GLOBAL AEROSPACE REPORT 2014

A CLEARWATER INTERNATIONAL INDUSTRIALS TEAM REPORT

CLEARWATER INTERNATIONAL

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This report is published by Clearwater International
Editors: Jim Pendrill & Sarah Fernandez
Design: www.creative-bridge.com
Subscription: sarah.fernandez@cwicf.com

Welcome

These are immensely exciting times for the global aerospace industry which is set for extraordinary growth over the next generation driven by emerging market demand. That growth will, of course, be mirrored in the supply chain on the back of the huge build schedules at Airbus and Boeing, as well as at other aircraft manufacturers.

But with these opportunities come major challenges for suppliers looking to exploit new markets, as manufacturers demand ever greater critical mass within their supply chains and only want to deal with suppliers which have the necessary scale and knowledge to invest heavily in technology.

Given the shrinking defence industry budgets in the US and Western Europe, suppliers particularly need to exploit new commercial aviation markets – a move which will pose challenges for those whose business models are currently more geared around the defence industry. Managing this transition will be key.

Against this backdrop, and the need for consolidation in the European market on the back of reduced military spending, we have already seen significant M&A activity in the first half of 2014. A good example was British defence specialist Cobham's acquisition of US rival Aeroflex, as it sought to insulate itself from the downturn in US defence spending and push into higher-growth commercial markets in microelectronics and wireless civil communications.

We expect to see plenty more cross-border deals of this type in the year ahead and we should also be alert to more Asian buyers looking to grasp opportunities in the market, such as the Chinese AVIC group which last year bought German aircraft engine maker Thielert.

A measure of the levels of M&A interest in the wider sector was illustrated only last month, when US aircraft interiors business B/E Aerospace said it was reviewing its strategic options which could lead to a sale, merger or divestments. That announcement has already led to intense interest on both sides of the Atlantic, and shows just how hot the aerospace market is right now.

We hope you enjoy the read.

Constantine Biller
Partner, UK
+44 845 052 0353
constantine.biller@cwicf.com

@CWICF
/company/clearwater-international-corporate-finance

Market Overview

The next 20 years herald extraordinary growth in the global aviation industry, driven by the rise in passenger traffic to and from emerging markets.

As plane maker Airbus affirms, continued economic growth, a growing middle class, plus rising tourism and migration are just some of the factors that are set to increase global connectivity. Increasing urbanisation will lead to a doubling of mega cities by 2032, and 99 per cent of the world's long-haul traffic will be between, or through, these cities.

Airbus* predicts that air traffic will grow 4.7 per cent annually over the next 20 years (2013-2032), requiring more than 29,000 new passenger and freight aircraft valued at nearly $4.4tn. Some 10,400 planes will replace existing aircraft, which means that the worldwide fleet will double to around 36,500 aircraft by 2032. By the same date, trade organisation ADS** estimate that more than 24,000 business jets, 5,800 regional aircraft and 40,000 helicopters will also be required.

Asia-Pacific will lead the world in traffic by 2032, say Airbus, overtaking Europe and North America. Today a fifth of the population in emerging markets take a flight annually, but by 2032 this will rise to two thirds as global passenger numbers more than double to 6.7 billion.

Domestic demand in emerging economies will grow sharply too. India is forecast to grow at the fastest rate (nearly 10 per cent), followed by China and Brazil (both 7 per cent).

Fully capitalising on this uplift and exploiting new commercial aviation markets will be key for suppliers, especially those whose business models are currently more geared around the defence industry which continues to shrink in the US and Western Europe. Although there is significant growth in defence markets such as China and Russia, these are still largely out of bounds for Western suppliers.

A measure of the wider dominance of the passenger jet market came last year when the European aerospace and defence group EADS changed its name to Airbus Group, reflecting the fact that the bulk of its revenues now come from civil aerospace.

Passenger traffic growth for the next 20 years

4.7% CAGR

Passenger fleet

2012	2032	
16,094	33,651	+109%

Number of passengers

2012	2032
2.9 billion	6.7 billion

Deliveries 2012-2032

29,226

Total new passenger & freighter aircraft

Source: Airbus Global Market Forecast

* Global Market Forecast
** Commercial Aerospace Market Information

Record orders

Against this backdrop, it is little wonder that the industry's 'big two' - Airbus and Boeing - have record order books for new aircraft deliveries. Between them they delivered a record 1,300 planes in 2013, while also receiving 2,800 new orders, taking their combined backlog to more than 10,000.

Airbus delivered almost 500 of its short-haul A320 jet in 2013, far more than any other aircraft type. It also took significant orders for its next generation A320 Neo, which features more fuel efficient engines. Boeing, meanwhile, has announced that it will increase production of the 737, its short-haul jet.

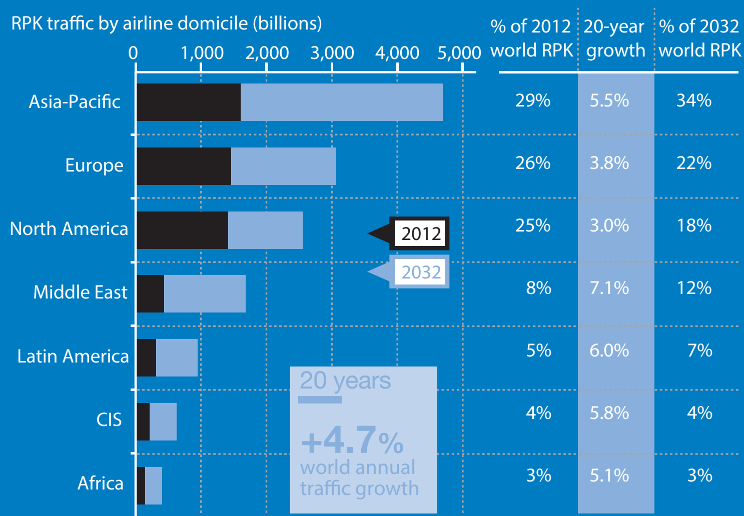
2014 has also started with a record delievery of commercial aircraft. In total, more than 300 planes were delivered globally in the first three months of this year – up 7 per cent on 2013.

Due largely to the huge backlog of orders - $390bn for Boeing and €638bn for Airbus Group at list price – AlixPartners* expects that by 2017 the workload volume of OEMs' main commercial programmes will have ramped up by 45 per cent. On the back of these projections, suppliers such as Precision Castparts, Safran, Rolls-Royce, UTC, Parker Hannifin and Zodiac are all seeing significant growth.

Alix says the commercial aerospace profit pool will continue to grow at an annual rate of 5 per cent, driven in part by both airframe and engine manufacturers' new technologies intended to improve aircraft operating efficiency. As the profit pool gets larger, commercial aircraft OEMs will fight to increase their share by developing new aircraft designs and ramping up production for both narrow- and wide-body aircraft.

In the very large aircraft market, dominated by the Airbus A380, Alix says there is a requirement for 1,334 passenger aircraft valued at $519bn. Of these, it estimates that almost half will be needed in the Asia-Pacific region. The requirement in the twin-aisle market is for 6,779 aircraft valued at $1.8tn, again with almost half of deliveries forAsia-Pacific, while the single-aisle market requires more than 20,000 aircraft worth another $1.8tn.

RPK (Revenue Passenger Kilometres) traffic by...



Source: Airbus Global Market Forecast

* 2013 Aerospace & Defence Industry Outlook

Airline flux

While suppliers can exploit the plethora of opportunities in the industry, times remain tough for airlines. Operators continue to be squeezed by high fuel prices, while low-cost carriers (LCCs) and new global competitors have kept pressure on pricing. The global spread of the LCC market - not only in Europe but increasingly in Asia, the Middle East and Africa - is further helping to open new markets and encourage more first-time flyers.

Competitive pressures are likely to remain for some time with operators in the US and Europe either restructuring or merging. However, the benefits of such restructurings are beginning to feed through. For instance, profits for the new American Airlines Group improved fivefold in 2013 as a series of mergers and bankruptcies reduced competition.

However, the blurring of the line between low-cost and full-service carriers is creating flux. Alix* says as traditional network carriers have unbundled their pricing to give passengers lower fares, so the LCCs have added new services such as business-class tickets and long-haul routes. Many former flag carriers now operate subsidiaries that provide competition on short-haul European flights such as Lufthansa's Germanwings and IAG's Vueling.

New entrant Norwegian Air is low-cost but is setting its sights on intercontinental markets as well as short-haul business, aiming to connect European cities with US and Asian cities.

Defence woes

Driven by rising defence budgets in China and Russia, global military spending is growing for the first time in five years. According to IHS Jane**, global defence spending will rise slightly to £945bn in 2014 and China's planned spending on armed forces will for the first time be greater than the combined budgets of Britain, France and Germany. China has set aside $148bn this year, up more than 6 per cent, and its defence spending is projected to increase at a compound annual growth rate of 18.5 per cent for the next decade. US spending at $351bn is still the highest in the world, but fell by 1.3 per cent last year.

Contractors that sell to the US are particularly exposed, although European firms face big threats too as major programmes like combat aircraft and shipbuilding are reduced. In particular Alix says European contractors are struggling to sustain innovation and industrial capacity in the absence of a major new initiative to radically restructure European defence capacity.

It says that defence companies must continue to reduce costs and improve their value proposition to customers, while focusing on international markets and rebalancing their portfolios. Competitions for major programmes are increasingly 'winner-take-all arrangements', such as combat aircraft in developing markets, and OEMs must adapt their offerings accordingly.

Outlook

The mix of rapidly growing emerging markets in Asia and the Middle East, evolving technologies, and fiscal strains on mature markets is leading to widespread instability in the aerospace industry. Alix concludes that profitability is an ongoing challenge and companies must redouble their efforts to reduce costs.

Meanwhile, companies need to accelerate their diversification into new and faster-growth markets. This entails more than a mere geographic change but the tailoring of products and services for customer segments with varying priorities and requirements. The ability to identify and anticipate demand for new products and services driven by new technologies will be a clear differentiator in A&D companies.

* 2013 Aerospace & Defence Industry Outlook

** Annual defence budgets review

Aircraft Focus

In response to huge demand, Airbus and Boeing are developing existing models to prolong their life and make them more fuel efficient.

Commercial

In terms of the largest aircraft today, most orders are for the Airbus A380 with Emirates recently announcing plans to buy a further 100 units of the plane. Many analysts see the A380 as the best solution to the expected huge increase in passengers flying between the world's most congested hubs.

Debate continues to rage as to whether mid-sized planes will better serve future global markets, with proponents stating that passengers will want more frequent departures at main hubs and direct flights between smaller airports.

The Airbus A330 is a big player in this market, while Boeing is upgrading its 777. The 777x is its newest family of twin-aisle planes and was launched at last year's Dubai Airshow. Production of the 777x is scheduled to begin in 2017, with first delivery in 2020.

Business jets

Bombardier* anticipate 9,800 aircraft deliveries in the business jet market worth $269bn from 2013 to 2022, and 14,200 aircraft worth $381bn from 2023 to 2032. Meanwhile, it forecasts a total of 24,000 business jet deliveries in its markets from 2013 to 2032, worth around $650bn to the industry.

The figures are a sign of how the business aviation market has continued to recover since the depths of the global recession, and how as confidence has returned to world markets so aircraft orders and backlogs have grown. The business jet market is particularly active in Asia, where demand is being driven by a new generation of entrepreneurs mainly from China and Indonesia.

While business jet orders and deliveries for 2013 are expected to be comparable to those of 2012, Bombardier forecasts that they will begin to improve this year and that the industry will surpass its prior delivery peak year of 2008 by as early as 2016. It is also anticipated that with demand for business jets shifting towards emerging markets, the fleet of large and medium category aircraft will grow, with the large aircraft category demonstrating the fastest growth.

North America will still see the greatest number of new business jet deliveries between 2013 and 2032, followed by Europe. China is forecast to become the third largest region in terms of deliveries over the next 20 years, while markets such as Brazil, India, Russia, Mexico and Turkey are expected to form a significant share of the business jet market.

With increasing demand for more cost-effective and fuel-efficient aircraft, it is predicted that 60 per cent of the current commercial fleet will be retired by 2032, especially in the smaller seat market.

* Business Aircraft Market Forecast

Much focus remains on the F-35 programme – although being developed by Lockheed Martin for the US market, it is a collaboration with the UK, Canada, Australia, Denmark, Norway, Turkey, Italy and the Netherlands.

Lockheed is building the front fuselage and completing final assembly of the plane, while Northrop Grumman is building the centre of the plane and BAE Systems the rear fuselage, tail and wing tips. Pratt & Whitney is the engine supplier, while Rolls-Royce is making the lifting fans.

In Europe, there remains much political debate over the next generation of military aircraft. The UK and French governments have announced that BAE Systems and Dassault will work together on a £120m feasibility study into an unmanned combat air system, while Dassault is finalising a $20bn deal with the Indian government to supply almost 200 of its Rafale plane to replace India's ageing jet fighter fleet.

Brazil has chosen the aircraft maker Saab for a $4.5bn contract to build 36 fighter jets over the next 10 years, while BAE Systems is selling 72 Eurofighter Typhoon jets to Saudi Arabia as it targets growth markets such as the Middle East to offset weak demand from the US and Europe.

Helicopters

A Strategic Defence Intelligence report* into the commercial helicopter market forecasts global growth of just over 3 per cent per annum between 2013 and 2023. It says the market is being driven by growth in offshore oil and gas exploration and production; in the emergency medical care market; in VIP transport; and in law enforcement requirements.

The steadily growing oil and gas industry in the Middle East is creating particular demand for commercial helicopters, while emergency services (EMS) will drive the market for civil helicopters in Asia-Pacific and the Middle East as countries in these regions often lack an established EMS network.

The report also highlights the constraints of the sector. It says such fast-growing demand will make it difficult to fulfill the requirement for trained commercial pilots and technicians. Some helicopter manufacturers, one example being Bell, are addressing the issue by signing agreements with aviation colleges in countries such as China.

Freight

Unlike the continued rise in passenger traffic in recent years, the freight market has struggled to maintain strong growth as a combination of the global financial crisis, reshoring, an increased volume of freight carried by sea, and high fuel prices have combined to put pressure on airlines.

Although estimates from Boeing** put the value of the sector at $240bn in 2013, in that year it saw year-on-year global growth of just 1.4 per cent measured in freight tonne kilometers, according to the International Air Transport Association (IATA). Asian cargo carriers now make up about 40 per cent of the global market, although Asian carriers' average freight charges have been pushed down by excess capacity – in part because airlines have been expanding their passenger fleets so quickly.

As a result of its huge investment in its fleet, Emirates is now the world's biggest freight airline by tonnage carried while the Middle East has continued to see strong growth in its freight market, rising by 13 per cent last year. Players such as Cathay Pacific are also entering new emerging markets such as Mexico, India and Vietnam.

Supply chains

The huge increase in sales volumes of commercial aircraft over the next generation will create significant challenges for A&D supply chains. For instance, Alix*** projects a 45 per cent increase in workload by 2017 with new programmes like the A320 Neo, Boeing 737 MAX, and Bombardier C series coming on stream.

These new programmes also involve more technologically complex designs aimed at increasing aircraft operating efficiency, which will put added pressures on supply chains to react to advances in composite materials, fuel-efficient engine technologies, avionics, and fuel, braking and electric systems.

* Commercial Helicopter Market 2013-2023
** World Air Cargo Forecast 2012-2013
*** 2013 Aerospace & Defence Industry Outlook

Alix* suggests that the current industry supply chain is not entirely ready for this dual challenge of delivering a greater volume of more sophisticated aircraft. In fact, it says there is a "real and growing risk" of supply chain disruptions as certain suppliers have only limited expertise and modest engineering capabilities for implementing and sustaining several programmes, especially in the detailed parts and aerostructures segments.

It says some suppliers and OEMs have taken steps to handle these limitations, for example by more directly involving and closely monitoring Tier 1 aerostructure suppliers in new programmes. But it says these measures also represent a new risk-sharing model which brings its own dangers.

The conclusion is that OEMs will increasingly have to lead operational improvement programmes at their key suppliers, and Tier 1 responsibility suppliers will have to develop similar measures further down the supply chain. As tier 1 responsibility shifts to include not only full-system but subsystem specs and integration, OEMs will have to work with those specs and that integration to ensure that sufficient competencies are in place.

Engines

With engines accounting for up to a third of the value of a new jet, engine makers are well placed to capitalise on the forecast growth in the aviation industry over the next generation with combined revenues forecast to reach $1tn over the next 20 years. Big players in the market include GE, CFM International (GE's joint venture with Snecma of France), Rolls-Royce and Pratt & Whitney.

One of the biggest trends in the market is engine makers increasingly being guaranteed exclusivity on a new plane and sometimes contributing directly towards development costs of the aircraft. For instance, Rolls-Royce is the only engine supplier for Airbus' new long-haul A350 plane, while GE supplies all the engines for the Boeing 777. Another key trend is engine manufacturers now offering long-term benefits to customers such as full life cycle services.

New technologies

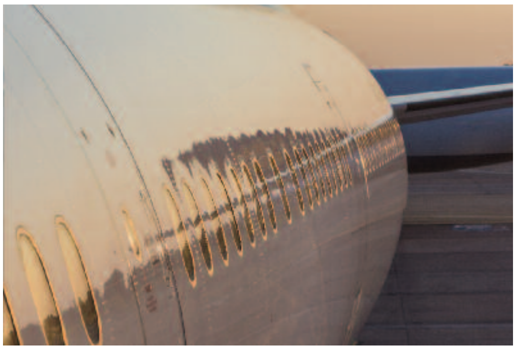
Technological developments to make aircraft more fuel efficient remains key. Pratt & Whitney is developing a new generation of jet engine – its geared turbofan – which has a gearbox that lets the fan at the front of the engine turn at a different speed to the compressors inside, thereby making the engine more efficient. The engine is being fitted in Airbus' updated A320 aircraft which is being delivered from 2016, and the hope is that the engine may in time be fitted to wide-bodied jets too.

Another eye-catching technology is CFM's LEAP engine which uses composite materials to achieve fuel efficiency savings. The company says the engine can reduce fuel consumption and CO_2 emissions by 15 per cent compared to today's engines. The LEAP product line incorporates a number of technologies including optimized thermodynamic design, higher compression ratios, advanced 3D aerodynamic design, and greater use of advanced materials. The engine begins flight tests this year leading to engine certification next year, and entry into commercial service in 2016.

Earlier this year, Rolls-Royce started assembly of the first higher-thrust version of its Trent XWB – the engine which it claims is the world's most efficient flying today and which has been specifically designed for the Airbus A350. The new 97,000lb thrust version will exclusively power the Airbus A350, with the first flight scheduled for the end of 2016 and entry into service in 2017.

The increased thrust is achieved through a combination of new high-temperature turbine technology, a larger and scaled-up engine core, and a higher-flow fan enabled by advanced aerodynamics which has allowed Airbus to increase the A350 payload range and maximum take-off weight.

* 2013 Aerospace & Defence Industry Outlook



Air frames

The use of composites and other advanced materials in aircraft design and manufacturing has now become commonplace, resulting in a product line of economical and environmentally-friendly jetliners.

Composite materials maximise weight reduction as they are typically 20 per cent lighter than aluminium, while they are also more reliable than other traditional metallic materials, leading to reduced aircraft maintenance costs. Composite technologies also give added strength and durability to aircraft, ensuring a longer lifespan, as well as being corrosion-free, which lessens the quantity of chemicals necessary to protect structural components. Weight reductions from composites also result in lower fuel consumption.

Both Airbus and Boeing have widely adopted the technology, with Boeing's Dreamliner the first full-size commercial aircraft with composite wings and fuselage. More than 50 per cent of of the next-generation Airbus A350 XWB is made of composites, and it is also the first Airbus aircraft that uses a higher percentage of composite technologies than metallic applications. Its fuselage panels, frames, window frames, clips and doors are made from carbon fibre reinforced plastic.

By applying composites on the A350 XWB, Airbus says it has increased the service intervals for the aircraft from from six to 12 years, which significantly reduces maintenance costs for customers. The high percentage of composites also reduces the need for fatigue-related inspections required on more traditional aluminium jetliners, and lessens the requirement for corrosion-related maintenance checks.

Maintenance, repair and operations (MRO)

With the civil air transport fleet doubling to more than 50,000 aircraft within 15 years, there are significant opportunities in the MRO market as airlines increasingly outsource their maintenance operations, while aircraft OEMs are also extending their reach into the MRO business.

Airbus FHS and Boeing Edge could become major players in the segment in the next three to five years, as the two companies build on their relationships with airlines and challenge component OEMs such as cabin equipment manufacturers by implementing major new programmes and platforms.

Another trend affecting the MRO business is that next-generation aircraft and engines require less maintenance. So, although there is a clear growth opportunity in the MRO segment, operators will have to navigate a dynamic market in order to succeed. Key requirements will be access to capital, willingness to invest long term and a footprint with operations close to the fleet of tomorrow, including strong coverage in Asia, says Alix*.

Such growth is also encouraging new entrants into the market, as seen by considerable M&A activity in recent years. In 2012, for example, the component MRO business of Aveos was taken over by A J Walter Aviation.

* 2013 Aerospace & Defence Industry Outlook

Geographic Trends

Head east

As growth in mature markets flattens, the industry's centre of gravity is shifting to markets in Asia and the Middle East where a growing middle class is increasingly travelling by air and airlines are building up their fleets. China is forecast to replace the US as the most valuable market in the world for passenger jet deliveries by about 2030 – almost half of all traffic will originate in Asia by that date, compared with 37 per cent currently, according to Boston Consulting Group* (BCC).

The International Air Transport Association** (IATA) estimates that China's domestic passenger traffic increased nearly 12 per cent last year, compared to global traffic growth of just over 5 per cent. According to the Chinese government, the total number of airports in the country is to increase from 175 in 2010 to 230 in 2015 – including a major new hub in Beijing scheduled for completion in 2018. Growth in China's second and third-tier cities is also rapid and Boeing predicts that the size of China's civil aviation fleet will increase to 6,450 aircraft. Boeing and Airbus both say they expect orders for wide-body planes to increase rapidly as Chinese airlines expand their international networks.

But not just to China…

Asia will account for almost 32 per cent of global passenger traffic by 2017, up from 28 per cent in 2012, according to IATA. The share of traffic from North America and Europe will fall to 24 per cent and 23 per cent respectively. Between them Boeing and Airbus expect airlines in Asia to buy $1.8tn-1.9tn worth of aircraft during the next 20 years.

Such phenomenal growth isn't just confined to China. Indonesia's Lion Air ordered 234 Airbus A320s in 2013, the biggest ever commercial airline order, while Vietnamese low-cost airline VietJetAir recently signed a $9.1bn deal to buy 63 Airbus aircraft. There are about 1,200 aircraft on order in southeast Asia with the likes of Malaysia's AirAsia and Lion Air - the region's fastest growing low-cost carriers – particularly active. By 2031, the Asia-Pacific region will be the biggest airline market in the world, receiving nearly a third of all new jet deliveries, according to Alix***.

Arise the 'superconnectors'

At the heart of this shift are the Gulf's 'superconnectors', its three fast-growing, state-controlled carriers which are increasingly taking market share from more established airlines. Emirates, Etihad Airways and Qatar Airways, which have hubs in Dubai, Abu Dhabi and Doha respectively, are all pursuing ambitious long-haul strategies and all three cities are busy building either new airports or terminals.

For instance, Dubai's new Al Maktoum airport will handle 160 million passengers on five runways when fully operational in 2027. The existing airport is already set to replace London Heathrow as the world's largest hub by 2015. In less than 30 years, Emirates (with almost 200 aircraft) has assembled the largest fleet of long-range, wide-body passenger jets in the world. Earlier this year, Qatar's new Doha airport opened with a design capacity of 30 million passengers a year and the potential to raise throughput to 45 million.

At last year's Dubai Airshow, the trio were unveiled as launch customers for the Boeing 777x. Emirates plans to buy 150 units of the plane in what is set to become Boeing's biggest single commercial aircraft order, while Etihad and Qatar ordered 75 units between them. Emirates also bought 50 more A380s while Etihad, which wants to triple the size of its fleet by 2026, placed orders at the show for a total of 143 aircraft worth $37.2bn.

The potential of the sector to grow in big emerging markets such as Indonesia, Vietnam and the Philippines is clear. While the US has 7,050 commercial aircraft in use and Europe 4,200, southeast Asia still only has 1,050 planes and more than 1,200 on order. In Indonesia alone the middle class is forecast to nearly double from 74m to 140m by 2020, according to BCC. Low-cost carriers already account for more than half of the capacity in Indonesia, Malaysia, the Philippines and Thailand.

However, IATA estimates that Asian carriers have seen net profits fall from $11.1bn in 2010 to $3.2bn in 2013 with the biggest factor being the weak state of the air cargo market.

* BCG/Tripadvisor: Winning the next billion Asian travellers
** IATA Monthly Traffic Analysis
*** 2013 Aerospace & Defence Industry Outlook

M&A Review

The global aerospace market continues to be a vibrant source of M&A activity.

Overview

With suppliers coming under pressure from OEMs to consolidate supply chains, as well as regional players in the supply chain broadening their product portfolio and customer base, the industry is a hotbed of deal activity. In addition, the desire of major players to seize upon technological advances and growing global opportunities is also creating a fertile M&A landscape.

That said, in Europe at least, the past year was notable for the deal that did not happen – namely the failed merger of Airbus owner EADS and the UK's largest defence contractor BAE Systems. The logic of the tie-up was to create a European aerospace and defence group which could compete with the likes of the US and China. However, the deal hit the rocks after the UK, German and French governments failed to agree on how much influence they should each have over the new business.

US leads the way

US corporates continue to lead the way in terms of M&A activity and the first half of 2014 saw a number of big ticket transactions, such as Precision Castparts acquiring California-based Aerospace Dynamics International (ADI) from the Marvin Group for $625m.

ADI operates a wide range of high-speed machining centres for the industry and has developed particular expertise in large complex components, hard metal machining and critical assemblies. ADI has strong positions across high growth commercial platforms, including a significant presence on the Airbus A350, and Precision says ADI has developed large part capabilities that will expand its aerostructures product offering and role on next-generation aircraft.

Another deal saw Textron acquire Beech Holdings, the parent of Beechcraft, and then bring together its Cessna business and Beechcraft to form a new division – Textron Aviation. Cessna and Beechcraft together produced about $4.6bn in revenues during 2013. Textron Aviation will now offer a broader selection of aircraft for its customers and a greatly expanded service footprint including Citation and Hawker business jets, King Air twin-engine turboprops, Caravan single-engine utility turboprops and piston-engine aircraft.

The end of 2013 saw Rockwell Collins, which develops communication and aviation electronic solutions for both commercial and government applications, complete its largest ever acquisition with the purchase of Arinc from the Carlyle Group for $1.4bn. Arinc provides digital communications to airliners and business jets through aircraft communications systems as well as flight support services for business aviation, airport communications and information services, and MRO services.

The US TransDigm Group, a manufacturer of components for use on commercial and military aircraft, has also been particularly acquisitive.

Last year it bought Arkwin Industries, a manufacturer of aerospace hydraulic and fuel system components for commercial and military aircraft, helicopters and other speciality applications. It also bought GE Aviation's Electromechanical Actuation division via a new vehicle, Whippany Actuation Systems, which manufactures motion control sub-systems for civil and military applications. Earlier this year, the company went on to complete the acquisition of German-based Elektro-Metall Export which manufactures actuators, electrical and electromechanical components and assemblies, primarily for commercial aircraft, helicopters and other speciality applications.

Another notable US deal saw the Triumph Group acquire the pump and engine control systems business of Goodrich from United Technologies Corporation. The business is a leading independent aerospace fuel system supplier for the commercial, military, helicopter and business jet markets.

Cross-border

The past year has also seen a number of significant cross-border deals. For instance Eaton sold its aerospace power distribution management solutions and integrated cockpit solutions business to the French Safran group. The division produces illuminated switches, cockpit panel assemblies, pilot controls and passenger safety unit latches, as well as circuit protection, power distribution and switch components and sub-systems for aerospace and industrial applications. The deal allows Safran to bolster its North American presence in avionics and flight controls bringing recognised expertise in panels and displays, including illuminated switches and cockpit controls.

The UK has long been seen as a global leader in aerospace technologies and its suppliers remain attractive to overseas buyers. The past year saw engine component maker Trac Group acquired by US-based Chromalloy, which serves engine makers and operators in the commercial aerospace, defence and energy industries. CCRS, a provider of coating and repair services to the aerospace and gas turbine industries, also fell into US hands after being acquired by Curtiss-Wright.

Another deal saw Tritech, a manufacturer of complex investment castings and a supplier to OEM and Tier 1 aerospace groups, sold to Uni Deritend, part of the Neterwala Group of companies and India's largest manufacturer of air-melt investment castings.

However, UK companies have been on the overseas acquisition trail too. One example is MB Aerospace's acquisition of engine component manufacturing business Norbert Industries which has operations in the US and Poland. Last year MB also acquired US-based aero-engine component manufacturing business Delta Industries.

British defence specialist Cobham acquired US-based Aeroflex for an enterprise value of $1.5bn. Aeroflex makes components used in the aerospace and defence industries and more than two-thirds of its revenues come from the commercial sector.

There has been plenty of recent M&A activity within the UK too. Senior acquired Thermal Engineering, an aerospace components manufacturer which specialises in manufacturing hot and cold formed components, complex fabricated assemblies and thermal insulation heat shields and systems. Farsound, a manufacturer and supply chain manager of precision components for the aerospace and defence industries, was sold to RG Industries, a partnership between Rubicon Partners and Grovepoint Capital.

Meanwhile, 2014 has also seen a number of JV exits. Rolls-Royce sold its 50 per cent stake in Rolls-Royce Turbomeca to the helicopter engine manufacturer, while Cobham acquired the remaining 50 per cent stake it did not already own in three companies from Bristow Helicopters.

Recent M&A Transactions

Astronics Corp / Airbus Group Inc's Test and Services division	**Announced:** 21/01/2014 **Target:** Airbus Group Inc's Test and Services division **Total Transaction Value (£m):** 32 **Purchaser:** Astronics Corp **Stake Acquired (%):** Pending	Astronics Corporation agreed to acquire the assets and liabilities of the Test and Services division of Airbus Group Inc, a US-based defence and homeland security provider, for an estimated $53m plus a net working capital adjustment of $17m.
Cobham plc / remaining stake in FBS Ltd, FB Heliservices Ltd and FB Leasing Ltd	**Announced:** 15/07/2013 **Target:** Remaining stake in FBS Ltd, FB Heliservices Ltd and FB Leasing Ltd **Total Transaction Value (£m):** 74 **Purchaser:** Cobham plc **Stake Acquired (%):** 50 in each entity	Cobham acquired the remaining 50 per cent stake that it did not already own in three companies from Bristow Helicopters. It fully bought out FB Heliservices Ltd and FBS Ltd, the UK-based helicopter pilot training companies, and FB Leasing Ltd, for a total of £74m including debt of an estimated £38m.
General Electric Company / Avio SPA's aviation business	**Announced:** 21/12/2012 **Target:** Avio SPA's aviation business **Total Transaction Value (£m):** 2,800 **Purchaser:** General Electric Company **Stake Acquired (%):** 100	General Electric acquired Avio SPA's aviation business, an Italian-based aircraft engine, control, automation and electrical system manufacturer, and provider of aircraft repairs and services.
Heico Corp / Reinhold Industries Inc	**Announced:** 06/05/2013 **Target:** Reinhold Industries Inc **Total Transaction Value (£m):** n.a. **Purchaser:** Heico Corp **Stake Acquired (%):** 100	Heico Corporation acquired Reinhold Industries Inc, a US-based aircraft parts manufacturer and wholesaler, from affiliates of investment firm The Jordan Company L.P. and Reinhold management.
Cobham plc / Aeroflex Corp	**Announced:** 19/05/14 **Target:** Aeroflex Corp **Total Transaction Value (£m):** 1,500 **Purchaser:** Cobham plc **Stake Acquired (%):** 100	British defence specialist Cobham has acquired Aeroflex, which makes components used in the aerospace and defence industry. The deal is the largest in Cobham's history.

Precision Castparts Corp / Aerospace Dynamics International Inc	**Announced:** 20/03/2014 **Target:** Aerospace Dynamics International Inc **Total Transaction Value (£m):** 376 **Purchaser:** Precision Castparts Corp **Stake Acquired (%):** 100	Precision Castparts Corporation acquired Aerospace Dynamics International Inc, a California-based machined parts and assemblies manufacturer for the aerospace and defence industries, from Marvin Engineering Company Inc. The transaction is expected to complete in the first fiscal quarter of 2015 and is subject to regulatory approvals.
Rockwell Collins Inc / ARINC Inc	**Announced:** 11/08/2013 **Target:** ARINC Inc **Total Transaction Value (£m):** 857 **Purchaser:** Rockwell Collins Inc **Stake Acquired (%):** 100	Rockwell Collins completed the acquisition of ARINC from the Carlyle Group for $1.4bn. Rockwell Collins also sold ARINC's Industry Standards Organisation to SAE International. In addition, Rockwell Collins divested of ARINC's Aerospace Systems Engineering and Support business, which provides military aircraft integration and modifications, maintenance, logistics and support.
Safran SA / Eaton Corp's Aerospace Power Distribution Management Solutions and Integrated Cockpit Solutions business	**Announced:** 20/01/2014 **Target:** Eaton Corp's Aerospace Power Distribution Management Solutions and Integrated Cockpit Solutions business **Total Transaction Value (£m):** 133 **Purchaser:** Safran SA **Stake Acquired (%):** 100	Eaton Corporation sold its Aerospace Power Distribution Management Solutions and Integrated Cockpit Solutions business to Safran SA for $270m. The transaction was due to complete in the first half of 2014.
Safran SA / Aerolec SAS Goodrich Corp's Electrical Power Generation and Transmission Systems businesses	**Announced:** 16/10/2012 **Target:** Stake in Aerolec SAS, and outright acquisition of Goodrich **Total Transaction Value (£m):** 263 **Purchaser:** Safran SA **Stake Acquired (%):** 60/100	China's Ministry of Commerce ordered Goodrich Corporation, a US defence and aerospace products manufacturer, to divest its electrical power generation and transmission systems businesses and a 60 per cent stake in Aerolec SAS, a French-based aircraft parts wholesaler and aircraft equipment maintenance services company. The divestments followed United Technologies Corporation's acquisition of Goodrich. Safran SA subsequently agreed to acquire both companies.
Senior plc / Thermal Engineering Holding Ltd	**Announced:** 02/12/2013 **Target:** Thermal Engineering Holding Ltd **Total Transaction Value (£m):** 28 **Purchaser:** Senior plc **Stake Acquired (%):** 100	Senior plc acquired Thermal Engineering Holding Ltd, a UK-based aerospace component manufacturer, from Privet Capital LLP and other shareholders, for £28m. The consideration includes £6.5m of debt assumed. The company is now part of Senior's Aerospace Fluid Systems division.

Textron Inc / Beechcraft Holdings (aka Beech Holdings LLC)	**Announced:** 26/12/2013 **Target:** Beechcraft Holdings LLC **Total Transaction Value (£m):** 841 **Purchaser:** Textron Inc **Stake Acquired (%):** 100	Textron acquired all outstanding equity interests in Beechcraft Holdings LLC, a US-based aircraft manufacturing holding company and parent of Beechcraft Corporation, for a reported $1.4bn. The deal provided Textron with an opportunity to extend its general aviation business.
The Boeing Company / CPU Technology Inc's Acalis business	**Announced:** 22/02/2013 **Target:** CPU Technology Inc's Acalis business **Total Transaction Value (£m):** n.a. **Purchaser:** The Boeing Company **Stake Acquired (%):** 100	The Boeing Company acquired the Acalis business from CPU Technology Inc, the US-based anti-reverse engineering semiconductor elements manufacturer. The Acalis business became part of Boeing Military Aircraft's Global Strike division.
TransDigm Group Inc / Arkwin Industries Inc	**Announced:** 15/05/2013 **Target:** Arkwin Industries Inc **Total Transaction Value (£m):** 187 **Purchaser:** TransDigm Group Inc **Stake Acquired (%):** 100	TransDigm Group Inc acquired Arkwin Industries Inc, a US-based aerospace hydraulic and fuel system components manufacturer. The cash consideration was approximately $286m.
TransDigm Group Inc / GE Aviation Systems LLC's Electro-mechanical Actuation division's assets	**Announced:** 13/02/2014 **Target:** GE Aviation Systems LLC's Electromechanical Actuation division's assets **Total Transaction Value (£m):** 98 **Purchaser:** Whippany Actuation Systems LLC **Stake Acquired (%):** 100	TransDigm Group Inc acquired the assets of GE Aviation Systems LLC's Electromechanical Actuation division. The cash consideration was approximately $150m. The business is now conducted through a new entity, Whippany Actuation Systems LLC, based in New Jersey, USA.
TransDigm Group Inc / EME Holding GmbH	**Announced:** 13/02/2014 **Target:** EME Holding GmbH **Total Transaction Value (£m):** 28 **Purchaser:** TransDigm Group Inc **Stake Acquired (%):** 100	TransDigm Group Inc acquired EME Holding GmbH, a German-based holding company. The deal allowed TransDigm Group to expand its content on a number of substantial platforms.

Triumph Group Inc / Goodrich Pump & Engine Control System Inc

Announced: 18/01/2013
Target: Goodrich Pump & Engine Control System Inc
Total Transaction Value (£m): n.a.
Purchaser: Triumph Group Inc
Stake Acquired (%): 100

United Technologies Corporation sold Goodrich Pump & Engine Control System Inc, the US-based helicopter exhausts end engine parts manufacturer, to Triumph Group Inc.

Triumph Group Inc / Precision Castparts Corporation's UK- and Thai-based Primus Composites business

Announced: 06/05/2013
Target: Precision Castparts Corporation's UK- and Thai-based Primus Composites business
Total Transaction Value (£m): n.a.
Purchaser: Triumph Group Inc
Stake Acquired (%): 100

Triumph Group Inc acquired the UK- and Thai-based Primus Composites business of Precision Castparts Corporation, a US-based machine tools and investment castings manufacturer.

Turbomeca SA / Rolls-Royce Turbomeca Ltd

Announced: 23/04/2014
Target: Rolls-Royce Turbomeca Ltd
Total Transaction Value (£m): 251
Purchaser: Turbomeca SA
Stake Acquired (%): 50

Rolls-Royce Holdings sold its 50 per cent stake in Rolls-Royce Turbomeca Ltd, the UK-based helicopter engine manufacturer, to Turbomeca SA, for €293m. Turbomeca already held a 50 per cent stake in the company.

Ultra Electronics Holdings plc / 3 Phoenix Inc

Announced: 19/02/2014
Target: 3 Phoenix Inc
Total Transaction Value (£m): 52
Purchaser: Ultra Electronics Holdings plc
Stake Acquired (%): 100

Ultra Electronics Holdings acquired 3 Phoenix Inc, a US-based sonar, radar, intelligence, surveillance and reconnaissance products manufacturer, from management. The consideration comprises an initial payment of $70m, plus up to an additional $17m contingent on earnings growth over the next three years.

Xi'An Aero Engine / Avic Xi'An Aero Engine (Group) Ltd - assets

Announced: 01/05/2013
Target: Avic Xi'An Aero Engine (Group) Ltd - assets
Total Transaction Value (£m): 956
Purchaser: Xi'An Aero Engine
Stake Acquired (%): Assets and debts

Xi'an Aero Engine acquired a 100 per cent stake in six companies, an 80 per cent stake in a Shenzhen-based company, as well as the assets and debts related to the final assembly of the aero motor and test run business of Avic Xi'an Aero-engine (Group) Ltd.

Top 20 Global Players

Airbus

Rotterdam (144, 061)*

Airbus Group manufactures aircraft, helicopters, commercial space launch vehicles, missiles, satellites, defence systems and electronics. The Airbus division comprises of Airbus Commercial and Airbus Military which develop, manufacture and market commercial jet aircraft military transport aircraft, and special mission aircraft.

Revenues:	**£m**
2013	49,466
2012	47,321
2011	41,161
EBITDA:	**£m**
2013	3,708
2012	3,505
2011	3,051
EBITDA Margin:	**£m**
2013	7.5%
2012	7.4%
2011	7.4%
EBIT:	**£m**
2013	2,065
2012	1,785
2011	1,472
EBIT Margin:	**£m**
2013	4.2%
2012	3.8%
2011	3.6%

Principle areas of business:
Aerospace, defence

Revenue breakdown:
Commercial 95%; Defence 5%

Geographical breakdown:
Asia-Pacific 32%; Europe 23%; North America 18%; Middle East 18%; Latin America 6%; Other 3%

Recent M&A activity:
March 2014: Sold EADS North America Test & Services Inc, a California-based manufacturer of test & measurement systems, to Astronics Corporation.

BAE Systems

London (78,000)

BAE Systems is a global defence, aerospace and security company delivering a range of products and services for air, land and naval forces, as well as advanced electronics, security, information technology solutions and support services. The company operates in the following segments: Electronic Systems, Cyber & Intelligence and Platforms & Services.

Revenues:	**£m**
2013	16,864
2012	16,691
2011	17,770
EBITDA:	**£m**
2013	1,112
2012	1,934
2011	3,185
EBITDA Margin:	**£m**
2013	6.6%
2012	11.6%
2011	17.9%
EBIT:	**£m**
2013	619
2012	1,389
2011	1,683
EBIT Margin:	**£m**
2013	3.7%
2012	8.3%
2011	9.5%

Principle areas of business:
Aerospace, defence and security

Revenue breakdown:
Electronic Systems 12.9%; Cyber & Intelligence 6.5%; Platforms & Services 79%; HQ 1.6%

Geographical breakdown:
USA 37%; UK 26%; Saudi Arabia 20%; Australia 5%; Other 12%

Recent M&A activity:
July 2013: Sold its unmanned aircraft business, a London-based manufacturer of civil and military aircraft.

Boeing

Chicago (168,400)

Boeing is an international aerospace company providing products and services across five segments: Commercial Airplanes, Military Aircraft, Network and Space Systems, Global Services & Support and Boeing Capital Corporation.

Revenues:	**£m**
2013	52,527
2012	50,530
2011	44,472
EBITDA:	**£m**
2013	5,001
2012	4,950
2011	4,897
EBITDA Margin:	**£m**
2013	9.5%
2012	8.7%
2011	11.0%
EBIT:	**£m**
2013	3,883
2012	3,830
2011	3,954
EBIT Margin:	**£m**
2013	7.4%
2012	7.0%
2011	8.9%

Principle areas of business:
Aerospace, defence, space systems and security

Revenue breakdown:
Aerospace 61.2%; Defence 18.4%; Space systems 9.8%; Other 10.1%

Geographical breakdown:
USA 33.3%; Asia (other than China) 33.3%; China 7.4%; Europe 22.2%; Oceania 2.2%; Other 1.5%

Recent M&A activity:
February 2013: Acquired CPU Technology Inc, a California-based manufacturer of electronic computers.

Bombardier

Montreal (76,400)

Bombardier is a Canadian-based aerospace and transportation company. The business operates in two segments: Aerospace and Rail Transportation. The Aerospace segment provides business, commercial, amphibious and specialised aircraft, plus related services.

Revenues:	**£m**
2013	11,007
2012	10,152
2011	11,871
EBITDA:	**£m**
2013	758
2012	602
2011	997
EBITDA Margin:	**£m**
2013	6.9%
2012	3.8%
2011	6.5%
EBIT:	**£m**
2013	521
2012	377
2011	782
EBIT Margin:	**£m**
2013	4.7%
2012	3.8%
2011	6.5%

Principle areas of business:
Aerospace, transportation

Revenue breakdown:
Aerospace 51.6%; Transportation 48.4%

Geographical breakdown:
North America 39%; Europe 43.6%; Asia-Pacific 10.7%; Other 6.7%

Recent M&A activity:
May 2013: Sold Flexjet Inc, a provider of fractional aircraft ownership services, for £118m.

* Workforce

Dassault Aviation
Paris (11,614)

Dassault Aviation operates in the global civil and military aviation industry specialising in the design, manufacture and sale of combat aircraft and executive jets. Its portfolio of products includes the Falcon family for the civil aviation market, as well as Mirage 2000, Rafale and Neuron aircrafts for the military sector.

Revenues:	**£m**
2013	3,834
2012	3,221
2011	2,769
EBITDA:	**£m**
2013	1,448
2012	687
2011	450
EBITDA Margin:	**£m**
2013	37.8%
2012	21.3%
2011	16.3%
EBIT:	**£m**
2013	560
2012	605
2011	381
EBIT Margin:	**£m**
2013	14.6%
2012	18.8%
2011	13.8%

Principle areas of business:
Civil and military aviation

Revenue breakdown:
Defence 30.2%; Falcon (executive jets) 69.8%

Geographical breakdown:
France 78%; US 22%

Recent M&A activity:
Acquisition of a 20.8% stake in Thales Group, the French-based provider of onboard and ground systems for the civil aerospace market, in a deal worth £1.46bn.

Finmeccanica
Rome (63,835)

Finmeccanica operates through eight divisions producing military aircraft and civil applications such as turboprop aircraft, aerostructures and engine nacelles. It is also active in helicopter production, computerised flight control and mission management, satellite navigation, radar systems, avionics and electro-optimal equipment.

Revenues:	**£m**
2013	13,384
2012	13,490
2011	14,510
EBITDA:	**£m**
2013	548
2012	69
2011	(1,239)
EBITDA Margin:	**£m**
2013	4.1%
2012	0.5%
2011	(8.5%)
EBIT:	**£m**
2013	(45)
2012	(485)
2011	(1,801)
EBIT Margin:	**£m**
2013	(0.3%)
2012	(3.6%)
2011	(12.4%)

Principle areas of business:
Aerospace, defence

Revenue breakdown:
Helicopters 25.4%; Defence and Security Electronics 30.5%; Aeronautics 20.9%; Space 6.6%; Defence Systems 7.8%; Transportation 11.2%; Other 2.1%

Geographical breakdown:
Italy 17.6%; UK 10.1%; Rest of Europe 29.2%; North America 22.7%; Other 20.4%

Recent M&A activity:
December 2013: Sold its 39.55% stake in Ansaldo Energia SpA, a Genoa-based manufacturer of power generators, gas and steam turbines, for £308m.

August 2013: Acquired DSI Entertainment Systems Inc, a provider of audio installation services, through its US subsidiary Engineered Environments Inc.

GE
Connecticut (307,000)

General Electric Company (GE) is a diversified technology and financial services company. Its products and services range from aircraft engines, power generation, water processing and household appliances, through to medical imaging, business & consumer financing and industrial products.

Revenues:	**£m**
2013	88,559
2012	90,724
2011	92,020
EBITDA:	**£m**
2013	17,266
2012	17,934
2011	20,030
EBITDA Margin:	**£m**
2013	19.5%
2012	19.8%
2011	21.8%
EBIT:	**£m**
2013	10,309
2012	11,252
2011	12,956
EBIT Margin:	**£m**
2013	11.6%
2012	12.4%
2011	14.1%

Principle areas of business:
General industrials including aviation

Revenue breakdown:
Power & Water 16.7%; Oil & Gas 11.5%; Energy Management 5.1%; Aviation 14.8%; Healthcare 12.3%; Transportation 4%; Appliances & Lighting 5.6%; GE Capital 29.8%

Geographical breakdown:
USA 47%; Europe 17.3%; Pacific Basin 17.5%; Latin America 9%; Middle East and Africa 9.2%

Recent M&A activity:
December 2012: Acquired the aviation business of Avio SpA in a £2.7bn deal.

General Dynamics
Virginia (96,000)

General Dynamics offers a portfolio of products and services in business aviation, combat vehicles, weapons systems and munitions, military & commercial shipbuilding and communications & information technology. The company has four divisions: Aerospace, Combat Systems, Marine Systems, and Information Systems & Technology.

Revenues:	**£m**
2013	18,930
2012	19,491
2011	21,142
EBITDA:	**£m**
2013	2,587
2012	899
2011	2,889
EBITDA Margin:	**£m**
2013	13.7%
2012	4.6%
2011	13.7%
EBIT:	**£m**
2013	2,250
2012	515
2011	2,506
EBIT Margin:	**£m**
2013	11.9%
2012	2.6%
2011	11.9%

Principle areas of business:
Aerospace, defence

Revenue breakdown:
Aerospace 26%; Combat Systems 19.6%; Marine Systems 21.5%; Information Systems and Technology 32.9%

Geographical breakdown:
North America 82.7%; Europe 9.1%; Asia-Pacific 4.8%; Africa/Middle East 2.4%; South America 1.1%

Recent M&A activity:
November 2012: Sold the Palencia operations of its subsidiary company Santa Barbara Sistemas SA, the Spanish based manufacturer of defence equipment and materials.

Honeywell
New Jersey (131,000)

Honeywell International is a diversified technology and manufacturing company whose range of products include sensing and security technologies for buildings, turbochargers, automotive products, speciality chemicals, electronic and advanced materials, process technology for refining and petrochemicals, and energy efficient products and solutions.

Revenues:	**£m**
2013	23,682
2012	23,296
2011	23,616
EBITDA:	**£m**
2013	4,058
2012	3,166
2011	2,378
EBITDA Margin:	**£m**
2013	17.1%
2012	13.6%
2011	10.1%
EBIT:	**£m**
2013	3,458
2012	2,593
2011	1,759
EBIT Margin:	**£m**
2013	14.6%
2012	11.1%
2011	7.5%

Principle areas of business:
General industrials including aerospace

Revenue breakdown:
Aerospace 30.7%; Automation and Control Solutions 42.4%; Performance Materials and Technologies 17.3%; Transportation Systems 9.6%

Geographical breakdown:
USA 58.8%; Europe 25.2%; Other 16.1%

Recent M&A activity:
April 2014: Sold Société d'Études et de Constructions Aéronavales SAS, a manufacturer of aircraft parts.

September 2013: Acquired Intermec Inc, a manufacturer and wholesaler of systems for automated data collection and mobile computing, for £376m.

ITT
New York (9,400)

ITT Corporation is a manufacturer of engineered critical components and customised technology solutions for the aerospace, defence, energy, transportation and industrial markets. The company has five divisions: Aerospace/Defence, Industrial Process, Motion Technologies, Interconnect Solutions and Control Technologies.

Revenues:	**£m**
2013	1,514
2012	1,378
2011	1,349
EBITDA:	**£m**
2013	166
2012	136
2011	(109)
EBITDA Margin:	**£m**
2013	11.0%
2012	9.9%
2011	(8.1%)
EBIT:	**£m**
2013	113
2012	92
2011	(155)
EBIT Margin:	**£m**
2013	7.5%
2012	6.7%
2011	(11.5%)

Principle areas of business:
Aerospace, defence, energy, transportation and industrial

Revenue breakdown:
Industrial Process 44.4%; Motion Technologies 28.9%; Interconnect Solutions 15.8%; Control Technologies 11.1%

Geographical breakdown:
USA 35.9%; Germany 10.7%; Other developed markets 23.4%; Other emerging markets 30.1%

Recent M&A activity:
November 2012: Sold the shape cutting product lines of ITT Corp, a US provider of aerospace and defence services, to Lincoln Electric Holdings Inc.

L-3 Communications
New York (48,000)

L-3 Communications is a prime contractor in aerospace systems and national security solutions. The company also provides a range of communication & electronic systems and products used on military and commercial platforms. It operates in four segments: Aerospace Systems, Electronic Systems, Communication Systems and National Security Solutions.

Revenues:	**£m**
2013	7,658
2012	8,131
2011	8,513
EBITDA:	**£m**
2013	902
2012	974
2011	1,031
EBITDA Margin:	**£m**
2013	11.8%
2012	12.0%
2011	12.1%
EBIT:	**£m**
2013	772
2012	832
2011	883
EBIT Margin:	**£m**
2013	10.1%
2012	10.2%
2011	10.4%

Principle areas of business:
Aerospace, national security

Revenue breakdown:
Platform & Logistics Solutions 21.5%; Communications, Intelligence, Surveillance and Reconnaissance 26.8%; Electronic Systems 45%; National Security Solutions 10.3%

Geographical breakdown:
USA 77.7%; UK 3.6%; Canada 2.9%; Germany 2.2%; Australia 1.7%; South Korea 1.4%; Other 10.5%

Recent M&A activity: March 2014: Acquired Data Tactics Corp, the Virginia-based provider of data analytics services.

December 2013: Acquired Mustang Technology Group, a manufacturer of radar sensors and systems.

Lockheed Martin
Maryland (115,000)

Lockheed Martin is a global security and aerospace company principally engaged in the research, design, development, manufacture, integration, and sustainment of technology systems and products. The business also provides a range of management, engineering, technical, scientific, logistic and information services.

Revenues:	**£m**
2013	27,504
2012	29,182
2011	30,085
EBITDA:	**£m**
2013	3,527
2012	3,195
2011	3,016
EBITDA Margin:	**£m**
2013	12.8%
2012	11%
2011	10%
EBIT:	**£m**
2013	2,926
2012	2,584
2011	2,364
EBIT Margin:	**£m**
2013	10.6%
2012	8.9%
2011	7.9%

Principle areas of business:
Aerospace and defence, IT, space and emerging technologies

Revenue breakdown:
Aeronautics 31%; Information Systems and Global Solutions 18%; Missiles and Fire Control 17%; Mission Systems and Training 16%; Space Systems 18%

Geographical breakdown:
USA 82%; Other 18%

Recent M&A activity:
March 2014: Acquired BEONTRA AG, a German provider of integrated corporate planning solutions.

November 2013: Acquired Amor Business Technology Solutions Ltd, a UK provider of information technology services.

Mitsubishi Heavy Industries
Tokyo (68,213)

Mitsubishi Heavy Industries is a diversified manufacturer. Its Marine Vessel and Ocean division develops passenger ships and car ferries, while its Power Engine division develops boilers, turbines, diesel engines and pumps. Its Aviation and Space segment offers space equipment, aircraft and torpedoes.

Revenues:	**£m**
2013	19,670
2012	21,441
2011	21,854
EBITDA:	**£m**
2013	2,033
2012	1,629
2011	1,461
EBITDA Margin:	**£m**
2013	10.3%
2012	7.6%
2011	6.7%
EBIT:	**£m**
2013	1,206
2012	687
2011	466
EBIT Margin:	**£m**
2013	6.1%
2012	3.2%
2011	2.1%

Principle areas of business:
Aviation, space, marine, power engine and machinery

Revenue breakdown:
Shipbuilding and Ocean Development 7.7%; Power Systems 33.9%; Machinery & Steel Infrastructure Systems 16.5%; Aerospace Systems 16.6%; General Machinery and Special Vehicles 13.3%; Other 11.9%

Geographical breakdown:
Japan 55.2%; USA 12.0%; Asia 16.2%; Europe 7.7%; Latin America 3.7%; Middle East 1.7%; Other 3.4%

Recent M&A activity:
April 2014: Acquired the offshore wind turbines business of Vestas Wind Systems A/S, a manufacturer and wholesaler of wind turbines, to form a joint venture for an estimated £253m.

February 2014: Merged its thermal power generation system business with Hitachi in a £2.1bn deal.

Northrop Grumman
Virginia (65,300)

Northrop Grumman provides products, services and integrated solutions in aerospace and electronics. The company operates four divisions: Aerospace Systems, Electronic Systems, Information Systems and Technical Services. Its main customer is the US government, principally the Department of Defence and Intelligence.

Revenues:	**£m**
2013	14,954
2012	15,597
2011	17,089
EBITDA:	**£m**
2013	2,192
2012	2,280
2011	2,490
EBITDA Margin:	**£m**
2013	14.7%
2012	14.6%
2011	14.6%
EBIT:	**£m**
2013	1,892
2012	1,965
2011	2,138
EBIT Margin:	**£m**
2013	12.7%
2012	12.6%
2011	12.5%

Principle areas of business:
Aerospace, electronics

Revenue breakdown:
Aerospace 40.6%; Electronic Systems 29.0%; Information Systems 26.7%; Technical Services 11.5%

Geographical breakdown:
USA 86.3%; Other 13.7%

Recent M&A activity:
February 2014: Acquired Qantas Defence, a Sydney-based provider of air work maintenance and modification services, from Qantas Airways.

Raytheon
Massachusetts (63,000)

Raytheon is a technology company specialising in defence, homeland security and other government markets worldwide. The company provides electronics, mission systems integration and other capabilities in the areas of communications and intelligence systems, as well as a range of mission support services.

Revenues:	**£m**
2013	14,375
2012	15,100
2011	16,040
EBITDA:	**£m**
2013	2,069
2012	2,125
2011	2,120
EBITDA Margin:	**£m**
2013	14.4%
2012	14.1%
2011	13.2%
EBIT:	**£m**
2013	1,799
2012	1,843
2011	1,832
EBIT Margin:	**£m**
2013	12.5%
2012	12.2%
2011	11.4%

Principle areas of business:
Aerospace, defence and homeland security

Revenue breakdown:
Integrated Defence Systems 27.4%; Information and Services 25.5%; Missile Systems 27.8%; Space and Airborne Systems 26.9%

Geographical breakdown:
USA 72.8%; Asia-Pacific 10.9%; Middle East and North Africa 10.1%; Other (principally Europe) 6.2%

Recent M&A activity:
June 2013: Acquired Visual Analytics Inc, a US developer of analytics software.

December 2013: Acquired the government solutions business of SafeNet Inc, a US developer of network security software, for an estimated £174m.

Rolls-Royce
London (55,200)

Rolls-Royce is a provider of power systems and services for use on land, at sea and in the air. It has divisions in Civil Aerospace, Defence Aerospace, Marine and Energy. The Civil Aerospace segment is engaged in the provision of commercial aero engines and aftermarket services. The Defence Aerospace segment provides military aero engines and aftermarket services.

Revenues:	**£m**
2013	15,513
2012	12,161
2011	11,124
EBITDA:	**£m**
2013	2,644
2012	3,314
2011	1,448
EBITDA Margin:	**£m**
2013	17.0%
2012	27.3%
2011	13.0%
EBIT:	**£m**
2013	1,844
2012	2,827
2011	1,040
EBIT Margin:	**£m**
2013	11.9%
2012	23.3%
2011	9.4%

Principle areas of business:
Aerospace, defence, marine and energy

Revenue breakdown:
Civil Aerospace 42.9%; Defence Aerospace 16.7%; Marine 16.3%; Energy 6.8%; Power Systems 18.2%.

Geographical breakdown:
UK 11.6%; Rest of Europe 24.7%; Americas 31.4%; Middle East & Africa 7.2%; Asia 23.5%; Other 1.6%

Recent M&A activity:
August 2013: Acquired SmartMotor AS, a Norway-based manufacturer and wholesaler of turbines and power systems.

May 2013: Acquired Hyper-Therm High Temperature Composites Inc, a California-based manufacturer of composite materials.

Safran

Paris (66,289)

Safran produces aircraft and rocket engines and propulsion systems. Its Aerospace Propulsion division provides engines, turbines and parts for aircraft, and rocket boosters for civil, military and spatial markets. Its Aircraft Equipment division produces landing gear, wheels and carbon brakes, aircraft engine nacelles and airborne power electronics.

Revenues:	£m
2013	12,096
2012	11,129
2011	9,767
EBITDA:	**£m**
2013	2,458
2012	2,074
2011	1,196
EBITDA Margin:	**£m**
2013	20.3%
2012	18.6%
2011	12.3%
EBIT:	**£m**
2013	1,673
2012	1,485
2011	642
EBIT Margin:	**£m**
2013	13.8%
2012	13.4%
2011	6.6%

Principle areas of business:
Aerospace, aircraft, defence and security

Revenue breakdown:
Aerospace Propulsion 53%; Aircraft Equipment 28%; Defence 9%; Security 10%

Geographical breakdown:
France 59.7%; Rest of Europe 11.1%; Africa and the Middle East 3.9%; Americas 19.9%; Asia and Oceania 5.4%

Recent M&A activity:
January 2014: Acquired the Aerospace Power Distribution Management Solutions and Integrated Cockpit Solutions business of Eaton Corp for £164m.

March 2013: Acquired the electrical power systems business of Goodrich Corp, a manufacturer and wholesaler of aircraft parts and equipment, for an estimated £252m.

Textron

Rhode Island (32,000)

Textron operates in the aircraft, defence, industrial and finance sectors. It runs five divisions: Cessna, Bell, Textron Systems, Industrial and Finance. Cessna is a general aviation company with two principal lines of business: aircraft sales and aftermarket services. Bell Helicopter is a supplier of military and commercial helicopters.

Revenues:	£m
2013	7,349
2012	7,589
2011	7,295
EBITDA:	**£m**
2013	750
2012	891
2011	638
EBITDA Margin:	**£m**
2013	10.2%
2012	11.7%
2011	8.8%
EBIT:	**£m**
2013	514
2012	653
2011	377
EBIT Margin:	**£m**
2013	7.0%
2012	8.6%
2011	5.2%

Principle areas of business:
Aerospace, defence

Revenue breakdown:
Bell Helicopter 37.3%; Textron Systems 13.8%; Cessna 23%; Industrial 24.9%; Finance 1.1%

Geographical breakdown:
USA 62.1%; Europe 12.7%; Canada 3.1%; Latin America 7.3%; Asia and Australia 9.2%; Middle East and Africa 5.7%

Recent M&A activity:
December 2013: Acquired Beech Holdings LLC, a US-based manufacturer and wholesaler of aircraft, for an estimated £856m.

Thales

Paris (65,912)

Thales is a provider of integrated solutions, equipment and security systems, primarily to the aerospace and defence markets. Its Aerospace division specialises in on-board equipment, electronics and systems for the civil and military markets. Its Space division offers solutions combining space and terrestrial technologies.

Revenues:	£m
2013	11,849
2012	11,572
2011	10,915
EBITDA:	**£m**
2013	1,084
2012	1,070
2011	907
EBITDA Margin:	**£m**
2013	9.2%
2012	9.2%
2011	8.3%
EBIT:	**£m**
2013	702
2012	676
2011	628
EBIT Margin:	**£m**
2013	5.9%
2012	5.8%
2011	5.8%

Principle areas of business:
Aerospace, defence

Revenue breakdown:
Aerospace 32.0%; Transport 10.6%; Defence & Security 51.9%; DCNS (35% owned subsidiary) 8.3%

Geographical breakdown:
USA 72.8%; Asia-Pacific 10.9%; Middle East and North Africa 10.1%; Other (principally Europe) 6.2%

Recent M&A activity:
January 2014: Sold the SAP Business of Thales Italia SpA, an Italian manufacturer and wholesaler of defence equipment.

February 2013: Acquired the air traffic management IT solutions business of Egis SA, a French provider of consulting services.

United Technologies

Connecticut (212,000)

United Technologies Corporation provides high technology products and services to the building systems and aerospace industries worldwide. The company operates six divisions: Carrier and UTC Fire & Security serve customers in the commercial, government infrastructure and residential property sectors.

Revenues:	£m
2013	37,975
2012	35,692
2011	36,073
EBITDA:	**£m**
2013	6,771
2012	5,769
2011	5,929
EBITDA Margin:	**£m**
2013	17.8%
2012	16.2%
2011	16.4%
EBIT:	**£m**
2013	5,667
2012	4,827
2011	5,112
EBIT Margin:	**£m**
2013	14.9%
2012	13.5%
2011	14.2%

Principle areas of business:
Aerospace, building systems

Revenue breakdown:
Commercial & Industrial 47%; Military Aerospace & Space 19%; Commercial Aerospace 34%

Geographical breakdown:
USA 57.5%; Europe 20.2%; Asia-Pacific 13.9%; Other 8.4%

Recent M&A activity:
January 2014: Acquired UHS Pty Ltd, the Australian-based provider of electronic systems services.

June 2013: Sold Angus Fire Ltd, a UK-based manufacturer and wholesaler of fire-fighting products, for £62m. Clearwater International advised the buyers, LDC and management on the transaction.

FARSOUND ENGINEERING

Manufacturer and supply chain manager for aerospace fasteners

Clearwater International advised Farsound Engineering on the sale to RG Industries LLP

PRECISION MICRO

Manufacturer of precision engineered and mission-critical components

Clearwater International advised Precision Micro on the sale to Meggitt plc

TRITECH

Manufacturer of precision machined, investment and vacuum castings for the aerospace industry

Clearwater International advised on the sale of Tritech Aerospace to India's largest manufacturer of air-melt castings, Neterwala Group Ltd

ALTER TECHNOLOGY

Provider of procurement and testing services for electronic components used in the aerospace and space industries

Clearwater International advised Alter Technology on the sale to TÜV Nord GmbH

SMA

Manufacturer of precision engineered components and tooling for the aerospace industry

Clearwater International advised SMA on the establishment of a joint venture with Hafei Aviation Industry Co Ltd

PRINTCA

Manufacturer of advanced printed circuit boards for the aerospace, military and space industries

Clearwater International advised Printca on the sale to Graphic plc

CRITICAL GROUP

Software development for business-critical information systems

Clearwater International advised a founding shareholder on the sale of a 28% stake in the company

SINAER MAINTENANCE DIVISION

Provider of aircraft maintenance services

Clearwater International advised Sinaer on raising debt from three international institutions