

Operational Review

Consistent with the plans we laid out in November 2015, we have enhanced the financial disclosures for all our reporting segments to include gross margin, R&D and other costs below gross margin, as well as restructuring charges. In addition, within Civil Aerospace we have provided additional revenue segmentation and a trading cash flow breakdown. These disclosures apply to both 2014 and 2015 and should help further analysis of trading performance.

We have also included an 'Other' category. This includes the residual retained assets relating to the Energy business which were not included in the sale to Siemens in 2014 and the one-off intellectual property settlement. The value of these is not material to the Group.

Operational Review: Civil Aerospace

£m	2014	Underlying Change	Acquisitions & Disposals	Exchange	2015
Order book	63,229	3,800	-	-	67,029
Engine deliveries	739	(27)	-	-	712
Underlying revenue	6,837	201	-	(105)	6,933
<i>Change</i>		+3%	-	-2%	+1%
Underlying OE revenue*	3,463	(117)	-	(88)	3,258
<i>Change</i>		-3%	-	-3%	-6%
Underlying services revenue*	3,374	318	-	(17)	3,675
<i>Change</i>		+9%	-	+1%	+9%
Underlying gross margin	1,675	(139)	-	(10)	1,526
<i>Gross Margin %</i>	24.5%	-270 bps			22.0%
Commercial and administrative costs	(283)	(14)	-	1	(296)
Restructuring costs	(82)	75	-	-	(7)
Research and development costs	(461)	(65)	-	11	(515)
Joint ventures and associates	93	8		3	104
Underlying profit before financing	942	(135)	-	5	812
<i>Change</i>		-14%			-14%
Underlying operating margin	13.8%	-230 bps			11.7%

* The methodology basis for the allocation of Civil Aerospace revenues on linked TotalCare contracts between original equipment and aftermarket has been reviewed and amendments made to reflect better the commercial substance of the combined contracts. Historically, the allocation has resulted in original equipment revenue and aftermarket revenue reflecting the contractual terms rather than the commercial substance of the contracts. The 2014 figures have been restated on the same basis; the impact was an increase in original equipment revenue of £198m and an equal decrease in aftermarket revenue.

Financial overview

Overall, underlying revenue for Civil Aerospace grew 3% on a constant currency basis (up 1% at actual rates) with steady growth in services (up 9% at constant rates, including a £189m one-off benefit discussed below) which more than offset the reduction in original equipment (down 3% at constant rates). Second half growth was particularly strong as the business improved original equipment delivery performance on a number of programmes, notably in corporate jets.

£m	%	2014	Underlying Change	Exchange	%	2015
Underlying revenue	100%	6,837	201	(105)	100%	6,933
Underlying OE revenue	51%	3,463	(117)	(88)	48%	3,258
<i>Widebody engines: linked & other</i>	26%	1,766	(191)	(5)	23%	1,570
<i>Widebody engines: unlinked installed</i>	6%	392	114	(2)	7%	504
<i>Corporate (and other small engines)</i>	14%	974	(9)	(62)	14%	903
<i>V2500</i>	5%	331	(31)	(19)	4%	281
Underlying services revenue	49%	3,374	318	(17)	52%	3,675
<i>Widebody engines</i>	30%	2,029	336	6	34%	2,371
<i>Corporate</i>	6%	383	50	(8)	6%	425
<i>Regional</i>	6%	427	(61)	(6)	5%	360
<i>V2500</i>	7%	535	(7)	(9)	7%	519

Original equipment revenues from widebody engines: linked and other reduced 11% reflecting a slow-down in linked Trent 700 deliveries for the Airbus A330 ahead of the introduction of the Trent 7000 for

the A330neo together with reduced sales of linked Trent 900 engines for the A380, partly offset by increased linked Trent 1000 engine sales for the Boeing 787 Dreamliner. In addition, sales of spare engines to joint ventures generated revenue of £189m (2014: £138m).

Original equipment revenues from unlinked widebody engines increased by 29% largely a result of an increase in unlinked Trent XWB and other Trent engine deliveries.

The 17% increase in widebody service revenue was mainly driven by increased flying hours from our growing fleet of installed Trent 700, Trent 900 and Trent 1000 engines and a £189m one-off benefit resulting from refining the basis of taking account of risk in our forecasts of future revenue on long-term contracts. This was partially offset by lower utilisation of some of our more mature engine types, notably the Trent 500 and Trent 800.

Within our corporate engine business we had good revenue growth from our BR725 engine which powers the Gulfstream G650 and G650ER. This was offset by lower volumes for our other products due to weaker demand from Chinese, Russian and Brazilian customers. As a result, corporate original equipment revenues declined 1%. Despite a reduction in new corporate engine deliveries our installed base of corporate jet engines continued to grow, contributing to a 13% increase in service revenues from these products.

Services revenues from our regional jet engines declined 14%, reflecting retirements and reduced utilisation of relevant fleets by North American operators.

On the V2500 programme, original equipment revenues declined 9% due to reduced demand from IAE for V2500 modules to power the Airbus A320ceo, reflecting a mix change in engine types powering the aircraft ahead of the introduction of the A320neo. Despite continued growth in the installed base of engines, service revenues on the V2500 were down 1% overall reflecting a combination of fewer overhauls, lower spare parts sales and reduced engine flying hours.

Overall **gross margins** for Civil Aerospace were 22.0% (2014: 24.5%). The year-on-year reduction in margin of £139m reflected the lower proportion of linked Trent 700 engine sales, weaker corporate jet engine volumes and a declining regional aftermarket, partially offset by an £16m higher gross margin contribution from sales of spare engines to joint ventures (£67m in 2015 compared to £51m in 2014).

In addition, these factors were partially offset by a number of contract accounting adjustments and reversals of impairments and provisions.

The in-year benefit of retrospective long-term contract accounting adjustments as expected was a net positive £222m (2014: total benefit of £150m). Of this, £189m was a one-off benefit resulting from refining the basis of taking account of risk in our forecasts of future revenue. In 2012 it was agreed with the Group Audit Committee that a comprehensive review would be completed during 2015. The new enhanced methodology should better reflect risk, current experience and expected long-term performance. Other long-term contract accounting adjustments totalled a net benefit of £33m (2014: total benefit of £150m). This comprised a retrospective charge of £107m (2014: benefit of £90m), reflecting reduced customer fleet utilisation, including Trent 500 and Trent 800 powered airframes, other commercial changes and technical risks, offset by the benefit of £140m (2014: benefit of £60m) from life-cycle cost improvements.

Full year performance also benefited from the reversal of previously recognised impairment on Contractual Aftermarket Rights (CARs) and release of a related provision with a profit of £65 million being recognised (2014: impairment charge of £19 million). This reflected a significantly more positive outlook for future maintenance costs for a Trent 1000 launch customer which enabled the reversal of a previous impairment. This also resulted in the capitalisation of £22m of 2015 CARs that would otherwise have been impaired.

Costs below gross margin were £5m lower than the previous year. Within this, R&D charges were £64m higher, reflecting increased spend on key programmes, particularly in respect of the Trent 1000 TEN, the Trent 7000 and the Trent XWB-97. These engines, now in their final stages of preparation before flight testing, are due to enter service in 2017 and 2018. They represent a significant advance on

previous Trent designs, providing substantial fuel burn improvements. The Trent 7000 and Trent XWB-97 programmes have yet to reach a point at which their costs can be capitalised. In addition, following its successful entry into service, continuing investment in the Trent XWB-84 engine can no longer be capitalised. Investment also increased to develop future corporate jet engine technology. The R&D charge was reduced by £94m (2014: £71m) by the recognition of entry fees receivable from risk and revenue sharing partners.

Underlying corporate, administration and other costs were £14m higher. Restructuring costs were £75m lower reflecting the significant charges taken in 2014.

As a result, **profit before financing and tax** was 14% down, reflecting a combination of lower overall gross margins, increased R&D and reduced restructuring costs. Taking account of foreign exchange effects, underlying profit before financing and tax was £812m (2014: £942m).

New disclosure on trading cash flow provides additional clarity on performance

£m	2015	2014	Var
Underlying profit before financing	812	942	(130)
Depreciation and amortisation	410	381	29
Sub-total	1,222	1,323	(101)
CARs additions	(161)	(86)	(75)
Property, plant, equipment and other intangibles	(502)	(748)	246
Other timing differences*	(75)	(53)	(22)
Trading cash flow pre-working capital movements	484	436	48
Net long-term contract debtor movements	(406)	(463)	57
Other working capital movements	(78)	208	(286)
Trading cash flow**	0	181	(181)

* Includes timing differences between underlying profit before financing and cash associated with: joint venture profits less dividends received; provision charges higher/(lower) than cash payments; non-underlying cash and profit timing differences (including restructuring); and, financial assets and liabilities movements.

** Trading cash flow is cash flow before: deficit contributions to the pension fund; taxes; payments to shareholders; foreign exchange on cash balances; and, acquisitions and disposals.

Trading cash flow before working capital movements improved year-on-year by £48m, despite the headline drop in underlying profit before financing of £130m and the higher level of CARs additions. This is largely due to a reduced level of property, plant and equipment additions and a lower spend on certification costs and participation fees. The £286m year-on-year difference in working capital movements was largely due to differences in the timing of payments to suppliers and increased draw down of deposits in 2015.

Investment and business development

Order intake of £12.8bn in 2015 for Civil Aerospace was £1.1bn up on the previous year. As a result, the order book closed at £67.0bn, up £3.8bn or 6% on the previous year.

Significant orders during the year included our largest ever order by value to provide Trent 900 engines and TotalCare® service support for 50 Airbus A380s for Emirates worth \$9.2bn of which \$6.1bn is recognised within the order book. Other major orders included Trent 1000 engines to power 21 Boeing 787 Dreamliner aircraft and long-term TotalCare® support for Air China and Ethiopian Airlines, and a \$2.4bn order for engines and services with HNA Group.

Engineering excellence remains the cornerstone of our value to Civil Aerospace customers

Several important engineering milestones were achieved during 2015. For widebody engines, the focus has been on completing the development and testing of the new Trent 1000 TEN and the Trent XWB-97. The results of initial tests on both engines are broadly in line with expectations. In December, the Trent XWB-97 flew for the first time and has since undergone rigorous testing in a number of conditions. The Trent 1000 TEN has also completed several major milestones. In addition, a hybrid Trent 7000, produced to de-risk the development programme, ran for the first time and is now being put through its paces with a series of rigorous tests.

For corporate jets, developments in the year were more modest. Strong orders for the BR725 have sustained steady original equipment volumes as the new Gulfstream G650ER entered service, despite a weakening market. Failure in past years to secure new positions on some important new corporate jet platforms contributed to a weak order intake in the year which will impact future volumes and revenues adversely. As part of Rolls-Royce's technology strategy, investments are being made to secure future opportunities and regain its position as the leading provider to the important market of large cabin, long-range corporate jets.

Investing in new aerospace supply chain capabilities to help drive operational excellence

As part of the supply chain transformation underway in the business, several important new facilities were completed during the year. These included the opening of our Advanced Blade Casting Facility in Rotherham, UK, which will halve the time it takes to manufacture turbine blades and an expansion of our Trent XWB production centre in Derby. We also announced plans to invest in our facility in Inchinnan to create a new Centre of Competence for the manufacture of aerofoils and established a joint venture with Liebherr to develop manufacturing capability and capacity for the power gearbox for our Ultrafan demonstrator programme.

Strengthening our aerospace aftermarket service offering

During 2015 we broadened our service offering and strengthened our support network to provide customers with greater choice, flexibility and capability at all stages of the engine lifecycle, supporting a growing installed base.

This included making improvements to our Trent Service Network which will result in increased competition among our Approved Maintenance Centres (AMCs) and the announcement of our first independent AMC, Delta TechOps. We have also set up a global network of Customer Service Centres, bringing us closer to our customers, working in their time-zone.

We launched a new service, SelectCare™, which fits between Rolls-Royce's comprehensive TotalCare® and general maintenance, repair and overhaul services, where customers contract for individual shop visit support. At the same time, we announced American Airlines as the launch customer. We also announced our first customers for TotalCare Flex®, a new service targeting owners and operators of more mature engines. Cathay Pacific, AerCap, South African Airways and BMI Regional chose the service for Trent 800, Trent 500 and AE3007 engines respectively.

Civil Aerospace outlook

As we set out in November 2015, we believe the long-term outlook for Civil Aerospace remains very good, led by a strong widebody order book for Rolls-Royce's fuel efficient engines. Key to the long-term success of the business is converting this exceptional order book into a large installed base of engines that meet customer demands for safe, reliable, efficient operation while driving profitable engine flying hour revenues. The next few years will be very important as we ramp up production of new engines - in new, efficient facilities – and invest in the development of future engine platforms that will benefit the order book from 2020 onwards. As a result, until we gain additional aftermarket scale, or complete our industrial transformation and improve unit costs and cash margins, the business will continue to be a net investor of cash.

Over the next few years the transition from 'linked' to 'unlinked' contracts creates a headwind to reported profit but no change to cash flows

In the future, an increasing proportion of our new engines will be sold to the airframer on a sole-source basis, in particular the new Trent XWB and Trent 7000 for use on the A350 and A330neo respectively. As a result, a significantly larger proportion of our sales in the future will be accounted for on an "unlinked" basis. While this does not change cash flows, it does change the timing of when profit is recognised across the OE and aftermarket contracts. Under "unlinked" accounting, the engine sale and aftermarket contracts are accounted for separately. This typically results in lower upfront profit recognition on engine delivery, with significantly higher proportion of profit in the aftermarket period. This

is in comparison to “linked” accounting, where a blended margin is applied across the engine sale and aftermarket contracts.

Near-term conditions in some segments remain challenging

We continue to expect our Civil Aerospace business to underperform 2015 underlying profit before finance and tax by around £550m. The significant headwind related to Trent 700 volume reductions and the non-recurrence of a number of one-off benefits seen in 2015 remains broadly unchanged. In addition, we still expect to see weaker demand for new corporate jets and declines in demand within our regional jet aftermarket. The aftermarket benefit of higher levels of engine deliveries and increased installed thrust is expected to be largely offset by the underutilisation of older large engines. However, the business will benefit from reduced costs from the restructuring initiatives started in 2014.

We now expect the TotalCare net asset to grow from £2.2bn and peak at around £2.5bn, allowing for a more positive demand outlook for our ‘linked’ accounted engines and the benefit of further life-cycle cost improvements now being seen in engine performance.

Operational Review: Defence Aerospace

£m	2014	Underlying Change	Acquisitions & Disposals	Exchange	2015
Order book	4,564	(248)	-	-	4,316
Engine deliveries	744	(95)	-	-	649
Underlying revenue	2,069	(101)	-	67	2,035
<i>Change</i>		-5%	-	+3%	-2%
Underlying OE revenue	816	(45)	-	30	801
<i>Change</i>		-6%	-	+4%	-2%
Underlying services revenue	1,253	(56)	-	37	1,234
<i>Change</i>		-5%	-	+3%	-2%
Underlying gross margin	567	(9)	-	21	579
Gross Margin %	27.4%	+90bps	-		28.5%
Commercial and administrative costs	(112)	(7)	-	(5)	(124)
Restructuring costs	(55)	48	-	(1)	(8)
Research and development costs	(50)	(20)	-	(3)	(73)
Joint ventures and associates	16	3	-	-	19
Underlying profit before financing	366	15	-	12	393
<i>Change</i>		+4%			+7%
Underlying operating margin	17.7%	+170bps			19.3%

Financial overview

Underlying revenue at £2,035m was 5% lower on a constant currency basis (down 2% at actual exchange rates). Lower original equipment volumes for helicopters and trainers were partially offset by growth in LiftSystem volumes. Aftermarket revenues reflected lower volumes on helicopter spares partially offset by higher revenues related to long term service agreements for UK combat aircraft.

Despite the reduced revenues, gross margin improved to 28.5%. Lower helicopter volumes and lower margins on some transport contract extensions were offset by higher LiftSystem volumes and increased retrospective margin improvements of £101m (2014: £53m) on existing long term contracts. These relate to various combat platforms, where overall profitability has been improved by changed flying patterns and lower service costs, including approximately £40m (2014: nil) due to one-off contract and scope variations.

Overall R&D costs were £20m higher in 2015 reflecting increased investment in new programmes. Restructuring costs were lower due to reduced level of severance costs and lower costs related to changing our operational footprint.

Underlying profit before financing of £393m was 4% up on the prior year on a constant currency basis, reflecting the lower volumes, the one-off margin improvements, increased R&D charges and lower restructuring charges. As a result, operating margin improved by 160 basis points to 19.3%.

Investments and business development

Overall, the Defence order book declined 5%, in large part reflecting the 2014 benefit of the significant multi-year order for engines to power C130-J aircraft. With a major focus within defence budgets on cost control, 2015 saw significant interest in availability based service contracts and also on offering efficiency upgrades. New contracts included an extension of the UK's Hercules Integrated Operational Support contract and commitment to the UK's Future Combat Air System (FCAS) programme. After successful first flights on US 'Hurricane Hunter' P-3 aircraft in May, we received strong international interest including an initial USAAF order for the T56 3.5 technology insertion kit upgrade delivering both fuel saving and performance benefits for an engine programme which has been in existence for over 50 years.

Outside the UK and US markets, our particular focus has been on positioning ourselves to be competitive for forthcoming combat programmes. We had success in South Korea in conjunction with Airbus, with the contract being awarded to power the A330 tanker fleet with Trent 700 engines, as well as agreeing an order for our largest ever number of engines – a ten year order with Robinson to supply at least 1,000 RR300 engines.

Long-term, it remains essential that we have a cost efficient supply chain to support the profitable growth of our business in a competitive market. To support future business competitiveness we initiated a major \$600m investment in the upgrading of our Indianapolis facility, which will bring a combination of cost reductions, operational efficiencies and greater development capabilities for defence technologies. This investment recognises the importance of the US market and our strong position there.

Defence Aerospace outlook

The long-term outlook for Defence Aerospace remains positive with good opportunities to capitalise on its strong positions in transport and patrol and combat. Investment in developing new advanced technologies will be a feature of R&D for the next few years as the business ensures it can compete for new opportunities.

The outlook for revenues in 2016 remains steady. Operating profit will be adversely impacted by the lower level of expected long-term contract benefits in 2016, together with higher R&D and operational restructuring costs.

Free cash flow from Defence Aerospace is expected to remain strong in the longer term, reflecting the high proportion of aftermarket revenues. However, in the coming year free cash flow is expected to be lower reflecting the increased cost of investment and the run out of costs on key UK programmes where deposits have been received in advance of delivery.

Operational Review: Power Systems

£m	2014	Underlying Change	Acquisitions & Disposals	Exchange	2015
Order book	1,971	(43)	-	-	1,928
Underlying revenue	2,720	(72)	-	(263)	2,385
<i>Change</i>		-3%	-	-10%	-12%
Underlying OE revenue	1,893	(97)	-	(178)	1,618
<i>Change</i>		-5%	-	-9%	-15%
Underlying services revenue	827	25	-	(85)	767
<i>Change</i>		+3%	-	-10%	-7%
Underlying gross margin	742	(37)	-	(70)	635
<i>Gross Margin %</i>	27.3%	-70bps			26.6%
Commercial and administrative costs	(296)	(9)	-	30	(275)
Restructuring costs	(7)	3	-	-	(4)
Research and development costs	(183)	3	-	18	(162)
Joint ventures and associates	(3)	3	-	-	0
Underlying profit before financing	253	(37)	-	(22)	194
<i>Change</i>		-15%			-23%
Underlying operating margin	9.3%	-110bps			8.1%

Financial overview

Underlying revenue of £2,385m was 3% lower on a constant currency basis (12% lower at actual rates). Original Equipment revenue was 5% lower, reflecting weaker oil & gas markets and weaker governmental demand which peaked in 2014. This was partially offset by an improved luxury yacht demand and some recovery in our sections of the construction and agriculture market where new emissions regulations increased demand. Underlying service revenues were up 3% despite some weakness in spare parts sales in North America and Europe.

Gross margins were slightly lower at 26.6% (2014: 27.3%) reflecting a change in product mix and lower overall volumes as expected.

Underlying profit declined 15% as a result of the lower gross margins. On a constant currency basis costs below gross margin were unchanged.

Investment and business development

Our Power Systems business serves a variety of markets ranging from marine, industrial, construction & agriculture to defence and power generation. This diversity enabled the business to mitigate some of the weak environment, particularly that linked to oil and commodities.

2015 order intake was £2.5bn (2014: £2.6bn) with the closing order book broadly unchanged at £1.9bn. Within this, the defence sector demonstrated greater resilience with a combination of a higher proportion of long term service contracts together with the winning of the first order worth approximately €80m from the British Army for 589 MTU Diesel engines for the new Scout Specialist Vehicle.

Within the broad range of Industrial applications, while a number of markets deteriorated through the year, there was positive news. This included contract wins from a Chinese company for 232 MTU Series 4000 engines for freight locomotives bound for South Africa, and further orders for luxury yacht engines. An extension to our longstanding co-operation with Daimler was also agreed for the development of new range of industrial engines, which comply with new EU off-highway regulations for reduced soot emissions.

The energy segment generated an increased order intake in 2015 reflecting good growth in 'gas gensets', particularly in Asia. In addition, the easing of the trading embargo with Iran is enabling the business to secure a good foothold in the country. As a result, we enjoy a strong market position within backup power, particularly for larger mission-critical applications, which is a growing market. Recent

notable orders came from Kuwait, Turkey and Bangladesh for the provision of backup power (for hospital modernisations) and continuous power (for a steel mill).

Power Systems outlook

The outlook for Power Systems remains steady. The business finished the year with a healthy order book for many of its key markets. As a result, while some markets remain difficult, we continue to expect the business to deliver modest growth in revenue and profit in 2016.

Operational Review: Marine

£m	2014	Underlying Change	Acquisitions & Disposals	Exchange	2015
Order book	1,567	(403)	-	-	1,164
Underlying revenue	1,709	(269)	-	(116)	1,324
<i>Change</i>		-16%	-	-7%	-23%
Underlying OE revenue	1,070	(204)	-	(93)	773
<i>Change</i>		-19%	-	-9%	-28%
Underlying services revenue	639	(65)	-	(23)	551
<i>Change</i>		-10%	-	-4%	-14%
Underlying gross margin	425	(139)	-	(26)	260
<i>Gross Margin %</i>	24.9%	-500bps			19.6%
Commercial and administrative costs	(254)	27	-	26	(201)
Restructuring costs	(4)	(16)	-	4	(16)
Research and development costs	(29)	(2)	-	3	(28)
Underlying profit before financing	138	(130)	-	7	15
<i>Change</i>		-94%			-89%
Underlying operating margin	8.1%	-750bps			1.1%

Financial overview

Underlying revenue of £1,324m was 16% lower on a constant currency basis (down 23% at actual rates). Within this, original equipment revenues were 19% down at £773m. Service revenues were more robust, although still declined 10%. This reflected weaknesses in offshore and merchant, as ship owners deferred overhaul and maintenance on the back of reduced utilisation of their vessels.

As a result of the revenue weaknesses, price pressure and cost under-recovery, gross margins declined 500 basis points to 20% and overall gross margin was £260m, £139m lower than in 2014. As a result, with only modest reductions to date being achieved in corporate, administration and other costs, underlying profit was £15m, 94% down on a constant currency basis.

Around £15m of restructuring charges were incurred in 2015 and excluding these, underlying profit declined 83%. In the first half we took a non-underlying charge of £69m for the impairment of goodwill on two of our businesses owing to a less favourable business outlook, partly driven by the impact of market deteriorations on our offshore businesses.

Investment and business development

The focus in 2015 has been on repositioning the marine business to reflect the very challenging market environment and outlook. During the year we also announced a number of restructuring programmes that will in total lead to the loss of around 1,000 employees in operations and back-office functions as we shrink our Northern European footprint, reduce indirect headcount, and consolidate manufacturing activity. This will deliver projected cost savings of £65m per annum from 2017 onwards and create a business better able to compete in an increasingly cost-conscious market place which is geographically shifting towards Asia.

Overall, the Marine order book declined 26% during the year, mainly reflecting a very weak offshore market, particularly in Northern Europe. Orders for new vessels, projects and services were all sharply lower than 2014 and as a result order intake was only £997m, 45% down on the previous year.

The offshore market was extremely weak reflecting a low oil price and reduced capital expenditure within the upstream oil exploration and related services sectors. Targeted investment in R&D and improving our Asian position saw progress later in the year with two major orders from China. These comprised an equipment contract for nine tug supply vessels and a package of advanced ship equipment for a dive support vessel. We also saw demand from non-oil related sectors such as wind farm support and fishing trawlers.

Activity within our target merchant sectors was subdued, but we made progress in our strategy of developing markets for offshore derived technologies within specialist areas such as azimuth propulsion systems for double-ended ferries. We also delivered Asia's first LNG-powered tug and the first of two all-gas powered cargo vessels for a Norwegian transport company.

The naval business was focused on further development work and deliveries against contracts in both the UK and US. These included the first DDG 1000 multi-mission destroyer class for the US Navy and the world's largest gas turbine engines, the MT30 for the UK's two new aircraft carriers. We also signed a contract to supply MT30s for operation on the first three of the Royal Navy's new Type 26 Global Combat Ship.

Product development work within the business included expanding the range of permanent magnet-based propulsion systems, as well as spearheading research into our pioneering Ship Intelligence technology focused on data-driven value-added services.

Marine outlook

Overall the outlook for marine remains cautious. We expect that the market will continue to be hit by low oil prices and the impact on demand for our products and services. As a result we will sustain our cost reduction programmes, focusing on manufacturing facilities, supply chain and overhead costs, in order to drive a more competitive business while also adapting to volume risks.

As set out in November 2015, we expect the net impact of weak trading conditions and cost saving initiatives to result in 2016 profits being between £75m and £100m lower than those achieved in 2015. As a result, the business is expected to be significantly loss making in 2016.

Operational Review: Nuclear (excludes Energy business)

£m	2014	Underlying Change	Acquisitions & Disposals	Exchange	2015
Order book	2,499	(331)	-	-	2,168
Underlying revenue	638	56	-	(7)	687
<i>Change</i>		<i>+9%</i>	-	<i>-1%</i>	<i>+8%</i>
Underlying OE revenue	230	27	-	(6)	251
<i>Change</i>		<i>+12%</i>	-	<i>-3%</i>	<i>+9%</i>
Underlying services revenue	408	29	-	(1)	436
<i>Change</i>		<i>+7%</i>	-	<i>-0%</i>	<i>+7%</i>
Underlying gross margin	119	(6)	-	(2)	111
<i>Gross Margin %</i>	<i>18.7%</i>	<i>-240bps</i>			<i>16.2%</i>
Commercial and administrative costs	(61)	6	-	2	(53)
Restructuring costs	(1)	(1)	-	-	(2)
Research and development costs	(7)	21	-	-	14
Underlying profit before financing	50	20	-	-	70
<i>Change</i>		<i>+40%</i>			<i>+40%</i>
Underlying operating margin	7.8%	+230bps			10.2%

Financial overview

Underlying revenue increased 9% on a constant currency basis, led by growth in both original equipment and services. In particular, growth in submarine activities was strong. Revenue growth for our instrumentation and controls businesses was also good, particularly in Europe.

Despite the growth in revenue, gross margin declined by around 240 basis points to 16.2% or £111m. This was largely due to increased costs on a number of projects with lower margin. Gross margin was also impacted by a reclassification of site costs from commercial, administration and other of around £7m. This favourably benefited costs below gross margin which also benefited from lower R&D charges as a result of an R&D credit of £19m which covered the current and the two previous years. Excluding this, underlying profit before tax was £50m, in line with the prior year. After the release, underlying profit of £70m is 40% up on the prior year.

Investment and business developments

The order book fell around 13%, reflecting delivery of our long-term contracts across both submarines and civil nuclear businesses. New orders were biased to the second half of the year, benefitting from the expansion of our business reach and capabilities.

Our civil nuclear business focuses on multi-year projects and specialist services for what is a growing global industry. We were selected as preferred bidder by EDF to work on heat exchangers and waste treatment for the Hinkley Point C project in the UK and we were selected by Hitachi to be part of the Wylfa power station delivery team, the second nuclear power station scheduled in the UK's new-build programme. We also won a contract to supply safety measurement systems for the entire French fleet of 900MW reactors. These mandates help to further consolidate our significant position in the European marketplace and position us well to seek further opportunities for partnerships in growing nuclear markets. In the US our acquisition of ROV Technologies Inc. in March expanded our nuclear services portfolio, bringing complementary Boiling Water Reactor expertise and broadening our existing Pressurised Water Reactor remote inspection capability.

Our submarine activities have concentrated on delivering against long-term contracts for the UK Royal Navy's nuclear submarine fleet, including delivery of the nuclear propulsion system to power HMS Artful, the third Astute-class submarine, which was launched in August. Our work on the Vanguard-class included work on a refueling programme and also the first successful upgrade to the reactor control and instrumentation update for HMS Vengeance. At the Naval Reactor Test Establishment, HMS Vulcan, the PWR2 test facility reactor was safely shut down having completed its prototyping role. Development work on the new PWR3 power plant for Successor continues with contract extensions agreed in preparation ahead of the government final investment decision.

Nuclear outlook

The outlook for Nuclear remains steady. Both submarines and civil nuclear enjoy long-term secure aftermarket revenues. While business development opportunities remain modest in the near-term, new power plants for the Successor submarine fleet together with long-term opportunities to develop relevant products for civil nuclear applications should provide incremental growth.