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Aerospace & defense
2014 year in review and 2015 forecast

How are aerospace and defense companies performing today?

What challenges and opportunities do they face?

PwC takes a look.

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Methodology

Our data is drawn from financial reports on fiscal 2014 results for the largest 100 aerospace and defense (A&D) companies by revenue (see Appendix A) and other publicly available information such as company websites and press releases. Our cut-off date for publication was April 1, 2015; accordingly, a few companies were omitted because they had not reported results by that date.

A&D companies include those that generate the majority of revenue from aerospace or defense activities or, for diversified companies, those reportable segments that derive a majority of their revenue from A&D activities. The results are reported in US dollars. Foreign currencies were translated at average exchange rates for the years ended Dec. 31, 2014, and Dec. 31, 2013, respectively.

Our report also expresses PwC's point of view on topics affecting the industry, developed through interactions with our clients and other industry leaders and analysts.

Contents

Aerospace and defense overview	*1*
Commercial aerospace	*6*
Defense	*11*
Mergers and acquisitions	*16*
In summary	*18*
Appendix	*19*
Additional resources	*23*

Aerospace and defense overview

Figure 1: Key industry metrics (US$ billions)

	2014	2013	Change
Revenue	$729	$710	3%
Operating profit	$73	$67	10%
Operating margin	10.1%	9.4%	70bps

Source: PwC analysis

Aerospace and defense industry delivers a fifth consecutive year of record revenues and profits

Profits rise 10%

2014 review

The aerospace and defense industry marked its best year ever in 2014, in terms of revenue and operating profit, the fifth consecutive year of record revenues and profits. The results were again driven by a continuing surge in the commercial aviation market, which more than offset continued weakness in defense performance. The top 100 A&D companies (see Appendix A) set new records in 2014: $729 billion in revenue and $73 billion in operating profit. Revenue increased by 3 percent compared with 2013, while operating profit was up 10 percent over 2013. Operating margin increased by 70 basis points to 10.1 percent, reaching double digits for the first time. The improvement in operating margin was in part a result of higher volumes at Boeing and Airbus.

For the second consecutive year, profits improved most in the top quartile. Operating margins in the top quartile have improved nearly 200 basis points in two years. Operating margins are now very consistent across quartiles; historically, operating margins have been higher among suppliers than OEMs.

Operating margins for Boeing and Airbus, 8.2 percent and 6.6 percent, respectively, are below industry average, but the gap has narrowed considerably in recent years. The industry's overall health remains robust, but the supply chain is being adversely affected by defense budget cuts, an emphasis on affordability, cost pressures from commercial OEMs, and efficiency challenges in meeting an aggressive ramp-up of commercial aircraft production.

Figure 2: Key metrics by quartile

	Revenue	Operating profit	Operating margin	Change
Top quartile	3%	12%	10.1%	+80 bps
Second quartile	1%	-7%	9.8%	-80 bps
Third quartile	-1%	17%	10.0%	+60 bps
Fourth quartile	1%	-3%	10.3%	+20 bps

Source: PwC analysis

Prospects continue to be bright for commercial aerospace. The sector is enjoying its longest and most profitable growth cycle in history—and there are no signs of a slowdown. Records are being set for many of the sector's measures. New equipment output has increased 35 percent over the last three years, and more production increases are expected. Strong growth in air traffic is driving the lucrative aftermarket business. The industry captured 2,888 net orders for large commercial aircraft in 2014 (30 more than 2013), marking the fourth consecutive year with more than 2,000 large aircraft orders (and only the fifth time in history). Book to bill was more than 2:1, resulting in more than 12,000 aircraft—nine years of production at current rates.

The US defense sector was spared the full impact of sequestration, when the US Congress passed the Bipartisan Budget Act of 2013 and mitigated the impact on the Department of Defense for two years. Consequently, the industry reported only a modest revenue decline in 2014. Several companies reported slight improvements in margin, but margin expansion is slowing compared with recent years.

There is significant uncertainty about the impact on defense budgets after 2015. However, many defense industry leaders believe another compromise could be reached, particularly in light of growing global threats (including ISIS, Iran, Russian conflict in Ukraine, North Korea and China's military modernization) that underscore the need for global security and could result in rapidly changing US defense priorities.

Another year of record deliveries and backlog for commercial aerospace

Figure 3: Analysis highlights		
Largest increase in revenue (dollars)	Boeing	$4,139 M
Largest increase in revenue (percentage)	Wesco Aircraft	50%
Largest increase in profit (dollars)	Airbus	$1,880 M
Largest increase in profit (percentage)	Finmeccanica	5036%
Highest operating margin	Transdigm	28.4%
Largest increase in top 100 list	Wesco Aircraft	+13
Largest decrease in revenue (dollars)	Oshkosh Defense	-$1,326 M
Largest decrease in revenue (percentage)	Oshkosh Defense	-43%
Largest decrease in profit (dollars)	Bombardier Aerospace	-$1,413 M
Largest decrease in profit (percentage)	Bombardier Aerospace	-338%
Largest decrease in top 100 list	Oshkosh Defense	-26

Source: PwC analysis

Figure 4: Deleted from the list	
Orbital Sciences	Merger with ATK
Aeroflex	Acquired by Cobham
Latecoere	Did not report earnings by March 31, 2015

Source: PwC analysis

Figure 5: Added to the list	
#34 SAIC	Spin off from Leidos
#77 KLX	Spin off from BE Aerospace
#78 Vectrus	Spinoff from Exelis

Source: PwC analysis

Revenue

Boeing was again the industry's largest company, reporting $90.8 billion in revenue, a 5 percent increase driven by commercial aircraft deliveries. Airbus increased revenue from €59.3 billion to €60.7 billion, or 2 percent (5 percent in US dollars). Boeing also reported the largest revenue growth, $4.1 billion, closely followed by Airbus.

Defense contractors generally reported flat or lower revenue, while commercial aerospace companies had revenue increases in the single digits. Industry revenue was only 3 percent higher than last year's as commercial aviation revenue growth slowed considerably relative to recent years. Also, in another departure from the last several years, no companies in the top 15 reported double digit revenue growth.

Profitability

- Boeing was the industry's most profitable company in 2014, with $7.473 billion in operating profit, an increase of 14 percent.
- Airbus reported the largest increase in profit of $1.880 billion. Finmeccanica had the largest percentage increase due to the absence of large charges recognized in 2013.
- GE Aviation achieved an operating margin of more than 20 percent for the first time.
- Lockheed Martin reported a 25 percent increase in profit on just a one percent improvement in revenue, driven primarily by pension income related to changes in its pension plan as well as higher discount rates and improved FAS/CAS recovery.
- Bombardier Aerospace reported the largest decline in profit, related largely to a charge taken on the suspension of the Lear Jet 85 program.

Operating margins

For the first time since we have been tracking the top 100, the industry achieved double-digit operating margins of 10 percent. The industry's best operating margin, 28.4 percent, belongs to Transdigm, which has grown in recent years through acquisitions.

Figure 6: Companies with operating margin > 20%

#7	GE Aviation	20.7%
#18	Precision Castparts	27.0%
#29	Rockwell Collins	20.8%
#42	Transdigm	28.4%
#50	Hindustan Aeronautics Limited	23.7%
#51	Meggitt	22.3%

Source: PwC analysis

2015 forecast

The A&D industry has experienced five consecutive years of record revenue and profit. The growth in commercial aviation has more than offset a soft defense market and multi-billion-dollar impairment charges at large defense contractors.

While the rate of aviation growth has been slowing, 2015 is likely be another record year for the sector. As commercial aviation continues to expand, both in OEM production and revenue passenger miles, it will likely drive the aftermarket. On the other hand, defense spending is likely to remain flat throughout the year. However, it appears that an increase in merger and acquisition activity may provide some additional momentum for the sector as a whole.

Commercial aerospace

2014 review

Boeing and Airbus both set company records for aircraft deliveries in 2014. Boeing delivered 723 aircraft, a 12 percent increase over the prior year's record performance. Airbus delivered 629 aircraft, three more than the prior year, marking its thirteenth consecutive year of record production levels. Just three years ago, the industry crossed the 1,000 deliveries mark for the first time; it has now exceeded that level by 35 percent. Production has more than doubled in the last decade. This level of increase is even more remarkable considering the complex and unusually long lead time unique to aircraft manufacturing.

The past year also set a new record for orders, 2,888, thirty more than last year's record. Orders surpassed the 2,000 mark for the fourth consecutive year and the fifth time in history. The industry book-to-bill was 2.1:1, pushing the backlog to another record of more than 12,000 aircraft, nine years of production at current levels.

Boeing's backlog, $440 billion, and Airbus' backlog, $919 billion (at list price), are at record levels for both companies.

For 2014, the International Air Transportation Association (IATA) reported revenue passenger growth of 5.2 percent, marking the fourth consecutive year that air travel demand grew by more than 5 percent. This level of demand supports Boeing's 20-year forecast of approximately 36,800 new planes, a value of $5.2 trillion.

Figure 7: Aircraft backlog (US$ billions)

	12/31/14	12/31/13	12/31/12	12/31/11
Boeing	$440	$374	$319	$239
Airbus*	$919	$809	$638	$679

*at list price

Figure 8: Aircraft backlog (units)

	Boeing	Airbus	Total
Backlog at December 31, 2013	5,080	5,559	10,639
Net orders	1,432	1,456	2,888
Deliveries	723	629	1,352
Backlog at December 31, 2014	5,789	6,386	12,175

Sources: Boeing 2014 annual report; Airbus 2014 annual report

Figure 9: Key aerospace metrics

	2014	2013	2012	2011
Revenue passenger miles	5.9%	5.2%	5.3%	5.9%
Load factor	79.7%	78.7%	79.1%	78.1%
Cargo freight ton miles	4.5%	1.4%	-1.5%	-0.7%
Load	45.7%	46.3%	45.2%	45.9%

Sources: IATA. (2015. Feb. 4). Air Cargo Ends 2014 on a Positive Note [Press release]. IATA. (2015. Feb. 5). Strong Demand for Air Travel Rises in 2014 [press release].

Regional aircraft

Bombardier's CSeries is expected to complete certification in 2015 and enter service in 2016. The aircraft received its largest single order in 2014, 40 aircraft from Macquarie AirFinance. The company booked 61 firm orders in 2014, and has a firm backlog of 243.

Mitsubishi's Regional Jet (MRJ) is scheduled for first flight in 2015. The company received 26 firm orders in 2014, and 32 more in January 2015. The backlog stands at 191 as of December 31, 2014.

Embraer formally launched its second-generation E-Jets during 2013, and announced a deal with American Airlines for 60 E175 jets. These jets are currently under development and will include several improvements: Pratt & Whitney PW1700G and PW 1900G geared turbo fan engines, fly-by-wire, and new wings. In a complete reversal in the regional engine market, Pratt & Whitney, once absent from the regional jet space, now dominates new production platforms, with engines on the Bombardier C-Series, Mitsubishi MRJ, and Embraer's second-generation E-Jets.

Business jets

Business jets cycles continued to show modest improvements, with higher cycles, year-over-year, during every month in 2014. While cycles were below the prerecession highs of 2007, they are expected to pick up. The Federal Aviation Administration (FAA) is predicting a 2.8 percent growth rate for business jet fleets through 2035, much faster than the 0.4 percent rate anticipated for all general aviation aircraft. "The forecast calls for robust growth in the long-term outlook, driven by higher corporate profits and the growth of worldwide GDP, though at rates slightly lower than those predicted last year."[1]

While business jets can expect another year of modest improvement, business jets should see significant growth longer-term. Much of the growth is expected to come from emerging economies, principally China, and the US because of its relatively strong economy and increasing demand for replacement aircraft. Reduced regulations in Asia and the Middle East are clearing more air space for general aviation. These longer routes favor the larger segment of the business jet market.

Unmanned aircraft systems

Pressure is mounting from both the commercial sector and government to develop policies on the use of unmanned aircraft systems (UAS) or drones. The commercial sector, led by companies such as Amazon, wants the FAA to provide greater access to the skies for commercial drone applications. Meanwhile, Congress is calling on the Department of Homeland Security to develop a comprehensive drone strategy to mitigate security concerns. One possibility is that, in the future, secure areas such as airports, government buildings, power plants, and metropolitan areas will have anti-drone identification and defense systems.

On February 17, 2015, the US government announced a new export policy governing the international sale, transfer, and subsequent use of US-origin commercial and military UAS. This policy re-affirmed and enhanced the US's commitment to the Missile Technology Control Regime, which is the multilateral export control regime that includes international agreement on controls over sales and transfers of commercial drones. Exports of commercial UAS are subject to export licensing by the Department of Commerce's Bureau of Industry and Security, which reviews license applications in accordance with Export Administration Regulations. The new export policy for military UAS includes stringent conditions consistent with the Foreign Military Sales program.

1 Federal Aviation Administration, FAA Aerospace Forecasts FY 2013–2033, pg. 58

Air Safety

The past year had the third highest number of airline fatalities in forty years, highlighted by unusual and mysterious incidents: the unexplained disappearance of Malaysia Airlines flight 370, the missile strike on Malaysia Airlines flight 17, and AirAsia flight 8501, which crashed into the Java Sea. Furthermore, 2015 got off to an ominous start with the seemingly intentional crash of Germanwings flight 9525. None of these incidents are believed to result from aircraft failure, although some investigations are ongoing. While air travel is by far the safest mode of transportation, these incidents will result in further reforms to pilot evaluation and flight tracking procedures to improve the safety of air travel.

Space-related services

On September 16, 2014, NASA awarded contracts to Boeing and SpaceX to provide crew launch services to the International Space Station (ISS). Contracts for commercial resupply services 2 (CRS2) for the ISS, covering deliveries from 2017 until 2024, are expected to be awarded in 2015.

On November 10, 2014, as part of the Export Control Reform initiative, controls on commercial communications and remote sensing satellites and related ground equipment, certain parts and components including specific "space qualified" microelectronic circuits, and other items and technologies were moved from the US Munitions List to the Commerce Control List. This action was done to facilitate more flexible licensing arrangements for items deemed less sensitive for national security reasons. More sensitive items, such as military satellites, related ground equipment, parts critical for military functions, and services for all satellite exports remain subject to the stringent controls of the US Munitions List (USML). The long-standing embargo against satellite exports to China remains in place.

2015 forecast

For 2015, Boeing is forecasting between 750 and 755 aircraft deliveries—a 4 percent increase. Airbus is forecasting "slightly higher"[2] deliveries in 2015, which would represent its fourteenth consecutive year of record production. Boeing plans to produce 47 737s per month by 2017. On February 27, 2015, Airbus announced an A320 production increase to 50 per month by the first quarter of 2017.

The industry expects to set new records for output in 2015, leading to significant challenges for an industry with a very complex, long supply chain with significant lead times. Over the years, the industry has faced raw materials shortages, late deliveries, out-of-sequence work, overtime, and rush shipments throughout the supply chain. The industry is again facing these challenges as capacity constraints bump up against record backlogs. Orders may exceed deliveries by more than 1,400 aircraft this year, pushing the backlog to a new high.

New competitors are entering the market, seeking to take advantage of growing demand. Commercial Aircraft Corporation of China (COMAC) has launched its C919 aircraft and expects to sell more

2 Airbus Group. (2015. Feb. 15). Airbus Group Achieves Record Revenues, EBIT* And Order Backlog In 2014 [Press release].

than 2,000 planes, capturing about 7 percent market share. In addition, Irkut of Russia has launched a narrow-body aircraft, and Bombardier is marketing its CSeries to compete in the narrow-body market. Embraer launched its next-generation E-Jet in 2013.

Adverse economic conditions remain the principal short-term risk to industry growth in 2015. The economic recovery, while slow, has been underway for more than five years—a long time by historical standards. However, the economic outlook remains stable to optimistic and should lead to modest growth in commercial aerospace in the coming year.

Long-term forecast

The long-term forecast for commercial OEM aircraft is about 36,800 deliveries over the next 20 years, at a value of approximately $5.2 trillion. This may be an understatement since significant efficiency improvements in new planes may accelerate the demand for replacement aircraft. On the other hand, low fuel prices could have a depressing effect on the demand for replacement aircraft. Market growth accounts for 58 percent of deliveries; the remaining 42 percent is estimated to come from replacement aircraft.

However, the backlog at risk from lower oil prices may be closer to 20 percent of forecasted demand because of the need to replace large numbers of aging aircraft. Furthermore, oil has been at depressed prices for less than a year, and these prices may not be sustainable for very long. With long-term demand at more than 1,840 aircraft per year, and current production rates at 1,352 per year, the industry could potentially support an additional 36 percent growth in OEM production, providing a considerable cushion for any softening in demand.

Defense

2014 review

The top dozen defense companies, half from the US and half from Europe, reported revenues down one percent, but profits up 12 percent, for return on sales (ROS) of 120 basis points improvement to 10.0 percent. Five companies reported revenue increases, while seven companies reported revenue declines. The US companies reported an aggregate 2 percent decline in revenue and a 7 percent improvement in profit, with ROS of 12.1 percent. European companies reported flat aggregate revenues and a 28 percent improvement in profit, with ROS of 6.5 percent.

Finmeccanica reported the best revenue improvement, $1.266 billion, or 7 percent. Boeing Defense, Space & Security reported the largest revenue decline, $2.3 billion. Rolls Royce Defense reported the largest percentage decline, 16 percent.

While overall sector profits increased significantly in 2014, half of the companies reported a decline in profits. Two-thirds of the top dozen companies continued to report margin improvement, but one-third reported margin declines. Thirty-nine percent of the aggregate profit improvement came from Lockheed Martin, with more than $1 billion in profit, a 24 percent increase, expanding its operating margin to 12.3 percent. Two other companies

reported significant operating profit increases: Finmeccanica ($937 million) and BAE Systems ($882 million); both companies reported large charges the prior year. Rolls Royce Defense had the best operating margin at 17.7 percent.

In Europe, the continuing result from the economic crisis put pressure on defense budgets. However, security threats in the region, including the military crisis in Eastern Europe and terrorist incidents, are starting to reshape views on military expenditures. France, for one, has decided to decrease military personnel cuts by 7500. The full impact of security challenges on defense budgets remains to be seen.

The European Commission (EC) has recognized the need for a more effective, multilateral approach with the Common Security and Defense Policy (CSDP). In June 2014, the EC announced a detailed roadmap to strengthen defense. The plan includes initiatives to increase the efficiency of procuring war materiel for defense purposes and the development of synergies between civil and military research. In the meantime, the European Council has called on member states to deepen bilateral cooperation on improving defense. In 2014, the UK and France agreed to look at the feasibility of producing a military drone for use in combat operations.

The growth in defense exports has helped mitigate the impact of domestic cuts on backlogs. As seen below, backlogs have not changed appreciably in the last year:

Figure 10: Backlog of defense orders US$ (billions)

	12/31/2014	12/31/2013
Safran	$85	$73
Lockheed Martin	$81	$83
Airbus Defense & Space and Helicopters	$73	$63
BAE Systems	$67	$67
Boeing Defense, Space & Security	$62	$67
General Dynamics (excl. Gulfstream)	$59	$32
Finmeccanica	$51	$57
Northrop Grumman	$38	$37
Thales	$36	$39
Raytheon	$34	$34
L-3	$10	$10
Rolls Royce Defense	$7	$8
Total	$603	$570

Source: Company reports

Exports

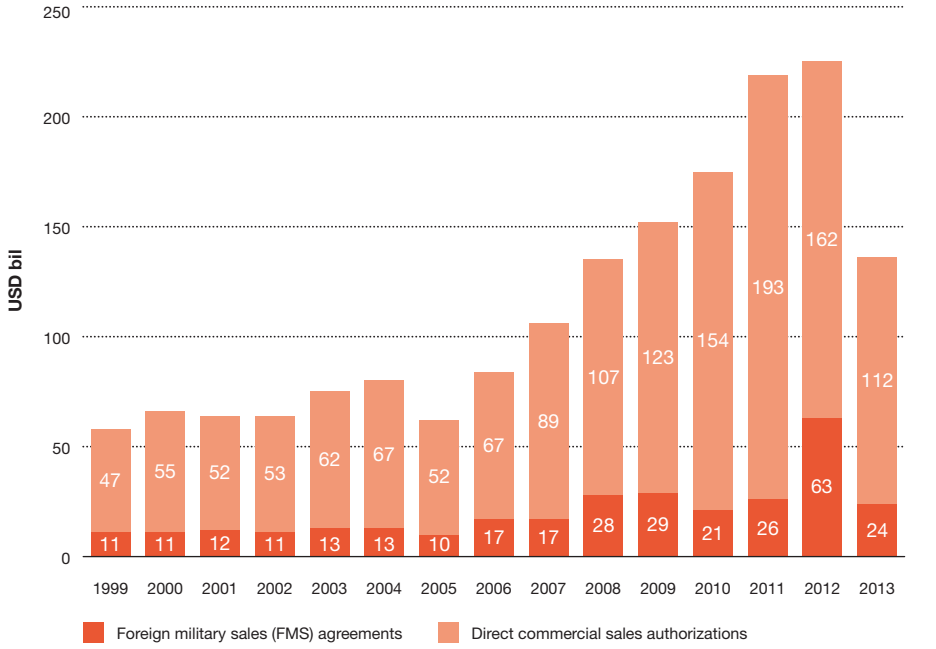
In 2013, the most recent year for which data are available, defense export authorizations were $136 billion, nearly double the amount from a decade ago, but down from a high of $225 billion in 2012. The decrease does not seem to be a trend reversal, but rather a leveling of activity. The export backlog, $327 billion at mid-year 2011, is now estimated to be approximately $500 billion. This significant growth in defense exports should help soften the impact of US defense cuts. Much of the growth during this period has been in Asia, over concerns with China's growing military power and tensions between North and South Korea, and in the Middle East. The United States, Western Europe, Israel, South Korea, Russia, and China are benefiting from increased defense exports. China has now moved ahead of Russia as the world's second largest arms exporter.

The US government continues to move forward with its Export Control Reform initiative. In 2014, it published rules affecting several US Munitions List (USML) categories. On March 2, 2015, the Departments of State and Commerce solicited public input concerning ongoing revisions to two categories (Cat. VIII—Aircraft and Cat. XIX—Gas Turbine Engines). As with last year's revisions, delisting items from the USML will be consistent with the overall objectives to safeguard national security and promote interoperability with allies and close partners.

In 2014, the US government imposed a range of economic sanctions targeting Russia and the Ukraine, including new designations for the Treasury Department's Specially Designated Nationals and Blocked Persons List, and the creation of new "sectoral" sanctions that may impact the ability of A&D companies to engage in certain financial transactions. US sanctions policy also changed to expand the universe of individuals and entities that may be subject to restrictions, even when such parties have not been specifically "listed" or "named."

On November 24, 2013, Iran and the P5+1 nations (US, UK, China, France, Germany, and Russia) entered into a temporary agreement, known as the "Joint Plan of Action" (JPOA), regarding Iran's nuclear program. The JPOA was initially valid from January 20, 2014, through July 20, 2014, and was extended first through November 24, 2014, and again through June 30,

Figure 11: US foreign military sales (FMS) agreements and direct commercial sales authorizations



Sources: US Department of Defense, "Fiscal Year Series"; US Department of State, "Section 655 Annual Military Assistance Reports"

2014. The JPOA provided the ability to license safety-related inspections, repairs, and exports of spare parts and services regarding flight safety for Iran's civil aviation sector and specified associated services. On April 2, 2015, the US announced that the P5+1 had reached a "framework" agreement regarding Iran's nuclear program. This framework calls for the amelioration, but not the removal, of economic sanctions.

The US has also announced changes to its longstanding embargo against Cuba, but it has not lifted sanctions as yet.

2015 forecast

US companies still face sequestration-related challenges following the expiration of the two-year Bipartisan Budget Act of 2013, which helped mitigate the impact of sequestration on the Department of Defense for two years. Former Secretary of Defense Hagel, testifying before Congress, said the impact of sequestration beyond 2015 would include the following:

- The Army's cutting of troop levels below 450,000, the lowest level since before World War II, and elimination of the A-10 program
- The Navy's elimination of a carrier fleet and air wing, a nuclear submarine, and other ships
- The Air Force's retiring of 80 aircraft and a slowdown in the purchase of F-35s

Whether these cutbacks are acceptable to Congress will play out over the remainder of 2015. Recently, the tone of Congress has been in favor of strong national defense, but the ultimate resolution may be linked to social spending cutbacks. The global security environment continues to be dynamic, with the rise of ISIS and instability in Eastern Ukraine. The coming year is likely to have additional repercussions on defense policies, given the continuing crises around the world.

As a result of the Bipartisan Budget Act, defense revenue is expected to be flat in 2015. The margin expansion seen in recent years may have hit a ceiling or at least slowed down. However, the industry is experiencing some favorable pension cost trends as a result of market conditions and the "pension harmonization" rules for cost allowability. Therefore, operating margins may be modestly higher in 2015.

As the industry contracts, much of the cost to reduce capacity or terminate programs will likely be passed along to the government. There is a risk that some companies will be subject to impairment charges similar in nature, if not in magnitude, to those reported in the recent past.

A year ago, it appeared that market contraction, coupled with more certainty about defense budgets, would be a catalyst for industry consolidation and portfolio realignments. That prediction was

realized during 2014 and into early 2015, with Orbital's merger with Alliant, Engility's acquisition of TASC, Harris's acquisition of Exelis, and SAIC's acquisition of Scitor, as well as BE Aerospace's spinoff of KLX, Exelis' spinoff of Vectrus, and UTC's announcement that it is evaluating a potential spinoff of Sikorsky. M&A activity in 2014 was slightly above the 10-year rolling average for A&D, and deal-making is likely to continue to increase in 2015.

The defense industry is already highly concentrated, resulting from consolidations during the post-Cold War era. The Defense Department has opposed any further consolidation among major prime contractors, but that position could soften, depending on market conditions. Regardless of whether the major prime contractors consolidate further, there may be some consolidation in the supply base.

The idea of affordability continues to be a point of focus in the industry; the Defense Department lists affordability among its procurement criteria. While the industry is entering a period of fewer new platforms, it also needs to recapitalize equipment. As a result, there will likely be a shift from new platforms to platform upgrades and sustainment. Expected areas of growth are electronics and C4ISR, including unmanned and autonomous vehicles of varied types, and cybersecurity.

Many companies are considering commercial applications for their technologies. Most defense contractors and their investors approach commercial markets cautiously because past experience has yielded mixed results. However, many of the largest commercial markets have roots in defense and space technologies as well as computers, computer networking, and telecommunications. So defense contractors are likely to seek commercial applications for their technologies, even if it means they have to license or supply technology to commercial entities.

European defense budgets are unlikely to increase in the short term, despite NATO's urging to better prepare forces to deal with growing threats. The UK and Germany, with two of the biggest defense budgets in the region, announced they will cut military expenditures in 2015. France's budget is expected to remain at 2014 levels. This situation is creating a challenge for European defense contractors in light of the rising costs of developing technologically complex capabilities.

With domestic budgets flat or declining in many countries, contractors are continuing to look to increase exports, making the global defense industry fiercely competitive in growth markets. In this environment, companies and governments may have to rethink their operating models, leading to more cooperative programs, niche market specialization, and industry consolidation.

Mergers and acquisitions

In 2014, there were only two companies that were deleted from our top 100 list as a result of M&A activity. There was significant improvement in transaction activity, after a lackluster 2013, with a notable pickup in defense-related transactions. The total deal value, $22.3 billion, was slightly above the ten-year rolling average of $21.2 billion. The number of megadeals, or transactions of $1 billion or greater, doubled from 2013, and included the first defense-oriented megadeal since the Budget Control Act of 2011. Much of the year's activity occurred among smaller and privately-owned companies, and average deal size remained below historical averages.

However, M&A activity in the sector showed a supply chain consolidation trend that seems to be gaining momentum. Cyber surveillance, security, intelligence, and reconnaissance emerged as major themes, particularly in the fourth quarter. The fourth quarter megadeal between Engility and TASC, companies previously spun-off from prime defense contractors, is expected to broaden Engility's service offering in the areas of intelligence analysis, space systems architecture, cyber forensics, and cybersecurity. Other notable deals include Raytheon's acquisition of Blackbird Technologies and BAE Systems' announced plans to acquire SilverSky and Eclipse Electronic Systems. The businesses of these acquisition targets are in line with the major budgetary priorities of governments across the globe.

We expect further acquisition activity for companies with advanced, niche technologies with high growth potential. Attractive markets include cyber, electronics, and autonomous and unmanned aerial vehicles. These markets have commercial applications, which allow for a diversified revenue stream in a time of defense budget challenges.

Divestitures and spin-offs remain popular for A&D companies. The most common driver of divestitures is a desire to exit businesses directly impacted by decreased military spending, including units that produce vehicles and electronics or provide communication services. Spin-offs have helped create more focused business portfolios as A&D companies offload some of their small industrial units.

The fragmented and high margin maintenance, repair, and overhaul (MRO) business saw an increase in M&A, including the acquisition of four MRO-focused business units by VSE Corporation in the fourth quarter.

Companies are strengthening their MRO services to enhance capabilities, expand geographic reach, and improve the bottom line. In commercial aerospace, rising passenger traffic and higher utilization rates in growing regions support more spending for MRO services. In defense, budget constraints have a direct impact on the service life of different platforms and MROs.

Some major deals have already been announced for 2015, including Harris's acquisition of Exelis and SAIC's acquisition of Scitor.

Figure 12: Megadeals in 2014 (disclosed value of at least $1 billion)

Target	Acquirer	Status	Value of transaction in US$ bil.	Category
Firth Rixson Ltd	Alcoa Inc	Completed	3.00	Aerospace
Aerospace Inc-Distribution, Logistics,Technical Services Business	Shareholders	Completed	2.24	Aerospace
Shenyang Aircraft Industrial(Group) Co Ltd	Sichuan Chengfei Integration Technology Corp Ltd	Completed	2.19	Defense
Orbital Sciences Corp	Alliant Techsystems Inc	Completed	1.87	Defense
Aeroflex Holding Corp	Cobham PLC	Completed	1.43	Defense
TASC Inc	Engility Holdings Inc	Pending	1.30	Defense

In summary

The performance of the top 100 A&D companies is a barometer for the health of the industry. It reflects disciplined management over the past decade as well as strong demand for the industry's products and services.

Aviation has become a critical part of our global infrastructure. Demand for aviation related services is becoming increasingly inelastic, as witnessed by its resiliency during the recession. Businesses cannot operate effectively without global deployment of human capital. And while air freight is still dwarfed by sea and land freight, a greater portion of the global supply chain now relies on air cargo.

The outlook for defense continues to be clouded by uncertainty about overall budgets beyond 2015, when the Bipartisan Budget Act expires. However, security threats are an ongoing concern and changing events could result in new defense priorities. The defense industry is trying to meet both current conditions and prepare for future possibilities by focusing on affordability and productivity improvements.

The near-term and long-term forecast for commercial aerospace is full of optimistic predictions for growth. Aviation will continue to grow faster than the overall economy because of its critical role in the global economic infrastructure, bolstered by economic growth in Asia, the Middle East, Eastern Europe, and Latin America. Defense faces some challenges, but those challenges should be moderate and manageable through 2015. Accordingly, the industry is poised for a sixth consecutive year of record results.

Appendix: A&D Top 100 companies

UK

6 BAE Systems
10 Rolls-Royce
23 Babcock International Group
37 GKN Aerospace
42 Cobham
45 Serco UK & Europe and Americas
49 Meggitt
54 BBA Aviation
62 QinetiQ
79 Ultra Electronics
89 Senior Aerospace
91 Smiths Detection

Canada

16 Bombardier Aerospace
64 CAE
65 MacDonald Dettwiler & Associates
93 Magellan Aerospace Corp

US

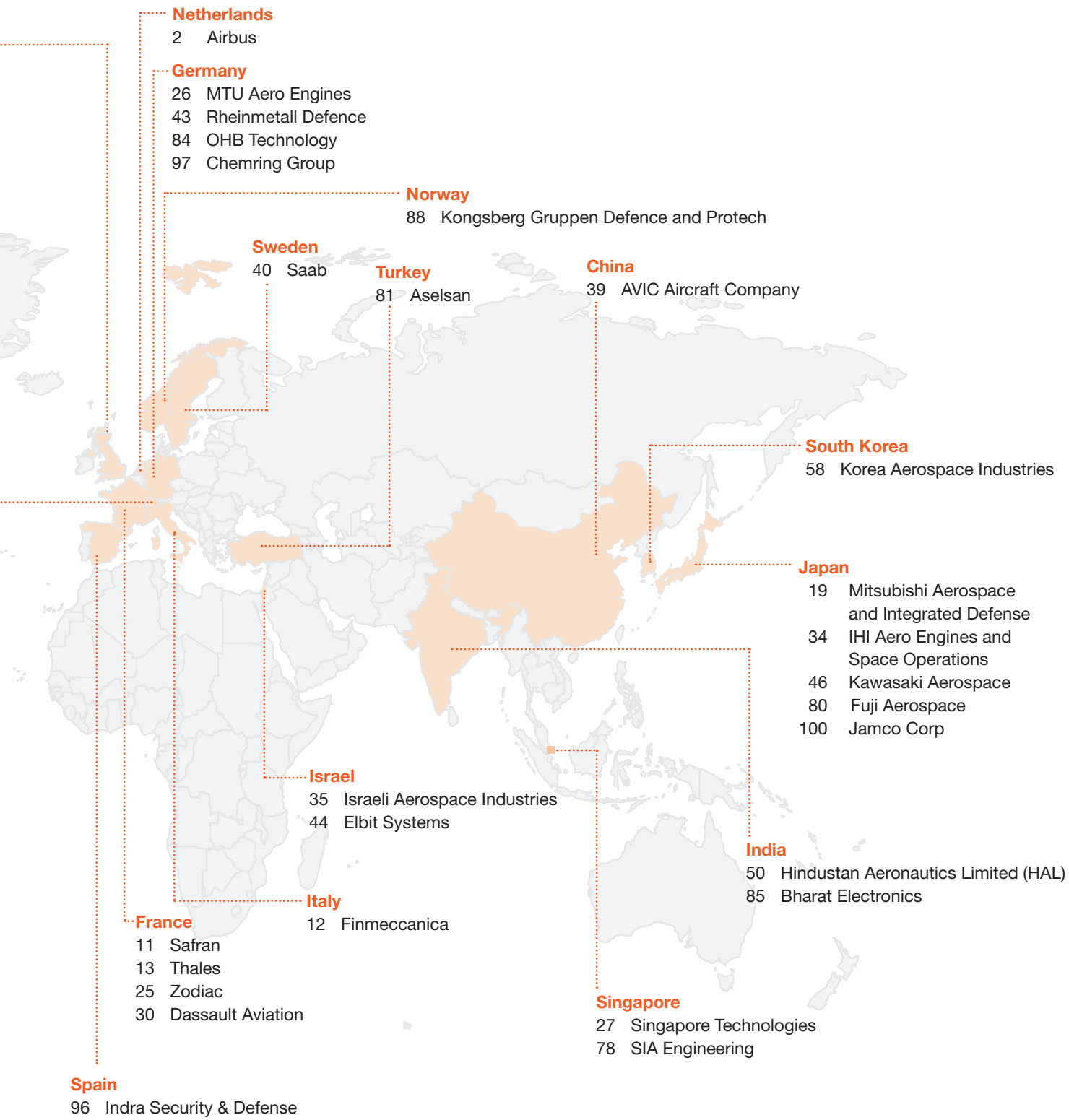
1 Boeing
3 Lockheed Martin
4 United Technologies
5 General Dynamics
7 GE Aviation
8 Northrop Grumman
9 Raytheon
14 Honeywell Aerospace
15 L-3 Communications
17 Textron
18 Precision Castparts Corp.
20 Huntington Ingalls
21 Spirit AeroSystems
24 Leidos
28 Harris Corp
29 Rockwell Collins
31 Alliant Techsystems
32 SAIC
33 CSC North American Public Sector
36 Triumph Group
38 CACI
41 Exelis
47 MOOG
48 BE Aerospace
51 Trimble
52 Teledyne Technologies
53 TransDigm Group
55 Delta Tucker Holdings/DynCorp International
56 Curtiss-Wright
57 Parker Hannifin Aerospace
59 Esterline Technologies
60 AAR
61 Allegheny Technologies High Performance Metals
66 Eaton Aerospace
67 Hexcel
68 ManTech International
69 Oshkosh Defense
70 GenCorp
71 FLIR Systems
72 Cubic Corporation
73 Engility
74 Wesco Aircraft Holdings
75 ViaSat
76 KLX
77 Vectrus
82 Heico Corporation
83 Woodward Governor Aerospace
86 Cytec Aerospace Materials
87 Ball Aerospace
90 Kratos Defense & Security Solutions
92 Alion Science and Technology
94 Ducommun
95 Crane Aerospace & Electronics
98 DigitalGlobe
99 Kaman Aerospace

Switzerland

63 RUAG

Brazil

22 Embraer


Netherlands
2 Airbus
Germany
26 MTU Aero Engines
43 Rheinmetall Defence
84 OHB Technology
97 Chemring Group
Norway
88 Kongsberg Gruppen Defence and Protech
Sweden
40 Saab
Turkey
81 Aselsan
China
39 AVIC Aircraft Company
South Korea
58 Korea Aerospace Industries
Japan
19 Mitsubishi Aerospace and Integrated Defense
34 IHI Aero Engines and Space Operations
46 Kawasaki Aerospace
80 Fuji Aerospace
100 Jamco Corp
Israel
35 Israeli Aerospace Industries
44 Elbit Systems
India
50 Hindustan Aeronautics Limited (HAL)
85 Bharat Electronics
Italy
12 Finmeccanica
France
11 Safran
13 Thales
25 Zodiac
30 Dassault Aviation
Singapore
27 Singapore Technologies
78 SIA Engineering
Spain
96 Indra Security & Defense

Appendix: A&D Top 100 companies

#	Company	Revenue (US$ millions) 2014	2013	Change	Operating Profit (US$ millions) 2014	2013	Change
1	Boeing	90,762	86,623	5%	7,473	6,562	14%
2	Airbus	80,521	76,450	5%	5,293	3,413	55%
3	Lockheed Martin	45,600	45,358	1%	5,592	4,505	24%
4	United Technologies	36,174	34,101	6%	4,574	4,488	2%
5	General Dynamics	30,852	30,930	0%	3,889	3,689	5%
6	BAE Systems	27,409	28,406	-4%	2,142	1,259	70%
7	GE Aviation	23,990	21,911	9%	4,973	4,345	14%
8	Northrop Grumman	23,979	24,661	-3%	3,196	3,123	2%
9	Raytheon	22,826	23,706	-4%	3,179	2,938	8%
10	Rolls Royce	22,629	22,878	-1%	2,290	2,311	-1%
11	Safran	20,365	19,074	7%	2,361	2,774	-15%
12	Finmeccanica	19,447	18,181	7%	918	(19)	5036%
13	Thales	17,207	16,863	2%	1,179	1,085	9%
14	Honeywell Aerospace	15,598	15,735	-1%	2,915	2,870	2%
15	L-3 Communications	12,124	12,622	-4%	1,085	1,212	10%
16	Bombardier Aerospace	10,499	9,385	12%	(995)	418	-338%
17	Textron	10,437	8,960	16%	913	672	36%
18	Precision Castparts Corp.	9,616	8,361	15%	2,672	2,157	24%
19	Mitsubishi Aviation and Integrated Defense	9,066	8,041	13%	446	440	1%
20	Huntington Ingals	6,957	6,820	2%	655	512	28%
21	Spirit AeroSystems	6,799	5,961	14%	354	(364)	197%
22	Embraer	6,289	6,235	1%	543	713	-24%
23	Babcock International Group	5,845	5,069	15%	623	541	15%
24	Leidos	5,772	6,469	-11%	164	423	-61%
25	Zodiac	5,537	5,169	7%	719	745	-4%
26	MTU Aero Engines	5,191	4,746	9%	508	501	1%
27	Singapore Technologies	5,161	5,302	-3%	438	538	-19%
28	Harris Corp	5,012	5,112	-2%	882	812	9%
29	Rockwell Collins	4,979	4,474	11%	1,036	973	6%
30	Dassault Aviation	4,881	6,100	-20%	468	661	-29%
31	Alliant Techsystems	4,775	4,362	9%	590	470	26%
32	SAIC	4,121	4,781	-14%	183	281	-35%
33	CSC North American Public Sector	4,099	4,662	-12%	501	490	2%
34	IHI Aero Engines and Space Operations	3,837	3,468	11%	347	158	120%
35	Israeli Aerospace Industries	3,827	3,642	5%	141	84	68%
36	Triumph Group	3,763	3,703	2%	400	531	-25%
37	GKN Aerospace	3,667	3,505	5%	456	416	10%
38	CACI	3,565	3,682	-3%	257	271	-5%
39	AVIC Aircraft Company	3,452	2,793	24%	77	85	-10%
40	Saab	3,430	3,645	-6%	242	206	-7%
41	Exelis	3,277	3,341	-2%	397	328	21%
42	Cobham	3,051	2,797	9%	94	248	-62%
43	Rheinmetall Defence	2,971	2,862	4%	(12)	80	-115%
44	Elbit Systems	2,958	2,925	1%	247	239	3%
45	Serco UK Central Government and Americas	2,751	2,873	-4%	(372)	281	-232%
46	Kawasaki Aerospace	2,653	2,451	8%	248	152	63%
47	MOOG	2,648	2,610	1%	276	228	21%
48	BE Aerospace	2,599	2,203	18%	384	363	6%
49	Meggitt	2,560	2,558	0%	570	620	-8%
50	Hindustan Aeronautics Limited (HAL)	2,484	2,448	1%	558	598	-2%

#	Company	Revenue (US$ millions) 2014	2013	Change	Operating Profit (US$ millions) 2014	2013	Change
51	Trimble	2,396	2,288	5%	261	252	4%
52	Teledyne Technologies	2,394	2,339	2%	295	240	23%
53	TransDigm Group	2,373	1,924	23%	928	749	24%
54	BBA Aviation	2,290	2,219	3%	154	169	-9%
55	Delta Tucker Holdings / DynCorp International	2,252	3,287	-31%	(220)	(207)	-6%
56	Curtiss-Wright	2,243	2,118	6%	282	237	19%
57	Parker Hannifin Aerospace	2,235	2,268	-1%	271	280	-3%
58	Korea Aerospace Industries	2,203	1,841	20%	153	114	35%
59	Esterline Technologies	2,051	1,889	9%	244	247	-1%
60	AAR	2,035	2,137	-5%	146	123	19%
61	Allegheny Technologies High Performance Metals	2,007	1,945	3%	290	209	39%
62	QinetiQ	1,953	2,075	-6%	39	(190)	121%
63	RUAG	1,946	1,890	3%	126	124	1%
64	CAE	1,916	1,976	-3%	264	227	16%
65	MacDonald Dettwiler & Associates	1,901	1,766	8%	188	175	8%
66	Eaton Aerospace	1,860	1,774	5%	273	252	8%
67	Hexcel	1,856	1,678	11%	306	271	13%
68	ManTech International	1,774	2,310	-23%	95	22	332%
69	Oshkosh Defense	1,724	3,050	-43%	76	225	-66%
70	GenCorp	1,591	1,377	16%	13	22	-41%
71	FLIR Systems	1,531	1,496	2%	259	241	7%
72	Cubic Corporation	1,398	1,361	3%	92	41	124%
73	Engility	1,367	1,407	-3%	83	108	-23%
74	Wesco Aircraft Holdings	1,356	902	50%	184	181	2%
75	ViaSat	1,352	1,120	21%	3	(20)	115%
76	KLX	1,310	1,268	3%	192	240	-20%
77	Vectrus	1,203	1,512	-20%	38	131	-71%
78	SIA Engineering	1,178	1,147	3%	116	128	-9%
79	Ultra Electronics	1,176	1,164	1%	65	90	-27%
80	Fuji Aerospace	1,175	913	29%	133	70	91%
81	Aselsan	1,141	1,143	0%	136	92	47%
82	Heico Corporation	1,132	1,009	12%	203	184	10%
83	Woodward Governor Aerospace	1,084	1,061	2%	159	166	-4%
84	OHB Technology	1,021	930	10%	53	48	11%
85	Bharat Electronics	1,014	1,028	-1%	193	191	1%
86	Cytec Aerospace Materials	1,000	961	4%	178	178	0%
87	Ball Aerospace	935	897	4%	80	80	0%
88	Kongsberg Gruppen Defense and Protech	927	1,186	-22%	124	160	-22%
89	Senior Aerospace	885	792	12%	128	120	7%
90	Kratos Defense & Security Solutions	868	951	-9%	20	32	-38%
91	Smiths Detection	843	873	-3%	38	81	-53%
92	Alion Science and Technology	805	849	-5%	46	42	10%
93	Magellan Aerospace Corp	764	730	5%	77	65	18%
94	Ducommun	742	737	1%	52	39	33%
95	Crane Aerospace & Electronics	696	694	0%	138	160	-14%
96	Indra Security & Defense	675	657	3%	(9)	45	-121%
97	Chemring Group	664	738	-10%	41	(73)	156%
98	DigitalGlobe	655	613	7%	32	(85)	138%
99	Kaman Aerospace	633	614	3%	109	103	6%
100	Jamco Corp	630	500	26%	44	30	47%
	Total	**729,173**	**710,418**	**3%**	**73,291**	**66,835**	**10%**

Additional resources

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