2018 ANNUAL REPORT

Rolls-Royce Holdings plc

PIONEERS OF POWER

Rolls-Royce pioneers cutting-edge technologies that deliver clean, safe and competitive solutions to meet our planet's vital power needs.

Group Financial Highlights *†

Free cash flow △
£568m
2017: £259m

Full year payment to shareholders
11.7p
2017: 11.7p

Underlying revenue
£15,067m
2017: £13,671m ‡

Reported revenue
£15,729m
2017: £14,747m †

Underlying operating profit
£616m
2017: £306m ‡

Reported operating (loss)/profit
£(1,161)m
2017: £366m ‡

Underlying profit before tax
£466m
2017: £199m ‡

Reported (loss)/profit before tax
£(2,947)m
2017: £3,898m ‡

Underlying earnings per share
16.0p
2017: 2.3p ‡

Reported earnings per share
(129.2)p
2017: 184.4p ‡

Net funds/(debt) ø
£611m
2017: £(305)m

* All figures in the narrative of the Strategic Report are underlying unless otherwise stated. The explanation of underlying and the reconciliation to the reported figures is in note 2 to the Consolidated Financial Statements on page 129.
† All references to organic change in the Strategic Report are at constant translational currency and excluding M&A.
‡ Following the adoption of IFRS 15 *Revenue from Contracts with Customers* in 2018, the 2017 figures have been restated – see note 27 to the Consolidated Financial Statements.
△ Free cash flow is defined in note 26 on page 168.
ø Net funds/(debt) is defined on page 111.

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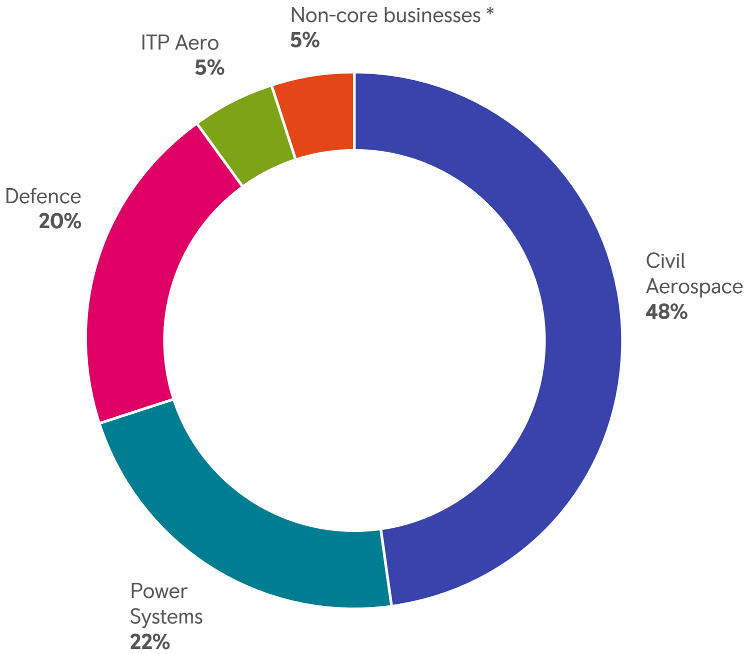
Forward-looking statements

This Annual Report contains forward-looking statements. Any statements that express forecasts, expectations and projections are not guarantees of future performance and guidance may be updated from time to time. This report is intended to provide information to shareholders, and is not designed to be relied upon by any other party or for any other purpose, and the Company and its Directors accept no liability to any other person other than that required under English law. Latest information will be made available on the Group's website. By their nature, these statements involve risk and uncertainty, and a number of factors could cause material differences to the actual results or developments.

GROUP AT A GLANCE

Rolls-Royce pioneers cutting-edge technologies that deliver clean, safe and competitive solutions to meet our planet's vital power needs.

Underlying revenue mix in 2018



Free cash flow

£568m

Underlying revenue

£15,067m

Reported revenue

£15,729m

Underlying operating profit

£616m

Reported operating loss

£(1,161)m

Read more in our Business Review on pages 24 to 40.

Order backlog **

£63.1bn

Patents approved for filing

892

Gross R&D expenditure

£1.4bn

Countries

50

Employees (year average)

54,500

* see page 40 for definition of non-core businesses.
** see page 14 for definition of order backlog.

Our core businesses in 2018

Civil Aerospace

Civil Aerospace is a major manufacturer of aero engines for the large commercial aircraft, regional jet and business aviation markets. The business uses engineering expertise, in-depth knowledge and capabilities to provide through-life support solutions for its customers.

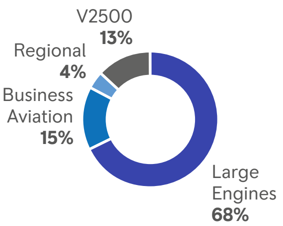
Underlying revenue

£7,378m

Underlying operating loss

£(162)m

Underlying revenue mix



See page 24

Power Systems

Power Systems is a leading provider of high-speed and medium-speed reciprocating engines and complete propulsion systems. It serves the marine, defence, power generation and industrial markets and includes civil nuclear operations that supply safety-critical systems.

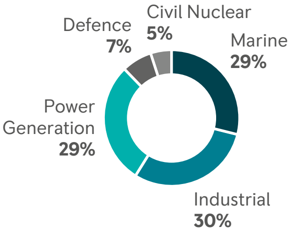
Underlying revenue

£3,484m

Underlying operating profit

£317m

Underlying revenue mix



See page 30

Defence

Defence is a market leader in aero engines for military transport and patrol aircraft with strong positions in combat and helicopter applications. It has significant scale in naval and is the technical authority for through-life support of the nuclear power plant for the Royal Navy's submarine fleet.

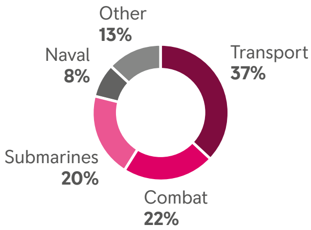
Underlying revenue

£3,124m

Underlying operating profit

£427m

Underlying revenue mix



See page 34

ITP Aero

ITP Aero is a global leader in aero-engine design, manufacture and maintenance. Alongside the development, manufacturing, assembly and testing of engines, it provides MRO services for regional airlines, business aviation, helicopters, industrial and defence applications.

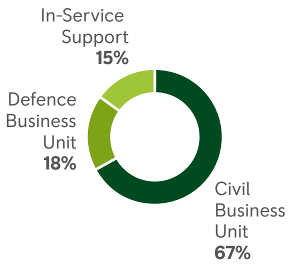
Underlying revenue

£779m

Underlying operating profit

£67m

Underlying revenue mix



See page 38

CHAIRMAN'S STATEMENT

The underlying strength of our business model is increasingly apparent. We are focused on generating strong returns and the cash flow that will allow us to compete even more effectively in what continue to be attractive growth markets. Our long-term goal is to be the world's leading industrial technology company. We have the potential to achieve that.

In my statement last year I talked about the momentum that was building in our Company after a challenging period. This momentum has continued and there were some notable achievements and advances in the year, despite a significant, unanticipated operational setback in our Civil Aerospace business.

The underlying strength of our business model is increasingly apparent. After a period of heavy investment, we are now focused on generating strong returns and the cash flow that will allow us to compete even more effectively in what continue to be attractive growth markets. Our long-term goal is to be the world's leading industrial technology company. We have the potential to achieve that.

2018 Overview

We entered the year with a determination to improve our efficiency and operating performance and a refined vision and strategy (see page 10). We embarked on an ambitious restructuring programme and increased the focus of the Group by rationalising our portfolio and simplifying our corporate structure. This is an ongoing task, and pace of implementation has been uneven, but the signs of progress are clear. Your Board and management team absolutely recognise the need to improve our operational competitiveness and performance, particularly in our Civil Aerospace business.

Strategically we have sustained our investments in the technologies that will ensure our long-term competitiveness and innovation ambitions (see page 41). Advanced materials and electric and hybrid technologies will be as crucial to our success as artificial intelligence and digitalisation.

IAN DAVIS
CHAIRMAN

The successful development and adoption of digital technologies across the whole of our Group will be fundamental to both improved cost efficiency and quality, and also to our long-term growth platforms. I am particularly excited about some of our achievements in this area – for example the establishment of R² Data Labs and creation of a digital ecosystem through partnerships with start-ups and academia.

I would like to highlight the exceptional performance of Power Systems. The business has made the most of strong end markets, but additionally has made some innovative breakthroughs in services and new technologies such as hybrid power for trains. We are also seeing tangible examples of technology transfer between Power Systems and our other businesses, particularly in aftermarket services, a crucial component of the Rolls-Royce business model.

We have had setbacks, however, the most significant of which has been operational issues with our in-service fleet, particularly with our Trent 1000 engine. This has caused pain for us and even more importantly for many of our customers. In the end, businesses are there for their customers and we very much regret the disruption caused. This has been an area of continuing focus and oversight by the Board. That said, I would like to draw attention to the heroic efforts of our engineering and customer support teams (and indeed to those of our partner customers) in addressing the issues, while maintaining their absolute dedication to ensuring product safety – our most important priority.

At the time of writing we do not have clarity on the UK's withdrawal from the European Union. During 2018 we took steps to prepare for different potential outcomes with a particular focus on supply chain continuity and retaining essential capabilities. The potential risks and impacts considered by our Brexit steering group is included in the Principal Risks section in this report (see page 50) and the risks relating to Brexit were also included in our viability assessment (see page 55).

Stakeholder trust and confidence

Building credibility and trust with stakeholders is a priority. We held another Capital Markets event with our investors in 2018, at which we clarified our financial metrics and performance and provided a detailed review of our Power Systems business and of the organisational and cultural changes we are planning.

We specified our targets and ambitions for cash flow – our priority near-term financial objective – but also introduced a new measure: cash return on invested capital (CROIC). This will be a primary long-term financial measure and the basis for capital allocation decisions.

We have continued also to focus on engaging with our employees. I talk more about this in the Corporate Governance section (see page 67). Irene Dorner has been designated as Employee Champion on the Board and she has geographic support in this role from Beverly Goulet in North America. All Directors are encouraged, and expected, to visit our operations across the world and to engage with employees on these trips at open invitation Meet the Board events. This helps us to understand the culture of the Company as well as to hear employees' concerns and exciting ideas directly. Such visits also help us observe progress on key topics such as diversity and safety awareness. At the same time, it helps demystify the Board and, hopefully, makes us more human and accessible.

We continue to engage actively with governments and social organisations to understand our broader impact on issues such as the environment.

We have always pursued the goal of cleaner, safer and more competitive power, and we recognise our role and responsibility in enabling the transition to a low carbon world. We understand our obligations and are keen to partner and collaborate to find solutions while delivering on our core business purpose.

> "Strategically we have sustained our investments in the technologies that will ensure our long-term competitiveness and innovation ambitions."

Shareholder payments

Although we are emerging from a very significant investment cycle, the needs of the business are substantial. Steps have been taken in 2018 to further strengthen the balance sheet. However, it is sustainable free cash flow from within our business upon which we must base our shareholder payment strategy and we still have work to do in order to deliver that.

It is proposed that the final payment for 2018 is unchanged from 2017 at 7.1 pence per share. Taken together with the interim payment, this brings the full-year payment to 11.7 pence per share. As with past payments, the distribution will be in the form of C Shares.

Our performance has improved significantly from the position in which we found ourselves three years ago and it remains our stated objective, in the long term, to progressively rebuild payments to shareholders to an appropriate level, subject to the cash needs of the business. This reflects the Board's long-standing confidence in the strong cash generation potential of Rolls-Royce, as we build our share of the widebody engine market and benefit from the consequent increase in services revenue.

Board developments

During the year we announced the appointment of Nick Luff as a Non-Executive Director. He joined the Board following the AGM and is a member of the Audit Committee and Safety & Ethics Committee as well as the Nominations & Governance Committee. A chartered accountant and chief financial officer of RELX Group, he brings to your Board additional financial and accounting acumen. He also has expertise and experience in cyber security and is active in the oversight of this key activity – and risk – for the Group.

Looking forward

Our medium-term prospects remain bright and the long-term growth opportunities are significant. Our immediate focus is on improved financial and operational performance so that we have a sound and credible financial platform for productive long-term investment into rapidly growing markets. Our technology platforms – in gas turbines, in micro-grids and in electrical propulsion – will be fundamental to this.

We have further work to do on restructuring and on improving our internal processes and controls, and shifting the culture remains an important priority as Warren talks about in his statement.

I would like to conclude by thanking all my colleagues and co-workers at Rolls-Royce for their dedication and hard work in challenging circumstances. Their pride in the Company, and the determination to improve and develop, are one of our greatest assets.

Ian Davis
Chairman

CHIEF EXECUTIVE'S REVIEW

Our goal was to make 2018 a breakthrough year for Rolls-Royce and real progress has been made in realising that ambition. We are seeing the crucial behavioural changes we need to build momentum and sustain these positive changes.

Progress in 2018

At the start of the year I made clear that our goal was to make 2018 a breakthrough year for Rolls-Royce and real progress has been made in realising that ambition. We have taken significant strategic steps, with the simplification of our Group and subsequent launch of a more fundamental restructuring positioning us for success. We are now starting to see the crucial cultural and behavioural breakthrough Rolls-Royce requires to build real momentum and sustain the positive change seen in 2018 for the long term, in support of our aspiration to be the world's leading industrial technology company.

Underlying financial results were ahead of expectations with strong growth from Civil Aerospace and Power Systems and a steady performance in Defence and ITP Aero. We reported good growth in underlying revenues and delivered a material improvement in underlying profit and free cash flow – another step along the journey towards free cash flow of at least £1bn by 2020. During the year we extended that financial horizon, with a mid-term ambition for free cash flow per share to exceed £1, in line with our ongoing drive to increase openness and transparency with investors. The message is clear: after a decade of significant investment we are committed to delivering improved returns while continuing to invest in the innovation needed to realise our long-term aspiration.

While we achieved a number of important operational and technical milestones during the year, we faced the challenge of in-service issues with the Trent 1000 which caused significant disruption for a number of our customers, which we sincerely regret. Given the advanced nature of the engineering requirements of aerospace products, such in-service issues can occur in our industry and it is the behaviour of our Company in dealing with them which will be

WARREN EAST
CHIEF EXECUTIVE

remembered by customers. We are recognising a significant exceptional charge within our financial figures for 2018 as a result of the abnormal cost of our contribution to dealing with customer disruption, but we are managing the issues and good progress was made in the year on long-term solutions (see page 24).

Our colleagues in Civil Aerospace have worked tirelessly to minimise disruption: designing new parts and inspection techniques and gaining the necessary regulatory approvals; increasing blade manufacturing; and growing maintenance capacity. I have been particularly encouraged by the attitude of the wider business to this challenge. Everyone has rallied round and taken the necessary mitigating actions in order to accommodate the additional costs that we incurred during the year. As a whole organisation we responded and delivered, and that is a real breakthrough.

Consistent with the announcement from Airbus in early 2019 that A380 deliveries will end in 2021, we will deliver our final tranche of Trent 900 engines over the next two years. The financial impact of this has been reflected as an exceptional item. We look forward to maintaining the in-service Trent 900 fleet for many years to come.

Strategic and cultural change

We entered the year with a clear, refreshed vision to pioneer cutting-edge technologies that deliver clean, safe and competitive solutions to meet our planet's vital power needs (see page 10). Following that vision, the year began with the further simplification of the Group from five operating businesses to three core units – Civil Aerospace, Power Systems and Defence – enabling us to act with much greater pace in meeting the needs of our customers. Creating a Defence operation with increased scale, for instance, will present us with further opportunities in the future. ITP Aero, acquired in 2017, remains a separate business unit within the Group.

We also took the decision to carry out a strategic review of our Commercial Marine operations, resulting in the sale of the business, due to complete in the first half of 2019. The team in Marine has responded admirably to a significant downturn in the offshore oil & gas market to reduce its cost base, while simultaneously carving out an industry-leading position in ship intelligence and autonomous shipping. We believe, however, that its future will be better served under new ownership. This business has been reclassified within assets held for sale. During the year we sold L'Orange, which supplies fuel injection technology; enabling Power Systems to focus on other long-term, high-growth opportunities and the Group to allocate our capital to core technologies.

These strategic changes enabled us to embark upon a 24-month programme of fundamental restructuring, to create smaller and more cost-effective corporate and support functions and reduce management layers and complexity (see page 08). We expect the proposed restructuring will lead to the reduction of around 4,600 roles by mid-2020. By the end of the year our non-manufacturing headcount had reduced by around 1,300. It is never an easy decision to reduce our workforce, but we must fundamentally change the way we work.

We are replacing a heavily-centralised control culture with empowered businesses, operating within a framework, in a leaner structure with much clearer accountabilities. We have reduced the size of our head office to focus solely on corporate governance, strategy and ensuring that we fulfil our corporate responsibilities as a publicly-listed company. From the start of this year, our businesses are being supported by a Group Business Services (GBS) organisation, which pools our professional and transactional services; and an Innovation Hub, which draws together skillsets and expertise which have common application across the Group including digital capabilities, future technologies and strategic insight. This activity will foster quicker decision-making but must be accompanied by the appropriate behavioural change; only then will this breakthrough be sustained into the long term.

The move to more empowered businesses removed the requirement for a Group Chief Operating Officer role and the Executive Team is now firmly focused on driving the required cultural change across the Group. We are embedding the behaviours that we need from our people through our care framework (see page 44), starting with the newly created Enterprise Leadership Group (ELG), consisting of the top senior managers from across the Group. Formed in 2018, the ELG gathered together for the first time early in 2019 and their level of energy was palpable – a clear signal that senior leaders are highly engaged. Crucially, there is a fundamental understanding that they are, first and foremost, leaders of the whole enterprise, not solely of a business or function. That enterprise-first mentality is vital to create the collaborative and agile organisation we need to become the world's leading industrial technology company.

2018 priorities

Customers	Technology	Resilience	Financial progress
mitigate impact to rectify in-service issues, ramp up large engine production, grow service capabilities	focus through product digitalisation, electrification and revitalisation	through adaptability with a spotlight on safety, diversity & inclusion, and the highest ethical standards	delivering improving free cash flow, strengthening balance sheet, more disciplined capital allocation

Delivery on 2018 priorities

At the beginning of the year, we set out four key priorities:

Priority 1: Customers

Our simplification and restructuring will shift our centre of gravity much closer to our customers and during the year we delivered on many of our promises to them. We joined Airbus and Qatar Airways to celebrate the delivery of the first Airbus A350-1000 to enter service, the first aircraft to be powered by our Trent XWB-97 engines; welcomed the delivery of the first A350 to mainland China; and saw the handover of the first A330neo, powered by our Trent 7000, to launch customer TAP Air Portugal. Civil Aerospace deals signed during the year included Trent XWB engine and long-term TotalCare service agreements with China Eastern Airlines and Turkish Airlines. During the year, the Trent XWB passed two important milestones as the fleet recorded two million flying hours just days after the 500th engine was delivered to Airbus. The Trent 700 fleet, meanwhile, passed two even greater milestones as the fleet recorded 50 million flying hours and the 2000th engine delivery. We also announced our first launch customers for LessorCare, designed to meet the aftermarket needs of aircraft lessors, and subsequently added LifeKey, which gives customers greater control over their assets.

During the year, we launched a new engine family for business aviation, with the introduction of the Pearl, and the first engine – the Pearl 15 – will be the sole engine for Bombardier's latest business jets (see page 28).

We were selected by the UK Government to play a pivotal role in Team Tempest, providing power and propulsion for the new UK combat fighter programme; scored a significant victory with our first partnership on a major military programme with Boeing Defense, powering the US Navy's new MQ-25 Stingray aircraft; and, following a concerted effort over the past few years to get our performance back on track, 2018 saw us deliver on all our promises to the Astute and Dreadnought submarine build programmes.

We signed memoranda of understanding for hybrid rail PowerPacks in Germany, Ireland and the UK (see page 31) and increased the number of long-term service agreements with customers of Power Systems, increasing our opportunities in the aftermarket and further replicating the model we pioneered in Civil Aerospace.

For some of our customers, however, the year was marred by the in-service issues with the Trent 1000 (see page 26). Coupled with challenges within our external supply chain, the increased load placed on our test capacity by the Trent 1000 issue meant delays in deliveries of the Trent 7000 at the end of the year. Overall we delivered fewer Trent engines during the year than we anticipated, a situation which we have been working hard to address in early 2019. We also had delivery issues in our Defence and Power Systems businesses.

Priority 2: Technology

During the year we made encouraging progress on existing programmes, new demonstrators and future technologies. We are making excellent progress on our new UltraFan demonstrator (see page 41), which is not only the foundation upon which our future large civil aero engines will be based but provides underlying technologies that will support other areas of our Group. We made encouraging progress in our strategy to champion electrification: developing programmes to demonstrate small-scale full-electric and hybrid-electric flight (see page 09) and launching our own micro-grids offering (see page 32); and in our strategy to reinvent our business with new digital technologies, R^2 Data Labs – our data innovation team – delivered significant incremental value during the year for us and our customers by using new techniques and technologies. Our Digital Academy trained hundreds of employees in data innovation. As evidence of the scale of progress made in 2018, we had 892 patents approved for filing, a new record, with two-thirds related to new technologies for UltraFan, electrical and digital.

Priority 3: Resilience

During the year, we established and introduced a new simple leadership framework of behaviours and values and this will be used as a performance measure for managers this year. We successfully rolled out our new Zero Harm programme and accompanying Life Saving Rules, and continued to make progress on our health and safety medium-term goals, though unfortunately our progress has been slower than we would have liked.

We continue to make progress towards our 2020 diversity targets during the year, actively recruiting from groups typically under-represented in our sector, particularly women (see page 46). As part of our restructuring and simplification work, we have made a good start on the simplification of our management system, removing thousands of spreadsheets and reducing processes although much remains to be done in 2019 to simplify how we work.

Priority 4: Financial progress

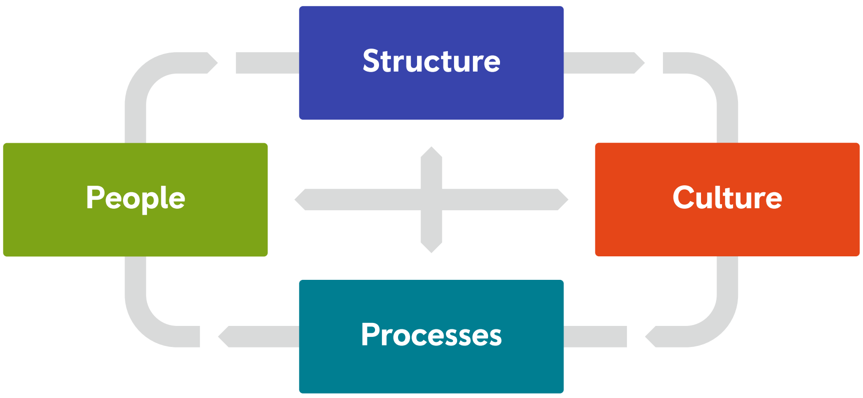
Our underlying results for 2018 were ahead of expectations (see page 18), as we benefited from increased engine flying hours and higher volumes of shop visits in Civil Aerospace; growth across most of our

OUR FUNDAMENTAL RESTRUCTURING

A significant step towards making 2018 a breakthrough year came in June with the launch of our fundamental restructuring. The 24-month programme will create an organisation that will better enable us to maximise the economic value of the very significant investments Rolls-Royce has made over the past decade; realise the growth potential embedded in our business; and seize the opportunities we see across all our markets.

We are addressing four areas: structure, culture, processes and people. They are highly interconnected and it is only by simultaneously attacking all four that we can bring about lasting change. This means looking at both reducing activity and enhancing capability.

The restructuring will create a simpler, healthier and more dynamic organisation with clearer accountabilities, greater productivity and quicker decision-making.



Creating empowered businesses, operating within a clear framework and supported by a Group Business Services organisation, will lead to a reduction in our indirect workforce.

The restructuring is being led through workstreams sponsored and owned by Executive Team members. We have challenged inefficiencies: for instance, we explored over 18,000 different job types, identifying over 2,000 activities that we can stop or significantly change. We are reducing the number of layers in the organisation and increasing the spans – the number of direct reports held by managers – closer to best practice.

end markets in Power Systems coupled with an increasing focus on growing services revenue; and Defence kept a tight control on costs, while seeking new opportunities. ITP Aero performed solidly. We achieved a modest reduction in the loss we make on widebody engine sales, though our efforts were impacted by the need to reallocate engineering resource to address in-service issues. Our cash performance was particularly strong and represents an important step in the right direction.

2019 priorities and longer-term outlook

We have established a firm foundation in 2018 on which to build the success of Rolls-Royce for the longer term. In the coming year, we will continue to focus on meeting our commitments to customers, especially in terms of fixing the current in-service issues and achieving our delivery targets.

We must continue to invest in the technologies that we need, not only to further improve our current products, but position ourselves for future growth. We must further increase diversity within our business and continue the trajectory we have established over the past few years to create real momentum behind the behavioural changes that we began in 2018. Too often, our business has looked on cost reduction measures as a short-term fix and costs have crept back into the business. We must not allow that to happen again so that we can take a further significant step towards our free cash flow ambitions. We must continue to attack costs, driving the restructuring at pace – not least because prolonged uncertainty places unwelcome strain on our people. Our longer-term outlook remains very positive. We have invested significantly over the past decade to build a commanding position in our core growth market of civil aerospace. Since 2010, we have invested significantly in cutting-edge research and development, world-class factories and modern facilities. We have launched six new civil engines including the world's fastest-ever selling civil large engine, the Trent XWB, and amassed orders for around 2,300 aero engines for widebody aircraft. As a result of our innovation and investment, we are well positioned to become the world leader in large aircraft engines.

Our restructuring will help us maximise the economic value of our past investments, realise the growth potential embedded in our business and seize the opportunities we see across all our markets. In order to make that sustainable, however, we must embed behavioural change throughout the organisation. In short, what we must achieve in 2019 is to build beyond the breakthrough seen in 2018.

Building beyond the breakthrough in 2019

2019 priorities

Customers	Technology	People & culture	Financial
– Increase production volume – Expand service network – Mitigate disruption from in-service issues	– Revitalise service – Develop new engine architecture – Advance electrification projects	– Build a resilient business – Continue restructuring programme – Further simplify processes – Diversity & inclusion	– Continue improving free cash flow – Further strengthen balance sheet – Enhance capital allocation discipline

BLUE SKY THINKING

An exciting new market in aerospace for electric vertical take-off and landing (EVTOL) vehicles is being opened up by a combination of new electrical and autonomous technologies and external factors including an increasingly urban population and humanity's never-ending desire to move more quickly from A to B.

During 2018, Rolls-Royce unveiled a concept EVTOL design that could be adapted for personal transport, public transport, logistics and military applications. It could take to the skies as soon as the early 2020s. It builds upon experience we gained by providing hybrid-electric propulsion for trains, naval vessels and other applications. Any commercial introduction would involve working with strategic partners.

The initial concept vehicle uses gas turbine technology to generate electricity. In this hybrid-EVTOL configuration it could carry four or five passengers at speeds up to 250mph for approximately 500 miles.

OUR VISION AND STRATEGY

We are one of the world's leading industrial technology companies. As pioneers, we must continuously innovate to provide the best solutions. This requires us to anticipate the opportunities and challenges our customers will face.

Our vision

Pioneering the power that matters

Rolls-Royce pioneers cutting-edge technologies that deliver clean, safe and competitive solutions to meet our planet's vital power needs.

Our strategy

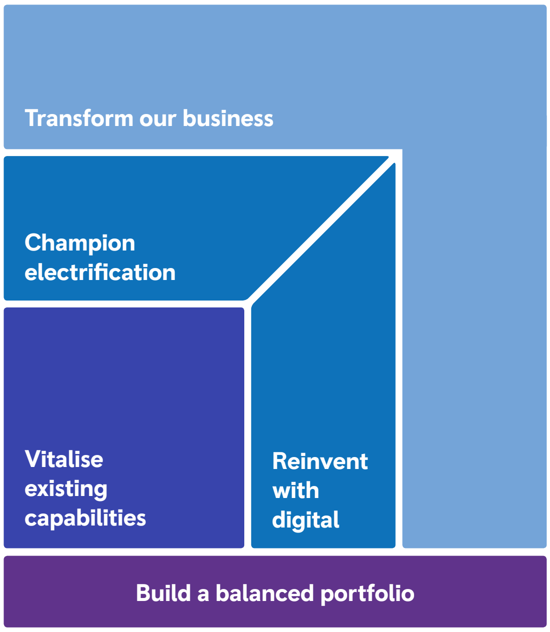
Our strategy reflects three horizons:

Horizon 1 Maintain and defend core businesses

Horizon 2 Nurture emerging businesses

Horizon 3 Create genuinely new businesses

At the same time we need to manage the transition of technologies, capabilities, resources and value across business horizons.



Our progress in 2018

Horizon 1

Vitalise existing capabilities

We are developing next generation technologies to sustain and grow our current competitiveness; investing in our existing thermo-mechanical products to ensure that they provide clean, safe and competitive solutions for our customers.

Over a 12-month period ending in 2018, Civil Aerospace put an unprecedented three new large engines into service: the Trent 1000 TEN on the Boeing 787-10, the Trent XWB-97 on the Airbus A350-1000 and the Trent 7000 on the Airbus A330neo. We also launched a new business jet engine, the Pearl 15, and have made strong progress with its testing regime ahead of its entry into service on the Bombardier Global 5500 and 6500.

We continued to progress our next generation widebody engine programme by running the Advance3 demonstrator at full power for the first time. This includes a new engine core that will sit at the heart of our UltraFan demonstrator. We tested UltraFan's new lean-burn and low-emissions combustion system and signed a collaboration agreement with Airbus for the integration of the UltraFan demonstrator for flight testing.

Within Power Systems, we launched new liquid fuel and gas engines; our Chinese joint venture MTU Yuchai Power unveiled its first engine; and in India we signed an agreement to create another engine manufacturing joint venture.

In Defence, Rolls-Royce engines were selected by Boeing to power the US Navy's new MQ-25 Stingray aircraft, which will provide unmanned, carrier-based air-to-air refuelling. Each MQ-25 aircraft will be powered by a single Rolls-Royce AE 3007N engine – the latest variant of the AE family.

Horizon 2

Champion electrification

We are investing in new power solutions for our long-term success. We are building on our strong heritage in thermo-mechanical engineering to produce state-of-the-art electro-mechanical and hybrid power systems. We already successfully combine our engines in hybrid systems for trains (see page 31), naval vessels and micro-grids (see page 32) and are now taking that expertise into the air.

We are developing hybrid propulsion solutions, built around existing gas turbine engines such as the M250, for a range of civil aviation applications including personal mobility vehicles (see page 09) and larger passenger aircraft. Rolls-Royce Electrical is increasingly working with partners ranging from existing airframers such as Airbus, with whom we are partnering on the E-Fan X hybrid-electric demonstrator aircraft programme, to newer entrants including Aston Martin. Many of these technologies are likely to have potential within Defence, which is already testing electrical generators embedded within military engines.

Alongside hybrid-electric flight, we are exploring all-electric aviation, leading a project known as Accelerating the Electrification of Flight (ACCEL) to explore the use of a high-power electrical system in a demonstrator aircraft; and new technologies that could provide solutions to the challenge of energy storage.

Reinvent with digital

We are using digital technologies across our activities to generate new insights, new solutions and new opportunities. We are creating digital versions of products, processes and facilities – known as digital twins – to improve our performance and further enhance our service to customers.

At the start of the year, we launched R² Data Labs, to act as a data innovation catalyst within the business. It exists to deliver untapped value from data, acting as a development hub for new services, and a data innovation community with hundreds of employees undertaking projects within our businesses. It is also an agent for behavioural change, using data innovation sprints – short, focused bursts of activity – to solve issues and create value.

During the year, we built up a digital ecosystem, sealing partnerships with leading technology start-up accelerators and partnering with The Alan Turing Institute in the UK, Germany's Hasso Plattner Institute and Singapore's Defence Science and Technology Agency (DSTA).

New digital opportunities unlocked across the Group in 2018 included: helping airline customers use data to reduce delays and cancellations; reducing fuel costs by understanding taxiing fuel consumption, diversion flight planning and even drinking water requirements; and developing an algorithm to collect comprehensive weather data for every airport around the world. This information improves engine maintenance planning by allowing for the removal of distorting factors – such as humidity – from engine health monitoring readings, which could otherwise lead to unnecessary maintenance visits.

In Defence, data science is now being used to streamline maintenance schedules and significantly reduce disruption to customer operations. At the same time new digital products and services from Power Systems are increasing returns from the aftermarket.

Horizon 3

Transform our business

We are advancing new opportunities that could capture substantial growth and value for the Group in the future. In addition to emerging opportunities linked to our current activities, electrification and digitalisation offer the potential for completely new markets and business models. For example, in Civil Aerospace, the electrification of aircraft may transform the movement of people and freight. Similarly in Power Systems, the digitalisation of customer relationships may allow micro-grids to be funded directly by offering power as a service.

Rolls-Royce is seeking to act as a disruptor, rather than an incumbent. We believe that the competitive marketplaces where we operate will increasingly be shaped by new entrants and aggressive innovators from other industries. To help us participate in this process, we have established Rolls-Royce ventures to invest in and collaborate with new technology start-ups.

Build a balanced portfolio

We actively manage our portfolio of activities to ensure that technologies, capabilities, resources and value are effectively and efficiently allocated across the Group.

As part of this process, we focus on key activities that are aligned with our strategy and our business model. During the year, this led to the disposal of L'Orange and the announcement of the disposal of our Commercial Marine business.

TRENDS SHAPING OUR MARKETS

We believe three key trends will define the world's future power needs:

- the growing demand for cleaner, safer and more competitive power;
- electrification; and
- digitalisation.

As we move to a low carbon global economy, our engines will become part of broader, hybrid-electrical systems with lower emissions and environmental impacts. We will increasingly act as a systems integrator, combining our traditional mechanical expertise with electrical technology. To provide lifelong performance for our customers, we will use the huge power of digitalisation and create new insights using new technologies including artificial intelligence.

Global economic power and rising prosperity will increase demand for travel, trade and energy. Consensus forecasts are for air traffic (revenue passenger kilometres) to achieve a compound annual growth rate of approximately 4.5% over the next 20 years.

BUSINESS MODEL

Our resources

Brand
Our brand enables us to sustain relationships, secure business and attract talent.

People and culture
Our success is a result of the commitment, skills and ingenuity of our employees and their determination to be 'Trusted to Deliver Excellence'.

Technology
Our technology enables us to meet emerging customer needs.

Engineering capability
Our engineering expertise enables us to embed cutting-edge technologies into outstanding products.

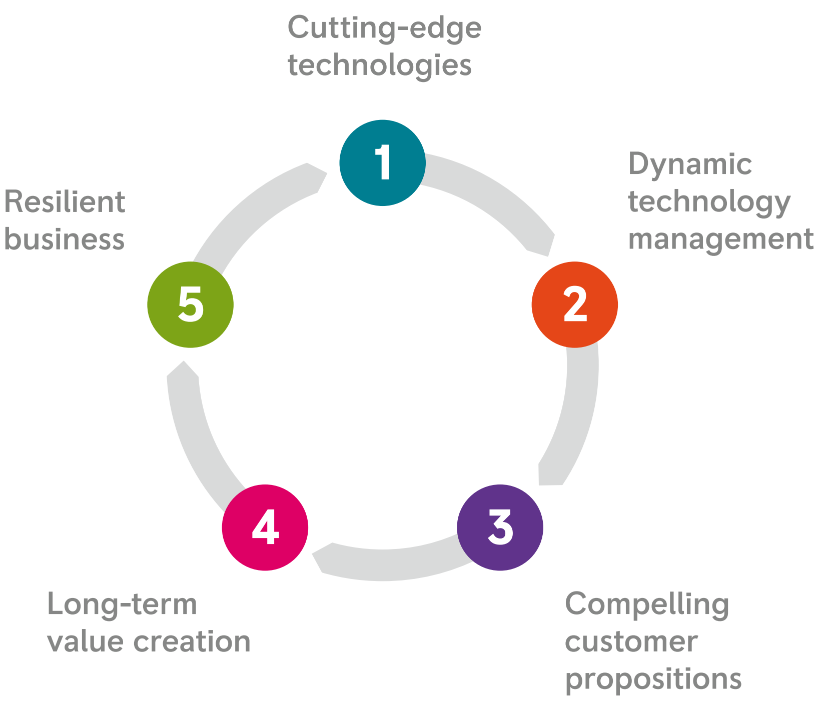
Advanced manufacturing capability
Our manufacturing processes enable us to embed advanced technologies in our products quickly and efficiently.

Service capability
Our service orientation enables our customers to focus on their core activities.

Partners
Our partners enable us to collaborate in technology, manufacturing and services.

Financial strength
Our financial strength enables us to pursue long-term cutting-edge technologies and to support our customers throughout the entire product lifecycle.

Rolls-Royce is one of the world's leading industrial technology companies. We provide power solutions for our customers which combine three elements: advanced technologies; system solutions; and system life. These are delivered as part of a virtuous cycle which begins with the development of cutting-edge technologies. We optimise the value of our power solutions throughout their lives.



Our competitive advantage comes from:

Cutting-edge technologies

We apply cutting-edge technologies to provide cleaner, safer and more competitive power. Our technologies ensure that our customers have power that meets their emerging needs.

System solutions

We package technologies into systems that provide complete solutions for our customers. Our solutions mean that our customers have power from a single, trusted partner.

System life

We care about the performance of our solutions throughout their lives. Our through-life capabilities maximise availability and enable us to meet changing customer needs.

1 Cutting-edge technologies

Cutting-edge technology allows us to meet emerging customer needs. We pursue new technologies that will help us deliver clean, safe, competitive solutions.

We identify the key horizon technologies that will generate a competitive advantage for Rolls-Royce in the long term.

Link to risks A B F

2 Dynamic technology management

Our future technological world is complex with many exciting new challenges across everything we do. We respond to this with broader and deeper collaboration with others, and with a more dynamic approach to ensure that our technology brings the most value to our customers and our business.

We are inclusive in the pursuit, co-operative in the application and aggressive in the commoditisation of technology.

Link to risks A B D F G I

3 Compelling customer propositions

Our customer relationships are our greatest strength. We offer our customers a combination of advanced technology, in a complete systems solution, optimised throughout its life.

We create combinations of technology, systems and aftermarket performance that make our customers more competitive.

Link to risks A B C D F G

4 Long-term value creation

Our activities are complex and global. We share best practice across the Group and assess where and how activities can offer the best value.

Link to risks A B D G

5 Resilient business

Our activities have a major impact on our planet, the global economy and on communities. To ensure that we are free to operate and invest for the long term, we are thoughtful and careful about the business we undertake, our financial resources and our wider impact.

We build balance in our activities, strength in our balance sheet and behave sustainably.

Link to risks C D E F H I J

Value creation for our stakeholders in 2018

Customers
We develop product solutions that improve our customers' competitiveness.

Gross R&D expenditure
£1.4bn

Investors
We generate attractive returns for investors over the long term.

Total shareholder return
3.4%

Employees
We create an environment where each employee is able to be at their best.

Invested in training and development
£27.1m

Partners
We create partnerships based on collaboration where each partner benefits from the relationship.

Spend with external suppliers
£10.1bn

Communities
We improve the communities that we impact locally, nationally and globally.

Hours of employee time volunteered
91,000

Governing bodies and regulators
We aim to create trusted relationships with governing bodies and regulators, meeting all legal and regulatory commitments and requirements.

Stakeholder engagement page 66

Our power solutions create revenue from:

- **original equipment**
- **maintenance, repair and overhaul**
- **additional products and services**

Our intimate knowledge of our customers and our products enables us to optimise the value of our power solutions throughout their lives. We share this value with our customers by offering power as a service.

Revenue recognition page 115

Link to principal risks

- A Strategic transformation
- B Competitive environment
- C Cyber threat
- D Major product programme delivery
- E Business continuity
- F Safety
- G Talent and capability
- H Market and financial shock
- I Compliance
- J Political risk

Principal Risks page 50

KEY PERFORMANCE INDICATORS

Financial key performance indicators

Description	Why we measure it	How we have performed	
Order backlog [1] △ £63.1bn	We measure our order backlog as an indicator of future business.	We had a 15% increase in Group order backlog, primarily driven by Civil Aerospace with ANA TotalCare signed on the Trent 1000, Trent 7000 inclusion and new orders on the Trent XWB. Significant growth in Power Systems of 29% and 17% growth in Defence.	£bn 2018 63.1 2017 55.0
Underlying revenue △ £15,067m	Monitoring of revenue provides a measure of business growth. [2]	Underlying revenue rose 8% organically, with 15% growth in Power Systems, reflecting strength across almost all end-markets. Civil Aerospace revenue was up 12% led by strong growth in services. Defence revenues were broadly stable year-on-year.	£m 2018 15,067 2017 13,671 2016 13,783 2015 13,354 2014 13,864
Self-funded R&D as a proportion of underlying revenue △ 7.6%	This measure reflects the need to generate current returns as well as to invest for the future. [3]	Disciplined control of spend kept R&D stable as a percentage of sales, with self-funded R&D increasing to £1.14bn. This was primarily due to expenditure within Civil Aerospace, focused on new engines coming into service, progress on next generation technologies, and business jet development programmes.	% 2018 7.6 2017 7.6 2016 6.8 2015 6.2 2014 5.9
Capital expenditure as a proportion of underlying revenue △ 6.0%	To deliver on its commitments to customers, the Group invests significant amounts in its infrastructure. [4]	Capital expenditure rose 70 basis points as a proportion of revenue, reaching £905m in absolute terms. This reflects investment in capacity across our large engine manufacturing footprint as we ready ourselves for future growth, and investment in Defence as part of our commitment to the next generation submarines programmes.	% 2018 6.0 2017 5.3 2016 4.2 2015 3.6 2014 4.7
Underlying operating profit △ £616m	This measure reflects the Group's underlying economic performance taking account of its hedging strategies. [5]	Organic growth of £253m, driven by strong revenue growth in Civil Aerospace and Power Systems, our focus on reducing costs and higher capitalised R&D. This was achieved despite significantly higher contract accounting adjustments in the year.	£m 2018 616 2017 306 2016 915 2015 1,492 2014 1,681
Free cash flow £568m	In a business requiring significant investment, we monitor cash flow to ensure that profitability is converted into cash generation, both for future investment and as a return to shareholders. [6]	Free cash flow more than doubled, driven by working capital management, material growth in engine flying hour receipts and increased customer deposits. This was partly offset by higher capital and R&D spend and increased costs to resolve Civil Aerospace Trent 1000 in-service issues.	£m 2018 568 2017 259 2016 100 2015 179 2014 447

New financial key performance indicators for 2018

Description	Why we measure it	How we have performed	
Cash flow per share 30.6p	Cash flow per share ensures alignment with shareholder interests and is a key measure of the economic performance of the business. [7]	Significant increase, reflecting strong improvement in free cash flow and a modest increase in share count as a result of shares issued for the purchase of ITP Aero.	p 2018 30.6 2017 14.1
Cash return on invested capital (CROIC) 12%	In a capital-intensive industry, CROIC is a key measure of the efficiency of our capital invested to generate cash flow. [8]	The modest decline reflected increased cash generation from our in-service engine fleet, which was offset by higher Trent 1000 in-service costs and growing levels of R&D and capital investments in recent years.	% 2018 12% 2017 13%

Non-financial key performance indicators †

Description	Why we measure it	How we have performed	
Customer delivery 83%	To deliver on our commitments to our customers we measure the percentage of on-time deliveries to our customers including new equipment, spare parts, equipment repair and overhaul. This is tracked Group-wide in our scheduling and order fulfilment system.	This year we fell short of both our 2018 target of 92% and previous year's achievement. This was due to a shortfall in widebody build and invoiced deliveries, most evident on the Trent 7000. The shortfall was due to the significant ramp-up in new engine programmes and parts supply constraints.	% 2018 83% 2017 91% 2016 88%
Employee engagement 75	This is measured through our employee opinion survey which produces a composite sustainable engagement score. The targets are based on absolute scores for six key questions within the overall survey.	Our employee engagement score was 75 in 2018, which was the same as the previous two years but fell short of our target by one point. The score was maintained during a period of significant transformation and restructuring within the organisation.	2018 75 2017 75 2016 75

Notes

△ Following the adoption of IFRS 15 in 2018, the 2017 figures have been restated.
† These non-financial performance indicators are linked to our remuneration structure.

Reconciliation to statutory results are included in the notes as referenced below:

1 Following the adoption of IFRS 15 in 2018, unrecognised revenue in accordance with IFRS 15 is disclosed in note 2 to the Consolidated Financial Statements. Order backlog, also known as unrecognised revenue, measures the amount of revenue on current contracts that is expected to be recognised in future periods and hence is measuring a similar, but not identical indicator to the order book previously shown. To avoid presenting two different measures of a similar indicator, from 2018 we will use the IFRS 15 measure and have renamed it 'order backlog' to distinguish it. In 2017 and earlier, we measured the order book at our long-term planning exchange rate (LTPR) and list prices and included both firm and announced orders. In Civil Aerospace, it is common for a customer to take options for future orders in addition to firm orders placed. Such options are excluded from the order backlog. In Defence, long-term programmes are often ordered for only one year at a time. In such circumstances, even though there may be no alternative engine choice available to the customer, only the contracted business was included in the order backlog. We only included the first seven years' revenue from long-term aftermarket contracts.
2 Underlying revenue is used as it reflects the impact of our foreign exchange (FX) hedging policy by valuing foreign currency revenue at the actual exchange rates achieved as a result of settling FX contracts in the year. This provides a clearer measure of the year-on-year performance. See more in note 2 on page 124.
3 We measure R&D as the self-funded expenditure before both amounts capitalised in the year and amortisation of previously capitalised balances. We expect to spend approximately 5% of underlying revenue on R&D although this proportion will fluctuate depending on the stage of development of current programmes. We expect this proportion will reduce modestly over the medium term.
4 All proposed investments are subject to rigorous review to ensure that they are consistent with forecast activity and will provide value for money. We measure annual capital expenditure as the cash purchases of property, plant and equipment acquired during the period; over the medium-term we expect a proportion of around 4%.
5 In particular: (a) revenue and costs denominated in US dollars and euros are presented on the basis of the exchange rates achieved based on our FX hedge book; (b) similar adjustments are made in respect of commodity derivatives; and (c) consequential adjustments are made to reflect the impact of exchange rates on trading assets and liabilities, and long-term contracts, on a consistent basis.
6 We measure free cash flow as the movement in net funds during the year, before movements arising from payments to shareholders, acquisitions and disposals, and FX. This excludes cash cost of the 2018 restructuring plan.
7 We calculate cash flow per share using free cash flow (as defined above) and the average number of shares in issue during the year, consistent with EPS calculations. See note 6 on page 134.
8 CROIC is calculated as cash flow divided by invested capital. We measure free cash flow (as per note 26) which is then adjusted to remove R&D, PPE & software capital expenditure, certification costs, other intangibles, and working capital (excluding change in the net LTSA balance in Civil Aerospace) and operating lease payments. Invested capital is defined as the sum of 15 years net R&D investment, PPE and software at cost, certification costs, other intangibles (excluding M&A and goodwill), and working capital (excluding net LTSA balance in Civil Aerospace) and operating leases.

FINANCIAL REVIEW

Rolls-Royce delivered strong growth in 2018 profit and cash flow. This, together with the execution on our portfolio reshaping, saw a strengthening of our balance sheet. We made a good start with our restructuring plan. I am confident of delivering further progress in 2019 as we move towards making our mid-term financial ambitions a reality.

STEPHEN DAINTITH
CHIEF FINANCIAL OFFICER

Overview 2018

Rolls-Royce delivered a strong financial performance in 2018, with a material improvement in free cash flow, good growth in underlying operating profit and a strengthening of our balance sheet. These were achieved despite the operational and financial disruption caused by in-service issues with the Trent 1000. I was particularly pleased with how our invigorated management team embraced the challenges we faced on the Trent 1000, moving decisively to embed a number of mitigating actions across the Group to control costs and deliver our results, while allowing us to continue to invest for the long term.

In 2018, we incurred £431m of cash costs on Trent 1000 in-service issues. Although we are making good progress on technical fixes for the engine, a related £790m exceptional charge was taken for the full year. This reflects the abnormal portion of costs to resolve the Trent 1000 in-service issues, which fall outside the scope of our normal TotalCare costs. We expect cash costs within Civil Aerospace for these issues of around £450m in 2019, before declining by at least £100m in 2020 and stepping down materially thereafter.

We made good progress on our restructuring plan in the year. A reduction in headcount of around 1,300 was delivered in 2018 across a variety of overhead and engineering functions. Finance is embracing its own role in the drive to transform our organisation and progress was made in simplifying our processes and reducing headcount.

A £317m exceptional restructuring charge was taken in 2018, of which £223m related to our Group-wide restructuring programme announced in 2018. Cash costs incurred in 2018 were £70m. In total we continue to expect around £500m of total cash costs to be incurred on implementation of our restructuring programme, with a target to deliver around £400m of run-rate cost savings from the end of 2020.

In early 2019, Airbus announced it will cease delivery of the A380 in 2021. This decision to shorten the programme has led to us taking an exceptional item of £186m in 2018.

We achieved significant progress in 2018 focusing our portfolio and improving our balance sheet. In June we completed the disposal of L'Orange for €673m. In July, we announced the sale of Commercial Marine for a total value of £500m with expected net proceeds of around £350m to £400m. Year-end balance sheet net funds improved by £916m, moving from £305m net debt to a £611m net cash position. We remain committed to further improving our balance sheet strength with a focus on improving cash generation. We aim to maintain a strong investment-grade credit rating, while also focusing on returning shareholder payments to a more appropriate level.

At our 2018 Capital Markets event, I set out the three fundamental drivers we are pursuing to improve cash flow and returns. Progress was made in 2018 on all of these:

— in Civil Aerospace we made further positive steps in reducing OE cash deficits on widebody engines, which fell by 13% to £1.4m;

— large engine aftermarket cash margin improved materially led by the 14% growth in large engine flying hours driving up aftermarket cash receipts, which more than outstripped higher shop visit costs; and

— we remain focused on reducing commercial and administrative (C&A) costs and bringing down R&D and capital expenditure as a percentage of sales. C&A costs in our core businesses fell £18m, with further improvements targeted as we deliver further restructuring benefits.

2019 outlook

We are confident and committed to delivering further progress in 2019. We expect revenue to grow by a mid-single digit percentage, with underlying operating profit of around £700m +/- £100m.

Free cash flow should increase further to around £700m +/- £100m, as we deliver another positive step along our journey towards our mid-term ambitions.

"We are committed to generating significantly improved cash flow and returns"

Longer-term outlook

As we exit a period of significant investment in Civil Aerospace and our restructuring plan delivers benefits, we are committed to generating significantly improved returns. To do this, we must focus on: further reducing the OE cash deficit per widebody engine; increasing our aftermarket cash margins; being more disciplined in the allocation of our R&D and capital expenditure; and reducing our C&A costs growth. The restructuring programme is a key enabler to delivering such reductions in our fixed costs. Our mid-term ambition is to deliver free cash flow per share of over £1 and to generate annual cash flow return on invested capital of at least 15% through the cycle.

FINANCE TRANSFORMATION

We have made good progress on our finance transformation in 2018, embracing the drive to transform by simplifying our reporting and forecasting processes, improving our efficiency and reducing headcount and costs.

We are standardising our processes and improving the quality of data to free-up time to focus on insight and analysis, helping us to drive business performance.

Through our Finance Academy, we are investing in building our people's capabilities to support our new organisation. Investment in new systems is helping us to further improve finance efficiency.

Over time, this transformation will eliminate and automate more activity, and by leveraging Group Business Services, our new shared services environment, we will ensure that routine activities are optimised.

Core trading summary

The income statement table below and all commentary relate to the underlying [1] performance of our core [2] businesses and percentage or absolute change figures in this document are on an organic basis, unless otherwise stated.

Summary income statement – Core businesses

£m	2018	2017 [3]	Change	Organic change [4]
Underlying revenue	**14,336**	**12,786**	**+12%**	**+10%**
Underlying OE revenue	7,184	6,244	+15%	+10%
Underlying services revenue	7,152	6,542	+9%	+9%
Underlying gross profit	**2,256**	**1,998**	**+13%**	**+4%**
Gross margin %	*15.7%*	*15.6%*	*+10bps*	*-80bps*
Commercial and administration costs	(991)	(955)	+4%	-2%
Restructuring	(14)	(16)	-13%	-25%
Research and development charge	(650)	(724)	-10%	-14%
Joint ventures and associates	32	14	+129%	+150%
Underlying operating profit	**633**	**317**	**+100%**	**+71%**
Underlying operating margin	***4.4%***	***2.5%***	***+190bps***	***+140bps***
Financing costs	(150)	(106)	+42%	+38%
Underlying profit before tax	**483**	**211**	**272**	**184**
Tax	(152)	(131)	+16%	+11%
Underlying effective tax rate	31.5%	62.1%		
Underlying profit for the year	**331**	**80**	**251**	**170**
Underlying earnings per share	**17.4p**	**4.4p**	**+13.0p**	**+8.7p**

1 Underlying: for definition see note 2 on page 124.
2 Core includes: Civil Aerospace, Power Systems, Defence and ITP Aero and excludes L'Orange and Commercial Marine.
3 All prior year comparatives have been restated for IFRS 15: see note 1 on page 113 and note 27 on page 169.
4 Organic change at constant translational currency (constant currency) by applying 2017 average rates to 2018 numbers and excluding M&A, specifically ITP Aero and L'Orange.

Underlying revenue up 10%

Underlying revenue rose 10% to £14,336m reflecting growth in both OE revenue (10%) and services (9%), led by Civil Aerospace and Power Systems. Civil Aerospace revenue increased 12%, reflecting OE growth of 8% driven by large engine pricing improvements and higher volumes of spare engines to support our growing in-service fleet. Services revenue in Civil Aerospace rose 15%, reflecting growth in LTSA shop visits and higher spare parts sales. Power Systems delivered excellent revenue growth of 15% with strength across almost all of its end markets, driving double-digit growth in both OE (18%) and services (10%). Defence revenue remained stable with a modest increase in OE, offset by reduced services revenue, reflecting phasing of work on UK submarines.

Underlying gross profit up 4%

Underlying gross profit was up 4% to £2,256m with gross margins of 15.7%. Civil Aerospace gross profit was stable with good progress on reducing widebody OE engine losses and increased spare engine volumes, offset by higher negative LTSA contract accounting adjustments. Before these contract accounting adjustments, Civil Aerospace gross margins were up 100bps. Power Systems recorded lower gross margins due to product mix, despite the increased volumes. Defence gross margins were modestly weaker due to lower OE combat volumes and lower margins on submarine services revenue in the year.

Self-funded R&D cash spend up 8%; income statement charge down 14%

Gross R&D expenditure grew to £1,378m. After funding from customers and other third parties, core self-funded cash R&D spend rose 8% to £1,106m, primarily driven by: investment in new engine technologies in Civil Aerospace, specifically the UltraFan and on our new business aviation engine family; higher spend on the Trent 1000; and future programmes in Defence. Capitalisation of R&D rose from £347m to £498m reflecting the full-year impact of our revised R&D policy application as outlined at our 2017 full-year results (see note 1). Overall, the R&D charge to the income statement reduced by £102m to £650m.

C&A costs down 2%

C&A costs were 2% lower at £(991)m, reflecting the beneficial effect of reductions in non-manufacturing headcount across the Group. C&A costs as a percentage of revenue fell to 6.9% in 2018 (2017: 7.5%). Over the mid term, our ambition is to reduce C&A costs to around 5%.

Underlying operating profit up £224m

Underlying operating profit saw a material improvement of £224m on prior year to £633m, reflecting 20% growth in Power Systems to £317m, due to strong volume growth and a £189m improvement in Civil Aerospace, reflecting a number of factors:

- further progress in reducing OE unit losses in large engines, which fell by 13%;
- increased sales of spare engines and spare parts, and higher LTSA shop visit volumes;
- offset to an extent by a material increase in LTSA negative contract accounting adjustments of £276m, up £127m versus 2017; and
- £188m higher net R&D capitalisation.

Financing costs

Financing costs increased from £106m in 2017 to £150m in 2018, partly due to the inclusion of ITP Aero, which was absent from our 2017 results. Within financing, net interest payable increased to £72m (2017: £53m) driven by higher interest rates, and the carry cost associated with pre-funding our 2019 debt maturities as part of Brexit mitigation planning. This was partially offset by interest received on the L'Orange disposal proceeds.

Other underlying financing costs were £78m in 2018 (2017: £54m). The increase reflects the inclusion of ITP Aero, increased charges related to discounting of provisions and higher other financing charges.

Taxation

Core underlying taxation was £152m (2017: £131m), an underlying rate of 31.5% compared with 62.1% in 2017. The 2018 core underlying tax charge has not increased in line with profits mainly due to reductions in US tax rates and the benefit of tax credits. The reduction in the 2018 core underlying tax rate compared to the prior year is primarily driven by the increase in the core underlying profit in 2018 together with the lower US tax rate and benefit of tax credits. The rate remains high due to the impact of UK losses and the mix of profits arising in other countries with higher tax rates, predominantly the US and Germany.

Trent 1000 in-service impact

A full-year exceptional charge of £790m has been recorded to cover the full anticipated costs of the Trent 1000 in-service issues over 2017 to 2022 that are considered abnormal in nature. These abnormal costs fall outside the scope of our normal LTSA costs and largely comprise our contribution to additional customer disruption costs. This charge is an increase of £236m compared to the £554m recorded at the half year. While strong progress has been made in reducing shop visit costs compared to our prior estimates, this has been counter-balanced by an increased level of customer disruption driven by the higher than previously anticipated aircraft on ground (AOG) levels. This change in the mix of costs has driven the higher exceptional charge. The total multi-year cash impact of Trent 1000 in-service issues is now expected to be £100m higher than our prior estimates over 2017 to 2022, of which £431m has been incurred in 2018.

The treatment of such a charge as exceptional reflects a number of factors, primarily:

— the unprecedented nature of the issues with the Trent 1000 – a fleet-wide issue of an unusual and abnormal scale, impacting multiple airline customers and resulting in a significant level of AOG; and

— the fact that this technical issue has resulted in a number of separate airworthiness directives and non-modification service bulletins – a highly abnormal situation for Rolls-Royce.

The costs which have been included in the exceptional charge cover those which we would not typically incur, such as contributing to additional customer disruption costs. The total exceptional charge represents around 55% of the total estimated cash costs from 2017 to 2022. The remaining charge will be recognised over time through our normal contract accounting margins.

The total cash impact on Civil Aerospace from the Trent 1000 in-service issues in 2018 was £431m (2017: £119m). In 2019, we expect the impact to be around £450m, before declining by at least £100m in 2020 and reducing materially thereafter. All technical changes are expected to be fully embodied into the Trent 1000 fleet by 2022.

Costs to mitigate in-service issues on the Trent 900 in 2018 were £14m. Given their smaller scale, these costs will be included within our normal operational costs going forwards and not split out.

Trent 900 cancellation impact

Following the announcement by Airbus on 14 February 2019 of its plan to cease delivery of the A380 in 2021, we have assessed the impact on our Trent 900 programme and associated customers and suppliers. We have recorded an exceptional item of £186m in our 2018 results which relates to onerous contracts, tooling write-offs and the acceleration of depreciation and amortisation on associated Trent 900 programme assets.

Exceptional restructuring charge

An exceptional restructuring charge of £317m was recognised in the year (2017: £104m), of which £223m relates to the cost of our Group-wide restructuring plan as announced in early 2018. Positive progress has been made so far and we have achieved a gross reduction in headcount of around 2,000 during the year with a net reduction of around 1,300. The total expected cash cost to implement this restructuring programme remains around £500m and should be completed by the end of 2020. The remainder of the exceptional charge taken in 2018 relates to restructuring programmes that were already in place in Power Systems and Defence, reflecting actions to remove cost and improve operational efficiency.

Order backlog: unrecognised revenue under IFRS 15

IFRS 15 requires the disclosure of unrecognised revenue, the amount of revenue from our customer contracts that has not yet been traded. For OE, the policy is prescriptive, including only firm purchase orders and pricing net of any discounts. The IFRS 15 disclosure includes the entirety of any contracted aftermarket revenue.

Total unrecognised revenue at the year end under IFRS 15 was £63.1bn (2017: £55.0bn). This new disclosure replaces the valuation of the order book that we have previously published and which was prepared on a different basis.

IFRS 16

IFRS 16 is effective for the year beginning 1 January 2019 and requires the total commitments of all leases (both finance and operating leases) to be recognised on the balance sheet. In broad terms, the impact of the standard will be:

— on our balance sheet we will record an additional lease liability of £2.1bn and leased assets of £1.8bn;

— in the income statement the impact on operating profit is expected to be a £40-50m benefit as rental payments are now replaced with depreciation on the leased assets. However, higher finance costs relating to the lease liability will result in a potential £10-15m reduction in overall underlying profit before tax compared with the previous basis of accounting for leases; and

— there will be no cash flow impact.

Capital allocation strategy/KPIs

As we outlined at our 2018 Capital Markets event, a disciplined approach to capital allocation and sustaining a healthy balance sheet will play a major part in improving our long-term returns. To support this we have introduced a new key performance indicator, cash return on invested capital (CROIC), to focus on both cash generation and asset efficiency. In 2018, we generated a CROIC of 12% (2017: 13%). The modest decline reflected increased cash generation from our growing in-service engine fleet which was offset by higher Trent 1000 in-service costs and growing levels of R&D and capital investments in recent years. Our mid-term ambition is to generate a CROIC of at least 15% through the business cycle.

We also re-iterated our focus on free cash flow by introducing a cash flow per share (CPS) KPI. In 2018, core CPS improved materially to 34.5p (2017: 17.3p). We maintain our mid-term ambition of at least £1 of free cash flow per share. With improved cash generation, we aim to maintain a strong investment-grade credit rating and ultimately return to single A-grade status.

Group trading summary

Group results include core and non-core businesses. Group underlying revenue rose 8% to £15,067m, primarily driven by growth in Civil Aerospace and Power Systems, offsetting a 16% decline in non-core revenue. Group underlying operating profit improved by £253m to £616m as a result of improved gross profit and lower expensed R&D.

Group funds flow

Free cash flow

Group free cash flow improved materially by £309m to £568m, well ahead of the £259m in 2017, driven by improved trading performance, increased engine flying hour receipts in Civil Aerospace and active working capital management across the Group. This was achieved despite increased capital and R&D expenditure reflecting ongoing investment in bringing new Civil Aerospace large engines to the market and supporting our growing in-service fleet. As expected, Trent 1000 in-service cash costs were materially higher in 2018 at £431m, an increase of £312m versus 2017. Given the one-off nature of the restructuring announced in early 2018, the £70m cash costs relating to this restructuring programme are not included in Group underlying free cash flow.

Expenditure on property, plant and equipment and intangibles

The combined £1,585m investment is broadly aligned with our capital additions in the year and reflects our ongoing investment in capacity and capability projects to modernise facilities in the US, investment in systems and software applications and the capitalisation of R&D.

Working capital change

Positive contribution to cash flow from working capital in 2018 of £581m, reflecting:

- higher payables due to increased trading activity in Civil Aerospace and Power Systems. Progress on standardising supplier payment terms, around £400m benefit in 2018;
- receivables broadly neutral as volume-related growth in receivables was offset by an improvement in overdue payment collection; and
- partly offset by an increase in inventory driven by volume growth in Power Systems and the production challenges Civil Aerospace encountered in 2018.

Active working capital management includes the management of trade receivables and the provision of a supply chain finance scheme to our suppliers. The most significant driver of our underlying working capital improvement in 2018 related to standardisation of supplier payment terms, which positively impacted cash flow by around £400m.

Movement in Civil Aerospace net LTSA balance

The LTSA balance represents deferred revenue and is a core part of our business model where we receive payments from our customers in respect of our long-term service and overhaul agreements. In 2018, there was an increase of £944m, reflecting strong engine flying hour growth and associated cash receipts from customers in advance of incurring costs for engine servicing activity in Civil Aerospace.
The movement in year also reflected the negative contract accounting adjustments and foreign exchange.

Summary funds flow statement [1]

	Full year to 31 December		
£m	2018	2017	Change
Opening net (debt)/funds	(305)	(225)	
Closing net funds/(debt)	611	(305)	
Change in net funds/(debt)	916	(80)	
Underlying profit before tax	466	199	267
Depreciation and amortisation	756	652	104
Capital expenditure (PPE)	(905)	(730)	(175)
Expenditure on intangible assets	(680)	(647)	(33)
Working capital change	581	(219)	800
Civil Aerospace net LTSA balance change	944	1,379	(435)
Other	(405)	(186)	(219)
Trading cash flow	757	448	309
Contributions to defined benefit pensions in excess of underlying PBT charge	59	(9)	68
Taxation paid	(248)	(180)	(68)
Group free cash flow	568	259	309
Of which: Core free cash flow	*641*	*318*	*323*
Shareholder payments	(219)	(214)	(5)
Disposals and acquisitions	583	211	372
Exceptional group restructuring	(70)	–	(70)
Payment of financial penalties	–	(286)	286
Foreign exchange	54	(59)	113
Other	–	9	(9)
Change in net funds/(debt)	916	(80)	996

[1] The derivation of the summary funds flow statement above from the reported cash flow statement and the definition of free cash flow is included in note 26 to the Consolidated Financial Statements on page 167.

Pensions

The improvement to pension funding largely relates to the UK, as contributions agreed at the 31 March 2017 statutory valuation came into effect from 1 January 2018. In addition, we agreed to make cash contributions quarterly in arrears from 1 January 2018 (previously monthly in arrears) and benefited from a one-off cash saving in 2018. We expect to contribute around £145m in respect of the benefits accruing in 2018 (2017: £117m).

Taxation

Cash tax was higher in 2018 due to higher profits and increased payments in Germany partly offset by the benefit of the US rate reduction.

Shareholder payments

The increase relates to the higher number of shares in issue resulting from the acquisition of ITP Aero and a dividend to a non-controlling interest of £3m.

Acquisitions and disposals

L'Orange (a subsidiary of Power Systems), was sold on 1 June 2018. The inflow in 2017 relates to the funds held by ITP Aero on acquisition.

Payment of financial penalties

Following the agreements reached with investigating authorities in January 2017, a payment schedule was agreed and £286m of penalties were paid in the UK, US and Brazil in 2017. As part of that schedule, no payments were due in 2018 and further UK payments of £100m, £130m and £148m (plus interest) will be made in 2019, 2020 and 2021 respectively.

Balance sheet

Summary balance sheet

£m	31 Dec 2018 Core	31 December 2017: Exc. L'Orange and Commercial Marine	31 December 2017: L'Orange and Commercial Marine	31 December 2017: Total	Change excluding L'Orange and Commercial Marine
Intangible assets	**5,295**	4,998	567	5,565	297
Property, plant and equipment	**4,929**	4,468	190	4,658	461
Joint ventures and associates	**412**	375	–	375	37
Contract assets and liabilities	**(7,073)**	(5,766)	–	(5,766)	(1,307)
Working capital [1]	**(1,255)**	(1,050)	83	(967)	(205)
Provisions	**(1,917)**	(891)	(52)	(943)	(1,026)
Net funds/(debt) [2]	**611**	(305)	–	(305)	916
Net financial assets and liabilities [2]	**(4,117)**	(2,643)	–	(2,643)	(1,474)
Net post-retirement scheme surpluses/(deficits)	**641**	793	(55)	738	(152)
Tax	**1,026**	193	(5)	188	833
Held for sale (Commercial Marine)	**374**	506	(499)	7	(132)
Other net assets and liabilities	**22**	22	4	26	–
Net (liabilities)/assets	**(1,052)**	700	233	933	(1,752)
Other items					
US$ hedge book (US$bn)	**36.8**			38.5	
Civil Aerospace LTSA asset	**1,097**			1,027	
Civil Aerospace LTSA liability	**(5,584)**			(4,570)	
Civil Aerospace net LTSA liability [3]	**(4,487)**			(3,543)	

[1] Net working capital includes inventories and trade receivables and payables and similar assets and liabilities.
[2] Net funds/(debt) includes **£293m** (2017: £227m) of the fair value of financial instruments which are held to hedge the fair value of borrowings.
[3] In August 2018, we reported a net Civil Aerospace net LTSA creditor of £(3,559)m at 31 December 2017. Since then we further reviewed the classification of balances resulting in a change of £16m being reflected in the balance of £(3,543)m.

Excluding L'Orange and Commercial Marine key drivers of balance sheet movements were:

Intangible assets

The net increase of £297m includes additions of £680m, primarily driven by R&D capitalisation of £498m, largely relating to Civil Aerospace, together with further investment in software applications of £110m. These were partially offset by an impairment charge of £184m, primarily relating to the write-off of Commercial Marine goodwill, and £381m of amortisation in the year.

Property, plant and equipment

PPE increased by £461m. Capital additions of £974m in the year were driven by investments in Civil Aerospace to support growth. We made a number of investments to increase the capacity and capability across our businesses, including addressing Trent 1000 in-service issues in Civil Aerospace, upgrade of our Indianapolis facility in Defence and technical equipment and specialised tooling in Power Systems. We also expanded our lease engine pool to support our growing in-service widebody engine fleet. Depreciation of £523m was charged in the year.

Investments in joint ventures and associates

There was no material change in our investment in joint ventures and associates year-on-year.

Contract assets and liabilities

This represents deferred revenue and is a core part of our business model where we receive payments from our customers in respect of our long-term service and overhaul agreements. The balance increased by £(1,307)m, of which £(944)m related to Civil Aerospace. This was driven by strong engine flying hour growth and associated cash receipts from customers in advance of engine servicing activity, and the £276m contract accounting catch-up adjustment recorded in 2018. The remainder of the increase reflected growth in deposits.

Working capital

For discussion of the movement in working capital, see the explanation on page 20 within funds flow.

Provisions

Provisions increased by £1.0bn to £1.9bn. This reflected a £1.6bn charge (the majority of which relates to the exceptional items recorded in 2018), net of £0.6bn utilisation of provisions in the year. Approximately £1bn of the closing balance relates to current provisions.

Net funds

Net funds improved from a net debt position of £305m in 2017 to a net cash position of £611m. The change reflected receipt of £573m net proceeds from the disposal of L'Orange and £568m of free cash flow generation offset by payments to shareholders of £219m.

Net financial assets and liabilities

These items principally relate to the fair value of foreign exchange, commodity and interest rate contracts. There was a reduction of £1,474m, primarily relating to an adverse mark-to-market movement on the foreign exchange hedge book of £2,122m, offset by settled contracts of £684m.

Net post-retirement scheme surpluses

There was a decrease in the surplus of £152m, with a reduction of £182m in UK schemes and a £30m increase in overseas schemes. The reduction in the UK surplus was primarily the result of changes in demographic assumptions plus additional Guaranteed Minimum Pension liabilities recognised following the Lloyds Bank High Court decision, which led to an exceptional charge of £121m.

US$ hedge book

The US$ hedge book at $36.8bn remained broadly stable as contracts settled were replaced with new contracts.

Group reported results

The changes resulting from underlying trading are described on pages 18 to 20.

Consistent with past practice and IFRS, we provide both reported and underlying figures. As the Group does not generally hedge account for forecast transactions in accordance with IFRS 9 *Financial Instruments*, we believe underlying figures are more representative of the trading performance by excluding the impact of year-end mark-to-market adjustments. In particular, the USD:GBP hedge book has a significant impact on the reported results. In 2018, the USD:GBP rate fell from 1.35 to 1.28 while the EUR:GBP fell from 1.13 to 1.12. The adjustments between the underlying income statement and the reported income statement are set out in note 2 to the Consolidated Financial Statements. This basis of presentation has been applied consistently.

Reconciliation between underlying and reported results

Year to 31 December £m	Revenue 2018	Revenue 2017	(Loss)/profit before financing 2018	(Loss)/profit before financing 2017	Financing 2018	Financing 2017	(Loss)/profit before tax 2018	(Loss)/profit before tax 2017
Underlying	15,067	13,671	616	306	(150)	(107)	466	199
1 Revenue recognised at exchange rate on date of transaction	781	1,076	–	–	–	–	–	–
2 Mark-to-market adjustments on derivatives	–	–	(1)	24	(2,144)	2,648	(2,145)	2,672
1 Related foreign exchange adjustments	–	–	(23)	294	163	196	140	490
3 Trent 1000 exceptional charge	–	–	(790)	–	(15)	–	(805)	–
3 Trent 900 exceptional item	(119)	–	(186)	–	–	–	(186)	–
3 Exceptional restructuring charge	–	–	(317)	(104)	–	–	(317)	(104)
4 Effects of acquisition accounting	–	–	(175)	(129)	(8)	–	(183)	(129)
5 ITP acquisition	–	–	–	785	–	–	–	785
6 Disposal of L'Orange	–	–	358	–	–	–	358	–
7 Impairments of Commercial Marine	–	–	(155)	–	–	–	(155)	–
8 Pension equalisation	–	–	(121)	–	–	–	(121)	–
Other	–	–	(9)	(25)	10	10	1	(15)
Reported	15,729	14,747	(803)	1,151	(2,144)	2,747	(2,947)	3,898

The most significant items included in the reported income statement, but not in underlying are summarised below.

1. The impact of measuring revenue and costs at spot rates rather than achieved hedge rates increased revenue by £781m (2017: £1,076m) and reduced profit before financing by £(23)m (2017: increased by £294m). Adjustments to profit before financing include the loss on derivatives settled during the year of £219m (2017: £453m) and the impact of valuation of assets and liabilities using the year-end exchange rate rather than the underlying hedge book rate.
2. There was a mark-to-market loss on the Group's hedge book of £(2,144)m (2017: gain of £2,648m). These reflect the large hedge book held by the Group (e.g. USD $37bn); and the weakening of sterling, against the US dollar (1.35 to 1.28) in 2018. At each period end, our foreign exchange hedge book is included in the balance sheet at fair value (mark-to-market) and the movement in the year included in reported financing costs.
3. As described on page 124, the exceptional items are excluded from the underlying results. This includes the exceptional items in respect of the Trent 1000, Trent 900 and restructuring costs. These have been explained on page 19.
4. The effects of acquisition accounting were £183m (2017: £129m) and principally relate to the amortisation of intangible assets arising on the acquisition of Power Systems in 2013 and ITP Aero at the end of 2017.
5. ITP Aero was acquired on 19 December 2017 and gave rise to a bargain purchase of £303m and a revaluation of the existing stake of £482m.
6. The disposal of L'Orange in June 2018 gave rise to a gain of £358m.
7. As described on page 40, the sale of the Commercial Marine business was announced on 6 July. It has been classified as held for sale, and written down to its expected disposal value, resulting in a loss of £155m.
8. Following a High Court judgement in October 2018, the estimated costs of equalising UK pension benefits for men and women have been recognised as a past-service charge.

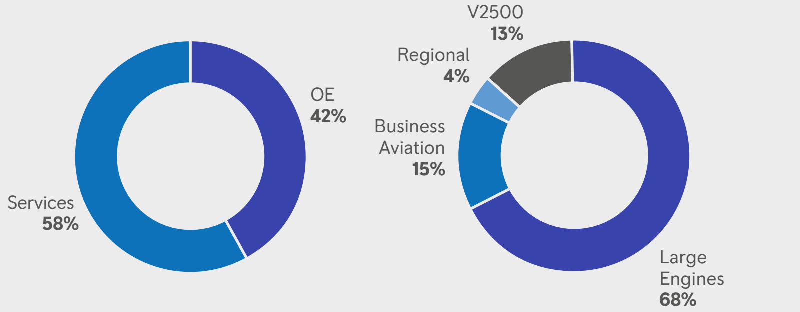
Tax effecting these adjustments resulted in a tax credit of £715m (2017: charge £360m).

BUSINESS REVIEW

Civil Aerospace

Civil Aerospace is a major manufacturer of aero engines for the large commercial aircraft, regional jet and business aviation markets. The business uses its engineering expertise, in-depth knowledge and capabilities to provide through-life support solutions for its customers.

Underlying revenue mix



Underlying revenue
£7,378m
2017: £6,598m

Underlying operating loss
£(162)m
2017: £(343)m

Order backlog
£52.3bn
2017: £45.7bn

35
types of commercial aircraft powered by Rolls-Royce engines

13,000
engines in service around the world

Trading cash flow
£201m
2017: £38m

Key highlights

- Underlying revenue growth of 12% driven by increased service activity, higher spare engine volumes and improved OE pricing
- Underlying operating loss halved to £(162)m reflecting reduced installed OE losses, higher spare engine volumes, strong servicing activity, and increased net R&D capitalisation of £188m, offsetting £127m increase in negative LTSA contract accounting adjustments
- Trading cash flow improved from £38m to £201m led by 14% growth in widebody engine flying hours and 13% reduction in average installed OE unit deficit to £(1.4)m. This was despite a £312m increase in cash costs for the Trent 1000 and higher major LTSA shop visits (up from 240 to 286). Trent 1000: 99.9% despatch reliability, accumulated 6.7 million flying hours
- Good progress introducing technical fixes on the Trent 1000 with introduction of new design for IPC blade in Package C engines and agreement to move from a hard life on the Trent 1000 TEN to an inspection regime. AOGs remained at a high level in the second half of 2018; 34 AOGs at the end of the year (2017: 18). Expect a significant improvement in AOGs over the course of 2019 reflecting the improvement in fleet health
- Milestone programme achievements; Trent 1000 TEN entered into service; launched first of a new family of engines for business aviation with the Pearl 15; Trent XWB-97 entered into service on the Airbus A350-1000; Trent 7000 entered into service on the A330neo with TAP Portugal
- Trent XWB-84; 99.9% despatch reliability, achieved 3 million flying hours, OE deficit down 32%

Civil Aerospace overview 2018

Civil Aerospace recorded good progress in 2018 with further growth in our widebody installed fleet to 4,757 engines, generating increased engine flying hour cash receipts. It was a year of milestone achievements in new engine programmes with the entry into service of the Trent 1000 TEN on the Boeing 787-10, launch of the first of a new family of engines for business aviation with the Pearl 15, entry into service of the Trent XWB-97 on the Airbus A350-1000 and the Trent 7000 on the A330neo. While another relatively quiet year for orders, we expect this to pick up in the next few years driven by replacement cycles of both medium and large widebody aircraft. Good progress has been made introducing technical fixes on the Trent 1000 where the fleet health is expected to improve through 2019.

Financial overview

£m	2018	2017	Change	Organic change
Engine deliveries (volume)	**686**	**683**	**–**	**–**
Underlying revenue	**7,378**	**6,598**	**+12%**	**+12%**
Underlying OE revenue	3,119	2,890	+8%	+8%
Underlying services revenue	4,259	3,708	+15%	+15%
Underlying gross profit	**493**	**473**	**+4%**	**+5%**
Gross margin %	6.7%	7.2%	-50bps	-40bps
Commercial and administrative	(336)	(362)	-7%	-7%
Restructuring	(8)	(11)	-27%	-27%
Research and development charge	(332)	(454)	-27%	-27%
Joint ventures and associates	21	11	+91%	+109%
Underlying operating loss	**(162)**	**(343)**	**181**	**189**
Underlying operating margin %	**-2.2%**	**-5.2%**	**+300bps**	**+310bps**

Underlying revenue

£m	2018	2017	Change	Organic change
Original Equipment	**3,119**	**2,890**	**+8%**	**+8%**
Large engines	**2,373**	2,089	+14%	+14%
Business aviation	**620**	582	+7%	+6%
V2500	**126**	219	-42%	-42%
Services	**4,259**	**3,708**	**+15%**	**+15%**
Large engines	**2,666**	2,327	+15%	+15%
Business aviation	**464**	396	+17%	+18%
Regional	**292**	277	+5%	+7%
V2500	**837**	708	+18%	+18%

Metrics

	2018	2017
Large engine deliveries	**469**	483
Average loss per widebody OE	**(1.4)**	(1.6)
Large engine in-service fleet	**4,757**	4,409
Large engine invoiced flying hours	**14.3m**	12.6m
Large engine LTSA major refurbs	**286**	240
Large engine LTSA check & repair	**569**	356
Total service revenue growth	**+15%**	n/a

Financial overview

Underlying revenue

Underlying revenue increased 12% to £7,378m, reflecting growth in OE, up 8% to £3,119m, and 15% growth in services to £4,259m. OE growth was led by large engines (up 14%) driven by improved widebody engine pricing and higher sales volumes of spare engines to support the growing in-service fleet. Revenue growth from increased sales of spare engines to joint ventures contributed £112m to revenue growth. 2018 large engine OE deliveries include initial sales of Trent XWB-97 for the Airbus A350-1000, and Trent 7000 for the A330neo, both of which entered into service in the year.

Large engine service revenue increased 15% to £2,666m (2017: £2,327m) driven by increased LTSA shop visit volumes, with major refurbishments up 19% and check & repair volumes up 60%. The growth in check and repair activity was driven by Trent 1000 part durability issues. The increase in major refurbishments reflected our maturing in-service fleet, with engines that entered service in the early part of this decade, largely Trent 700s, reaching their first refurbishment. Sales of spare parts not covered by LTSAs also increased year-on-year.

Within business aviation, OE sales were 6% higher reflecting increased demand from airframers. The 18% growth in service revenue reflected a combination of increased servicing activity and a positive contract accounting adjustment which benefitted revenue. The 7% increase in regional aviation revenue was driven by higher sales of spare parts. On the V2500, OE revenue was 42% lower, reflecting production slowdown on the Airbus A320ceo. The 18% increase in V2500 service revenue to £837m was driven by increased servicing and higher spare part sales together with a modest increase in the payment for flying hours.

Underlying operating loss

The underlying operating loss halved to £(162)m. Gross profit increased 5% to £493m with a slight deterioration in gross margin to 6.7%. Reduced installed OE losses, higher profit from increased spare engine sales and strong demand for time & materials activity drove increased gross profit. These were offset by a material negative impact from long-term contract assumption changes. Before these contract accounting adjustments Civil Aerospace gross margins were up 100bps. Under long-term accounting, variations in revenue or cost assumptions, up or down, can lead to adjustments, positive or negative, for profits that have already been recognised over the life of a programme to date; with

IFRS 15 leading to much greater volatility for such adjustments than under the previous revenue recognition standard. In 2018 there was a negative contract accounting impact of £(276)m (2017: £(149)m) which comprised three components:

- lifecycle cost benefits of £38m primarily reflecting lower servicing costs for business aviation;
- technical costs of £(80)m to reflect the reassessed costs of technical issues across various engine programmes including rectifying manufacturing quality issues on Trent 900 turbine blades; and
- higher operational costs of £(234)m reflected the latest information around future aircraft utilisation patterns and the resultant effects on shop visit cost with particular impact from mature programmes where small changes impact a significant portion of the profitability already recognised on the contract.

Self-funded R&D rose by £66m to £787m, reflecting increased investment in the new family of engines for business aviation and next generation technology, including the UltraFan demonstrator. This was more than offset by an increase in net R&D capitalisation of £188m reflecting the technical maturity across a number of programmes. It also reflected the policy application change, applied from half year 2017 that aligns with European peers and best practice. Overall the expensed R&D charge reduced from £(454)m in 2017 to £(332)m in 2018. C&A costs were 7% lower year-on-year reflecting reductions in headcount driven by our restructuring programme. The increase in profit from joint ventures and associates to £21m (2017: £11m) reflected higher shop visit volumes in joint venture overhaul bases, partly offset by ITP Aero no longer being reported as a joint venture.

Contract accounting adjustments

£m	2018	2017
Lifecycle cost benefits	**38**	17
Technical costs	**(80)**	(98)
Operational costs	**(234)**	(68)
Total contract accounting adjustments	**(276)**	(149)

Trading cash flow

Civil Aerospace trading cash flow improved £163m to £201m despite a £312m increase in cash costs on Trent 1000 in-service issues, £133m higher capital expenditure, largely on engines to support the in-service fleet and £66m higher self-funded R&D. These were more than offset by increased flying hour receipts from our growing in-service fleet, a 13% reduction in average widebody OE unit deficits, and higher volumes of spare engines.

Actions to improve working capital, included around £400m benefit from standardisation of supplier payment terms and good cash collection from a number of customers. These more than offset the growth in inventory and an outflow of OE concessions of £150m led by the changing delivery mix of our widebody engine programmes.

Trent 1000 in-service update

Since 2016, we have been undertaking a proactive maintenance programme on the Trent 1000 to address the lower than expected durability of a small number of parts. On 7 March 2018, with our full year 2017 results, we provided further detail as we progressed our understanding of the

TRENT XWB POWERS LONGEST FLIGHT

The Trent XWB, which powers the Airbus A350 family, continued its highly successful performance during 2018. The world's most efficient large aero engine powered the world's longest commercial flight. Passengers on board the Singapore Airlines Airbus A350-900 ULR flight from Singapore to New York, flew over 10,000 miles, passed through 12 time zones and experienced two nights and one short day during the 18 hour flight.

This success followed two important milestones reached during the year. The 500th Trent XWB was delivered, evidence of our continued ramp-up in production. As the fleet has continued to grow, the entire Trent XWB fleet then passed the two million flying hours milestone, recording dispatch reliability of 99.9%.

The Trent XWB is the sixth Trent engine and in 2018 we celebrated 30 years since the Rolls-Royce Board approved the start of the whole Trent programme.

technical issues impacting compressor rotor blades, and intermediate and high pressure turbine blades within the Trent 1000 engine. Subsequent to that we announced the decision to undertake more frequent inspections of the compressors of our fleet of 386 Trent 1000 Package C engines. A similar durability issue was also identified on a small number of high-life Package B engines and we agreed with the regulatory authorities to carry out a one-off inspection followed by a regular inspection regime which we have managed as part of our ongoing maintenance programme for the fleet of 166 Package B engines. Both announcements were followed by EASA and the FAA issuing airworthiness directives related to repeat inspection requirements for Package B and Package C compressors.

The Trent 1000 in-service engine issues have caused significant disruption for a number of our customers, which we sincerely regret. We continue to work hard to remedy this situation and have made further good progress on the implementation of long-term solutions during the year. We have significantly increased our Trent 1000 MRO capacity, sought ways to reduce engine shop visit turnaround times and have added approximately 50% more turbine blade production capacity since the start of the year. We recently confirmed that we have gained certification for a redesigned intermediate compressor rotor blade for Trent 1000 Package C engines, with a redesign for the Trent 1000 Package B engine to follow. In addition, we have obtained approval from the authorities to move from the current hard life for the Trent 1000 TEN on the intermediate compressor rotor drum to an inspection regime. We are also in the process of developing a redesigned blade for the Trent 1000 TEN and Trent 7000. We introduced a new intermediate pressure turbine blade with an improved protective coating to defend against sulphidation, and in relation to the high pressure turbine blades (which had impaired durability), a new blade design was made available from October 2018. Improvement in the fleet health of the Trent 1000 is expected to be most clearly seen through a declining level of AOG as we progress through 2019.

The total cash impact on Civil Aerospace from the Trent 1000 in-service issues in 2018 was £431m (2017: £119m). In 2019, we expect the impact to be around £450m, before declining by at least £100m in 2020 and stepping down materially thereafter. All technical changes are expected to be fully embodied into the Trent 1000 fleet by 2022. Costs to mitigate in-service issues on the Trent 900 in 2018 were £14m. Given their smaller scale, these costs will be included within our normal operational costs going forwards and not split out.

Operational and strategic review

Long term demand for passenger aircraft remains strong, driven by the global expansion of an increasingly mobile middle-class. We expect this to drive continued strong widebody airframe demand, with an increased focus on newer, more fuel-efficient aircraft which our engines power. The progress made by our three newest widebody engines supports our strong market position in new widebody aircraft. In March we powered the entry into service of the Boeing 787-10 Dreamliner with delivery of the first Trent 1000 TEN powered 787-10 to Singapore Airlines. February saw us join Airbus and Qatar Airways to celebrate entry into service of the A350-1000, powered by our Trent XWB-97 engine. In November we celebrated the delivery of the first A330neo aircraft to enter service with TAP Portugal, which is powered by the Trent 7000 engine. We also powered the first flight of two new aircraft, the Beluga XL transporter with the Trent 700 engine and Bombardier's latest business jet with the newly certified Pearl 15.

In 2018 we delivered 469 widebody engines, and shipped a further 11 engines to airframer OEMs. This is lower than our original projections and reflects a combination of industry wide supply chain challenges and our own early stage production ramp-up challenges on the new Trent 7000 engine. We have continued to make progress reducing large engine OE unit losses, down by 13% to £1.4m per engine. A key contributor was the 32% reduction in the Trent XWB-84 average OE loss.

Our in-service large engine fleet grew by 8% in the year to 4,757 engines with widebody engine flying hours increasing 14%, driven by growth in our Trent 700, Trent 1000 and Trent XWB fleets. The Trent 700 fleet, which represents 34% of our in-service fleet with over 1,600 installed engines in service, celebrated its 2,000th delivery in December and has now flown over 50 million flying hours. This has become the engine of choice for Airbus A330ceo customers. Our Trent XWB-84 engine, which represents 9% of our in-service widebody fleet, has now achieved over three million flying hours and in 2018 powered the world's longest commercial flight. As the world's fastest-selling widebody engine with around 1,300 engines on order and excellent reliability, our Trent XWB engines will be a key driver of the continued growth in our share of the passenger widebody market.

At 2,288 engines our current total widebody order book supports continued growth in market share and in our installed base, delivering strong service revenues for decades.

In October Delta TechOps, based in Atlanta, US, joined our expanded service network for widebody engines when it began operations as a Trent authorised maintenance centre to carry out services on the Trent 1000, Trent 7000 and Trent XWB engines. We also took steps during the year to increase our engine testing capacity, signing a lease with American Airlines for a testbed in Texas, US and entering into an agreement with Thai Airways International to support maturity testing. Work continues to progress well on the construction of a new testbed in Derby, UK for the next generation of engines.

We continue to see positive signs of recovery in the business aviation market and are well placed to respond with our new family of Pearl engines, launched earlier this year with the Pearl 15 to power the new Bombardier Global 5500 and Global 6500 aircraft. This supports our strategy of regaining market share in this sector and reaffirms our position as the top engine supplier in the long range, large cabin sector of the market. We also announced the expansion of our global network of authorised service centres for our business jet customers.

We have made excellent progress on our future technology programmes. As part of the continued development of our new UltraFan demonstrator, we ran our Advance3 demonstrator at full power for the first time and successfully started icing tests on our new lean burn and low emission combustion system (ALECSys). The UltraFan programme is not only the foundation for our future large civil aero engines but also provides underlying technologies that will support other areas of our business.

PEARL SET TO SHINE IN THE BUSINESS JET MARKET

During the year, we proudly unveiled the first member of a new engine family for the next generation of business jets. The Pearl 15 is the first of the planned Pearl engine family for business aviation and marks the sixth new civil aerospace engine introduced by Rolls-Royce in the past decade.

The Pearl engine combines innovative technologies derived from the Advance2 technology demonstrator programme with proven features from the Rolls-Royce BR700, today's leading engine family in business aviation. The Pearl 15 will be the sole engine for Bombardier's latest business jets, the Global 5500 aircraft and the Global 6500 aircraft, strengthening our leading position in business aviation.

Alongside its luxury connotations, the name Pearl continues the Rolls-Royce tradition of naming engines after rivers: there are Pearl rivers in China and the US, both key markets for business aviation.

Encouraging progress was also made in our strategy to champion electrification. We are developing programmes to demonstrate small scale full-electric and hybrid-electric flight. We continue to design and deliver new digital services for our customers under the banner of our IntelligentEngine vision. With the support of our newly-established R^2 Data Labs team we are able to combine our pioneering technology with advancements in the digital arena to deliver greater reliability, efficiency and value.

We continued to develop our service proposition for our aircraft lessor customers and have introduced LessorCare. We now have 15 customers covering around half of our leased widebody fleet. LessorCare provides faster and easier access to lessor services, whilst maximising returns on investment. Subsequently, we added LifeKey, which gives customers greater control over their assets by offering greater visibility, accessibility, portability and liquidity.

Civil Aerospace outlook

Our current widebody order book supports the continued growth of our large engine installed base, which in turn will drive ongoing engine flying hour growth. Revenue and profit improvements will be led by continued reduction in OE deficits and increased servicing activity. In 2019 we expect these dynamics to deliver around 10% revenue growth and operating profits to be closer to break-even. We expect cash costs for the Trent 1000 in-service issues to be around £450m in 2019. Given the smaller scale of the Trent 900 in-service costs, these will no longer be reported separately.

THE FUTURE OF ENGINE MAINTENANCE

We have teamed up with robotics partners including Harvard University and University of Nottingham to explore how robots could revolutionise the future of engine maintenance. 'Inspect' robots could be embedded within an engine to improve monitoring; 'snake' robots could work their way into it for inspections; or tiny collaborative 'swarm' robots could fix it.

Operating environment

Rolls-Royce key differentiators

Our continued development of advanced world-leading technology, culture of partnership with customers and innovation in services are attributes that Civil Aerospace customers really value and are difficult to imitate. These differentiators will maintain the business' position at the forefront of the civil aerospace industry.

Market dynamics

- The slow-down in new aircraft orders highlighted in 2017 has continued through 2018 across all regions. These market conditions were to be expected after the high levels of order placement over the past few years, as airlines absorb the increased capacity. There has been a slowdown in overall growth in air travel; however, it remains robust and higher than historical averages.
- Demand growth for air travel in all regions has remained resilient to recent geopolitical uncertainties, and historically growth has recovered quickly following major economic shocks. A broad consensus forecasts that air traffic (revenue passenger kilometres) will grow by approximately 4.5% compound annual growth rate over the next 20 years.
- The business jet market is seeing order intakes improve on US demand, growth elsewhere is more tentative with some concern over the prospects for world trade.

Opportunities

- The business has a strong and growing market position on widebody aircraft produced by the world's two major aircraft manufacturers: Airbus and Boeing. The current share of the widebody engine market is 36% of the installed passenger fleet and is expected to approach 50% early in the next decade.
- The increasing size of the installed base delivers significant services growth opportunities. 90% of the current Rolls-Royce widebody fleet is covered by TotalCare service agreements.
- The business continues to invest in technologies to enhance the existing and near-future product portfolio. In parallel, a number of engine demonstrators with embedded electrical generators have been successfully run; and work on innovative hybrid aircraft demonstrator projects is ongoing.
- The launch of the Pearl family of engines and the winning of its first application with Bombardier reinforces and secures our long-term position in the business jet sector.
- China's COMAC and Russia's UAC joint venture, the China Russia Commercial Aircraft International Corporation (CRAIC) has been formally incorporated. CRAIC plans to develop the CR929, a long-haul widebody aircraft. Rolls-Royce is actively exploring this opportunity.

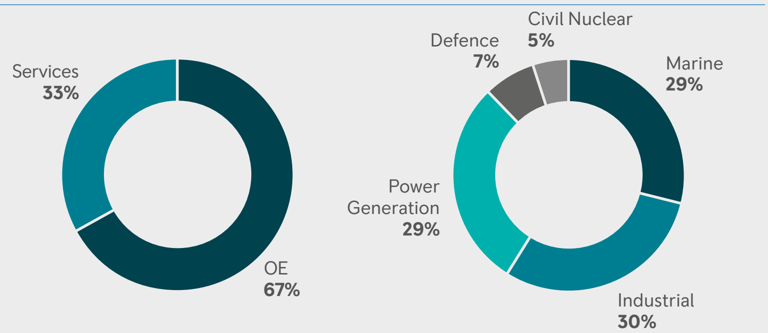
Business risks

- If our products do not achieve their required technical attributes and maturity, then product performance, customer satisfaction, unit costs and aftermarket costs may be impacted and could result in financial and reputational damage.
- If a major product failure in service is experienced, then this could result in loss of life and significant financial and reputational damage.
- If an external event or severe economic downturn significantly reduces air travel and thereby reduces engine flying hours and demand for aircraft, then financial performance may be impacted.
- If aircraft manufacturer customers significantly delay their production rates or we cannot ramp up capacity to deliver planned production and services, then financial performance may be impacted.
- If our internal or external supply chain is not sufficiently resilient to events that affect our operations, then this could result in significant financial and reputational damage. We have taken appropriate mitigating actions against the potential risks relating to Brexit (see page 50).
- If the business experiences significant pricing pressure from increased competitor challenge in key markets, then financial performance may be impacted.
- If there are significant changes to the regulatory environment for the airline industry, then the market position of the Civil Aerospace business may be impacted.

Power Systems

Power Systems is a leading provider of high-speed and medium-speed reciprocating engines and complete propulsion systems. It serves the marine, defence, power generation and industrial markets and includes civil nuclear operations that supply safety-critical systems to approximately half the world's nuclear power plants.

Underlying revenue mix



Underlying revenue
£3,484m
2017: £3,008m

Underlying operating profit
£317m
2017: £261m

Order backlog
£3.1bn
2017: £2.4bn

>20,000
reciprocating engines sold per year

>1,200
development, production, service and dealership locations

200
reactors in 20 countries where Rolls-Royce nuclear technology is installed

Key highlights

- Underlying revenue increased by 15% driven by 18% growth in OE, with some pre-buy ahead of emission regulation changes, and 10% growth in services; reflecting strong performance across key market segments
- Underlying operating profit improved 20% driven by higher volumes
- Order intake growth of more than 20% reflecting strength across a diverse range of end markets
- Continued focus on service growth with ValueCare agreements gaining momentum
- New power generation products developed for data centre applications and micro-grids to help meet increasingly stringent environmental regulations

Power Systems overview 2018

Power Systems made excellent progress in 2018 driven by strong demand in key markets and ongoing actions taken by our new leadership, with an increased focus on manufacturing efficiency. Our significant installed base of engines across a broad range of end markets, new lifecycle service solutions, increased digital penetration, and greater R&D discipline, underpin our confidence for the future.

Financial overview

Commentary excludes L'Orange which has been treated as non-core following its disposal in June 2018.

Financial overview

£m	2018	2017	Change	Organic change
Underlying revenue	**3,484**	**3,008**	**+16%**	**+15%**
Underlying OE revenue	2,322	1,956	+19%	+18%
Underlying services revenue	1,162	1,052	+10%	+10%
Underlying gross profit	**882**	**797**	**+11%**	**+10%**
Gross margin %	25.3%	26.5%	-120bps	-120bps
Commercial and administrative	(377)	(350)	+8%	+7%
Restructuring	(1)	(1)	–	–
Research and development charge	(188)	(181)	+4%	+3%
Joint ventures and associates	1	(4)	n/a	n/a
Underlying operating profit	**317**	**261**	**+21%**	**+20%**
Underlying operating margin %	**9.1%**	**8.7%**	**+40bps**	**+40bps**

Underlying revenue

Underlying revenue of £3,484m increased by 15%. OE revenue rose by 18% driven by strong demand across a broad range of end markets. Key contributors were commodity related markets, emissions regulatory led demand in construction and agricultural sectors and increased governmental project volumes. In power generation the strong demand for diesel and gas systems was partly offset by the tough comparison base following high levels of Chinese demand in 2017.

Services revenue increased by 10%, primarily due to improved commodity markets driving higher engine running hours and increasing demand for spare parts. The growth in major maintenance activities, in particular with ferry operators, as well as the growth in service activity in the Middle East also contributed to the growth. Good revenue growth on long-term service contracts reflected our earlier success in securing new contracts in rail and marine markets.

Underlying operating profit

Overall underlying operating profit rose 20% to £317m, led by increased sales volumes. Gross profit rose £78m reflecting this volume growth albeit product mix changes saw gross margin decline 120bps to 25.3% as a result of strong growth in lower margin construction and agricultural activity. C&A costs of £(377)m were 7% higher year-on-year due to pay escalation and strategic investments. The 3% increase in our R&D charge reflected increases in investment in future engine platforms and progress on our electrification strategy and automation engineering capabilities.

LAYING THE TRACKS FOR QUIETER, CLEANER RAIL TRAVEL

Power Systems has a long heritage of innovation on the world's railways. Now, our hybrid-electric PowerPacks are writing a new chapter of environmentally-friendly, quieter and more efficient rail travel.

The MTU Hybrid PowerPack combines the advantages of diesel and battery-powered rail traction. It helps reduce emissions, increase fuel efficiency and improve the lives of people who live near stations as it runs more quietly than conventional trains. It also represents a more economic way of moving to lower carbon rail transport than full electrification as it does not require the installation of overhead power lines.

During the year, we announced letters of intent with seven partners in the UK, Ireland and Germany for the future delivery of several hundred MTU Hybrid PowerPacks.

SMALL-SCALE, BIG POTENTIAL

Renewable energy projects often face the challenge of maintaining a reliable energy supply when weather conditions are unfavourable. Small-scale, autonomous electricity networks – or micro-grids – that combine co-generation plants, diesel or gas powered gensets and renewable sources, with batteries and a control system, can provide a real solution.

During the year Power Systems launched turnkey micro-grids and began construction of a micro-grid validation centre in Friedrichshafen, Germany, enabling customers to see just what such a system can deliver. As a micro-grid provides security of supply, it can help to boost the take-up of renewable energy and further assist in the global transition to a low carbon economy.

Operational and strategic review

Conditions across Power Systems' diverse end-markets remained robust throughout 2018. Recovery in the mining and onshore oil & gas industries, where we saw increased utilisation after several challenging years, drove strong aftermarket service demand. Increasingly stringent diesel engine emissions regulations drove some pre-buy in 2018, ahead of regulation changes that will take effect in 2019. The exponential growth in data usage and subsequent expansion of data centres drove increasing demand for back-up power solutions with Power Systems' products. The combination of rising energy demand in developing countries and the expansion of renewable energy sources led to an increase in demand for our flexible power solutions and products such as micro-grid, hybridisation, gasification, electrification and energy storage.

We have made investments, both organic and inorganic, and formed new partnerships to support our strategy to become an integrated solutions provider. Customers are focusing on lifecycle performance, energy optionality and responsiveness and have an increasing requirement for digital capabilities. As an example, we launched turnkey micro-grid solutions and took a strategic stake in the Berlin-based start-up Qinous to develop energy storage and further micro-grid capability.

We continue to make progress increasing our focus on service solutions. Lifecycle service contracts such as ValueCare agreements continue to gain momentum with several new contracts signed during the year. The increased number of long-term service agreements with customers of Power Systems expands our aftermarket opportunities and follows the successful model pioneered in Civil Aerospace.

Demand for civil nuclear energy remains strong, particularly in those nations where clean energy policies are focused on finding solutions with attractive economics. This plays well to our SMR solution, starting in the UK with further export potential in the longer term.

Order intake remained strong with more than 20% year-on-year growth driven by the recovery of key markets, including mining, yachts and onshore oil & gas, the latter being supported by higher oil prices. Power generation orders continued to grow with an increasing number of data centre projects. We secured the first letters of intent for hybrid rail systems with Porterbrook and Irish Rail for the MTU Hybrid PowerPack. This powerpack is an eco-friendly drive system combining the best of diesel and battery-powered rail traction. It will deliver up to 33% lower fuel consumption and CO_2 emissions, a fall in noise levels around railway stations of as much as 75% and significantly lower operating costs.

In the second half of the year a new operations strategy was launched that focuses on footprint efficiency and production flexibility. In addition, digital solutions introduced into our facilities have led to efficiency gains.

Future growth was underpinned by the introduction of a number of new products during the year. In power generation major product launches included the S4000 L64 PowerGen gas engine and the S4000 PowerGen diesel engine. Increasingly stringent emissions regulation led to the launch of the S1000–S1500 EU Stage V Diesel Engines for agriculture, commodity and industrial applications. The new generation S4000 marine diesel engine was launched meeting the latest emission legislations and was commissioned by US ferry operator WETA.

R&D continues to focus on gas strategies power generation applications, a new generation of automation systems and strengthening our electrical design competence. In 2018 we focused our engineering resources to reflect new requirements for systems solutions and expanded globally with the enlargement of our India R&D facility. Work is being carried out on a number of forward-looking technology development concepts, including the use of alternative fuels and fuel cells.

Power Systems outlook

As we enter 2019 our confidence for the year ahead is underpinned by significantly improved order coverage than at this point last year. After the strong pre-buy effect in 2018, revenue growth is expected to moderate to mid single-digit growth supported by continued tightening of emission regulations, increasing data storage requirements and the growth of lifecycle solutions. Operating margins are expected to increase by around 100bps and we remain on track to realise our mid-teens operating margin ambition in the mid-term.

Operating environment

Rolls-Royce key differentiators

Technology leadership and a reputation for market-leading performance and system approach, new product innovation, full lifecycle service solutions and high levels of customisation in collaboration with customers will maintain a strong market position for Power Systems.

Market dynamics

— Almost all OE markets continued to improve in 2018, with the exception of the offshore marine markets. There is strong demand in mining and onshore oil & gas markets.

— Increased utilisation in resource industries, especially oil & gas and mining, is driving aftermarket service demand after several years of challenging market conditions.

— There continues to be increasingly stringent government regulation in most markets with regards to emissions from diesel engines.

— The industry is increasingly focused on service solutions, electric and hybrid power solutions as well as renewable energy solutions and digital capabilities; this is stimulating organic and inorganic investments and accelerating acquisitions and partnerships.

— Power Systems is experiencing increasing competition in its core markets as existing competitors launch new engine series and new players emerge with new technologies, for example battery container offerings from adjacent industries such as automotive.

— The civil nuclear market has strengthened in areas with set energy policy and financing mechanisms but weakened in areas where GHG reductions are not being prioritised.

Opportunities

— Rising energy demand in developing countries in combination with expansion of renewable energy sources will increase the demand for flexible power solutions and products beyond combustion engines (for example, micro-grid, hybridisation, electrification, energy storage and gasification).

— There is continued growth forecast in emerging markets, for example China and India, where domestic partnerships including local value creation will continue to be important.

— Tightening emission regulations in several regions will require clean diesel solutions where the business is well positioned (for example S4000 engine).

— Exponentially growing data usage requires rapid expansion of data centres and infrastructure and therefore corresponding back-up power solutions, Power Systems power generation systems are in particular demand due to their reliability.

— Increased utilisation in recovering resource markets due to wear and tear of existing fleets is leading to emerging services opportunities.

— Nuclear energy demand remains significant across developed nations, with the need for attractive economics and ability to finance dominating customer requirements. Our SMR technology is well placed to meet these requirements, with opportunities in the UK, Eastern Europe, the Middle East and Canada.

Business risks

— If electrical storage technologies develop faster than anticipated, then these may substitute Rolls-Royce products and/or affect margins.

— If other players in the industry consolidate, then they may generate synergies or capabilities that outpace the ability of the business to get new products and services to market.

— If new disruptive service models, for example 3D printing of spare parts or new digital service models, are offered by competitors, then we may lose attractiveness and competitive edge.

— If the industry fails to tackle the current supply chain constraints, then the market demand cannot be met as anticipated.

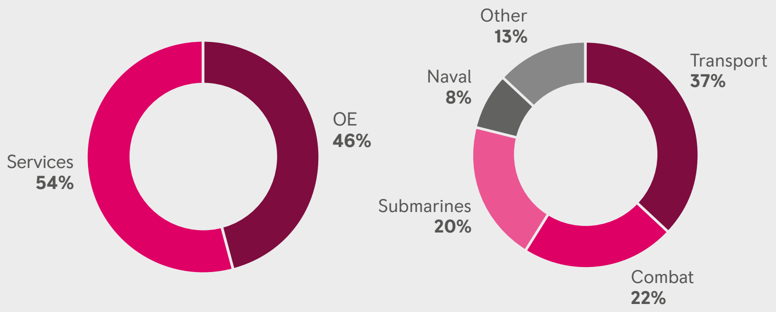
— If nuclear energy is reduced in priority by certain countries for political or economic reasons, then the civil nuclear market will suffer.

— If there is not clarity on UK energy policy and the willingness of UK Government to support SMR development, then continued investment may be called into question.

Defence

Defence is a market leader in aero engines for military transport and patrol aircraft with strong positions in combat and helicopter applications. It has significant scale in naval markets across the world and is the technical authority for the through-life support of the nuclear power plant for the Royal Navy's submarine fleet.

Underlying revenue mix



Underlying revenue	Underlying operating profit	Order backlog
£3,124m	£427m	£6.8bn
2017: £3,180m	2017: £454m	2017: £5.8bn

16,000
engines in service around the world

150
customers in over 100 countries

>50
years powering the UK's nuclear submarine fleet

Key highlights

- Underlying revenue broadly flat with modest increase in OE offset by reduced service revenues
- Underlying operating profit down £16m due to higher R&D spend reflecting our focus on future technology development, partly offset by lower C&A costs
- Strong year for new order intake with £3.9bn of customer orders and 1.3 book-to-bill ratio; notable orders included a further production contract for the F-35 LiftSystem and EJ200 engines for Qatar
- MT30 engine continued to prove its success in the Naval market; selection on Japan's 30FFM frigate programme; negotiations progressing to secure further exports
- Confirmed as one of four partner companies on Tempest, UK combat demonstrator programme

Defence overview 2018

Defence had a solid year, with good progress on the full integration of defence aerospace, naval marine and submarines into one business and delivering on our 2018 facility modernisation plans. OE revenues increased, driven in part by demand for transport engines. Service revenue declined reflecting lower activity in submarines. Underlying operating profit was lower due to increased R&D on ongoing future technology development partly offset by reduced C&A cost. As we look to the year ahead, our stable outlook is underpinned by strong order intake achieved in 2018.

Financial overview

£m	2018	2017	Change	Organic change
Underlying revenue	**3,124**	**3,180**	**-2%**	**+0%**
Underlying OE revenue	1,452	1,398	+4%	+6%
Underlying services revenue	1,672	1,782	-6%	-4%
Underlying gross profit	**690**	**728**	**-5%**	**-3%**
Gross margin %	22.1%	22.9%	-80bps	-80bps
Commercial and administrative	(170)	(188)	-10%	-9%
Restructuring	(3)	(4)	-25%	-25%
Research and development charge	(100)	(89)	+12%	+13%
Joint ventures and associates	10	7	+43%	+43%
Underlying operating profit	**427**	**454**	**-6%**	**-4%**
Underlying operating margin %	**13.7%**	**14.3%**	**-60bps**	**-50bps**

Financial overview

Underlying revenue

Underlying revenue of £3,124m was broadly flat compared to the prior year. OE revenue, 6% higher year-on-year, was driven by increased demand for transport engines such as the Multi-Role Tanker Transport (MRTT) aircraft and an OE contract for the UK's Dreadnought submarine programme. This was partly offset by reduced combat volumes after the completion of the Oman EJ200 production contract in 2017. Service revenue was 4% lower, as increased LTSA revenues on EJ200 and Adour were offset by lower service revenue due to the phasing of work on UK submarines.

Underlying operating profit

Underlying operating profit of £427m was £16m lower than the prior year. Gross profit of £690m fell 3%, driven by lower OE combat volumes and lower margins on a bridging contract for submarines services following the introduction of single source contract regulations (SSCR). This was partially offset by increased sales of MRTT engines and improved LTSA margins driven by customer settlements and higher AE engine volume.

An increase in R&D spend of £11m largely reflected ongoing future technology development. C&A costs were £17m lower as a result of actions taken across the business to manage discretionary spend.

Operational and strategic review

Overall, our Defence markets remain stable. The United States continues to be our largest addressable market, where we have a particularly strong position in the transport and patrol segment. While annual US Department of Defense budgets can fluctuate from year to year, we expect modest growth over the long term. The UK and Europe remain important markets for us; the political environment in these markets typically leads to large defence programmes being developed by a consortium of two or more companies, a trend we expect to continue. In Asia and the Middle East, indigenisation and regional threat levels have led to areas of higher growth.

BRINGING DEFENCE TOGETHER

The Royal Navy's new carrier strike force showcases the combined capability of the newly integrated Rolls-Royce Defence business. Four months after the UK's first F-35B Lightning II aircraft arrived at RAF Marham, the new Queen Elizabeth (QE) class aircraft carrier conducted its first flight operations. Twin Rolls-Royce MT30 engines powered the ship into position while the Rolls-Royce LiftSystem enabled the F-35B to perform the first ever shipborne rolling vertical landing. This manoeuvre allows the jet to land with a heavier load, removing the need to jettison fuel or weapons.

Once fully deployed, the QE class carriers will be the heart of a potent carrier strike capability group, supported by escort frigates, destroyers and nuclear-powered Astute-class submarines – all reliant on Rolls-Royce propulsion systems.

MT30 POWERS AHEAD IN JAPAN

The MT30 marine gas turbine continued its success during 2018 with Japan becoming the fifth navy to select the engine – which is derived from Trent aero-engine technology. The Japan Maritime Self Defence Force (JMSDF) selected the MT30 to power a new class of frigates, the 30FFM.

The power and performance of the MT30 provides shipbuilders and system designers with new options and the ability to futureproof their latest naval platforms. It also provides the additional benefit of low on-board maintenance requirements while retaining its high power throughout its life. The world's navies are demanding more power and for Japan the MT30 will deliver a power rating in excess of 40 megawatts – enough to power a small town.

Operationally, Defence completed the implementation of its simplified five-layer organisation as part of the Group's wider restructuring programme. This has streamlined Defence programmes and services activities and created aligned functional support.

Defence achieved its 2018 facility modernisation milestones in Indianapolis which included the relocation of over half of manufacturing operations into new facilities. The business also successfully started the transition of a substantial element of AE transport overhaul capability to Standard Aero, progressing towards a 2019 exit of the Oakland, US repair and overhaul facility. Together, these transformations will enable our Defence business to be more responsive to our customer needs while focusing our capital allocation on future products and technology.

2018 was a strong year for new order intake with Defence capturing £3.9bn of customer orders, a 1.3 book-to-bill ratio. Accordingly, our Defence order backlog grew 17% in the year to £6.8bn.

In aerospace, notable orders included; an additional production contract for the F-35 LiftSystem and EJ200 engines for Typhoon from Qatar. In addition, the first deliveries of the Trent 700 powered Airbus A330 MRTT were made to France, Singapore and the Republic of Korea.

In maritime, we secured contracts in submarines representing orders for decommissioning, development and sustainment activity in the near-term. Our MT30 engine continued to prove its success in the naval market, including a further application secured this year with the selection for Japan's 30FFM frigate programme and with negotiations progressing to secure further exports.

In services, the US Department of Defense renewed around £0.9bn of contracts to support in-service fleets across our transport, combat and trainer markets and Saudi Arabia renewed the RB199 support contract for its Tornado fleet.

In terms of new technology and R&D, Defence continues to make good progress towards securing a substantive role in delivering a new combat engine through our position as one of four partner companies on Team Tempest, a UK programme aimed at maintaining the nation's position as a leader in combat capability. Furthermore, our AE 3007 engine was selected to power the US Navy's MQ-25 Stingray, a new unmanned tanker aircraft. The UK Government has further underpinned the Dreadnought submarine programme for which our Defence business will supply the nuclear power capability.

Defence outlook

The Defence order backlog remains strong with a healthy number of new orders received in 2018 giving us confidence in our medium-term outlook. In 2019, revenue is expected to remain stable with operating margins around 100bps lower as we increase investment in new platforms to position us for the next generation opportunities in transport and combat end markets.

FROM DREADNOUGHT TO DREADNOUGHT

The year 2018 marked 60 years since the signing of the mutual defence agreement between the US and the UK, which heralded the involvement of Rolls-Royce in nuclear propulsion and led to the launch of the first Royal Navy nuclear submarine, HMS Dreadnought.

In a fitting tribute to this milestone, the Dreadnought Alliance was launched during 2018, which will see a second submarine named Dreadnought enter into service in the early 2030s. Powered by a new design of propulsion plant, PWR3, the next Dreadnought will further extend Operation Resilience, the Royal Navy's continuous at-sea deterrence capability, which in 2019 will celebrate its 50th year.

Operating environment

Rolls-Royce key differentiators

Advanced technology, innovation, and collaboration with partners and customers are unique hallmarks of Defence. These differentiators ensure successful delivery of products and services tailored to customers' evolving needs.

Market dynamics

- Long-term defence investment is tied to economic growth while threat levels and politics drive near-term spend; the business expects to see modest growth across the globe in the coming years.
- While higher-growth areas exist in Asia and the Middle East, driven by indigenisation and regional threats, the US represents nearly half of addressable defence spend globally.
- Programme wins are generally long-term and as a result barriers to entry are high, which leads to entrenched competitors and aggressive competition for new opportunities.

Opportunities

- There is strong interest in electrification across land, sea, and air platforms; the business is exploring more electric and hybrid-electric propulsion technologies as well as power generation for high-energy systems.
- Combat propulsion remains the largest market segment, with opportunities for current products (LiftSystem and EJ200), UK investment in future combat air technologies (Tempest), and new international and next generation programmes (Turkey TF-X).
- In transport, Defence is well positioned for various next-generation opportunities, as demonstrated by the recent win of the US Navy MQ-25A program.
- Building on success as preferred gas turbine provider on Korean FFX Batch III and Australian SEA 5000 programmes, Defence is well positioned to capture other large maritime opportunities with the MT30.
- There is strong service growth potential via technology insertion, and emerging service opportunities using digital technology and data analytics to generate new solutions.

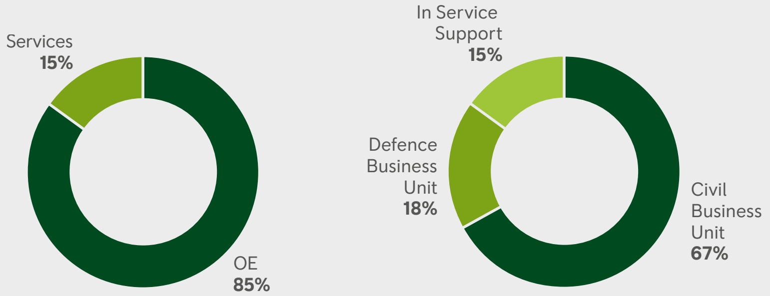
Business risks

- If a major product failure in service is experienced, then this may result in loss of life and significant financial and reputational damage.
- If global defence spending experiences a significant downturn, then financial performance would be impacted.
- If we do not continue to invest in improving the performance and cost of Rolls-Royce products, then market share may be lost.
- If the business suffers a major disruption in its supply chain, then delivery schedules would be delayed, damaging financial performance and reputation. We have taken appropriate mitigating actions against the potential risks relating to Brexit (see page 50).
- If new applications are not secured, then the business may have to increase investment or accept erosion in capabilities.
- If electrification and digitalisation technology proceeds at a faster rate than expected, then the business may not be positioned to fully capitalise on this potential growth.

ITP Aero

ITP Aero is a global leader in aero engine design, manufacture and maintenance. Alongside the development, manufacturing, assembly and testing of engines, it provides MRO services for regional airlines, business aviation, helicopters, industrial and defence applications.

Underlying revenue mix



Key highlights

- Underlying revenue increased by 6% primarily driven by higher civil aerospace OE deliveries
- Operating profit broadly flat; lower gross profit; offset by lower C&A cost and R&D costs
- Good progress on footprint expansion plans

Underlying revenue	Underlying operating profit	Order backlog
£779m	£67m	£0.9bn
2017: £725m	2017: £65m	2017: £1.1bn

16
facilities in six countries (India, Malta, Mexico, Spain, UK and US)

7
Trent engine programmes in which ITP Aero is a risk and revenue sharing partner

>575
engines and modules serviced by ITP Aero per year

STRATEGIC REPORT

ITP Aero overview 2018

ITP Aero delivered good growth in 2018 driven by its exposure to civil aerospace growth programmes. Capacity was increased to support this, with 5% higher headcount. Underlying operating profit rose by 3% despite the impact of the share of Trent 1000 in-service issues shared with ITP Aero. We are well positioned to deliver further good growth, supported by long-term demand for growth in air travel and our exposure to growing civil aero engine programmes.

Financial overview

Underlying revenue

Underlying revenue grew 6% to £779m led by progress in civil aerospace OE revenues, which saw good growth from increased volumes across Rolls-Royce and Pratt & Whitney programmes as well as improved pricing. This more than offset lower defence OE revenues, driven by a reduction in EJ200 and TP400 delivery volumes. Services revenues were lower, with weaker aftermarket revenues on certain civil aerospace programmes which more than offset a significant improvement in defence aftermarket.

Underlying operating profit

Underlying operating profit was 3% higher primarily driven by higher gross margins in civil OE, reflecting better pricing and good progress reducing unit costs. Operating profit growth was delivered despite a profit headwind from the impact of the share of Trent 1000 in-service issues that were allocated to ITP Aero. Gross margins in defence were lower due to reduced EJ200 engine volumes.

Financial overview

£m	2018	2017 *	Change	Organic change
Underlying revenue	**779**	**725**	**+7%**	**+6%**
Underlying OE revenue	666	554	+20%	+19%
Underlying services revenue	113	171	-34%	-35%
Underlying gross profit	**156**	**159**	**-2%**	**-3%**
Gross margin %	20.0%	21.9%	-190bps	-200bps
Commercial and administrative	(57)	(61)	-7%	-8%
Restructuring	(2)	–	–	–
Research and development charge	(30)	(33)	-9%	-12%
Underlying operating profit	**67**	**65**	**+3%**	**+3%**
Underlying operating margin %	**8.6%**	**9.0%**	**-40bps**	**-30bps**

* ITP Aero was acquired on 19 December 2017. Prior year comparatives are unaudited and are presented for comparison purposes only

Operational and strategic review

The long-term trends driving demand growth in passenger aircraft remain strong. Our business continues to expect strong demand for aero engines across both narrow and widebody aircraft, with an increased focus on newer, more fuel efficient aircraft types. This, coupled with our presence on newly launched platforms that are currently ramping up, provides a solid base for ongoing growth in our civil aerospace business.

The production ramp-up in the year on growth programmes from both Rolls-Royce and Pratt & Whitney was supported by 8% capacity growth. To cater for further ongoing growth, we made good progress in 2018 on our capital investment plans, with the expansion of production facilities in Spain and Mexico to support development of new products. Actions taken to improve manufacturing cost efficiency delivered good progress in unit cost reduction, particularly across our civil engine programmes.

We made significant progress on the industrial plans included within our ITP Aero 2020 strategic plan, announcing an investment of €14.2 million (2018-2021) in new facilities in Derio, Spain, focused on the design and manufacturing of engine external parts. This new plant will be operational by late spring 2019. Our newly built castings facility in Sestao, Spain is now fully operational.

Significant milestones in 2018 included delivery of the 600th low pressure turbine for the Trent XWB-84; delivery of the last EJ200 Tranche 3A engine to the Spanish Air Force; and more than 575 engines and modules serviced across plants in Spain, US and Malta. We continue to execute our R&T plan with good progress on UltraFan turbine technology development and a strengthening of the Centro de Fabricación Aeronautica Avanzada (CFAA) in Biscay, Spain with a large number of development programmes.

ITP Aero outlook

Our exposure to growing civil aerospace platforms supports our expectation of around 10% revenue growth in 2019 with a stable operating margin.

PARTNERING ON THE TRENT XWB-97

ITP Aero has a long heritage supporting Rolls-Royce as a risk and revenue sharing partner. In 2013, ITP Aero started work on the low pressure turbine for the high-thrust variant of the Trent XWB, the Trent XWB-97. That work involved an in-depth analysis of the aerodynamic efficiency of the earlier variant, the Trent XWB-84. As a result of this work, ITP Aero achieved a decrease in fuel consumption per pound of thrust on the Trent XWB-97, which celebrated its entry into service in 2018.

NON-CORE BUSINESSES

Non-core businesses primarily comprise L'Orange, sold on 1 June 2018, and Commercial Marine, the proposed disposal of which was announced on 6 July 2018.

L'Orange

In April, we announced an agreement to sell L'Orange, a wholly owned subsidiary of Rolls-Royce Power Systems, to Woodward, Inc., a designer, manufacturer and service provider of control system solutions and components for aerospace and industrial markets. The deal completed in June. L'Orange supplies fuel injection technology for engines that power a wide range of industrial applications including marine power and propulsion systems, special-application vehicles and power generation. L'Orange remains an important partner and supplier for Power Systems through a long-term supply agreement, with an initial term of 15 years.

L'Orange financial overview

£m	2018 (5 months)	2017
Underlying revenue	89	212
Underlying operating profit	21	55

Commercial Marine

In January, we announced plans to consolidate our naval marine and submarines operations within our existing Defence business and that we would be evaluating strategic options for our Commercial Marine operation. Since 2015 our Marine business has responded to weak demand for products and services for the offshore oil & gas market, which significantly impacted its profitability. It has divested non-core businesses, consolidated its sites and reduced its workforce. At the same time, the business has been investing in new facilities and new technologies and become an industry leader in the fields of ship intelligence and autonomous vessels.

In July, we announced an agreement to sell the business to KONGSBERG, the provider of systems and solutions to clients within the oil & gas industry, merchant marine, defence and aerospace sectors. KONGSBERG will, through a trading arrangement, continue to have access to products from Bergen Engines, which remains part of Power Systems. The deal is expected to complete during 2019.

Commercial Marine financial overview

£m	2018	2017
Underlying revenue	726	810
Underlying operating profit	(35)	(60)

TECHNOLOGY

Rolls-Royce develops products which are underpinned by cutting-edge technologies and we are continuing to invest to maintain our competitive edge, both today and in the future.

During 2018 we increased our momentum on technologies to protect the competitiveness of our core products; on digital technologies to drive productivity across manufacturing, design and services; and on developing electrification technologies to prepare for the third generation of aviation.

We made substantial progress on our UltraFan demonstrator, which will offer 25% fuel efficiency improvement over the first generation of Trent engines. The underlying gas turbine technologies will also support our military and business jet customers. Progress included:

- the Advance3 core at the heart of the UltraFan demonstrator achieved full power on test and performed in-line with expectations;
- the power gearbox, which transmits the UltraFan's propulsive power to the large fan, has achieved over 250 hours on test, having proven its capability to run at 70,000 horsepower; and
- engine testing of the lean burn combustion system has so far shown around half the NOx emissions at cruise compared to today's levels.

We also welcomed the UK Government's announcement of the Tempest programme to revitalise sovereign capability in combat aviation. We supported advanced concept activity with testing of the embedded high-power electrical machines required to power a modern sixth-generation fighter.

In dealing with the in-service issues with the Trent 1000, we accelerated the implementation of capabilities in advanced manufacturing to increase turbine blade output by 75%, and developed new near-wing overhaul techniques to approximately halve engine turnaround time from 30 days.

The ACCEL programme will create an all-electric plane that will fly at over 300mph.

Our global network of 31 University Technology Centres and seven Advanced Manufacturing Research Centres continued to deliver world-class applied research. This ranged from materials modelling developed in the UK – which will enable extending the service life of certain critical parts – to increased efficiency axi-centrifugal compressor technologies validated in the US, and smart manufacturing and visual corrosion inspection technology developed in Singapore. In total we support around 500 PhD students through our relationships with universities.

We supported our strategic goal of championing electrification with the formation of Rolls-Royce Electrical, a self-contained capability group, to advance technologies and new solutions. It had a number of notable successes:

- established a number of technology demonstration programmes to position us to support the future of hybrid-electric flight for regional aviation (E-Fan X) and urban air mobility (EVTOL);
- progressed the development of power-dense electrical technologies for kW and MW power in hybrid systems. Our 2.5MW power generation system is currently in the build stage while our M250-based hybrid-electric system has completed ground testing;
- received a UK research grant for the ACCEL programme to demonstrate all-electric flight technologies; and
- signed customer letters of intent to develop our first series hybrid-electric system for marine yachts and to retrofit over 140 diesel railcars as part of the ongoing hybridisation of rail travel and based on the successful demonstration of MTU PowerPacks.

We also retained a dedicated team to work on SMRs and we are in discussions with the UK Government to develop these as an affordable zero carbon electricity solution.

As a result of our focus on new technologies, 2018 saw us deliver 892 patents approved for filing, aided by a series of focused workshops and engaging our global population of engineers through our innovation portal, which now has more than 26,000 users.

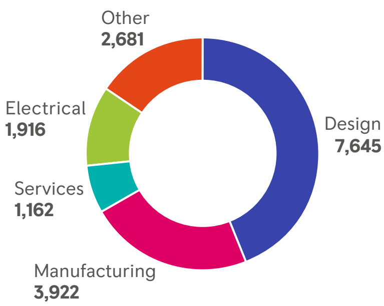
Key facts

892
Patents approved for filing

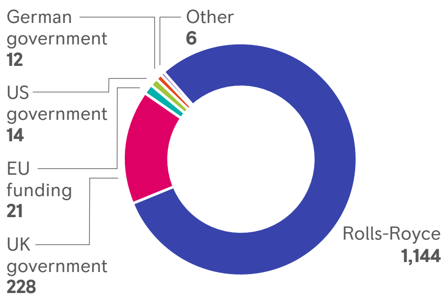
17,326
Number of engineers across the Group

£1.4bn
Gross R&D expenditure

Number of engineers (at 31 Dec 2018)



2018 Gross R&D expenditure (£m)



ENVIRONMENT

As a leading industrial technology company we have an irrefutable role in enabling the transition to a low carbon global economy. We are committed to utilising our engineering skills and technology capabilities to enable and accelerate this.

Our approach

We believe that the successful management of climate change will depend upon a structured transition to a low carbon economy, driven by the development of sustainable power solutions.

During 2018, our executive-level environment & sustainability committee reviewed our governance, strategy and policies in relation to our environmental impacts. Our environmental commitments are embedded within our governance framework and operational procedures, including Our Code and associated Group policies. We have also begun developing dedicated scenarios to understand the potential opportunities and risks associated with climate change.

AS GOOD AS NEW, SEVEN MILLION MILES LATER

Our TotalCare model helps us to reduce waste and optimise resource efficiency, whilst enabling our customers to maximise the availability of their engines. Through TotalCare we are able to extend the service intervals between engine overhauls by around 25%, with engines typically flying up to seven million miles between shop visits. By keeping engines flying for longer there is less demand for new products and components that require complex materials and are expensive and resource intensive to manufacture.

Products and technology

We recognise the significant environmental impacts of the markets in which we operate, and as a result have a long-standing commitment to minimising the impacts of our products and services. The technologies we are developing will contribute significantly to decarbonising global transport and the built environment.

In 2018, we spent £1.4bn on R&D to develop the technology we embed in our products and services. Over two-thirds of our R&D expenditure is dedicated to improving the environmental performance of our products. This helps ensure that each generation of product has a better environmental performance than the last.

We are making good progress towards achieving the industry level ACARE goals for civil aviation, including reducing CO_2 emissions per passenger kilometre by 75% by 2050. With significant forecasted growth in passenger demand it is critical that we continue to develop new engine technologies that meet customer's expectations for efficiency. Our Trent 7000, which entered service this year, builds upon the industry-leading performance of the Trent XWB to deliver 10% better fuel efficiency than the engine it is designed to replace.

We recognise that electrification and hybrid solutions will deliver a step-change in emissions performance. We are leading the development of electric flight through our R&D projects, including EVTOL and E-Fan X. To support this, we are investing in our electrical capabilities, including launching focused graduate and apprentice development programmes.

Our Power Systems business is the leading provider of hybrid rail applications, which can enable fast, quiet and efficient rail transportation without the need for major infrastructure change. Our micro-grid technologies support wider uptake of renewable energy solutions, such as wind and solar, by providing battery and control solutions. These can mitigate challenges associated with storing renewable energy.

Operations and facilities

Managing the environmental impacts of our operations and facilities are a key part of being a responsible and resilient business. We seek to consider the environmental impact of major business decisions, including property developments, to reduce our exposure to the physical and transitional risks of climate change.

We apply circular economy principles across our operations. Each year, we use over 30,000 tonnes of high-value metal alloys in our manufacturing and production. Through our revert programme of closed-loop recycling, we seek to recover and reuse materials wherever reasonably possible to reduce the cost and environmental impacts associated with manufacturing. We have continued to make progress in maturing our waste management practices during 2018, and are working in partnership with waste management specialists and research bodies to identify alternatives to landfill.

We continue to invest in low carbon and renewable technologies, including completion of a ground source heat pump thermal storage project in Bristol, UK in 2018. Following the early achievement of our 2020 energy reduction target in 2017, we are extending this with a longer-term target to reduce energy consumption by a further 20% by 2025.

TARGETING ZERO EMISSIONS BY 2030

We recognise the significance of climate change and the global commitments made to reduce greenhouse gas (GHG) emissions. We are replacing our existing GHG target with a longer-term ambition to achieve zero emissions from our operations and facilities by 2030. This science-based target, aligned to the GHG emissions reduction pathways required to limit global temperature rise to 1.5°C, will drive further investment in low carbon and renewable energy solutions across our global footprint, and reduce our vulnerability to volatile energy prices.

Absolute GHG emissions ($ktCO_2e$)

381 $ktCO_2e$

2030	TARGET	0
2018		381
2017		392
2016		405
2015		432
2014	BASELINE	484

Target: Achieve zero scope 1 + 2 GHG emissions by 2030 [1,2,3,4]

The GHG emissions associated with our global operations and facilities has reduced by 21% since 2014. This has been achieved through significant investment in renewable and low carbon energy installations, including solar and energy storage.

Energy consumption (MWh/£m)

92 MWh/£m

2025	TARGET	58
2018		92
2017		94
2016		94
2015		104
2014	BASELINE	115

Target: Reduce energy consumption by 50% by 2025 [1,2,3,4]

We continue to invest in renewable and energy efficient technologies, such as upgrading lighting and heating, to reduce our energy use. Our consumption has reduced by 20% from 2014, and we are on track to meet our longer-term target.

Total solid and liquid waste (t/£m)

4.78 t/£m

2025	TARGET	3.46
2018		4.78
2017		4.54
2016		3.99
2015		4.18
2014	BASELINE	4.62

Target: Reduce solid and liquid waste by 25% by 2025 [1,2,3]

Our total waste generation has increased slightly as we have improved our data reporting processes and accuracy. We continue to identify opportunities to minimise the generation of waste at source in our manufacturing.

Waste to landfill (000 tonnes)

2.7 kilotonnes

2020	TARGET	0
2018		2.7
2017		3.4
2016		4.8
2015		7.2
2014	BASELINE	8.2

Target: Achieve zero waste to landfill by 2020 [1,2]

The amount of waste sent to landfill from our operations has reduced by 67% since 2014. This has been achieved through continued investment in waste management improvements and the use of innovative alternatives to landfill.

1 External assurance over the STEM, energy, GHG, and TRI rate data provided by Bureau Veritas. See page 197 for its sustainability assurance statement.
2 Data has been reported in accordance with our basis of reporting, available at www.rolls-royce.com/sustainability. Data for prior years has been restated to reflect the disposal of L'Orange and the acquisition of ITP Aero. Data associated with ITP Aero is included in the GHG, energy and total waste targets for 2017 and 2018 only.
3 Emissions associated with product test and development, critical to ensuring product safety, and power generation are excluded from our GHG target. Statutory GHG emissions data, including emissions from these sources, are detailed on page 203. Our energy and total waste reduction targets are normalised by revenue.
4 We have extended our previous energy consumption reduction target with a new target to 2025, the baseline year remains 2014. We have replaced our GHG emissions reduction target with a new target to 2030.

OUR PEOPLE

It is through our people that we fulfil our potential, achieve our vision and execute our strategy. We are committed to creating an environment where all of our people can be at their best.

Our people framework

We introduced our people framework in 2017, consisting of five constituents to deliver our vision and strategy. The core competencies and growing capabilities are determined by our existing and future strategic and operational needs, whilst our values and behaviours drive our culture and conduct throughout the Group.

Care
Creating a working environment where each of us is able to be at our best.

Growing capabilities
Key capabilities needed to secure emerging opportunities:
— systems integration
— electrical engineering
— data sciences

Growing behaviours
Key behaviours needed to secure emerging opportunities:
— embrace agility
— be bold
— pursue collaboration
— seek simplicity

Core competencies
Key competencies needed to safeguard our current competitiveness:
— engineering pre-eminence
— programme management
— business acumen

Core values
Key values needed to safeguard our current competitiveness:
— trusted to deliver excellence
— act with integrity
— operate safely

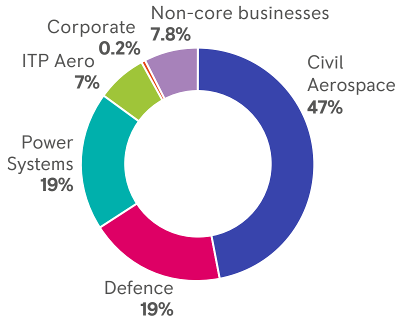
Restructuring and cultural change

We continue to make progress with our fundamental restructuring programme. From the beginning of 2019, our core businesses have been supported by a Group Business Services organisation, which pools our professional and transactional services into one entity. It will act and feel like a customer service provider. During the latter half of 2018, our head office reduced dramatically to focus on corporate governance and Group strategy, as well as our corporate responsibilities. We have also created an Innovation Hub, which draws together skillsets and expertise which have common application across the businesses, including digital capabilities and future technologies.

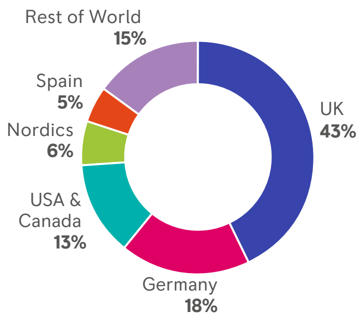
Through these changes we are reducing our non-manufacturing headcount. It is never an easy decision to reduce our workforce, but we must create a commercial organisation that is as world-leading as our technologies. Over the 24 months starting in mid-2018, we expect the fundamental restructuring to lead to the reduction of around 4,600 roles. In 2018, we saw a reduction of around 1,300 roles, taking our non-manufacturing related headcount to 27,800. The programme is expected to gain further momentum through 2019 with full implementation of headcount reductions and structural changes by mid-2020.

From its outset, the restructuring was designed as more than just a cost-saving exercise of reducing our headcount. It is a simultaneous and strategic change of our structure, our culture, our processes and our people; transforming Rolls-Royce to be the world's leading industrial technology company. It is nothing less than setting ourselves up for success for this century. There are elements of our current culture, especially our employees' pride and sense of purpose, that we need to preserve and enhance. However, there are other aspects of our current culture that need changing. We will do this by embedding our values and behaviours throughout the organisation so that every employee can enjoy the same standard of care no matter where they work. Particular areas of focus will be centred around anti-bullying and harassment, safety and wellbeing.

54,500 employees total



Employees in 50 countries



Leadership

Embedding our values and behaviours and culture change hinges upon strong leadership. We have renewed our Executive Team and will continue to refresh our Enterprise Leadership Group, comprising our senior leadership, throughout 2019. This group has reduced by more than a third compared to the previous senior leadership team, with 30% of the new group being promoted internally, placed in a new role or brought in from outside the organisation. We continue to concentrate on increasing the diversity of our leadership population, including making progress towards our 2020 target.

We have been working hard to ensure that the expectations of our leaders and the accountability deriving from their positions within the Company are clear. The way we assess, reward and promote our leaders is increasingly linked to how they embody and cast the shadow of these values and behaviours in their teams and beyond.

To support these leaders, we are completely refreshing our approach to leadership learning not only to embed the new expectations, but also so that our leaders have a licence to operate before they move to the next level of leadership – or become a leader in the first place. Linked closely to this leadership learning programme is a refresh of our talent management system to ensure we have the right leaders and to encompass strengthened activities such as succession planning, spotting potential and structuring our talent groups.

Employee development

Investing in people is a core component of our talent attraction and retention programmes. During 2018 we invested £27.1m in employee learning and development, delivering over one million hours of employee training.

This year, for the first time, employees were required to complete all mandatory training to be eligible for certain reward outcomes. Mandatory training includes courses linked to our code of conduct (Our Code) and Group policies. Our broader learning programmes include HSE, product safety, ethics and leadership development; 70% of our courses are now taken digitally as we seek to develop a more agile culture.

Our approach to performance enablement is based on providing regular, less formal feedback and coaching. Dedicated training and toolkits are available to support managers with this and to enable some great performance conversations across the organisation.

Career framework

In 2018 we began work to launch a new career framework, which is a refreshed approach to the way we manage careers at Rolls-Royce. This streamlined framework contains broader job levels and removes the complexity associated with multiple layers of management. It should enable our employees to move between roles within the Group with more ease and greater opportunity to broaden their experiences. In 2018, 1,340 employees were promoted internally and our employee turnover rate decreased to 7.6% (2017: 9.3%).

Key facts

15.5%
Female employee population

91,000
Hours of employee time volunteered

£27.1m
Invested in learning and development

A STRONG AND DIVERSE FUTURE TALENT PIPELINE

A strong pipeline of future talent and diverse experience is critical to our ongoing success.

In 2018, 319 graduates and 450 apprentices joined the Group into dedicated early career development programmes; 62% of these graduates joined engineering development programmes. These include new dedicated programmes for electrical systems engineering and digital and technology solutions. Other development programmes include programme management, human resources and procurement. These provide a vital pipeline of talent into our functions.

This year, 32% of graduates recruited were female, supporting our target of achieving a 30% female population on our graduate programmes by 2020; 21% of apprentices recruited were female.

Employee engagement

We provide a variety of channels to communicate and engage with, and listen to, our employees and their representatives.

We encourage participation and engagement throughout the organisation, through both formal and informal channels, including our intranet, newsletters and employee magazines. Team briefings and employee forums allow employees to discuss key developments and business performance, and to contribute their views.

We consult and work closely with elected employee representatives through well-established frameworks, including our European Works Council.

Our annual employee engagement survey helps provide a measure of success for our engagement activities. This year, 57% of our in-scope employees participated in the survey. The 2018 results highlighted strong belief in our Company vision and values. Our sustainable employee engagement score remained stable for the third year running, despite the ongoing restructuring programme.

Our incentive schemes and all-employee share programmes enable everyone to share in our success.

For more information on the Board's stakeholder engagement see Corporate Governance section, page 67.

Diversity and inclusion

We are committed to building an inclusive culture and diverse workforce. We believe that a culture of inclusion is paramount to creating an environment where all our people can be at their best.

Our employee resource groups (ERGs) support this by connecting people with shared characteristics or experiences. We have 18 ERGs globally, including our PRISM and Propel with Pride groups for LGBT+ employees; women and gender diversity groups; and faith and ethnicity based groups. Additional support networks are also available in key geographies, such as working parents, veterans and disabilities groups.

Diversity continues to be a significant challenge for the engineering sector as a whole, but we are making progress as an organisation. We are committed to increasing the number of women at all levels, and have made good progress towards our 2020 diversity targets during the year. We are actively recruiting from groups typically under-represented in our sector, particularly women and minority ethnic groups. To support the number of women in senior manager positions we have introduced 50:50 shortlists and have partnered with the FT 125 Women's Forum in the UK.

Through our community investment and education outreach programmes we aim to engage young people from diverse backgrounds in STEM subjects at an early age. Our activities are focused on promoting the opportunities that education and career choices in STEM can offer.

We continue to work with organisations such as Women in Science and Engineering, Women in IT, Women in Finance and Women in Nuclear to boost our visibility amongst potential female talent. We support initiatives driven by these organisations and others, and sponsor awards such as Female Undergraduate of the Year and Young Woman Engineer of the Year to celebrate success and showcase role models in the engineering sector.

Our global diversity and inclusion and anti-discrimation policies ensure that all employees, regardless of gender, race, religion, physical ability or any other characteristic, are treated with dignity and respect, and feel safe and empowered to work without fear of bullying and harassment. At the end of 2018 we launched a global anti-bullying campaign, championed by our Chief People Officer. This will continue into 2019 and will focus on encouraging employees to recognise and challenge inappropriate behaviours.

We give full and fair consideration to all employment applications from people with disabilities and support disabled employees in the workplace, helping them to make the best use of their skills and expertise to reach their full potential.

For Board members by gender see page 59.

For Board diversity, see pages 73 and 74.

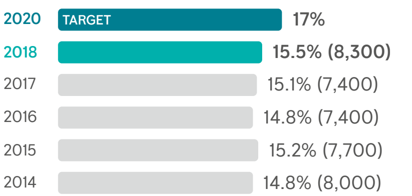
Progress against our 2020 diversity targets

In 2017 we launched a diversity and inclusion strategy with global targets to increase female participation at all levels by 2020. These are supported by local targets in key regions where we face specific diversity challenges associated with ethnicity, nationality and age.

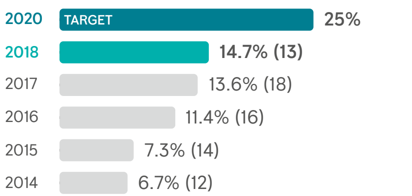
Our inclusiveness score is measured by a subset of our employee engagement survey, including questions related to whether people feel they can be themselves at work and are treated with fairness and respect.

Inclusiveness score

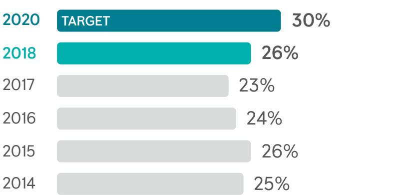
Female employee population[1]



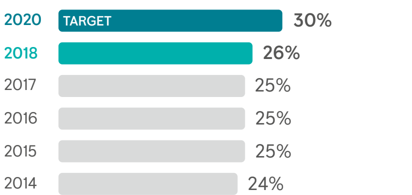
Female senior manager population[2]



Female graduate population[3]



Female high potentials population[3]



1 Employee headcount data is calculated as the average number of full time equivalents throughout the year. Certain joint ventures are classified as joint operations. As a result, 1,000 employees associated with joint operations are included within our overall headcount, however we do not collect diversity information from these employees, therefore they are omitted from this data.

2 Senior management population for 2018 is calculated as Executive Team and ELG population (2018 total: 88), prior years data refers to the senior leadership team that has been replaced by the ELG through restructuring.

3 The graduate and high potentials targets refer to the number of employees on development programmes as at 31 December each year.

INSPIRING TOMORROW'S PIONEERS

We recognise the need to inspire young people in STEM subjects at an early age, to enable them to make informed career and education choices. In 2018, we reached 1.6 million people through our STEM activities and programmes, and are now 92% towards our target to reach 6 million people by 2020 [1]. We are extending this target with a longer-term ambition to inspire 25 million of tomorrow's pioneers by 2030.

During the year we invested £7m in broader community engagement activities, including £3.8m in cash contributions and 91,000 hours in employee time.

Health and safety

We believe that a safe and healthy workplace is a better place for our people, our customers and our business. Our health and safety performance is fundamental to our success and is integral to creating an environment where everyone can be at their best.

Operate safely is one of our core values and we are committed to promoting a Zero Harm culture.

To support this, we have introduced a suite of Life Saving Rules, a clear set of simple guidelines that focus on our most frequent safety incidents and high-hazard activities. These rules, accompanied by training and communications, are aimed at supporting our people in prioritising their personal safety, and the safety of those around them, in their daily decisions.

Throughout the ongoing Group-wide restructuring we have concentrated on building greater leadership accountability for HSE risk. To support this, we have launched dedicated training and toolkits for our management population, supporting them in recognising and understanding HSE risk and the control systems we have in place.

During 2018 we initiated a programme of comprehensive safety reviews at some of our major and high-hazard sites. From these reviews we have identified and prioritised a series of improvement actions.

TRI rate (per 100 employees) [1,2]

2020	TARGET	0.3
2018		0.58
2017		0.62
2016		0.58
2015		0.77
2014	BASELINE	0.62

These risk-based improvement programmes have contributed to a 6% improvement in our total reportable injury (TRI) rate since 2014. This improvement rate is lower than anticipated when our 2020 target was first introduced, primarily due to changes within the Group structure including the disposal of L'Orange and inclusion of ITP Aero data in our reporting for 2017 and 2018. The continued promotion of a safety-conscious culture, as well as increased maturity of our HSE reporting, has led to increases in the reporting of restricted work cases that has impacted our overall TRI rate.

We remain committed to reducing our injury rate and minimising the exposure of our people to potential harm, and are pleased to have made significant progress following particularly poor performance in 2015. Our TRI rate for 2018 was 0.58 per 100 employees [1].

For more information on our safety performance see the Safety & Ethics Committee report, pages 96–101.

Employee wellbeing

Supporting employee wellbeing is particularly important during times of change. Our approach to wellbeing aims to create a work environment which is supportive of wellbeing, to remove barriers to healthy behaviour, and to motivate employees to lead healthy lifestyles at work.

During the year we have concentrated on increasing awareness of employee wellbeing, particularly mental health, at all levels of the organisation. This included encouraging employees to make personal commitments to improving their individual wellbeing. We have a comprehensive range of support and guidance materials available to employees, including resilience toolkits, manager guides and online training. In key regions, employees can access dedicated support for work and non-work related mental health challenges through our employee assistance programmes. This year, we have piloted mental health champions in the UK, and now have 190 trained volunteers who can act as a first point of call for employees who may need support. We have also introduced dedicated mental health first aid training.

We continue to build upon our site-based wellbeing programme. This recognises sites that have taken steps to enable employees in making healthier choices, for example introducing flexible workplace arrangements, healthier catering options, or onsite exercise facilities. To date, 68% of sites have achieved a LiveWell award.

[1] External assurance over STEM, energy, GHG and TRI rate data provided by Bureau Veritas. See page 197 for the sustainability assurance statement.
[2] The TRI rate for prior years has been restated to reflect the disposal of L'Orange and the acquisition of ITP Aero. ITP Aero data is included for years 2017 and 2018 only.

ETHICS AND COMPLIANCE

We work hard to create an environment where everyone in Rolls-Royce can work safely, act with integrity, and deliver excellence. This helps ensure that we are a company that people want to work for and want to work with. It helps to keep us strong, sustainable and resilient as a business.

We continue to meet the requirements of the DPAs entered into in 2017, including reporting progress made with our ethics and compliance programme. During the year we published an enhanced code of conduct (Our Code), as well as a suite of consolidated Group policies. Our Code focuses on our new values and behaviours, and brings together our commitments to adhere to the highest standards and to supporting our people to be at their best. Our Code applies to all employees, wherever they are located.

We have a zero tolerance approach to misconduct of any kind, and will take disciplinary action, up to and including dismissal, in the event of a breach. In 2018, 59 employees (2017: 65 employees) left the Group for reasons related to breaches of Our Code.

Our Code sets out the behaviours and principles we expect each of our people to demonstrate. It also provides guidance on how to apply these principles in our daily activities through real life examples. Our Code can be accessed online or as a mobile app, as well as in booklet form. In 2018, 99% of managers certified their commitment to adhere to these principles; 98% of employees completed our ethics training. We flow these commitments to our suppliers through our Supplier Code of Conduct, which was also reviewed during the year. All suppliers are contracted to adhere to this, or to a mutually agreed alternative.

OUR VALUES

Our values and behaviours drive our culture and conduct throughout the Group. Our values, Our Code and associated Group policies support employees in doing the right thing, making the right decisions and working in the right way.

- Trusted to deliver excellence
- Operate safely
- Act with integrity

Anti-bribery and corruption

Our Code and anti-bribery and corruption policies are clear in our commitment not to tolerate bribery or corruption of any form. During 2018, we continued to take steps to strengthen our anti-bribery and corruption compliance, including updating our policies and continuing our monitoring and assurance work.

Our due diligence is dependent on the level of risk that a particular third party presents, and may include verification visits, screening, interviews and obtaining reports from specialist providers. This year we have conducted a number of external audits on some of our highest-risk third parties. We also conduct extensive due diligence before entering into joint ventures, and are working with our existing joint ventures to enhance their own ethics and compliance programmes.

Those employees who have a higher likelihood of exposure to potential bribery and corruption, due for example to their work location or role type, are required to complete dedicated training. This year's training focused on gifts and hospitality.

Human rights

We are committed to maintaining the highest ethical standards, and to maintaining and improving global policies and processes to avoid any potential complicity in human rights violations related to our operations or supply chain.

This commitment, including our position on forced labour, involuntary labour, child labour, and human trafficking, is embedded within Our Code, as well as our Global Human Rights policy and Supplier Code of Conduct. Human rights due diligence is embedded within our operating systems and processes, including recruitment and procurement processes.

More information on our approach can be found in our anti-slavery and human trafficking statement, available at www.rolls-royce.com.

For more information see Safety & Ethics Committee Report, pages 96 to 101.

NON-FINANCIAL INFORMATION STATEMENT

The EU Non-Financial Reporting Directive applies to the Group for the first time this year and the following chart summarises where you can find further information on each of the key areas of disclosure that the directive requires. Further disclosures, including our Group policies and non-financial targets and performance data, can be found in the sustainability section at www.rolls-royce.com.

Environmental, social and employee related matters

- As a leading industrial technology company we have an irrefutable role in enabling the transition to a low carbon global economy. We are committed to utilising our engineering skills and technological capabilities to enable and accelerate this. See page 42
- Our place in communities around the world is important and we have built close ties with local communities. In addition, our activities to inspire young people in STEM subjects at an early age is important to enable them to make informed career choices. See page 47.
- It is through our people that we fulfil our potential, achieve our vision and execute our strategy. We are committed to creating an environment where all of our people can be at their best, with the right values and competencies for today, and the right capabilities and behaviours for the future. See page 44.

Business model, policies, principal risks and KPIs

- Our business model provides an insight into the key resources and relationships that support the generation and preservation of value within Rolls-Royce. See page 12. We believe that stakeholder engagement remains vital to building a sustainable business and in 2018 the Board reviewed the engagement across the Group. See page 66.
- We develop Group policies that are applicable across our global operations to address material issues pertinent to our operations and activities. These are publicly available in English. Group policies are translated and made available to employees in local languages that reflect our key geographies.
- Principal risks are identified by the Group and a robust risk assessment of each one is carried out by the Board or one of its committees. See page 50.
- Non-financial key performance indicators allow us to assess progress against objectives and monitor the development and performance of specific areas of the business. These are set out on page 15 and metrics specific to environment and people can be found on pages 43 and 46 respectively.

Human rights and anti-bribery related matters

- We are committed to maintaining the highest ethical standards and to maintaining and improving global policies and processes to avoid any potential complicity in human rights violations related to our operations or supply chain. See page 48 together with our anti-slavery and human trafficking statement at www.rolls-royce.com.
- We work hard to create an environment where everyone in Rolls-Royce can work safely, act with integrity, and deliver excellence. Our Code and anti-bribery and corruption policies are clear in our commitment to not tolerate bribery or corruption of any form. See page 48.

Diversity policy and approach

- We are committed to building an inclusive culture and diverse workforce. We believe that a culture of inclusion is paramount to creating an environment where all our people can be at their best. However, diversity continues to be a significant challenge for the engineering sector as a whole but we are making progress as an organisation.
- In 2017 we launched a diversity and inclusion strategy with global targets – see page 46.
- The Board reviews its diversity policy annually to ensure it is at least aligned with best practice and any proposed changes are appropriate for the Group. See pages 73 and 74 and www.rolls-royce.com.

PRINCIPAL RISKS

Risk management

The Board is responsible for the Group's risk management system (RMS) and internal control systems.

Our RMS is designed to identify and manage, rather than eliminate, the risk of failure to achieve business objectives and to provide reasonable, but not absolute, assurance against material misstatement or loss.

We continue to build risk management into the way we work to help us to make better decisions. It is implemented through a mandated Group-wide risk management policy, including our process, software tools and governance structures. Our risk policy is supported by training and a team of experts. Businesses and functions are accountable for identifying and managing risks in line with this policy.

The Executive Team recently refreshed their principal risks, based on the new organisation structure, strategy and Group priorities.

Business continuity plans are in place to mitigate continuity risks and there has continued to be regular testing of the adequacy of these plans through exercises at every level of our incident management framework.

Joint ventures constitute a large part of the Group's activities. Responsibility for risk and internal controls in joint ventures lies with the managers of those operations. Through Board representation, we seek to align the approach to risk and internal controls with that of the Group. Management and internal audit regularly review the activities of these joint ventures.

Improvements to our risk management system

During the past year we have continued to build and enhance our RMS, specifically:

- embedding the improvements to our risk appetite framework, with key early warning metrics being introduced;
- launching a refreshed and simplified suite of Group policies, which set the tone by confirming that managing risk effectively is critical to the ongoing success and resilience of the Group;
- introducing a risk assurance programme assessing how effectively the Group-wide RMS has been implemented and providing visibility of where further improvement is needed;
- strengthening focus on assessment and treatment of our safety, compliance and business continuity risks at our remote locations;
- improving our horizon scanning, by uncovering previously hidden risks which commonly arise from external factors, incorrect assumptions or a lack of clear accountability;
- evaluating climate change scenarios; and
- increasing the number of exercises of our incident management framework, focused on our principal risks.

In 2019, we plan further enhancements to all of these areas, including placing greater focus on emerging risks and near misses, launching an improved training offering promoting a culture of risk management, increased digital support and integrated testing of contingency plans. These improvements will also support changes recommended in the FRC's recently revised Code, together with the revised Guidance on Board Effectiveness.

Principal risks

The Executive Team has refreshed the principal risks (pages 51 to 54) that we need to manage to deliver our strategic objectives. Responsibility for oversight of all the refreshed principal risks have been allocated to the Board itself or one of its committees to ensure there is appropriate monitoring and challenge.

We continued the deep dives we introduced last year and all principal risks, including their mitigation plans and controls, have been reviewed by the Board or one of its committees. The following changes were made to our principal risks for 2019:

- added Strategic Transformation to recognise the significance and extent of the organisational and cultural changes required to achieve our vision, improve our financial returns and meet our stakeholders' expectations;
- expanded Safety to reflect our expectations of having a safe and healthy place of work and the increasing importance of sustaining the environment that we live and operate in;
- re-named IT Vulnerability as Cyber Threat to better reflect the nature of this risk, placing more emphasis on the potential threat of cyber-attacks to our products as well as the additional controls we have introduced; and
- Disruptive Technologies and Business Models is a key risk relating to our competitiveness and this has been brought under the re-named principal risk of Competitive Environment (replacing Competitive Position).

Political risk

Our Brexit steering group has continued to assess potential impacts of the UK leaving the EU, including uncertainties related to our principal risks. We have continued to brief the UK Government, other governments, and regulatory agencies on our Brexit-related issues.

While we wait for clarity on the Brexit process, we have identified and implemented contingency plans to minimise interruption to our service to customers as a result of Brexit. These contingency plans include: building inventory and relocating some inventory to mainland Europe; increasing our options for logistics movements; assessing our suppliers' readiness and liaising with higher-risk suppliers; and transferring our EASA Design Organisation Approval to Rolls-Royce Deutschland Ltd & Co KG. We update our people regularly on key Brexit issues and the steps we are taking, and are supporting EU nationals in the UK and UK nationals in the EU on steps they may need to take to retain the right to work. We will keep our contingency measures under review during the Brexit process and the Board is regularly updated on our risk mitigation activities.

Management of principal risks

Our risk framework ensures that risks are identified, managed and communicated throughout the Group.

Building beyond the breakthrough in 2019

2019 priorities

1 Customers
- Increase production volume
- Expand service network
- Mitigate disruption from in-service issues

2 Technology
- Revitalise service
- Develop new engine architecture
- Advance electrification projects

3 People & culture
- Build a resilient business
- Continue restructuring programme
- Further simplify processes
- Diversity & inclusion

4 Financial progress
- Continue improving free cash flow
- Further strengthen balance sheet
- Enhance capital allocation discipline

Change in risk level from 2018

- Increased
- Decreased
- Static

PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT	KEY CONTROLS	CHANGE	PRIORITY
STRATEGIC TRANSFORMATION Failure to deliver our strategic transformation, including changing our behaviours could result in: missed opportunities; dissatisfied customers; disengaged employees; ineffective use of our scarce resources; and increasing the likelihood of other principal risks occurring. This could lead to a business that is overly dependent on a small number of products and customers; failure to achieve our vision; non-delivery of financial targets and not meeting investor expectations.	– Implementing a new organisational operating model. – Focusing on behaviours to drive cultural change. – Simplifying the processes in our Rolls-Royce Management System, whilst ensuring we comply with our legal, contractual and regulatory requirements. – Horizon scanning and scenario planning. – Investing in products with lower emissions, reducing our impact on climate change. – Employee innovation portal. This principal risk is subject to review by the Board and the Safety & Ethics Committee.	– Executive Team – Gated reviews	New for 2019	1 2 3 4
COMPETITIVE ENVIRONMENT The presence of competitors in the majority of our markets means that the Group is susceptible to significant price pressure for original equipment or services. Our main competitors have access to significant government funding programmes as well as the ability to invest heavily in technology and industrial capability. Disruptive technologies or new entrants with alternative business models could also reduce our ability to sustainably win future business, achieve operating results and realise future growth opportunities.	– Horizon scanning for emerging technology and other competitive threats, including patent searches. – Establishing our Innovation Hub to invest in innovation, manufacturing and production, and ensure continuing governance of technology programmes. – Enhancing our capabilities to access, invest in and develop key technologies and innovative service offerings which differentiate us competitively. – Improving the quality, delivery and durability of our products and services through investment in innovation, manufacturing and production capabilities. – Forming strategic partnerships and conducting joint research programmes with our partners. – Driving down cost to improve margins. – Protecting credit lines. – Strengthening our balance sheet to enable access to cost-effective sources of third party funding. This principal risk is subject to review by the Board.	– Financial performance review – Strategic planning process – Investment review committee – Science & Technology Committee – Digital strategy leadership committee	Static	1 2 4

PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT	KEY CONTROLS	CHANGE	PRIORITY
CYBER THREAT An attempt to cause harm to the Group, its customers, suppliers and partners through the unauthorised access, manipulation, corruption, or destruction of data, systems or products through cyber space.	– Implementing defence in depth through deployment of multiple layers of software and processes including web gateways, filtering, firewalls, intrusion, advanced persistent threat detectors and integrated reporting. – Running security and network operations centres. – Actively sharing cyber security information through industry, government and security forums. – Information and product assurance processes. – Training and awareness to improve cyber security culture. This principal risk is subject to review by the Audit Committee.	– Digital strategy leadership committee – IT executive – Product cyber security working groups in high risk areas – Information assurance and engineering processes – Crisis management team	<>	1 2 3
MAJOR PRODUCT PROGRAMME DELIVERY Failure to deliver a major programme on time, within budget, to technical specification or falling significantly short of customer expectations, or not delivering the planned business benefits, would have potentially significant adverse financial and reputational consequences, including the risk of impairment of the carrying value of the Group's intangible assets and the impact of potential litigation.	– Major programmes are subject to Board approval. – Reviewing major programmes at levels and frequencies appropriate to their criticality and performance, against key financial and non-financial deliverables and potential risks throughout the programmes lifecycle. – Investing in facilities and people to manage the level of disruption to our customers from Trent 1000 in-service issues and developing longer-term solutions to these issues. – Conducting technical audits at pre-defined points which are performed by a team that is independent from the programme. – Requiring programmes to address the actions arising from reviews and audits and monitoring and controlling progress through to closure. – Applying knowledge management principles to provide benefit to current and future programmes. This principal risk is subject to review by the Board.	– Rolls-Royce Management System – Operational performance review – Project audit and risk assurance reviews – Gated business and technical reviews – Quality compliance audit – Quality committee	<>	1 2 4
BUSINESS CONTINUITY The major disruption of the Group's operations, which results in our failure to meet agreed customer commitments and damages our prospects of winning future orders. Disruption could be caused by a range of events, for example: extreme weather or natural hazards (e.g. earthquakes, floods); political events; financial insolvency of a critical supplier; scarcity of materials; loss of data; and fire or infectious disease. The consequences of these events could have adverse impact on our people, our internal facilities or our external supply chain.	– Sustaining investment in adequate capacity, modern equipment and facilities, dual sources of supply and researching alternative materials. – Promoting and developing resilience within our external supplier partners. – Providing a supplier finance programme in partnership with banks to enable our suppliers to benefit from the Rolls-Royce credit rating and access funds at low interest rates (in 2018, 155 suppliers used the programme). – Building a resilient culture through flexible and collaborative working, using our single group-wide incident management framework. – Developing, maintaining and regularly exercising effective business continuity and crisis management plans to prepare our people to respond quickly and confidently to any business disruption. – Sharing lessons learned identified through exercises or incidents. – Scanning the horizon to provide awareness of emerging risks/potential incidents. This principal risk is subject to review by the Audit Committee.	– Incident management framework – Business continuity readiness assessment – External supplier audits and robust contractual agreements – Training and exercising in incident response and recovery – Environment & sustainability committee	<>	1 3 4

PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT	KEY CONTROLS	CHANGE	PRIORITY
SAFETY Failure to meet the expectations of: i) our customers to provide safe products which also minimise the impact on the environment during their production or use; or ii) people who work for or with us to provide a safe and healthy place of work which minimises the impact on the environment; would adversely affect our reputation and long-term sustainability.	We manage product safety by: — Ensuring clear accountability for safety and a culture that puts safety first. — Applying our engineering design and validation process from initial design, through production and into service to reduce the safety risks so far as is reasonably practicable; always ensuring that we meet or better the relevant company, legal, regulatory and industry requirements. — Operating a safety management system, governed by the product safety assurance board, and subject to continual improvement based on review of existing and emerging threats, experience, and industry best practice. — Ensuring that our products and those of our suppliers conform to their specification. — Ensuring that everyone receives appropriate product safety awareness training. We manage people's safety and wellbeing by: — Ensuring clear accountability for HSE and a culture that puts operating safely first. — Refreshing our global HSE policy and introducing our Zero Harm programme. — Operating an HSE management system, including reporting, investigating and learning lessons from incidents. — Driving sustainable use of resources. This principal is subject to review by the Safety & Ethics Committee.	For the safety of our products: — Company product safety assurance committee — Business product safety committee — Quality compliance audit — Engineering technical audit — Crisis management team For people's safety and wellbeing: — HSE management system — HSE accountability framework — HSE committee — Crisis management team — Environment & sustainability committee	<>	1 2 3
TALENT AND CAPABILITY Inability to identify, attract, retain and apply the critical capabilities and skills needed in appropriate numbers to effectively organise, deploy and incentivise our people would threaten the delivery of our strategies, business plans and projects.	— Attracting, rewarding and retaining the right people with the right skills globally and locally in a planned and targeted way, including regular benchmarking of remuneration. — Developing and enhancing organisational, leadership, technical and functional capability to deliver global programmes. — Continuing a strong focus on individual development and succession planning, recognising the changing nature of careers and expectations of work. — Proactively monitoring retirement in key areas and actively managing the development and career paths of our people with a special focus on employees with the highest potential. — Embedding a lean, agile, high-performance culture where everyone can be at their best that tightly aligns Group strategy with individual and team objectives. — Incentivising and effectively deploying the critical capabilities, skills and people needed to deliver our strategic priorities, plans and projects whilst implementing the Group's major programme to transform its business, to be resilient and to act with pace and simplicity. — Tracking engagement through regular employee opinion surveys and a commitment to drive year-on-year improvement to employee engagement. This principal risk is subject to review by the Nominations & Governance Committee.	— Remuneration Committee — Executive Team — Enterprise Leadership Group — People leadership team	<>	1 2 3 4

PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT	KEY CONTROLS	CHANGE	PRIORITY
MARKET AND FINANCIAL SHOCK The Group is exposed to a number of market risks, some of which are of a macro-economic nature (for example, foreign currency, oil price, rates) and some of which are more specific to the Group (for example, liquidity and credit risks, reduction in air travel or disruption to other customer operations). Significant extraneous market events could also materially damage the Group's competitiveness and/or creditworthiness. This would affect operational results or the outcomes of financial transactions.	— Maintaining a strong balance sheet, through managing cash balances and debt levels. — Providing financial flexibility by maintaining high levels of liquidity and an investment grade credit rating. — Sustaining a balanced portfolio through earning revenue both from the sale of original equipment and aftermarket services, providing a broad product range and addressing diverse markets that have differing business cycles. — Deciding where and what currencies to source in, and where and how much credit risk is extended or taken. The Group has a number of treasury policies that are designed to hedge residual risks using financial derivatives (foreign exchange, interest rates and commodity price risk). — Review debt financing and hedging in light of volatility in external financial markets caused by external events, such as Brexit or other geopolitical changes. This principal risk is subject to review by the Audit Committee.	— Financial performance review — Financial risk committee — Operational performance review — Group finance, treasury and tax teams	‹ ›	4
COMPLIANCE Non-compliance by the Group with legislation, the terms of the DPAs or other regulatory requirements in the heavily regulated environment in which it operates (for example, export controls; use of controlled chemicals and substances; anti-bribery and corruption; environmental regulations; and tax and customs legislation). This could affect our ability to conduct business in certain jurisdictions and would expose the Group to potential: reputational damage; financial penalties; debarment from government contracts for a period of time; and suspension of export privileges (including export credit financing), each of which could have a material adverse effect.	— Taking an uncompromising approach to compliance. — Operating an extensive compliance programme. Global mandatory policies, processes and training are disseminated throughout the Group and are updated from time to time to ensure their continued relevance, and to ensure that they are complied with, both in spirit and to the letter. — Regular reviews of the strength of relevant teams including the ethics, anti-bribery and corruption, compliance, tax, sustainability and export control teams. — A legal team is in place to manage any ongoing regulatory investigations. — Engaging with all relevant external regulatory authorities. — Implementing a comprehensive REACH compliance programme. This includes ensuring that we and our supply chain are covered by REACH authorisations for a number of chemicals needed for our products, establishing appropriate data systems and processes and working with our suppliers, customers and trade associations. This principal risk is subject to review by the Safety & Ethics Committee.	— Governance framework — Compliance and export control teams — Governance team — Legal team	‹ ›	3 4
POLITICAL RISK Geopolitical factors that lead to an unfavourable business climate and significant tensions between major trading parties or blocs which could impact the Group's operations. Examples include: changes in key political relationships; explicit trade protectionism, differing tax or regulatory regimes, potential for conflict or broader political issues; and heightened political tensions.	— Where possible, diversifying our global operations to avoid excessive concentration of risks in particular areas. — The Group's businesses, strategic marketing network and global government relations teams proactively monitoring local situations. — We develop and maintain relationships with governments and stakeholders and proactively influence policy, regulation and legislation where it affects us. — Steering committee to co-ordinate activities across the Group and minimise the impact of Brexit. This principal risk is subject to review by the Board.	— Global government relations network — Group tax and export control teams — Strategic planning process — Brexit steering committee	↑	1 2 3 4

GOING CONCERN AND VIABILITY STATEMENTS

Introduction

Rolls-Royce operates an annual planning process. Our plans and risks to their achievement are reviewed by the Board and once approved are cascaded throughout the Group and are used as the basis for monitoring our performance, incentivising employees and providing external guidance to our shareholders.

The processes for identifying and managing the principal risks are described on page 50. As also described there, the risk management process, and the going concern and viability statements, are designed to provide reasonable, but not absolute, assurance.

Going concern

The going concern assessment considers whether it is appropriate to prepare the financial statements on a going concern basis. The Board has also considered the net liability position at 31 December 2018 and the going concern status of the Group's material subsidiaries.

As described on page 199, the Group meets its funding requirements through a mixture of shareholders' funds, bank borrowings, bonds and notes. At 31 December 2018, the Group had borrowing facilities of £6.9bn and total liquidity of £7.5bn, including cash and cash equivalents of £5bn and undrawn facilities of £2.5bn. £858m of the facilities mature in 2019.

The Group's forecasts and projections, taking into account reasonably possible changes in trading performance, show that the Group has sufficient financial resources. The Directors have reasonable expectations that the Company and the Group are well placed to manage business risks and to continue in operational existence for the foreseeable future (which accounting standards require to be at least a year from the date of this report) and have not identified any material uncertainties to the Company's and the Group's ability to do so.

On the basis described above, the Directors consider it appropriate to adopt the going concern basis in preparing the Consolidated Financial Statements (in accordance with the Guidance on Risk Management, Internal Control and Related Financial and Business Reporting published by the FRC in September 2014).

Viability

The viability assessment considers solvency and liquidity over a longer period than the going concern assessment. Consistent with previous years, we have assessed our viability over a five-year period. Inevitably, the degree of certainty reduces over this longer period.

In making the assessment, severe but plausible scenarios have been considered that estimate the potential impact of the principal risks arising over the assessment period, for example: the loss of a key element of the supply chain; the impact on aircraft travel of a global pandemic; worsening or new in-service issues on new Civil Aerospace programmes; or, the impact of a political risk such as Brexit on the Group (see page 50 for further information on the process we are taking to manage the risks related to Brexit).

The scenarios assume an appropriate management response to the specific event, but not broader mitigating actions which could be undertaken, which have been considered separately. The cash flow impacts of these scenarios were overlaid on the five-year forecast to assess how the Group's liquidity and solvency would be affected. Reverse stress testing has also been performed to assess the severity of scenario that would have to occur to exceed headroom, including a scenario where existing borrowing facilities could not be refinanced as they mature.

The assessment took account of the Group's current funding, forecast requirements and existing committed borrowing facilities.

On the basis described above, the Board confirms that it has a reasonable expectation that the Company will be able to continue in operation and meet its liabilities as they fall due over the next five years.

In making this statement, the Directors have made the following key assumptions:

- That maturing facilities will be refinanced. The Group currently has access to global debt markets and expects to be able to refinance these facilities on commercially acceptable terms. The Group's medium and long-term financing plans are designed to allow for periods of adverse conditions in world capital markets but not a prolonged (say 12 month) period where debt markets were effectively closed to the Group.
- That in the event of one or more risks occurring, which has a particularly severe effect on the Group, all potential actions, such as constraining capital spending and reducing or suspending payments to shareholders, would be taken on a timely basis. The Group believes it has the early warning mechanisms to identify the need for such actions and the ability to implement them on a timely basis if necessary.
- That implausible scenarios, whether involving multiple risks occurring at the same time or the impact of individual risks occurring that cannot be mitigated by management actions to the degree assumed, do not occur.

Signed on behalf of the Board

Warren East
Chief Executive

28 February 2019

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Compliance with the UK Corporate Governance Code 2016

The Company is subject to the principles and provisions of the UK Corporate Governance Code 2016 (the Code), a copy of which is available at www.frc.org.uk. For the year ended 31 December 2018, the Board considers that it has complied in full with the provisions of the Code. Further information on the application of the principles can be found in the Directors' Report on pages 57 to 105 and 200 to 203. With the publication in July 2018 of the revised UK Corporate Governance Code 2018 (the revised Code), the Board has reviewed its governance initiatives and programmes. Whilst reporting on the Company's compliance with the Code, we have also reported where possible in the spirit of the revised Code.

CHAIRMAN'S INTRODUCTION TO DIRECTORS' REPORT

IAN DAVIS
CHAIRMAN

Introduction

2018 has been an important year for the strengthening of corporate governance practices externally. This provided a backdrop for a review of our programmes and initiatives.

We saw the introduction of the FRC's revised Code in July. The Board welcomes the considered yet concise approach apparent in the revised Code that helps to clarify and guide in promoting a strong governance environment. From the good work that we have undertaken over recent years, we are pleased that we are well placed to meet the requirements of the revised Code.

I consider that we are a particularly active Board. We seek opportunities outside of the boardroom to find out about what is happening across the organisation and gain assurance that the Group is operating responsibly and effectively. For example, some Non-Executive Directors and I have attended executive-level committee meetings such as those of the environment & sustainability committee, the digital steering committee and the business audit committees. This enables us to gain deeper insights while visibly supporting management's goals in these areas.

This additional level of commitment by Board members has been of particular assistance to the Board during 2018 as much of our work has been centred on the themes of corporate culture and our engagement with stakeholders.

Corporate culture

We have continued to support the Executive Team with its ambitious restructuring programme. A key part of this depends on reinforcing the values, behaviours and mindset needed to position and drive the Group's strategy towards achieving its vision. The Board recognises that, to be successful in this, requires not just organisational restructuring but a cultural shift in inspiring our people to take accountability, be innovative and continuously seek out improved and more efficient ways of working.

This must, however, all be within the bounds of a defined framework that reflects our values and the type of group that Rolls-Royce wishes to be known and admired for. As well as other aspects, this of course includes a continuing strong focus on ethics and compliance, driving the highest standards of integrity, and in doing so meeting our obligations to regulators under our DPA. The Board has overseen and directly contributed to the work in this area during the year, which expands upon the Group's governance framework that we have previously endorsed.

In the summer, we reviewed and approved a refreshed version of our Code of Conduct and a simplified set of Group policies. These are aligned to our core values and are available at www.rolls-royce.com.

With the recognition that we need to continuously reinforce safety as a core value, we strongly supported the deployment of our Zero Harm Life-Saving Rules across the workforce earlier in the year. Occupational safety and wellbeing remain priorities for the Group and you can read more on this in the Safety & Ethics Committee Report on pages 96 to 101.

In September, we were briefed on the Group's new people framework, providing a structured approach to the development of our talented people and the nurturing of the skills and behaviours that will lead the Group to a successful and sustainable future.

We are taking a keen interest in how the diversity and inclusion (D&I) agenda is being progressed and promoted across the Group. I was personally delighted to be invited back to speak with the African and Caribbean professional network, one of a growing number of Rolls-Royce employee resource groups, having attended its inaugural conference in 2015.

For more information on D&I and employee engagement see Our People on pages 44 to 47.

Stakeholders

The revised Code has reinforced and expanded on the long-standing requirements of the UK Companies Act for directors to remain mindful of their duties to consider the interests of key stakeholders. At Rolls-Royce, we understand that who we are and how we behave matters not only to our people but to the many stakeholders who have an interest in our business.

In September, the Board undertook a thorough review of the Group's stakeholders and how we engage. This is set out in detail on pages 66 to 68.

Talent and succession

The Board was pleased with the increased focus by the Executive Team on leadership talent and the succession pipeline. Development plans are in place for those emerging leaders with potential to succeed current members of the Executive Team in due course. Following management restructuring activities, the Enterprise Leadership Group has also been refined and reset to a smaller, diverse core of key leaders who will take the business forward. There remains much to do in improving diversity amongst our leadership and management populations, a challenge which we are committed to support through monitoring of careful plans to attract and recruit, retain and develop our leaders of the future.

After the success of our inaugural Board apprentice programme launched in 2017, we incorporated the feedback received into a refined programme for 2018/19. This initiative provides coaching and board experience to a diverse group of emerging leaders selected from the Group's talent pool. Six individuals were selected for our second cohort. Under the sponsorship of two Board members and one Executive Team member for each apprentice, we were delighted to welcome them to their first meetings of the committees to which they have been assigned in November 2018. The programme will run for 18 months with a rotation to a different committee half way through the period. There are opportunities to participate in supplementary committees, masterclasses on board-relevant topics and other networking forums. As well as the experience gained by the apprentices, the Directors value the participation and perspectives brought by these individuals to our discussions.

Board developments

The Board has a diverse membership with varied and balanced experience and skills that are highly relevant to the Group's needs and challenges.

In February 2018, we agreed to extend Brad Singer's initial two-year appointment for a further three years. The Company and Brad are party to a relationship agreement with ValueAct. A new, simplified agreement was put in place in February (a summary of which can be found at www.rolls-royce.com).

At the AGM in May, shareholders confirmed the Board's recommendation to appoint Nick Luff as a Non-Executive Director with effect from the conclusion of the AGM. As chief financial officer at RELX plc, Nick brings listed company regulatory experience and technical financial and accounting skills. He also has extensive non-executive experience. These add real value to the work of the Board and the Audit Committee. Details of the selection and appointment process are in the Nominations & Governance Committee Report on page 73.

On the recommendation of the Nominations & Governance Committee, the Board agreed to extend Jasmin Staiblin's appointment for a third three-year term and Irene Dorner and Sir Kevin Smith's appointments for a second three-year term. Their biographies, including their Board skills and experience, can be found on pages 59 to 61.

All Directors will stand for re-election at the AGM in May 2019.

Looking forward

With the introduction of the revised Code, we have been able to reflect on our own governance framework and initiatives. Corporate culture, including anti-bullying and harrassment, safety and wellbeing, together with stakeholder engagement, will be areas of focus as we look forward to the year ahead.

Ian Davis
Chairman

STRATEGIC DECISIONS

In 2018, the Board made some important strategic decisions.

In January, the Board approved a strategic review of the Group's Commercial Marine business. After several options had been explored, we resolved later in the year to dispose of the business to KONGSBERG. In arriving at such a decision, we considered the interests of our key stakeholders, including our shareholders, customers, employees and the communities in which they work. We concluded that the Group was not in a position to make the investments required to enable the Commercial Marine business to reach its potential. However, we believed that under the right ownership the business could develop strongly over time for the benefit of its stakeholders. As a well-regarded marine industry company headquartered in Norway, KONGSBERG presented an attractive proposition as a trade buyer which was interested in working with the talented people in the business to drive it forward. When the deal concludes in 2019, the proceeds will serve to strengthen the Company's balance sheet as we look to both the challenges and the opportunities ahead.

Very similar considerations were applied by the Board when we resolved in March to dispose of our Power Systems fuel injection technologies business, L'Orange.

We concluded that the business was a better fit in the hands of Woodward Group as an appropriate owner but only after considering alternative options.

Stakeholder interests, including those of the employees of the business who would be able to continue to contribute to the business under its new ownership, were considered by the Board.

To ensure that the interests of customers were recognised, the Board acknowledged that L'Orange, which is based in Stuttgart, Germany, would remain an important partner and supplier to Rolls-Royce. Therefore, Power Systems entered into a long-term supply agreement with L'Orange for an initial term of 15 years.

The transaction completed in June 2018.

BOARD OF DIRECTORS

IAN DAVIS NG
Chairman of the Board
Chairman, Nominations & Governance Committee

Appointed to the Board in March 2013 and as Chairman in May 2013.

Career Ian was a partner at McKinsey for 31 years and, during his time, served as chairman and worldwide managing director.

Board skills and experience Ian brings significant financial and strategic experience and has worked with and advised global organisations and companies. This enables him to draw on knowledge of diverse issues and outcomes to assist the Board.

Other principal roles
— BP p.l.c., senior independent director
— Johnson & Johnson Inc., non-executive director
— McKinsey & Company, senior partner emeritus

WARREN EAST CBE
Chief Executive

Appointed to the Board in January 2014 and as Chief Executive in July 2015.

Career Warren is an engineer and joined ARM Holdings plc in 1994 where he was CEO from 2001 until 2013. He is a fellow of the Institute of Engineering and Technology; the Royal Academy of Engineering; the Royal Society; and the Royal Aeronautical Society. He was awarded a CBE in 2014 for services to the technology industry.

Board skills and experience Warren brings a deep understanding of technology and developing long-term partnerships. He also has proven strategic and leadership skills within a global business and a strong record of value creation.

Other principal roles
— Dyson James Group Limited, director

STEPHEN DAINTITH
Chief Financial Officer

Appointed in April 2017.

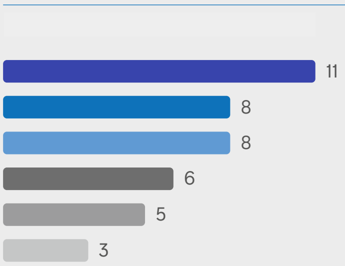
Career Stephen is a chartered accountant. His previous roles include CFO of Daily Mail and General Trust plc from January 2011 to April 2017. He was CFO and COO of Dow Jones in New York and CFO of News International in London, both part of News Corporation. Prior to this, he held executive positions at British American Tobacco plc.

Board skills and experience Stephen has a strong understanding of international business and an appreciation for looking beyond numbers to help improve performance. His change management experience allows him to make a significant contribution to the long-term growth of the business.

Other principal roles
— 3i Group plc, non-executive director

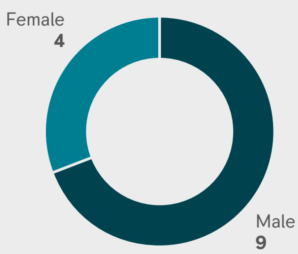
Composition of the Board

Board skills and experience

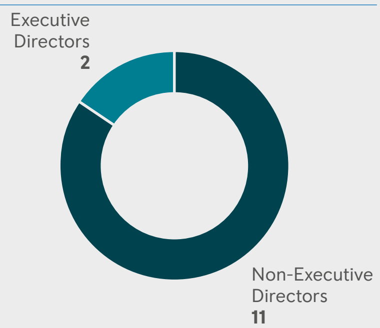


Number of Directors with:
- Chairman/CEO/CFO experience
- Related industry/operational
- Financial
- Engineering/technology
- Safety/regulatory/risk
- Remuneration/HR

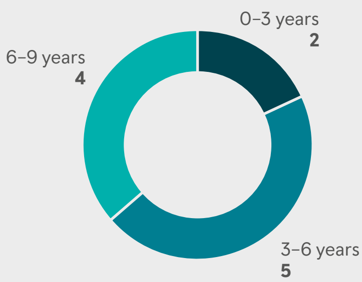
Board members by gender



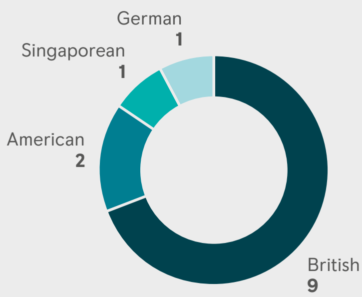
Balance of the Board



Non-Executive Directors' tenure



Board members by nationality *



* According to the Company's Articles of Association, at least 50% of our Directors must be British citizens.

NG Nominations & Governance Committee
A Audit Committee
R Remuneration Committee
SE Safety & Ethics Committee
ST Science & Technology Committee

LEWIS BOOTH CBE NG A R
Independent Non-Executive Director
Chairman, Audit Committee

Appointed in May 2011.

Career After gaining a bachelor of engineering degree with honours in mechanical engineering, Lewis began his career with British Leyland. He spent 34 years at Ford Motor Company including as executive vice president and CFO. He was awarded a CBE in 2012 for services to the UK automotive and manufacturing industries.

Board skills and experience Lewis has considerable financial expertise and experience, of great benefit to both the Board and in his role as Chairman of the Audit Committee. He brings a global perspective and is recognised as one of the strongest and most experienced international leaders in his sector.

Other principal roles
— Mondelez International Inc., director

RUTH CAIRNIE NG R ST
Independent Non-Executive Director
Chairman, Remuneration Committee

Appointed in September 2014.

Career A physicist by background, Ruth joined Royal Dutch Shell plc as a scientist. During her 37 years with the company, she held a number of senior positions, in the UK and internationally. From 2011 until her retirement in 2014, Ruth was executive vice president of strategy and planning for the global business.

Board skills and experience Ruth has strong strategic and commercial knowledge. Skilled in addressing technological and environmental challenges, she brings real value to the Science & Technology Committee. She also has significant experience as remuneration committee chair, both at Associated British Foods plc (ABF) and previously Keller Group plc.

Other principal roles
— ABF, non-executive director
— ContourGlobal plc, non-executive director
— POWERful Women, industry chair

SIR FRANK CHAPMAN NG SE ST
Independent Non-Executive Director
Chairman, Safety & Ethics Committee

Appointed in November 2011.

Career Sir Frank is a chartered engineer. With 40 years spent in the oil & gas sector, he was chief executive of BG Group plc for 12 years and chairman of Golar LNG Ltd. Sir Frank is a fellow of the Royal Academy of Engineering, the Institute of Mechanical Engineers and the Energy Institute. He was knighted in 2011 for services to the oil & gas industry.

Board skills and experience Sir Frank has an outstanding record of business achievement, a life-long passion for engineering and innovation and a deep understanding of technology. His significant industrial and safety experience are invaluable to the Board and in particular in his role as chairman of the Safety & Ethics Committee.

Other principal roles
— Myeloma UK, vice chairman

IRENE DORNER NG A SE
Independent Non-Executive Director
Employee Champion

Appointed in July 2015.

Career Irene was CEO and president of HSBC, US until retiring in December 2014. During her 30-year career with HSBC, she held a number of international roles including CEO of HSBC in Malaysia. Irene is an honorary fellow of St Anne's College Oxford, she qualified as a barrister-at-law in London and until 2016, was a consultant at PwC.

Board skills and experience With a strong background in risk management, gained from the financial sector, Irene brings valuable insight as part of her role on our Audit Committee. As a passionate advocate of diversity and inclusion, she has embraced the role of Employee Champion and ensures the views of the workforce are properly reflected in the Board's discussions.

Other principal roles
— AXA SA, director
— Control Risks Group Holdings Limited, chairman

BEVERLY GOULET NG R A
Independent Non-Executive Director
Employee Champion, North America

Appointed in July 2017.

Career Beverly, a US national, started her career as a securities and M&A lawyer and has spent a considerable amount of her career in the airline industry. From 1993 until June 2017, Beverly was a key member of the executive team of American Airlines where she served in a number of senior roles.

Board skills and experience Beverly brings valuable knowledge and operational experience gained from within the airline sector. Together with her expertise in finance, treasury, strategy, legal and governance matters, she actively takes part in the development and strengthening of our business.

Other principal roles
— Xenia Hotels, non-executive director
— Texas Women's Foundation, board member
— Rolls-Royce North America Holdings, Inc., board member

LEE HSIEN YANG NG A SE
Independent Non-Executive Director

Appointed in January 2014.

Career A Singaporean, Hsien Yang was chief executive of Singapore Telecommunications Limited for 12 years. He was a former member of the Rolls-Royce International Advisory Board, he served as chairman and non-executive director of Fraser and Neave Limited from 2007 to 2013 and Chairman of the Civil Aviation Authority of Singapore.

Board skills and experience Hsien Yang combines a strong background in engineering with extensive international business and management experience in a key market for the Company. His significant industrial and financial skills prove valuable in his committee memberships.

Other principal roles
— The Islamic Bank of Asia Private Limited, chairman

NICK LUFF NG SE A
Independent Non-Executive Director

Appointed in May 2018.

Career Nick is a chartered accountant. He is chief financial officer at RELX Group PLC, playing a key role in driving shareholder returns as the company transforms its business and simplifies its corporate structure. Nick was previously CFO of Centrica plc for 7 years and, prior to that, P&O Group. Nick has formerly been audit committee chairman and a non-executive director of both Lloyds Banking Group plc and QinetiQ Group plc.

Boards skills and experience Nick has broad financial skills and a track record of driving business performance. In addition, he has extensive non-executive experience. This exposure together with both financial and accounting expertise and a passion for engineering is invaluable to the Board.

Other principal roles
— RELX Group PLC, chief financial officer

BRADLEY SINGER ST
Non-Independent Non-Executive Director

Appointed in March 2016.

Career Brad, a US national, is a partner and COO of ValueAct Capital Management LP. He has been senior executive vice president and CFO of Discovery Communications, Inc. and CFO and treasurer of American Tower Corp. Before these appointments, he worked as an investment banker at Goldman Sachs.

Board skills and experience Brad has an outstanding record as a business leader, with experience of public companies during periods of change, growth and significant financial outperformance, particularly in the US. He provides an investor perspective drawing on his experience as COO of ValueAct.

Other principal roles
— ValueAct Capital, partner and COO
— The Posse Foundation, chairman
— McIntire School Foundation, University of Virginia, trustee

PAMELA COLES
Company Secretary
Chief Governance Officer

Appointed in October 2014.

Career Pamela is a fellow of the ICSA: The Governance Institute. She joined Rolls-Royce from Centrica plc, where she was head of secretariat. Pamela's previous roles also include group company secretary and a member of the executive committee at The Rank Group plc and company secretary and head of legal at RAC plc.

Board skills and experience Pamela is an expert in corporate governance and company law. With a pragmatic approach to how the Governance Team supports the business, she has been instrumental in supporting the Chairman and the Non-Executive Directors to build strong relationships with the management team and has been able to offer advice and guidance on a wide range of topics.

Other principal roles
— E-ACT, non-executive director

SIR KEVIN SMITH CBE NG R ST
Senior Independent Director
Chairman, Science & Technology Committee

Appointed in November 2015.

Career Sir Kevin was CEO of GKN plc for nine years. Before GKN, he spent nearly 20 years with BAE Systems in a number of senior executive positions. He has an honorary fellowship doctorate from Cranfield University and is an honorary fellow of the University of Central Lancashire. He was awarded a CBE in 1997 and knighted in 2006 for services to industry.

Board skills and experience Sir Kevin has extensive industrial leadership experience and a deep knowledge of engineering and manufacturing businesses, as well as the aerospace industry. He makes a significant contribution to the growth and development of our key strategies, both as a member of the Board and as Chairman of the Science & Technology Committee.

Other principal roles
— Unitas Capital, senior adviser
— L.E.K. Consulting, European advisory board member

JASMIN STAIBLIN NG ST
Independent Non-Executive Director

Appointed in May 2012.

Career A German national, Jasmin was the CEO of Alpiq Holding AG from 2013 to 2018. Prior to this, she held a number of senior positions in the ABB Group working in Switzerland, Sweden and Australia, becoming CEO of ABB Switzerland from 2006 until 2012.

Board skills and experience Jasmin combines a strong background in advanced engineering and deep technology knowledge with extensive international business experience in the industrial sector. With a background dominated by science and technology, she makes a significant contribution both to the Board and as a member of the Science & Technology Committee.

Other principal roles
— Georg Fischer AG, non-executive director
— Seves, non-executive director

Board committee membership

	NG	A	R	SE	ST
Ian Davis	C				
Lewis Booth	■	C	■		
Ruth Cairnie	■		C		■
Sir Frank Chapman	■			C	■
Irene Dorner	■	■		■	
Beverly Goulet	■	■	■		
Lee Hsien Yang	■	■		■	
Nick Luff	■	■		■	
Bradley Singer					■
Sir Kevin Smith	■		■		C
Jasmin Staiblin	■				■

Key
NG Nominations & Governance Committee
A Audit Committee
R Remuneration Committee
SE Safety & Ethics Committee
ST Science & Technology Committee
C Chairman

Full Director's biographies can be found at: www.rolls-royce.com

CORPORATE GOVERNANCE

The Board

The role of the Board

The Board is ultimately responsible to shareholders for the direction, management, performance and long-term sustainable success of the Company. It sets the Group's strategy and objectives and oversees and monitors internal controls, risk management, principal risks, governance and viability of the Company. In doing so, the Directors comply with their duties under section 172 of the Companies Act 2006.

The Board has established certain principal committees to assist it in fulfilling its oversight responsibilities, providing dedicated focus on particular areas, as set out below. Each committee chairman reports to the Board on the committee's activities after each committee meeting.

In addition to the Board's principal committees, it has established a sub-committee of Directors who each hold an appropriate level of UK national security clearance for the purpose of receiving and considering, on behalf of the Board, any UK classified information relating to the Group's programmes and activities. Beverly Goulet, a US national and independent Non-Executive Director, also sits on the board of Rolls-Royce North America Holdings, Inc. to create a link between the Board and the Group's North American governance structure.

Key matters reserved to the Board

- The Group's long-term objectives, strategy and risk appetite
- The Group's organisation and capability
- Shareholder engagement and general meetings
- Overall corporate governance arrangements including Board and committee composition, committee terms of reference, Directors' independence and conflicts of interest
- Internal controls, governance and risk management frameworks
- Changes to the corporate or capital structure of the Company
- Annual report and accounts, and financial and regulatory announcements
- Significant changes in accounting policies or practices
- Annual budgets and financial expenditure and commitments above levels set by the Board

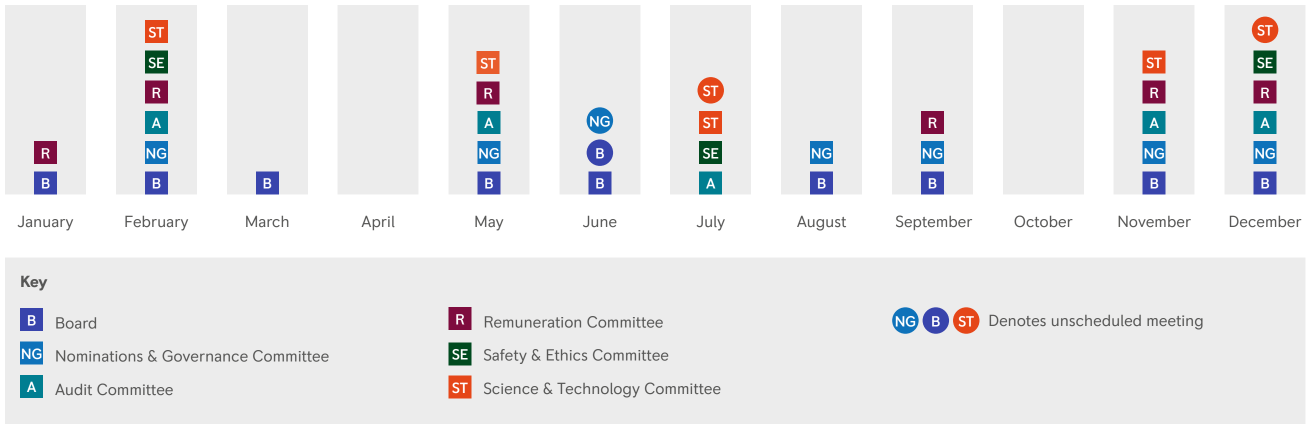
The Board committees

Nominations & Governance Committee	Audit Committee	Remuneration Committee	Safety & Ethics Committee	Science & Technology Committee
Board & committee composition	Financial reporting	Remuneration policy	Product safety	Technology strategy
Board nominations	Internal controls & risk management	Incentive design and setting of targets	HSE	Cross-sector technology
Succession planning for Directors and senior management	Internal audit	Executive and senior management remuneration review	Sustainability	Technology capabilities and skills
Corporate governance	External audit	Workforce remuneration review and related policies	Ethics & compliance	Technology trends and risks
Oversight of principal risk – talent & capability	Oversight of principal risks – business continuity, market & financial shock, cyber threat		Oversight of principal risks – compliance, strategic transformation, safety	

Roles and responsibilities

The roles of the Chairman and Chief Executive are clearly defined and the Board supports the separation of the two roles. The Chairman is responsible for the leadership and effectiveness of the Board. The Chief Executive is responsible for the running of the Company's business and leads the Executive Team which comes together to communicate, review and agree on issues and actions of Group-wide significance. Non-Executive Directors support the Chairman and provide objective and constructive challenge to management. The Senior Independent Director (SID) provides a sounding board for the Chairman and serves as an intermediary for the Chief Executive, other Directors and shareholders when required. The Company Secretary makes sure that appropriate and timely information is provided to the Board and its committees and is responsible for advising and supporting the Chairman and Board on all governance matters. All Directors have access to the Company Secretary and may take independent professional advice at the Company's expense in conducting their duties.

Board and committee meetings held in 2018



At the end of most scheduled meetings, the Chairman holds meetings with the Non-Executive Directors without the Executive Directors or management present.

Unscheduled meetings

The unscheduled meeting of the Board in June was to review the programme and content for the Capital Markets event. The unscheduled meeting of the Nominations & Governance Committee in June was to consider the re-appointment of Irene Dorner as a Non-Executive Director following the expiry of her first three-year term.

Two additional Science & Technology Committee calls were held. The first, in July, was for the Committee to be updated on progress with the technology efficiency and effectiveness review and the second in December was to follow up after a technical risk deep dive at the meeting held in November.

Non-attendance

Some Board members were unable to participate in certain Board and committee meetings due to the meeting being held to discuss the Director's reappointment, for medical reasons or due to critical business commitments, as noted in the table below.

If any Directors are unable to attend a meeting they communicate their opinions and comments on the matters to be considered via the Chairman of the Board or the relevant committee chairman.

Board and committee members and attendance at scheduled meetings in 2018

	Board (9 meetings)	Nominations & Governance (6 meetings)	Audit (5 meetings)	Remuneration (6 meetings)	Safety & Ethics (3 meetings)	Science & Technology (4 meetings)
Ian Davis	9/9	6/6				
Warren East	9/9					
Stephen Daintith	9/9					
Lewis Booth	9/9	6/6	5/5	6/6		
Ruth Cairnie	9/9	6/6		6/6		4/4
Sir Frank Chapman	9/9	6/6		6/6	3/3	
Irene Dorner	9/9	6/6	5/5		3/3	
Beverly Goulet	9/9	6/6	5/5			
Lee Hsien Yang	9/9	6/6	5/5		3/3	
Nick Luff (appointed 3 May 2018)	5/5	4/4	3/3			
Brad Singer	9/9					4/4
Sir Kevin Smith[1]	8/9	5/6		6/6		4/4
Jasmin Staiblin[2]	9/9	4/6				4/4

[1] Sir Kevin Smith did not attend the August Board and Nominations & Governance Committee meetings due to medical reasons.
[2] Jasmin Staiblin did not attend the May meeting of the Nominations & Governance Committee as it was convened to discuss her re-appointment. She did not attend the December meeting of the same Committee due to critical business commitments.

Committee changes

From 1 January 2019, on the recommendation of the Nominations & Governance Committee, the Board approved the following changes to its committees: Sir Frank Chapman stepped down from the Remuneration Committee and joined the Science & Technology Committee; Beverly Goulet joined the Remuneration Committee; and Nick Luff joined the Safety & Ethics Committee.

Board's focus during the year

Area of focus	Matters considered	Outcome
Strategy and risk	Review the Group's strategy	The refreshed vision and strategy for the Group, approved by the Board in 2017, was rolled out internally and externally from early 2018. In September, the Board held a two-day meeting with the Executive Team focused on reviewing the progress with the execution of the Group's strategic plan and the longer-term context, including discussions on all areas of the business, people capability and the restructuring programme. The Board provided reflections on the day at the subsequent Board meeting. Feedback and content of discussions were shared with the Executive Team and businesses.
	Review of risk appetite and principal risks, including deep dives on: — political risk; — competitive position; and — major product programme delivery	The Board reviewed and approved the Group's risk appetite framework in February. Furthermore, the Board carried out a robust assessment of the principal risks facing the Company, set out on pages 51 to 54 and including those that would threaten its business model, future performance, solvency or liquidity. The Board received an update on the effectiveness of risk management from the Audit Committee in December. Lord Powell[1] supported a deep dive on political risk in March 2018, which included: the implications of Brexit; current geo-political factors; and the changing cyber security threats. The Board considered the Group's competitive position as part of its strategy sessions in September. The Board reviewed the risks associated with the delivery of Civil Aerospace programmes during the year and received regular updates from the President – Civil Aerospace, including the in-service issues with the Trent 1000 programme. The Board reviewed Power Systems in detail during its visit to Friedrichshafen, Germany in March and discussed the Defence business and strategy with the President – Defence in August.
	Disposal of the Commercial Marine business and Power Systems fuel injection technologies business, L'Orange	During the year, the Board approved the disposal of the Group's Commercial Marine business to KONGSBERG Gruppen ASA and the disposal of L'Orange to the Woodward Group. Progress updates were received by the Board. See page 58 for more details.
	Ongoing co-operation with regulators following deferred prosecution agreements (DPAs)	The Board kept oversight of compliance with the DPAs with regular updates provided by the Group's General Counsel.
Succession and leadership	Board appointments	During the course of the year, the Board welcomed Nick Luff as a Non-Executive Director. In addition, the Board approved the re-appointments of Brad Singer, Irene Dorner, Jasmin Staiblin and Sir Kevin Smith.
	Effectiveness of the Board, Chairman and Chief Executive	An external evaluation was undertaken and it concluded that the Board operated effectively in 2018. See page 70 for more details. The Chairman and Chief Executive received constructive feedback on their respective performance.
Financial performance	Review of financial KPIs	The Board obtained monthly financial performance reports and discussed the reports with the Chief Financial Officer at each Board meeting. Two new KPIs were approved by the Board: cash flow per share and cash return on invested capital. See page 15 for more details.
	Introduction of new accounting standards (IFRS 9 and IFRS 15)	The financial reporting basis from the start of the year was in compliance with IFRS 9 and IFRS 15. In preparation for the changes, the Board had received updates regarding the introduction and impact of the new accounting standards during 2017.

[1] Lord Powell from the Council of Foreign Relations has been retained by the Company as an adviser on geo-political issues.

Area of focus	Matters considered	Outcome
Operational performance/ challenges	Operational performance updates	Year-to-date status across key operational performance measures and key priorities presented throughout the year. The operational KPIs for each business were also discussed.
	Civil Aerospace programme challenges, including new product introduction	Operational challenges during the year are described in the Civil Aerospace review on pages 24 to 29. The Board remained regularly informed on the management of these issues, including steps to minimise customer disruption, and received regular briefings from the Chief Executive and President – Civil Aerospace.
	Safety incidents	The Board was briefed on the RIDDOR report that had resulted in the UK H&S Executive visiting the relevant site (more detail can be found on page 99). The safety walks quick guide was provided to the Directors for their future reference when visiting facilities.
Stakeholder engagement and governance	Investor engagement	Continued transparency in investor briefings. The Capital Markets event held in June was well received and introduced members of the Executive Team to our investors. In July, we published our first ESG newsletter which is available at www.rolls.royce.com.
	Employee engagement	The Board held two Meet the Board events for employees, in the UK and in Germany. Regular updates were given by Irene Dorner on her employee champion role and meetings/events she had attended. The Board considered a report on global employee relations. Irene Dorner also highlighted an emerging theme arising across her discussions with employees concerning bullying and harassment. This was considered by the Safety & Ethics Committee – see page 101 – and resulted in a global anti-bullying campaign which was launched at the end of the year and will continue into 2019.
	Other stakeholder engagement	The Board reviewed in detail its stakeholder groups and current engagement programmes. This is discussed in detail on pages 66 to 68.
	FRC's publication of the 2018 UK Corporate Governance Code (revised Code)	The Board was updated on the implications for Rolls-Royce of the changes following the publication of the revised Code.
	Matters reserved to the Board and delegated authorities	The Board carried out a full review of its matters reserved to ensure alignment with the revised Code and its delegated authorities.
	UK Modern Slavery Act	The anti-slavery and human trafficking statement was presented and approved by the Board in February 2018.

The Board's areas of focus in 2019 are expected to include:

- The Group's culture
- Execution of strategic priorities
- Overview of the restructuring of the businesses, support and management functions including management of associated risk
- Civil Aerospace operational delivery programme ramp-up
- Continued monitoring of financial and operational performance
- Continued strong focus on safety improvements
- Continuing to monitor compliance with the terms of the DPAs
- The implications of Brexit on the Group's activities
- Principal risk reviews
- Increased emphasis on sustainability
- Implementation of any required changes to the corporate governance framework introduced by the revised Code

Stakeholder engagement

At Rolls-Royce, we understand that who we are and how we behave matters not only to our people but to the many stakeholders who have an interest in our business. We believe that stakeholder engagement remains vital to building a sustainable business and we interact with many stakeholders at different levels of the organisation. Engagement is carried out by those most relevant to the stakeholder group or issue.

The table below identifies some of our stakeholders and how both the Company and the Board engages with them. More details can be found on www.rolls-royce.com. During the year, the Board has reviewed the different stakeholder groups and the current engagement programmes and identified further opportunities for strengthening both its relationships and understanding to facilitate the decisions and contributions made by the Board to the success of the business.

Customers

Why they matter to us

Focusing on the needs of our customers is critical to the success of our business. We collaborate and innovate with our customers to improve product performance and value.

Type of engagement

- Contract negotiation, execution and management of ongoing relationships
- Customer training
- Satisfaction surveys and net promoter scores
- Participation in industry forums and events
- Partnerships with industry, STEM, graduate and apprentice activities

What matters to them

- Safety, quality and reliability
- Value for money
- Product performance and efficiency
- Competitiveness
- Our availability and responsiveness
- Research and innovation
- Sustainability performance
- Relationship
- Compliance

How the Board engages

The Board has kept very close to our businesses' customer engagement throughout the year, due to the highly regrettable and significant operational disruption caused to our affected airline customers as a result of the in-service issues with the Trent 1000. Civil Aerospace customers have been invited to present to the Board to share views on what it is like to work with us. Customer relationships across our businesses are discussed at most Board meetings as part of the Chief Executive's report. In addition, all business presidents regularly present to the Board and key customer relationships are part of the discussions. The Board's discussions benefit from Beverly Goulet's experience in the sector and she provides valuable insights into what matters to airline customers.

Investors

Why they matter to us

Continued access to capital is vital to the long term performance of our business.

We work to ensure that our investors and investment analysts have a strong understanding of our strategy, performance, ambition and culture.

Type of engagement

- Dedicated investor relations (IR) team
- Annual report and accounts and Annual General Meeting
- Corporate website, including dedicated investor section
- Investor roadshows
- Results presentations and post-results engagement with top shareholders
- Stock Exchange announcements and press releases
- Addressing regular analyst enquiries
- Governance days for fund managers and governance analysts
- IR briefing papers and governance newsletter
- Capital Markets events
- Investor consultations
- Meetings with institutional shareholders on request to discuss governance approach and areas of interest

What matters to them

- Financial performance and economic impact
- Governance and transparency
- Sustainability performance
- Confidence in Company's leadership
- Stability and predictability with no surprises

Investors continued	**How the Board engages** The Board receives a regular report from the director of investor relations on shareholder analyst feedback, especially post results. A Capital Markets event was held in June which proved to be a success and introduced two new members of the Executive Team to our key investors. In 2018, the Chief Executive and Chief Financial Officer met with investors in the UK and North America, following both the preliminary and interim results, and at various times throughout the year. The IR team is in constant dialogue with investors in the UK and North America. At our strategy day in September, we welcomed the external perspectives of bull and bear fund managers who presented their investment theses prior to taking questions from the Board. We have held 'governance days' in two of the last three years following the release of our Annual Report. These are led by the Chairman and attended by the Chief Executive and our committee chairs and seeks to provide a discussion forum for fund managers and governance analysts. With relative stability on governance topics in 2018, we published a well-received ESG newsletter instead to provide an update on our activities in these areas. The Chairman, Senior Independent Director and members of the Board make themselves available to meet with institutional investors when requested with the Chairman and SID meeting with the ESG representatives of some of our major shareholders in both London and Edinburgh in the first half of the year. The Company's AGM is held in different locations in order to reach a wider shareholder base. Of real benefit to the Board is the institutional investor perspective shared by Brad Singer as chief operating officer of ValueAct.
Employees	**Why they matter to us** Employee engagement is critical to our success. We work to create a diverse and inclusive workplace where every employee can reach their full potential and be at their best. We engage with our people to ensure we are delivering to their expectations, supporting wellbeing and making the right business decisions. This ensures we can retain and develop the best talent. **Type of engagement** ▸ Non-Executive Directors identified as Employee Champions ▸ Board apprentice programme ▸ Graduate and apprentice focused events ▸ Meet the Board events and 'town hall' briefings ▸ Informal leadership blogs, all employee webex programme and videos by Executive Team ▸ Employee relations and HSE dedicated teams ▸ Global HSE week, ongoing occupational safety and wellbeing programme ▸ Annual global employee opinion survey and individual performance reviews ▸ Employee volunteering ▸ Trade union representative participation **What matters to them** ▸ Reputation ▸ Reward ▸ Employee development ▸ Employee engagement ▸ Talent pipeline and retention ▸ Career opportunities ▸ HSE performance ▸ Diversity and inclusion **How the Board engages** Irene Dorner has continued to meet with employee groups and has attended the employee stakeholder engagement meetings. She regularly provides feedback to the Board on employee topics of interest and/or concern, including our graduate and apprentice population. This direct link that Irene provides between the employees and the Directors is proving to be extremely valuable, particularly through this period of extensive change. The Board has recognised the success of Irene's role and has recently appointed Beverly Goulet as the Board's Employee Champion for our North American employees. Following on from the success of the first programme, the second Board apprentice programme for 2018/19 has been launched (see Nominations & Governance Committee Report on page 73). During the year, the Meet the Board events for employees were held in Friedrichshafen, Germany and Derby, UK. Both Directors and Executive Team members take every opportunity to meet with local employees and conduct town hall sessions when visiting different business locations. In 2018, in addition to the work of the employee champions, members of the Board met with employees during their visits to Indianapolis, US; Pune and Bangalore, India; and Singapore. The Board discussed employee relations in August and this will be reviewed by the Board as required but at least annually. Diversity statistics in respect of the graduate and apprentice programmes are reported to the Board periodically. Finally, when considering M&A activity, the Board always remains mindful of any impacts on employees (see strategic decisions on page 58).

Partners

Why they matter to us
Our external supply chain and our suppliers are vital to our performance. We engage with them to build trusting relationships from which we can mutually benefit and to ensure they are performing to our standards and conducting business to our expectations.

Type of engagement
- Global Supplier Code of Conduct and associated certification and risk monitoring processes
- Supplier conferences and forums, globally, regionally and by business
- Webex programme and global supplier portal
- Supplier working groups, information gathering, assessments and awards

What matters to them
- Winning more work
- Competitiveness
- Security of pipeline and programmes
- Maintaining strong relationships
- Building capability and expertise
- Responsible procurement, trust and ethics
- Operational improvement
- Technological advances, including digital solutions

How the Board engages
Suppliers' interests are considered as part of the Board's discussions on manufacturing strategy and when reviewing specific projects. Critical suppliers are, of course, considered as part of the assessment of the business continuity risks. However, with some 2,300 suppliers alone in the UK, the Board has agreed that this is a group they would like greater visibility of in 2019.

Communities

Why they matter to us
We are committed to building positive relationships with the communities in which we operate. We support communities and groups local and relevant to our operations, particularly educational outreach.

Type of engagement
- Dedicated community investment team
- Sponsorship and employee volunteering
- Employee volunteering on boards, committees and councils
- Engagement with local councils on community matters
- Corporate website

What matters to them
- Future talent pipeline
- Local operational impact
- Health, safety and environment performance

How the Board engages
Directors meet with relevant community groups on their site visits and will engage with certain community programmes should they be requested to do so. As Employee Champion, Irene Dorner takes opportunities to meet with relevant community groups as will Beverly Goulet in her new role as Employee Champion for North America.

Governing bodies and regulators

Why they matter to us
We engage with national governments, national/transnational agencies and key politicians and regulators to ensure that we can help shape policy, have licence to operate, attract funding, enable markets and ultimately win business. We work with governments globally where we have operations or future business opportunities.

Type of engagement
- Dedicated government relations team
- Rolls-Royce North America government security committee
- Group policy development on key issues aligned with government priorities
- Relationship management, both parliament and government, and responses to consultations
- Participation in industry bodies and government and industry working groups
- Conferences and speaking opportunities
- Dedicated export controls, compliance and tax teams to manage compliance to regulatory/legal requirements

What matters to them
- Trust and ethics
- Governance and transparency
- Industry support for policies
- Regulations, policies and standards
- Research and innovation
- Sustainability performance
- Regulatory compliance

How the Board engages
The Board receives frequent regulatory updates from the General Counsel. Briefings on how the business engages with airworthiness regulators are discussed at the Safety & Ethics Committee. In addition, regular updates are provided to both the Board and the Safety & Ethics Committee on engagement with the SFO, DoJ and other regulators in relation to ethics and compliance improvement programmes. Engagement with the tax authorities and related regulatory landscape is discussed at the Board and the Audit Committee. In addition, meetings with ministers and senior officials are held as relevant throughout the year, with the Chairman supporting the Chief Executive's engagement programme at various airshows. The Board's considerations are benefited by the previous experience of Lee Hsien Yang, having been Chairman of the Singapore CAA.

Board induction and development

The Chairman and Company Secretary arrange a comprehensive, tailored induction programme for newly-appointed Non-Executive Directors, which includes dedicated time with Group executives and scheduled trips to business operations. The programme is tailored based on experience and background and the requirements of the role. All Directors visit the Group's main operating sites as part of their induction and are encouraged to make at least one visit to other sites each year throughout their tenure. In 2018, Board members visited locations including: Oberursel and Friedrichshafen in Germany, Derby and Rotherham in the UK, Indianapolis and Reston in the US, Pune and Bangalore in India and Singapore. We regard these site visits as an important part of continuing education as well as an essential part of the induction process. They help Directors understand the Group's activities through direct experience of seeing processes in operation and by having discussions with a range of employees.

Nick Luff was appointed to the Board in May 2018 and at that time joined the Nominations & Governance and Audit Committees. Since his appointment he has undertaken a thorough induction and met with members of the Executive Team. He was also briefed by the Company Secretary on the Company's corporate governance arrangements. Nick has attended a number of site visits, including Derby in the UK, Indianapolis and Crosspointe in the US, and Singapore.

It is important that the Directors continue to develop and refresh their understanding of the Group's activities. To facilitate this, the Board met local management at its meetings in Derby, UK and Friedrichshafen, Germany.

It is also important that the Directors regularly refresh and update their skills and knowledge and receive relevant training when necessary. Members of the Board also attend relevant seminars, conferences and training events to keep up-to-date on developments in key areas.

Board induction programme for Nick Luff

Timing	People to meet	Key topics covered
Within first three months	Chairman	Overview of the Board Nominations & Governance Committee
	Committee chairmen	Overview of committees Plan of work for the year Current issues
	Chief Executive	Business model Current strategic priorities Opportunities/risks Current issues
	Chief Financial Officer	Finance, treasury, M&A and tax overviews Budget Accounting issues
	Company Secretary	UK Corporate Governance Code and directors' duties UK listed company requirements Rolls-Royce governance framework Board arrangements and meeting dates
	Executive Team members	Overview of each area of responsibility, including — Markets and competition — Operational and financial performance including KPIs — Functional responsibility — Current issues
	Auditors	Audit report and findings Controls Accounting issues
Within first nine months	Senior management, including investor relations, internal audit and corporate affairs	Overview of specific business/functional areas

Board effectiveness

Board and committee review

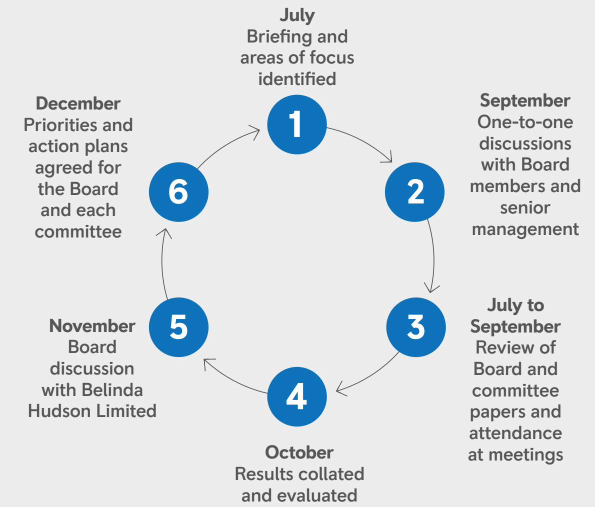
This year, having undertaken both benchmarking and tender exercises, Belinda Hudson Limited (BHL), experts in enhancing board effectiveness, was invited to undertake our externally-facilitated effectiveness review. BHL's appointment, in July, was based on cultural-fit, the research that BHL had undertaken which highlighted the areas that needed addressing, and commercial competitiveness. BHL has been appointed for a three-year term, with a slightly less in-depth review to be conducted in 2019.

A review of the effectiveness of the Board committees was undertaken at the same time as the Board. BHL has not provided any other service to the Company during the year.

This review took the form of confidential one-to-one discussions between BHL and members of the Board and several senior management executives and BHL's attendance at Board and committee meetings as well as at the Board strategy day. The review covered specific areas identified as requiring further development during the previous year's review. The scope was agreed with the Company Secretary after consultation with the Chairman. The specific areas of focus were: Board composition and dynamics, the Board's role and the Board at work.

Good progress had been made since the last review and the Board feels that it is working more effectively. The Board discussed the findings of the report at its meeting in November, which BHL attended.

Stages of the Board and committees effectiveness review

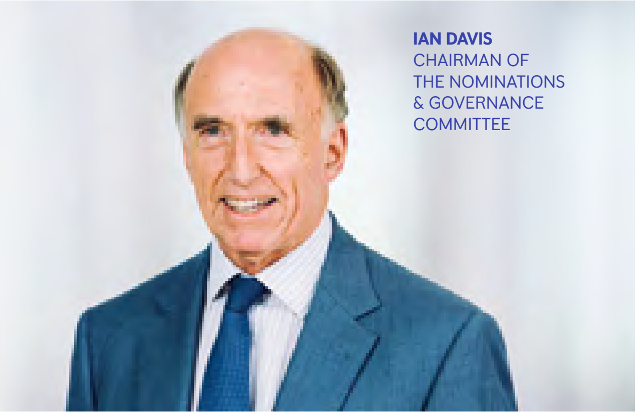


At a private meeting of the Non-Executive Directors, Sir Kevin Smith, SID, led a review of the Chairman's performance without the Chairman present. The Nominations & Governance Committee also met without any management present to discuss the performance of the Chief Executive. The meetings concluded that both the Chairman and the Chief Executive continued to be effective and constructive feedback was shared with each of them.

Progress on key areas

Areas of focus	BHL's findings in 2018	Focus for 2019
Board composition and dynamics	The Board has a strong cadre of Non-Executive Directors and highly regarded executives who bring a good range of skills and a wealth of useful and relevant experience. Diversity is good in terms of nationality, gender, perspective and style. All Board members have shown strong commitment and resilience and collectively it is working effectively.	Continued focus on the Board succession programme and skills matrix together with a review of the composition of the Board's committees to maximise co-ordination across their respective duties and to prepare for future Board changes. **Responsibility: Chairman**
The Board's role	The Board is seen as a positive asset. Together with its committees, they are seen to add significant value. The Board's impact and how it has encouraged the executives to address specific matters was highlighted with those Non-Executive Directors with strong operational experience able to provide useful challenge, input and support during the restructuring and cultural change programme.	With engagement from different parts of the business, a restructuring update to be provided at each Board meeting with a watchful eye on the cultural impact as the change programme continues to be embedded across the Group. **Responsibility: Chairman/Company Secretary**
The Board at work	The combination of face-to-face meetings and telephone calls is working well, with the latter only being used for routine updates and not a forum for discussion of major proposals. There have been some positive and welcome developments in the quality of information provided to the Board which has increased the level of knowledge, understanding and confidence on the part of the Non-Executive Directors.	Emphasis on the co-ordination of agendas and papers between the Board and its committees and the Executive Team to strengthen further the linkage and feedback mechanisms. **Responsibility: Chief Executive/Chief Financial Officer/Company Secretary**

NOMINATIONS & GOVERNANCE COMMITTEE REPORT



IAN DAVIS
CHAIRMAN OF THE NOMINATIONS & GOVERNANCE COMMITTEE

"I was pleased that this year's evaluation concluded that the Committee was proactive in promoting good governance with an innovative approach."

Key highlights

- Appointment of Nick Luff as a Non-Executive Director
- Diversity and inclusion detailed update
- Talent and succession approach for Executive Team
- Implications of UK Corporate Governance Code 2018 (revised Code)

Introduction

The Committee leads the process for nominations to the Board, making recommendations to the Board as appropriate. It gives full consideration to the composition of the Board and succession planning for Directors and senior management and, in so doing, oversees the development of a diverse pipeline for succession. The Committee also keeps the Group's corporate governance arrangements under review and ensures they are consistent with best practice standards.

Membership and operation of the Committee

The Committee comprises wholly of independent Non-Executive Directors. Biographies are on pages 59 to 61 and meeting attendance is on page 63. Directors do not attend discussions relating to their re-appointment.

The Committee's responsibilities are outlined in its terms of reference which can be found at www.rolls-royce.com. We review these annually and refer them to the Board for approval. This year, we have made changes to our remit to ensure it aligns with the principles of the revised Code.

Other attendees

In addition to the members of the Committee, both the Chief Executive and Brad Singer, non-independent Non-Executive Director, attend when it is considered appropriate.

Committee evaluation review

This year, Belinda Hudson Limited (BHL) was appointed to undertake a review of the Committee. The effectiveness review process of the Board and its committees is discussed in greater detail on page 70. The Committee considered the review at its meeting in December and I was pleased that it concluded that the Committee is particularly strong and proactive in promoting good governance, with an innovative approach and a desire to ensure Rolls-Royce's governance is best in class, adds value and is appropriate for the Group and its stakeholders. Early in 2019, we reviewed the committees' composition to ensure skills and experience are best placed to support management in the delivery of the strategy. In addition, together with the Executive Directors, we will review the succession plan to identify the desired skills of future appointments and to continue the focus on the diversity and inclusion agenda.

Principal responsibilities

Board and committee composition

- Review the structure, size and composition of the Board and its committees regularly.
- Evaluate and consider the Directors' conflicts of interest.

Board nominations

- Recommend new appointments to the Board.
- Oversee the induction plans, training and site visits for the Directors.

Succession planning

- Consider succession plan for Directors and senior management.
- Oversee the development of a diverse pipeline for succession.
- Review implementation of diversity and inclusion policy.

Evaluation of Chairman, Chief Executive and Non-Executive Directors

- Evaluate annually the Chairman and Chief Executive.
- Review the independence of the Non-Executive Directors.

Corporate governance

- Review the Group's global governance framework.
- Keep up-to-date with the changing governance landscape and report on the Group's corporate governance practices.

Principal risk

- Talent and capability

Areas of focus for 2019

- Culture and behaviour
- Employee engagement
- Diversity and inclusion
- Talent, capability and succession

Nominations & Governance Committee focus during 2018

Area of focus	Matters considered	Outcome
Board and committee composition	A review of the composition of the Board and committee membership	In reviewing Non-Executive Director appointments, the Committee considers the current skills, experience and tenure of the Directors and assesses future needs against the longer-term strategy of the Group. The Committee reviewed the composition of the Board and its committees and recommended to the Board some changes to certain committees effective January 2019, as set out on page 63.
Board nominations	Re-appointment of four Non-Executive Directors The appointment of Nick Luff as Non-Executive Director and oversight of Nick's induction plan A review of site visits undertaken by Board members	Following individual reviews of each Director, the Committee satisfied itself that the Directors considered for re-appointment continued to be committed and effective. Members of the Committee were involved in the interview process for the new Non-Executive Director and the Committee recommended Nick Luff's appointment to the Board. You can read more about the appointment process on page 73.
Succession planning	Progress on succession planning Update on diversity and inclusion	The Committee focused primarily on the approach to Executive Team succession, following the introduction of a new talent review process. The Committee received a detailed update on the work to improve the diversity and inclusion agenda across the Group. You can read more about our diversity and inclusion programmes on pages 46 and 73.
Evaluation of Chairman, Chief Executive and Non-Executive Directors	Annual review of the effectiveness of the Chairman and the Chief Executive, led by the Senior Independent Director and the Chairman respectively Annual review of whether the Non-Executive Directors remained independent, in accordance with the Code	The Chairman and Chief Executive continue to be effective. Feedback was shared directly with them. The review concluded that all Non-Executive Directors, with the exception of Brad Singer, remained independent.
Corporate governance	Governance updates from the Company Secretary	The Committee has been kept informed about the changes to the governance landscape following the introduction of the revised Code and reviewed progress against its related initiatives.
Oversight of principal risk – talent and capability	The principal risk is considered when discussing talent and capability	A revised approach to talent review was considered in September and it was agreed that continuing focus was required, particularly on the high-potential and emerging talent pools in key geographies. Our second Board apprentice programme was launched in November 2018 (see page 73).

Board and committee composition

The Committee regularly reviews the balance and composition of the Board, its committees and the Executive Team, as well as Non-Executive Director independence, skills and tenure. When reviewing the Non-Executive Directors appointments the Committee considers the current skills and experience of the Board and assesses future needs against longer-term succession planning in light of the Group's strategy.

The Committee also takes into account the need to make sure there is appropriate diversity on the Board. During the year, the Committee considered the external reviews on diversity, namely the Hampton-Alexander Review, published in November 2018. Further details on our approach to diversity are set out on pages 73 and 74. The Committee is satisfied with the current composition of the Board committees and believes that undue reliance is not placed on particular individuals. The Board committee membership is set out on pages 61 and 63. This will be regularly reviewed and refreshed by the Board.

Board inductions, training and development

The Company Secretary is responsible for ensuring that new Directors have a thorough and appropriate induction. Each newly appointed Director has a structured programme and receives a comprehensive data pack providing detailed information on the Group. You can read more about inductions and continuing development on page 69.

Board nominations

In February 2018, the Committee recommended to the Board the appointment of Nick Luff as Non-Executive Director.

During the year, we considered and recommended to the Board the terms of appointment for Brad Singer for a further three-year term, his initial appointment being for a two-year term. In addition, the Committee considered and recommended to the Board the re-appointment of Jasmin Staiblin for a third three-year term and Irene Dorner and Sir Kevin Smith both for second three-year terms subject to annual shareholder re-election. For each, we consider the effectiveness and commitment of the Director and undertake a more thorough review of those Directors who are being re-appointed for their third three-year term. The Committee was satisfied with the Directors' continued commitment and effectiveness.

As announced in February 2018, Nick Luff, chief financial officer of RELX Group, was appointed as a Non-Executive Director with effect from close of the AGM in May 2018, following shareholder approval. Nick is a member of the Audit Committee and Nominations & Governance Committee. You can read Nick's full biography at www.rolls-royce.com. Nick was identified as a candidate who would bring significant expertise in finance and accounting to the Board. Prior to his appointment, Nick met with eight members of the Board including the Chairman, Chief Executive and Chief Financial Officer.

For Nick's appointment, the Committee appointed MWM Consulting. MWM Consulting had no other connection to the Company during the year. In accordance with our Board diversity policy, we will only engage firms who have signed up to the Voluntary Code of Conduct for Executive Search firms. Prior to the new appointment, the Chairman agreed a Non-Executive Director profile and the Committee provided input into a shortlist of candidates for the role.

Succession planning

The Committee is committed to regularly reviewing succession planning and it plays a vital role in promoting effective board succession, making sure that this is aligned to the Group's strategy. A principal risk to the Group is the inability to attract, retain and incentivise talented individuals to deliver our strategy; the Committee is responsible for reviewing talent, capability and succession at the most senior levels of the business.

The Committee was pleased with the increased focus by the Executive Team on leadership talent and the succession pipeline. Development plans are in place for those emerging leaders with potential to succeed current members of the Executive Team in due course. Following management restructuring activities, the Enterprise Leadership Group below the Executive Team has also been refined and reset to a smaller, diverse core of key leaders who will take the business forward. There remains much to do in improving diversity amongst our leadership and management populations, a challenge which we are committed to addressing through monitoring of careful plans to attract and recruit, retain and develop our leaders of the future.

We recognise that succession planning includes nurturing our own talent pool and giving opportunities to those who are capable of growing into more senior roles. Throughout the year, Directors took opportunities to meet with senior management across the Group. At the beginning of 2018, we announced the appointments of Chris Cholerton, former President – Defence Aerospace, as the new President – Civil Aerospace, and Tom Bell, a former employee, as the new President – Defence. These appointments came at a crucial time for our business as the Company set out to make 2018 a breakthrough year.

Board apprentice programme

In November 2018, we launched our second programme, the format of which incorporates the feedback from our pilot programme which ran in 2016/2017. Six individuals from different areas of the Group have been selected for the programme, via our talent succession process, which will run for 18 months. The purpose of the programme is to provide these individuals with leadership development experience and demonstrate our commitment to their career progression and development as leaders in the organisation.

Each apprentice will join two core Board committees, attending each one for a total of nine months. They have been aligned to one committee which is more synonymous with their current job role and one that provides them with more of a challenge. In addition to this, apprentices will be able to participate in supplementary committees to broaden their experience, attend masterclasses on a variety of board-relevant topics and take advantage of frequent networking opportunities. Throughout the programme, each apprentice will be mentored by two Board members and sponsored by the relevant Executive Team member as well as attending one-to-one sessions with the Chief People Officer. This framework intends to provide them with the right support and guidance for both them and the Board to get as much out of the programme as possible.

Diversity and inclusion

Diversity and inclusion continues to be an area of focus for the Committee. The Board has long understood the importance of diversity within our workforce and particularly the value of developing a diverse pipeline for succession to senior management. We continue to work to improve women's representation at Board level and in senior leadership positions, including as a supporter of The Mentoring Foundation, which owns and operates both the FTSE 100 cross-company mentoring executive programme and the next generation women leaders programme (the FTSE programmes). These programmes match high-potential female mentees with mentors who are chairs or senior leaders in other companies. In recent years, Ian Davis has acted as a mentor on the FTSE programmes to several senior women from other organisations and Rolls-Royce itself has placed eight mentees into the FTSE 100 cross-company mentoring programme. The Committee is pleased to be able to make this contribution and to offer our high-performing and aspirational women this opportunity to further their careers.

Furthermore, the Board is committed to supporting and monitoring Group activities to increase the percentage of senior management roles held by women and other under-represented groups across the organisation. In September, the Committee was updated on the Executive Team's diversity and inclusion strategy against the backdrop of the restructuring programme, see page 46. In December, the Board reviewed the Board diversity policy and approved certain amendments to ensure alignment with the revised Code and the recommendations of both the Hampton-Alexander Review regarding gender diversity and the Parker Review in respect of ethnic diversity. Our policy will continue to promote an inclusive and diverse culture and it reaffirms our aspiration to meet and exceed the recommended voluntary target of 33% of Board positions being held by women in 2020. It is recognised that there will be periods of change on the Board and that this number may be smaller for periods of time while the Board is refreshed. However, it is our longer-term intention to at least maintain this balance. You can find the full policy at www.rolls-royce.com.

Board diversity policy

Objective	Progress
All Board appointments will be made in the context of the skills and experience that are needed for the Board to be effective.	The Committee regularly reviews the composition of the Board.
Maintain a balance so that, as a minimum, one third of the Directors are women.	The chart on page 59 shows that the percentage of women on the Board is 30.8% This has reduced slightly since 2017 following the appointment of Nick Luff as a Non-Executive Director in May 2018.
Support and monitor Group activities to increase the percentage of senior management* roles held by women and other under-represented groups to 25% by 2020.	The Committee received an update on the diversity and inclusion strategy across the restructured business. This recognises the need to bring different people with different ways of thinking together to find simpler, more innovative, bolder ways of doing things to deliver better business outcomes.
Monitor, challenge and support internally set targets for diversity and inclusion at all levels across the organisation.	The charts on page 59 provide a clear picture of our Board diversity. Progress against our 2020 diversity targets across the Group are set out on page 46.

* Senior management defined as Executive Team and Enterprise Leadership Group which currently comprises 88 most senior roles.

Executive Team Diversity

The Executive Team currently comprises ten members, all of whom are male, following the departures of Mary Humiston and Marion Blakey during the year. The Committee has agreed a 2020 gender diversity target for the Executive Team of 23%. In September, the Committee considered the detailed succession plan for the Executive Team and noted that 36% of the candidates were female (2017: 21%). Currently 17% of the Enterprise Leadership Group are female as are half our Board apprentices.

Governance

We strive to take an innovative approach in all that we do and that includes our approach to governance. In 2018, we have carried out a number of initiatives including two Meet the Board events in the UK and Germany, the launch of our second Board apprentice programme and the appointment of Beverly Goulet as our Employee Champion for North America following the very successful employee engagement initiatives supported by Irene Dorner as our first Non-Executive Director Employee Champion. We continue to look to be best in class and to ensure our governance is appropriate for the Group and all our stakeholders.

The Group's governance framework has been reviewed in depth to ensure it is aligned with the objectives and ambitions of the restructured business. Having the framework in place enables the Executive Team to manage risk, drive critical business decisions and maintain consistent standards. It means the Group can act with pace and confidence in a way that meets the expectations of our stakeholders, including our customers, regulators, colleagues, partners and shareholders.

We also refreshed and simplified our Group policies. We now have a more succinct set of policies that communicate clear expectations of employees in a new, consistent format. The new Group policies were launched across the organisation in the autumn simultaneously with our code of conduct and are available to view in the sustainability section on www.rolls-royce.com.

The General Counsel and the Company Secretary will continue to help to keep the governance framework and the development of the Group policies under review. They will oversee the effectiveness of the framework across the organisation and ensure that the Group's corporate governance and corporate compliance arrangements, practices and procedures (below Board level) are consistent with appropriate best practice principles and standards for a group of the size and complexity of Rolls-Royce.

The Nominations & Governance Committee is provided with regular updates on key developments to corporate governance. This year, the Committee has been kept informed about the changes to the governance landscape with the introduction of the revised Code.

Conflicts of interest and independence

The Board continues to monitor and note potential conflicts of interest that each Director may have and recommends to the Board whether these should be authorised and whether any conditions should be attached to any authorisation. The Directors are regularly reminded of their continuing obligations in relation to conflicts and are required annually to review and confirm their external interests, which helps to determine whether each of them continue to be considered independent.

Brad Singer, as a representative of a significant shareholder, is not considered to be independent. As noted on page 58, the conflict of interest was managed throughout the year by a relationship agreement between the Company, ValueAct and Brad Singer.

During the year, no additional conflicts of interest were identified which required approval by the Board. This was confirmed in an annual review by the Board. The Committee advised the Board that it considered that each of the remaining Non-Executive Directors continued to be independent.

Looking forward

In 2018, I believe the Committee has made strong progress in a number of key areas, particularly our detailed review of the Group's stakeholder engagement programme as well as gaining greater insight into the Group's culture as part of the restructuring programme. These areas of our remit have been emphasised in the revised Code and we will keep under review any enhancements to our work during 2019 to ensure our governance initiatives continue to aspire to be best in class and remain innovative, thoughtful and appropriate for the Group and all our stakeholders.

Ian Davis
Chairman of the Nominations & Governance Committee

AUDIT COMMITTEE REPORT

LEWIS BOOTH
CHAIRMAN OF THE AUDIT COMMITTEE

"The long business cycle coupled with complex contractual arrangements leads to the need for well considered judgements. In 2018, these have included embedding IFRS 15, accounting for the Trent 900 and Trent 1000 programmes and assessing the recognition of deferred tax assets."

Key highlights

- IFRS 15 embedded and IFRS 16 implementation on schedule
- Trent 900 and Trent 1000 exceptional items
- Focus on assessment of potential onerous contracts
- Transition to PwC as auditors
- Focus on risk management and internal control systems, including cyber security

Introduction

I am pleased to present the 2018 report of the Audit Committee which describes how the Committee has carried out its responsibilities during the year. I would like to thank the members of the Committee, the executive management team and the external auditors for the open discussions that take place at our meetings and the importance they all attach to its work.

We have had a number of key issues to consider in 2018, most significantly:

- matters arising from embedding IFRS 15 *Revenue from Contracts with Customers* and the impact of IFRS 16 *Leases;*
- key judgements and estimates in accounting for the Trent 900 and Trent 1000 exceptional items;
- consideration of the recognition of UK deferred tax assets, particularly in light of the Group's negative balance sheet position;
- the impact of the restructuring programme announced in June 2018 on the people and processes on which the financial reporting and risk and control environment are based; and
- following the audit tender in 2016, PricewaterhouseCoopers LLP (PwC) appointment as the Company's new auditor.

Areas for focus in 2019

We will continue to pay particular attention to the maintenance of the control environment as the restructuring programme progresses, particularly within the finance transformation programme. We will continue to oversee the Group's management of its cyber threat principal risk. We will also focus on the smooth transition to IFRS 16 *Leases*.

Membership and operation of the Committee

In addition to myself, members of the Committee are Irene Dorner, Beverly Goulet, Nick Luff and Lee Hsien Yang. All members of the Committee are independent Non-Executive Directors. For the purposes of the Code and DTR 7.1, Irene Dorner, Beverly Goulet, Nick Luff and I have recent and relevant financial experience. The Board has confirmed that it believes the Committee as a whole has competence relevant to the Company's sector. Our biographies are on pages 60 and 61 and our meeting attendance is shown on page 63.

The Committee's responsibilities are outlined in its terms of reference which can be found at www.rolls-royce.com. We review these annually and refer them to the Board for approval. This year, we have made changes to our remit to ensure it aligns with the principles of the revised Code.

Other attendees

In addition to the members of the Committee, the Chairman, Chief Executive, Chief Financial Officer and any of the Non-Executive Directors may attend one or more meetings at the Committee's invitation. The Committee is supported by the General Counsel, the Company Secretary, the group controller, the head of group reporting, the group chief accountant, the director of internal audit, the head of enterprise risk management and the external auditors.

Committee evaluation review

This year, Belinda Hudson Limited (BHL) was appointed to undertake a review of the Committee. The effectiveness review process of the Board and its committees is discussed on page 70. I was pleased with the conclusion that the Committee had been strengthened and is becoming increasingly effective with the benefit of the support from the Chief Financial Officer and his team. To ensure we continuously improve, the review recommended that, in 2019, our focus will include: supporting the new director of internal audit; a review of the effectiveness of the internal audit function; and oversight of the non-financial aspects of the control environment.

Principal responsibilities

Financial reporting

- Financial announcements, focusing on: accounting policies, judgements and estimates; inclusion of appropriate disclosures; compliance with relevant regulations; and whether the Annual Report is fair, balanced and understandable.

Risk and control environment

- Monitoring the effectiveness of the risk management and internal control systems.
- Reviewing concerns of financial fraud.

2018 principal risks

- Business continuity, market and financial shock and IT vulnerability.

Internal audit

- Scope, resources, results and effectiveness.

External audit

- Relationship with, and effectiveness of, the external auditor.
- Approving the external auditor's terms of engagement and fees.

Audit Committee focus during 2018

Area of focus	Matters considered	Outcome
Financial reporting	The appropriateness and disclosure of accounting policies, key judgements and key estimates with a focus on: — the adoption of IFRS 15 — the methodology for the identification of abnormal costs on the Trent 1000 programme — judgements and estimates on the Trent 900 programme following the decision to shorten the Airbus A380 programme — recognition and disclosure of restructuring costs — judgements and estimates necessary to assess the recognition of the UK deferred tax assets — finalisation of the acquisition of ITP Aero The implementation project for IFRS 16. In particular, the preparation of the restated information on an IFRS 16 basis which is included in note 1 to the Consolidated Financial Statements The form and content of the Annual Report	The accounting policies, judgements and estimates are appropriate and balanced. Agreed the judgements and estimates to adopt IFRS 16 and the assessment of the impact included on page 123. The Annual Report, taken as a whole, is fair, balanced and understandable.
Risk and control environment	The continuing development of the enterprise risk management and internal controls systems The processes for identifying and managing risks The effectiveness of the Group's systems of internal control The progress against the commitments under the DPAs as they relate to financial reporting The process and assumptions underlying the going concern and viability statements	The internal control system has been enhanced to include compliance controls required for the DPAs. Agreed the importance of ensuring that emerging risks were considered and the need to maintain focus on further embedding risk management during the restructuring activities. Reported to the Board that an appropriate process is in place to make the going concern and viability statements, particular attention was given to the going concern status of the Group's material subsidiaries.
2018 Principal risks	Management's assessment of the risk of, and procedures to manage, a business continuity event The procedures for preventing, detecting and recovering from any breaches of the Group's IT systems security The Group's policies, procedures and controls for identifying, managing and mitigating a market or financial shock	Appropriate procedures are in place to identify and manage principal risks and all of these have been subject to a review by the Board or an appropriate Board committee. Appropriate resources are being focused on managing the business continuity, IT vulnerability and market and financial shock principal risks, in line with the Group's agreed risk appetite.
Internal audit	The effectiveness of the internal audit function, its key findings and trends arising, and the resolution of these matters	While the scope and extent of internal audit are appropriate and the function remains effective, we noted the importance of maintaining this through the restructuring programme and the opportunity to further enhance its robustness.
External audit	The transition to PwC as auditor in 2018 The approach, scope and risk assessments of external audit and the effectiveness and independence of the external auditor The extent of non-audit services provided by the external auditors	Monitored PwC's transition work plan and activities. No concerns over the nature and amount of the non-audit services provided by PwC. Recommended that PwC be re-appointed as the Group's auditor at the 2019 AGM.

Business audit committees

Each of the Group's businesses has its own audit committee. These committees are now chaired by the respective business president, and comprise business functional leaders, internal audit and senior finance personnel and are also attended by PwC. They meet twice a year and:

— review the application of accounting policies, judgements and estimates;
— review risk management, internal control systems and issues arising at a more detailed level;
— give us further assurance as to the extent of management control and accountability;
— promote the governance culture within the Group; and
— inform areas for further consideration at our meetings.

We receive reports on key matters arising and updates on the work and effectiveness of the business audit committees during the year.

During 2018, the business audit committees focused on the continuous improvement of our internal control and risk management processes, in particular the embedding of these in our normal operational processes.

Members of the Committee were invited to the business audit committee meetings during 2018 and do periodically attend meetings during the year. We believe that this provides a key level of support to the reviews we undertake in our meetings.

Business and function presentations

In addition to a regular review of the business audit committee process and any key issues identified, we have a regular schedule of presentations from each of the Group's businesses and its key functions. During 2018, we received presentations from the following:

— **Civil Aerospace** – issues arising from the embedding of IFRS 15, the financial implications of the Trent 1000 in-service issues and the shortening of the Trent 900 programme, including the key estimates underlying these, and the impact on existing contracts, in particular whether they are onerous.

— **Defence** – the business environment and in particular pressure on UK and US defence budgets; business risk process, monitoring and planned enhancements; key accounting judgements and estimates for long-term contracts; and the status of the Defence internal control framework.

— **Power Systems** – key accounting estimates (including warranty and compliance provisions); the introduction of an enhanced 'Controls Framework for Finance and Controlling' with a specific focus on fraud prevention; and the risk management process (including risk culture and risk management tools).

— **Group Tax** – the main drivers of the Group's tax position and key tax risks and how they are managed (with specific consideration of tax audits and disputes); key tax law developments and new requirements (in particular developments in the taxation of the digital economy); and key sources of estimation uncertainty (in particular the recognition of deferred tax assets).

Financial reporting

As I have previously noted, the Group has complex long-term accounting and every year we spend much of our time reviewing the accounting policies and accounting judgements implicit in our financial results. For 2018, the Trent 900 and Trent 1000 exceptional items have again highlighted these complexities and the need for well-considered judgements on the appropriate accounting for the costs of meeting our obligations under our long-term agreements.

The Group has an established process for preparing the Consolidated Financial Statements, including:

— maintenance of internal financial controls – see page 79;
— monitoring of developments in financial reporting;
— review of financial statements by local management prior to submission to group finance for further review and explanations;
— certification by management of each business unit;
— preparation and review of consolidation adjustments;
— review of the draft Consolidated Financial Statements prior to submission to the Committee and the Board; and
— review of the Consolidated Financial Statements by the Committee and the Board together with reports from management and the auditors on significant judgements, estimates, changes in accounting policies and any other relevant matters.

The scope of the external audit is set out in PwC's report on page 187.

A summary of the principal matters we considered in respect of the 2018 Consolidated Financial Statements is set out in the table on page 78.

Fair, balanced and understandable

Since the year end, we have reviewed the form and content of the Company's 2018 Annual Report, together with the processes used to prepare and verify it. We have reported to the Board that, taken as a whole, we consider the Annual Report to be fair, balanced and understandable. We further believe the Annual Report provides the necessary information for shareholders to adequately assess the Company's position and performance, business model and strategy.

In making this assessment, we considered:

— the process for preparing the Annual Report, including a steering committee, the core team, and instructions to contributors;
— written representations from management in respect of the business reviews, sustainability, principal risks and Financial Statements;
— the completion of a regulatory compliance checklist;
— all reviews performed (including the Board, the Executive Team and PwC) and ensured that all feedback was appropriately reflected; and
— the presentation and discussion in the Strategic Report of: (i) the underlying as well as reported results; (ii) the in-service issues on the Trent 1000 programme; and (iii) trends, in particular, the impact of individually significant items.

Areas of focus for the 2018 Financial Statements

Key issue	Matters considered	Outcome
Adoption of IFRS 15 *Revenue from Contracts with Customers*	The embedding of the significant changes, most significantly in Civil Aerospace, and the resolution of additional matters arising, in particular, how changes in estimates on long-term aftermarket contracts impact in the reported results The appropriateness of the long-term planning rate that is used to translate transactions in long-term contracts The appropriateness of the disclosures in the financial statements – see pages 113 to 116	We were satisfied that: — while additional matters arose on transferring the new IFRS 15 processes to a live environment, these have been resolved satisfactorily; — the long-term planning rate remains appropriate; and — the required disclosures are included in the Financial Statements.
Adoption of IFRS 9 *Financial Instruments*	The appropriateness of the disclosures in the financial statements – see page 113	We were satisfied that the required disclosures are included in the Financial Statements.
Accounting for Trent 1000 in-service issues	Development of a methodology for identifying abnormal costs of wasted material, labour and other resources and the application of this to the Trent 1000 – see page 115	We were satisfied that the methodology adopted appropriately reflects the nature of the costs and that these abnormal costs should be excluded from the performance.
Accounting for the impact of the decision to shorten the Airbus A380 programme on the Trent 900 programme	The consequences on existing contractual arrangements with both customers and suppliers The potential impairment of programme assets	We were satisfied, that, while at this early stage estimates were necessary, the impacts have been appropriately reflected in the results and that these should be excluded from the underlying performance.
Consideration of onerous contracts	Review of procedures to assess whether contracts are onerous, including the consequential impact of the Trent 1000 and Trent 900 issues above	We were satisfied that an appropriate assessment had been made and that appropriate provision had been made for contracts identified as onerous.
Classification of restructuring costs	The criteria for excluding certain costs from the underlying results and whether the costs meet this criteria – see page 124	We reviewed the criteria in the context of the ongoing restructuring programme and were satisfied that they are appropriate and have been consistently applied.
Finalisation of accounting of the acquisition of ITP Aero	The update of the fair value of the assets and liabilities acquired, which were provisional in the 2017 Consolidated Financial Statements	We were satisfied that the updated values have been prepared appropriately, including third-party valuations where necessary.
Accounting for business disposals	Treatment of contingent consideration on the disposal of L'Orange – see page 165	We reviewed the assessment of the potential contingent consideration and were satisfied that there are currently no indications that it will be significant.
	Classification of the Commercial Marine business as a disposal group held for sale to be completed in 2019 – see page 166	We reviewed the anticipated disposal in the context of the definitions within IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations* and were satisfied that it is appropriately classified.
Classification of joint arrangements	A review of the classification of joint arrangements in accordance with IFRS 10 *Consolidated Financial Statements* and IFRS 11 *Joint Arrangements*	The review resulted in the reclassification of a number of joint arrangements. However, we were satisfied that these were not significant individually or in aggregate.
The sale of engines to joint ventures	Basis for assessing the selling price – see page 163	We were satisfied that the price represents the fair value of the engines.
Deferred tax assets (DTAs)	Basis for recognition of DTAs arising from tax losses and advance corporation tax in the UK	Based on the forecasts of the relevant Group entities, we were satisfied that the treatment is appropriate.
Implementation of IFRS 16 *Leases*	The progress to implement IFRS 16 in 2019 and the preparation of the disclosures of the impact of the change for 2018 – see page 123	We were satisfied that the judgements and estimates made are appropriate and consistent with the new requirements; that the disclosures of the impact in the Financial Statements are appropriate; and that the Group has systems and processes in place to report on the new basis in 2019.

Risk and control environment

Assessment of principal risks

All risks are managed through a risk management system (RMS described on page 50) in accordance with policies and guidance approved by the Board. On behalf of the Board, the Committee monitors the RMS, including continued developments and improvements. We continue to pay particular attention to the assessment and management of risks at remote sites. The processes are designed to identify and manage, rather than eliminate, the risk of failure to achieve our business objectives.

In managing the identified risks, judgement is necessary to:

- evaluate the risks facing the Group in achieving its objectives;
- determine the risks that are considered acceptable;
- determine the likelihood of those risks materialising;
- assess the Group's ability to reduce the impact of risks that do materialise; and
- ensure the costs of operating particular controls are proportionate to the benefit provided.

We satisfied ourselves that the processes for identifying and managing the principal risks are appropriate and that all risks and mitigating actions had been subject, during the year, to a detailed review by the Board or an appropriate Board committee. Based on this and on our other activities, including consideration of the work of internal and external audit and presentations from senior management of each business which include risk management, we reported to the Board that a robust assessment of the principal risks facing the Group had been undertaken.

The principal risks arising are described on pages 51 to 54. These formed a key element of our assessment of the going concern and viability statements, described further below.

Internal control

The Board has overall responsibility to shareholders for the Group's system of internal control over its business and risk management processes and the risks identified through the risk management process. The Committee has responsibility for reviewing the system's operation and effectiveness. The system is based on business best practice and comprises:

- entity-level controls covering leadership and direction from the top; and
- specific control activities, covering detailed process controls, and internal and external assurance activities.

We have reviewed controls over the Group's principal risks and the key risks and critical processes in each of the Group's businesses. In addition, both the business audit committees and this Committee consider the auditor's observations on the control environment.

During 2018, we reviewed the results of attestation and testing performed by the internal control and internal audit teams to confirm the effective operation of key financial controls across the Group, with an improving trend in the results compared to previous years. We also reviewed the progress of the programme to strengthen financial reporting and compliance controls to meet our DPA commitments, including the work to document and assess the process risks and design of controls in our key finance processes. We have made progress in embedding a financial controls awareness and culture with additional training and guidance provided to our finance teams. Opportunities to further strengthen and automate the financial controls have been identified and will be addressed in the 2019 work plan. These focus on strengthening the supervisory review and oversight controls that provide assurance over the detailed key financial controls, and enhancing and embedding standardised IT controls to operate consistently over all of our key financial systems. We will pay particular attention to ensuring that the control environment is maintained during the restructuring activities.

We have conducted a review of the effectiveness of the Group's risk management and internal control systems, including those relating to the financial reporting process, in accordance with the Code. Where opportunities for improvement were identified, action plans have been put in place and progress is monitored by the Committee. We consider that our review of the risk management and internal control systems, in place throughout 2018, meet the requirements of the Code and the DTR.

Going concern and viability statements

Having regard to the net liabilities of £1,052m on the Group's 2018 balance sheet, we paid particular attention to these assessments. We reviewed the processes and assumptions underlying the statements set out on page 55, considering in particular:

- the Group's forecast funding position over the next five years;
- the forecasts for material subsidiaries making up this position;
- an analysis of impacts of severe but plausible risk scenarios, ensuring that these were consistent with the risks reviewed by the Board as part of its strategy review;
- the impact of multiple risks occurring simultaneously;
- additional mitigating actions that could be taken in extreme circumstances; and
- the current borrowing facilities in place and the availability of future facilities.

As a result, we were satisfied that the going concern and viability statements have been prepared on an appropriate basis.

2018 Principal risks

As set out on page 50, the Board allocated certain principal risks to the Committee and we considered these in detail through the year. From our discussions we are satisfied that all of the principal risks that we oversee have received significant management attention during the year. We reviewed:

Business continuity

In November, the chief information officer updated the Committee on business continuity risks related to the Group's key IT systems. In December, we reviewed plans to mitigate business continuity risks related to the Group's supply chain and received an update on the business continuity exercises that the Civil Aerospace business had undertaken. We also received updates on investment plans to help to reduce these risks.

IT vulnerability

In May and November, the chief information officer and the cyber security director updated the Committee on IT vulnerability risks, including the increasingly hostile landscape that the Group is experiencing.

We also reviewed the cyber security strategy, the resources and investments required to maintain resilience and the potential risks that need to be managed during the restructuring activities.

Market and financial shock

In July, we reviewed potential key risks, focusing particularly on liquidity and credit rating risks and how they are managed by the financial risk committee.

We satisfied ourselves that any market or financial shock that could result from Brexit has been included in the scenario analysis on which the viability statement is based.

Our risk management system

We satisfied ourselves that appropriate progress had been made during the year to strengthen the RMS, as described on page 50. We also identified opportunities to further improve the RMS, for example the requirement of the revised Code to consider emerging risks and how the Group's horizon scanning activities can be applied further.

Internal audit

The director of internal audit regularly reports to the Committee:

- **Quarterly** – a dashboard identifying the key trends and findings from internal audit reports, and the resolution of actions agreed.
- **Biannually** – a detailed update of significant findings and his perspectives on the internal control environment, management responses to underlying root causes and systemic issues.
- **Annually** – compliance with expenses policies for the directors and the Executive Team; and an internal audit work plan for the following year.
- **As required** – the results of audits on advisor processes (including payments) and offset and monitoring, as part of the Group's response to the DPAs.

At least once a year, the Committee meets the director of internal audit privately to discuss: the activities, findings and resolution of control weaknesses; progress against the agreed plan; and the resourcing of the department. Specific topics discussed in 2018 included: process and control design; compliance to process; data security and integrity; project management; and accountability. I also meet the director of internal audit before each meeting and on an ad-hoc basis throughout the year, as do other members of the Committee.

We continue to focus on the nature and number of issues raised by internal audit and the time to complete the related actions. While we are pleased to observe a continued reduction in the time to complete actions, we noted that the underlying root causes remain largely unchanged. These areas will be a focus for the improved systems and processes being designed to achieve the restructuring plans. The future work plan is developed to focus on the key risks facing the business. We monitor changes during the course of the year.

We considered and reviewed the effectiveness of the Group's internal audit function, including resources, plans and performance as well as the function's interaction with management. There has been increased turnover in resource in the second half of 2018 and we discussed plans to maintain sufficient resource.

Based on the reports and discussion, we are satisfied that the scope, extent and effectiveness of internal audit work are appropriate for the Group and that there is an appropriate plan for ensuring that this continues to be the case, particularly through the restructuring activities.

External audit

Audit transition and the 2018 audit

Following the audit tender process in 2016, PwC was formally appointed as the Company's auditor at the 2018 AGM. We assessed PwC's qualifications, expertise and resources, independence and the effectiveness of the external audit process.

The Committee reviewed the quality of the external audit throughout the year and considered the performance of PwC, taking into account the Committee's own assessment and feedback, the results of a survey of senior finance personnel across the Group focusing on a range of factors we considered relevant to audit quality, feedback from the auditors on their performance against their own performance objectives and the firm-wide audit quality inspection report issued by the FRC in June 2018.

Based on these reviews, the Committee concluded that there had been appropriate focus and challenge by PwC on the primary areas of the audit and that they had applied robust challenge and scepticism throughout the audit. Consequently, as noted above, the Committee has recommended to the Board that they be reappointed at the AGM in May 2019.

During the year significant time has been spent on transition activities, including:

- shadowing KPMG through the 2017 year-end process;
- planning workshops held with Group and business teams;
- review of KPMG's working papers; and
- detailed walkthrough tests of key processes and controls.

In May 2018, PwC presented its audit plan, which identified its assessment of the key audit risks and the proposed scope of audit work. We agreed the approach and scope to be undertaken. Subsequently, an updated plan was agreed in November 2018, building on the work undertaken at the half-year and other transition activities.

Key risks and the audit approach to these risks are discussed in the Independent Auditor's Report (pages 186 to 196), which also highlights the other significant risks that PwC drew to our attention.

As part of the reporting of the half-year and full-year results, in July 2018 and February 2019, PwC reported to the Committee on its assessment of the Group's judgements and estimates in respect of these risks and the adequacy of the reporting. Where effective to do so, PwC also reported on its assessment of the Group's controls.

I meet with the lead partner prior to each Committee meeting and the whole Committee has a private meeting with PwC at least once a year.

During 2018, the Audit Quality Review team (AQRT) of the FRC conducted a review of KPMG's audit of the Group's Financial Statements for the year ended 31 December 2017. In January 2019, the AQRT provided its final report to me. The report highlighted two areas of estimation risk which we discussed initially with PwC in January 2019 and again in February 2019 as part of the final audit discussions.

Non-audit services

In order to safeguard the auditor's independence and objectivity, and in accordance with the FRC's Ethical Standard, we do not engage PwC for any non-audit services except where it is work that they must, or are clearly best-suited to, perform. Accordingly, our policies for the engagement of the auditor to undertake non-audit services broadly limit these to audit-related services such as reporting to lenders and grant providers.

Fees paid to PwC are set out in note 7 to the Consolidated Financial Statements. All proposed services must be pre-approved in accordance with the policy which is reviewed and approved annually. Above defined levels, my approval is also required before PwC is engaged. Quarterly, we also review the non-audit fees charged by PwC. In addition, in 2018, we continued to review fees charged by KPMG until they had completed the 2017 audits of all significant subsidiary companies.

Non-audit related fees paid to the auditor during the year were £0.9m (including £0.5m relating to the review of the half-year results) representing 10% (2017 (KPMG): 24%) of the audit fee. Our annual review of the external auditor takes into account the nature and level of all services provided.

Based on our review of the services provided by PwC and discussion with the lead audit partner, we concluded that neither the nature nor the scale of these services gave any concerns regarding the objectivity or independence of PwC.

Compliance

During 2018, the Company complied with The Statutory Audit Services for Large Companies Market Investigation (Mandatory Use of Competitive Tender Processes and Audit Committee Responsibilities) Order 2014.

Looking forward

As well as our regular review of accounting policies, our focus will include monitoring:

— the finance transformation programme (see page 17);
— the impact of the restructuring activities on the risk and internal control environment;
— the continued improvements to the internal control systems, with particular focus on the supervisory review and oversight controls; and
— in light of the current environment, a continuing focus on the Group's response to cyber security risks.

In addition to the continuing oversight by the Safety & Ethics Committee of the ethics and compliance programme (see page 101), we will continue to monitor actions relating to risk management, internal controls and other matters relevant to the Committee that arise out of Lord Gold's recommendations and the DPAs.

Lewis Booth
Chairman of the Audit Committee

REMUNERATION COMMITTEE REPORT

"Our policy is designed to support the strategic focus of the Company as it undergoes its transformation. We remain satisfied that the policy works well."

Key highlights

- First LTIP payout for four years
- Business performance drives bonus above target
- Consideration of revised Code

Introduction

I am pleased to present my report as Chair of the Remuneration Committee, outlining what we have achieved in the year.

Our remuneration policy

Our policy is designed to support the strategic focus of the Company as it undergoes its industrial transformation to new engine models and greatly increased volumes. This is reflected in the key policy themes of transformation, competitiveness, alignment with shareholders and simplicity, with a strong emphasis on ramp-up in cash flow generation as the most important financial metric. We remain satisfied that the policy works well.

2018 outturns

In terms of customer delivery, 2018 was a challenging year especially in dealing with the issues on the Trent 1000 engines. In addition, our delivery of widebody engines fell short of the significant ramp-up we had targeted, in part due to industry-wide supply chain constraints. We also had delivery issues in the Defence and Power Systems businesses. As a result, our customer delivery metric in the annual bonus did not hit the base level and no bonus element was earned, reflecting that the experience of some of our customers was disappointing in 2018.

Our other non-financial metric in our bonus plan is employee engagement, where in 2018 we maintained the same level as in 2017. As a result, the bonus outcome was at the base level; year-on-year improvement would have been required for on-target performance, which was known to be a challenging target given the significant restructuring activity in 2018 and the impact this has had across the organisation.

On our key financial bonus metrics, both profit and cash finished ahead of target. Our operational cash flow increased significantly in 2018 and has positioned us well to achieve at least £1bn of free cash flow by 2020. Similarly underlying profit increased, with strong performances from all businesses despite the challenges arising from Trent 1000 in-service issues.

Underlying profit does not include the accounting impacts of non-operational factors. In particular it excludes our US dollar hedge book valuation adjustment, which is a non-cash consequence of managing our foreign exchange risk. This year, there were also several exceptional charges not included in underlying profit, as detailed on page 124. After due consideration, the Committee concluded that underlying profit remained the appropriate basis for our bonus calculation, in line with the normal definitions we use.

In determining the outcomes for bonus purposes, the Committee continues rigorously to examine the quality of both profit and cash, ensuring that executives are being rewarded for genuine operational improvements. The Committee also reviewed the resulting outturn in the round, to assess whether it was a fair reflection of performance over the year, taking into account a number of factors. While the underlying profit measure excludes the exceptional Trent 1000 charge, the free cash flow measure, which this year had a higher weighting of 50%, includes the unplanned costs incurred in the year. The Trent 1000 issues also contributed to the zero outturn for the customer delivery metric, as described above. The in-service issues therefore had a significant impact on the bonus outturn, and the Committee did not consider it appropriate to make any further adjustment. The Committee also recognised the way in which the organisation responded to the challenge, both in terms of mitigating actions and progress on long-term solutions.

Overall it was felt than an outcome of 56% of maximum was reflective of the Group's progress and performance during the year.

The targets for the 2016 long term incentive plan (LTIP) have been met and as a result awards will vest. This is the first time in four years that LTIP awards have vested, and it reflects the actions taken by Warren and his team to improve business performance, particularly a significant growth in cash generation. As our LTIP extends to wider management, I am pleased that the significant efforts of this group will be recognised. In line with the agreement with shareholders in 2016 to modify the EPS hurdle measure, Warren's award is capped at 150% of salary.

2019 salary review and incentives

The Committee has reviewed the salary levels of the Executive Directors and concluded that no increases will be made for 2019.

For the bonus for 2019 the same financial and non-financial metrics will be retained; however, we will change how we measure the non-financial elements. In relation to customers, we want to recognise that there are a number of different ways that our customers experience our performance, so we have developed a balanced scorecard of metrics for each business, that better reflects the broader aspects of performance in addition to on-time delivery, which has been our only measure to date. For example, in Civil Aerospace we will include a measure of aircraft on ground (AOG) as this is clearly a critical driver of customer satisfaction.

On employee engagement we are moving to a simpler employee survey tool in 2019, the Gallup Q12 survey. This survey aligns better to the key levers that will drive cultural change. We are not making any changes to the design of the LTIP for 2019 as we believe that the current design and measures continue to align with our strategic priorities.

The revised Code

During 2018, the Committee has considered the revised corporate governance requirements relevant to remuneration. We will use the review of our remuneration policy in 2019, for approval at the 2020 AGM, as our main opportunity to assess how we will take the revised Code into account.

In 2019, the Committee will place an increased focus on the linkage between our culture and reward, to ensure that incentives drive behaviours consistent with that culture. Part of the personal element of our bonus plan is already dependent on demonstration of the Company behaviours and values. This has been a strong focus for the Executive Team in 2018 and will continue to be a focus across the organisation in 2019. We have chosen to publish our CEO pay ratio versus UK employees for a second year, in advance of it becoming a mandatory requirement, as we recognise the importance of being open and transparent about executive pay.

As we review our policy during 2019, we will be giving further consideration to our post-employment shareholding policy and pensions, mindful of shareholders' views in these areas.

The revised Code emphasises judgement and discretion. As I have outlined in my report in previous years, the Committee rigorously reviews incentive outturns to ensure that they reflect business performance. We have a history of applying discretion to adjust awards to ensure outcomes reflect the broader context, including shareholder experience. The Committee also reviews the underlying performance of the business on potential outcomes of incentives on a regular basis to ensure that, before and during the life of awards, an ongoing level of scrutiny of performance and reward is maintained.

UK gender pay

We are now in the second year of publishing our gender pay gap and our results this year reflect a similar position to the previous year. As with many engineering organisations, we need to increase the number of women at all levels in the Group. We have global targets to improve the representation of women and have increased the number of women in our succession and talent pipelines. We continue to focus on encouraging young women to see STEM as a future career, but we recognise that there is more to do.

Ruth Cairnie
Chairman of the Remuneration Committee

Membership and operation of the Committee

In 2018, members of the Committee were Ruth Cairnie, Lewis Booth, Sir Frank Chapman and Sir Kevin Smith. Following a review of the Board committees' composition, Sir Frank Chapman stepped down from the Committee at the end of the year and Beverly Goulet joined the Committee from 1 January 2019. All members of the Committee are independent Non-Executive Directors. Our biographies are on pages 60 and 61 and our meeting attendance is shown on page 63.

The Committee's responsibilities are outlined in its terms of reference which can be found at www.rolls-royce.com. We review these annually and refer them to the Board for approval. This year, we have made changes to our remit to ensure it aligns with the principles of the revised Code.

Other attendees

In addition to the members of the Committee, the Chairman, Chief Executive, Chief Financial Officer and any of the Non-Executive Directors may attend one or more meetings at the Committee's invitation, although none were present during discussion of his or her own remuneration package. The Committee is supported by the Company Secretary, Harry Holt – Chief People Officer and Natasha Rice – People Director, Performance and Reward.

Advisers

During the year, the Committee had access to advice from Deloitte LLP's executive compensation advisory practice. Total fees for advice provided to the Committee during the year by Deloitte were £73,415 (2017: £126,750). Fees are based on a time and materials basis. Deloitte also advised the Company on tax, corporate compliance, employee global mobility, assurance, pensions and corporate finance and Deloitte MCS Limited provided consulting services. The Committee is exclusively responsible for reviewing, selecting and appointing its advisers.

Deloitte is a founding member of the Remuneration Consultants Group and adheres to its code in relation to executive remuneration consulting. The Committee requests Deloitte to attend meetings periodically during the year and is satisfied that the advice it has received has been objective and independent.

Committee evaluation review

This year, Belinda Hudson Limited (BHL) was appointed to undertake a review of the Board and its Committees; the review is discussed in greater detail on page 70. The Committee was pleased that the review concluded that it is operating effectively with the members providing strong views and robust challenge to support management in this area. It was particularly encouraging that BHL recognised the Committee for adopting current best practice in all respects and being an early adopter of developing best practice. The Committee discussed the review in December and agreed to continue the approach of open dialogue and innovative thinking into our review of the remuneration policy and our response to the revised Code in 2019.

Principal responsibilities

- Determine the remuneration policy for the Executive Directors and set the remuneration for the Chairman, the Executive Directors and Senior Management.
- Review workforce remuneration and related policies and the alignment of incentives and rewards with our culture.
- Determine the design, conditions and coverage of annual incentives and LTIPs for senior executives and approve total and individual payments under the plans.
- Determine targets for any performance-related pay plans.
- Determine the issue and terms of all-employee share plans.
- Oversee any major changes in remuneration.

Areas of focus for 2019

In 2019, in addition to our regular activities we will:

- Review the remuneration policy to ensure that it continues to support the business strategy and is aligned to the broader executive remuneration landscape, including the revised Code.
- Continue to focus on incentive measures and targets to ensure they remain aligned with performance and strategy.
- Develop our approach to understanding remuneration across the wider workforce and how this should be taken into account by the Committee in setting executive remuneration.

Remuneration Committee focus during 2018

Area of focus	Matters considered	Outcome
Base salaries	Review of base salaries in accordance with the remuneration policy and the broader employee context	The Committee reviewed the salary levels of the Executive Directors and concluded that no increases would be made in 2018.
Annual bonus	2018 bonus – review of performance against the 2018 bonus targets	Warren East and Stephen Daintith received a bonus of 60% of maximum. 40% of the awards were deferred into shares.
	2019 bonus – review of measures and targets to ensure continued alignment to strategy	The Committee agreed that for the 2019 bonus plan the same measures would apply as in 2018: — Profit – 25% — Cash – 50% — Customer satisfaction – 12.5% — Employee engagement – 12.5% Awards will be based 80% on Group performance and 20% on individual performance. The maximum opportunities remain at 180% of salary for the Chief Executive and 150% for other Executive Directors.
Long-term incentive plan	2016 PSP – review of achievement of performance measures	The 2016 awards will vest in March 2019 capped at 150% of salary for the Chief Executive and 130% of salary for other Executive Directors, prior to the impact of share price growth and dividends.
	2019 LTIP – setting targets that ensure significant stretch	For 2019 grants, targets will continue to be based on CPS (60%), EPS (20%) and TSR (20%). The EPS targets for threshold, on target and maximum vesting are now based on IFRS 15 accounting. The maximum opportunities remain at 250% for the Chief Executive and 225% for other Executive Directors.
Revised Code requirements	Review of the revised Code and impacts for the Committee	The Committee undertook a detailed review of the revised Code and approved appropriate changes to its terms of reference at its meeting in December. As part of this review, the Committee's remit has been revised to ensure the remuneration and policies applying to the wider workforce are taken into account by the Committee in setting executive remuneration. The Committee is already periodically briefed by the Chief People Officer and the People Director, Performance & Reward on topics relating to workforce practices, such as gender pay, employee engagement and wider employee pay and conditions. However it was determined that during 2019 this would be supplemented by an additional meeting to provide the Committee with a more in-depth briefing on overall workforce pay and practices. During the year, the revised Code provisions relating to executive remuneration were considered. A number of the new provisions such as holding periods and the use of judgement and discretion already form part of the remuneration policy and the Committee's approach. We will present a new policy for approval at the 2020 AGM, and during 2019 will consult with shareholders on any proposed changes, including areas such as post-employment shareholding requirements and executive pensions.

Summary of our remuneration policy

Fixed pay

- Base salary
- Benefits
- Pension

Variable pay

Annual bonus

80% Group performance + 20% individual performance

75% Financial
- Profit
- Cash

25% Non-financial
- Customer delivery
- Employee engagement

40% deferral for 2 years

Long-term incentive plan

60% CPS | 20% EPS | 20% TSR

3-year performance period plus 2-year holding period

Malus and clawback – provisions apply where there has been: a material misstatement of audited results; serious financial irregularity which invalidates the targets set; reputational damage; material failure of risk management; a serious breach of Our Code; or individual gross misconduct. Clawback will apply until three years after the release of shares.

Shareholding requirement – Executive Directors are required to work towards holding beneficially-owned shares equivalent in value to a percentage of their salary by retaining at least one half of after-tax shares released from the PSP/LTIP until this requirement is met. For the Chief Executive this requirement is 250% of salary and for other Executive Directors this requirement is 200% of salary.

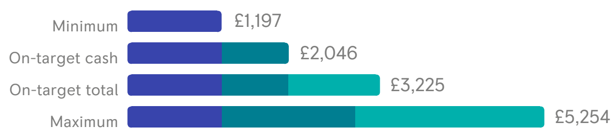
There are four key themes that underpin the policy:

Simplification | Stewardship | Talent | Supporting transformation

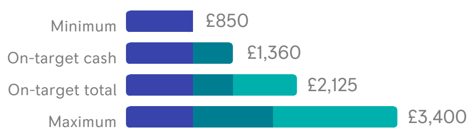
These themes continue to align to our organisational strategy and our reward programmes support them through a combination of salary, benefits, annual bonus and long-term incentives, underpinned by stretching performance measures and appropriate award levels. The full policy can be found in the 2016 Annual Report, available at www.rolls-royce.com.

Remuneration policy – worked examples for 2019

Chief Executive £000



Chief Financial Officer £000



- Fixed remuneration (including salary, benefits and pension)
- Annual bonus
- Long-term incentive plan – this does not include share price growth

Minimum – fixed remuneration (salary, pension, benefits), no bonus award or LTIP vesting.
On-target cash – fixed remuneration, 50% of maximum bonus award, no LTIP vesting.
On-target total – fixed remuneration, 50% of maximum bonus award, 50% of LTIP vesting.
Maximum – fixed remuneration, 100% of maximum bonus award, 100% of LTIP vesting.

Shareholder voting

The remuneration policy was last approved by shareholders at our AGM on 4 May 2017. The remuneration report was last approved by shareholders at our AGM on 3 May 2018. Details of voting are shown below.

	For		Against		Withheld [1]
	Number of votes	%	Number of votes	%	Number of votes
Approval of the Directors' remuneration policy (4 May 2017)	1,357,109,903	95.79	59,613,198	4.21	2,505,008
Approval of the Directors' remuneration report (3 May 2018)	1,390,091,256	98.87	15,919,095	1.13	3,639,984

[1] Withheld votes are not counted towards the total percentage of votes cast.

Executive Directors' remuneration

The following pages 86 to 94 show how we have applied our remuneration policy during 2018 and disclose all elements of remuneration received by our Executive Directors. Details of remuneration received by our Non-Executive Directors during 2018 can be found on pages 94 and 95.

Executive Directors' single figure of remuneration (audited)

	Salary (a) [1] £000		Benefits (b) £000		Bonus (c) £000		Long-term incentives (d) [2] £000		Pension (e) £000		Total remuneration £000	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Executive Directors												
Warren East	**944**	931	**17**	17	**1,012**	1,150	**1,734**	–	**236**	233	**3,943**	2,331
Stephen Daintith [3]	**680**	499	**19**	15	**608**	565	**1,644**	1,259	**150**	110	**3,101**	2,448

1 Neither Warren East nor Stephen Daintith received a salary increase in 2018. The last increase made to Warren East was in September 2017.
2 The average share price for the three months to 31 December 2018 has been used to calculate the LTIP value (as the actual value is not known at the date of signing this report).
3 Stephen Daintith took up his role at Rolls-Royce on 7 April 2017. The LTIP awards which vested in 2017 represent part of his buy-out awards – see page 91. The remaining buy-out awards will vest in 2019 and have been included in the table above as they are both based on performance up to 31 December 2018.

a) Salary

The Company provides competitive salaries suitable to attract and retain individuals of the right calibre to develop and execute the business strategy. The Committee reviewed the salaries of Warren East and Stephen Daintith in early 2019 and agreed there would be no increases for 2019.

Executive Director	Base salary as at 1 March 2019	Base salary as at 1 March 2018
Warren East	**£943,500**	£943,500
Stephen Daintith	**£680,000**	£680,000

b) Executive Directors' benefits (audited)

Benefits are provided to ensure that remuneration packages remain sufficiently competitive to attract and retain individuals of the right calibre to develop and execute the business strategy and to enable them to devote themselves fully to their roles. The taxable value of all benefits paid to Executive Directors during 2018 is shown below.

	Car or car allowance inc. fuel allowance £000		Financial planning £000		Medical insurance £000		Travel and subsistence £000		Accommodation costs £000		Total £000	
Executive Directors	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Warren East	**15**	15	**–**	–	**2**	2	**–**	–	**–**	–	**17**	17
Stephen Daintith	**17**	13	**–**	–	**2**	1	**–**	1	**–**	–	**19**	15

c) Annual bonus outturn (audited)

The Company's annual bonus scheme is designed to incentivise the execution of the business strategy, delivery of financial targets and the achievement of personal objectives. Executive Directors receive any annual bonus awarded in March following the performance period. 60% of the bonus is paid in cash with the remaining 40% awarded in deferred shares. Deferred shares are held in trust for two years before being released, subject to the recipient still being employed by the Group and include the right to receive an amount equal in value to the C shares issued during the deferral period. The annual maximum for the Chief Executive is 180% of salary and 150% for the other Executive Director(s):

— 80% of the award is based on Group performance

— 20% of the award is based on individual performance

2018 annual bonus outturn

The Committee reviewed the 2018 outturn against the performance measures; 80% of annual bonus is based on Group performance and 20% is based on individual performance. The Group performance measures are shown below:

	Profit	Cash	Customer delivery	Employee engagement	Total
Weighting	25%	50%	12.5%	12.5%	100%
Base (25%)	£256m	£426m	85%	75	
Target (50%)	£356m	£576m	92%	76	
Maximum (100%)	£556m	£876m	100%	80	
2018 performance [1]	£400m	£727m	83%	75	
% of maximum	61%	75%	0%	25%	56%
Adjusted % of maximum [2]					**56%**

[1] Adjusted to exclude ITP Aero, non-core businesses, FX, exceptional items and the impact of accounting effects.
[2] The Committee reviewed the Group and business unit outturns in the round, based on assessment of overall underlying performance during the year and the experience of shareholders. Factors taken into account include the quality of financial performance and the manner in which the Trent 1000 issues have been managed.

The Committee retains overriding discretion on the outturns of the annual bonus.

Definitions used for performance measures:

Profit – underlying profit before tax that is reported by the Group for 2018, adjusted for unbudgeted acquisitions and disposals.

Cash – free cash flow which is cash flow before acquisitions and disposals, shareholder payments, foreign exchange and share buybacks.

Customer delivery – % on-time to purchase order, measured for new equipment, spare parts or equipment repair and overhaul.

Employee engagement – measured through our long-standing global employee engagement survey. 57% of our people participated in our survey in 2018 and our sustainable engagement score was 75.

Individual performance

Executive Directors have 20% of their bonus based on achievement of their personal objectives. Personal performance objectives are set at the beginning of the year and are aligned with the Group's internal strategic priorities.

For Executive Directors these have included:

- deliver Group revenue, profit and cash for 2018 and key operational and entry into service targets, ensuring a clear path to £1bn free cash flow by 2020 and beyond;
- address in-service quality problems to rebuild customer confidence and trust;
- deliver the next phase of restructuring, including headcount, a simpler structure and simplification of portfolio;
- deliver culture change through changing behaviours, new leadership model;
- drive M&A disposals to deliver targeted disposal proceeds in 2018;
- deliver a new finance operating model; and
- accelerate progress on diversity and HSE.

The Committee assesses performance against the objectives. The overall assessed percentage is based on the Committee's judgement and may include other factors and achievements in the year.

The following provides an overview of key achievements during the year for each Executive Director:

Warren East	Stephen Daintith
Profit and cash exceeded budget expectation despite challenges.	Core free cashflow delivered ahead of budget, business positioned well to achieve £1bn by 2020.
Operational disruption of Trent 1000 has been managed and a permanent solution identified.	Clear goals established on cashflow per share and cash returns on invested capital, linked to key business drivers; compelling Group commitments for the mid-term established and communicated.
New, simpler organisation structure launched with three empowered businesses, leaner head office and Group Business Services established.	Led the restructuring programme; good progress delivered and real momentum for change.
One third of total headcount reduction target delivered in 2018.	A new driver-based budgeting process launched as a key foundation for the new finance model.
Implemented a simpler management grading structure and new behaviour framework.	Strengthened the finance function with focus on talent and improving capability.
D&I targets and plans progressed across the Group; Group governance strengthened; increased focus on HSE performance across the organisation with progress made but more to do.	Balance sheet strengthened with improved trading and disposal of L'Orange and divestment of Commercial Marine nearing completion.

2018 annual bonus outturn (paid in March 2019)

	Group performance (% of maximum)	Individual performance (% of maximum)	Total bonus (% of maximum)	Total bonus (% of salary)
Warren East	56%	75%	60%	107%
Stephen Daintith	56%	75%	60%	89%

d) Long-term incentives (audited)

Conditional share awards are made to Executive Directors under the LTIP to reward the execution and development of the business strategy over a multi-year period. The conditional shares are then subject to a further two-year holding period.

LTIP awards made in March 2018

The performance targets for awards made in March 2018 are shown below. Performance will be measured over three years to 31 December 2020.

	CPS (60%)	EPS (20%)	Relative TSR (20%)
Threshold (20% vesting)	95p	73p	Median
Mid (50% vesting)	126p	86p	Between median and upper quartile
Maximum (100% vesting)	158p	103p	Upper quartile

	Number of shares	% of salary	Face value of award £000	Performance period end date
Warren East	275,083	250	2,359	31 December 2020
Stephen Daintith	178,432	225	1,530	31 December 2020

PSP awards vesting in March 2019

The following sets out details in respect of the March 2016 PSP award (made under the 2014 remuneration policy) for which the final year of performance was the 2018 financial year. Subject to performance conditions, the vesting date of these awards is March 2019, three years after the awards were made.

	Targets for 2017-2018 period	Performance against targets
EPS growth (hurdle) [1]	Awards will vest if EPS growth exceeds the OECD index of consumer prices. Awards will lapse if the hurdle is not met.	Hurdle achieved [2]
Aggregate CPS	Aggregate CPS over three-year period of less than 10p – zero vesting. Aggregate CPS over three-year period of 50p – 100% vesting.	Aggregate CPS performance over three-year period of 51p.
Relative TSR	Relative TSR versus FTSE 100 constituents less than median – 1.0 x multiplier. Relative TSR versus FTSE 100 constituents equal to median – 1.25 x multiplier. Relative TSR versus FTSE 100 constituents equal to upper quartile – 1.5 x multiplier.	Relative TSR over the three-year period was between median and upper quartile, generating a 1.4 multiplier.
Outturn		The 2016 awards will vest in March 2019 capped at 150% of salary for the CEO and 130% of salary for other Executive Directors

1 As disclosed in the 2015 Annual Report, the EPS hurdle was measured over the period 2017 and 2018. In recognition of this change, the maximum vesting level was reduced from 180% of salary to a cap of 150% for the Chief Executive and from 150% to 130% of salary for other Executive Directors, prior to the impact of share price growth and dividends.

2 Over the performance period of the PSP award, the Company was required to change from accounting under IAS 18 to IFRS 15. As extensively disclosed, this had a significant effect on reported profit and EPS. Audited results are available under IAS 18 for 2016 and 2017, and under IFRS 15 for 2017 and 2018. We have therefore tested for achievement of the hurdle for each performance year separately. Between 2016 and 2017, under IAS 18, EPS grew by 22.6% (from 30.1p to 36.8p). Compared to OECD consumer price inflation of 2.3%. Between 2017 and 2018, under IFRS 15, EPS grew 242% from (1.4p) to 3p compared to OECD consumer price inflation of 2.4%. The hurdle was therefore considered to be met.

Outstanding PSP awards made to Stephen Daintith in May 2017

The remaining buy-out awards made to Stephen Daintith will vest in March and October 2019. As previously disclosed, they were based on the 2016 PSP and, as shown above, the performance conditions have been met and the awards will vest at 130% of grant value.

e) Pension entitlements (audited)

The Company provides competitive pension arrangements suitable to attract and retain individuals of the right calibre to develop and execute the business strategy. Executive Directors are offered membership of a defined contribution pension plan. A cash allowance may be payable in lieu of pension contributions. The cash allowance is generally calculated as equivalent to the cost of the pension contributions after allowing for National Insurance costs. However, some historic levels of cash allowance will continue to be honoured. Warren East receives a cash allowance of 25% and Stephen Daintith receives a cash allowance of 22% of salary in lieu of pension accrual. The Group's UK pension schemes are funded, registered schemes and were approved under the regime applying until 6 April 2006. They include both defined contribution and defined benefit pension schemes and there is now only one defined benefit pension plan, the 'Rolls-Royce UK Pension Fund'. None of the current Directors are members of this plan. The Committee will consider the requirements of the revised Code, to align pension contributions for newly-hired Executive Directors to the wider workforce as part of its policy review in 2019.

Other (audited)

PSP awards vesting in March 2019

Colin Smith stepped down from the Board on 4 May 2017 and left the Group on 31 May 2017. He retained pro-rated PSP awards. In accordance with the rules of the Performance Share Plan, 48% of the 2016 PSP award will vest on 1 March 2019 and Colin will receive 38,415 shares worth around £422,000 (based on the average share price for the three months to 31 December 2018). Colin has no further outstanding awards.

David Smith left the Group on 28 February 2017 and retained pro-rated PSP awards. In accordance with the rules of the Performance Share Plan, 39% of the 2016 PSP award will vest on 1 March 2019 and David will receive 31,005 shares worth around £340,000 (based on the average share price for the three months to 31 December 2018). David has no further outstanding awards.

Payments to past directors

A short-term agreement was put in place between the Company and Colin Smith, for Colin to represent the Company in an ambassadorial capacity for a maximum of 15 days to the end of 2017 (which was extended to 21.5 days) and 35 days to the end of 2018. Total payments of £114,000 have been made under this agreement. This arrangement has been extended into 2019 up to a maximum of 35 days.

Payments for loss of office

As set out in last year's report, Colin Smith, having served four months of his 12 month's notice, was entitled to receive payments of £469,000 in lieu of notice payable to him in eight instalments. Seven of these instalments were paid to Colin in 2017 and the final instalment of £49,000 was paid to him in January 2018.

Implementation of remuneration policy in 2019

Base salary

There will be no change to base salary for 2019; base salaries remain as:
— Warren East – £943,500
— Stephen Daintith – £680,000

Benefits

There will be no change to our approach to benefits in 2019, which includes car or car allowance, financial planning assistance, insurances and other benefits.

Pensions

There will be no change to our approach to pensions in 2019. Pension arrangements will be:
— Warren East: cash allowance of 25% of salary
— Stephen Daintith: cash allowance of 22% of salary

In the event of any new appointment, the Committee will be mindful of shareholder views and relativity to the wider workforce.

Annual bonus

For 2019, bonuses will continue to be awarded using a simple additive approach:
— 80% of the award will be based on Group performance
— 20% of the award will be based on individual performance

For 2019, the Group measures and weightings will be unchanged.

Profit (25%) – Free cash flow (50%) – Customer satisfaction (12.5%) – Employee engagement (12.5%)

Targets are commercially sensitive and will be disclosed following assessment of performance.

Maximum opportunities will remain unchanged:
— Chief Executive – 180% of salary
— Other Executive Directors – 150% of salary

LTIP awards

For awards to be granted in 2019 performance measures will be weighted:
— 60% on CPS
— 20% on EPS
— 20% on relative TSR (versus FTSE 100 and Global S&P Index, to recognise that Rolls-Royce is a global company).
Performance will be measured over three years to 31 December 2021. Performance targets will be:

	CPS	EPS IFRS 15 basis	Relative TSR
Threshold (20% vesting)	112p	81p	Median
Mid (50% vesting)	150p	95p	Between median and upper quartile
Maximum (100% vesting)	187p	109p	Upper quartile

Performance below threshold will result in that element lapsing in full.
The above targets are not an indication of forecast numbers for the three-year period.

Methodologies

CPS – calculated as reported cash flow before the cost of business acquisitions or proceeds of disposals, foreign exchange translation effects, special payments into pension schemes and payments to shareholders, divided by the weighted average number of shares in issue. CPS is cumulative over a three-year period. The Committee will review CPS performance to ensure that it is a fair reflection of achievements over the period.

EPS – calculated as cumulative absolute underlying EPS over the three-year performance period on an IFRS 15 basis.

Relative TSR – measured 50% against the constituents of the FTSE 100 and 50% against the constituents of the S&P Global Industrials index.

Award sizes for maximum performance
— Chief Executive: 250% of salary
— Other Executive Directors: 225% of salary
Threshold vesting at 20% equates to 50% of salary for the Chief Executive and 45% of salary for other Executive Directors. LTIP awards will be subject to an additional shareholding period of two years following the three-year performance period.

Other information

Executive Directors' share interests (audited)

The Directors and their connected persons hold the following interests in the ordinary shares of the Company:

	Ordinary shares		Conditional shares not subject to performance conditions (Deferred share bonus)	Conditional shares subject to performance conditions (PSP)	Conditional shares subject to performance conditions (LTIP)	Options over shares subject to savings contract (Sharesave)
	31 December 2018	27 February 2019	31 December 2018	31 December 2018	31 December 2018	31 December 2018
Warren East	35,540	35,680	101,039	164,202	557,037	1,264
Stephen Daintith	70,937	71,320	26,374	149,753	364,979	925

Executive Directors' interests in vested and unvested shares – changes in 2018 (audited)

Warren East	31 December 2017	Granted during the year	Vested awards	Lapsed awards	31 December 2018	Market price at date of award (p)	Date of grant	Vesting Date/ Lapse Date	Market price at vesting (p)
PSP 2015	126,643	–	–	126,643	–	730.00	01/09/15	01/09/18	n/a
PSP 2016	164,202	–	–	–	164,202	676.00	01/03/16	01/03/19	–
Total	**290,845**	**–**	**–**	**126,643**	**164,202**				
LTIP 2017	281,954	–	–	–	281,954	820.17	05/05/17	05/05/20	–
LTIP 2018	–	275,083	–	–	275,083	857.47	08/03/18	08/03/21	–
Total	**281,594**	**275,083**	**–**	**–**	**557,037**				
Deferred share bonus (2016)	47,398	–	–	–	47,398	772.83	01/03/17	01/03/19	–
Deferred share bonus (2017)	–	53,641	–	–	53,641	857.47	08/03/18	01/03/20	–
Total	**47,398**	**53,641**	**–**	**–**	**101,039**				
Sharesave (options) [1]	1,264	–	–	–	**1,264**	616.80	12/10/15	01/02/21	–

Stephen Daintith	31 December 2017	Granted during the year	Vested awards	Lapsed awards	31 December 2018	Market price at date of award (p)	Date of grant	Date of vesting	Market price at vesting (p)
PSP 2017 (buy-out award) [2]	70,027	–	–	–	70,027	754.70	05/05/17	01/03/19	–
PSP 2017 (buy-out award) [2]	79,726	–	–	–	79,726	754.70	05/05/17	31/10/19	–
Total	**149,753**	**–**	**–**	**–**	**149,753**				
LTIP 2017	186,547	–	–	–	186,547	820.17	05/05/17	05/05/20	–
LTIP 2018	–	178,342	–	–	178,432	857.47	08/03/18	08/03/21	–
Total	**186,547**	**178,342**	**–**	**–**	**364,979**				
Deferred share bonus (2017)	–	26,374	–	–	**26,374**	857.47	08/03/18	01/03/20	–
Sharesave (options) [1]	925	–	–	–	**925**	758.40	13/10/17	01/02/21	–

[1] For Sharesave, the price shown is the exercise price which was 85% of the market price at the date of the award.
[2] The grant price for PSP awards made to Stephen Daintith was the average closing mid-market price calculated over one month, up to 22 September 2016 (the date that his appointment to Rolls-Royce was announced).

Shareholding requirement (audited)

Executive Directors are required to work towards holding beneficially-owned shares equivalent in value to a percentage of their salary by retaining at least one half of after-tax shares released from the PSP/LTIP until this requirement is met. For the Chief Executive this requirement is 250% of salary and for other Executive Directors this requirement is 200% of salary. The current shareholdings, as a percentage of the requirement, for Warren East and Stephen Daintith are 61% and 68% respectively *. As part of our 2019 policy review we will be developing post-employment shareholding requirements in line with the revised Code requirement.

* The percentage of the requirement was calculated by reference to the average share price, over the three months to 31 December 2018, and salary as at the date of the last grant on 8 March 2018. Unvested PSP awards, LTIP awards and Sharesave options are not included in this calculation.

Pay across the organisation

This section of the report enables our remuneration arrangements to be seen in context by providing:

— a comparison of the year-on-year percentage change in our Chief Executive's remuneration with the change in average remuneration across the UK;

— a year-on-year comparison of the total amount spent on employment costs across the Group and shareholder payments;

— a ten-year history of our Chief Executive's remuneration;

— our TSR performance over the same period; and

— an indication of the ratio between our Chief Executive's remuneration and the remuneration of employees.

Percentage change in Chief Executive remuneration

The following table compares the percentage change in the Chief Executive's salary, bonus and benefits (excluding LTIP) to the average percentage change in salary, bonus and benefits for all UK employees from 2017 to 2018.

Change in remuneration

	Salary	Benefits	Annual bonus
Chief Executive	0%	0%	-12%
UK employees average [1]	-2.06%	-9.86%	-12%

[1] UK employees were chosen as a comparator group in order to avoid the impact of exchange rate movements over the year. UK employees including apprentices, graduates and interns, make up 43% of the total employee population. The decline in the year reflects the significant reduction in senior manager headcount.

Chief Executive pay ratio

The Committee is mindful of the relationship between the remuneration of the Chief Executive and the wider employee population. This is the second year that we have voluntarily published our CEO pay ratio and we have taken into account the new regulations in how this has been approached.

We have used Method A in determining the ratio, using the full-time equivalent total remuneration of all UK employees. This has led to us including additional groups of employees in the calculation this year, including graduates, apprentices and interns.

The ratio has increased significantly in 2018 due to the vesting of long term incentives (compared to no vesting in 2017) and a small impact of including additional employees as noted above.

	CEO pay ratio (total remuneration)	CEO pay ratio (salary only)
2018	**72:1**	**21.1**
2017	41:1	21.1

The ratios shown above reflect average remuneration for the Chief Executive and UK employees.

CEO pay ratio quartiles (total remuneration)

25th	Median	75th
92:1	77:1	72:1

In terms of the wider workforce:

— all employees participate in a bonus plan; and

— we encourage all employees to join our Sharesave plan, launched every two years. For our most recent launch in 2017, around 50% of our employees joined the plan, sharing in 14 million shares/stock appreciation rights.

Relative importance of spend on pay

The following chart sets out the percentage change in payments to shareholders and overall expenditure on pay across the Group.

Payment to shareholders (£m) *

(Consolidated Cash Flow Statement)

Group employment costs (£m)

(Note 8 – Employee Information)

* Value of C Shares redeemed during the year

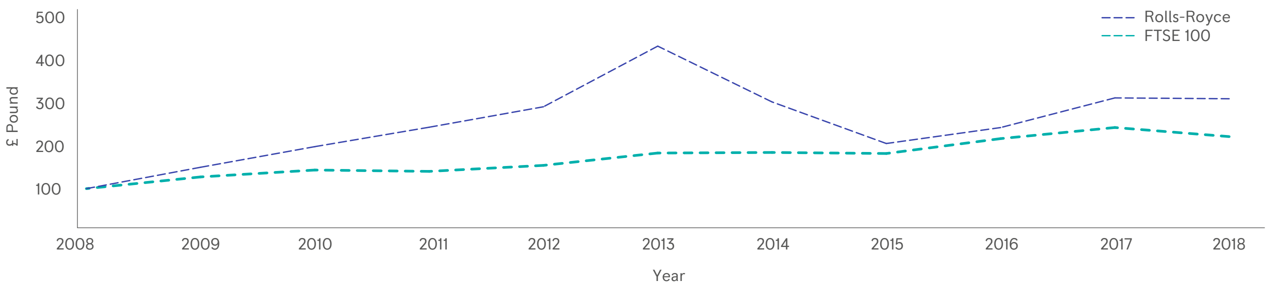
Chief Executive pay

Year	Chief Executive [1]	Single figure of total remuneration £000	Annual bonus as a % of maximum	LTIP as a % of maximum
2018	Warren East	3,943	60	100
2017	Warren East	2,331	68	–
2016	Warren East	2,089	55	–
2015	Warren East	543	0	–
2015	John Rishton	754	0	–
2014	John Rishton	2,596	0	45
2013	John Rishton [2]	6,228	55	100
2012	John Rishton [2]	4,577	85	–
2011	John Rishton	3,677	63	–
2011	Sir John Rose [3]	3,832	–	75
2010	Sir John Rose [3]	3,914	100	100
2009	Sir John Rose	2,409	29	93

[1] On 31 March 2011, Sir John Rose retired and John Rishton was appointed. John Rishton retired on 2 July 2015 and Warren East was appointed as Chief Executive on 3 July 2015.
[2] John Rishton received a special grant of shares on joining the Company on 1 March 2011 to mirror the shares he forfeited on resigning from his previous employer. The share price had increased from 483.50p at the time this grant was made to 870p at the end of 2014. These are the main reasons why John Rishton's remuneration in 2012 and 2013 exceeded that of his predecessor.
[3] The remuneration for Sir John Rose does not include any pension accrual or contribution as he received his pension from 1 February 2008.

TSR performance

The Company's TSR performance over the previous ten years compared to a broad equity market index is shown in the graph below. The FTSE 100 has been chosen as the comparator because it contains a broad range of other UK-listed companies. The graph shows the growth in value of a hypothetical £100 holding in the Company's ordinary shares over ten years, relative to the FTSE 100 index.



Gender pay reporting

The Company is committed to creating a diverse and inclusive place to work where our people can be themselves and be at their best. We published our UK gender pay gap in December 2018, which showed:

Median gender pay gap across all Rolls-Royce employees in the UK

Mean gender pay gap across all Rolls-Royce employees in the UK

Overall, women currently represent 15.5% of our total workforce, however we have increased the percentage of women in the top pay quartile this year. Diversity remains a challenge for our business and the engineering sector as a whole, but we are committed to improving both these issues. In 2017 we launched a diversity and inclusion strategy with targets to increase female participation at all levels in our organisation. More details of the initiatives we are undertaking to support this can be found on page 46.

Contractual arrangements

Each Executive Director has a service agreement that sets out the contract between that Executive Director and the Company.

Executive Directors' service contracts

	Date of contract	Notice period from Company	Notice period from individual
Warren East	21 April 2015	12 months	6 months
Stephen Daintith	21 September 2016	12 months	12 months

Payments received for serving on external boards

Executive Directors retain payments received from serving on the boards of external companies, the details of which are given below:

	Directorships held	Payments received and retained £000
Warren East	Dyson James Group Limited	80
Stephen Daintith	3i Group plc	65

Non-Executive Directors' remuneration

Single figure of remuneration (audited)

	Fees (£000)		Benefits (£000)		Total (£000)	
Chairman and Non-Executive Directors	**2018**	2017	**2018**	2017	**2018**	2017
Ian Davis	**425**	425	**2**	2	**427**	427
Lewis Booth [1]	**95**	95	**29**	69	**124**	164
Ruth Cairnie	**90**	90	**3**	4	**93**	94
Sir Frank Chapman	**90**	90	**5**	4	**95**	94
Irene Dorner [2]	**76**	70	**1**	–	**77**	70
Beverly Goulet	**70**	35	**7**	11	**77**	46
Lee Hsien Yang	**70**	70	**4**	3	**74**	73
Nick Luff [3]	**46**	–	**–**	–	**46**	–
Brad Singer	**70**	70	**6**	20	**76**	90
Sir Kevin Smith	**105**	105	**2**	5	**107**	110
Jasmin Staiblin	**70**	70	**10**	7	**80**	77
Former Non-Executive Directors						
John McAdam	**–**	24	**–**	–	**–**	24
Total	**1,207**	1,144	**69**	125	**1,276**	1,269

[1] The tax treatment of travel expenses incurred by Lewis Booth, for travel to and from the UK, changed in May 2016 (five years from his date of appointment and in accordance with HMRC rules). This change is reflected in the value of benefits reported.
[2] Irene Dorner received an increase of £15,000 per annum in July 2018 to reflect the additional time commitment as a result of taking on the role of Employee Champion.
[3] Nick Luff joined the Board on 3 May 2018.

Non-Executive Directors' fees

The Chairman's fee is reviewed by the Board as a whole on the recommendation of the Committee. The review of the other Non-Executive Directors' base fees is reserved to the Executive Directors, who consider recommendations from the Chairman. No individual may be involved in setting his or her own fee. The Chairman and the Non-Executive Directors are not eligible to participate in any of the Group's share schemes, incentive arrangements or pension schemes. A facility is in place which enables Non-Executive Directors (who reside in a permitted dealing territory) to use some or all of their fees, after the appropriate statutory deductions, to make market purchases of shares in the Company on a monthly basis. Ruth Cairnie, Ian Davis and Lee Hsien Yang use this facility.

Non-Executive Directors' fees

	2018 £000	2017 £000
Chairman	425	425
Other Non-Executive Directors base fee	70	70
Chairman of the Audit Committee	25	25
Chairman of the Remuneration Committee	20	20
Chairman of the Safety & Ethics Committee	20	20
Chairman of the Science & Technology Committee	20	20
Senior Independent Director	15	15
Employee Champion	15	–

Non-Executive Directors' benefits (audited)

The benefits for Non-Executive Directors relate predominantly to travel, hotel and subsistence incurred in attending meetings. For Non-Executive Directors based outside the UK the Company may also pay towards tax advice and the cost of making tax filings.

Non-Executive Directors' share interests (audited)

The Non-Executive Directors and their connected persons hold the following interests in the ordinary shares of the Company:

Chairman and Non-Executive Directors	31 December 2018	27 February 2019
Ian Davis	60,747	61,534
Lewis Booth	60,000	60,000
Ruth Cairnie	16,876	17,415
Sir Frank Chapman	33,203	33,226
Irene Dorner	10,370	10,425
Beverly Goulet	4,302	4,325
Lee Hsien Yang	6,871	7,135
Nick Luff	10,000	10,000
Brad Singer	–	–
Sir Kevin Smith	26,536	26,679
Jasmin Staiblin	–	–

Non-Executive Directors' letters of appointment

Our Non-Executive Directors serve a maximum of three, three-year terms (nine years in total).

Chairman and Non-Executive Directors	Original appointment date	Current letter of appointment end date
Ian Davis *	1 March 2013	28 February 2019
Lewis Booth	25 May 2011	24 May 2020
Ruth Cairnie	1 September 2014	31 August 2020
Sir Frank Chapman	10 November 2011	9 November 2020
Irene Dorner	27 July 2015	26 July 2021
Beverly Goulet	3 July 2017	2 July 2020
Lee Hsien Yang	1 January 2014	31 December 2019
Nick Luff	3 May 2018	2 May 2021
Brad Singer	2 March 2016	2 May 2021
Sir Kevin Smith	1 November 2015	31 October 2021
Jasmin Staiblin	21 May 2012	20 May 2021

* On 26 February 2019, the Board unanimously approved a further three-year extension to the appointment term of Ian Davis. A revised letter of appointment will be issued on 1 March 2019.

Statutory requirements

The Committee's composition, responsibilities and operation comply with the principles of good governance, as set out in the UK Corporate Governance Code 2016, with the Listing Rules (of the Financial Conduct Authority) and with the Companies Act 2006. The Directors' Remuneration Report has been prepared on the basis prescribed in the Large and Medium-sized Companies and Groups (Accounts and Reports) (Amendment) Regulations 2013.

SAFETY & ETHICS COMMITTEE REPORT

SIR FRANK CHAPMAN
CHAIRMAN OF THE SAFETY & ETHICS COMMITTEE

"Matters of product safety, the safety and wellbeing of our people, the integrity of our assets and infrastructure, and ensuring ethical, respectful and compliant behaviours are critical to the Group's sustainability"

Key highlights

- Supporting executive leadership with embedding its value of 'operate safely' and promoting safety culture as a 'state of being'
- Review of product safety management in Civil Aerospace, with a particular focus on the Trent 1000 in-service issues
- Maintaining product safety, occupational safety and asset integrity focus during organisational change
- Monitoring of compliance with obligations under the DPAs
- Maintaining oversight of the implementation of Lord Gold's recommendations on ethics and compliance
- Overseeing deployment of the enhanced code of conduct (Our Code)

Introduction

The Committee played an important role during 2018, supporting management in promoting a sharp focus on our core values. This is particularly important with the significant organisational changes that the Group is working through and the operational and financial challenges presented by the in-service issues with the Trent 1000.

Matters of product safety, the safety and wellbeing of our people, the integrity of our assets and infrastructure, and ensuring ethical, respectful and compliant behaviours are critical to the Group's sustainability and must be preserved when other high priority challenges present themselves.

The Committee has therefore continued to encourage and support the Group's progress in seeking to embed a culture where these values remain front of mind.

Membership and operation of the Committee

In addition to myself, members of the Committee during 2018 were Irene Dorner and Lee Hsien Yang. Nick Luff joined the Committee with effect from 1 January 2019. All members of the Committee are independent Non-Executive Directors. Our biographies are on pages 60 and 61 and our meeting attendance is on page 63.

The Committee's responsibilities are outlined in its terms of reference which can be found at www.rolls-royce.com. We review these annually and refer them to the Board for approval. This year, we have made changes to our remit to ensure it aligns with the principles of the revised Code.

Committee evaluation review

This year, Belinda Hudson Limited (BHL) was appointed to undertake a review of the Committee. The effectiveness review process of the Board and its committees is discussed in greater detail on page 70.

I was pleased that the review concluded that the Committee is strong and diligent, in particular in overseeing product safety, occupational safety, ethics and compliance. The Committee discussed the review at its meeting in December and considered the areas for ongoing development that had been highlighted. With the desire to improve continuously, we agreed that in 2019 our work would continue to support the executives with efforts to improve safety culture across the organisation, as well as conducting a review of the Committee's role in overseeing sustainability issues.

Principal responsibilities

Product safety

- Maintain an understanding of and keep under review the Group's framework for effective governance of product safety.
- Monitor product safety performance, the response to product in-service issues and lessons learned.

HSE

- Oversee HSE governance, review performance, incidents and monitor improvement projects.
- Guide and support management in the promotion of a culture of leadership in HSE.

Sustainability

- Oversee the Group's approach to sustainability, including how environmental/climate impacts from its operations are managed, and monitor performance towards sustainability targets.

Ethics & compliance

- Review the Group's compliance with relevant legislation.
- Keep Our Code and anti-bribery and corruption policies under review.
- Support the Board with their review of issues raised through the Ethics Line and other channels including reviewing the results of any investigations into ethical or compliance breaches or allegations of misconduct.

2018 principal risks

- Compliance and product safety.

Areas of focus for 2019

- Oversight of activities to meet continuing obligations under the DPAs and to implement Lord Gold's recommendations, including review of Lord Gold's final report due during the year
- Supporting leadership's performance improvement on HSE

Safety & Ethics Committee focus during 2018

Area of focus	Matters considered	Outcome
Product safety	Maintaining safety during organisational change Product safety policy and processes, training, safety assurance framework and competence in manufacturing Product safety performance and in-service issues Product safety management systems Product safety in Civil Aerospace Product safety in digital products and in technology development	The Committee was satisfied that product safety governance remained robust following organisational restructuring. The safety assurance framework is a sound incremental development. Safety performance remained at expected levels, with safety aspects of in-service issues handled competently and appropriately. The product safety management system in Civil Aerospace is effective and well-operated. Digital products are deemed to be emerging, and less mature, and therefore require particular focus to ensure high standards are observed.
HSE	Detailed reviews of serious injury, high potential incidents and interventions by regulators Events, key findings, shared learning and actions HSE ambition, strategy and plans for continuous improvement HSE performance including incidents, injuries, waste, energy use and GHG emissions metrics HSE programmes – LiveWell, asset care, waste action	Overall, despite some year-on-year HSE improvements, the 2018 TRI performance was disappointing and missed key targets. Investigations from some serious incidents are being rigorously pursued, and lessons learned implemented. Rolls-Royce recognises that HSE is a top leadership priority and on-going efforts focus on reaching the Company's Zero Harm campaign objectives. Strengthening of HSE leadership, strategies, plans and communications as part of a structured approach to achieve continuous improvement. HSE programmes are at varying maturity levels but there are signs of progress.
Sustainability	Review of sustainability strategy and governance in-year and planned activity	Planning for an additional 2019 focus on environmental performance, combining both current operational metrics and longer-term strategic product development investments, to provide a complete picture of the environmental trajectory of the Group.
Ethics & compliance	Compliance with continuing obligations under the DPAs and implementation of Lord Gold's recommendations Deployment of Our Code and Group policies Resourcing of ethics and compliance team and effectiveness of compliance officers Embedding of ethics and compliance culture and behaviours. Review of number and nature of concerns raised through the Ethics Line Management intermediaries including screening, appointments, payments, termination and settlements	Reviewed detailed plans for, and progress on, compliance. Reviewed the second annual report to DoJ. The enhanced code of conduct and simplified suite of Group policies were issued in 2018. The ethics and compliance team is effective. Bullying and harassment were prevalent themes and we will be monitoring the effectiveness of management's campaigns to address this. The intermediary processes are effective to manage the risks.
Oversight of 2018 principal risks	Principal risks of compliance and product safety reviewed	These principal risks are reviewed and discussed at every meeting of the Committee and both continue to be managed effectively.

Product safety

Rolls-Royce aims to go beyond compliance with regulatory product safety standards, setting a goal of continuous product safety improvement in common with other industry participants. This is regarded as fundamental to the Group's licence to operate and to the sustainability of our business. Product safety encompasses the design, manufacture, assembly, installation, in-service operation, maintenance and repair of products, across all of our businesses and regions where we operate. It is critical that product safety processes develop continuously to keep pace with the science and technological innovation that enables product designs to evolve and extend operational boundaries.

In 2018, we continued with our rolling review programme of key product safety topics across the Rolls-Royce businesses, as well as considering special topics and in-service issues as they arose.

As in 2017, we maintained a focus throughout the year on how safety risk was being managed through the period of major organisational restructuring for the Group. We oversaw changes made to the product safety governance and risk management model. The principles behind the way accountability is assigned and product safety is governed remain. However, some adjustments to the structure of the business-level product safety review boards were required to align to the new organisational structure.

The Committee was assured that appropriate checks and balances were being used. Phased efficiencies were being introduced that preserved and improved product safety governance while achieving headcount reductions in the wider restructured Group.

Each year the Committee reviews particular aspects of the Group's product safety management system (PSMS) to ensure we maintain a good working knowledge of it and can oversee how it is being continuously improved. At our meeting in February 2018, we discussed a report on product safety assurance, covering the work undertaken to monitor effectiveness and improvements that are proposed to the PSMS and the processes within it. We reviewed delivery against 2017 plans, noting some excellent progress, and discussed the product safety assurance team's workplan for the remainder of 2018.

A key component of the 2018 workplan was the phased deployment of a new product safety assurance framework. This encourages a more consistent, structured and pro-active approach across the enterprise to assess what could go wrong, which complements the existing product safety processes. We discussed this in February and reviewed it in more detail in July. The framework will enable a more comprehensive means of managing our product safety principal risk in each of the businesses and provide clear lines of sight to key controls. This more forward-looking approach is particularly important in the current operating environment of organisational and technological change.

We also reviewed how product safety is managed through in-service product life. This covered three aspects: the identification during design of the limitations on operation and necessary maintenance; the processes used to identify and manage in-service safety concerns; and the performance of pro-active periodic safety reviews of products in service, where operational knowledge is used to identify opportunities to improve the safety or safety assurance of products.

We were briefed in February 2018 on enhancements to the programme of product safety training. A new course for senior managers had been added and the Board undertook an abridged version of this in May 2018. This interactive course was based on real case studies from outside Rolls-Royce. My colleagues and I found it

CIVIL AEROSPACE PRODUCT SAFETY – TRENT 1000 WORKSHOP

The Committee received briefings at each of its meetings during the year on specific issues that had arisen with products in service. This centred around the in-service issues with the Trent 1000 and included updates on investigations of root cause, assessment of implications, and oversight of the Group's response including redesign of certain components.

Following the briefings we had received in 2017 and in February 2018, and given the significance of the issues, the Committee felt it important to gain a deeper insight into how the product safety aspects were being assessed and managed in practice in line with the PSMS. We therefore arranged for members of the Committee to meet with Civil Aerospace engineering leaders and members of the product safety assurance team during two workshops held in May 2018 at the Group's facilities in Derby, UK.

In the first of the workshops, we received updates on product safety for the Trent 1000 from the chief engineer of this programme. We then undertook a tour of the large engine test bed in Derby, before a discussion on the regulatory framework and requirements in Civil Aerospace.

The second session was a more detailed technical review, where we examined the Trent 1000 intermediate pressure compressor (IPC) rotor blade issue, and received an explanation and demonstration of how numerical risk assessments are performed using data to predict the rate of events. We undertook a detailed comparison of the original risk assessment with the then current risk assessment, noting the significant degree of learning that the ongoing assessments were generating to enable the modelling system to be improved. Finally, we spent some time reviewing the management of other Trent 1000 issues that had been experienced in service.

Overall, the workshop provided a good level of confidence to the Committee. It allowed us to endorse to the Board in July the conclusion that the PSMS was being robustly applied to the Trent 1000 in-service issues and that it was effective in managing the product safety risk to be as low as reasonably practicable. The Committee will continue to oversee the resolution of the issues from a product safety perspective in 2019.

thought provoking and powerful in reinforcing the role that we, the Company's employees and our partners, must play in driving a culture where safety is an uncompromised priority and concerns are openly raised and addressed. In addition to the senior managers course, the more technical classroom-based product safety training for engineers was also refreshed later in the year. Feedback received on the new courses has been very positive and the Committee welcomed this as a key step in reinforcing product safety awareness.

In February 2018, we reviewed the overall metrics for product safety in the previous year. The metrics indicated that the safety performance of our mature and maturing products was stable or improving and that the businesses were managing safety issues effectively. The data did show an increase in Trent engine 'potential hazard red tops'. These are issues which have been identified and have the potential to result in an accident or incident but had not done so. This increase was principally driven by the rate of introduction of new engine types in the fleet and the associated early-life safety learning. We were assured that the Civil Aerospace business was addressing these issues during the year.

In late 2017, the Company acquired full ownership of ITP Aero, and as a consequence now has inherent accountability for the product safety risk arising from its activities. We therefore discussed a review of how it managed product safety. ITP Aero was already a long-standing supplier and a risk and revenue sharing partner of the Group on key components for a number of programmes, including Trent XWB. The Group therefore already had a good level of understanding of ITP Aero's approach to product safety. The Group now has oversight of the product safety processes and the product safety assurance team reported to us that they were comfortable with how these were being applied to its products. It was noted that the Company was not permitted to obtain detailed visibility over ITP Aero's supplies to the Company's competitors but we took comfort that its other OEM customers would have oversight as part of their programmes.

During the year, we reviewed and endorsed some relatively minor changes to the Group's product safety policy, that now incorporates some statements of expectations taken from the PSMS.

In December, we reviewed safety in digital products and safety in technology development. It was recognised that, as these were both emerging areas of high activity and innovation in the Company, a particular degree of focus on product safety was warranted to ensure consistency with the high standards observed in more mature areas of the business. This will be maintained in 2019.

We also reviewed the product safety principal risk and were satisfied this was being managed effectively and within the boundaries of the agreed risk appetite. At each of our meetings we received updates on incidents in service and, as part of these reviews, discussed any emerging product safety risks and how these were being identified and managed as part of the PSMS. We were particularly pleased to see examples of lessons learned from working on issues in older fleets being applied to the Group's newer products.

HSE

The Committee and management objective remains to drive continuous improvement in HSE performance. We discussed HSE matters at each of our meetings during the year and the different levels of maturity in HSE leadership across the business of the Group.

In February, we were updated on the conclusion of the investigations into the fatalities of the two employees in separate incidents in 2017, as reported in the previous annual report. The Company has extracted learning from these incidents and implemented improvements. These include: assessing lock-out mechanisms for electrical cabinet doors on the Group's estate, requiring second-level approval to open them; more use of CCTV for lone workers; work on ergonomics and state of mind commissioned with Grenoble University; improvements to the driving for work standard and global travel policy; a road safety awareness campaign in Power Systems; specialist securing of loads in vehicles; the specification of minimum car safety requirements; and the promotion of defensive driver training for high mileage drivers.

Safety culture was the prevalent theme of our meetings in the year and in February we reviewed the planned Zero Harm activity to improve this. This included: reinforcing HSE across the Group's leadership by using it as a theme at the senior leadership conference in March; holding HSE engagement sessions with the business and function leadership teams; refreshing the approach to HSE training for managers; improving HSE inductions across the Group's estate; reporting HSE leading indicators to the Executive Team; and initiating a dedicated electrical safety programme. There were also two additional new measures introduced to increase awareness of HSE.

The first was the introduction across the Group of Zero Harm Life-Saving Rules, a set of ten simple safety messages chosen with reference to particular areas of safety concern within the Group based on previous incidents. Their introduction and reinforcement campaigns are a very welcome step forward to support the embedding of our safety culture.

The second was the promotion of HSE safety walks, supported by a pocket-sized guide containing suggested questions to ask related to HSE. The Committee continues to encourage observation and intervention as one of the most effective methods of incident prevention and so we were very supportive of the new guide and the promotion of safety walks. The Committee itself conducted safety walks at the Power Systems plant in Friedrichshafen, Germany in March and at the large engine assembly and test facility in Derby, UK in May, making an intervention to improve working practices regarding the use of temporary platforms.

At each of our meetings, we review the Group's HSE key activities, performance metrics, insights and learning, including the total reportable injury (TRI) rate. This is discussed in more detail on page 47. The Group failed to meet its target TRI rate for 2018, primarily due to the rates at Power Systems and ITP Aero remaining significantly higher than for the rest of the Group. However, both of these businesses have made significant improvements against their 2017 TRI performance through concerted focus and this will continue into 2019 and beyond.

The Committee however remains concerned that the number of major and high potential incidents in 2018, while fewer than in 2017, is still unacceptably high. The most serious injury in the year was a fall from height in which an employee in Derby suffered a fracture of both wrists. The UK Health and Safety Executive conducted an investigation across our Derby and Hucknall sites, also engaging with me directly. Corrective actions were required, which the Committee is overseeing to ensure full implementation.

We were briefed on steps taken to help manage HSE risks that may arise from the organisational change. There were 11 sites in total occupied by civil nuclear, submarines or naval marine operations that were being integrated into the Power Systems or Defence businesses as part of the reorganisation. HSE packs for each site were developed and handover meetings arranged to ensure the receiving business understood the operational activities, infrastructure and related site risks.

We were updated on the Zero Harm safety case programme, with sites having been assessed against numbers of high consequence hazards, business activity complexity and incident history. This had resulted in 53 out of 195 sites being assessed as requiring a safety case, and the development of these being prioritised over an 18-month programme plan, accelerated from three years. The programme is generating momentum in HSE reporting and improvement activity and we will keep progress under review.

Good progress was noted with the LiveWell programme, including the Group's approach to workplace wellbeing. This is recognised as leading practice by the Royal Society of Public Health. The Group introduced its global tobacco-free campus policy from 1 January 2019 following preparatory work through the year, including support to smokers. Local legislative requirements have, however, prevented the policy from being implemented in Germany, France and Italy. LiveWell accreditation was achieved by 68% of the Group's sites by the end of 2018.

The Group's mental health strategy and approach was also revised during the year. We discussed this very important topic at our meeting in December and will keep this under review. In 2018, a trained mental health champions network and community of practice was established, after a pilot in the UK. The Chief Executive has signed the 'time to change' pledge committing the Group to combat stigma attached to mental health issues in the workplace.

We discussed management's proposed move to a regional HSE model, designed to reinforce line accountability for HSE, enable more agile support and provide improved assurance to business leaders. To support this, the Committee was well-positioned to draw on lessons from the ethics and compliance improvement programme. We discussed with the HSE team that business line management accountability needed to be underpinned and resourced with central professional support during a transition period until this reached an appropriate level of embedded maturity in the businesses with appropriate policies, processes and controls in place. The Committee was also able to provide anecdotes from the oil & gas majors, where gaining appropriate levels of experience and competence in safety was a pre-requisite to career advancement in operations and general management roles. We noted that, organisationally, the HSE function had been moved from the operations function to report to the Chief People Officer, as a means of driving centrally a cultural change in behaviours.

The Committee conducted an annual review of the HSE Group policy, which was subject to some minor changes to align with the Group's new vision and values launched early in 2018.

Sustainability

We were briefed in July about the work across the Group on sustainability topics, focused through the executive-level environment & sustainability committee (E&SC).

At the Safety & Ethics Committee in December 2017 (as reported in the previous Annual Report), we agreed that the pre-existing sustainability strategy would be reconsidered. This has enabled the Group to concentrate on developing position statements on material issues. This includes developing a single environmental position statement that crystallises operational and longer-term strategic commitments. It also sets out the Company's commitment through investment to the decarbonisation of its product portfolio and supporting the global transition to a low carbon economy. Through reports from the E&SC and the Science & Technology Committee, this Committee will oversee how this position statement is applied across the Group and summarise in future annual reports sustainability progress across all activities in the Group.

We were briefed on: the Company's approach to the management of the risk of 'conflict minerals' being potentially used in our supply chain; the review of a sustainable alternative fuels strategy; and a review of the approach to investor engagement in sustainability topics. This resulted in the development of the Group's first environmental, social and governance (ESG) newsletter, which was sent to investors and other external stakeholders in July this year. The newsletter highlighted progress made against the commitments set out in our previous annual report and demonstrates commitment to increasing our external engagement on these important topics.

The Company has maintained its listing in the Dow Jones Sustainability Index (DJSI), one of only five aerospace and defence companies to achieve this. Overall, our score improved slightly from 2017 and we achieved industry leading scores for the social dimension of the assessment, including top scores for the environmental reporting and corporate citizenship and philanthropy question sets.

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM

SAM | Sustainability Award Silver Class 2019

You can read more about the Group's sustainability activities on pages 41 to 49.

Ethics and compliance

Following the DPAs, much of the Committee's focus in the year has been on overseeing the Group's ethics and compliance work plans – see Ethics and Compliance report on page 48. This included obligations to the regulators and monitoring progress in implementing the recommendations put forward by Lord Gold in his reports. Lord Gold attended all Committee meetings during the year and updated the Committee on how he has been overseeing and supporting this work, as well as reporting on his particular areas of focus and activities. This included: continuing his engagement with employee focus groups to understand how the ethics and compliance programme is working in practice; monitoring the continuing work to embed the right behaviours and attitudes across the organisation; and assessing the resource needed to drive the programme, both centrally and within the businesses.

The Group's ethics and compliance workplans were reported to the Committee throughout the year, including monitoring resourcing of the teams across the organisation. We noted the reports of a good level of engagement by ITP Aero as it sought to align to the requirements of the Group's programme, having joined the Group at the end of 2017.

At each of our meetings during the year, we received an update from the General Counsel on the Group's continuing dialogue and co-operation with regulators and government agencies. We also received reports and briefings from the head of ethics and compliance on ethics and compliance matters generally.

We continued to keep the level and nature of adviser engagements under review following a significant reduction in 2017 and were notified of any claims received during the year from any advisers who had been terminated in the past.

The Committee reviews statistics and details of Ethics Line reports at our meetings and in 2018 we observed that bullying and harassment were prevalent themes. This had also been picked up as a theme by Irene Dorner in her role as Employee Champion and brought to the Board's attention. This warranted a focused response and in December we received a briefing from the Chief People Officer and members of his team, with input from the head of ethics and compliance, on the planned campaign activity to seek to drive out such behaviours. We will review the impact of this activity during 2019.

In autumn 2018, we oversaw the roll-out of our enhanced code of conduct and a suite of refreshed and simplified Group policies combined into one simple manual for employees. The Group's enhanced code of conduct was developed in digital format including a mobile-enabled app, allowing employees to access it wherever they are, which is of particular benefit to shop floor workers or those in remote locations. The launch of Our Code was supported by new training modules that were subject to mandatory completion during the year, with managers who failed to do so being subject to capped performance reviews. Of the population of several thousand managers required to complete the training, only one failed to do so by the due date without having acceptable grounds for mitigation; a remarkable improvement on previous completion rates for core training modules.

We also monitored the Company's ongoing compliance with the General Data Privacy Regulations and progress with the Company's application for Data Privacy Binding Corporate Rules.

Looking forward

In the year ahead, we will be carefully reviewing the content of Lord Gold's final report to be issued later this year and progress with all previous, and any final, recommendations made. We will continue to oversee the Company's compliance with the DPAs and its annual reporting to the DoJ.

We will monitor developments with the Civil Aerospace large engine in-service issues towards full mitigation of product safety risk to expected levels.

We will continue to monitor and support progress and performance on the Zero Harm and LiveWell programmes to mitigate HSE risks, with a particular interest in seeing injury rates and high potential incidents reduce. A careful eye will be kept on leading indicator trends as a pre-cursor to future underlying outturn performance. We will also keep the environmental performance of our operations, and other sustainability measures, under review.

In 2019, we look forward to seeing tangible progress from the continuing efforts by management to drive the desired behaviours and mindset, reinforcing an ethical and safety-focused culture across the organisation.

Sir Frank Chapman
Chairman of the Safety & Ethics Committee

SCIENCE & TECHNOLOGY COMMITTEE REPORT

"The Committee feels privileged and excited to participate in the technology journey with the many extremely talented people who will deliver the future for Rolls-Royce and its shareholders."

Key highlights

- Technology strategy, investment and programmes review
- Electrical systems strategy
- Review of UltraFan, Advance3 and power gearbox programmes
- Services strategy
- Micro-grids strategy
- Workshop on new product offerings
- Visit to the IT innovation hub and manufacturing facilities

Introduction

The Group invests more than £1bn each year in R&D to conceive, design and deliver world-class technology that meets our customers' current and future needs. In a fast-changing world, the Committee provides dedicated focus on the research and technology part of this, providing directional input and oversight of the Group's scientific and technological strategy, processes and related investments.

Membership and operation of the Committee

Members of the Committee during 2018, all Non-Executive Directors, were myself, Ruth Cairnie, Brad Singer and Jasmin Staiblin. Sir Frank Chapman joined the Committee from 1 January 2019. Our biographies are on pages 60 and 61 and meeting attendance is on page 63.

The Committee's responsibilities are outlined in its terms of reference, available at www.rolls-royce.com. We review these annually and refer them to the Board for approval.

Other attendees

In addition to the members of the Committee, the Chairman, Chief Executive, Chief Financial Officer and any of the Non-Executive Directors may attend one or more meetings at the Committee's invitation. The Committee is supported by the Company Secretary and the Chief Technology Officer (CTO).

Committee evaluation review

This year, Belinda Hudson Limited (BHL) was appointed to undertake a review of the Committee. The effectiveness review process of the Board and its committees is discussed in greater detail on page 70. The Committee considered the review in December and I was pleased that it concluded that the Committee is playing a key role in helping the CTO and his team with their approach to technology. In 2019, our focus will include the continued reinforcement of the alignment between technology and competitiveness and the need for efficient execution of our technology plans. We will also keep under review the composition of the Committee and future technology knowledge, and encourage the improvement in the Committee's meeting materials.

Principal responsibilities

Technology strategy

- Review the strategic direction of the Group's research, technology and development activities and ensure investment is allocated appropriately.
- Keep under review the key technology programmes.
- Assist the Board in its oversight of major R&D investment and provide assurance on its competitiveness and the adequacy of R&D investment.

Cross-sector technology

- Oversee the effectiveness of key engineering and technology processes and operations, including delivery of major product development and technology programmes.

Technology capabilities and skills

- Oversee processes for ensuring effective resourcing and development of required technological capability and skills.
- Conduct visits to R&D facilities.

Technology trends and risks

- Provide assurance on the identification and management of key technological risks.
- Review and consider any other topics or risks appropriate to the overall remit of the Committee as delegated by the Board.

2018 principal risk

- Disruptive technologies and business model.

Areas of focus for 2019

- Oversight of the Group's technology programme
- Update on key programmes including SMRs and UltraFan
- Review of Group activities in digital and electrical technologies
- Review of technology across the Defence business
- Follow-up on services and the technology efficiency and effectiveness reviews
- Assessment of skills and capability development and alignment with the technology strategy

Science & Technology Committee focus during 2018

Area of focus	Matters considered	Outcome
Technology strategy	The Group's technology strategy Investment allocation Review of key technology programmes Efficiency and effectiveness review	The strategic objectives and associated investment funding allocations were confirmed to be appropriate. The review of key technology programmes helped shape the agenda and discussions at the Board strategy meeting. The Committee made a number of recommendations to management to improve the efficiency and effectiveness of the Group's future research and technology programme.
Cross-sector technology	UltraFan demonstrator The Group's electrical systems strategy Micro-grids	UltraFan demonstrator review confirmed that progress was satisfactory and advised the Board on approval of the next phase of programme funding. Direction of the Group electrical strategy supported and the excellent progress to date acknowledged. Potential for micro-grid synergies across the Group recognised.
Technology capabilities and skills	Engineering capabilities of the future Visits to large engine assembly, test bed and IT innovation hub	Plan endorsed to shift to electrical system skills from mechanical capability. Visits were insightful, provided physical evidence of progress on key technology programmes and gave an invaluable opportunity to meet the teams.
Technology trends and risks	Internet of Things Ceramic matrix composites (CMCs)	Endorsement of the Internet of Things programme. Support for future programme recognising the strategic importance of CMCs for the Group.
Oversight of principal risk	Disruptive technologies and business model	The principal risk review confirmed that the identification of disruptive technology threats and ongoing mitigation activities supported the direction for future key activities.

2018 overview

In 2018, the Committee continued with its work from the previous year in overseeing technology strategy, the prioritisation of resources towards technology development and acquisition and assessing competitiveness in key technology and product areas. In doing this, we place importance on ensuring an active dialogue with engineering and technology leaders and experts, inviting relevant employees to Committee meetings, meeting with employees during site visits and developing future leaders through the Board apprentice programme.

At the first meeting of the year in February 2018, we reviewed the 2018 technology programme and the investment funding allocation, and received an update on the progress made on technology plans for each business. As reported last year, significant investment is directed towards aerospace technology demonstrators to validate new architectures and gas turbine technologies vital to supporting future competitiveness. We dedicated one meeting to conducting a detailed review of the UltraFan demonstrator programme, noting its scalable architecture design and its differentiating technologies which would enable a step change in efficiency. We discussed the phased investments proposed to deliver the programme and the approach to managing risks and programme dependencies. During the year, we received regular updates on the progress of the programme and the Committee visited the dedicated team area in Derby and met with key staff. We also viewed the Advance3 test vehicle which forms the core of the UltraFan demonstrator and undertook a tour of the Civil Aerospace large engine assembly and test facility in Derby, UK. The Committee advised the Board on progress and funding continuation of the programme.

The Committee also reviewed key enabling technologies for gas turbines including the Group's strategy and competitive position on silicon carbide CMCs and progress on development and maturing of the technology.

The Group's new vision and strategy recognises the need to grow capability in electrical technologies and we received an update on the Group's electrical strategy and exciting plans in this increasingly important area of focus. We were encouraged by the progress made on a number of demonstrator programmes and electrical component technologies. The potential for deployment of electrical and hybrid technologies in civil aviation, marine, defence and rail for propulsion and power generation applications was clear and we support the direction of the technology roadmap. This included the E-Fan X programme launched with Airbus and Siemens in 2017 that is working towards a flight demonstration of a complete hybrid regional aircraft-sized propulsion system in 2020.

We received a detailed presentation on opportunities in micro-grids from the Power Systems business unit's strategy and systems design representatives. The micro-grid market is attractive with high growth potential, including export markets. As well as helping decarbonise electricity production, micro-grids can provide the required operational flexibility to optimise costs, emissions and the availability of the integrated system. We were briefed on the principal components that comprise a micro-grid and their respective characteristics and on the system controls architecture. We examined the rationale for the Company to enter this market, the strength of its offering and achievements to date, as well as areas planned for future development. We discussed the possible business models to address this market and the business case associated with each, noting Power Systems' existing and developing capabilities and the opportunities available to fill capability gaps. Finally, we reviewed the planned investment roadmap that will enable the business to continue to pursue developing micro-grid markets.

We had a briefing on the future market for transport for long-range supersonic business jets and commercial aircraft. This covered the design challenges and different propulsion system concepts that apply to supersonic flight, how the Group's technology was positioned with regard to powering a new generation of supersonic aircraft, and the associated research and technology budget requirements. We also considered the concept of hypersonic passenger transport, discussing the vehicle requirements, propulsion system concepts and feasibility challenges.

Further, the Committee reviewed the Group's services strategy and associated technology development plans. We encouraged management to be bolder in pursuing new technology and ways of working, noting that services would in future contribute significantly more than half of the Group's revenue.

We also reviewed manufacturing technologies to improve productivity. During the course of the year, we benefited from various visits to UK facilities in Derby, Sheffield, Rotherham, Barnoldswick and Washington to see the application of advanced technologies and to meet Company experts. We encouraged management to fully embed across the Group the many good improvement initiatives as a prerequisite of the advanced manufacturing programme.

Together with our other Board colleagues, we visited the IT innovation hub, an area dedicated to facilitate the generation and testing of innovative ideas to further the Company's ambitions through creative thinking and best use of digital technology. We received a briefing on the work of the hub by the R^2 Data Labs team and learned about some recent projects and ideas that were showcased. We were also briefed on plans to transform engineering and how this will drive major changes in our skills mix in the coming years. This is driven by the introduction of new technology and the associated automation of many transactional engineering tasks. It is also impacted by the expectation that certain skill sets will grow significantly as electrical systems and digital capability become more prevalent in our product portfolio over the coming years. We reviewed the work that is being done to support these changes.

The Committee added an additional meeting by teleconference to undertake a detailed review of the efficiency and effectiveness of technology programmes and their delivery. We received information on the effectiveness of historical investments in technology to understand what proportion of the investment has carried through to the final product. The Committee supports the changes the Company is introducing to improve the impact of technology programmes in the context of managing technology acquisition as a portfolio. We recommended broad leadership engagement and governance around setting investment priorities and the delivery of technology programmes.

We also gave our support to further development of the approach to strategic management of technology acquisition and reviewed the Company's approach to technology partnering as a means of obtaining access to co-investment, skilled resources and accelerating technology development. We discussed in general terms the various models and opportunities that could be used to achieve this. We discussed the risks and opportunities arising from each, notably in respect of the protection/exploitation of intellectual property and considered specific examples of previous partnering arrangements the Company had put in place. We then went on to consider a number of specific opportunities and their potential value.

We further reviewed the Company's risk appetite with regard to the Group's 2018 principal risk of disruptive technologies and business models. We considered assessments on a range of potentially disruptive technologies and the Group's activities in each area. This will remain a live process to ensure awareness of potential shifts. We received a progress report on the Group's work on the Internet of Things and tagging and tracking technology for use on our assets and those of our customers, with activities covering the full lifecycle of our products including design, manufacture, operations and services.

ULTRAFAN

In May, we visited the test beds to see the Advance3 engine between test runs and were briefed on initial performance results of test data compared to pre-test predictions. The Advance3 reflects a new engine core architecture which, together with a power gearbox, will form the new UltraFan demonstrator.

Our Committee dedicated a workshop to assess the Group's technology position with regard to supporting new product offerings and managing risk and new ways of working to reduce development timescales. While it is not possible to completely de-couple the strategic, financial and operational aspects of a proposed new programme from technological aspects, the focus of the Committee's review was on the latter so that we could report our conclusions to the Board to assist its broader decision-making. The review was attended by representatives from the Civil Aerospace technology project team, the technical assurance team, and a team of former senior engineers of the Company, as quasi-independent participants. We held a follow-on meeting by teleconference in early December before reporting back to the Board with our conclusions and recommendations.

Looking forward

The Company sits at a pivotal point in its development. 2018 started with the launch of a new vision grounded in innovation. This prioritised the development of new capabilities in electrical and digital technologies along with those critical to the future competitiveness of our existing products such as Ultrafan, Advance3 and micro-grids. This technology will build the future Rolls-Royce with exciting new products and services delivering value in existing and new markets, with current and new customers.

The Committee feels privileged and excited to participate in this journey with the many extremely talented people who will deliver that future for Rolls-Royce and its shareholders. The Committee will continue to focus on the alignment of our research and technology strategy with the future needs of the business, the efficient execution of our research and technology programmes and the assessment of skills and capabilities to support them.

In conclusion, I would like to pay tribute to the support Rolls-Royce receives from governments both in the UK and our key international locations. Their foresight and recognition of the future economic value of technology and its contribution to national industrial competitiveness is a credit to them and their support is both necessary and welcome.

Sir Kevin Smith
Chairman of the Science & Technology Committee

RESPONSIBILITY STATEMENTS

Statement of Directors' responsibilities in respect of the Financial Statements

The Directors are responsible for preparing the Annual Report and the Financial Statements in accordance with applicable law and regulation.

Company law requires the Directors to prepare financial statements for each financial year. Under that law the Directors have prepared the Group Financial Statements in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union and the parent company Financial Statements in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 *Reduced Disclosure Framework*, and applicable law).

Under company law, the Directors must not approve the Financial Statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and parent company and of the profit or loss of the Group and parent company for that period.

In preparing the Financial Statements, the Directors are required to:

— select suitable accounting policies and then apply them consistently;

— state whether applicable IFRSs, as adopted by the European Union, have been followed for the Group Financial Statements and United Kingdom Accounting Standards comprising FRS 101, have been followed for the Company Financial Statements, subject to any material departures disclosed and explained in the Financial Statements;

— make judgements and accounting estimates that are reasonable and prudent; and

— prepare the Financial Statements on the going concern basis unless it is inappropriate to presume that the Group and parent company will continue in business.

The Directors are also responsible for safeguarding the assets of the Group and parent company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Group and parent company's transactions and disclose with reasonable accuracy at any time the financial position of the Group and parent company. This enables them to ensure that the Financial Statements and the Directors' Remuneration Report comply with the Companies Act 2006 and, as regards the Group's Consolidated Financial Statements, Article 4 of the IAS Regulation.

The Directors are responsible for the maintenance and integrity of the parent company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Directors' confirmations

The Directors consider that the Annual Report, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group and parent company's position and performance, business model and strategy.

Each of the Directors, whose names and functions are listed in the Directors' Report, confirm that to the best of his or her knowledge:

— the Group Financial Statements, which have been prepared in accordance with IFRSs as adopted by the European Union, give a true and fair view of the assets, liabilities, financial position and loss of the Group;

— the parent company Financial Statements, which have been prepared in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 *Reduced Disclosure Framework*, and applicable law), give a true and fair view of the assets, liabilities, financial position and result of the Company; and

— the Strategic Report includes a fair review of the development and performance of the business and the position of the Group and parent company, together with a description of the principal risks and uncertainties that it faces.

By order of the Board

Pamela Coles
Company Secretary
28 February 2019

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CONSOLIDATED INCOME STATEMENT

For the year ended 31 December 2018

	Notes	2018 £m	Restated* 2017 £m
Revenue	2	15,729	14,747
Cost of sales [1]		(14,531)	(12,325)
Gross profit		1,198	2,422
Commercial and administrative costs [1]		(1,595)	(1,222)
Research and development costs	3	(768)	(843)
Share of results of joint ventures and associates	11	4	9
Operating (loss)/profit		(1,161)	366
Gain arising on the acquisition of ITP Aero	25	–	785
Gain arising on the disposal of L'Orange	25	358	–
(Loss)/profit before financing and taxation †	2	(803)	1,151
Financing income	4	271	2,911
Financing costs	4	(2,415)	(164)
Net financing		(2,144)	2,747
(Loss)/profit before taxation		(2,947)	3,898
Taxation	5	554	(515)
(Loss)/profit for the year		(2,393)	3,383
Attributable to:	6		
Ordinary shareholders		(2,401)	3,382
Non-controlling interests		8	1
(Loss)/profit for the year		(2,393)	3,383
Other comprehensive income		182	290
Total comprehensive (loss)/income for the year		(2,211)	3,673
Earnings per ordinary share attributable to ordinary shareholders:	6		
Basic		(129.15)p	184.41p
Diluted		(129.15)p	183.80p
Payments to ordinary shareholders in respect of the year:			
Per share		11.7p	11.7p
Total		220	216
† Underlying profit before taxation	2	466	199

* The 2017 figures have been restated for IFRS 15 *Revenue from Contracts with Customers*, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

[1] Included within cost of sales and commercial and administrative costs are exceptional charges relating to the Trent 1000 and Trent 900 Civil Aerospace programmes and restructuring costs. Further details can be found in note 2.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

For the year ended 31 December 2018

	Notes	2018 £m	Restated* 2017 £m
(Loss)/profit for the year		**(2,393)**	3,383
Other comprehensive income (OCI):			
Actuarial movements on post-retirement schemes	19	27	735
Share of OCI of joint ventures and associates	11	(1)	(1)
Related tax movements	5	(2)	(307)
Items that will not be reclassified to profit or loss		**24**	427
Foreign exchange translation differences on foreign operations		171	(133)
Reclassified to income statement on disposal of L'Orange		(19)	–
Cash flow hedge reserve movements		(17)	–
Share of OCI of joint ventures and associates	11	18	(5)
Related tax movements	5	5	1
Items that may be reclassified to profit or loss		**158**	(137)
Total other comprehensive income		**182**	290
Total comprehensive (loss)/income for the year		**(2,211)**	3,673
Attributable to:			
Ordinary shareholders		(2,219)	3,672
Non-controlling interests		8	1
Total comprehensive (loss)/income for the year		**(2,211)**	3,673

* The 2017 figures have been restated for IFRS 15 *Revenue from Contracts with Customers*, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

CONSOLIDATED BALANCE SHEET

At 31 December 2018

	Notes	2018 £m	Restated * 31 December 2017 £m	Restated * 1 January 2017 £m
ASSETS				
Intangible assets	9	**5,295**	5,565	4,116
Property, plant and equipment	10	**4,929**	4,658	4,134
Investments – joint ventures and associates	11	**412**	375	555
Investments – other	11	**22**	26	38
Other financial assets	17	**343**	610	382
Deferred tax assets	5	**2,092**	1,451	1,785
Post-retirement scheme surpluses	19	**1,944**	2,125	1,346
Non-current assets		**15,037**	14,810	12,356
Inventories	12	**4,287**	3,803	3,353
Trade receivables and other assets	13	**4,690**	4,353	3,683
Contract assets	13	**2,057**	1,945	1,875
Taxation recoverable		**34**	17	32
Other financial assets	17	**22**	36	5
Short-term investments		**6**	3	3
Cash and cash equivalents	14	**4,974**	2,953	2,771
Current assets		**16,070**	13,110	11,722
Assets held for sale	25	**750**	7	5
TOTAL ASSETS		**31,857**	27,927	24,083
LIABILITIES				
Borrowings	15	**(858)**	(82)	(172)
Other financial liabilities	17	**(647)**	(601)	(693)
Trade payables and other liabilities	16	**(8,292)**	(6,885)	(6,133)
Contract liabilities	16	**(3,794)**	(4,104)	(3,366)
Current tax liabilities		**(138)**	(209)	(211)
Provisions for liabilities and charges	18	**(1,122)**	(550)	(632)
Current liabilities		**(14,851)**	(12,431)	(11,207)
Borrowings	15	**(3,804)**	(3,406)	(3,185)
Other financial liabilities	17	**(3,542)**	(2,461)	(5,129)
Trade payables and other liabilities	16	**(1,940)**	(2,238)	(1,822)
Contract liabilities	16	**(5,336)**	(3,607)	(2,946)
Deferred tax liabilities	5	**(962)**	(1,071)	(713)
Provisions for liabilities and charges	18	**(795)**	(393)	(263)
Post-retirement scheme deficits	19	**(1,303)**	(1,387)	(1,375)
Non-current liabilities		**(17,682)**	(14,563)	(15,433)
Liabilities associated with assets held for sale	25	**(376)**	–	–
TOTAL LIABILITIES		**(32,909)**	(26,994)	(26,640)
NET (LIABILITIES)/ASSETS		**(1,052)**	933	(2,557)
EQUITY				
Called-up share capital	20	**379**	368	367
Share premium account		**268**	195	181
Capital redemption reserve		**161**	162	162
Cash flow hedging reserve		**(106)**	(112)	(107)
Merger reserve		**406**	3	3
Translation reserve		**809**	657	789
Accumulated losses		**(2,991)**	(343)	(3,954)
Equity attributable to ordinary shareholders		**(1,074)**	930	(2,559)
Non-controlling interests		**22**	3	2
TOTAL EQUITY		**(1,052)**	933	(2,557)

* The figures at 1 January and 31 December 2017 have been restated for IFRS 15 *Revenue from Contracts with Customers*, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

The financial statements on pages 107 to 174 were approved by the Board on 28 February 2019 and signed on its behalf by:

Warren East
Chief Executive

Stephen Daintith
Chief Financial Officer

CONSOLIDATED CASH FLOW STATEMENT

For the year ended 31 December 2018

	Notes	2018 £m	Restated* 2017 £m
Reconciliation of cash flows from operating activities			
Operating (loss)/profit		(1,161)	366
Profit on disposal of property, plant and equipment		11	11
Share of results of joint ventures and associates	11	(4)	(9)
Dividends received from joint ventures and associates	11	105	79
Amortisation and impairment of intangible assets	9	565	343
Depreciation and impairment of property, plant and equipment	10	521	450
Impairment of and other movements on investments	11	6	14
Increase/(decrease) in provisions		1,003	(1)
Increase in inventories		(616)	(194)
Increase in trade receivables and other assets		(469)	(169)
Increase in contract assets		(112)	(70)
Decrease in amounts payable for financial penalties from agreements with investigating bodies		–	(286)
Increase in trade payables and other liabilities		1,732	398
Increase in contract liabilities		1,419	1,399
Cash flows on other financial assets and liabilities held for operating purposes		(732)	(664)
Net defined benefit post-retirement cost recognised in profit before financing	19	352	240
Cash funding of defined benefit post-retirement schemes	19	(181)	(249)
Share-based payments	21	35	34
Net cash inflow from operating activities before taxation		2,474	1,692
Taxation paid		(248)	(180)
Net cash inflow from operating activities		2,226	1,512
Cash flows from investing activities			
Additions of unlisted investments	11	(6)	(4)
Additions of intangible assets	9	(680)	(647)
Disposals of intangible assets	9	13	7
Purchases of property, plant and equipment – net of government grants of £5m (2017: £14m)		(905)	(730)
Disposals of property, plant and equipment		43	4
Acquisition of ITP Aero	25	–	263
Disposal of L'Orange	25	573	–
Other investments in joint ventures and associates and other investment movements	11	(13)	(47)
Net cash outflow from investing activities		(975)	(1,154)
Cash flows from financing activities			
Repayment of loans		(37)	(160)
Proceeds from increase in loans		1,054	309
Capital element of finance lease payments		(23)	(6)
Net cash flow from increase in borrowings and finance leases		994	143
Interest received		27	14
Interest paid		(92)	(64)
Interest element of finance lease payments		(5)	(3)
Increase in short-term investments		(3)	–
Issue of ordinary shares (net of expenses)		1	21
Purchase of ordinary shares		(1)	(24)
Dividends to NCI		(3)	–
Redemption of C Shares		(216)	(214)
Net cash inflow/(outflow) from financing activities		702	(127)
Change in cash and cash equivalents		1,953	231
Cash and cash equivalents at 1 January		2,933	2,771
Exchange gains/(losses) on cash and cash equivalents		66	(69)
Cash and cash equivalents at 31 December		4,952	2,933

* The 2017 figures have been restated for IFRS 15 *Revenue from Contracts with Customers*, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details. This does not affect cash flows, but has changed the reconciliation of operating profit to net cash inflow from operating activities.

CONSOLIDATED CASH FLOW STATEMENT CONTINUED

For the year ended 31 December 2018

	2018 £m	2017 £m
Reconciliation of movements in cash and cash equivalents to movements in net funds/(debt)		
Change in cash and cash equivalents	1,953	231
Cash flow from increase in borrowings and finance leases	(994)	(143)
Cash flow from increase in short-term investments	3	–
Change in net funds/(debt) resulting from cash flows	962	88
New finance leases in the year	(97)	(57)
Net debt (excluding cash and cash equivalents) on acquisition of ITP Aero	–	(34)
Net debt (excluding cash and cash equivalents) of previously unconsolidated subsidiary	–	(18)
Exchange gains/(losses) on net funds/(debt)	54	(59)
Fair value adjustments	(69)	131
Movement in net funds/(debt)	850	51
Net debt at 1 January excluding the fair value of swaps	(532)	(583)
Net funds/(debt) at 31 December excluding the fair value of swaps	318	(532)
Fair value of swaps hedging fixed rate borrowings	293	227
Net funds/(debt) at 31 December	611	(305)

The movement in net funds/(debt) (defined by the Group as including the items shown below) is as follows:

	At 1 January £m	Funds flow £m	Net funds on acquisition and disposal of businesses £m	Net funds of previously unconsolidated subsidiaries £m	Exchange differences £m	Fair value adjustments £m	Reclassi-fications £m	At 31 December £m
2018								
Cash at bank and in hand	838	170	–	–	15	–	–	1,023
Money market funds	589	630	–	–	3	–	–	1,222
Short-term deposits	1,526	1,155	–	–	48	–	–	2,729
Cash and cash equivalents (per balance sheet)	2,953	1,955	–	–	66	–	–	4,974
Overdrafts	(20)	(2)	–	–	–	–	–	(22)
Cash and cash equivalents (per cash flow statement)	2,933	1,953	–	–	66	–	–	4,952
Short-term investments	3	3	–	–	–	–	–	6
Other current borrowings	(39)	(38)	–	–	(1)	15	(739)	(802)
Non-current borrowings	(3,292)	(972)	–	–	–	(84)	739	(3,609)
Finance leases	(137)	(81)	–	–	(11)	–	–	(229)
Financial liabilities	(3,468)	(1,091)	–	–	(12)	(69)	–	(4,640)
Net funds/(debt) excluding fair value swaps	(532)	865	–	–	54	(69)	–	318
Fair value of swaps hedging fixed rate borrowings	227					66		293
Net funds/(debt)	(305)	865	–	–	54	(3)	–	611
2017								
Cash at bank and in hand	872	(5)	–	–	(29)	–	–	838
Money market funds	552	44	–	–	(7)	–	–	589
Short-term deposits	1,347	212	–	–	(33)	–	–	1,526
Cash and cash equivalents (per balance sheet)	2,771	251	–	–	(69)	–	–	2,953
Overdrafts	–	(20)	–	–	–	–	–	(20)
Cash and cash equivalents (per cash flow statement)	2,771	231	–	–	(69)	–	–	2,933
Short-term investments	3	–	–	–	–	–	–	3
Other current borrowings	(169)	159	(6)	(18)	3	–	(8)	(39)
Non-current borrowings	(3,121)	(280)	(28)	–	(2)	131	8	(3,292)
Finance leases	(67)	(79)	–	–	9	–	–	(137)
Financial liabilities	(3,357)	(200)	(34)	(18)	10	131	–	(3,468)
Net debt excluding fair value swaps	(583)	31	(34)	(18)	(59)	131	–	(532)
Fair value of swaps hedging fixed rate borrowings	358					(131)		227
Net debt	(225)	31	(34)	(18)	(59)	–	–	(305)

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

For the year ended 31 December 2018

		Attributable to ordinary shareholders									
	Notes	Share capital £m	Share premium £m	Capital redemption reserve £m	Cash flow hedging reserve [2] £m	Merger reserve £m	Translation reserve £m	Accumulated losses [3] £m	Total £m	Non-controlling interests (NCI) £m	Total equity £m
At 1 January 2017 as previously reported		367	181	162	(107)	3	811	445	1,862	2	1,864
Impact of adopting IFRS 15 [1]		–	–	–	–	–	(22)	(4,442)	(4,464)	–	(4,464)
Other [1]		–	–	–	–	–	–	43	43	–	43
At 1 January 2017 restated [1]		367	181	162	(107)	3	789	(3,954)	(2,559)	2	(2,557)
Profit for the year [1]		–	–	–	–	–	–	3,382	3,382	1	3,383
Foreign exchange translation differences on foreign operations [1]		–	–	–	–	–	(133)	–	(133)	–	(133)
Movements on post-retirement schemes	19	–	–	–	–	–	–	735	735	–	735
OCI of joint ventures and associates	11	–	–	–	(5)	–	–	(1)	(6)	–	(6)
Related tax movements	5	–	–	–	–	–	1	(307)	(306)	–	(306)
Total comprehensive income for the year		–	–	–	(5)	–	(132)	3,809	3,672	1	3,673
Arising on issues of ordinary shares	20	1	14	–	–	–	–	(14)	1	–	1
Issue of C Shares [4]		–	–	(215)	–	–	–	1	(214)	–	(214)
Redemption of C Shares		–	–	215	–	–	–	(215)	–	–	–
Ordinary shares purchased		–	–	–	–	–	–	(24)	(24)	–	(24)
Share-based payments – direct to equity [5]		–	–	–	–	–	–	51	51	–	51
Related tax movements	5	–	–	–	–	–	–	3	3	–	3
Other changes in equity in the year		1	14	–	–	–	–	(198)	(183)	–	(183)
At 31 December 2017		368	195	162	(112)	3	657	(343)	930	3	933
Impact of adopting IFRS 9		–	–	–	–	–	–	(15)	(15)	–	(15)
At 1 January 2018		**368**	**195**	**162**	**(112)**	**3**	**657**	**(358)**	**915**	**3**	**918**
(Loss)/profit for the year		–	–	–	–	–		(2,401)	(2,401)	8	(2,393)
Foreign exchange translation differences on foreign operations		–	–	–	–	–	171	–	171	–	171
Reclassified to income statement on disposal of L'Orange		–	–	–	–	–	(19)	–	(19)	–	(19)
Movements on post-retirement schemes	19	–	–	–	–	–	–	27	27	–	27
Debited to cash flow hedge reserve		–	–	–	(17)	–	–	–	(17)	–	(17)
OCI of joint ventures and associates	11	–	–	–	18	–	–	(1)	17	–	17
Related tax movements	5	–	–	–	5	–	–	(2)	3	–	3
Total comprehensive loss for the year		–	–	–	6	–	152	(2,377)	(2,219)	8	(2,211)
Shares issued in respect of acquisition of ITP Aero		10	–	–	–	403	–	–	413	–	413
Other issues of ordinary shares	20	1	73	–	–	–	–	–	74	–	74
Issue of C Shares [4]		–	–	(217)	–	–	–	1	(216)	–	(216)
Redemption of C Shares		–	–	216	–	–	–	(216)	–	–	–
Shares issued to employee share trust		–	–	–	–	–	–	(75)	(75)	–	(75)
Share-based payments – direct to equity [5]		–	–	–	–	–	–	32	32	–	32
Transfer of joint operations to subsidiaries		–	–	–	–	–	–	–	–	15	15
Transactions with NCI		–	–	–	–	–	–	–	–	(4)	(4)
Related tax movements	5	–	–	–	–	–	–	2	2	–	2
Other changes in equity in the year		11	73	(1)	–	403	–	(256)	230	11	241
At 31 December 2018		379	268	161	(106)	406	809	(2,991)	(1,074)	22	(1,052)

[1] The 2017 figures have been restated for IFRS 15 *Revenue from Contracts with Customers*, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.
[2] See accounting policies note 1.
[3] At 31 December 2018, **13,538,921** ordinary shares with a net book value of **£123m** (2017: 6,466,153, 2016: 6,854,216 ordinary shares with net book values of £52m and £56m respectively) were held for the purpose of share-based payment plans and included in accumulated losses. During the year, **468,165** ordinary shares with a net book value of **£4m** (2017: 4.992,304 shares with a net book value of £42m) vested in share-based payment plans. During the year, the Company acquired **80,810** (2017: 92,537) of its ordinary shares via reinvestment of dividends received on its own shares and purchased **nil** (2017: 2,711,349) of its ordinary shares through purchases on the London Stock Exchange. During the year, the Company issued **47,556,914** new ordinary shares relating to the first five instalments for the acquisition of ITP Aero and **7,460,173** new ordinary shares (2017: 1,740,355) to the Group's share trust for its employee share-based payment plans with a net book value of **£74m** (2017: £14m).
[4] In Rolls-Royce Holdings plc's own Financial Statements, C Shares are issued from the merger reserve, this reserve was created by a scheme of arrangement in 2011. As this reserve is eliminated on consolidation, in the Consolidated Financial Statements, the C Shares are shown as being issued from the capital redemption reserve.
[5] Share-based payments – direct to equity is the share-based payment charge for the year less the actual cost of vesting excluding those vesting from own shares and cash received on share-based schemes vesting.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1 Accounting policies

The Company

Rolls-Royce Holdings plc (the Company) is a public company incorporated under the Companies Act 2006 and domiciled in the United Kingdom. The Consolidated Financial Statements of the Company for the year ended 31 December 2018 consist of the consolidation of the Financial Statements of the Company and its subsidiaries (together referred to as the Group) and include the Group's interest in jointly controlled and associated entities.

Basis of preparation and statement of compliance

In accordance with the Companies Act 2006 and European Union (EU) regulations, these Consolidated Financial Statements have been prepared in accordance with International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) and interpretations issued by the IFRS Interpretations Committee (IFRIC), as adopted for use in the EU effective at 31 December 2018 (Adopted IFRS).

The Company has elected to prepare its individual Company Financial Statements under FRS 101 *Reduced Disclosure Framework*. They are set out on pages 175 to 177 and the accounting policies in respect of Company Financial Statements are set out on page 176.

The Consolidated Financial Statements have been prepared on the historical cost basis except where Adopted IFRS requires the revaluation of financial instruments to fair value and certain other assets and liabilities on an alternative basis – most significantly post-retirement scheme obligations are valued on the basis required by IAS 19 *Employee Benefits* – and on a going concern basis as described on page 55.

The Consolidated Financial Statements are presented in sterling which is the Company's functional currency.

The preparation of Consolidated Financial Statements in conformity with Adopted IFRS requires management to make judgements and estimates that affect the reported amounts of assets and liabilities at the date of the Consolidated Financial Statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Revisions to Adopted IFRS in 2018

IFRS 15 *Revenue from Contracts with Customers*

The Group adopted IFRS 15 on 1 January 2018 using the 'full' retrospective approach.

IFRS 15 provides a single, principles-based five-step model to be applied to all sales contracts with customers. It is based on the transfer of control of goods and services to customers. In summary:

- revenues on original equipment (OE) and time and material aftermarket contracts are generally recognised at the point of delivery;
- revenues on long-term aftermarket contracts and some OE contracts (generally for products without an alternative use to the specific contract) are recognised on an activity basis using the costs incurred as the measure of the activity;
- costs to fulfil contracts are recognised as they are incurred; and
- costs to obtain a contract are amortised over the period of the contract against revenue.

The impact on the Group of adopting IFRS 15 is very significant, with a cumulative adjustment to equity at 1 January 2017 being £4.5bn. The income statement for 2017 and the balance sheets at 1 January and 31 December 2017 have been restated to reflect the adoption of IFRS 15 – see note 27.

IFRS 9 *Financial Instruments*

The Group adopted IFRS 9 on 1 January 2018. IFRS 9 relates to the accounting for financial instruments and covers:

- classification and measurement – certain trade receivables are now classified as 'fair value through other comprehensive income';
- impairment – additional requirements for the measurement of expected credit losses on financial assets; and
- hedge accounting – amendments to requirements.

Except for hedge accounting, retrospective application is not required with any adjustment being made to reserves on 1 January 2018. In accordance with the transitional provisions in IFRS 9, the Group has not restated its 2017 comparative information. For hedge accounting, the Group considered the new requirements; no changes to the existing hedge relationships were necessary and the Group has applied the standard prospectively.

The cumulative impact of IFRS 9 on the balance sheet at 1 January 2018 of £15m is set out in more detail in note 27.

1 Accounting policies continued

Key areas of judgement and sources of estimation uncertainty

The determination of the Group's accounting policies requires judgement. The subsequent application of these policies requires estimates; the actual outcome may differ from that calculated. The key judgements and key sources of estimation uncertainty at the balance sheet date, that have a significant risk of causing material adjustment to the carrying amounts of assets and liabilities within the next financial year, are summarised below. Further details are included within the significant accounting policies as indicated.

	Key judgements	Key sources of estimation uncertainty	Page
Revenue recognition	Whether Civil Aerospace OE and aftermarket contracts should be combined How performance on long-term aftermarket contracts should be measured Whether any costs should be treated as wastage Whether sales of spare engines to joint ventures are at fair value	Estimates of future revenues and costs of long-term contractual arrangements	115
Risk and revenue sharing arrangements	Determination of the nature of entry fees received		116
Taxation	Whether deferred tax assets should be recognised	Estimates necessary to assess whether it is probable that sufficient suitable taxable profits will arise in the UK to utilise the deferred tax assets	117
Financial instruments		Valuation of financial instruments without an observable market value	118
Business combinations	Identification of acquired assets and liabilities	Estimates to allocate purchase price	119
Capitalisation of internally generated developments costs	Determination of the criteria for starting, and subsequently ceasing, capitalisation Determination of the basis for amortising capitalised development costs		119
Impairment of non-current assets	Determination of cash-generating units for assessing impairment of goodwill	Estimates of cash flow forecasts and discount rates to assess the value in use	121
Provisions	Assessment of satisfying the criteria for the recognition of a provision, particularly in respect of restructuring	Estimates of expenditure required to settle the obligation, in particular where long-term contracts are assessed as onerous	121
Post-retirement benefits		Estimates of market value of scheme assets without an observable market value and assumptions for valuing the defined benefit obligation	122

Sensitivities for key sources of estimation risk are disclosed in the relevant notes where this is appropriate and practicable.

Significant accounting policies

The Group's significant accounting policies are set out below. With the exception of IFRS 9, which has been adopted with effect from 1 January 2018, these accounting policies have been applied consistently to all periods presented in these Consolidated Financial Statements.

Basis of consolidation

The Consolidated Financial Statements include the Company Financial Statements and its subsidiary undertakings together with the Group's share of the results of joint arrangements and associates made up to 31 December. ITP Aero was acquired on 19 December 2017. ITP Aero did not have any significant trading activity between the acquisition date and 31 December 2017. L'Orange (a subsidiary of Power Systems) was sold on 1 June 2018.

A subsidiary is an entity controlled by the Company. Control exists when the Company has power over an entity, exposure to variable returns from its involvement with an entity and the ability to use its power over an entity so as to affect the Company's returns.

A joint arrangement is an entity in which the Group holds a long-term interest and which is jointly controlled by the Group and one or more other venturers under a contractual arrangement. Joint arrangements may be either joint ventures or joint operations. An associate is an entity, being neither a subsidiary nor a joint arrangement, in which the Group holds a long-term interest and where the Group has a significant influence. The results of joint ventures and associates are accounted for using the equity method of accounting. Joint operations are accounted for using proportionate accounting.

Any subsidiary undertaking, joint arrangement or associate sold or acquired during the year are included up to, or from, the date of change of control. Transactions with non-controlling interests are recorded directly in equity.

1 Accounting policies continued

All intra-group transactions, balances, income and expenses are eliminated on consolidation. Adjustments are made to eliminate the profit or loss arising on transactions with joint arrangements and associates to the extent of the Group's interest in the entity.

As a result of the announcement on 6 July 2018 of the proposed disposal of the Commercial Marine business, it has been treated as a disposal group held for sale, with its assets and liabilities presented separately on the balance sheet.

Revenue recognition

Key judgement – Whether Civil Aerospace OE and aftermarket contracts should be combined
In the Civil Aerospace business, OE contracts are with the airframers (except for spare engines), while the aftermarket contracts are with the aircraft operators, although there may be interdependencies between them. IFRS 15 includes additional guidance on the combination of contracts, in particular that contracts with unrelated parties should not be combined. Notwithstanding the interdependencies, the Directors' consider that, as the operators are ultimately purchasing an aircraft from the airframer, of which the engines are part, the engine contract should be consider separately from the aftermarket contract. In making this judgement, they also took account of evolving industry practice.

Key estimate – Estimates of future revenues and costs of long-term contractual arrangements
The Group has long-term contracts that fall into different accounting periods and which can extend over significant periods (generally up to 25 years) – the most significant of these are long-term service arrangements (LTSAs) in the Civil Aerospace business. The estimated revenue and costs are inherently imprecise and significant estimates are required to assess: engine flying hours, time on wing and other operating parameters; the pattern of future maintenance activity and the costs to be incurred; lifecycle cost improvements over the term of the contracts and escalation of revenue and costs. The estimates take account of the inherent uncertainties, constraining the expected level of revenue as appropriate. In addition, many of the revenues and costs are denominated in currencies other than that of the relevant Group undertaking. These are translated at an estimated long-term exchange rate, based on historical trends and economic forecasts.

Key judgement – How performance on long-term aftermarket contracts should be measured
The Group generates a significant proportion of its revenue from aftermarket arrangements. These aftermarket contracts, such as TotalCare and CorporateCare agreements in the Civil Aerospace business, cover a range of services and generally have contractual terms covering more than one year. Under these contracts, the Group's primary obligation is to maintain customers' engines in an operational condition and this is achieved by undertaking various activities, such as repair, overhaul and engine monitoring over the period of the contract. Revenue on these contracts is recognised over the period of the contract and the basis for measuring progress is a matter of judgement. The Directors consider that the stage of completion of the contract is best measured by using the actual costs incurred to date compared to the estimated costs to complete the performance obligations, as this reflects the extent of completion of the activities performed.

Key judgement – Whether any costs should be treated as wastage
In rare circumstances, the Group may incur costs of wasted material, labour or other resources to fulfil a contract where the level of cost was not reflected in the contract price. The identification of such costs is a matter of judgement and would only be expected to arise where there has been a series of abnormal events which give rise to a significant level of cost which is also of a nature that the Group would not expect to incur and hence is not reflected in the contract price. For example, where there are technical issues that require resolution to meet regulatory requirements; have a wide-ranging impact across a product type; and cause significant operational disruption to customers. Similarly, in these rare circumstances, significant disruption costs to support customers resulting from the actual performance of a delivered good or service may be treated as a cost in the period. Any costs identified as wastage are expensed when the obligation to incur them arises – see note 2.

Key judgement – Whether sales of spare engines to joint ventures are at fair value
The Civil Aerospace business maintains a pool of spare engines to support its customers. Some of these engines are sold to, and held by, joint venture companies. The assessment of whether the sales price reflects fair value is a key judgement.

Revenue recognised comprises sales to the Group's customers after discounts and amounts payable to customers. The transaction price of a contract is typically clearly stated within the contract, although the absolute amount may be dependent on escalation indices and long-term contracts require the key estimates highlighted above. Refund liabilities where sales are made with a right of return are not typical in the Group's contracts. Where they do exist, and consideration has been received, a portion, based on an assessment of the expected refund liability is recognised within other payables. Revenue excludes value added taxes. The Group has elected to use the practical expedient not to adjust revenue for the effect of financing components, where the expectation is that the period between the transfer of goods and services to customers and the receipt of payment is less than a year.

Sales of standard OE, spare parts and time and material overhaul services are generally recognised on transfer of control to the customer. This is generally on delivery to the customer, unless the specific contractual terms indicate a different point. Management consider whether there is a need to constrain the amount of revenue to be recognised on delivery based on the contractual position and any relevant facts, however, this is not typically required.

Sales of services and OE specifically designed for the contract (most significantly in the Defence business) are recognised by reference to the progress towards completion of the performance obligation, using the costs method described in the key judgements, provided the outcome of contracts can be assessed with reasonable certainty.

1 Accounting policies continued

The Group generates a significant portion of its revenue and profit on aftermarket arrangements arising from the installed OE fleet. As a consequence, in particular in the Civil Aerospace large engine business, the Group will often agree contractual prices for OE deliveries that take into account the anticipated aftermarket arrangements. As described in the key judgements, these contracts are not combined. The consideration in the OE contract is therefore allocated to OE performance obligations and the consideration in the aftermarket contract to aftermarket performance obligations.

- Future variable revenue from long-term contracts is constrained to take account of the risk of non-recovery of resulting contract balances from reduced utilisation e.g. engine flying hours, based on historical forecasting experience and the risk of aircraft being parked by the customer.
- A significant amount of revenue and cost related to long-term contract accounting is denominated in currencies other than that of the relevant Group undertaking, most significantly US dollar transactions in sterling and euro denominated undertakings. These are translated at estimated long-term exchange rates.
- The assessment of stage of completion is generally measured for each contract. However, in certain cases, such as for CorporateCare agreements where there are many contracts covering aftermarket services, each for a small number of engines, the Group accounts for a portfolio of contracts together as the effect on the Consolidated Financial Statements would not differ materially from applying the standard to the individual contracts in the portfolio. When accounting for a portfolio of long-term service arrangements the Group uses estimates and assumptions that reflect the size and composition of the portfolio.
- A contract asset/liability is recognised where payment is received in arrears/advance of the costs incurred to meet performance obligations.
- Where material, wastage costs (see key judgements on page 115) are recorded as an exceptional non-underlying expense.

If the expected costs to fulfil a contract exceed the expected revenues, a contract loss provision is recognised for the excess costs.

The Group pays participation fees to airframe manufacturers, its customers for OE, on certain programmes. Amounts paid are initially treated as contract assets and subsequently charged as a reduction to the OE revenue when the engine is transferred to the customer.

The Group has elected to use the practical expedient to expense as incurred any incremental costs of obtaining or fulfilling a contract if the amortisation period of an asset created would have been one year or less. Where costs to obtain a contract are recognised in the balance sheet they are amortised over the performance of the related contract (average of three years).

Risk and revenue sharing arrangements (RRSAs)

Key judgment – Determination of the nature of entry fees received
RRSAs with key suppliers (workshare partners) are a feature of the Civil Aerospace business. Under these contractual arrangements, the key commercial objectives are that: (i) during the development phase the workshare partner shares in the risks of developing an engine by performing its own development work, providing development parts and paying a non-refundable cash entry fee; and (ii) during the production phase it supplies components in return for a share of the programme cash flows as a 'life of type' supplier (i.e. as long as the engine remains in service). The share of development costs borne by the workshare partner and of the revenue it receives reflect the partner's proportionate cost of providing its production parts compared to the overall manufacturing cost of the engine. The share is based on a jointly-agreed forecast at the commencement of the arrangement.

These arrangements are complex and have features that could be indicative of: a collaboration agreement, including sharing of risk and cost in a development programme; a long-term supply agreement; sharing of intellectual property; or a combination of these. These receipts are deferred and recognised against cost of sales over the estimated number of units to be delivered. In previous years, these cash entry fees were treated as a reduction to research and development costs. However, in assessing the accounting under IFRS 15 for the participation fee payments we sometimes make to our OE customers, we have also re-assessed the entry fees received from the Group's suppliers under RRSAs.

The payments to suppliers of their shares of the programme cash flows for their production components are charged to cost of sales as programme revenue arises. Cash entry fees received are initially deferred on the balance sheet and recognised as a reduction in cost of sales incurred, on a 15-year straight-line basis pro rata over the estimated number of units produced.

The Group has arrangements with third parties who invest in a programme and receive a return based on its performance, but do not undertake development work or supply parts. Such arrangements (financial RRSAs) are financial instruments as defined by IAS 32 *Financial Instruments: Presentation* and are accounted for using the amortised cost method.

Royalty payments

Where a government or similar body has previously acquired an interest in the intellectual property of a programme, royalty payments are matched to the related sales.

1 Accounting policies continued

Government grants

Government grants are recognised in the income statement so as to match them with the related expenses that they are intended to compensate. Where grants are received in advance of the related expenses, they are initially recognised in the balance sheet and released to match the related expenditure. Non-monetary grants are recognised at fair value.

Interest

Interest receivable/payable is credited/charged to the income statement using the effective interest method. Where borrowing costs are attributable to the acquisition, construction or production of a qualifying asset, such costs are capitalised as part of the specific asset.

Taxation

Key judgement – Whether deferred tax assets should be recognised
Deferred tax assets are recognised to the extent it is probable that future taxable profits will be available, against which the deductible temporary difference can be utilised, based on management's assumptions relating to the amounts and timing of future taxable profits.

Key estimate – Estimates necessary to assess whether it is probable that sufficient suitable taxable profits will arise in the UK to utilise the deferred tax assets.
Further details can be found in note 5

The tax charge/credit on the profit or loss for the year comprises current and deferred tax:

- current tax is the expected tax payable for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in respect of previous years; and
- deferred tax is provided using the balance sheet liability method, providing for temporary differences between the carrying amounts of the assets and liabilities for financial reporting purposes and the amounts used for tax purposes and is calculated using the enacted or substantively enacted rates that are expected to apply when the asset or liability is settled. In the UK, the deferred tax liability on the pension surplus is recognised consistently with the basis for recognising the surplus, i.e. at the rate applicable to refunds from a trust.

Tax is charged or credited to the income statement or OCI as appropriate, except when it relates to items credited or charged directly to equity in which case the tax is also dealt with in equity.

Deferred tax liabilities are recognised for taxable temporary differences arising on investments in subsidiaries and joint arrangements, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax is not recognised on taxable temporary differences arising on the initial recognition of goodwill or for temporary differences arising from the initial recognition of assets and liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit.

Deferred tax assets are recognised only to the extent that it is probable that future taxable profits will be available against which the assets can be utilised.

Further details on the Group's tax position can be found on page 198.

Foreign currency translation

Transactions denominated in currencies other than the functional currency of the transacting Group undertaking are translated into the functional currency at the average monthly exchange rate when the transaction occurs. Monetary assets and liabilities denominated in foreign currencies are translated into the relevant functional currency at the rate prevailing at the year end. Exchange differences arising on foreign exchange transactions and the retranslation of assets and liabilities into functional currencies at the rate prevailing at the year-end are included in profit before taxation.

The trading results of Group undertakings are translated into sterling at the average exchange rates for the year. The assets and liabilities of overseas undertakings, including goodwill and fair value adjustments arising on acquisition, are translated at the exchange rates prevailing at the year end. Exchange adjustments arising from the retranslation of the opening net investments, and from the translation of the profits or losses at average rates, are recognised in OCI. The cumulative amount of exchange adjustments was, on transition to IFRS in 2004, deemed to be nil.

1 Accounting policies continued

Financial instruments

Key estimate – Valuation of financial instruments without an observable market value
Financial liabilities include financial RRSAs, the value of which is determined based on the estimated future cash flows.

Financial instruments – Classification and measurement

IFRS 9 has changed the classification of financial assets compared to IAS 39. A summary of the changes is included in note 27.

Financial assets
Financial assets primarily include trade receivables, cash and cash equivalents (comprising cash at bank, money market funds and short term deposits), short term investments, derivatives (foreign exchange contracts, commodity contracts, interest rate contracts), and unlisted investments.

- Trade receivables are classified either as 'held to collect' and measured at amortised cost or as 'held to collect and sell' and measured at fair value through other comprehensive income (FVOCI). The Group may sell trade receivables due from certain customers before the due date. Any trade receivables from such customers that are not sold at the reporting date are classified as 'held to collect and sell'.
- Cash and cash equivalents (consisting of balances with banks and other financial institutions, money-market funds, short-term deposits) and short-term investments are subject to low market risk. Cash balances and short-term investments are measured at fair value through profit and loss (FVPL). Money market funds and short-term deposits are measured at FVOCI.
- Derivatives and unlisted investments are measured at FVPL.

Financial liabilities
Financial liabilities primarily consist of trade payables, borrowings, derivatives, financial RRSAs and C Shares.

The classification of financial liabilities under IFRS 9 is unchanged with respect to the previous requirements under IAS 32.

- Derivatives are classified and measured at FVPL.
- All other financial liabilities are classified and measured at amortised cost.

Financial instruments – Impairment of financial assets and contract assets

IFRS 9 codifies the basis for the accounting of expected credit losses (ECLs) on financial assets and contract assets resulting from transactions within the scope of IFRS 15. The Group has adopted the simplified approach to provide for ECLs, measuring the loss allowance at a probability weighted amount that considers reasonable and supportable information about past events, current conditions and forecasts of future economic conditions of the customers. The ECLs are updated at each reporting date to reflect changes in credit risk since initial recognition. ECLs are calculated for all financial assets in scope, regardless of whether or not they are overdue or not. On adoption of IFRS 9 on 1 January 2018, additional ECLs of £17m were recognised. Since adoption, there have been no material changes in estimates and assumptions that have led to a significant change in the ECLs allowance.

Financial instruments – Hedge accounting

Forward foreign exchange contracts and commodity swaps (derivative financial instruments) are held to manage the cash flow exposures of forecast transactions denominated in foreign currencies or in commodities respectively. In general, the Group has chosen to not apply hedge accounting in respect of these exposures. Prior to its acquisition in 2017, ITP Aero adopted hedge accounting for its equivalent exposures. It has continued to do so, although the value of the related derivatives is not significant, relative to those held by the rest of the Group.

The Group applies hedge accounting in respect of transactions entered into to manage the fair value and cash flow exposures of its borrowings. Forward foreign exchange contracts are held to manage the fair value exposures of borrowings denominated in foreign currencies and are designated as fair value hedges. Interest rate swaps are held to manage the interest rate exposures of fixed and floating rate borrowings and are designated as fair value or cash flow hedges respectively.

Derivative financial instruments qualify for hedge accounting when: (i) there is a formal designation and documentation at inception of the hedge of the hedging relationship and the Group's risk management objective and strategy for undertaking the hedge; and (ii) the hedge is expected to be effective.

Changes in the fair values of derivatives that are designated as fair value hedges are recognised directly in the income statement. The fair value changes of effective cash flow hedges derivatives are recognised in OCI subsequently recycled in the income statement to match the recognition of the hedged item. Any ineffectiveness in the hedging relationships is included in the income statement.

Hedge accounting is discontinued when the hedging instrument expires or is sold, terminated, exercised, or no longer qualifies for hedge accounting. At that time, for cash flow hedges and if the forecast transaction remains probable, any cumulative gain or loss on the hedging instrument recognised in OCI is retained until the forecast transaction occurs. If a hedged transaction is no longer expected to occur, the net cumulative gain or loss is recycled in the income statement.

The portion of a gain or loss on an instrument used to hedge a net investment in a foreign operation that is determined to be an effective hedge is recognised in the OCI. The ineffective portion is recognised immediately in the income statement. Gains and losses accumulated in the translation reserve will be recycled to profit when the foreign operation is sold.

All existing effective hedging relationships continue to qualify for hedge accounting under IFRS 9.

1 Accounting policies continued

Business combinations and goodwill

Key judgement – Identification of acquired assets and liabilities
In allocating the purchase price to the acquired assets and liabilities, such as technology, patents and licences, customer relationships, trademarks and in-process development, judgement is required. The assessments based on the Group's industry experience and the advice of third party valuers.

Key estimate – Estimates to allocate purchase price
On the acquisition of a business, fair values are attributed to the identifiable assets and liabilities of the acquired business. This requires estimates of future trading and cash flows of the acquired business. The Group will generally engage an independent valuer to advise on the determination of these fair values.

The fair values attributed to the identifiable assets and liabilities of ITP Aero in 2017 were provisional. In 2018, these have been finalised with the changes shown in note 25.

Goodwill recognised represents the excess of the fair value of the purchase consideration over the fair value to the Group of the net of the identifiable assets acquired and the liabilities assumed. On transition to IFRS on 1 January 2004, business combinations were not retrospectively adjusted to comply with Adopted IFRS and goodwill was recognised based on the carrying value under the previous accounting policies. Goodwill in respect of the acquisition of a subsidiary is recognised as an intangible asset. Goodwill arising on the acquisition of joint arrangements and associates is included in the carrying value of the investment.

The fair value of customer relationships recognised as a result of a business combination relate to the acquired company's established relationships with its existing customers that result in repeat purchases and customer loyalty. Amortisation occurs on a straight-line basis over its useful economic life, up to a maximum of 15 years.

Certification costs

Costs incurred in respect of meeting regulatory certification requirements for new Civil Aerospace aero engine/aircraft combinations including payments made to airframe manufacturers for this are recognised as intangible assets to the extent that they can be recovered out of future sales. They are charged to the income statement over the programme life on a 15-year straight-line basis pro rata over the estimated number of units produced.

Research and development

Key judgement – Determination of the criteria for starting, and subsequently ceasing, capitalisation
IAS 38 requires that internally generated development costs should only be capitalised if strict criteria are met, in particular relating to technical feasibility and generation of future economic benefits. The Group incurs significant research and development expenditure in respect of various development programmes, most notably in the Civil Aerospace business. Determining when capitalisation should commence and cease is a critical judgement, as is the determination of when subsequent expenditure on the programme assets should be capitalised.

Within the Group there is an established Product Introduction and Lifecycle Management process (PILM) in place. This is a gated process which assesses both the technical feasibility and commercial viability of programmes. A multi-functional team is involved in the assessment ensuring the technical and operational aspects of the programme have been assessed, together with the financial assessment. Until the programme has obtained sign off on the criteria set out below, all expenditure is expensed as incurred.

Subsequent expenditure after entry-into-service which enhances the performance of the engine and the economic benefits to the Group is capitalised. This expenditure is referred to as enhanced performance and is governed by the PILM process referred to above. All other development costs are expensed as incurred.

Key judgement – Determination of the basis for amortising capitalised development costs
The economic benefits of the development costs are primarily those cash inflows arising from long-term service agreements, which are expected to be relatively consistent for each engine. Consequently, the development costs associated with engine are amortised on a straight-line basis, over a 15-year period from its delivery. The period of 15 years is an estimate of the period of operation of the engine by its initial operator.

Expenditure incurred on research and development is distinguished as relating either to a research phase or to a development phase. All research phase expenditure is charged to the income statement. Development expenditure (which predominantly relates to Civil Aerospace engine programmes) is recognised as an internally generated intangible asset (programme asset) only if it meets strict criteria, relating in particular to technical feasibility and generation of future economic benefits.

1 Accounting policies continued

More specifically, development costs are capitalised from the point at which the following conditions have been met:

- the technical feasibility of completing the programme and the intention and ability (availability of technical, financial and other resources) to complete the programme asset and use or sell it;
- the probability that future economic benefits will flow from the programme asset; and
- the ability to measure reliably the expenditure attributable to the programme asset during its development.

Capitalisation continues until the point at which the programme asset meets its originally contracted technical specification (defined internally as the point at which the asset is capable of operating in the manner intended by management). Previously, until 30 June 2017, development costs were capitalised from engine certification until entry-into-service. The impact of this change on the 2018 results was an increase in the amount capitalised of **£323m** (2017: £127m).

Subsequent expenditure is capitalised where it enhances the functionality of the programme asset and demonstrably generates an enhanced economic benefit to the Group. All other subsequent expenditure on programme assets is expensed as incurred.

Development expenditure capitalised is amortised on a straight-line basis. In accordance with IAS 38, the basis on which programme assets are amortised is assessed annually. At the end of 2017, the basis was amended to amortise programme assets on a 15-year straight-line basis pro rata over the estimated number of units produced. This basis has been applied prospectively from 1 January 2018; the impact in the year is not significant.

Software

Software that is not specific to an item of property, plant and equipment is classified as an intangible asset, recognised at its acquisition cost and amortised on a straight-line basis over its useful economic life, up to a maximum of five years. The cost of internally developed software includes direct labour and an appropriate proportion of overheads.

Other intangible assets

These principally include intangible assets arising on acquisition of businesses, such as technology, patents and licences which are amortised on a straight-line basis over a maximum of 15 years and trademarks which are not amortised.

Property, plant and equipment

Property, plant and equipment are stated at acquisition cost less accumulated depreciation and any provision for impairment in value. The cost of self-constructed assets includes the cost of materials, direct labour and an appropriate proportion of overheads and, where appropriate, interest. Assets held that are funded by a customer (in particular in Defence) are not recognised.

Depreciation is provided on a straight-line basis to write off the cost, less the estimated residual value, of property, plant and equipment over their estimated useful lives. No depreciation is recorded on assets in the course of construction. Estimated useful lives are reassessed annually and are as follows:

- Land and buildings, as advised by the Group's professional advisers:
  - freehold buildings – five to 45 years (average 25 years);
  - leasehold buildings – lower of adviser's estimates or period of lease; and
  - no depreciation is provided on freehold land.
- Plant and equipment – five to 25 years (average 12 years).
- Aircraft and engines – five to 20 years (average 14 years).

Leases

Where the Group has substantially all the risks and rewards of ownership of an asset subject to a lease, the lease is treated as a finance lease. Assets held under finance leases are recognised as assets of the Group at their fair value at the inception of the lease. The corresponding liability to the lessor is included in borrowings. Lease payments are apportioned between interest expense and a reduction of the lease obligation so as to achieve a constant rate of interest on the remaining balance of the liability. Other leases are treated as operating leases, with payments and receipts taken to the income statement on a straight-line basis over the life of the lease.

1 Accounting policies continued

Impairment of non-current assets

Key judgement – Determination of cash-generating units for assessing impairment of goodwill
If it is not possible to assess the recoverable amount of a non-current asset individually (most significantly for goodwill), its recoverable amount is assessed by reference to the cash-generating unit to which the asset belongs. For the purposes of goodwill, the Group considers the cash-generating units to be Rolls-Royce Power Systems AG, Rolls-Royce Deutschland Ltd & Co KG and the Commercial Marine business. Where the Group is reorganised, goodwill is re-allocated to cash-generating units based on where the goodwill originated.

Key estimate – Estimates of cash flow forecasts and discount rates to assess the value in use
The carrying values of a number of items on the balance sheet are dependent on the estimates of future cash flows arising from the Group's operations, in particular:

- The assessment of whether the goodwill (carrying value at **31 December 2018: £1,045m**, 31 December 2017: £1,545m), arising on the consolidation of acquired businesses, is impaired is dependent on the present value of the future cash flows expected to be generated by the relevant business and the discount rate used to calculate a present value.
- The assessment as to whether there are any indications of impairment of development expenditure, certification costs, and customer relationships recognised as intangible assets (carrying values at **31 December 2018: £3,427m**, 31 December 2017: £3,168m) is dependent on estimates of cash flows generated by the relevant assets and the discount rate used to calculate a present value. These estimates include the performance of long-term contractual arrangements as described below, as well as estimates for future market share, pricing and unit cost for uncontracted business. The risk of impairment is generally higher for newer programmes and typically reduces as programmes become more established.

Impairment of non-current assets is considered in accordance with IAS 36 *Impairment of Assets*. Where the asset does not generate cash flows that are independent of other assets, impairment is considered for the cash-generating unit to which the asset belongs. Goodwill and intangible assets not yet available for use are tested for impairment annually. Other intangible assets, property, plant and equipment and investments are assessed for any indications of impairment annually. If any indication of impairment is identified, an impairment test is performed to estimate the recoverable amount.

If the recoverable amount of an asset (or cash-generating unit) is estimated to be below the carrying value, the carrying value is reduced to the recoverable amount and the impairment loss is recognised as an expense. The recoverable amount is the higher of value in use or fair value less costs to dispose, if this is readily available. The value in use is the present value of future cash flows using a pre-tax discount rate that reflects the time value of money and the risk specific to the asset.

Inventories
Inventories and work in progress are valued at the lower of cost and net realisable value. Cost comprises direct materials and, where applicable, direct labour costs and those direct and indirect overheads, including depreciation of property, plant and equipment, that have been incurred in bringing the inventories to their present location and condition. Net realisable value represents the estimated selling prices less all estimated costs of completion and costs to be incurred in marketing, selling and distribution.

Cash and cash equivalents
Cash and cash equivalents include cash at bank and in hand, investments in money-market funds and short-term deposits with a maturity of three months or less on inception. The Group considers overdrafts (repayable on demand) to be an integral part of its cash management activities and these are included in cash and cash equivalents for the purposes of the cash flow statement. Where the Group operates pooled banking arrangements across multiple accounts, these are presented on a net basis when it has both a legal right and intention to settle the balances on a net basis.

Provisions

Key judgement – Assessment of satisfying the criteria for the recognition of a provision, particularly in respect of restructuring
Judgement is required to determine whether a valid expectation has been created on those affected by restructuring.

Key estimate – Estimates of expenditure required to settle the obligation
The Group measures provisions (carrying value at **31 December 2018: £1,835m**, 31 December 2017: £943m) at the Directors' best estimate of the expenditure required to settle the obligation at the balance sheet date. These estimates take account of information available and different possible outcomes. Where onerous contracts are being assessed, this will involve similar estimates to those described on page 115 under *'Estimates of future revenues and costs of long-term contractual arrangements'.*

1 Accounting policies continued

Provisions are recognised when the Group has a present obligation as a result of a past event, and it is probable that the Group will be required to settle that obligation and are discounted to present value where the effect is material.

The principal provisions are recognised as follows:

- warranties and guarantees – based on an assessment of future claims with reference to past experience and recognised at the earlier of when the underlying products and services are sold and when the likelihood of a future cost is identified;
- contract loss – when the direct costs to fulfil a contract are assessed as being greater than the expected revenue;
- restructuring – when the Group has approved a detailed and formal restructuring plan, and the restructuring has either commenced or has been publicly announced; and
- Trent 1000 in-service issues – when wastage costs are identified as described on page 115.

Post-retirement benefits

Key estimate – Estimates of market value of scheme assets without an observable market value and assumptions for valuing the defined benefit obligation
The Group's defined benefit pension schemes and similar arrangements are assessed annually in accordance with IAS 19. The valuation, which is based on assumptions determined with independent actuarial advice, resulted in a net surplus of £641m before deferred taxation being recognised on the balance sheet at 31 December 2018 (31 December 2017: £738m). The size of the net surplus/deficit is sensitive to: (i) the market value of the assets held by the schemes, some of which do not have observable market values and which are estimated based on third party advice; and (ii) to actuarial assumptions, which include price inflation, pension and salary increases, the discount rate used in assessing actuarial liabilities, mortality and other demographic assumptions and the levels of contributions. Further details and sensitivities are included in note 19.

Pensions and similar benefits (principally healthcare) are accounted for under IAS 19.

For defined benefit plans, obligations are measured at discounted present value, using a discount rate derived from high-quality corporate bonds denominated in the currency of the plan, whilst plan assets are recorded at fair value. Surpluses in schemes are recognised as assets only if they represent economic benefits available to the Group in the future.

The service and financing costs of such plans are recognised separately in the income statement:

- current service costs are spread systematically over the lives of employees;
- past-service costs and settlements are recognised immediately; and
- financing costs are recognised in the periods in which they arise.

Actuarial gains and losses are recognised immediately in OCI.

In 2018, following clarification provided by the High Court judgement on the Lloyds Banking Group on 26 October 2018, in the UK, the Group has recognised the estimated impact of the obligation to equalise pensions for men and women as a past-service cost – see note 19.

Payments to defined contribution schemes are charged as an expense as they fall due.

Share-based payments

The Group provides share-based payment arrangements to certain employees. These are principally equity-settled arrangements and are measured at fair value (excluding the effect of non-market based vesting conditions) at the date of grant. The fair value is expensed on a straight-line basis over the vesting period. The amount recognised as an expense is adjusted to reflect the actual number of shares or options that will vest, except where additional shares vest as a result of the total shareholder return (TSR) performance condition in the long-term incentive plan (LTIP).

Cash-settled share options (grants in the International ShareSave plan) are measured at fair value at the balance sheet date. The Group recognises a liability at the balance sheet date based on these fair values, taking into account the estimated number of options that will actually vest and the relative completion of the vesting period. Changes in the value of this liability are recognised in the income statement for the year.

The cost of shares of Rolls-Royce Holdings plc held by the Group for the purpose of fulfilling obligations in respect of employee share plans is deducted from equity in the consolidated balance sheet. See note 21 for a further description of the share-based payment plans.

Customer financing support

In connection with the sale of its products, the Group will, on occasion, provide financing support for its customers. These arrangements fall into two categories: credit-based guarantees and asset-value guarantees. In accordance with the requirements of IFRS 9 and IFRS 4 *Insurance Contracts*, credit-based guarantees are treated as insurance contracts. The Group considers asset-value guarantees to be non-financial liabilities and accordingly these are also treated as insurance contracts. As described on page 155, the Directors consider the likelihood of crystallisation in assessing whether provision is required for any contingent liabilities.

1 Accounting policies continued

The Group's contingent liabilities relating to financing arrangements are spread over many years and relate to a number of customers and a broad product portfolio, and are reported on a discounted basis.

Presentation of underlying results

Underlying results are presented to reflect the economic impact of the Group's foreign exchange risk management activities and to adjust for exceptional items. Further details are given in note 2.

Revisions to IFRS not applicable in 2018

Standards and interpretations issued by the IASB are only applicable if endorsed by the EU. Other than IFRS 16 *Leases* described below, the Group does not consider that any standards, amendments or interpretations issued by the IASB, but not yet applicable will have a significant impact on the Consolidated Financial Statements.

IFRS 16 *Leases*

The new lease accounting standard IFRS 16 is effective for the year beginning 1 January 2019. It requires all leases to be recognised on the balance sheet with a right-of-use asset capitalised and depreciated over the estimated lease term together with a corresponding liability that will reduce over the same period with an appropriate interest charge recognised. IAS 17 *Leases* only requires leases categorised as finance leases to be recognised on the balance sheet.

At 31 December 2018, the Group held operating leases with a future obligation of £2.3bn (excluding the disposal group held for sale) on a non-discounted basis as disclosed in note 22. The impact of IFRS 16 will be as follows.

Lease liability

A lease liability of £2.1bn will be recognised, being the present value of the future payments, using the Group's incremental borrowing rate applicable to the currency and term of each lease. This is incremental to the existing finance lease liabilities of £0.2bn, resulting in a total liability of £2.3bn. The most significant lease liabilities relate to aircraft engines (£1.7bn) and property (£0.5bn).

The liability relating to operating leases is lower than the IAS 17 future lease obligation due to the discounting of the future payments. Existing balance sheet liabilities for leased aero-engine residual value guarantees will be included in the lease liability classification.

Where leases are held in non-sterling currencies, the spot exchange rates on 1 January 2019 have been used to value them. Lease liabilities will be revalued to spot exchange rates at each future balance sheet date. The most significant exposure will be to changes in the US dollar where a movement of ten cents would have an impact of around £100m on the Group's lease liability.

Right-of-use asset

A right-of-use asset of £1.8bn will be recognised in addition to the existing £0.2bn of property, plant and equipment under finance lease contracts, resulting in a total asset of £2.0bn. The right-of-use asset has been measured either: as if the standard had applied since commencement of the lease (for a small number of high value property leases); or at an amount equal to the lease liability on transition.

The opening right-of-use asset is lower than the opening lease liability due to a combination of:
- the recognition of high value property leases from the commencement of the lease, resulting in: (i) the amortisation of the right-of-use asset being greater than the reduction in the lease liability over the same period; and (ii) where the lease liability is not in the functional currency of the relevant entity it will be revalued for changes in foreign exchange rates, while the right-of use-asset will not be revalued; and
- the right-of-use asset has been reduced to reflect charges previously recognised in the income statement when aero-engine residual value liabilities and an onerous lease provision were established.

Based on the current portfolio of lease contracts above, the Group's full-year expense under IFRS 16 in 2019 will be around £0.3bn depreciation expense within operating profit and a £0.1bn finance charge. The total pre-tax charge to the income statement will be broadly consistent with the previous accounting standard.

Transition

The Group is applying the modified retrospective transition method under which comparative information will not be restated and has elected to use the following practical expedients permitted by the standard:

- on initial application, IFRS 16 will be only been applied to contracts that were previously classified as leases;
- lease contracts with a duration of less than 12 months will continue to be expensed to the income statement on a straight-line basis over the lease term; and
- the lease term has been determined with the use of hindsight where the contract contains options to extend the lease.

The cumulative impact of less than £0.1bn resulting from the adoption of the new standard will be recognised in equity as at 1 January 2019.

2 Segmental analysis

The analysis by divisions (business segment) is presented in accordance with IFRS 8 *Operating segments*, on the basis of those segments whose operating results are regularly reviewed by the Board (who act as the Chief Operating Decision Maker as defined by IFRS 8). Our four divisions are set out below and referred to collectively as the core businesses.

Civil Aerospace – development, manufacture, marketing and sales of commercial aero engines and aftermarket services.
Power Systems – development, manufacture, marketing and sales of reciprocating engines, power systems and nuclear systems for civil power generation.
Defence – development, manufacture, marketing and sales of military aero engines, naval engines, submarines and aftermarket services.
ITP Aero – design, research and development, manufacture and casting, assembly and test of aeronautical engines and gas turbines (acquired on 19 December 2017, with no significant trading from acquisition date to 31 December 2017).

In 2017, the Group had five operating segments; Civil Aerospace, Defence, Power Systems, Marine and Nuclear. Following the decision to simplify the Group, announced on 17 January 2018, the 2017 segmental analysis has been presented on a consistent basis with the new structure.

Non-core businesses are shown separately and include the results of L'Orange until the date of its disposal on 1 June 2018, Commercial Marine (held for sale from 30 June 2018) and other smaller businesses including former Energy businesses not included in the disposal to Siemens in 2014 (Retained Energy).

Underlying results

We present the financial performance of our businesses in accordance with IFRS 8 and consistently with the basis on which performance is communicated to the Board each month. Underlying results are presented to reflect the economic impact of the Group's foreign exchange risk management activities. Trading transactions are valued at the exchange rates achieved on the derivative contracts settled to cover the net exposures.

Underlying performance excludes the following:

- the effect of acquisition accounting and business disposals;
- the impairment of goodwill and other assets arising on acquisition; and
- exceptional items.

We classify items as exceptional where the Directors believe that presentation of our results in this way is more relevant to an understanding of our financial performance, as exceptional items are identified by virtue of their size, nature or incidence.

In determining whether an event or transaction is exceptional, management considers quantitative as well as qualitative factors such as the frequency or predictability of occurrence. Examples of exceptional items include one-off costs and charges in respect of Civil Aerospace programmes, costs of restructuring programmes and one-off past-service charges and credits on our post-retirement schemes.

Exceptional items are not allocated to segments and may not be comparable to similarly titled measures used by other companies.

The tax effect of the adjustments above are excluded from the underlying tax charge. In addition, changes in the amount of recoverable advance corporation tax recognised are also excluded.

See page 129 for the reconciliation between underlying performance and reported performance.

2 Segmental analysis continued

The following analysis sets out the results of the core businesses on the basis described on the previous page and also includes a reconciliation of the underlying results to those reported in the consolidated income statement.

	Civil Aerospace £m	Power Systems £m	Defence £m	ITP Aero £m	Corporate £m	Inter-segment £m	Core businesses £m
Year ended 31 December 2018							
Underlying revenue from sale of original equipment	3,119	2,322	1,452	666	–	(375)	7,184
Underlying revenue from aftermarket services	4,259	1,162	1,672	113	–	(54)	7,152
Total underlying revenue	7,378	3,484	3,124	779	–	(429)	14,336
Gross profit	493	882	690	156	–	35	2,256
Commercial and administrative costs	(336)	(377)	(170)	(57)	(51)	–	(991)
Restructuring	(8)	(1)	(3)	(2)	–	–	(14)
Research and development costs	(332)	(188)	(100)	(30)	–	–	(650)
Share of results of joint ventures and associates [1]	21	1	10	–	–	–	32
Underlying operating (loss)/profit	(162)	317	427	67	(51)	35	633
Segment assets	14,272	3,745	2,612	2,210	–	(1,621)	21,218
Investments in joint ventures and associates	380	14	16	–	–	–	410
Segment liabilities	(21,310)	(1,668)	(2,924)	(1,168)	–	1,743	(25,327)
Net (liabilities) /assets	(6,658)	2,091	(296)	1,042	–	122	(3,699)
Investment in intangible assets, property, plant and equipment and joint ventures and associates	1,283	120	151	74	–	–	1,628
Depreciation, amortisation and impairment	500	238	92	87	–	–	917
Year ended 31 December 2017 restated *							
Underlying revenue from sale of original equipment	2,890	1,956	1,398	–	–	–	6,244
Underlying revenue from aftermarket services	3,708	1,052	1,782	–	–	–	6,542
Total underlying revenue	6,598	3,008	3,180	–	–	–	12,786
Gross profit	473	797	728	–	–	–	1,998
Commercial and administrative costs	(362)	(350)	(188)	–	(55)	–	(955)
Restructuring	(11)	(1)	(4)	–	–	–	(16)
Research and development costs	(454)	(181)	(89)	–	–	–	(724)
Share of results of joint ventures and associates [1]	11	(4)	7	–	–	–	14
Underlying operating (loss)/profit	(343)	261	454	–	(55)	–	317
Segment assets	13,038	3,758	2,159	2,190	–	(1,557)	19,588
Investments in joint ventures and associates	357	15	2	–	–	–	374
Segment liabilities	(16,598)	(1,388)	(2,560)	(1,538)	–	1,799	(20,285)
Net (liabilities)/assets	(3,203)	2,385	(399)	652	–	242	(323)
Investment in intangible assets, property, plant and equipment and joint ventures and associates	1,156	124	163	–	–	–	1,443
Depreciation, amortisation and impairment	438	227	85	–	–	–	750

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.
[1] The elimination of transactions with joint ventures has been included in the results of joint ventures and associates, previously this was included within cost of sales – see note 11.

2 Segmental analysis continued

Reconciliation to reported results

	Core businesses £m	Non-core businesses[1] £m	Total underlying £m	Underlying adjustments and foreign exchange £m	Group at actual exchange rates £m
Year ended 31 December 2018					
Revenue from sale of original equipment	7,184	346	7,530	285	7,815
Revenue from aftermarket services	7,152	385	7,537	377	7,914
Total revenue	14,336	731	15,067	662	15,729
Gross profit	2,256	194	2,450	(1,252)	1,198
Commercial and administrative costs	(991)	(170)	(1,161)	(434)	(1,595)
Restructuring	(14)	(2)	(16)	16	–
Research and development costs	(650)	(39)	(689)	(79)	(768)
Share of results of joint ventures and associates[2]	32	–	32	(28)	4
Operating profit/(loss)	633	(17)	616	(1,777)	(1,161)
Gain arising on the disposal of L'Orange	–	–	–	358	358
Profit/(loss) before financing and taxation	633	(17)	616	(1,419)	(803)
Net financing	(150)	–	(150)	(1,994)	(2,144)
Profit/(loss) before taxation	483	(17)	466	(3,413)	(2,947)
Taxation	(152)	(9)	(161)	715	554
Profit/(loss) for the year	331	(26)	305	(2,698)	(2,393)
Attributable to:					
Ordinary shareholders			297	(2,698)	(2,401)
Non-controlling interests			8	–	8
Year ended 31 December 2017 restated *					
Revenue from sale of original equipment	6,244	504	6,748	520	7,268
Revenue from aftermarket services	6,542	381	6,923	556	7,479
Total revenue	12,786	885	13,671	1,076	14,747
Gross profit	1,998	248	2,246	176	2,422
Commercial and administrative costs	(955)	(195)	(1,150)	(72)	(1,222)
Restructuring	(16)	(2)	(18)	18	–
Research and development costs	(724)	(52)	(776)	(67)	(843)
Share of results of joint ventures and associates[2]	14	(10)	4	5	9
Operating profit/(loss)	317	(11)	306	60	366
Gain arising on the acquisition of ITP Aero	–	–	–	785	785
Profit/(loss) before financing and taxation	317	(11)	306	845	1,151
Net financing	(106)	(1)	(107)	2,854	2,747
Profit/(loss) before taxation	211	(12)	199	3,699	3,898
Taxation	(131)	(24)	(155)	(360)	(515)
Profit/(loss) for the year	80	(36)	44	3,339	3,383
Attributable to:					
Ordinary shareholders			43	3,339	3,382
Non-controlling interests			1	–	1

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.
[1] Includes Commercial Marine (held for sale from 30 June 2018), L'Orange sold on 1 June 2018 and other smaller non-core businesses.
[2] The elimination of transactions with joint ventures has been included in the results of joint ventures and associates, previously this was included within cost of sales – see note 11.

2 Segmental analysis continued

Disaggregation of revenue from contracts with customers

Analysis by type and basis of recognition

Year ended 31 December 2018	Civil Aerospace £m	Power Systems £m	Defence £m	ITP Aero £m	Corporate £m	Inter-segment £m	Core businesses £m
Original equipment recognised at a point in time	3,119	2,258	694	666	–	(375)	6,362
Original equipment recognised over time	–	64	758	–	–	–	822
Aftermarket services recognised at a point in time	1,575	1,019	718	113	–	21	3,446
Aftermarket services recognised over time	2,630	143	954	–	–	(75)	3,652
Total underlying customer contract revenue [1]	7,324	3,484	3,124	779	–	(429)	14,282
Other underlying revenue	54	–	–	–	–	–	54
Total underlying revenue	7,378	3,484	3,124	779	–	(429)	14,336
Year ended 31 December 2017							
Original equipment recognised at a point in time	2,890	1,931	682	–	–	–	5,503
Original equipment recognised over time	–	25	716	–	–	–	741
Aftermarket services recognised at a point in time	1,329	929	829	–	–	–	3,087
Aftermarket services recognised over time	2,343	123	953	–	–	–	3,419
Total underlying customer contract revenue [1]	6,562	3,008	3,180	–	–	–	12,750
Other underlying revenue	36	–	–	–	–	–	36
Total underlying revenue	6,598	3,008	3,180	–	–	–	12,786

[1] Includes **£(196)m** (2017: £(14)m) of revenue recognised in the year relating to performance obligations satisfied in previous years.

	Core businesses £m	Non-core businesses [1] £m	Total underlying £m	Underlying adjustments and foreign exchange £m	Group at actual exchange rates £m
Year ended 31 December 2018					
Original equipment recognised at a point in time	6,362	63	6,425	283	6,708
Original equipment recognised over time	822	283	1,105	2	1,107
Aftermarket services recognised at a point in time	3,446	365	3,811	148	3,959
Aftermarket services recognised over time	3,652	20	3,672	229	3,901
Total customer contract revenue	14,282	731	15,013	662	15,675
Other revenue	54	–	54	–	54
Total revenue	14,336	731	15,067	662	15,729
Year ended 31 December 2017					
Original equipment recognised at a point in time	5,503	106	5,609	520	6,129
Original equipment recognised over time	741	398	1,139	–	1,139
Aftermarket services recognised at a point in time	3,087	373	3,460	165	3,625
Aftermarket services recognised over time	3,419	8	3,427	391	3,818
Total customer contract revenue	12,750	885	13,635	1,076	14,711
Other revenue	36	–	36	–	36
Total revenue	12,786	885	13,671	1,076	14,747

[1] Includes Commercial Marine (held for sale from 30 June 2018), L'Orange sold on 1 June 2018 and other smaller non-core businesses.

2 Segmental analysis continued

Analysis by geographical destination

The Group's revenue by destination of the ultimate operator is as follows:

	2018 £m	2017 * £m
United Kingdom	1,505	1,709
Germany	1,177	915
Switzerland	675	787
France	251	379
Spain	343	256
Norway	246	194
Italy	304	283
Russia	79	56
Rest of Europe	815	664
Europe	5,395	5,243
United States	5,041	4,279
Canada	366	313
North America	5,407	4,592
South America	351	173
Saudi Arabia	282	285
Rest of Middle East	407	734
Middle East	689	1,019
China	1,483	1,534
Singapore	452	449
Japan	365	216
South Korea	334	243
Malaysia	111	89
India	82	110
Rest of Asia	588	530
Asia	3,415	3,171
Africa	152	235
Australasia	229	205
Other	91	109
	15,729	14,747

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

Order backlog

Contracted consideration that is expected to be recognised as revenue when performance obligations are satisfied in the future (referred to as order backlog) is as follows:

	2018		
	Within five years £bn	After five years £bn	Total £bn
Civil Aerospace	22.1	30.2	52.3
Power Systems	2.9	0.2	3.1
Defence	6.3	0.5	6.8
ITP Aero	0.8	0.1	0.9
	32.1	31.0	63.1

The contracted consideration disclosed above meets the IFRS 15 definition of unrecognised performance obligations. Specifically, the parties to these contracts have approved the contract and our customers do not have a unilateral enforceable right to terminate the contract without compensation. We exclude Civil Aerospace OE orders (for deliveries beyond the next 7-12 months) that our customers have placed where they retain a right to cancel. Our expectation based on historical experience is that these orders will be fulfilled. Within the 0–5 years category, contracted revenue in: Defence will largely be recognised in the next three years; Power Systems will be recognised over the next two years as it is a short-cycle business; and ITP Aero (where internal Group revenues have been eliminated) evenly spread over the next five years.

2 Segmental analysis continued

Underlying adjustments

	2018			2017 Restated *		
	Revenue £m	Profit before financing £m	Net financing £m	Revenue £m	Profit before financing £m	Net financing £m
Underlying performance	15,067	616	(150)	13,671	306	(107)
Revenue recognised at exchange rate on date of transaction	781	–	–	1,076	–	–
Realised losses on settled derivative contracts [1]	–	219	465	–	453	195
Net unrealised fair value changes to derivative contracts [2]	–	(1)	(2,144)	–	24	2,648
Effect of currency on contract accounting	–	(265)	–	–	(153)	–
Revaluation of trading assets and liabilities	–	23	(302)	–	(6)	1
Net post-retirement scheme financing	–	–	23	–	–	1
Financial RRSAs – foreign exchange differences and changes in forecast payments	–	–	(2)	–	–	12
Gain arising on the acquisition of ITP Aero	–	–	–	–	785	–
Effect of acquisition accounting	–	(175)	(8)	–	(129)	–
Gain arising on the disposal of L'Orange [3]	–	358	–	–	–	–
Impairment of goodwill [4]	–	(155)	–	–	–	–
Trent 1000 exceptional charges [5]	–	(790)	(15)	–	–	–
Trent 900 exceptional charges [5]	(119)	(186)	–	–	–	–
Exceptional restructuring charge [6]	–	(317)	–	–	(104)	–
Pension equalisation [7]	–	(121)	–	–	–	–
Other	–	(9)	(11)	–	(25)	(3)
Total underlying adjustments	662	(1,419)	(1,994)	1,076	845	2,854
Reported per consolidated income statement	15,729	(803)	(2,144)	14,747	1,151	2,747

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.
1 The adjustments for realised (gains)/losses on settled derivative contracts include adjustments to reflect the losses in the same period as the related trading cash flows.
2 The adjustments for unrealised fair value changes to derivative contracts include those included in equity accounted joint ventures and exclude those for which the related trading contracts have been cancelled when the fair value changes are recognised immediately in underlying profit.
3 Gain on the disposal of L'Orange business to Woodward Inc. on 1 June 2018 – see note 25.
4 Relates to the impairment of Commercial Marine goodwill given the planned disposal in 2019 – see note 9.

The table below summarises the exceptional items recorded in 2018 and 2017.

	Year to 31 December	
	2018 £m	2017 £m
Programme exceptional items [5]	976	–
Related foreign exchange impact [5]	147	–
Restructuring charge [6]	317	104
Pension equalisation charge [7]	121	–
	1,561	104

5 Included within programme exceptional items is **£790m** (£905m at prevailing exchange rates) in respect of the abnormal wastage costs on the Trent 1000. In addition there is an exceptional item of £186m (£218m at prevailing exchange rates) that relates to the decision by Airbus to cease A380 deliveries in 2021.
6 The Group recorded an exceptional restructuring charge of **£317m** (2017: £104m) in the year. The costs include: £223m in respect of the Group-wide restructuring programme announced on 14 June 2018; costs relating to ongoing multi-year significant restructuring programmes including restructuring at Power Systems (RRPS2018) and in respect of Defence, reflecting actions to remove cost and improve operational efficiency.
7 The cost of equalisation of pension benefits between men and women - see note 19.

Appropriate rates of tax have been applied to adjustments made to profit before tax in the table above. The total underlying adjustments to profit before tax in 2018 are a credit of **£715m** (2017: charge of £360m). The credit in 2018 was £672m plus an additional £43m relating to the reduction in the Spanish Basque region tax rate. The charge in 2017 was £473m plus an additional charge of £50m, relating to the US Federal tax rate reduction and a credit of £163m, relating to the recognition of advance corporation tax.

2 Segmental analysis continued

Reconciliation to the balance sheet

	2018 £m	Restated * 2017 £m
Reportable segment assets	21,218	19,588
Investments – joint ventures and associates	412	375
Non-core businesses	134	1,181
Assets held for sale	750	7
Cash and cash equivalents and short-term investments	4,980	2,956
Fair value of swaps hedging fixed rate borrowings	293	227
Income tax assets	2,126	1,468
Post-retirement scheme surpluses	1,944	2,125
Total assets	**31,857**	**27,927**
Reportable segment liabilities	(25,327)	(20,285)
Non-core businesses	(141)	(554)
Liabilities associated with assets held for sale	(376)	–
Borrowings	(4,662)	(3,488)
Fair value of swaps hedging fixed rate borrowings	–	–
Income tax liabilities	(1,100)	(1,280)
Post-retirement scheme deficits	(1,303)	(1,387)
Total liabilities	**(32,909)**	**(26,994)**
Net (liabilities)/assets	**(1,052)**	**933**

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

The carrying amounts of the Group's non-current assets including investments but excluding financial instruments, deferred tax assets and post-employment benefit surpluses, by the geographical area in which the assets are located, are as follows:

	£m	£m
United Kingdom	4,626	4,085
Germany	2,604	2,680
Spain	1,380	1,387
United States	1,338	1,258
Nordic countries	71	502
Other	639	712
	10,658	10,624

3 Research and development

	2018 £m	Restated * 2017 £m
Expenditure in the year	(1,145)	(1,041)
Capitalised as intangible assets	498	347
Amortisation and impairment of capitalised costs [1]	(121)	(149)
Net cost recognised in the income statement	**(768)**	**(843)**
Underlying adjustments relating to effects of acquisition accounting and foreign exchange	79	67
Net underlying cost recognised in the income statement	**(689)**	**(776)**

* The 2017 figures have been restated for the revised policy for recognition of entry fees received from risk and revenue sharing arrangements as a result of the adoption of IFRS 15. See note 27 for more details.

1 From 1 January 2018, the Group adopted the approach of amortising programme assets on a 15-year straight-line basis pro rata over the estimated number of units produced. See note 1 for more details.

4 Net financing

	Notes	2018 Per consolidated income statement £m	2018 *Underlying financing* [1] £m	2017 Restated * Per consolidated income statement £m	2017 Restated * *Underlying financing* [1] £m
Interest receivable		**27**	***27***	11	*11*
Net fair value gains on foreign currency contracts	17	**–**	**–**	2,611	–
Financial RRSAs – foreign exchange differences and changes in forecast payments	17	**25**	**–**	17	–
Net fair value gains on commodity contracts	17	**–**	**–**	37	–
Financing on post-retirement scheme surpluses	19	**56**	**–**	39	–
Net foreign exchange gains		**163**	**–**	196	–
Financing income		**271**	***27***	2,911	*11*
Interest payable		**(107)**	***(99)***	(67)	*(64)*
Net fair value losses on foreign currency contracts	17	**(2,122)**	**–**	–	–
Financial RRSAs – foreign exchange differences and changes in forecast payments	17	**(27)**	**–**	(5)	–
Financial charge relating to financial RRSAs	17	**(8)**	***(8)***	(5)	*(5)*
Net fair value losses on commodity contracts		**(22)**	**–**	–	–
Financing on post-retirement scheme deficits	19	**(33)**	**–**	(38)	–
Other financing charges		**(96)**	***(70)***	(49)	*(49)*
Financing costs		**(2,415)**	***(177)***	(164)	*(118)*
Net financing		**(2,144)**	***(150)***	2,747	*(107)*
Analysed as:					
Net interest payable		**(80)**	***(72)***	(56)	*(53)*
Net fair value (losses)/gains on derivative contracts		**(2,144)**	**–**	2,648	–
Net post-retirement scheme financing		**23**	**–**	1	–
Net other financing		**57**	***(78)***	154	*(54)*
Net financing		**(2,144)**	***(150)***	2,747	*(107)*

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.
[1] See note 2 for definition of underlying results.

5 Taxation

	UK 2018 £m	UK Restated * 2017 £m	Overseas 2018 £m	Overseas Restated * 2017 £m	Total 2018 £m	Total Restated * 2017 £m
Current tax charge for the year	**13**	33	**167**	244	**180**	277
Less double tax relief	**–**	–	**–**	–	**–**	–
	13	33	**167**	244	**180**	277
Adjustments in respect of prior years	**(13)**	–	**15**	(10)	**2**	(10)
Current tax	**–**	33	**182**	234	**182**	267
Deferred tax (credit)/charge for the year	**(630)**	366	**(43)**	(16)	**(673)**	350
Adjustments in respect of prior years	**22**	(2)	**(42)**	13	**(20)**	11
Recognition of advance corporation tax	**–**	(163)	**–**	–	**–**	(163)
Deferred tax charge resulting from reduction in tax rates	**–**	–	**(43)**	50	**(43)**	50
Deferred tax	**(608)**	201	**(128)**	47	**(736)**	248
Recognised in the income statement	**(608)**	234	**54**	281	**(554)**	515

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

5 Taxation continued

Other tax (charges)/credits

	OCI				Equity	
	Items that will not be reclassified		Items that may be reclassified			
	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m
Deferred tax:						
Movement in post-retirement schemes	(2)	(307)	–	–	–	–
Share-based payments – direct to equity	–	–	–	–	2	3
Cash flow hedge	–	–	5	–	–	–
Net investment hedge	–	–	–	1	–	–
Other tax (charges)/credits	(2)	(307)	5	1	2	3

Tax reconciliation

	2018 £m	Restated * 2017 £m
(Loss)/profit before taxation	(2,947)	3,898
Less share of results of joint ventures and associates (note 11)	(114)	(131)
(Loss)/profit before taxation excluding joint ventures and associates	(3,061)	3,767
Nominal tax (credit)/charge at UK corporation tax rate **19%** (2017: 19.25%)	(582)	725
UK tax rate differential [1]	51	(47)
Overseas rate differences [2]	91	89
Impairment of goodwill	29	–
Exempt gain on the disposal of L'Orange	(117)	–
R&D credits	(23)	(5)
Gain arising on the acquisition of ITP Aero	–	(151)
Other permanent differences	36	(8)
Tax losses in year not recognised in deferred tax	22	24
Adjustments in respect of prior years	(18)	1
Recognition of advance corporation tax	–	(163)
Reduction in closing deferred taxes resulting from decrease in tax rates [3]	(43)	50
	(554)	515
Underlying items (note 2)	161	155
Non-underlying items	(715)	360
	(554)	515

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.
[1] The UK tax rate differential arises on the difference between the deferred tax rate and the UK statutory tax rate.
[2] Overseas rate differences mainly relate to tax on profits in countries, such as the US and Germany, which have higher tax rates than the UK.
[3] The 2018 reduction in corporation tax rates relates to the reduction in the Spanish Basque region tax rate. The 2017 comparative relates to the reduction in the Federal tax rate in the US.

Deferred taxation assets and liabilities

	2018 £m	Restated * 2017 £m
At 1 January	380	1,072
Impact of adopting IFRS 9	2	–
Amount credited/(charged) to income statement	736	(248)
Amount charged to other comprehensive income	(2)	(307)
Amount credited to cash flow hedge reserve	5	–
Amount credited to equity	2	3
On disposal/acquisition of businesses	6	(118)
Transferred to assets held for sale	(4)	–
Exchange differences	5	(22)
At 31 December	1,130	380
Deferred tax assets	2,092	1,451
Deferred tax liabilities	(962)	(1,071)
	1,130	380

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

5 Taxation continued

The analysis of the deferred tax position is as follows:

	At 1 January £m	Impact of adopting IFRS 9 £m	At 1 January restated £m	Recognised in income statement £m	Recognised in OCI £m	Recognised in equity £m	Merger and acquisition related activity [1] £m	Exchange differences £m	At 31 December £m
2018									
Intangible assets	(419)	–	**(419)**	(203)	–	–	5	(3)	**(620)**
Property, plant and equipment	(158)	–	**(158)**	77	–	–	1	(5)	**(85)**
Other temporary differences	258	2	**260**	(106)	5	2	(1)	4	**164**
Net contract liabilities	63	–	**63**	(6)	–	–	–	–	**57**
Pensions and other post-retirement scheme benefits	(482)	–	**(482)**	19	(2)	–	(3)	7	**(461)**
Foreign exchange and commodity financial assets and liabilities	381	–	**381**	244	–	–	–	–	**625**
Losses	306	–	**306**	704	–	–	–	–	**1,010**
R&D credit	268	–	**268**	7	–	–	–	2	**277**
Advance corporation tax	163	–	**163**	–	–	–	–	–	**163**
	380	2	**382**	736	3	2	2	5	**1,130**

	At 1 January £m	Impact of adopting IFRS 15 £m	At 1 January restated £m	Recognised in income statement £m	Recognised in OCI £m	Recognised in equity £m	Merger and acquisition related activity [1] £m	Exchange differences £m	At 31 December £m
2017 restated *									
Intangible assets	(389)	170	(219)	167	–	–	(319)	(48)	(419)
Property, plant and equipment	(191)	(15)	(206)	95	–	–	(29)	(18)	(158)
Other temporary differences	28	299	327	(74)	–	3	(12)	14	258
Net contract liabilities	(512)	518	6	57	–	–	–	–	63
Pensions and other post-retirement scheme benefits	(131)	–	(131)	(69)	(307)	–	–	25	(482)
Foreign exchange and commodity financial assets and liabilities	926	–	926	(545)	–	–	–	–	381
Losses	339	–	339	(50)	–	–	12	5	306
R&D credit	30	–	30	8	–	–	230	–	268
Advance corporation tax	–	–	–	163	–	–	–	–	163
	100	972	1,072	(248)	(307)	3	(118)	(22)	380

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.
[1] Merger and acquisition activity includes Commercial Marine deferred tax transferred to assets held for sale, the disposal of L'Orange and the 2017 comparative includes the acquisition of ITP Aero.

Unrecognised deferred tax assets

	2018 £m	Restated* 2017 £m
Advance corporation tax	**19**	19
Losses and other unrecognised deferred tax assets	**111**	103
Deferred tax not recognised on unused tax losses and other items on the basis that future economic benefit is uncertain	**130**	122

* Restated for ITP Aero.

Deferred tax assets include **£998m** (2017: £285m) relating to tax losses in the UK and **£163m** (2017: £163m) relating to advance corporation tax (ACT), as we conclude it is probable that the UK business will generate taxable profits and tax liabilities in the future against which we can utilise these losses and ACT. They do not time expire.

Most of the tax losses relate to our Civil Aerospace business in the UK which makes initial losses through the investment period of a programme and margin through its services contracts. The programme lifecycles typically range between 30 and 55 years with more of our widebody engine programmes forecast at the upper end of that range. In the past few years there have been four new engines that have entered into service (Trent 1000-TEN, Trent 7000 and Trent XWB-84 and Trent XWB-97), all of which are still in the investment stage.

5 Taxation continued

The increase in the losses in 2018 is mainly due to the adoption of IFRS 15 (where the most significant impact of adopting the standard was in our Civil Aerospace business in the UK) together with a number of large one off exceptional profit-impacting items relating to the Trent 1000 and Trent 900 programmes and the impact of the restructuring charge. Details of these are included in note 2. Deferred tax assets are recognised only to the extent that it is probable that future taxable profits will be available against which the assets can be utilised. A recoverability assessment has been undertaken, taking account of deferred tax liabilities against which the reversal can be offset and using latest UK forecasts, which are mainly driven by the Group's Civil Aerospace business, to assess the level of future taxable profits. The recoverability of UK deferred tax assets has been assessed in 2018 on the following basis:

- using the most recent UK profit forecasts prepared by management, which are consistent with past experience and external sources on market conditions. These forecasts cover the next five years;
- growth rates for the period beyond the forecasts reflecting the markets in which the UK businesses operate and external sources (circa 2% to 4.4%);
- the long-term profit growth profile of certain of our more recently launched large engine programmes; and
- the term of our large engine programmes which is typically between 30 and 55 years from initial investment to retirement of the fleet, including the aftermarket revenues earned from airline customers. The assessment takes into account the UK tax laws effective from April 2017 that in broad terms restrict the offset of the carried forward tax losses to 50% of current year profits.

Based on this, the Group concludes that it is probable that the UK business will generate taxable income and tax liabilities in the future against which we can use the losses and ACT. Any future changes in tax law or the structure of the Group could have a significant effect on the use of losses and ACT, including the period over which they can be used. Based on current forecasts and using various scenarios the losses and ACT will be used in full within the next 20 to 30 years. Whilst there is significant judgement involved in the assessment the range is well within our expected programme lifecycles. This is an area the Board continuously reassesses.

As announced in the Spanish Basque region tax reform legislation, the corporation tax rate reduced from 28% to 26% with effect from 1 January 2018 and will reduce to 24% with effect from 1 January 2019. The rate reduction to 24% was enacted on 27 March 2018. As this rate reduction was enacted prior to the year end, the closing deferred tax assets and liabilities of the Spanish ITP Aero companies have been calculated at this rate. The resulting credit of £43m has been recognised in the income statement.

The Budget 2016 announced that the UK tax rate will reduce to 17% with effect from 1 April 2020. The rate reduction to 17% was substantively enacted on 6 September 2016. The deferred tax assets and liabilities of UK companies within the group have therefore been calculated at 17%.

The temporary differences associated with investments in subsidiaries, joint ventures and associates, for which a deferred tax liability has not been recognised, aggregate to **£99m** (2017: £188m). No deferred tax liability has been recognised on the potential withholding tax due on the remittance of undistributed profits as the Group is able to control the timing of such remittances and it is probable that consent will not be given in the foreseeable future.

6 Earnings per ordinary share

Basic earnings per ordinary share (EPS) are calculated by dividing the profit attributable to ordinary shareholders by the weighted average number of ordinary shares in issue during the year, excluding ordinary shares held under trust, which have been treated as if they had been cancelled.

Diluted EPS are calculated by adjusting the weighted average number of ordinary shares in issue during the year for the bonus element of share options.

	2018			2017 Restated*		
	Basic	Potentially dilutive share options [1]	Diluted	Basic	Potentially dilutive share options	Diluted
(Loss)/profit attributable to ordinary shareholders (£m)	(2,401)		(2,401)	3,382		3,382
Weighted average number of ordinary shares (millions)	1,859	–	1,859	1,834	6	1,840
EPS (pence)	(129.15p)	–	(129.15p)	184.41p	(0.61p)	183.80p

[1] As there is a loss, the effect of the potentially dilutive ordinary shares is anti-dilutive.

The reconciliation between underlying EPS and basic EPS is as follows:

	2018		2017 Restated*	
	Pence	£m	Pence	£m
Underlying EPS/Underlying profit attributable to ordinary shareholders	15.98	297	2.34	43
Total underlying adjustments to (loss)/profit before tax (note 2)	(183.59)	(3,413)	201.70	3,699
Related tax effects	38.46	715	(19.63)	(360)
EPS/(Loss)/profit attributable to ordinary shareholders	(129.15)	(2,401)	184.41	3,382
Diluted underlying EPS	15.98		2.34	

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

7 Auditors' remuneration

	2018 £m	2017 £m
Fees payable to the Company's auditor for the audit of the Company's annual Financial Statements [1]	0.4	0.3
Fees payable to the Company's auditor and its associates for the audit of the Company's subsidiaries pursuant to legislation [2]	8.7	7.3
Total fees payable for audit services	9.1	7.6
Fees payable to the Company's auditor and its associates for other services:		
Audit related assurance services [3]	0.8	0.7
Taxation compliance services	–	0.1
Taxation advisory services	–	–
All other services	0.1	1.0
Total fees payable to the Company's auditor and its associates [4]	10.0	9.4
Fees payable in respect of the Group's pension schemes:		
Audit	0.1	0.2
Taxation compliance services	–	–

[1] The Company's auditor changed in 2018. 2018 fees are those paid to PwC, 2017 fees are those paid to KPMG.
[2] The level of fees payable to the Company's auditor for the audit of the Company's annual Financial Statements reflects the fact that limited incremental work is required in respect of the audit of these Financial Statements. Rolls-Royce plc, a subsidiary of the Company, is also required to prepare Consolidated Financial Statements and the fees payable to the Company's auditor for the audit of those Financial Statements, including the audit of the sub-consolidation, is included in the audit of the Company's subsidiaries pursuant to legislation.
[3] This includes **£0.5m** (2017: £0.3m) for the review of the half-year report.
[4] Audit fees for overseas entities are reported at the average exchange rate for the year.

8 Employee information

	2018 Number	Restated* 2017 Number
United Kingdom	23,400	22,500
Germany	10,000	10,600
United States	6,300	6,200
Nordics	3,000	3,000
Spain	2,800	–
Canada	1,000	1,000
Rest of world	8,000	6,700
Average number of employees	54,500	50,000
Civil Aerospace	25,500	24,300
Power Systems	10,500	10,300
Defence	10,500	10,300
ITP Aero	3,700	–
Corporate [1]	100	200
Core businesses	50,300	45,100
Non-core businesses [2]	4,200	4,900
Average number of employees	54,500	50,000

	£m	£m
Wages, salaries and benefits	3,208	2,982
Social security costs	479	413
Share-based payments (note 21)	35	34
Pensions and other post-retirement scheme benefits (note 19)	470	372
Group employment costs [3]	4,192	3,801

* The segmental employee numbers have been restated to reflect the Group restructuring described in note 2.
[1] Corporate consists of employees who do not provide a shared service to the segments. Where corporate functions provide such a service, employees have been allocated to the segments on an appropriate basis.
[2] Includes Commercial Marine (held for sale from 30 June 2018), L'Orange (sold on 1 June 2018) and Retained Energy.
[3] Remuneration of key management personnel is shown in note 24.

9 Intangible assets

	Goodwill £m	Certification costs £m	Development expenditure £m	Contractual aftermarket rights £m	Customer relationships £m	Software £m	Other £m	Total £m
Cost								
At 1 January 2017 as previously reported	1,874	1,325	1,944	1,007	540	742	663	8,095
Impact of adoption of IFRS 15 [1]	–	(503)	–	(1,007)	–	–	–	(1,510)
Foreign exchange adjustment [2]	–	(21)	–	–	–	–	–	(21)
At 1 January 2017 restated	1,874	801	1,944	–	540	742	663	6,564
Additions	–	112	347	–	–	135	53	647
Acquisition of ITP Aero [3]	–	4	162	–	895	7	61	1,129
Disposals	–	–	–	–	–	(13)	–	(13)
Reclassifications	–	–	(9)	–	–	–	9	–
Exchange differences	(5)	–	15	–	(3)	(2)	8	13
At 1 January 2018	**1,869**	**917**	**2,459**	**–**	**1,432**	**869**	**794**	**8,340**
Additions	–	35	498	–	–	110	37	680
Transferred to assets held for sale [4]	(666)	–	(38)	–	(26)	(6)	(12)	(748)
Disposal of L'Orange [5]	(136)	–	(48)	–	(40)	–	(11)	(235)
Disposals	–	(4)	(1)	–	–	(16)	–	(21)
Reclassifications	5	–	–	–	–	3	(3)	5
Exchange differences	15	–	13	–	18	4	6	56
At 31 December 2018	**1,087**	**948**	**2,883**	**–**	**1,384**	**964**	**811**	**8,077**
Accumulated amortisation and impairment								
At 1 January 2017 as previously reported	337	440	888	433	209	414	294	3,015
Impact of adoption of IFRS 15 [1]	–	(134)	–	(433)	–	–	–	(567)
At 1 January 2017 restated	337	306	888	–	209	414	294	2,448
Charge for the year [6]	–	33	149	–	51	81	29	343
Disposals	–	–	–	–	–	(6)	–	(6)
Exchange differences	(13)	–	8	–	(4)	(1)	–	(10)
At 1 January 2018	**324**	**339**	**1,045**	**–**	**256**	**488**	**323**	**2,775**
Charge for the year [6]	–	35	114	–	90	103	39	381
Impairment	155	–	7	–	–	22	–	184
Transferred to assets held for sale [4]	(439)	–	(29)	–	(21)	(1)	(12)	(502)
Disposal of L'Orange [5]	–	–	(31)	–	(27)	–	(8)	(66)
Disposals	–	–	–	–	–	(8)	–	(8)
Reclassifications	5	(1)	–	–	–	1	–	5
Exchange differences	(3)	–	5	–	6	2	3	13
At 31 December 2018	**42**	**373**	**1,111**	**–**	**304**	**607**	**345**	**2,782**
Net book value								
At 31 December 2018	**1,045**	**575**	**1,772**	**–**	**1,080**	**357**	**466**	**5,295**
At 31 December 2017 restated	1,545	578	1,414	–	1,176	381	471	5,565
At 31 December 2017 as previously reported	1,545	1,117	1,450	873	1,247	380	451	7,063

1 The adoption of IFRS 15 results in the reclassification of participation fees as contract assets and the de-recognition of contractual aftermarket rights (CARs).
2 The foreign exchange adjustment relates to the revision of the foreign exchange rate applied to the initial recognition of non-monetary assets and liabilities – see note 27.
3 Changes to the provisional balances presented at 31 December 2017 reflect additional information during 2018 about facts which existed at the date of acquisition, since the acquisition occurred close to the year end – see note 27.
4 The Commercial Marine business was classified as a 'held for sale' disposal group on 30 June 2018 – see note 25.
5 The disposal of the L'Orange business to Woodward Inc. was completed on 1 June 2018 – see note 25.
6 Charged to cost of sales except development costs, which are charged to research and development costs.

9 Intangible assets continued

Goodwill

In accordance with the requirements of IAS 36 *Impairment of Assets*, goodwill is allocated to the Group's cash-generating units, or groups of cash-generating units, that are expected to benefit from the synergies of the business combination that gave rise to the goodwill as follows:

Cash-generating unit (CGU) or group of CGUs

	Primary reporting segment	2018 £m	2017 £m
Rolls-Royce Power Systems AG	Power Systems	750	868
Rolls-Royce Deutschland Ltd & Co KG	Civil Aerospace	246	244
Commercial Marine – arising from the acquisitions of Vinters Limited and Scandinavian Electric Holding AS [1,2]	Non-core	–	382
Other [1]	Various	49	51
		1,045	1,545

[1] Commercial Marine goodwill in 2017 has been restated for the reorganisation of the Marine business following the announcement to simplify the group on 17 January 2018.
[2] Commercial Marine goodwill of £382m at 1 January 2018 has been impaired by £155m and the balance of £227m transferred to assets held for sale – see note 25.

Goodwill has been tested for impairment during 2018 on the following basis:

- With the exception of the Commercial Marine business (see below), the carrying values of goodwill have been assessed by reference to value in use. These have been estimated using cash flows from the most recent forecasts prepared by management, which are consistent with past experience and external sources of information on market conditions. These forecasts generally cover the next five years. Growth rates for the period not covered by the forecasts are based on a range of growth rates (1.8-2.5%) that reflect the products, industries and countries in which the relevant CGU or group of CGUs operate.
- The key assumptions for the impairment tests are the discount rate and, in the cash flow projections, the programme assumptions, the growth rates and the impact of foreign exchange rates on the relationship between selling prices and costs. Impairment tests are performed using prevailing exchange rates.

The principal value in use assumptions for goodwill balances considered to be individually significant are:

Commercial Marine

On 6 July 2018, the Group announced the sale of Commercial Marine to KONGSBERG for a cash consideration of approximately £425m. The disposal is expected to complete in 2019 and the business meets the criteria of IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations* that where the carrying value of a disposal group is expected to be recovered through a sale transaction, the disposal group should be treated as held for sale, with assets and liabilities presented separately on the balance sheet measured at the lower of carrying value or fair value less costs to dispose. Following reclassification, the non-current assets of Commercial Marine are no longer amortised.

As a result of the classification of the Commercial Marine business as a disposal group, its carrying value was assessed against the anticipated proceeds and the disposal costs. An impairment charge of £155m for the related goodwill (with an additional £5m impairment charge to property, plant and equipment) has been recognised in the income statement and the remaining net balance of £227m transferred to assets held for sale.

Rolls-Royce Power Systems AG

- trading assumptions (e.g. volume of equipment deliveries, pricing achieved and cost escalation) are based on current and known future programmes, estimates of capture of market share and long-term economic forecasts;
- cash flows beyond the five-year forecasts are assumed to grow at **1.8%** (2017: 1.8%); and
- pre-tax discount rate **12%** (2017: 11.7%).

The Directors do not consider that any reasonably possible changes in the key assumptions would cause the value in use of the goodwill to fall below its carrying value.

Rolls-Royce Deutschland Ltd & Co KG

- trading assumptions (e.g. volume of engine deliveries, flying hours of installed fleet and cost escalation) are based on current and known future programmes, estimates of customers' fleet requirements and long-term economic forecasts;
- cash flows beyond the five-year forecasts are assumed to grow at **2.5%** (2017: 2.5%); and
- pre-tax discount rate **13%** (2017: 13%).

The Directors do not consider that any reasonably possible changes in the key assumptions would cause the value in use of the goodwill to fall below its carrying value.

9 Intangible assets continued

Other intangible assets

Other intangible assets have been reviewed for impairment in accordance with the requirements of IAS 36 *Impairment of Assets*. Where an impairment test was considered necessary, it has been performed on the following basis.

- The carrying values have been assessed by reference to value in use. These have been estimated using cash flows from the most recent forecasts prepared by management, which are consistent with past experience and external sources of information on market conditions over the lives of the respective programmes.
- The key assumptions underlying cash flow projections are assumed market share, programme timings, unit cost assumptions, discount rates, and foreign exchange rates.
- The pre-tax cash flow projections have been discounted at **7-13%** (2017: 9-13%), based on the Group's weighted average cost of capital, adjusted for the estimated programme risk, for example taking account of whether or not the forecast cash flows arise from contracted business.

On the basis of impairment reviews and tests performed, no impairments are required. However, a combination of adverse changes in assumptions (e.g. market size and share, unit costs and programme delays) and other variables (e.g. discount rate and foreign exchange rates), could result in impairment in future years.

10 Property, plant and equipment

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	In course of construction £m	Total £m
Cost					
At 1 January 2017 previously presented	1,667	4,599	491	765	7,522
Foreign exchange adjustment *	–	–	20	–	20
At 1 January 2017 restated	1,667	4,599	511	765	7,542
Additions	45	156	156	446	803
Acquisition of ITP Aero *	74	142	27	11	254
Transferred to assets held for sale	(5)	(11)	–	–	(16)
Disposals/write-offs	(13)	(111)	(4)	(9)	(137)
Reclassifications	92	308	29	(429)	–
Exchange differences	(18)	(61)	(5)	(11)	(95)
Adjustment [1]	–	–	20	–	20
At 1 January 2018 restated *	**1,842**	**5,022**	**734**	**773**	**8,371**
Additions	54	273	251	396	974
Disposal of L'Orange [2]	(23)	(72)	–	(4)	(99)
Transferred to assets held for sale [3]	(91)	(138)	–	(30)	(259)
Disposals/write-offs	(29)	(140)	(19)	–	(188)
Reclassifications	140	287	(3)	(424)	–
Exchange differences	23	64	4	11	102
At 31 December 2018	**1,916**	**5,296**	**967**	**722**	**8,901**

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details. The update to the provisional fair values of ITP Aero are set out in note 25.
[1] Adjustment relates to industrial engines sold with the Energy business in 2014.
[2] The disposal of the L'Orange business to Woodward Inc. was completed on 1 June 2018 – see note 25.
[3] The Commercial Marine business was classified as a held for sale disposal group on 30 June 2018 – see note 25.

10 Property, plant and equipment continued

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	In course of construction £m	Total £m
Accumulated depreciation					
At 1 January 2017	515	2,765	126	2	3,408
Charge for the year [4]	58	351	35	–	444
Impairment	3	3	–	–	6
Transferred to assets held for sale	(3)	(10)	–	–	(13)
Disposals/write-offs	(3)	(100)	(1)	–	(104)
Reclassifications	(7)	7	–	–	–
Exchange differences	(9)	(32)	(1)	–	(42)
Adjustment [1]	–	–	14	–	14
At 1 January 2018 restated *	**554**	**2,984**	**173**	**2**	**3,713**
Charge for the year [4]	67	376	80	–	523
Impairment	–	2	–	5	7
Disposal of L'Orange [2]	(4)	(34)	–	–	(38)
Transferred to assets held for sale [3]	(26)	(96)	–	–	(122)
Disposals/write-offs	(19)	(123)	(9)	–	(151)
Exchange differences	7	33	–	–	40
At 31 December 2018	**579**	**3,142**	**244**	**7**	**3,972**
Net book value					
At 31 December 2018	**1,337**	**2,154**	**723**	**715**	**4,929**
At 31 December 2017 restated *	1,288	2,038	561	771	4,658
At 31 December 2017 as previously reported	1,288	2,051	514	771	4,624

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details. The update to the provisional fair values of ITP Aero are set out in note 25.
[1] Adjustment relates to industrial engines sold with the Energy business in 2014.
[2] The disposal of the L'Orange business to Woodward Inc. was completed on 1 June 2018 – see note 25.
[3] The Commercial Marine business was classified as a held for sale disposal group on 30 June 2018 – see note 25.
[4] Depreciation charged during the year is presented in the income statement or included in the cost of inventory as appropriate.

Property, plant and equipment includes:

	2018 £m	2017 £m
Net book value of finance leased assets:		
Land and buildings	**4**	5
Plant and equipment	**5**	7
Aircraft and engines	**153**	82
Assets held for use in operating leases:		
Cost	**813**	552
Depreciation	**(192)**	(140)
Net book value	**621**	412
Capital expenditure commitments	**362**	257
Cost of fully depreciated assets	**1,573**	1,355

The Group's share of equity accounted entities' capital commitments is **£9m** (2017: £20m).

11 Investments

Composition of the Group

The entities contributing to the Group's financial results are listed on pages 178 to 185.

Where the Group does not own 100% of the shares of a Group undertaking, there are a number of arrangements with the other shareholder(s) that give the Group the option or potential obligation to acquire the third parties' shares. These arrangements have been assessed and are not considered to have a significant value, individually or in aggregate.

Non-controlling interests

The Group does not have any material non-wholly owned subsidiaries.

Equity accounted and other investments

	Equity accounted			Other
	Joint ventures £m	Associates £m	Total £m	Unlisted £m
At 1 January 2017	835	9	844	38
Reclassification from deferred income	(289)	–	(289)	–
At 1 January 2017 restated [1]	546	9	555	38
Exchange differences	(47)	2	(45)	2
Additions	47	1	48	4
Transfer ITP Aero from joint venture to subsidiary	(204)	–	(204)	–
Impairment [2]	–	(2)	(2)	(12)
Consolidation of previously non-consolidated subsidiary	–	–	–	(6)
Share of retained loss [3]	(60)	(10)	(70)	–
Reclassification of deferred profit to deferred income [1]	99	–	99	–
Share of OCI	(6)	–	(6)	–
At 1 January 2018 restated [1]	**375**	**–**	**375**	**26**
Exchange differences	41	–	41	–
Additions	17	–	17	6
Impairment	(7)	–	(7)	(2)
Disposals	–	–	–	(3)
Consolidation of previously non-consolidated subsidiary	–	–	–	(5)
Share of retained loss [3]	(101)	–	(101)	–
Reclassification of deferred profit to deferred income [1]	70	–	70	–
Share of OCI	17	–	17	–
At 31 December 2018	**412**	**–**	**412**	**22**

[1] Deferred profit on sales to joint ventures was previously credited to deferred income. During the year, the Group has concluded that it is more appropriate for the credit to be included in the carrying value of the investment in the entity – up to the extent of the Group's interest in the entity. The corresponding income statement treatment has been reassessed on a consistent basis; previously this was included in cost of sales. The Group has concluded that it is more appropriate for this to be included in the share of results of joint ventures and associates. The 2017 comparatives have been restated for this change.
[2] The unlisted investment impairment of £12m relates to the consolidation of a previously non-consolidated subsidiary.
[3] See table below.

Reconciliation of share of retained profit/(loss) to the income statement and cash flow statement

	2018 £m	2017 £m
Share of results of joint ventures and associates	**114**	131
Adjustments for intercompany trading	**(110)**	(122)
Share of results of joint ventures and associates (income statement)	**4**	9
Dividends paid by joint ventures and associates to the Group (cash flow statement)	**(105)**	(79)
[3] Share of retained loss above	**(101)**	(70)

The following joint ventures are considered to be individually material to the Group:

	Principal location	Activity	Ownership interest
Alpha Partners Leasing Limited (APL)	UK	Aero engine leasing	50.0%
Hong Kong Aero Engine Services Limited (HAESL)	Hong Kong	Aero engine repair and overhaul	50.0%
Singapore Aero Engine Services Pte Limited (SAESL)	Singapore	Aero engine repair and overhaul	50.0%

11 Investments continued

Summarised financial information of the Group's individually material joint ventures is as follows:

	APL		HAESL		SAESL		ITP Aero [1]
	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m	2017 £m
Revenue	**254**	188	**1,497**	954	**1,141**	933	689
Profit and total comprehensive income for the year	**61**	60	**72**	48	**41**	40	46
Dividends paid during the year	**(47)**	(25)	**(65)**	(44)	**(43)**	(47)	–
Profit for the year included the following:							
Depreciation and amortisation	**(110)**	(94)	**(13)**	(11)	**(12)**	(12)	(51)
Interest income	**1**	–	**–**	–	**–**	–	11
Interest expense	**(58)**	(34)	**(2)**	(1)	**(3)**	(2)	(15)
Income tax expense	**(14)**	(10)	**(14)**	(9)	**(4)**	–	–
Current assets	**355**	185	**421**	268	**379**	362	
Non-current assets	**2,759**	2,116	**124**	114	**161**	148	
Current liabilities	**(755)**	(531)	**(248)**	(116)	**(207)**	(202)	
Non-current liabilities	**(1,825)**	(1,299)	**(101)**	(91)	**(164)**	(138)	
Net assets	**534**	471	**196**	175	**169**	170	
Included in the above:							
Cash and cash equivalents	**103**	23	**46**	9	**17**	32	
Current financial liabilities [2]	**(702)**	(503)	**–**	–	**–**	–	
Non-current financial liabilities [2]	**(1,603)**	(1,101)	**(88)**	(83)	**(164)**	(137)	
Reconciliation to the carrying amount recognised in the Financial Statements							
Ownership interest	**50.0%**	50.0%	**50.0%**	50.0%	**50.0%**	50.0%	
Group share of net assets above	**267**	235	**98**	88	**85**	85	
Goodwill	**–**	–	**36**	34	**97**	92	
Adjustments for intercompany trading	**(267)**	(235)	**(3)**	–	**–**	–	
Included in the balance sheet	**–**	–	**131**	122	**182**	177	

[1] On 19 December 2017, the Group acquired the remaining share of ITP Aero to take the total shareholding to 100% – see note 25.
[2] Excluding trade payables and other liabilities.

The summarised aggregated results of the Group's share of equity accounted investments is as follows:

	Individually material joint ventures (above)		Other joint ventures		Associates		Total	
	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m
Assets:								
Non-current assets	**271**	259	**559**	561	**–**	–	**830**	820
Current assets	**402**	314	**393**	367	**–**	–	**795**	681
Liabilities: [1]								
Current liabilities	**(230)**	(160)	**(240)**	(350)	**–**	–	**(470)**	(510)
Non-current liabilities	**(130)**	(114)	**(613)**	(502)	**–**	–	**(743)**	(616)
	313	299	**99**	76	**–**	–	**412**	375
[1] Liabilities include borrowings of	**(126)**	(111)	**(439)**	(488)	**–**	–	**(565)**	(599)

12 Inventories

	2018 £m	Restated* 2017 £m
Raw materials	553	558
Work in progress	1,551	1,398
Finished goods	2,168	1,818
Payments on account	15	29
	4,287	3,803
Inventories stated at net realisable value	223	244
Amount of inventory write-down	69	85
Reversal of inventory write-down	21	4

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

13 Trade receivables and other assets

	2018 £m	Restated* 2017 £m
Trade receivables [1]	2,680	2,709
Amounts owed by joint ventures and associates [1]	229	270
Costs to obtain contracts with customers [2]	42	51
Other receivables	1,146	1,115
Prepayments	593	208
	4,690	4,353
Contract assets [3]	1,403	1,290
Participation fee contract assets [3]	654	655
Total contract assets	2,057	1,945
	6,747	6,298
Analysed as:		
Financial instruments (note 17):		
Trade receivables and similar items	3,361	3,375
Other non-derivative financial assets	489	477
Non-financial instruments	2,897	2,446
	6,747	6,298

	2018 £m	Restated* 2017 £m
Trade receivables and other assets expected to be recovered in more than one year:		
Trade receivables	–	16
Amounts owed by joint ventures and associates	–	1
Costs to obtain contracts	34	39
Other receivables	63	41
Prepayments	91	61
	188	158
Contract assets	1,108	1,020
Participation fee contract assets	605	578
Total contract assets	1,713	1,598
	1,901	1,756

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

1 Includes **£146m** of trade receivables held to collect or sell and **nil** receivables from joint ventures and associates held to collect or sell.

2 These are amortised over the term of the related contract, resulting in amortisation of **£13m** (2017: £6m) in the year. There were no impairment losses.

3 Contract assets include **£1,097m** (2017: £1,027m) of Civil Aerospace LTSA assets where the increase is primarily due to revenue being recognised based on stage of completion of LTSAs, measured on a cost-to-cost basis, that is circa £180m greater than the revenue invoiced in the year on these customer contracts i.e. those with debit balances. Catch-up adjustments of £111m in Civil Aerospace have reduced the contract asset primarily due to revised measurement of progress towards completing performance obligations as cost estimates have increased (an offsetting £27m catch-up adjustment relating to the RRSA partner share is included in prepayments). Similar timing differences between revenue recognised on a stage of completion basis and invoices raised have occurred to a lesser extent in other businesses. No impairment losses on contract assets have arisen during the year. Participation fee contract assets are flat year-on-year with additional amounts paid during 2018 being offset by amortisation.

14 Cash and cash equivalents

	2018 £m	2017 £m
Cash at bank and in hand	1,023	838
Money-market funds	1,222	589
Short-term deposits	2,729	1,526
Cash and cash equivalents per the balance sheet	4,974	2,953
Overdrafts (note 15)	(22)	(20)
Cash and cash equivalents per cash flow statement (page 110)	4,952	2,933
Cash held as collateral against third party obligations (note 18)	4	22

Cash and cash equivalents at 31 December 2018 includes **£31m** (2017: £23m) that is not available for general use by the Group. This balance predominantly relates to cash held in non-wholly owned subsidiaries and joint arrangements.

Balances are presented on a net basis when the Group has both a legal right of offset and the intention to either settle on a net basis or realise the asset and settle the liability simultaneously.

15 Borrowings

	Current		Non-current		Total	
	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m
Unsecured						
Overdrafts	22	20	–	–	22	20
Bank loans	298	39	354	572	652	611
6.75% Notes 2019 £500m [1]	504	–	–	519	504	519
2.375% Notes 2020 US$500m [2]	–	–	383	362	383	362
2.125% Notes 2021 €750m [2]	–	–	699	701	699	701
0.875% Notes 2024 €550m [2]	–	–	498	–	498	–
3.625% Notes 2025 US$1,000m [2]	–	–	765	726	765	726
3.375% Notes 2026 £375m [1]	–	–	403	412	403	412
1.625% Notes 2028 €550m [2]	–	–	502	–	502	–
Other loans [3]	–	–	5	–	5	–
Secured						
Obligations under finance leases [4]	34	23	195	114	229	137
	858	82	3,804	3,406	4,662	3,488

[1] These notes are the subject of interest rate swap agreements under which the Group has undertaken to pay floating rates of interest, which form a fair value hedge.
[2] These notes are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of GBP interest, which form a fair value hedge.
[3] Other loans are held by entities classified as joint operations. The loans are disclosed after adjustments have been made on consolidation to eliminate the extent of the Group's interest in the entity – see note 1.
[4] Obligations under finance leases are secured by related leased assets.

16 Trade payables and other liabilities

	Current		Non-current		Total	
	2018 £m	Restated* 2017 £m	2018 £m	Restated* 2017 £m	2018 £m	Restated* 2017 £m
Trade payables	2,520	2,014	–	10	2,520	2,024
Amounts owed to joint ventures and associates	635	43	18	7	653	50
Accruals	1,673	1,452	109	94	1,782	1,546
Deferred receipts from RRSA workshare partners	9	73	520	482	529	555
Government grants [1]	14	20	85	82	99	102
Other taxation and social security	125	126	–	–	125	126
Other payables [2]	3,316	3,157	1,208	1,563	4,524	4,720
	8,292	6,885	1,940	2,238	10,232	9,123
Contract liabilities [3]	3,794	4,104	5,336	3,607	9,130	7,711
	12,086	10,989	7,276	5,845	19,362	16,834

[1] During the year **£8m** (2017: £7m) of government grants were released to the income statement.
[2] Other payables include **£378m** (2017: £378m) for financial penalties from agreements with investigating bodies and **£245m** (2017: £648m) for deferred consideration in relation to the acquisition of ITP Aero. During the year **£2,823m** (2017: £2,570m) of the opening contract liability was recognised as revenue.
[3] During the year **£2,823m** (2017: £2,570m) of the opening contract liability was recognised as revenue. Contract liabilities have increased by £1,419m with the main reasons being (i) an increase of £1,014m in Civil Aerospace LTSA liabilities to **£5,584m** (2017: £4,570m) including a £192m catch-up adjustment as progress towards completing performance obligations has been re-measured with cost estimates updated to reflect technical issues across various engine programmes including rectifying manufacturing quality issues on Trent 900 turbine blades and the latest information around future aircraft utilisation patterns and their resultant effect on shop visit costs. Invoices raised in Civil Aerospace during 2018 for LTSA services as engines were utilised by customers were greater than revenue recognised as costs were incurred; (ii) an increase in OE deposits mainly on Civil Aerospace and Power Systems programmes; (iii) an increase of £190m in Defence with a greater value of invoices raised in the year than recognised as revenue and favourable catch-up adjustments of circa £40m; (iv) a £40m reduction in ITP Aero including a favourable catch-up adjustment on its external customer contracts of around £20m; and (vi) a reclassification of £148m of Commercial Marine balances now as held for sale.

16 Trade payables and other liabilities continued

Trade and other payables are analysed as follows:	2018 £m	Restated* 2017 £m
Financial instruments (note 17):		
Trade payables and similar items	5,659	4,088
Other non-derivative financial liabilities	1,754	2,096
Non-financial instruments	11,949	10,650
	19,362	16,834

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

17 Financial instruments

Carrying values and fair values of financial instruments

			Assets			Liabilities		Total
	Notes	Basis for determining fair value	Fair value through profit or loss £m	Fair value through OCI £m	Amortised cost £m	Fair value through profit or loss £m	Other £m	£m
2018								
Unlisted non-current asset investments	11	A	22	–	–	–	–	22
Trade receivables and similar items	13	B/C	–	146	3,215	–	–	3,361
Other non-derivative financial assets	13	B	–	–	489	–	–	489
Derivative financial assets [1]		C	365	–	–	–	–	365
Short-term investments		B	–	–	6	–	–	6
Cash and cash equivalents	14	B	1,222	–	3,752	–	–	4,974
Borrowings	15	D/E	–	–	–	–	(4,662)	(4,662)
Derivative financial liabilities [1]		C	–	–	–	(3,871)	–	(3,871)
Financial RRSAs		F	–	–	–	–	(227)	(227)
Other		F	–	–	–	–	(62)	(62)
C Shares		B	–	–	–	–	(29)	(29)
Trade payables and similar items	16	B	–	–	–	–	(5,659)	(5,659)
Other non-derivative financial liabilities	16	B	–	–	–	–	(1,754)	(1,754)
			1,609	146	7,462	(3,871)	(12,393)	(7,047)

			Assets				Liabilities		Total
	Notes	Basis for determining fair value	Fair value through profit or loss £m	Loans and receivables £m	Available for sale £m	Cash £m	Fair value through profit or loss £m	Other £m	£m
2017, restated *									
Unlisted non-current asset investments	11	A	–	26	–	–	–	–	26
Trade receivables and similar items	13	B/C	–	3,375	–	–	–	–	3,375
Other non-derivative financial assets	13	B	–	477	–	–	–	–	477
Derivative financial assets [1]		C	646	–	–	–	–	–	646
Short-term investments		B	–	3	–	–	–	–	3
Cash and cash equivalents	14	B	–	1,526	589	838	–	–	2,953
Borrowings	15	D/E	–	–	–	–	–	(3,488)	(3,488)
Derivative financial liabilities [1]		C	–	–	–	–	(2,730)	–	(2,730)
Financial RRSAs		F	–	–	–	–	–	(247)	(247)
Other		F	–	–	–	–	–	(57)	(57)
C Shares		B	–	–	–	–	–	(28)	(28)
Trade payables and similar items	16	B	–	–	–	–	–	(4,088)	(4,088)
Other non-derivative financial liabilities	16	B	–	–	–	–	–	(2,096)	(2,096)
			646	5,407	589	838	(2,730)	(10,004)	(5,254)

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

[1] In the event of counterparty default relating to derivative financial assets and liabilities, offsetting would apply and financial assets and liabilities held with the same counterparty would net off. If this occurred with every counterparty, total financial assets would be **£11m** (2017: £31m) and liabilities **£3,517m** (2017: £2,115m).

17 Financial instruments continued

Fair values equate to book values for both 2018 and 2017, with the following exceptions:

	Basis for determining fair value	2018 Book value £m	2018 Fair value £m	2017 Book value £m	2017 Fair value £m
Borrowings	D	(3,754)	(3,634)	(2,720)	(2,750)
Borrowings	E	(908)	(887)	(768)	(768)
Financial RRSAs	F	(227)	(235)	(247)	(250)

The fair value of a financial instrument is the price at which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arms-length transaction. Fair values have been determined with reference to available market information at the balance sheet date, using the methodologies described below.

A These primarily comprise unconsolidated companies where fair value approximates to the book value.
B Fair values are assumed to approximate to cost either due to the short-term maturity of the instruments or because the interest rate of the investments is reset after periods not exceeding six months.
C Fair values of derivative financial assets and liabilities and trade receivables held to collect or sell are estimated by discounting expected future contractual cash flows using prevailing interest rate curves. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. These financial instruments are included on the balance sheet at fair value, derived from observable market prices (Level 2 as defined by IFRS 13 *Fair Value Measurement*).
D Borrowings are carried at amortised cost. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. The fair value of borrowings is estimated using quoted prices. (Level 1 as defined by IFRS 13).
E Borrowings are carried at amortised cost. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. The fair value of borrowings is estimated by discounting contractual future cash flows. (Level 2 as defined by IFRS 13).
F The fair value of RRSAs and other liabilities are estimated by discounting expected future cash flows. The contractual cash flows are based on future trading activity, which is estimated based on latest forecasts (Level 3 as defined by IFRS 13).

IFRS 13 defines a three level valuation hierarchy:

Level 1 – quoted prices for similar instruments

Level 2 – directly observable market inputs other than Level 1 inputs

Level 3 – inputs not based on observable market data

Carrying values of other financial assets and liabilities

	Foreign exchange contracts £m	Commodity contracts £m	Interest rate contracts [1] £m	Total derivatives £m	Financial RRSAs £m	Other £m	C Shares £m	Total £m
2018								
Non-current assets	47	4	292	343	–	–	–	343
Current assets	16	2	4	22	–	–	–	22
Assets	63	6	296	365	–	–	–	365
Current liabilities	(523)	(15)	–	(538)	(52)	(28)	(29)	(647)
Non-current liabilities	(3,304)	(25)	(4)	(3,333)	(175)	(34)	–	(3,542)
Liabilities	(3,827)	(40)	(4)	(3,871)	(227)	(62)	(29)	(4,189)
	(3,764)	(34)	292	(3,506)	(227)	(62)	(29)	(3,824)
2017 restated *								
Non-current assets	362	16	232	610	–	–	–	610
Current assets	27	9	–	36	–	–	–	36
Assets	389	25	232	646	–	–	–	646
Current liabilities	(493)	(10)	–	(503)	(50)	(20)	(28)	(601)
Non-current liabilities	(2,208)	(14)	(5)	(2,227)	(197)	(37)	–	(2,461)
Liabilities	(2,701)	(24)	(5)	(2,730)	(247)	(57)	(28)	(3,062)
	(2,312)	1	227	(2,084)	(247)	(57)	(28)	(2,416)

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.
[1] Includes the foreign exchange impact of cross-currency interest rate swaps.

Derivative financial instruments

The Group uses various financial instruments to manage its exposure to movements in foreign exchange rates. Where the effectiveness of a hedging relationship in a cash flow hedge is demonstrated, changes in the fair value that are deemed effective are included in the cash flow hedge reserve and released to match actual payments on the hedged item. The Group uses commodity swaps to manage its exposure to movements in the price of commodities (jet fuel and base metals). To hedge the currency risk associated with a borrowing denominated in a foreign currency, the Group has currency derivatives designated as part of fair value hedges. The Group uses interest rate swaps and forward rate agreements to manage its exposure to movements in interest rates.

17 Financial instruments continued

Movements in the fair values of derivative financial assets and liabilities were as follows:

	Foreign exchange instruments		Commodity instruments		Interest rate instruments		Total	
	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m
At 1 January	(2,312)	(5,551)	1	(56)	227	358	(2,084)	(5,249)
Acquisition of business	–	7	–	2	–	–	–	9
Movements in fair value hedges	–	–	–	–	66	(131)	66	(131)
Movements in cash flow hedges	(14)	–	(9)	–	(1)	–	(24)	–
Movements in other derivative contracts [1]	(2,122)	2,611	(22)	37	–	–	(2,144)	2,648
Contracts settled	684	621	(4)	18	–	–	680	639
At 31 December	(3,764)	(2,312)	(34)	1	292	227	(3,506)	(2,084)

[1] Included in financing.

Financial risk and revenue sharing arrangements (RRSAs) and other financial liabilities

The Group has financial liabilities arising from financial RRSAs. These financial liabilities are valued at each reporting date using the amortised cost method. This involves calculating the present value of the forecast cash flows of the arrangements using the internal rate of return at the inception of the arrangements as the discount rate.

Movements in the carrying values were as follows:

	Financial RRSAs		Other	
	2018 £m	Restated* 2017 £m	2018 £m	Restated* 2017 £m
At 1 January as previously reported	(247)	(101)	(57)	(15)
Impact of adopting IFRS 15 [1]	–	–	–	(42)
At 1 January as restated	(247)	(101)	(57)	(57)
Exchange adjustments included in OCI	(3)	(14)	(1)	–
Acquisition of business	–	(161)	–	–
Additions	(3)	–	(25)	(3)
Financing charge [2]	(8)	(5)	(1)	(1)
Excluded from underlying profit:				
Changes in forecast payments [2]	(2)	2	–	–
Exchange adjustments [2]	–	10	–	1
Cash paid	36	22	22	–
Other	–	–	–	3
At 31 December	(227)	(247)	(62)	(57)

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments – see note 27 for more details.
[1] IFRS 15 adoption results in a change in accounting treatment for parts sold with an option to repurchase and also future obligations to airframers arising from sale of our OE on their airframes – see note 27.
[2] Included in financing.

Effect of hedging instruments on the financial position and performance

To manage the risk of changes in the fair values of fixed rate borrowings (the hedged items) the Group has entered into fixed-to-floating interest rate swaps and cross-currency interest rate swaps (the hedging instruments) which for accounting purposes are designated as fair value hedges. Although the hedging instruments have similar critical terms to the hedged item, some ineffectiveness, predominantly due to cross currency basis, will still remain. The impact of any hedge ineffectiveness on the financial position and performance of the Group is as follows:

	Hedged item [1]				Hedging Instrument [2]					
	Nominal £m	FV adjustment in the period £m	FV adjustment since inception £m	Carrying amount £m	Nominal £m	Carrying amount asset £m	Carrying amount liability £m	FV movement in the period £m	Hedge ineffect-iveness in the period [3] £m	Weighted average FX rate
Sterling	(875)	25	(34)	(907)	875	34	–	(25)	–	1.00
US Dollar	(987)	(61)	(165)	(1,148)	987	169	–	65	4	1.52
Euro	(1,607)	(33)	(97)	(1,699)	1,607	90	–	26	(7)	1.15

[1] Hedged items are included in borrowings in the balance sheet.
[2] Hedging instruments are included in other financial assets or liabilities in the balance sheet.
[3] Hedge ineffectiveness is included in net financing in the income statement.

17 Financial instruments continued

Risk management policies and hedging activities

The principal financial risks to which the Group is exposed are: foreign currency exchange rate risk; liquidity risk; credit risk; interest rate risk; and commodity price risk. The Board has approved policies for the management of these risks.

Foreign currency exchange rate risk – The Group has significant cash flows (most significantly US dollars, followed by the euro) denominated in currencies other than the functional currency of the relevant trading entity. To manage its exposures to changes in values of future foreign currency cash flows, so as to maintain relatively stable long-term foreign exchange rates on settled transactions, the Group enters into derivative forward foreign currency transactions.

The Group economically hedges its GBP/USD exposure by forecasting highly probable net USD receipts up to ten years forward. Hedges are taken out within prescribed maximum and minimum hedge positions set out in the Group FX policy. The maximum and minimum policy bands decline gradually over the ten year horizon and are calculated as a percentage of forecast net income. A similar policy is operated for the Group's EUR/USD exposure. For accounting purposes, these derivative contracts are not designated in hedging relationships with the exception of those taken out by the Group's Spanish subsidiary, ITP Aero, where they are designated in cash flow hedges. ITP Aero is exposed predominantly to net US dollar receipts that it hedges against the euro using foreign exchange forward contracts.

The Group regards its interests in overseas subsidiary companies as long-term investments. The Group aims to match its translational exposures by matching the currencies of assets and liabilities.

Liquidity risk – The Group's policy is to hold financial investments and maintain undrawn committed facilities at a level sufficient to ensure that the Group has available funds to meet its medium-term capital and funding obligations and to meet any unforeseen obligations and opportunities. The Group holds cash and short-term investments, which together with the undrawn committed facilities, enable the Group to manage its liquidity risk.

Credit risk – The Group is exposed to credit risk to the extent of non-payment by either its customers or the counterparties of its financial instruments. The effective monitoring and controlling of credit risk is a key component of the Group's risk management activities. The Group has credit policies covering both trading and financial exposures. Credit risks arising from treasury activities are managed by a central treasury function in accordance with the Group credit policy. The objective of the policy is to diversify and minimise the Group's exposure to credit risk from its treasury activities by ensuring the Group transacts strictly with 'BBB' or higher-rated financial institutions based on pre-established limits per financial institution. At the balance sheet date, there were no significant concentrations of credit risk to individual customers or counterparties. The maximum exposure to credit risk at the balance sheet date is represented by the carrying value of each financial asset, including derivative financial instruments.

Interest rate risk – The Group's interest rate risk is primarily in relation to its fixed rate borrowings (fair value risk), floating rate borrowings and cash and cash equivalents (cash flow risk). Interest rate derivatives are used to manage the overall interest rate profile of the Group. The fixed or floating rate interest rate decision on long-term borrowings is determined for each new agreement at the point it is entered into. The aggregate interest rate position of the Group is reviewed regularly and can be revised at any time in order to react to changes in market conditions or circumstances.

The Group also has exposures to the fair values of non-derivative financial instruments such as EUR, GBP and USD fixed rate borrowings. To manage the risk of changes in these fair values, the Group has entered into fixed-to-floating interest rate swaps and cross-currency interest rate swaps which for accounting purposes are designated as fair value hedges. The swaps have similar critical terms to the hedged items, such as the reference rate, reset dates, notional amounts, payment dates and maturities. Therefore, there is an economic relationship and the hedge ratio is established as 1:1. Possible sources of ineffectiveness in the fair value hedge relationship are changes in the credit risk of either party to the interest rate swap and, for cross-currency interest rate swaps, the cross-currency basis risk as this risk is present in the hedging instrument only. Another possible source of ineffectiveness would be if the notional amount of the borrowings is less than the notional amount of the derivative, for example, in the event of a partial repayment of hedged debt prior to its maturity.

The Group's Spanish subsidiary, ITP Aero, has also entered into a floating-to-fixed interest rate swap to hedge the cash flow risk on a floating rate borrowing which for accounting purposes is designated as a cash flow hedge.

Commodity risk – The Group has exposures to the price of jet fuel and base metals arising from business operations. To minimise its cash flow exposures to changes in commodity prices, the Group enters into derivative commodity transactions. The commodity hedging policy is similar to the FX policy, in that the Group forecasts highly probable exposures to commodities, and takes out hedges within prescribed maximum and minimum levels as set out in the policy. The maximum and minimum policy bands decline gradually over time. For accounting purposes, these derivative contracts are generally not designated in hedging relationships.

Other price risk – The Group's cash equivalent balances represent investments in money-market instruments, with a term of up to three months. The Group does not consider that these are subject to significant price risk.

17 Financial instruments continued

Derivative financial instruments

The nominal amounts, analysed by year of expected maturity, and fair values of derivative financial instruments are as follows:

	Expected maturity					Fair value	
	Nominal amount £m	Within one year £m	Between one and two years £m	Between two and five years £m	After five years £m	Assets £m	Liabilities £m
At 31 December 2018							
Foreign exchange contracts:							
Cash flow hedges	335	162	120	53	–	4	(11)
Non-hedge accounted	29,080	5,528	5,113	14,808	3,631	59	(3,816)
Interest rate contracts:							
Fair value hedges	3,469	500	329	639	2,001	293	–
Cash flow hedges	19	4	4	11	–	–	(1)
Non-hedge accounted	–	–	–	–	–	3	(3)
Commodity contracts:							
Cash flow hedges	6	2	1	1	2	1	(8)
Non-hedge accounted	250	92	79	77	2	5	(32)
	33,159	6,288	5,646	15,589	5,636	365	(3,871)
At 31 December 2017 restated *							
Foreign exchange contracts:							
Cash flow hedges	214	97	81	36	–	7	–
Non-hedge accounted	29,375	5,793	4,503	12,626	6,453	382	(2,701)
Interest rate contracts:							
Fair value hedges	2,500	–	500	967	1,033	227	–
Cash flow hedges	19	4	4	11	–	–	–
Non-hedge accounted	–	–	–	–	–	5	(5)
Commodity contracts:							
Cash flow hedges	41	8	7	19	7	5	(3)
Non-hedge accounted	241	85	68	81	7	20	(21)
	32,390	5,987	5,163	13,740	7,500	646	(2,730)

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

As described above, all derivative financial instruments are entered into for risk management purposes, although these may not be designated into hedging relationships for accounting purposes.

Currency analysis

Foreign exchange contracts are denominated in the following currencies:

	Nominal amount of currencies purchased forward				
	Sterling £m	US dollar £m	Euro £m	Other £m	Total £m
At 31 December 2018					
Currencies sold forward:					
Sterling	–	–	63	230	293
US dollar	24,376	–	3,280	753	28,409
Euro	84	119	–	274	477
Other	87	39	94	16	236
At 31 December 2017 restated *					
Currencies sold forward:					
Sterling	–	–	127	241	368
US dollar	25,426	–	2,268	802	28,496
Euro	136	177	–	251	564
Other	27	29	89	16	161

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

17 Financial instruments continued

The nominal value of interest rate and commodity contracts are denominated in the following currencies:

	2018 £m	Restated* 2017 £m
Sterling	875	875
US dollar	1,233	1,260
Euro	1,636	666

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

Non-derivative financial instruments are denominated in the following currencies:

	Sterling £m	US dollar £m	Euro £m	Other £m	Total £m
At 31 December 2018					
Unlisted non-current investments	2	7	13	–	22
Trade receivables and similar items	376	2,246	687	52	3,361
Other non-derivative financial assets	72	341	47	29	489
Short-term investments	–	–	–	6	6
Cash and cash equivalents	2,008	928	1,792	246	4,974
Assets	2,458	3,522	2,539	333	8,852
Borrowings	(1,441)	(1,435)	(1,753)	(33)	(4,662)
Financial RRSAs	–	(47)	(180)	–	(227)
Other	(24)	(38)	–	–	(62)
C Shares	(29)	–	–	–	(29)
Trade payables and similar items	(2,099)	(2,600)	(860)	(100)	(5,659)
Other non-derivative financial liabilities	(854)	(421)	(379)	(100)	(1,754)
Liabilities	(4,447)	(4,541)	(3,172)	(233)	(12,393)
	(1,989)	(1,019)	(633)	100	(3,541)
At 31 December 2017 restated *					
Unlisted non-current investments	–	5	20	1	26
Trade receivables and similar items	244	2,282	747	102	3,375
Other non-derivative financial assets	106	262	62	47	477
Short-term investments	–	–	–	3	3
Cash and cash equivalents	827	1,055	807	264	2,953
Assets	1,177	3,604	1,636	417	6,834
Borrowings	(1,462)	(1,225)	(767)	(34)	(3,488)
Financial RRSAs	–	(60)	(187)	–	(247)
Other	(18)	(39)	–	–	(57)
C Shares	(28)	–	–	–	(28)
Trade payables and similar items	(1,600)	(1,645)	(710)	(133)	(4,088)
Other non-derivative financial liabilities	(696)	(515)	(828)	(57)	(2,096)
Liabilities	(3,804)	(3,484)	(2,492)	(224)	(10,004)
	(2,627)	120	(856)	193	(3,170)

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

17 Financial instruments continued

Currency exposures

The Group's actual currency exposures after taking account of derivative foreign currency contracts, which are not designated as hedging instruments for accounting purposes are as follows:

Functional currency of Group operations	Sterling £m	US dollar £m	Euro £m	Other £m	Total £m
At 31 December 2018					
Sterling [1]	–	3	(237)	6	(228)
US dollar	(2)	–	(5)	5	(2)
Euro	2	(14)	–	12	–
Other	–	10	13	–	23
At 31 December 2017					
Sterling [1]	–	3	(642)	11	(628)
US dollar	(10)	–	(5)	8	(7)
Euro	3	212	–	7	222
Other	–	4	18	(3)	19

[1] The euro exposure primarily relates to deferred consideration on the acquisition of ITP Aero. Movements in this balance in relation to foreign exchange (recognised through the consolidated income statement) are partially matched by the related foreign exchange movement in the subsidiary's net assets, recognised through the consolidated statement of other comprehensive income.

Ageing beyond contractual due date of financial assets

	Within terms £m	Up to three months overdue £m	Between three months and one year overdue £m	More than one year overdue £m	Total £m
At 31 December 2018					
Unlisted non-current asset investments	22	–	–	–	22
Trade receivables and similar items	2,891	265	132	73	3,361
Other non-derivative financial assets	489	–	–	–	489
Derivative financial assets	365	–	–	–	365
Short-term investments	6	–	–	–	6
Cash and cash equivalents	4,974	–	–	–	4,974
	8,747	265	132	73	9,217
At 31 December 2017 restated *					
Unlisted non-current asset investments	26	–	–	–	26
Trade receivables and similar items	3,053	200	72	50	3,375
Other non-derivative financial assets	476	–	1	–	477
Derivative financial assets	646	–	–	–	646
Short-term investments	3	–	–	–	3
Cash and cash equivalents	2,953	–	–	–	2,953
	7,157	200	73	50	7,480

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

17 Financial instruments continued

Contractual maturity analysis of non-derivative financial liabilities

	Gross values				
	Within one year £m	Between one and two years £m	Between two and five years £m	After five years £m	Carrying value £m
At 31 December 2018					
Borrowings	**(983)**	**(520)**	**(1,014)**	**(2,699)**	**(4,662)**
Financial RRSAs	**(48)**	**(62)**	**(59)**	**(73)**	**(227)**
Other	**(27)**	**(3)**	**(25)**	**(7)**	**(62)**
C Shares	**(29)**	**–**	**–**	**–**	**(29)**
Trade payables and similar items	**(5,542)**	**(51)**	**(40)**	**(26)**	**(5,659)**
Other non-derivative financial liabilities	**(1,273)**	**(150)**	**(259)**	**(72)**	**(1,754)**
	(7,902)	**(786)**	**(1,397)**	**(2,877)**	**(12,393)**
At 31 December 2017					
Borrowings	(186)	(831)	(1,345)	(1,598)	(3,488)
Financial RRSAs	(40)	(50)	(96)	(80)	(247)
Other	(21)	(3)	(26)	(7)	(57)
C Shares	(28)	–	–	–	(28)
Trade payables and similar items	(4,027)	(44)	(17)	–	(4,088)
Other non-derivative financial liabilities	(1,208)	(436)	(331)	(121)	(2,096)
	(5,510)	(1,364)	(1,815)	(1,806)	(10,004)

Expected maturity analysis of derivative financial instruments

	Gross values				
	Within one year £m	Between one and two years £m	Between two and five years £m	After five years £m	Carrying value £m
At 31 December 2018					
Derivative financial assets:					
Cash inflows	**1,001**	**934**	**2,187**	**2,061**	
Cash outflows	**(979)**	**(869)**	**(2,185)**	**(1,934)**	
Other net cash flows	**24**	**7**	**15**	**16**	
	46	**72**	**17**	**143**	**365**
Derivative financial liabilities:					
Cash inflows	**4,753**	**4,753**	**13,481**	**3,437**	
Cash outflows	**(5,531)**	**(5,656)**	**(16,298)**	**(4,257)**	
Other net cash flows	**(14)**	**(12)**	**(12)**	**–**	
	(792)	**(915)**	**(2,829)**	**(820)**	**(3,871)**
At 31 December 2017					
Derivative financial assets:					
Cash inflows	2,018	1,345	5,810	2,912	
Cash outflows	(1,955)	(1,307)	(5,788)	(2,835)	
Other net cash flows	32	30	21	21	
	95	68	43	98	646
Derivative financial liabilities:					
Cash inflows	3,922	3,288	8,005	4,362	
Cash outflows	(4,504)	(3,847)	(9,551)	(5,392)	
Other net cash flows	(11)	(6)	(10)	–	
	(593)	(565)	(1,556)	(1,030)	(2,730)

The Group regularly renegotiates the contractual maturities of its foreign exchange contracts. In general, the effect of such negotiations is the settlement of derivative financial liabilities somewhat earlier than the contractual maturity date.

17 Financial instruments continued

Interest rate risk

In respect of income earning financial assets and interest bearing financial liabilities, the following table indicates their effective interest rates and the periods in which they reprice. The value shown is the carrying amount.

At 31 December 2018	Effective interest rate %	Total £m	Period in which interest rate reprices 6 months or less £m	6-12 months £m
Short-term investments [1]		6	6	–
Cash and cash equivalents [2]		4,974	4,974	–
Unsecured bank and other loans				
Other bank borrowings		(109)	(22)	–
£200m floating rate loan	GBP LIBOR + 1.260	(200)	(200)	–
£43m floating rate loan	GBP LIBOR + 0.402	(43)	(43)	–
£280m floating rate loan	GBP LIBOR + 0.805	(280)	(280)	–
€50m fixed rate loan	2.350%	(14)	–	–
€20m floating rate loan	EUR LIBOR + 1.931	(13)	(13)	–
€30m floating rate loan [3]	EUR LIBOR + 2.001	(15)	(15)	–
Other loans [4]		(5)	(5)	–
Unsecured bond issues				
6.75% Notes 2019 £500m	6.750%	(504)	–	–
Effect of interest rate swaps	GBP LIBOR + 2.982	–	(504)	–
2.375% Notes 2020 US$500m	2.375%	(383)	–	–
Effect of interest rate swaps	GBP LIBOR + 0.841	–	(383)	–
2.125% Notes 2021 €750m	2.125%	(699)	–	–
Effect of interest rate swaps	GBP LIBOR + 0.701	–	(699)	–
0.875% Notes 2024 €550m	0.8750%	(498)	–	–
Effect of interest rate swaps	GBP LIBOR + 0.7437	–	(498)	–
3.625% Notes 2025 US$1,000m	3.625%	(765)	–	–
Effect of interest rate swaps	GBP LIBOR + 1.466	–	(765)	–
3.375% Notes 2026 £375m	3.375%	(403)	–	–
Effect of interest rate swaps	GBP LIBOR + 0.893	–	(403)	–
1.625% Notes 2028 €550m	1.625%	(502)	–	–
Effect of interest rate swaps	GBP LIBOR + 1.0934	–	(502)	–
Other secured				
Obligations under finance leases	4.126%	(229)	–	–
		318		

1 Interest on the short-term investments are at fixed rates.
2 Cash and cash equivalents comprises bank balances and demand deposits and earn interest at rates based on daily deposit rates.
3 Interest rate swap in place to hedge floating rate loan.
4 Other loans are held by entities classified as joint operations. The loans are disclosed after adjustments have been made on consolidation to eliminate the extent of the Group's interest in the entity – see note 1.

17 Financial instruments continued

At 31 December 2017	Effective interest rate %	Total £m	Period in which interest rate reprices: 6 months or less £m	6-12 months £m
Short-term investments [1]		3	1	2
Cash and cash equivalents [2]		2,953	2,953	–
Unsecured bank and other loans				
Other borrowings		(54)	(20)	–
£200m floating rate loan	GBP LIBOR + 1.260	(200)	(200)	–
£43m floating rate loan	GBP LIBOR + 0.402	(43)	(43)	
£280m floating rate loan	GBP LIBOR + 0.805	(280)	(280)	
€50m fixed rate loan	2.350%	(20)	–	–
€20m floating rate loan	EUR LIBOR + 1.931	(15)	(15)	–
€30m floating rate loan [3]	EUR LIBOR + 2.001	(19)	(19)	–
Unsecured bond issues				
6.75% Notes 2019 £500m	6.750%	(519)	–	–
Effect of interest rate swaps	GBP LIBOR + 2.982	–	(519)	–
2.375% Notes 2020 US$500m	2.375%	(362)	–	–
Effect of interest rate swaps	GBP LIBOR + 0.841	–	(362)	–
2.125% Notes 2021 €750m	2.125%	(701)	–	–
Effect of interest rate swaps	GBP LIBOR + 0.701	–	(701)	–
3.625% Notes 2025 US$1,000m	3.625%	(726)	–	–
Effect of interest rate swaps	GBP LIBOR + 1.466	–	(726)	–
3.375% Notes 2026 £375m	3.375%	(412)	–	–
Effect of interest rate swaps	GBP LIBOR + 0.893	–	(412)	–
Other secured				
Obligations under finance leases	4.144%	(137)		
		(532)		

[1] Interest on the short-term investments are at fixed rates.
[2] Cash and cash equivalents comprises bank balances and demand deposits and earn interest at rates based on daily deposit rates.
[3] Interest rate swap in place to hedge floating rate loan.

Some of the Group's borrowings are subject to the Group meeting certain obligations, including customary financial covenants. If the Group fails to meet its obligations, these arrangements give rights to the lenders, upon agreement, to accelerate repayment of the facilities. At 31 December 2018, none of these were in breach. There are no rating triggers contained in any of the Group's facilities that could require the Group to accelerate or repay any facility for a given movement in the Group's credit rating.

In addition, the Group has **£2,500m** (2017: £2,106m) of undrawn committed borrowing facilities which is available for at least the next four years.

Sensitivity analysis

Sensitivities at 31 December (all other variables held constant) – impact on profit after tax and equity	2018 £m	Restated* 2017 £m
Sterling 10% weaker against the US dollar	**(2,421)**	(2,348)
Sterling 10% stronger against the US dollar	**2,014**	1,968
Euro 10% weaker against the US dollar	**(268)**	(148)
Euro 10% stronger against the US dollar	**219**	118
Sterling 10% weaker against the Euro	**(32)**	(77)
Sterling 10% stronger against the Euro	**26**	62
Commodity prices 10% lower	**(21)**	(22)
Commodity prices 10% higher	**21**	22

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See note 27 for more details.

At 31 December 2018 the Group had no material sensitivity to changes in interest rates on that date. The main interest rate sensitivity for the Group arises as a result of the gross up of net cash and this is mitigated as described under the interest rate risk management policies on page 147.

17 Financial instruments continued

C Shares and payments to shareholders

The Company issues non-cumulative redeemable preference shares (C Shares) as an alternative to paying a cash dividend. C Shares in respect of a year are issued in the following year. Shareholders are able to redeem any number of their C Shares for cash. Any C Shares retained attract a dividend of 75% of LIBOR on the 0.1p nominal value of each share, paid on a twice-yearly basis, and have limited voting rights. The Company has the option to compulsorily redeem the C Shares, at any time, if the aggregate number of C Shares in issue is less than 10% of the aggregate number of C Shares issued, or on the acquisition or capital restructuring of the Company.

Movements in issued and fully paid C Shares during the year were as follows:

	2018		2017	
	Millions	Nominal value £m	Millions	Nominal value £m
At 1 January	28,429	28	28,125	28
Issued	216,717	217	215,235	215
Redeemed	(216,075)	(216)	(214,931)	(215)
At 31 December	29,071	29	28,429	28

Payments to shareholders in respect of the year represent the value of C Shares to be issued in respect of the results for the year. Issues of C Shares were declared as follows:

	2018		2017	
	Pence per share	£m	Pence per share	£m
Interim	4.60	86	4.60	85
Final	7.10	135	7.10	131
	11.70	221	11.70	216

18 Provisions for liabilities and charges

	Restated* At 1 January 2018 £m	Charged to income statement £m	Utilised £m	Transferred to liabilities held for sale £m	Exchange differences £m	At 31 December 2018 £m
Warranties and guarantees	450	75	(132)	(25)	5	373
Contract loss	127	125	(46)	(1)	1	206
Restructuring	36	263	(96)	(1)	2	204
Customer financing	25	2	(10)	–	–	17
Insurance	63	41	(17)	–	–	87
Tax related interest and penalties	64	(2)	(1)	–	1	62
Employer liability claims	52	(1)	(3)	–	–	48
Trent 1000 exceptional costs [1]	–	1,069	(290)	–	–	779
Other	126	40	(21)	(5)	1	141
	943	1,612	(616)	(32)	10	1,917
Current liabilities	550					1,122
Non-current liabilities	393					795

* The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP acquisitions and other adjustments. See note 27 for more details.
[1] The exceptional charge to the income statement for Trent 1000 exceptional costs of £790m shown in note 2 is calculated taking into account foreign exchange derivative contracts in place. The above charge is calculated at prevailing exchange rates.

Provisions for warranties and guarantees primarily relate to products sold and generally cover a period of up to three years.

Provisions for contract losses are recorded when the direct costs to fulfil a contract are assessed as being greater than the expected revenue.

Restructuring provisions are made for Group approved, formal restructuring programmes where the restructuring has either commenced or has been publicly announced. Included is the Group-wide restructuring programme announced on 14 June 2018, which is an on-going multi-year restructuring programme across the business and reflects the severance costs as well as the consultancy costs that will help deliver the planned reductions. The majority of the provision is expected to be utilised over the next two years.

Customer financing provisions cover guarantees provided for asset value and/or financing.

18 Provisions for liabilities and charges continued

Provisions for tax related interest and penalties relate to uncertain tax positions in some of the jurisdictions in which the Group operates. Utilisation of the provisions will depend on the timing of resolution of the issues with the relevant tax authorities.

The provision relating to employer healthcare liability claims is as a result of an historic insolvency of the previous provider and is expected to be utilised over the next 30 years.

The Trent 1000 exceptional costs provision relates to the full anticipated costs of the Trent 1000 in-service issues over 2017 to 2022 that are considered abnormal in nature, which fall outside the scope of normal TotalCare costs. These costs are mostly in respect of non-contractual customer compensation claims.

Other provisions comprise a number of liabilities with varying expected utilisation rates.

In connection with the sale of its products the Group will, on some occasions, provide financing support for its customers – generally in respect of civil aircraft. The Group's commitments relating to these financing arrangements are spread over many years, relate to a number of customers and a broad product portfolio and are generally secured on the asset subject to the financing. These include commitments of **US$2.3bn** (2017: US$3.3bn) (on a discounted basis) to provide facilities to enable customers to purchase aircraft (of which approximately US$630m could be called during 2019). These facilities may only be used if the customer is unable to obtain financing elsewhere and are priced at a premium to the market rate. Consequently the Directors do not consider that there is a significant exposure arising from the provision of these facilities.

Commitments on delivered aircraft in excess of the amounts provided are shown in the table below. These are reported on a discounted basis at the Group's borrowing rate to reflect better the time span over which these exposures could arise. These amounts do not represent values that are expected to crystallise. The commitments are denominated in US dollars. As the Group does not generally adopt cash flow hedge accounting for future foreign exchange transactions, this amount is reported, together with the sterling equivalent at the reporting date spot rate. The values of aircraft providing security are based on advice from a specialist aircraft appraiser.

	2018		2017	
	£m	$m	£m	$m
Gross commitments	93	119	145	196
Value of security [1]	(24)	(30)	(41)	(55)
Indemnities	(19)	(24)	(51)	(69)
Net commitments	50	65	53	72
Net commitments with security reduced by 20% [2]	60	77	64	86
[1] Security includes unrestricted cash collateral of	4	6	22	29

[2] Although sensitivity calculations are complex, the reduction of relevant security by 20% illustrates the sensitivity to changes in this assumption.

The Group's captive insurance company retains a portion of the exposures it insures on behalf of the remainder of the Group. Significant delays occur in the notification and settlement of claims and judgement is involved in assessing outstanding liabilities, the ultimate cost and timing of which cannot be known with certainty at the balance sheet date. The insurance provisions are based on information currently available, however it is inherent in the nature of the business that ultimate liabilities may vary. Provisions for outstanding claims are established to cover the outstanding expected liability as well as claims incurred but not yet reported.

19 Post-retirement benefits

The Group operates a number of defined benefit and defined contribution schemes:

- The UK defined benefit scheme is funded, with the assets held in a separate trustee administered fund. Employees are entitled to retirement benefits based on either their final or career average salaries and length of service.
- Overseas defined benefit schemes are a mixture of funded and unfunded plans and provide benefits in line with local practice. Additionally in the US, and to a lesser extent in some other countries, the Group's employment practices include the provision of healthcare and life insurance benefits for retired employees. These schemes are unfunded.

The valuations of the defined benefit schemes are based on the most recent funding valuations, where relevant, updated by the scheme actuaries to 31 December 2018.

The defined benefit schemes expose the Group to actuarial risks such as longevity, interest rate, inflation and investment risks. In the UK, and in the principal US and Canadian pension schemes, the Group has adopted investment policies to mitigate some of these risks. This involves investing a significant proportion of the schemes' assets in liability driven investment (LOI) portfolios, which hold investments designed to offset interest rate and inflation rate risks. In addition, in the UK, the scheme has invested in a longevity swap, which is designed to offset longevity risks in respect of approximately two-thirds of current pensioners.

Amounts recognised in the income statement

	2018			2017		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
Defined benefit schemes:						
Current service cost and administrative expenses	183	58	241	190	58	248
Past-service cost in respect of equalisation [1]	121	–	121	–	–	–
Other past-service credit [2]	(9)	(1)	(10)	(8)	–	(8)
	295	57	352	182	58	240
Defined contribution schemes	41	100	141	33	100	133
Operating cost	336	157	493	215	158	373
Net financing (credit)/charge in respect of defined benefit schemes	(55)	32	(23)	(38)	37	(1)
Total income statement charge	281	189	470	177	195	372

[1] In the UK, past-service costs of £121m have been recognised relating to the estimated cost of equalising benefits earned after May 1990 between men and women. The Rolls-Royce UK Pension Fund has to provide Guaranteed Minimum Pensions (GMPs) which, as a result of statutory rules, have been calculated differently for men and women. Although equal treatment in pension provision for males and females has been required since 1990, there has been uncertainty on whether and how pension schemes are required to equalise GMPs. A High Court judgement on the Lloyds Banking Group hearing was published on 26 October 2018. The judgement confirmed that GMPs earned from 1990 must be equalised and highlighted an acceptable range of methods. The estimated cost of this equalisation is £97m. In addition, a cost of £24m has been recognised in relation to obligations to equalise certain other post-1990 benefits between men and women. The total cost of £121m represents the Directors' best estimate of the cost, based on actuarial advice. However, the final cost will differ from this amount when the actual method of equalisation is agreed with the Trustee and subsequently implemented.

[2] In addition, a past-service credit of £9m has arisen related to the restructuring activities. This credit has been offset against the restructuring costs. All amounts have been excluded from the underlying results.

The operating cost is charged as follows:

	Defined benefit		Defined contribution		Total	
	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m
Cost of sales	176	169	104	92	280	261
Commercial and administrative costs	148	38	21	23	169	61
Research and development	28	33	16	18	44	51
	352	240	141	133	493	373

Pension contributions to UK pension arrangements are generally paid via a salary sacrifice scheme under which employees agree to a reduction in gross contractual pay in return for the Group making additional pension contributions on their behalf. As a result, there is a decrease in wages and salaries and a corresponding increase in pension costs of **£31m** (2017: £30m) in the year.

19 Post-retirement benefits continued

Net financing comprises:

	2018 UK schemes £m	2018 Overseas schemes £m	2018 Total £m	2017 UK schemes £m	2017 Overseas schemes £m	2017 Total £m
Financing on scheme obligations	286	59	345	317	65	382
Financing on scheme assets	(341)	(27)	(368)	(355)	(28)	(383)
Net financing (income)/charge in respect of defined benefit schemes	(55)	32	(23)	(38)	37	(1)
Financing income on scheme surpluses	(55)	(1)	(56)	(38)	(1)	(39)
Financing cost on scheme deficits	–	33	33	–	38	38

Amounts recognised in OCI in respect of defined benefit schemes

	2018 UK schemes £m	2018 Overseas schemes £m	2018 Total £m	2017 UK schemes £m	2017 Overseas schemes £m	2017 Total £m
Actuarial gains and losses arising from:						
– demographic assumptions	(130)	(4)	(134)	208	15	223
– financial assumptions	782	134	916	96	(88)	8
– experience adjustments	(6)	9	3	173	9	182
Return on scheme assets excluding financing income	(705)	(53)	(758)	265	57	322
	(59)	86	27	742	(7)	735

Amounts recognised in the balance sheet in respect of defined benefit schemes

	2018 UK schemes £m	2018 Overseas schemes £m	2018 Total £m	2017 UK schemes £m	2017 Overseas schemes £m	2017 Total £m
Present value of funded obligations	(10,847)	(758)	(11,605)	(11,499)	(774)	(12,273)
Fair value of scheme assets	12,773	735	13,508	13,607	750	14,357
Net asset/(liability) on funded schemes	1,926	(23)	1,903	2,108	(24)	2,084
Present value of unfunded obligations	–	(1,289)	(1,289)	–	(1,346)	(1,346)
Net asset [1]/(liability) recognised in the balance sheet	1,926	(1,312)	614	2,108	(1,370)	738
Post-retirement scheme surpluses	1,926	18	1,944	2,108	17	2,125
Post-retirement scheme deficits	–	(1,303)	(1,303)	–	(1,387)	(1,387)
Included in liabilities associated with assets held for sale	–	(27)	(27)			

[1] The surplus in the UK scheme is recognised as, on ultimate wind-up when there are no longer any remaining members, any surplus would be returned to the Group, which has the power to prevent the surplus being used for other purposes in advance of this event.

Overseas schemes are located in the following countries:

	2018 Assets £m	2018 Obligations £m	2018 Net £m	2017 Assets £m	2017 Obligations £m	2017 Net £m
Canada	186	(227)	(41)	197	(243)	(46)
Germany	–	(749)	(749)	–	(789)	(789)
US pension schemes	549	(596)	(47)	553	(602)	(49)
US healthcare schemes	–	(446)	(446)	–	(460)	(460)
Other	–	(29)	(29)	–	(26)	(26)
Net asset/(liability) recognised in the balance sheet	735	(2,047)	(1,312)	750	(2,120)	(1,370)

19 Post-retirement benefits continued

Defined benefit schemes

Assumptions

Significant actuarial assumptions for the UK scheme at the balance sheet date were as follows:

		2018	2017
Discount rate		2.95%	2.55%
Inflation assumption (RPI) [1]		3.40%	3.40%
Rate of increase in salaries		3.65%	3.65%
Life expectancy from age 65:	current male pensioner	22.1 years	22.2 years
	future male pensioner currently aged 45	23.4 years	23.5 years
	current female pensioner	23.4 years	23.5 years
	future female pensioner currently aged 45	25.2 years	25.3 years

[1] This is the assumption for the Retail Price Index. The Consumer Price Index is assumed to be 1.1% lower.

Discount rates are determined by reference to the market yields on AA rated corporate bonds. The rate is determined by using the profile of forecast benefit payments to derive a weighted average discount rate from the yield curve.

The inflation assumption is determined by the market implied assumption based on the yields on long-term indexed linked government securities and increases in salaries are based on actual experience, allowing for promotion, of the real increase above inflation.

The mortality assumptions adopted for the UK pension schemes are derived from the SAPS S2 'All' actuarial tables, with future improvements in line with the CMI 2017 core projections and long-term improvements of 1.25%. Where appropriate, these are adjusted to take account of the scheme's actual experience.

Other assumptions have been set on advice from the actuary, having regard to the latest trends in scheme experience and the assumptions used in the most recent funding valuation. The rate of increase of pensions in payment is based on the rules of the scheme, combined with the inflation assumption where the increase is capped.

Assumptions for overseas schemes are less significant and are based on advice from local actuaries. The principal assumptions are:

		2018	2017
Discount rate		3.40%	2.90%
Inflation assumption		2.90%	2.10%
Long-term healthcare cost trend rate		4.80%	4.80%
Male life expectancy from age 65:	current pensioner	21.1 years	20.2 years
	future pensioner currently aged 45	23.1 years	22.1 years

Changes in present value of defined benefit obligations

	2018			2017		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
At 1 January	(11,499)	(2,120)	(13,619)	(12,014)	(2,112)	(14,126)
Exchange differences	–	(56)	(56)	–	81	81
Current service cost	(179)	(56)	(235)	(183)	(56)	(239)
Past service cost	(112)	–	(112)	8	–	8
Finance cost	(286)	(59)	(345)	(317)	(65)	(382)
Contributions by employees	(2)	(3)	(5)	(3)	(7)	(10)
Benefits paid out	585	78	663	533	87	620
Disposal of businesses	–	31	31	–	–	–
Actuarial gains/(losses)	646	140	786	477	(64)	413
Transfers	–	(2)	(2)	–	(3)	(3)
Settlement curtailment	–	–	–	–	19	19
At 31 December	(10,847)	(2,047)	(12,894)	(11,499)	(2,120)	(13,619)
Funded schemes	(10,847)	(758)	(11,605)	(11,499)	(774)	(12,273)
Unfunded schemes	–	(1,289)	(1,289)	–	(1,346)	(1,346)

The defined benefit obligations are in respect of:						
Active plan participants	(4,229)	(1,088)	(5,317)	(4,625)	(1,124)	(5,749)
Deferred plan participants	(1,975)	(157)	(2,132)	(2,243)	(164)	(2,407)
Pensioners	(4,643)	(802)	(5,445)	(4,631)	(832)	(5,463)
Weighted average duration of obligations	19	15	18	20	16	19

19 Post-retirement benefits continued

Changes in fair value of scheme assets

	2018			2017		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
At 1 January	13,607	750	14,357	13,350	747	14,097
Exchange differences	–	24	24	–	(56)	(56)
Administrative expenses	(4)	(2)	(6)	(7)	(2)	(9)
Financing	341	27	368	355	28	383
Return on plan assets excluding financing	(705)	(53)	(758)	265	57	322
Contributions by employer	117	64	181	174	75	249
Contributions by employees	2	3	5	3	7	10
Benefits paid out	(585)	(78)	(663)	(533)	(87)	(620)
Settlements/curtailment	–	–	–	–	(19)	(19)
At 31 December	12,773	735	13,508	13,607	750	14,357
Total return on scheme assets	(364)	(26)	(390)	620	85	705

Fair value of scheme assets at 31 December

	2018			2017		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
Sovereign debt	9,388	315	9,703	9,135	308	9,443
Derivatives on sovereign debt	–	–	–	–	2	2
Corporate debt instruments	3,447	356	3,803	3,223	337	3,560
Interest rate swaps	1,342	–	1,342	2,266	–	2,266
Inflation swaps	(375)	–	(375)	(480)	–	(480)
Cash and similar instruments [1]	(1,991)	22	(1,969)	(1,761)	20	(1,741)
LDI portfolios [2]	11,811	693	12,504	12,383	667	13,050
Longevity swap [3]	(292)	–	(292)	(187)	–	(187)
Listed equities	592	39	631	1,141	76	1,217
Unlisted equities	128	–	128	162	–	162
Synthetic equities [4]	(13)	(4)	(17)	–	2	2
Sovereign debt	–	5	5	–	4	4
Corporate debt instruments	548	–	548	100	–	100
Cash	–	2	2	8	2	10
Other	(1)	–	(1)	–	(1)	(1)
At 31 December	12,773	735	13,508	13,607	750	14,357

[1] Cash and similar instruments include repurchase agreements on UK Government bonds amounting to **£(1,991)m** (2017: £(2,285)m). The latest maturity date for these short-term borrowings is 12 October 2020.
[2] A portfolio of gilt and swap contracts, backed by investment grade credit instruments and LIBOR generating assets, that is designed to hedge the majority of the interest rate and inflation risks associated with the schemes' obligations.
[3] Under the longevity swap, the Rolls-Royce UK Pension Fund has agreed an average life expectancy of pensioners with a counterparty. If pensioners live longer than expected, the counterparty will make payments to the fund to offset the additional cost of paying pensioners. If the reverse applies, the cost of paying pensioners will be reduced but the scheme will be required to make payments to the counterparty. The longevity swap is valued at fair value in accordance with IFRS 13 Level 3 – see note 17.
[4] A portfolio of swap contracts designed to provide investment returns in line with global equity markets. The notional value of the portfolio was **$281m** (2017: $84m).

The investment strategy for the UK scheme is controlled by the Trustee in consultation with the Group. The scheme assets do not directly include any of the Group's own financial instruments, nor any property occupied by, or other assets used by, the Group. At 31 December 2018, there was an indirect holding of £0.3m in the Group's financial instruments.

The longevity swap is valued by the scheme actuaries based on the difference between the agreed longevity assumptions at inception and actual longevity experience. All other fair values are provided by the fund managers. Where available, the fair values are quoted prices (e.g. listed equity, sovereign debt and corporate bonds). Unlisted investments (private equity) are included at values provided by the fund manager in accordance with relevant guidance. Other significant assets are valued based on observable inputs such as yield curves.

19 Post-retirement benefits continued

Future contributions

The Group expects to contribute approximately **£220m** to its defined benefit schemes in 2019 (UK: £140m, Overseas: £80m).

In the UK, the funding is based on a statutory triennial funding valuation process. This includes a negotiation between the Group and the Trustee on actuarial assumptions used to value obligations (Technical Provisions) which may differ from those used for accounting set out above. The assumptions used to value Technical Provisions must be prudent rather than a best estimate of the liability. Most notably, the Technical Provision discount rate is currently based upon UK Government yields plus 0.5% rather than being based on yields of AA corporate bonds. Following the triennial valuation process, a Schedule of Contributions (SoC) must be agreed which sets out the required contribution for current service cost and any contributions from the employer to eliminate a deficit. The most recent valuation, as at 31 March 2017, agreed by the Trustee in December 2017, showed that the UK scheme was estimated to be 112% funded on the Technical Provisions basis. Employer contributions (inclusive of employee contributions paid by a salary sacrifice arrangement) will subsequently be paid at a rate of 27% in 2019 and 28.5% in 2020 (2018: 27%). The SoC includes an arrangement for a potential increase in contributions during 2021 to 2023 (capped at £48.3m a year) if the Technical Provisions funding position is below 107% at 31 March 2020. As at 31 December 2018 the Technical Provisions funding position was estimated to be 111%.

Sensitivities

The calculations of the defined benefit obligations are sensitive to the assumptions set out above. The following table summarises how the estimated impact of a change in a significant assumption would affect the UK defined benefit obligation at 31 December 2018, while holding all other assumptions constant. This sensitivity analysis may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

For the most significant funded schemes, the investment strategies hedge the risks from interest rates and inflation measured on a proxy solvency basis. For the UK scheme, the interest rate and inflation hedging is currently based on UK Government bond yields without any adjustment for any credit spread. The longevity risk of approximately two thirds of UK pensioner liabilities is also hedged. Where appropriate, the table also includes the corresponding movement in the value of the plan assets.

The sensitivity analyses set out below have been determined based on a method that estimates the impact on the defined benefit obligation as a result of reasonable changes in key assumptions occurring at the end of the reporting period.

		2018 £m	2017 £m
Reduction in the discount rate of 0.25% [1]	Obligation	**(510)**	(590)
	Plan assets (LDI portfolio)	**624**	675
Increase in inflation of 0.25% [1]	Obligation	**(275)**	(310)
	Plan assets (LDI portfolio)	**272**	291
Increase in real increase in salaries of 0.25%	Obligations	**(90)**	(105)
One year increase in life expectancy	Obligations	**(465)**	(545)

[1] The differences between the sensitivities on obligations and plan assets arise largely due to differences in the methods used to value the obligations for accounting purposes and the adopted proxy solvency basis.

20 Share capital

	Non-equity		Equity	
	Special Share of £1	Nominal value £m	Ordinary shares of 20p each Millions	Nominal value £m
Issued and fully paid				
At 1 January 2017	1	–	1,838	367
Shares issued to employee share trust	–	–	2	1
At 31 December 2017	**1**	**–**	**1,840**	**368**
Shares issued to employee share trust	**–**	**–**	**8**	**2**
Shares issued in relation to the acquisition of ITP Aero	**–**	**–**	**48**	**9**
At 31 December 2018	**1**	**–**	**1,896**	**379**

The rights attaching to each class of share are set out on page 200.

In accordance with IAS 32 *Financial Instruments: Presentation*, the Company's non-cumulative redeemable preference shares (C Shares) are classified as financial liabilities. Accordingly, movements in C Shares are included in note 17.

21 Share-based payments

Effect of share-based payment transactions on the Group's results and financial position

	2018 £m	2017 £m
Total expense recognised for equity-settled share-based payments transactions	32	31
Total expense recognised for cash-settled share-based payments transactions	3	3
Share-based payments recognised in the consolidated income statement	35	34
Liability for cash-settled share-based payment transactions	6	3

A description of the share-based payment plans is included in the Directors' Remuneration Report on pages 86 to 95.

Movements in the Group's share-based payment plans during the year

	ShareSave		PSP and LTIP	APRA
	Number Millions	Weighted average exercise price Pence	Number Millions	Number Millions
Outstanding at 1 January 2017	21.4	672	11.6	–
Granted	14.0	758	5.8	0.2
Forfeited	(3.3)	886	(3.4)	–
Exercised	(4.6)	527	(1.0)	–
Outstanding at 1 January 2018	**27.5**	**714**	**13.0**	**0.2**
Granted	–	–	5.7	0.2
Forfeited	(1.3)	738	(4.4)	–
Exercised	(0.1)	656	(0.4)	–
Outstanding at 31 December 2018	**26.1**	**713**	**13.9**	**0.4**
Exercisable at 31 December 2018	–	–	–	–
Exercisable at 31 December 2017	–	–	–	–

The weighted average share price at the date share options were exercised was **883p** (2017: 756p). The closing price at 31 December 2018 was **830p** (2017: 847p).

The weighted average remaining contractual life for the share options as at 31 December 2018 was **two years** (2017: three years).

Fair values of share-based payment plans

The weighted average fair value per share of equity-settled share-based payment plans granted during the year, estimated at the date of grant, are as follows:

	2018	2017
LTIP	815p	739p
PSP – (CFO) [1]	n/a	882p
LTIP (ELT & Board)	739p	714p
ShareSave – 3 year grant	n/a	244p
ShareSave – 5 year grant	n/a	260p
APRA	858p	773p

[1] Stephen Daintith (CFO) received one-off awards in 2017 to compensate him for unvested incentives awarded to him at Daily Mail & General Trust plc (DMGT) which were forfeited as a result of him joining Rolls-Royce – see Remuneration Committee Report on page 89.

PSP and LTIP

The fair value of shares awarded is calculated using a pricing model that takes account of the non-entitlement to dividends (or equivalent) during the vesting period and the market-based performance condition based on expectations about volatility and the correlation of share price returns in the group of FTSE 100 companies and which incorporates into the valuation the interdependency between share price performance and TSR vesting. This adjustment decreases the fair value of the award relative to the share price at the date of grant.

ShareSave

The fair value of the options granted is calculated using a pricing model that assumes that participants will exercise their options at the beginning of the six-month window if the share price is greater than the exercise price. Otherwise it assumes that options are held until the expiration of their contractual term. This results in an expected life that falls somewhere between the start and end of the exercise window.

APRA

The fair value of shares awarded under APRA is calculated as the share price on the date of the award, excluding expected dividends (or equivalent).

22 Leases

Operating leases

Leases as lessee

	2018 £m	2017 £m
Non-cancellable operating lease rentals are payable as follows:		
Within one year	303	281
Between one and five years	991	849
After five years	1,049	741
	2,343	1,871

- Operating lease rental obligations at 31 December 2018 relate to: aero engines **£1,422m** (2017: £1,143m) that are used to support customer's aircraft fleets; land and buildings **£834m** (2017: £630m) used for production, administration or training purposes; and equipment **£87m** (2017: £98m).
- Operating leases for aero engines typically contain no specific contractual right to renew. Certain land and building operating leases have renewal options with renewal dates for the most significant property leases, evenly spread between 2022 and 2028, and in 2041. Lease obligations beyond the renewal dates are included in the rentals payable data above where we are reasonably certain to extend the lease.
- Of the operating lease rentals payable, £61m relates to Commercial Marine, classified as held for sale, of which £60m relates to property.
- Both aircraft engines and property contain some contracts where payments are linked to an index such as LIBOR.
- During the year **£300m** was recognised as an expense in the income statement in respect of operating leases (2017: £277m).

Leases as lessor

	2018 £m	2017 £m
Rentals received – credited within revenue from aftermarket services	64	53
Non-cancellable operating lease rentals are receivable as follows:		
Within one year	23	14
Between one and five years	82	46
After five years	55	32
	160	92

The Group acts as lessee and lessor for both land and buildings and gas turbine engines, and acts as lessee for some plant and equipment.

- Sublease payments of **£1m** (2017: nil) and sublease receipts of **£40m** (2017: £36m) were recognised in the income statement in the year.
- The total future minimum sublease payments expected to be made is **£1m** (2017: £1m) and sublease receipts expected to be received are **£55m** (2017: £51m).

Finance leases

	2018			2017		
	Payments £m	Interest £m	Principal £m	Payments £m	Interest £m	Principal £m
Finance lease liabilities are payable as follows:						
Within one year	45	11	34	28	5	23
Between one and five years	137	33	104	94	18	76
After five years	96	5	91	42	4	38
	278	49	229	164	27	137

23 Contingent liabilities

Contingent liabilities in respect of customer financing commitments are described in note 18.

In January 2017, after full co-operation, the Company concluded deferred prosecution agreements with the SFO and the US Department of Justice and a leniency agreement with the MPF, the Brazilian federal prosecutors. Prosecutions of individuals may follow and other investigations or enforcement action may be taken by other authorities. In addition, we could still be affected by actions from customers and customers' financiers. The Directors are not currently aware of any matters that are likely to lead to a material financial loss, but cannot anticipate all the possible actions that may be taken or their potential consequences.

Contingent liabilities exist in respect of guarantees provided by the Group in the ordinary course of business for product delivery, performance and reliability. The Group has, in the normal course of business, entered into arrangements in respect of export finance, performance bonds, countertrade obligations and minor miscellaneous items. Various Group undertakings are parties to legal actions and claims which arise in the ordinary course of business, some of which are for substantial amounts. As a consequence of the insolvency of an insurer as previously reported, the Group is no longer fully insured against known and potential claims from employees who worked for certain of the Group's UK based businesses for a period prior to the acquisition of those businesses by the Group. While the outcome of some of these matters cannot precisely be foreseen, the Directors do not expect any of these arrangements, legal actions or claims, after allowing for provisions already made, to result in significant loss to the Group.

The Group's share of equity accounted entities' contingent liabilities is **nil** (2017: nil).

24 Related party transactions

	2018 £m	2017 £m
Sales of goods and services to joint ventures and associates	**3,237**	2,469
Purchases of goods and services from joint ventures and associates	**(2,957)**	(2,224)
Operating lease payments to joint ventures and associates	**(189)**	(127)
Guarantees of joint ventures' and associates' borrowings	**–**	5
Dividends received from joint ventures and associates	**105**	79
Other income received from joint ventures and associates	**2**	2

Included in sales of goods and services to joint ventures and associates are sales of spare engines amounting to **£563m** (2017: £418m). Profit recognised in the year on such sales amounted to **£157m** (2017: £75m), including profit on current year sales and recognition of profit deferred on sales in previous years. On an underlying basis (at actual achieved rates on settled derivative transactions), the amounts were **£132m** (2017: £67m).

The aggregated balances with joint ventures are shown in notes 13 and 16. Transactions with Group pension schemes are shown in note 19.

In the course of normal operations, related party transactions entered into by the Group have been contracted on an arms-length basis.

Key management personnel are deemed to be the Directors (pages 59 to 61) and the members of the Executive Team (described on page 62). Remuneration for key management personnel is shown below:

	2018 £m	2017 £m
Salaries and short-term benefits	**19**	16
Post-retirement schemes	**–**	–
Share-based payments	**5**	7
	24	23

More detailed information regarding the Directors' remuneration, shareholdings, pension entitlements, share options and other long-term incentive plans is shown in the Directors' Remuneration Report on pages 86 to 95. The charge for share-based payments above is based on when the award is charged to the income statement in accordance with IFRS 2 *Share-Based Payments*, rather then when the shares vest, which is the basis used in the Directors' Remuneration Report.

25 Acquisitions and disposals

Acquisitions

ITP Aero

On 19 December 2017, the Group completed the acquisition of the 53.1% of the shares of Industria de Turbo Propulsores SA (ITP Aero) owned by SENER Grupo de Ingenieria SA (SENER) which it did not already own.

The consideration of €718m is payable in eight instalments, commencing on 15 January 2018. At the Group's election, each instalment may be settled in either cash or Rolls-Royce Holdings plc shares. If the consideration is in shares, a 3% premium is applied. Interest is accrued on the outstanding balance based on EUR LIBOR + 1.5%.

In 2017, and as permitted by IFRS 3 *Business Combinations*, the fair value of acquired identifiable assets and liabilities was presented on a provisional basis. This has been finalised during 2018 and is set out below.

Fair values are determined on the basis of an assessment performed by an independent professional expert, using measurement techniques and estimation of future cash flows to assess the values of intangible assets at the date of acquisition. The total fair value of acquired identifiable assets and liabilities is £1,637m and a significant part of value was allocated to intangible assets. The valuation indicated a bargain purchase of £303m, which has been recognised in the income statement. Changes to the provisional balances presented at
31 December 2017 reflects additional information obtained during 2018 about facts which existed at the date of acquisition, since the acquisition occurred close to the year end. The adjustments mainly relate to customer relationships and the restatement of balances for IFRS 15.

Recognised amounts of identifiable assets acquired and liabilities assumed

	Provisional £m	Purchase price adjustments £m	Final £m
Intangible assets	1,417	(288)	**1,129**
Property, plant and equipment	268	(14)	**254**
Deferred tax assets	148	(148)	**–**
Inventory	316	(84)	**232**
Trade receivables and other assets	497	(73)	**424**
Current tax	2	–	**2**
Cash and cash equivalents	263	–	**263**
Trade payables and other liabilities	(625)	309	**(316)**
Borrowings	(34)	–	**(34)**
Other financial assets and liabilities	(148)	(4)	**(152)**
Deferred tax liability	(386)	268	**(118)**
Provisions	(68)	21	**(47)**
Total identifiable assets and liabilities	1,650	(13)	**1,637**
Total consideration	(1,405)	71	**(1,334)**
Bargain purchase gain arising	245	58	**303**
Gain from revaluation of existing shares	553	(71)	**482**
Gain arising on the acquisition of ITP Aero recognised in the income statement	798	(13)	**785**
Consideration satisfied by:			
Deferred consideration to be paid in cash or shares	648	–	**648**
Existing shareholding	757	(71)	**686**
	1,405	(71)	**1,334**
Identifiable intangible assets comprise:			
Technology, patents and licences	245	(111)	**134**
Customer relationships	833	62	**895**
Trademark	44	17	**61**
In-process development	91	(63)	**28**
Other	204	(193)	**11**
	1,417	(288)	**1,129**

25 Acquisitions and disposals continued

Disposals

L'Orange

On 1 June 2018, the Group sold its L'Orange business, a subsidiary of Power Systems, to Woodward Inc. for €673m.

	2018 £m
Proceeds	
Cash consideration [1]	589
Cash and cash equivalents disposed	(3)
Net cash consideration	586
Disposal costs paid	(13)
Cash inflow per cash flow statement	573
Assets and liabilities disposed	
Intangible assets	169
Property, plant and equipment	61
Investments	3
Deferred tax assets	6
Inventory	40
Deposits (payments received on account)	(1)
Trade receivables and other assets	27
Trade payables and other liabilities	(21)
Current tax	(1)
Provisions for liabilities and charges	(6)
Deferred tax liabilities	(12)
Post-retirement scheme deficits	(31)
Net assets disposed	234
Profit on disposal before disposal costs and continuing obligations	352
Cumulative currency translation gain	19
Profit on disposal of the business	371
Disposal costs	(13)
Non-underlying profit before tax	358

[1] Under the sale agreement, the cash consideration may be adjusted by up to +/-€44m, based on L'Orange aftermarket sales over the five-year period to 31 May 2023. This was reassessed at 31 December 2018, no significant adjustments were identified.

25 Acquisitions and disposals continued

Commercial Marine – held for sale

On 6 July 2018, the Group announced the sale of Commercial Marine to KONGSBERG for a cash consideration of approximately £425m. The disposal is expected to complete in 2019.

The transaction meets the criteria of IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations* that where the carrying value of a disposal group is expected to be recovered through a sale transaction, the disposal group should be treated as held for sale, with assets and liabilities presented separately on the balance sheet measured at the lower of carrying value or fair value less costs to dispose.

As a result of the decision to classify the Commercial Marine business as held for sale, its carrying value has been assessed against the anticipated proceeds and the disposal costs. An impairment charge of £155m for the related goodwill (with an additional £5m impairment charge to property, plant and equipment) has been recognised in the income statement and the remaining balance of £227m transferred to assets held for sale.

The table below summarises the categories of assets and liabilities classified as held for sale:

	2018 £m
Assets and liabilities held for sale	
Intangible assets	246
Property, plant and equipment [1]	140
Deferred tax assets	4
Inventory [1]	191
Trade receivables and other assets	166
Current tax assets	3
Assets held for sale	**750**
Trade payables and other liabilities	(313)
Current tax liabilities	(3)
Provisions for liabilities and charges	(33)
Post-retirement scheme deficits	(27)
Liabilities associated with assets held for sale	**(376)**
Net assets held for sale	**374**

[1] £7m of assets related to the steering gear business were held for sale at the end of 2017. £3m of property, plant and equipment and £4m of inventory held for sale in 2017 are due to be sold in 2019 as part of the proposed sale to KONGSBERG.

26 Derivation of summary funds flow statement

The table below shows the derivation of the summary funds flow statement (lines marked *) on page 20 from the cash flow statement (CFS) on page 110.

	2018		2017		
	£m	£m	£m	£m	Source
* Underlying profit before tax (PBT) – overleaf		466		199	
Depreciation and impairment of PPE	521		450		CFS
Amortisation and impairment of intangible assets	565		343		CFS
Impairment of goodwill	(155)		(12)		Reversal of underlying adjustment
Acquisition accounting	(175)		(129)		Reversal of underlying adjustment
* Depreciation and amortisation		756		652	
Increase in inventories	(616)		(194)		CFS
Movement in receivables/payables	1,129		226		CFS
Movement in contract assets and liabilities	363		(50)		CFS
Realised derivatives in financing	(465)		(195)		Underlying adjustment (note 2)
Revaluation of trading assets (excluding exceptional items)	170		(6)		Reversal of underlying adjustment
* Movement on net working capital		581		(219)	
* Civil Aerospace LTSA contract balances		944		1,379	
Additions of intangible assets	(680)		(647)		CFS
Purchases of PPE	(905)		(730)		CFS
* Expenditure on PPE and intangible assets		(1,585)		(1,377)	
Realised losses on hedging instruments	219		453		Reversal of underlying adjustment
Foreign exchange on contract accounting	(265)		(153)		Reversal of underlying adjustment
Net unrealised fair value changes to derivatives	(1)		24		Reversal of underlying adjustment
Exceptional restructuring charges (excluding cash spent of £70m)	(256)		(104)		Reversal of underlying adjustment
Underlying financing	150		107		Reversal of charge in underlying PBT
New finance leases in year	(97)		(57)		CFS
Impact of joint venture trading	101		70		JV dividends less share of results – CFS
Increase/(decrease) in provisions	1,003		(1)		CFS
Trent 900 exceptional items in payables	134		–		
Trent 1000 exceptional charges at expected rates	(790)		–		Reversal of underlying adjustment
Trent 900 exceptional items at expected rates	(186)		–		Reversal of underlying adjustment
Trent 1000 and Trent 900 adjustments to spot rates	(147)		–		Reversal of underlying adjustment
Cash flows on other financial assets and liabilities	(267)		(469)		CFS
Share based payments	35		34		CFS
Disposal of intangible assets and PPE	67		21		CFS
Investments in joint ventures and associates	(13)		(47)		CFS
Net interest received and paid	(70)		(53)		CFS
Transactions in ordinary shares	–		(3)		CFS
Other movements	(22)		(8)		
* Other		(405)		(186)	
* Trading cash flow		757		448	
Net defined benefit plans – underlying operating charge	240		240		CFS
Cash funding of defined benefit plans	(181)		(249)		CFS
* Contributions to defined benefit schemes in excess of underlying PBT charge		59		(9)	
* Tax		(248)		(180)	CFS
* Free cash flow		568		259	
* Shareholder payments		(219)		(214)	C Shares and NCI dividends – CFS
* Acquisition of ITP Aero		–		229	CFS
* Disposal of L'Orange		573		–	CFS
* Exceptional restructuring costs		(70)		–	
* DPA payments		–		(286)	CFS
* Other		10		(9)	
* Foreign exchange		54		(59)	CFS
* Change in net debt		916		(80)	

26 Derivation of summary funds flow statement continued

Free cash flow is a measure of financial performance of the business's cash flow to see what is available for distribution among those stakeholders funding the business (including debt holders and shareholders). Free cash flow is calculated as trading cash flow less recurring tax and post-employment benefit expenses. It excludes payments made to shareholders, amounts spent (or received) on business acquisitions and foreign exchange changes on net funds. The Board considers that free cash flow reflects cash generated from the Group's underlying trading.

	2018		2017		
	£m	£m	£m	£m	Source
Reported operating profit		(1,161)		366	
Realised losses on hedging instruments	(219)		(453)		Reported to underlying adjustment (note 2)
Net unrealised fair value changes to derivatives	1		(24)		Reported to underlying adjustment (note 2)
Foreign exchange on contract accounting	265		153		Reported to underlying adjustment (note 2)
Revaluation of trading assets and liabilities	(23)		6		Reported to underlying adjustment (note 2)
Trent 900 and Trent 1000 exceptional charges	976		–		
Effect of acquisition accounting	175		129		Reported to underlying adjustment (note 2)
UK pension equalisation	121		–		Reported to underlying adjustment (note 2)
Impairment of goodwill	155		24		Reported to underlying adjustment (note 2)
Exceptional restructuring charge	317		104		Reported to underlying adjustment (note 2)
Other	9		1		Reported to underlying adjustment (note 2)
Adjustments to reported operating profit		1,777		(60)	
Underlying profit before financing		616		306	
Underlying financing		(150)		(107)	Underlying income statement (note 2)
Underlying profit before tax		**466**		199	

The table below shows a reconciliation of free cash flow to the change in cash and cash equivalents presented in the cash flow statement on page 110.

	2018		2017	
	£m	£m	£m	£m
Change in cash and cash equivalents		1,953		231
Returns to shareholders		219		214
Net cash flow from changes in borrowings and finance leases		(1,091)		(200)
Increase in short-term investments		3		–
Acquisition of ITP Aero	–		(263)	
Disposal of L'Orange	(573)		–	
Other acquisitions and disposals	(10)		(1)	
Changes in group structure		(583)		(264)
Payments of financial penalties from agreements with investigating bodies		–		286
Exceptional restructuring expenditure		70		–
Other		(3)		(8)
Free cash flow		568		259
Exclude cash outflow of ITP Aero				14
Free cash flow excluding ITP Aero				273

27 Impact of new accounting standards and other adjustments

IFRS 15 *Revenue from Contracts with Customers* and IFRS 9 *Financial Instruments*
The restatements of the primary statements arising from adopting IFRS 15, IFRS 9 and other adjustments are summarised below.

Consolidated income statement

For the year ended 31 December 2017

	Previous accounting £m	IFRS 15 impact £m	ITP Aero adjustments [6] £m	Other adjustments [1] £m	IFRS 15 basis 31 December 2017 £m
Revenue	16,307	(1,547)	–	(13)	14,747
Cost of sales	(13,134)	687	–	122	(12,325)
Gross profit [2]	3,173	(860)	–	109	2,422
Commercial and administrative costs	(1,222)	–	–	–	(1,222)
Research and development costs [3]	(795)	(48)	–	–	(843)
Share of results of joint ventures and associates	131	–	–	(122)	9
Operating profit	1,287	(908)	–	(13)	366
Gain arising on the acquisition of ITP Aero	798	–	(13)	–	785
Profit before financing and taxation	2,085	(908)	(13)	(13)	1,151
Financing income	2,973	(58)	–	(4)	2,911
Financing costs	(161)	(8)	–	5	(164)
Net financing [4]	2,812	(66)	–	1	2,747
Profit before taxation	4,897	(974)	(13)	(12)	3,898
Taxation [5]	(689)	172	–	2	(515)
Profit for the year	4,208	(802)	(13)	(10)	3,383
Attributable to:					
Ordinary shareholders	4,207	(802)	(13)	(10)	3,382
Non-controlling interests	1	–	–	–	1
Profit for the year	4,208	(802)	(13)	(10)	3,383
Earnings per ordinary share attributable to shareholders					
Basic	229.40p	(43.73p)	(0.71p)	(0.55p)	184.41p
Diluted	228.64p	(43.59p)	(0.71p)	(0.54p)	183.80p

1 The other adjustments impacting profit before taxation for the year arise from the revised calculation of the foreign exchange rate applied to non-monetary assets and liabilities of £(4)m and the revised unwind of discounting of non-current liabilities of £(8)m. As per note 11 deferred profit on sales to joint ventures was previously recognised in cost of sales but is now recognised within the share of results of joint ventures and associates.
2 The IFRS 15 impact is predominantly due to de-recognition of contractual aftermarket rights, de-linkage of OE from aftermarket contracts and a change to recognise revenue on long-term service agreements as costs are incurred rather than when the engines are operated.
3 Reclassification of the recognition of contributions received from the Group's suppliers under RRSAs to cost of sales.
4 Revised phasing of foreign exchange in line with revised phasing of long-term service agreement revenues and unwind of discounting of future guarantee payments due to customers.
5 Consequential change from the restated reported profit before taxation.
6 Changes to the provisional balances presented at 31 December 2017 reflect additional information obtained during 2018 about facts which existed at the date of acquisition, since the acquisition occurred close to the year end, together with the impact of IFRS 15 transition in ITP Aero.

27 Impact of new accounting standards and other adjustments continued

Consolidated statement of comprehensive income

For the year ended 31 December 2017

	Previous accounting £m	IFRS 15 impact £m	ITP Aero adjustments £m	Other adjustments £m	IFRS 15 basis 31 December 2017 £m
Profit for the year	**4,208**	(802)	(13)	(10)	**3,383**
Other comprehensive income (OCI)					
Actuarial movements on post-retirement schemes	**735**	–	–	–	**735**
Share of OCI of joint ventures and associates	**(1)**	–	–	–	**(1)**
Related tax movements	**(307)**	–	–	–	**(307)**
Items that will not be reclassified to profit or loss	**427**	–	–	–	**427**
Foreign exchange translation differences on foreign operations	**(142)**	5	3	1	**(133)**
Share of OCI of joint ventures and associates	**(5)**	–	–	–	**(5)**
Related tax movements	**1**	–	–	–	**1**
Items that may be reclassified to profit or loss	**(146)**	5	3	1	**(137)**
Total other comprehensive income	**281**	5	3	1	**290**
Total comprehensive income for the year	**4,489**	(797)	(10)	(9)	**3,673**
Attributable to:					
Ordinary shareholders	**4,488**	(797)	(10)	(9)	**3,672**
Non-controlling interests	**1**	–	–	–	**1**
Total comprehensive income for the year	**4,489**	(797)	(10)	(9)	**3,673**

27 Impact of new accounting standards and other adjustments continued

Consolidated balance sheet

At 31 December 2017	Previous Accounting £m	IFRS 15 impact [1] £m	ITP Aero adjustments [2] £m	Other adjustments [3] £m	IFRS 15 basis 31 December 2017 £m	IFRS 9 impact [4] £m	1 January 2018 £m
ASSETS							
Intangible assets	7,063	(1,221)	(291)	14	5,565	–	5,565
Property, plant and equipment	4,624	–	(13)	47	4,658	–	4,658
Investments – joint ventures and associates	688	–	–	(313)	375	–	375
Investments – other	26	–	–	–	26	–	26
Other financial assets	610	–	–	–	610	–	610
Deferred tax assets	271	608	(148)	720	1,451	2	1,453
Post-retirement scheme surpluses	2,125	–	–	–	2,125	–	2,125
Non-current assets	15,407	(613)	(452)	468	14,810	2	14,812
Inventories	3,660	64	(84)	163	3,803	–	3,803
Trade receivables and other assets	7,919	(1,587)	(74)	(1,905)	4,353	(12)	4,341
Contract assets	–	–	–	1,945	1,945	(5)	1,940
Taxation recoverable	17	–	–	–	17	–	17
Other financial assets	36	–	–	–	36	–	36
Short-term investments	3	–	–	–	3	–	3
Cash and cash equivalents	2,953	–	–	–	2,953	–	2,953
Current assets	14,588	(1,523)	(158)	203	13,110	(17)	13,093
Assets held for sale	7	–	–	–	7	–	7
TOTAL ASSETS	30,002	(2,136)	(610)	671	27,927	(15)	27,912
LIABILITIES							
Borrowings	(82)	–	–	–	(82)	–	(82)
Other financial liabilities	(581)	(20)	–	–	(601)	–	(601)
Trade payables and other liabilities	(9,527)	(1,762)	300	4,104	(6,885)	–	(6,885)
Contract liabilities	–	–	–	(4,104)	(4,104)	–	(4,104)
Current tax liabilities	(209)	–	–	–	(209)	–	(209)
Provisions for liabilities and charges	(526)	36	7	(67)	(550)	–	(550)
Current liabilities	(10,925)	(1,746)	307	(67)	(12,431)	–	(12,431)
Borrowings	(3,406)	–	–	–	(3,406)	–	(3,406)
Other financial liabilities	(2,435)	(23)	(3)	–	(2,461)	–	(2,461)
Trade payables and other liabilities	(4,178)	(1,901)	14	3,827	(2,238)	–	(2,238)
Contract liabilities	–	–	–	(3,607)	(3,607)	–	(3,607)
Deferred tax liabilities	(1,144)	545	268	(740)	(1,071)	–	(1,071)
Provisions for liabilities and charges	(357)	–	14	(50)	(393)	–	(393)
Post-retirement scheme deficits	(1,387)	–	–	–	(1,387)	–	(1,387)
Non-current liabilities	(12,907)	(1,379)	293	(570)	(14,563)	–	(14,563)
TOTAL LIABILITIES	(23,832)	(3,125)	600	(637)	(26,994)	–	(26,994)
NET ASSETS	6,170	(5,261)	(10)	34	933	(15)	918

[1] The main balance sheet impacts of IFRS 15 have been as follows:
Intangible assets: De-recognition of Contractual Aftermarket Rights (CARs) and reclassification of participation fees as contract assets as IFRS 15 provides additional guidance on the treatment of payments to customers.
Deferred tax: Consequential change from the restated cumulative profits.
Inventories: The cost of parts sold where an option to repurchase is retained e.g. within a larger manufactured assembly. The customer has not obtained control based on the IFRS 15 definition, so the asset has been added to the inventory balance.
Trade receivables/payables and other assets/liabilities: There are a number of factors: (a) revised revenue allocation between years (deferred income) as a result of de-linkage of OE from aftermarket contracts and a change to recognise revenue on long-term service agreements as costs are incurred rather than as engines are operated, (b) recognition of an additional asset where costs are incurred to obtain a contract that will subsequently be amortised as a reduction against the associated revenue as goods and services are delivered; and (c) reclassifications of: participation fees from intangible assets to contract assets; RRSA payments made ahead of parts usage as a prepayment from trade payables and other liabilities; and amounts billed in advance have increased the trade receivables asset (amount billed) and the contract liability within trade payables and other liabilities to better reflect the contractual position.
Other financial liabilities: Parts sold with an option to repurchase and future obligations to airframers arising from sale of our OE on their airframes.
Provisions: As a result of the more refined guidance on contract liabilities in IFRS 15 we have reclassified a balance from provisions.
Net assets: All of the adjustments to net assets are included within retained earnings in equity, with the exception of £13m (2016: £22m) which arises from the consolidation of overseas entities and is included in the translation reserve.

[2] Changes to the provisional ITP Aero balances presented at 31 December 2017 reflecting additional information obtained during 2018 about facts which existed at the date of acquisition, since the acquisition occurred close to the year end, together with the impact of IFRS 15. Balances reflect the exchange rate at the balance sheet date, rather than the date of acquisition. See note 25.

[3] Further information on other adjustments is provided on page 173.

[4] Re-assessment of recoverability of financial assets using IFRS 9 principles has resulted in a reduction in net assets of £15m.

27 Impact of new accounting standards and other adjustments continued

Consolidated balance sheet

At 31 December 2016

	Previous Accounting £m	IFRS 15 impact [1] £m	Other adjustments [3] £m	IFRS 15 basis 31 December 2016 £m
ASSETS				
Intangible assets	5,080	(985)	21	4,116
Property, plant and equipment	4,114	–	20	4,134
Investments – joint ventures and associates	844	–	(289)	555
Investments – other	38	–	–	38
Other financial assets	382	–	–	382
Deferred tax assets	876	465	444	1,785
Post-retirement scheme surpluses	1,346	–	–	1,346
Non-current assets	12,680	(520)	196	12,356
Inventories	3,086	89	178	3,353
Trade receivables and other assets	6,956	(1,405)	(1,868)	3,683
Contract assets	–	–	1,875	1,875
Taxation recoverable	32	–	–	32
Other financial assets	5	–	–	5
Short-term investments	3	–	–	3
Cash and cash equivalents	2,771	–	–	2,771
Current assets	12,853	(1,316)	185	11,722
Assets held for sale	5	–	–	5
TOTAL ASSETS	25,538	(1,836)	381	24,083
LIABILITIES				
Borrowings	(172)	–	–	(172)
Other financial liabilities	(651)	(42)	–	(693)
Trade payables and other liabilities	(7,957)	(1,497)	3,321	(6,133)
Contract liabilities	–	–	(3,366)	(3,366)
Current tax liabilities	(211)	–	–	(211)
Provisions for liabilities and charges	(543)	(73)	(16)	(632)
Current liabilities	(9,534)	(1,612)	(61)	(11,207)
Borrowings	(3,185)	–	–	(3,185)
Other financial liabilities	(5,129)	–	–	(5,129)
Trade payables and other liabilities	(3,459)	(1,549)	3,186	(1,822)
Contract liabilities	–	–	(2,946)	(2,946)
Deferred tax liabilities	(776)	533	(470)	(713)
Provisions for liabilities and charges	(216)	–	(47)	(263)
Post-retirement scheme deficits	(1,375)	–	–	(1,375)
Non-current liabilities	(14,140)	(1,016)	(277)	(15,433)
TOTAL LIABILITIES	(23,674)	(2,628)	(338)	(26,640)
NET ASSETS/(LIABILITIES)	1,864	(4,464)	43	(2,557)

Footnote references as per previous page.

27 Impact of new accounting standards and other adjustments continued

Other adjustments can be analysed as follows:

At 31 December 2017

	Deferred profit on JV sales[1] £m	Other classification changes[2] £m	Other[3] £m	Deferred tax[4] £m	**Other adjustments £m**
Intangible assets	–	–	14	–	**14**
Property, plant and equipment	–	–	47	–	**47**
Investments – joint ventures and associates	(313)	–	–	–	**(313)**
Deferred tax assets	–	–	–	720	**720**
Non-current assets	(313)	–	61	720	**468**
Inventories	–	–	163	–	**163**
Trade receivables and other assets	–	(1,945)	40	–	**(1,905)**
Contract assets	–	1,945	–	–	**1,945**
Current assets	–	–	203	–	**203**
Trade payables and other liabilities	35	4,193	(124)	–	**4,104**
Contract liabilities	–	(4,104)	–	–	**(4,104)**
Provisions for liabilities and charges	–	(67)	–	–	**(67)**
Current liabilities	35	22	(124)	–	**(67)**
Trade payables and other liabilities	278	3,635	(86)	–	**3,827**
Contract liabilities	–	(3,607)	–	–	**(3,607)**
Deferred tax liabilities	–	–	–	(740)	**(740)**
Provisions for liabilities and charges	–	(50)	–	–	**(50)**
Non-current liabilities	278	(22)	(86)	(740)	**(570)**
NET ASSETS	–	–	54	(20)	**34**

At 31 December 2016

	Deferred profit on JV sales[1] £m	Other classification changes[2] £m	Other[3] £m	Deferred tax[4] £m	**Other adjustments £m**
Intangible assets	–	–	21	–	**21**
Property, plant and equipment	–	–	20	–	**20**
Investments – joint ventures and associates	(289)	–	–	–	**(289)**
Deferred tax assets	–	–	–	444	**444**
Non-current assets	(289)	–	41	444	**196**
Inventories	–	–	178	–	**178**
Trade receivables and other assets	–	(1,868)	–	–	**(1,868)**
Contract assets	–	1,875	–	–	**1,875**
Current assets	–	7	178	–	**185**
Trade payables and other liabilities	–	3,393	(72)	–	**3,321**
Contract liabilities	–	(3,366)	–	–	**(3,366)**
Provisions for liabilities and charges		(16)	–	–	**(16)**
Current liabilities	–	11	(72)	–	**(61)**
Trade payables and other liabilities	289	2,975	(78)	–	**3,186**
Contract liabilities	–	(2,946)	–	–	**(2,946)**
Deferred tax liabilities	–	–	–	(470)	**(470)**
Provisions for liabilities and charges	–	(47)	–	–	**(47)**
Non-current liabilities	289	(18)	(78)	(470)	**(277)**
NET ASSETS	–	–	69	(26)	**43**

[1] As per note 11 deferred profit on sales to joint ventures of £313m (2016: £289m) was previously included in trade payables and other liabilities but during the year the Group concluded that it is more appropriate for the credit to be included in the carrying value of the investment in the entity (included within Investments – joint ventures and associates).
[2] Other classification changes are primarily the result of separately disclosing contract assets and contract liabilities on the face of the balance sheet. In addition, some balances have been reclassified to better reflect the nature of the liability.
[3] Other adjustments includes the revision of the foreign exchange rate applied to the initial recognition of non-monetary assets and liabilities that increases net assets by £140m (2016: £147m) and the use of a revised discount rate that increases non-current liabilities by £86m (2016: £78m).
[4] Includes a gross-up of deferred tax assets and liabilities on pension surpluses that cannot be offset with other deferred tax balances. The impact on net assets arises from the tax effect on the other adjustments that are stated gross and a change in treatment of industrial building allowances.

27 Impact of new accounting standards and other adjustments continued

Cash flows

The adjustments to the income statement and balance sheet described above do not affect the cash balances, but do alter the categorisation of some items in the cash flow statement. In particular, the de-recognition of contractual aftermarket rights and the transfer of participation fees to contractual assets reduce additions to intangible assets. These cash flows are now included in the net cash flows from operating activities and there is a consequential change to the adjustment for amortisation of intangible assets. Other adjustments are principally within monetary working capital movements.

Classification of financial instruments

IFRS 9 was adopted on 1 January 2018 and affects the classification of financial instruments. If it had been adopted at 31 December 2017, the classifications (see page 144) would have been as follows:

	Assets			Liabilities		
	Fair value through profit or loss £m	Fair value through OCI £m	Amortised cost £m	Fair value through profit or loss £m	Other £m	Total £m
2017						
Unlisted non-current asset investments	26	–	–	–	–	26
Trade receivables and similar items [1]	–	285	3,090	–	–	3,375
Other non-derivative financial assets	–	–	477	–	–	477
Derivative financial assets	646	–	–	–	–	646
Short-term investments	–	–	3	–	–	3
Cash and cash equivalents [2]	589	–	2,364	–	–	2,953
Borrowings	–	–	–	–	(3,488)	(3,488)
Derivative financial liabilities	–	–	–	(2,730)		(2,730)
Financial RRSAs	–	–	–	–	(247)	(247)
Other	–	–	–	–	(57)	(57)
C Shares	–	–	–	–	(28)	(28)
Trade payables and similar items	–	–	–	–	(4,088)	(4,088)
Other non-derivative financial liabilities	–	–	–	–	(2,096)	(2,096)
	1,261	285	5,934	(2,730)	(10,004)	(5,254)

[1] Trade receivables are classified as FVTOCI if the Group may sell before the due date.
[2] Money-market funds are classified as FVTPL, other cash and cash equivalent balances are classified as amortised cost.

COMPANY BALANCE SHEET

At 31 December 2018

	Notes	2018 £m	2017 £m
ASSETS			
Investments – subsidiary undertakings	2	12,521	12,076
Trade and other receivables	3	371	371
Cash and cash equivalents		–	2
Current assets		371	373
TOTAL ASSETS		12,892	12,449
LIABILITIES			
Other financial liabilities	5	(29)	(28)
Trade and other payables	4	(2,008)	(1,794)
Current liabilities		(2,037)	(1,822)
NET ASSETS		10,855	10,627
EQUITY			
Called-up share capital	6	379	368
Share premium account		268	195
Merger reserve		7,029	6,843
Capital redemption reserve		2,432	2,216
Other reserve		218	186
Retained earnings		529	819
TOTAL EQUITY		10,855	10,627

The Financial Statements on pages 175 to 177 were approved by the Board on 28 February 2019 and signed on its behalf by:

Warren East
Chief Executive

Stephen Daintith
Chief Financial Officer

Company's registered number: 7524813

COMPANY STATEMENT OF CHANGES IN EQUITY

For the year ended 31 December 2018

	Attributable to ordinary shareholders						
	Share capital £m	Share premium £m	Merger reserve £m	Capital redemption reserve £m	Other reserve [1] £m	Retained earnings £m	Total equity £m
At 1 January 2018	368	195	6,843	2,216	186	819	10,627
Profit for the year	–	–	–	–	–	–	–
Arising on issues of ordinary shares [2]	11	73	403	–	–	–	487
Issue of C Shares	–	–	(217)	–	–	–	(217)
Redemption of C Shares	–	–	–	216	–	(216)	–
Share-based payments – direct to equity	–	–	–	–	32	(74)	(42)
At 31 December 2018	379	268	7,029	2,432	218	529	10,855

[1] The 'Other reserve' represents the value of the share-based payments in respect of employees of subsidiary undertakings for which payment has not been received.
[2] During the year, the Company issued **47,556,914** new ordinary shares relating to the first five instalments of the Group's acquisition of ITP Aero and **7,460,173** new ordinary shares (2017: 1,740,355) to the Group's share trust for its employee share-based payment plans with a net book value of **£74m** (2017: £14m).

NOTES TO THE COMPANY FINANCIAL STATEMENTS

1 Accounting policies

Basis of accounting

Rolls-Royce Holdings plc (the 'Company') is a company incorporated and domiciled in the United Kingdom. These Financial Statements have been prepared in accordance with Financial Reporting Standard 101 *Reduced Disclosure Framework* (FRS 101) on the historical cost basis.

In preparing these Financial Statements, the Company applies the recognition, measurement and disclosure requirements of International Financial Reporting Standards as adopted by the EU (Adopted IFRS), but makes amendments where necessary in order to comply with the Companies Act 2006.

In these Financial Statements the Company has applied the exemptions available under FRS 101 in respect of the following disclosures:

- A cash flow statement and related notes.
- Comparative period reconciliations for share capital.
- The effects of new, but not yet effective accounting standards.
- The requirements of IAS 24 *Related Party Transactions* and has, therefore, not disclosed transactions between the Company and its wholly-owned subsidiaries.

The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these Financial Statements.

There were no changes to accounting standards that had a material impact on the 2018 Financial Statements.

The Company's Financial Statements are presented in sterling, which is the Company's functional currency.

As permitted by Section 408 of the Companies Act 2006, a separate income statement for the Company has not been included in these Financial Statements. As permitted by the audit fee disclosure regulations, disclosure of non-audit fees information is not included in respect of the Company.

Investments in subsidiary undertakings

Investments in subsidiary undertakings are reported at cost less any amounts written off.

Share-based payments

As described in the Directors' Remuneration Report on pages 86 to 95, the Company grants awards of its own shares to employees of its subsidiary undertakings (see note 21 of the Consolidated Financial Statements). The costs of share-based payments in respect of these awards are accounted for, by the Company, as an additional investment in its subsidiary undertakings. The costs are determined in accordance with IFRS 2 *Share-based Payment*. Any payments made by the subsidiary undertakings in respect of these arrangements are treated as a return of this investment.

Financial instruments

In accordance with IAS 32 *Financial Instruments: Presentation*, the Company's C Shares are classified as financial liabilities and held at amortised cost from the date of issue until redeemed.

2 Investments – subsidiary undertakings

	£m
Cost:	
At 1 January 2018	12,076
Additions [1]	413
Cost of share-based payments in respect of employees of subsidiary undertakings less receipts from subsidiaries in respect of those payments	32
At 31 December 2018	12,521

[1] Additions relate to investments in Rolls-Royce plc, relating to the first five instalments for the Group's acquisition of ITP Aero (2017: nil).

The subsidiary and joint venture undertakings are listed on pages 178 to 185.

3 Trade and other receivables

	2018 £m	2017 £m
Amounts owed by subsidiary undertakings	371	371

4 Trade and other payables

	2018 £m	2017 £m
Amounts owed to subsidiary undertakings	2,008	1,794

5 Financial liabilities

C Shares

Movements during the year were as follows:

	C Shares of 0.1p millions	Nominal value £m
At 1 January 2018	**28,429**	**28**
Issued	216,717	217
Redeemed	(216,075)	(216)
At 31 December 2018	**29,071**	**29**

The rights attaching to C Shares are set out on page 200.

6 Share capital

	Non-equity			Equity	
	Special Share of £1	Preference shares of £1 each	Nominal value £m	Ordinary shares of 20p each Millions	Nominal value £m
Issued and fully paid					
At 1 January 2018	1	–	–	1,840	368
Shares issued to employee share trust	–	–	–	8	2
Shares issued in relation to the acquisition of ITP Aero	–	–	–	48	9
At 31 December 2018	1	–	–	1,896	379

The rights attaching to each class of share are set out on page 200.

In accordance with IAS 32, the Company's non-cumulative redeemable preference shares (C Shares) are classified as financial liabilities. Accordingly, movements in C Shares are included in note 5.

7 Contingent liabilities

Where the Company enters into financial guarantee contracts to guarantee the indebtedness of other companies within its group, the Company considers these to be insurance arrangements, and accounts for them as such. In this respect, the Company treats the guarantee contract as a contingent liability until such time as it becomes probable that the Company will be required to make a payment under the guarantee.

At 31 December 2018, these guarantees amounted to **£3,982m** (2017: £2,930m).

8 Other information

Employees

The Company had no employees in 2018.

Share-based payments

Shares in the Company have been granted to employees of the Group as part of share-based payment plans, and are charged in the employing company.

Emoluments of Directors

The remuneration of the Directors of the Company is shown below, further information is in the Directors' Remuneration Report on pages 86 to 95.

	2018			2017		
	Highest paid director £000	Other directors £000	Total £000	Highest paid director £000	Other directors £000	Total £000
Remuneration	**2,209**	**2,733**	**4,942**	1,189	4,635	5,824
Gains made on share options	**1,734**	**1,644**	**3,378**	1,259	–	1,259
Company contributions to pension schemes	–	–	–	–	–	–
	3,943	**4,377**	**8,320**	2,448	4,635	7,083

No Director accrued any retirement benefits in the year (2017: nil).

SUBSIDIARIES

As at 31 December 2018, the companies listed below and on the following pages are indirectly held by Rolls-Royce Holdings plc except Rolls-Royce Group plc which is 100% directly owned by Rolls-Royce Holdings plc. The financial year end of each company is 31 December unless otherwise indicated.

Company name	Address	Class of shares	% of class held
Aeromaritime America, Inc.	M&H Agent Services, Inc., 1850 North Central Avenue, Suite 2100, Phoenix, Arizona 85004, United States	Common	100
Aeromaritime Mediterranean Limited	7 Industrial Estate, Hal Far, Birzebbuga, BBG 3000, Malta	Ordinary	100
Aerospace Transmission Technologies GmbH**	Adelheidstrasse 40, D-88046, Friedrichshafen, Germany	Capital Stock	50
Amalgamated Power Engineering Limited *	Derby [1]	Deferred Ordinary	100 100
Bergen Engines AS	Hordvikneset 125, N-5108, Hordvik, Bergen 1201, Norway	Ordinary	100
Bergen Engines Bangladesh Private Limited	Green Granduer, 6th Floor, Plot no.58 E, Kamal Ataturk Avenue Banani, C/A Dhaka, 1213, Bangladesh	Ordinary	100
Bergen Engines BV	Werfdijk 2, 3195HV Pernis, Rotterdam, Netherlands	Ordinary	100
Bergen Engines Denmark A/S	Ostre Havnepromenade 9000 Ålborg, Denmark	Ordinary	100
Bergen Engines India Private Limited [3]	52-b, 2nd Floor, Okhla Industrial Estate, Phase III, New Delhi 110020, India	Ordinary	100
Bergen Engines Limited	Derby [1]	Ordinary	100
Bergen Engines PropertyCo AS	Hordvikneset 125, N-5108, Hordvik, Bergen 1201, Norway	Ordinary	100
Bergen Engines S.L.	Calle Dinamarca s/n (esquina Calle Alemania), Poligono Industrial de Constanti, 43120 Constanti, Tarragona, Spain	Social Participation	100
Bergen Engines S.r.l.	Via Castel Morrone 13, 16161, Genoa, Italy	Social Capital	100
Bristol Siddeley Engines Limited *	Derby [1]	Ordinary	100
Brown Brothers & Company Limited	Taxiway, Hillend Industrial Estate, Dalgety Bay, Dunfermline, Fife, KY11 9JT, Scotland	Ordinary	100
C.A. Parsons & Company Limited *	Derby [1]	Ordinary	100
Data Systems & Solutions, LLC	Wilmington [2]	Partnership (no equity)	100
Derby Specialist Fabrications Limited *	Derby [1]	Ordinary	100
Europea Microfusioni Aerospaziali S.p.A.	Zona Industriale AS1, 83040 Morra de Sanctis, Avellino, Italy	Ordinary	100
Heaton Power Limited *	Derby [1]	Ordinary	100
Industria de Tuberías Aeronáuticas México S.A. de C.V.	Acceso IV, No.6B, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A	100
Industria de Tuberías Aeronáuticas S.A.U.	Pabellón Industrial, Torrelarrgoiti, Parcela 5H, Naves 7 a 10, Zamudia, Vizcaya, Spain	Ordinary	100
Industria de Turbo Propulsores S.A.	Parque Technológico Edificio 300, 48170 Zamudio, Vizcaya, Spain	Ordinary	100
ITP Engines UK Limited	The Whittle Estate, Cambridge Road, Whetstone, Leicester, LE8 6LH, England	Ordinary	100
ITP Externals India Private Ltd	Plot 60/A, IDA Gandhi Nagar, Hyderabad, 500037, India	Ordinary	100
ITP Externals S.L.U.	Pabellón Industrial, Polígono Ugaldeguren I, PIIIA, Pab 1-2 Zamudio, Vizcaya, Spain	Ordinary	100
ITP Ingeniería y Fabricación S.A. de C.V.	Acceso IV, No.6D, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A Class B	100 100
ITP México Fabricación S.A. de C.V.	Acceso IV, No.6, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Fixed capital B Variable capital B	100 100
ITP México S.A. de C.V.	Acceso IV, No.6, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Fixed capital B Variable capital B	100 100
ITP Next Generation Turbines S.L.U.	Parque Technológico Edificio 300, 48170 Zamudio, Vizcaya, Spain	Ordinary	100
John Thompson Cochran Limited *	Taxiway, Hillend Industrial Estate, Dalgety Bay, Dunfermline, Fife, KY11 9JT, Scotland	6% Cumulative Preference Ordinary	100 100
Kamewa AB *	Box 1010, S-68129, Kristinehamn, Sweden	Ordinary	100
Kamewa do Brazil Equipmentos Maritimos Limitada (in liquidation)	401 Rua Visconde de Pitaja 433, Rio de Janeiro, Brazil	Quotas	100
Kamewa Holding AB *	Box 1010, S-68129, Kristinehamn, Sweden	Ordinary	100
Karl Maybach-Hilfe GmbH	Maybachplatz 1, 88045, Friedrichshafen, Germany	Capital Stock	100
MTU Africa (Proprietary) Limited	36 Marconi Street, Montague Gardens, Cape Town, 7441, South Africa	Capital Stock	100

* Dormant entity.
** Though the interest held is 50%, the Company controls the entity (see note 1 accounting policies) and, as a result, consolidates the entity and records a non-controlling interest.
[1] Moor Lane, Derby, DE24 8BJ, England.
[2] Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, United States.
[3] Reporting year end is 31 March.

Company name	Address	Class of shares	% of class held
MTU America Inc.	Wilmington [2]	Ordinary	100
MTU Asia PTE Limited	10 Tukang Innovation Drive, Singapore 618302	Ordinary	100
MTU Benelux B.V.	Merwedestraat 86, 3313 CS, Dordrecht, Netherlands	Ordinary	100
MTU China Company Limited	Room 1803 18/F Ascendas Plaza, No.333 Tian Qiao Road, Xuhai Distrcit, Shanghai, 200030, China	Ordinary	100
MTU do Brasil Limitada	Via Anhanguera, KM 29203, 05276-000 Sao Paulo – SP, Brazil	Ordinary	100
MTU Engineering (Suzhou) Company Limited	9 Long Yun Road, Suzhou Industrial Park, Suzhou 215024, Jiang Su, China	Ordinary	100
MTU France S.A.S.	Immeuble Colorado, 8/10 rue de Rosa Luxembourg-Parc des Bellevues 95610, Erangy-sur-Oise, France	Ordinary	100
MTU Friedrichshafen GmbH	Maybachplatz 1, 88045, Friedrichshafen, Germany	Capital Stock	100
MTU Hong Kong Limited	Room 1006, 10/F, Hang Seng Tsimshatsui Building, 18 Carnarvon Road, Tsimshatsui, Kowloon, Hong Kong	Ordinary	100
MTU Ibérica Propulsión y Energia S.L.	Calle Copérnico 26-28, 28823 Coslada, Madrid, Spain	Ordinary	100
MTU India Private Limited [3]	6th Floor, RMZ Galleria, S/Y No. 144 Bengaluru, Bangalore, Kamataka 560,064, India	Ordinary	100
MTU Israel Limited	4 Ha'Alon Street, South Building, Third Floor, 4059300 Kfar Neter, Israel	Ordinary	100
MTU Italia S.r.l.	Via Aurelia Nord, 328, 19021 Arcola (SP), Italy	Capital Stock	100
MTU Japan Co. Limited	Resorttrust Building 4-14-3, Nishitenma Kita-ku, Osaka 530-0047, Japan	Ordinary	100
MTU Korea Limited	22nd Floor, Olive Tower, 41 Sejongdaero 9 gil, Junggu, 100-737 Seoul, Republic of Korea	Ordinary	100
MTU Middle East FZE	S3B5SR06, Jebel Ali Free Zone, South P.O. Box 61141, Dubai, United Arab Emirates	Ordinary	100
MTU Motor Türbin Sanayi ve Ticaret. A.Ş.	Hatira Sokak, No. 5, Ömerli Mahellesi, 34555 Arnavutköy, Istanbul, Turkey	Ordinary	100
MTU Onsite Energy GmbH	Dasinger Strasse 11, 86165, Augsburg, Germany	Capital Stock	100
MTU Onsite Energy Systems GmbH	Rotthofer Strasse 8, 94099 Ruhstorf a.d. Rott, Germany	Capital Stock	100
MTU Polska Sp. z o.o.	Ul. Śląska, Nr 9. Raum, Ort: Stargard Szczeciński, Plz: 73-110, Poland	Ordinary	100
MTU Power Systems Sdn. Bhd	Level 10 Menara LGB, 1 Jalan Wan Kadir Taman Tun Dr Ismail, 6000 Kuala Lumpur, Malaysia	Ordinary	100
MTU Reman Technologies GmbH	Friedrich-List-Strasse 8, 39122 Magdeburg, Germany	Capital Stock	100
MTU Rus Limited Liability Company	Shabolovka Street 2, 119049, Moscow, Russian Federation	Ordinary	100
MTU South Africa (Proprietary) Limited	36 Marconi Street, Montague Gardens, Cape Town, 7441, South Africa	Ordinary	100
MTU UK Limited	Derby [1]	Ordinary	100
Navis Consult d.o.o.	Ul. Bartola Kašića 5/4, HR-51000, Rijeka, Croatia	Ordinary	75
NEI International Combustion Limited *	Derby [1]	Ordinary	100
NEI Mining Equipment Limited *	Derby [1]	Ordinary	100
NEI Nuclear Systems Limited *	Derby [1]	Ordinary	100
NEI Parsons Limited *	Derby [1]	Ordinary	100
NEI Peebles Limited *	Derby [1]	Ordinary	100
NEI Power Projects Limited *	Derby [1]	Ordinary	100
Nightingale Insurance Limited	Maison Trinity, Trinity Square, St. Peter Port, GY1 4AT, Guernsey	Ordinary	100
PKMJ Technical Services, Inc.	Wilmington [2]	Ordinary	100
Power Jets (Research and Development) Limited *	The Whittle Estate, Cambridge Road, Whetstone, Leicester, LE8 6LH, England	Ordinary	100
Powerfield Limited *	Derby [1]	Ordinary	100
Precision Casting Bilbao S.A.U.	Calle El Barracón 1, Baracaldo, Vizcaya, 48910 Spain	Ordinary	100
Prokura Diesel Services (Proprietary) Limited * (in liquidation)	36 Marconi Street, Montague Gardens, Cape Town, 7441, South Africa	Ordinary	100
PT MTU Indonesia	Secure Building Blok B, Jl. Raya Protokol Halim, Perdanakusuma, Jakarta, 13610, Indonesia	Ordinary	100

* Dormant entity.
[1] Moor Lane, Derby, DE24 8BJ, England.
[2] Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, United States.
[3] Reporting year end is 31 March.

Company name	Address	Class of shares	% of class held
PT Rolls-Royce	Secure Building Blok B JL, Raya Protokol Halim Perdanakusuma, Halim P.K. Makasar, Jakarta, Timur DKI Jakarta	Ordinary	100
Rolls-Royce (Ireland) Unlimited Company *	Ulster International Finance, 1st Floor IFSC House, IFSC, Dublin 1, Ireland	Ordinary	100
Rolls-Royce (Thailand) Limited	4, 4.5 Level 12, Suite 1299, Rajdamri Road, Pathumwan, Bangkok, 10330, Thailand	Ordinary	100
Rolls-Royce AB	Box 1010, S-68129, Kristinehamn, Sweden	Ordinary	100
Rolls-Royce Aero Engine Services Limited *	Derby [1]	Ordinary	100
Rolls-Royce Asia Limited	G/F, No 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong	Ordinary	100
Rolls-Royce Australia Pty Limited	Suite 102, 2-4 Lyonpark Road, Macquarie Park, NSW 2113, Australia	Ordinary	100
Rolls-Royce Australia Services Pty Limited	Suite 102, 2-4 Lyonpark Road, Macquarie Park, NSW 2113, Australia	Ordinary	100
Rolls-Royce Brasil Limitada	Rua drive Cincinato Braga No. 47, Planalto District, São Bernando do Campo, SP, 09890-900, Brazil	Quotas	100
Rolls-Royce Canada Limited	9500 Côte de Liesse, Lachine, Québec H8T 1A2, Canada	Common Stock	100
Rolls-Royce China Holding Limited	305-306 Indigo Building 1, 20 Jiuxianqiao Road, Beijing, 100016, China	Registered Capital	100
Rolls-Royce Civil Nuclear Canada Limited	597 The Queensway, Peterborough Ontario K9J 7J6, Canada	Common Shares	100
Rolls-Royce Civil Nuclear S.A.S.	23 chemin du Vieux Chêne, 38240, Meylan, France	Ordinary	100
Rolls-Royce Commercial Aero Engines Limited *	Derby [1]	Ordinary	100
Rolls-Royce Control Systems Holdings Co	Wilmington [2]	Common Stock	100
Rolls-Royce Controls and Data Services (NZ) Limited	c/o Deloitte, 80 Queen Street, Auckland Central, Auckland 1010, New Zealand	Ordinary	100
Rolls-Royce Controls and Data Services (UK) Limited	Derby [1]	Ordinary	100
Rolls-Royce Controls and Data Services, Inc.	Wilmington [2]	Common Stock	100
Rolls-Royce Controls and Data Services Limited*	Derby [1]	Ordinary	100
Rolls-Royce Corporation	Wilmington [2]	Common Stock	100
Rolls-Royce Crosspointe LLC	Wilmington [2]	Partnership (no equity)	100
Rolls-Royce Defense Products and Solutions, Inc.	Wilmington [2]	Common Stock	100
Rolls-Royce Defense Services, Inc.	Wilmington [2]	Common Stock	100
Rolls-Royce Deutschland Ltd & Co KG	Eschenweg 11, 15827 Blankenfelde-Mahlow, Germany	Ordinary	100
Rolls-Royce Electrical Norway AS	Jarleveien 8A, 7041, Trondheim 500, Norway	Ordinary	100
Rolls-Royce Energy Angola, Limitada *	Rua Rei Katyavala, Edificio Rei Katyavala, Entrada B, Piso 8, Luanda, Angola	Quota	100
Rolls-Royce Energy Systems Inc.	Wilmington [2]	Common Stock	100
Rolls-Royce Engine Services Holdings Co.	Wilmington [2]	Common Stock	100
Rolls-Royce Engine Services Limitada Inc. (in liquidation)	Bldg. 06 Berthaphil Compound, Jose Abad Santos Avenue, Clark Special Economic Zone, Clark, Pampanga, Philippines	Capital Stock	100
Rolls-Royce Erste Beteiligungs GmbH	Eschenweg 11, 15827 Blankenfelde-Mahlow, Germany	Capital Stock	100
Rolls-Royce Finance Company Limited	Derby [1]	Deferred Ordinary	100 100
Rolls-Royce Finance Holdings Co.	Wilmington [2]	Common Stock	100
Rolls-Royce Fuel Cell Systems Limited	Derby [1]	Ordinary	100
Rolls-Royce General Partner Limited *	Derby [1]	Ordinary	100
Rolls-Royce Group plc	62 Buckingham Gate, London, SW1E 6AT, England	Ordinary Ordinary A	100 100
Rolls-Royce High Temperature Composites, Inc.	Corporation Service Company, 2710 Gateway Oaks Drive, Suite 150N, Sacramento, California 95833, United States	Ordinary	100
Rolls-Royce Holdings Canada Inc.	9500 Côte de Liesse, Lachine, Québec H8T 1A2, Canada	Common C	100
Rolls-Royce India Limited * [3]	Derby [1]	Ordinary	100

* Dormant entity.
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[3] Reporting year end is 31 March.

Company name	Address	Class of shares	% of class held
Rolls-Royce India Private Limited [3]	Birla Tower West, 2nd Floor 25, Barakhamba Road, New Delhi, 110001, India	Equity	100
Rolls-Royce Industrial & Marine Power Limited *	Derby [1]	Ordinary	100
Rolls-Royce Industrial Power (India) Limited * [3]	Derby [1]	Ordinary	100
Rolls-Royce Industrial Power Engineering (Overseas Projects) Limited	Derby [1]	Ordinary	100
Rolls-Royce Industries Limited *	Derby [1]	Ordinary	100
Rolls-Royce International Limited	Derby [1]	Ordinary	100
Rolls-Royce International LLC	Office 41 H, 32-34 Liter A, Nevsky Office, St. Petersburg, 191186, Russian Federation	Ordinary	100
Rolls-Royce International s.r.o.	Pobřežní 620/3, Postal code 186 00, Karlin - Prague 8, Czech Republic	Ordinary	100
Rolls-Royce Italia S.r.l.	Via Castel Morrone 13, 16161, Genoa, Italy	Ordinary	100
Rolls-Royce Japan Co., Limited	31st Floor, Kasumigaseki Building, 3-2-5 Kasumigaseki, Chiyoda-Ku, Tokyo, 100-6031, Japan	Ordinary	100
Rolls-Royce Korea Limited	197 Noksan SanEop Buk-Ro (Songjeong-dong), Gangseo-gu, Busan 46753, Republic of Korea	Ordinary	100
Rolls-Royce Leasing Limited	Derby [1]	Ordinary	100
Rolls-Royce Malaysia Sdn. Bhd.	Level 10, Menara LGB, 1 Jalan Wan Kadir Taman Tun Dr Ismail, 6000 Kuala Lumpur, Malaysia	Ordinary	100
Rolls-Royce Marine (Shanghai) Limited	1st Floor Building 14, Lane 8666, Hu Nan Road, Pudong District, Shanghai, PRC	Ordinary	100
Rolls-Royce Marine A/S	Ostre Havnepromenade 34, 9000, Aalborg, Denmark	Ordinary	100
Rolls-Royce Marine AS	Borgundvegen 340, Ålesund, 6009, Norway	Ordinary	100
Rolls-Royce Marine Benelux BV	Werfdijk 2, 3195 HV Pernis, Rotterdam, Netherlands	Ordinary	100
Rolls-Royce Marine Chile S.A.	Alcantra 200, Piso 6, C,O, 7550159 Las Condes, Santiago, Chile	Ordinary	100
Rolls-Royce Marine Deutschland GmbH	Fährstieg 9, 21107, Hamburg, Germany	Capital Stock	100
Rolls-Royce Marine Electrical Systems Limited *	Derby [1]	Ordinary	100
Rolls-Royce Marine España S.A.	Calle Dinamarca s/n (esquina Calle Alemania), Poligono Industrial de Constanti, 43120 Constanti, Tarragona, Spain	Ordinary	100
Rolls-Royce Marine France SARL	122 avenue Charles de Gaulle, 92200 Neuilly-sur-Seine, France	Ordinary	100
Rolls-Royce Marine Hellas S.A.	25 Atki Poseidonos str. & Makrigianni str., Moschato, Athens, GR-18344, Greece	Ordinary	100
Rolls-Royce Marine Hong Kong Limited	G/F, No 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong	Ordinary	100
Rolls-Royce Marine India Private Limited [3]	Birla Tower West, 2nd Floor, 25 Barakhamba Road, New Delhi, 110001, India	Ordinary	100
Rolls-Royce Marine North America, Inc.	Wilmington [2]	Common Stock	100
Rolls-Royce Mexico Administration S. de R.L. de C.V.	Boulevard Adolfo Ruiz Cortinez 3642-403, Fracc Costa de Oro, Verzcruz CP 94299 6, Mexico	Ordinary	100
Rolls-Royce Mexico S. de R.L. de C.V.	Boulevard Adolfo Ruiz Cortinez 3642-403, Fracc Costa de Oro, Verzcruz CP 94299 6, Mexico	Ordinary	100
Rolls-Royce Military Aero Engines Limited * [3]	Derby [1]	Ordinary	100
Rolls-Royce Namibia (Proprietary) Limited	2nd Floor, Unit 4, LA Chambers, Ausspann Plaza, Dr Agostinho Neto Road, Ausspannplatz, Windhoek, Namibia	Ordinary	100
Rolls-Royce New Zealand Limited	c/o Deloitte, 80 Queen Street, Auckland Central, Auckland 1010, New Zealand	Ordinary	100
Rolls-Royce Nigeria Limited * (in liquidation)	Civic Towers, Plot GA1, Ozumba Mbadiwe Avenue, Victoria Island, Lagos, Nigeria	Ordinary	100
Rolls-Royce North America (USA) Holdings Co.	Wilmington [2]	Common Stock	100
Rolls-Royce North America Holdings, Inc.	Wilmington [2]	Common Stock	100
Rolls-Royce North America, Inc.	Wilmington [2]	Common Stock	100
Rolls-Royce North America Ventures, Inc.	Wilmington [2]	Common Stock	100

* Dormant entity.
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[3] Reporting year end is 31 March.

Company name	Address	Class of shares	% of class held
Rolls-Royce North American Technologies, Inc.	Wilmington [2]	Common Stock	100
Rolls-Royce Nuclear Field Services France S.A.S.	ZA Notre-Dame, 84430, Mondragon, France	Ordinary	100
Rolls-Royce Nuclear Field Services, Inc.	Corporation Service Company, 80 State Street, Albany, New York 12207, United States	Common Stock	100
Rolls-Royce Oman LLC	Bait Al Reem, Business Office #131, Building No 81, Way No 3409, Block No 234, Al Thaqafa Street, Al Khuwair, PO Box 20, Postal Code 103, Oman	Ordinary	100
Rolls-Royce Operations (India) Private Limited	Birla Tower West, 2nd Floor, 25 Barakhamba Road, New Delhi, 110001, India	Ordinary Ordinary	100 100
Rolls-Royce Overseas Holdings Limited	Derby [1]	Ordinary	100
Rolls-Royce Overseas Investments Limited	Derby [1]	Ordinary	100
Rolls-Royce Oy AB	P.O. Box 220, Suojantie 5, 26101, Rauma, Finland	A shares	100
Rolls-Royce Placements Limited	Derby [1]	Ordinary	100
Rolls-Royce plc	62 Buckingham Gate, London, SW1E 6AT, England	Ordinary	100
Rolls-Royce Poland Sp. z o.o.	Gniew 83-140, ul. Kopernika 1, Poland	Ordinary	99.9
Rolls-Royce Power Development Limited	Derby [1]	Ordinary	100
Rolls-Royce Power Engineering plc	Derby [1]	Ordinary	100
Rolls-Royce Power Systems AG	Maybachplatz 1, 88045, Friedrichshafen, Germany	Ordinary	100
Rolls-Royce Saudi Arabia Limited	PO Box 88545, Riyadh, 11672, Saudi Arabia	Cash shares	100
Rolls-Royce Retirement Savings Trust Limited * [3]	Derby [1]	Ordinary	100
Rolls-Royce Singapore Pte. Limited	6 Shenton Way, #33-00 OUE, Downtown Singapore 068809, Singapore	Ordinary	100
Rolls-Royce Sp z.o.o.	Budynek Fronton ul Kamienna 21, Krakow, 31-403, Poland	Ordinary	100
Rolls-Royce Submarines Limited	Derby [1]	Ordinary	100
Rolls-Royce Technical Support Sarl	Centreda I, Avenue Didier Daurat, 31700 Blagnac, Toulouse, France	Ordinary	100
Rolls-Royce Total Care Services Limited	Derby [1]	Ordinary	100
Rolls-Royce Turkey Power Solutions Industry and Trade Limited	Levazim Mahellesi, Koru Sokagi, Zorlu Center, No. 2 Teras Evler T2 D:204, Zincirlikuyu, Besiktas, Istanbul, Turkey	Cash shares	100
Rolls-Royce UK Pension Fund Trustees Limited *	Derby [1]	Ordinary	100
Rolls-Royce Vietnam Limited	Dông Xuyên Industrial Zone, Rach Dùa Ward, Vũng Tàu City, Bà Ria-Vũng Tàu Province, Vietnam	Capital Stock	100
Rolls-Royce Zweite Beteiligungs GmbH	Eschenweg 11, 15827 Blankenfelde-Mahlow, Germany	Capital Stock	100
Ross Ceramics Limited	Derby [1]	Ordinary	100
Scandinavian Electric Gdansk Sp. z.o.o.	ul. Reja No.3, 80-404, Gdansk, Poland	Ordinary	67
Scandinavian Electric Systems do Brazil Limitada * (in liquidation)	Rua Sao Jose 90, salas 1406 e 1407, Centro, Rio De Janeiro, Brazil	Quotas	66
Sharing in Growth UK Limited **	Derby [1]	Limited by guarantee	100
Spare IPG 20 Limited *	Derby [1]	Ordinary	100
Spare IPG 21 Limited *	Derby [1]	Ordinary	100
Spare IPG 24 Limited *	Derby [1]	Ordinary	100
Spare IPG 32 Limited *	Derby [1]	7.25% Cumulative Preference Ordinary	100 100
Spare IPG 4 Limited *	Derby [1]	Ordinary	100
The Bushing Company Limited *	Derby [1]	Ordinary	100
Timec 1487 Limited *	Derby [1]	Ordinary	100
Trigno Energy S.R.L.	Zona Industriale, San Salvo, 66050, Italy	Ordinary	100

* Dormant entity.
** The entity is not included in the consolidation as Rolls-Royce plc does not have a beneficial interest in the net assets of the entity.
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3 Reporting year end is 31 March.

Company name	Address	Class of shares	% of class held
Turbine Surface Technologies Limited **	Derby [1]	Ordinary A Ordinary B	Nil 100
Turborreactores S.A. de C.V.	Acceso IV, No.6C, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A Class B	100 100
Ulstein Holding AS	Sjøgata 80, 6065 Ulsteinvik, Norway	Ordinary	100
Ulstein Maritime Limited *	8 Adelaide Street West, Suite 200, Toronto, ON M5H 0A9, Canada	Common	100
Vessel Lifter, Inc. *	Corporation Service Company, 1201 Hays Street, Tallahassee, Florida 32301, United States	Common Stock	100
Vinters Defence Systems Limited *	Derby [1]	Ordinary	100
Vinters Engineering Limited	Derby [1]	Ordinary	100
Vinters International Limited	Derby [1]	Ordinary	100
Vinters Limited	Derby [1]	Ordinary	100
Vinters-Armstrongs (Engineers) Limited *	Derby [1]	Ordinary	100
Vinters-Armstrongs Limited *	Derby [1]	Ordinary B	100

* Dormant entity.
** Though the interest held is 50%, the Company controls the entity (see note 1 accounting policies) and, as a result, consolidates the entity and records a non-controlling interest.
[1] Moor Lane, Derby, DE24 8BJ, England.

JOINT VENTURES AND ASSOCIATES

Company name	Address	Class of shares	% of class held	Group interest held %
Aero Gearbox International SAS **	18 Boulevard Louis Sequin, 92700 Colombes, France	Ordinary	50	50
Airtanker Holdings Limited	Airtanker Hub, RAF Brize Norton, Carterton, Oxfordshire, OX18 3LX, England	Ordinary	20	20
Airtanker Services Limited	Airtanker Hub, RAF Brize Norton, Carterton, Oxfordshire, OX18 3LX, England	Ordinary	22	22
Alpha Leasing (US) (No.2) LLC	Wilmington [2]	Partnership (no equity held)	–	50
Alpha Leasing (US) (No.4) LLC	Wilmington [2]	Partnership (no equity held)	–	50
Alpha Leasing (US) (No.5) LLC	Wilmington [2]	Partnership (no equity held)	–	50
Alpha Leasing (US) (No.6) LLC	Wilmington [2]	Partnership (no equity held)	–	50
Alpha Leasing (US) (No.7) LLC	Wilmington [2]	Partnership (no equity held)	–	50
Alpha Leasing (US) (No.8) LLC	Wilmington [2]	Partnership (no equity held)	–	50
Alpha Leasing (US) LLC	Wilmington [2]	Partnership (no equity held)	–	50
Alpha Partners Leasing Limited	62 Buckingham Gate, London, SW1E 6AT, England	Ordinary A	100	50
Anecom Aerotest GmbH	122 Freiheitstrasse, Wildau, D-15745, Germany	Capital Stock	35.6	35.6
CFMS Limited	43 Queen Street, Bristol, BS1 4QP, England	Limited by guarantee	–	50
Clarke Chapman Portia Port Services Limited	Maritime Centre, Port of Liverpool, Liverpool, L21 1LA, England	Ordinary A	100	50
Consorcio Español para el Desarrollo Industrial del Helicóptero de Ataque Tigre, A.I.E.	Avda. de Aragón 404, 28022 Madrid, Spain	Partnership (no equity held)	–	50
Consorcio Español para el Desarrollo Industrial del Programa Eurofighter, A.I.E.	Paseo de John Lennon, s/n, edificio T22, 2ª planta, Getafe, Madrid, Spain	Partnership (no equity held)	–	50
Egypt Aero Management Services	EgyptAir Engine Workshop, Cairo International Airport, Cairo, Egypt	Ordinary	50	50
EPI Europrop International GmbH	Dachauer Strasse 655, 80995, Munich, Germany	Capital Stock	44	44
EPIX Power Systems, LLC	The Corporation Trust Company, 1209 Orange Street, Wilmington, Delaware 19801, United States	Partnership (no equity held)	–	50
Eurojet Turbo GmbH	Lilienthalstrasse 2b, 85399 Halbergmoos, Germany	Capital Stock	46	46
Force MTU Power Systems Private Limited	Mumbai Pune Road, Akurdi, Pune, Maharashtra 411035, India	Capital Stock	49	49
Genistics Holdings Limited	Derby [1]	Ordinary A	100	50
Global Aerospace Centre for Icing and Environmental Research Inc.	1000 Marie-Victorin Boulevard, Longueuil Québec J4G 1A1, Canada	Ordinary	50	50
Hong Kong Aero Engine Services Limited	33rd Floor, One Pacific Place, 88 Queensway, Hong Kong	Ordinary	50	50
Hovden Klubbhus AS	Stålhaugen 5, Ulsteinvik, 6065, Norway	Ordinary	62	62
International Aerospace Manufacturing Private Limited ** [3]	Survey No. 3 Kempapura Village, Varthur Hobli, Bangalore, KA 560037, India	Ordinary	50	50
LG Fuel Cell Systems, Inc.	Wilmington [2]	Common Stock	22.2	22.2
Light Helicopter Turbine Engine Company (unincorporated partnership)	Suite 119, 9238 Madison Boulevard, Madison, Alabama 35758, United States	Partnership (no equity held)	–	50
MEST Co., Limited	97 Bukjeonggongdan 2-gil, Yangsan-si, Gyeongsangnam-do, 50571, Republic of Korea	Normal	46.8	46.8
Metlase Limited	Unipart House, Garsington Road, Cowley, Oxford, OX4 2PG, England	Ordinary B	100	20

* Dormant company.
** These entities are accounted for as joint operations (see note 1 accounting policies).
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3 Reporting year end is 31 March.

Company name	Address	Class of shares	% of class held	Group interest held %
MTU Turbomeca Rolls-Royce GmbH	Am Söldnermoos 17, 85399 Hallbergmoos, Germany	Capital Stock	33.3	33.3
MTU Turbomeca Rolls-Royce ITP GmbH	Am Söldnermoos 17, 85399 Hallbergmoos, Germany	Capital Stock	50	50
MTU Yuchai Power Company Limited	No 7 Danan Road, Yuzhou, Yulin, Guangxi, China, 537005, China	Capital Stock	50	50
N3 Engine Overhaul Services GmbH & Co KG	Gerhard-Höltje-Strasse 1, D-99310, Arnstadt, Germany	Capital Stock	50	50
N3 Engine Overhaul Services Verwaltungsgesellschaft Mbh	Gerhard-Höltje-Strasse 1, D-99310, Arnstadt, Germany	Capital Stock	50	50
Offshore Simulator Centre AS	Borgundvegen 340, 6009, Ålesund, Norway	Ordinary	25	25
Qinous GmbH	Villa Rathenau, Wilhelminenhofstrasse 75, 12459 Berlin, Germany	Preference	22	22
Rolls Laval Heat Exchangers Limited *	Derby [1]	Ordinary	50	50
Rolls-Royce & Partners Finance (US) (No 2) LLC	Wilmington [2]	Partnership (no equity held)	–	50
Rolls-Royce & Partners Finance (US) LLC	Wilmington [2]	Partnership (no equity held)	–	50
SAFYRR Propulsion Limited	Derby [1]	B Shares	100	50
Shanxi North MTU Diesel Co. Limited	No.97 Daqing West Road, Datong City, Shanxi Province, China	Ordinary	49	49
Singapore Aero Engine Services Private Limited	11 Calshot Road, 509932, Singapore	Ordinary	50	50
Taec Ucak Motor Sanayi AS	Buyukdere Caddesi, Prof. Ahmet Kemal Aru, Sokagi Kaleseramik, Binasi Levent No. 4, Besiktas, Istanbul	Cash Shares	49	49
Techjet Aerofoils Limited **	Tefen Industrial Zone, PO Box 16, 24959, Israel	Ordinary A Ordinary B	50 50	50
Texas Aero Engine Services LLC	The Corporation Trust Company, 1209, Orange Street, Wilmington, Delaware 19801, United States	Partnership (no equity held)	–	50
TRT Limited	Derby [1]	Ordinary B	100	49.9
Turbo-Union Limited	Derby [1]	A Shares Ordinary	37.5 40	40
UK Nuclear Restoration Limited *	Booths Park, Chelford Road, Knutsford, Cheshire, WA16 8QZ, England	Ordinary	20	20
Xian XR Aero Components Co., Limited **	Xujiawan, Beijiao, Po Box 13, Xian 710021, Shaanxi, China	Ordinary	49	49

* Dormant company.
** These entities are accounted for as joint operations (see note 1 accounting policies).
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2 Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, United States.
3 Reporting year end is 31 March.

INDEPENDENT AUDITORS' REPORT

to the members of Rolls-Royce Holdings plc

Report on the audit of the financial statements

Opinion

In our opinion:

- **Rolls-Royce Holdings plc's Consolidated Financial Statements and Company Financial Statements (the "financial statements") give a true and fair view of the state of the Group's and of the Company's affairs as at 31 December 2018 and of the Group's loss and cash flows for the year then ended;**
- **the Consolidated Financial Statements have been properly prepared in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union;**
- **the Company Financial Statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law); and**
- **the financial statements have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the Consolidated Financial Statements, Article 4 of the IAS Regulation.**

We have audited the financial statements, included within the Annual Report, which comprise: the Consolidated and Company Balance Sheets at 31 December 2018; the Consolidated Income Statement and Consolidated Statement of Comprehensive Income; the Consolidated Cash Flow Statement for the year then ended; the Consolidated and Company Statements of Changes in Equity for the year then ended; and the notes to the Consolidated and Company Financial Statements, which include a description of the significant accounting policies.

Our opinion is consistent with our reporting to the Audit Committee.

Basis for opinion

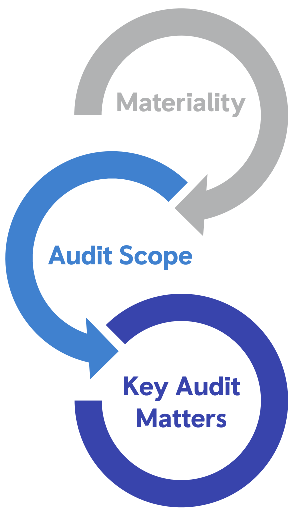
We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities under ISAs (UK) are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We remained independent of the group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, we declare that non-audit services prohibited by the FRC's Ethical Standard were not provided to the Group or the Company.

Other than those disclosed in note 7, we have provided no non-audit services to the Group or the Company in the period from 1 January 2018 to 31 December 2018.



Our audit approach

Overview

- Overall Group materiality: £56 million, based on 0.4% of underlying revenue.
- Overall Company materiality: £128 million, based on 1.0% of total assets. This exceeds Group materiality as it is determined on a different basis given the nature of the Company's operations. For the purposes of the audit of the Consolidated Financial Statements, our procedures, including those on balances in the Company, are undertaken with reference to the Group materiality.

- Following our assessment of the risks of material misstatement of the Consolidated Financial Statements we subjected 35 individual components (including 3 joint ventures) to full scope audits for group purposes, which following an element of consolidation, equates to 16 group reporting opinions. In addition 7 components performed targeted specified procedures.
- In addition the Group engagement team audited the Company and other centralised functions including those covering the Group treasury operations, corporate taxation, pensions, fair value assessments on acquired entities and goodwill and intangible asset impairment assessments.
- The components on which full scope audits, targeted specified procedures and centralised work was performed accounted for 87 % of revenue, 80% of loss before tax and 84% of total assets.
- Central audit testing was performed where appropriate for reporting components in Group audit scope supported by the Group's Finance Service Centres (FSCs).
- As part of the supervision process, the Group engagement team have visited 12 components as well as the FSCs. Interactions with component auditors also included formal written instructions, meetings and reviewing selected audit papers.

Our assessment of the risk of material misstatement also informed our views of the areas of particular focus of our work which are listed below:

- Long-term contract accounting and associated provisions;
- The implementation of IFRS 15;
- The valuation of and accounting for the acquisition of Industrial De Turbo Propulsores SA ("ITP Aero");
- The presentation and accuracy of underlying results and disclosure of other one-off items (including exceptional items);
- The response of the Group to the Deferred Prosecution and Leniency Agreements in connection with alleged bribery and corruption in overseas markets;
- The capitalisation and amortisation of development costs;
- The recognition of Deferred tax assets; and
- The translation of foreign-currency denominated transactions and balances.

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we looked at where the directors made subjective judgements, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain.

We gained an understanding of the legal and regulatory framework applicable to the Group and the industries in which it operates, and considered the risk of acts by the Group which were contrary to applicable laws and regulations, including fraud. We designed audit procedures at Group and significant component level to respond to the risk, recognising that the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion. We focused on laws and regulations that could give rise to a material misstatement in the Consolidated and Company Financial Statements, including, but not limited to, financial reporting and related company legislation, taxation, export control, defence contracting, anti-bribery and corruption legislation. Our tests included, but were not limited to, agreement of the financial statement disclosures to underlying supporting documentation, review of correspondence with regulators, review of correspondence with legal advisors, enquiries of management, review of significant component auditors' working papers and review of internal audit reports in so far as they related to the financial statements. There are inherent limitations in the audit procedures described above and the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely we would become aware of it.

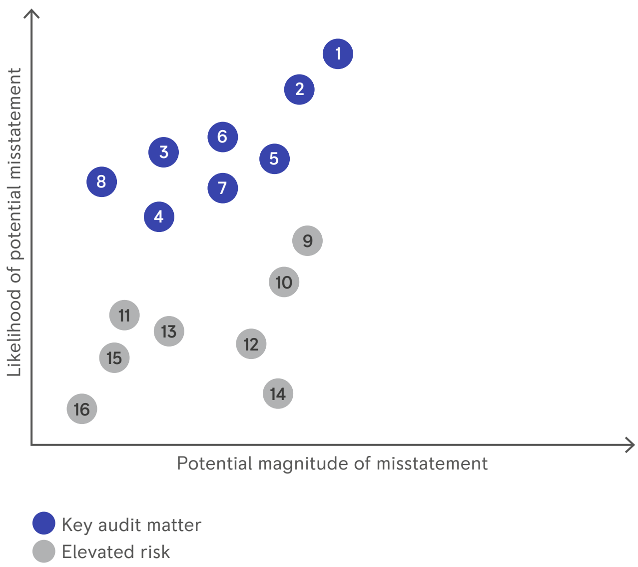
We identified the Group's response to deferred prosecution and leniency agreements as a key audit matter, and this is discussed further below. As in all of our audits we also addressed the risk of management override of internal controls, including testing journals and evaluating whether there was evidence of bias by the directors that represented a risk of material misstatement due to fraud.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. This is not a complete list of all risks identified by our audit.

Key changes in the assessment of audit risks for the current period compared to the assessment made by the prior period auditor that we consider to be key audit matters are:

- Capitalisation and amortisation of development costs is now considered a key audit matter due to a change in the methodology for starting, and subsequently ceasing, the capitalisation of development costs. In addition a change has been made to the basis for amortising those capitalised development costs effective from 1 January 2018;
- Deferred tax asset recognition is now considered a key audit matter due to a significant increase in the value of deferred tax assets and the period over which they are expected to reverse, requiring the exercise of significant judgement in assessing levels of profitability over an extended period; and
- Translation of foreign currency denominated transactions and balances has been identified as a new significant risk and key audit matter in the current year given the nature of manual adjustments that are needed to retranslate non-monetary assets and liabilities to applicable spot rates and resulting correction recorded in equity at 1 January 2017.



Risk ref	Risk description	Change compared to prior year
Key audit matters		
1	Long-term contract accounting and associated provisions	<>
2	Implementation of IFRS 15	<>
3	Valuation of and accounting for the acquisition of ITP Aero	<>
4	Presentation and accuracy of underlying results and disclosure of other one-off items (including exceptional items)	<>
5	Response of the Group to the Deferred Prosecution and Leniency Agreements in connection with alleged bribery and corruption in overseas markets	<>
6	Capitalisation and amortisation of development costs	↑
7	Deferred tax asset recognition	↑
8	Translation of foreign currency denominated transactions and balances	new
Elevated Risk		
9	Accounting for complex treasury instruments	<>
10	Measurement of post-retirement benefits	<>
11	Risk and Revenue Sharing Arrangements	<>
12	Warranties and other provisions	<>
13	Consolidation process and Joint Venture accounting	new
14	Sales financing	<>
15	Carrying value and accounting for disposals and assets held for sale	new
16	Uncertain tax positions	<>

Key audit matter	How our audit addressed the key audit matter
Long-term contract accounting and associated provisions (relevant to the Consolidated Financial Statements) *Page 78 (Audit Committee report) and page 115 (Note 1 to the Consolidated Financial Statements – Accounting policies – Revenue recognition)* The Civil Aerospace and Defence businesses operate primarily with long-term customer contracts that span multiple periods. These long-term contracts require a number of assumptions to be made in order to determine the level of revenue and profit that is recognised in each period. For Civil Aerospace aftermarket contracts, the profitability typically assumes that there will be significant cost improvements over the lifetime (15-25 years) of the contracts. Significant judgement needs to be applied in determining the engine flying hours, time on wing, whether incremental costs should be treated as wastage or are part of the ongoing cost of servicing a contract, and other operating parameters used to calculate the projected life cycle. These future costs are also risk adjusted to take into account forecasting accuracy which represents an additional judgement. Small adjustments can have a significant impact on the results of an individual financial year. In addition, changes to the operating conditions of engines such as changes in route structure can result in different performance assumptions and hence cost profiles which impact the profitability of a contract. The Group continues to experience significant in-service issues on the Trent 1000 programme. The assessment of the total cost of delivering this programme, including the cost of the proposed engineering solutions, speed of implementation and the level of customer disruption which was not expected at the inception of the contract are all significant judgements which impact the value and timing of revenue and profit recognition. In addition, we have had to assess the impact of the announcement of the cessation of A380 deliveries after 2021 on the forecast contract profitability and the recoverability of the associated assets. At the development stage of a programme agreements are entered into with certain suppliers to share in the risk and rewards of the contracts (Risk and Revenue Sharing Partners – 'RRSP'). This can involve upfront participation fees from the RRSP which are amortised over the engine production phase. In addition, specified revenue and costs are recorded in the income statement net of the RRSP's share. The nature of the Civil Aerospace business gives rise to a number of contractual guarantees, warranties and potential claims. The accounting for these can be complex and judgemental and may impact the Income Statement immediately or over time through the long term contract pack. The valuation of associated amounts may be highly judgemental and needs to be considered on a contract by contract basis.	Our procedures over the long term contract accounting applied in the Civil Aerospace and Defence businesses included: – We attended meetings with Civil Aerospace and Defence programme and contract managers in order to understand the operational matters impacting the performance of specific contracts and any amendments to contractual arrangements; – We obtained and read the relevant sections of a sample of contracts to understand the key terms including performance obligations and pricing structures; – We re-performed the calculations used to determine the degree of completion for a sample of contracts and this was also used in assessing the magnitude of any catch-up adjustments; – We compared the previously forecast results of a sample of contracts with the actual results to assess the performance of the contract and the historical accuracy of forecasting; – We verified a sample of costs incurred to third party documentation in order to assess the validity of the forecast costs to complete; – We challenged management's judgement around whether incremental contract costs arising from in-service issues should be accounted for over the expected duration of the underlying contract or recognised immediately; – We assessed the assumptions relating to life cycle cost reductions to determine the likelihood of realisation and where relevant the speed at which they would be achieved, including validating these assumptions directly with the senior programme engineers. Where the revision of assumptions has resulted in catch-up adjustments we have understood the driver of the adjustments and assessed the appropriateness of the key changes in the estimates and judgements; – We obtained support for the risk adjustments made in respect of future costs and challenged management's assumptions through assessment against historical performance, known technical issues and the stage of completion of the programme; – We challenged the assessment of provisions for loss making or onerous contracts to determine the completeness of the unavoidable costs to fulfill the contractual obligations; – We reviewed a sample of RRSP contracts to assess whether revenue and costs had been appropriately reflected, net of the share attributable to the RRSP in the income statement; and – We also assessed the adequacy of disclosures in note 1 of the key judgements and estimates involved in long-term contract accounting and the description of changes arising as a result of the adoption of IFRS 15. Overall we concluded that the key estimates and judgements used by management in the long-term contract accounting to be supportable and the balances recorded in the financial statements to be materially correct.

Key audit matter	How our audit addressed the key audit matter
Implementation of IFRS 15 *(relevant to the Consolidated Financial Statements)* *Pages 78 (Audit Committee report), page 113 (Note 1 to the Consolidated Financial Statements – Accounting policies – IFRS 15 Revenue from Contracts with Customers) and pages 169 to 174 (Note 27 to the Consolidated Financial Statements – Impact of new accounting standards and other adjustments)* IFRS 15 has had a very significant impact on the timing of revenue and cost recognition for the Civil Aerospace and Defence businesses which generally operate large long-term contracts. Revenue on aftermarket arrangements is now recognised based upon the stage of completion of the contract which is assessed by using the actual costs incurred to date compared to the estimated costs to complete the performance obligations. Judgement is involved in a number of areas impacting revenue and costs such as engine flying hours, time on wing, the operating pattern of the aircraft and the nature and timing of future maintenance activity, which increases the risk of misstatement. Given the significant adjustments required to the previously reported figures in order to reflect all of the IFRS 15 impacts, there is a risk that other accounting adjustments are inappropriately reported as IFRS 15 impacts.	We completed the majority of our procedures on the initial adoption of IFRS 15 by the half year. These procedures were as follows: – Review of the predecessor auditors' working papers on the impact assessment disclosed in the 2017 financial statements and audit work performed thereon; – We sampled a number of contracts to understand the terms and how management had assessed the five step process in its IFRS 15 impact assessment for determining the appropriate revenue recognition; – With assistance from our in-house technical specialists, we critically appraised a number of position papers produced by management, who were assisted by their external technical specialists, on key aspects of its impact assessment and proposed changes to revenue recognition policy; – We appraised the revisions to the Group's revenue recognition accounting policy under IFRS 15, including both its appropriateness under the new standard and its completeness in reflecting the Group's different activities, including, for example, Original Equipment and long term aftermarket service contracts; and – We assessed the appropriateness of the methods used to determine the estimated impact of the initial application of IFRS 15 as reflected in the restatements booked at the half year. We instructed in-scope component audit teams with significant revenue streams to perform: – audit procedures on a sample basis to test the accuracy and completeness of the application of IFRS 15 on local contracts; – an assessment of any material new contracts or contract amendments where revenue recognition under IFRS 15 is complex; and – substantive testing to support the new additional quantitative information disclosed in the Consolidated Financial Statements. We found that the changes required by IFRS 15 were well embedded in the business and we reviewed key changes that impact the Group's more significant contracts. We also considered the adequacy of the Group's disclosures on the impact of the adoption of IFRS 15 as set out in notes 1, 2 and 27. No material uncorrected misstatements or disclosure exceptions arose from these procedures.

Key audit matter	How our audit addressed the key audit matter
Valuation of and accounting for the acquisition of ITP Aero *(relevant to the Consolidated Financial Statements)* *Pages 78 (Audit Committee report), page 119 (Note 1 to the Consolidated Financial Statements – Accounting policies – Business combinations and goodwill) and page 164 (Note 25 to the Consolidated Financial Statements – Acquisitions and disposals)* Following the acquisition of the remaining 53.1% of ITP in December 2017, the fair value of the assets and liabilities acquired was assessed on a provisional basis in the 2017 Annual Report. The purchase price allocation exercise was finalised during the year. Calculating the fair value of the intangible assets of ITP at the date of acquisition involves the use of complex valuation techniques and significant judgements in relation to the future profitability of its long term programmes. Management utilised an expert to perform this exercise. In addition, the existing risk-sharing arrangements between ITP and the Civil Aerospace business are complex and the consolidated position needs to be carefully considered to ensure that the post acquisition recognised revenues and profits are appropriate.	We obtained the updated purchase price allocation performed by management's valuation experts and considered their methodology and assumptions using our own valuation experts. Our work focused on the appropriateness of the valuation models used for each of the significant acquired intangible assets and consideration paid (including the fair value of the existing shareholding). We also assessed the competence and objectivity of management's expert. In light of the bargain purchase gain arising on the transaction, we considered whether all identifiable liabilities and assets had been recognised by comparing the intangible assets recognised to those recognised in other similar acquisitions. We understood the drivers of the change in the fair value of net assets acquired compared to the provisional purchase price allocation disclosed in the 2017 Annual Report, which was predominantly driven by changes in cash flow forecasts and the availability of more up to date information. We challenged the cash flow projections that underpinned each of these valuations, by comparing them to historical cash flows and understanding the reasons for the growth profile in those projections. Where applicable we reconciled the cash flow projections to those used elsewhere in the business including for long-term contract accounting or for the recognition of deferred tax assets. We considered whether adjustments were required to the purchase price allocation for the settlement of pre-existing relationships between Rolls-Royce and ITP, by comparing the contracted programme share to actual experience. Overall we found the disclosures in respect of the transaction and updated purchase price allocation and resultant adjustments to the opening balance sheet to be in line with the results of our audit work with no material exceptions arising.
Presentation of underlying results and disclosure of other one-off items (including exceptional items) *(relevant to the Consolidated Financial Statements)* *Page 123 (Note 1 to the Consolidated Financial Statements – Accounting policies – Presentation of underlying results)* In addition to the performance measures prescribed by International Financial Reporting Standards, the Group also presents the results on an "underlying" basis, as the Directors believe this better reflects the performance of the Group during the year. The most significant adjustment between the statutory results and the underlying results relates to the foreign exchange rates used to translate foreign currency transactions. The underlying results reflect the achieved rate on foreign currency contracts settled in the period and retranslates assets and liabilities at the foreign currency rates expected to be achieved in the future. As the Group can influence which contracts are settled in each reporting period it has the ability to influence the achieved rate and hence the underlying result. The underlying results differ significantly from the reported statutory results and are used extensively to explain performance to the shareholders. Alternative performance measures can provide investors with a better understanding of the Group's performance if properly used and presented. However, when improperly used and presented, these kinds of measures can mislead investors by masking the real financial performance and position.	We considered the judgements by management to determine what should be treated as a one-off or exceptional item and the translation of foreign currency amounts and obtained corroborative evidence for these. We also considered whether there were items that were recorded within underlying profit that we consider are exceptional in nature and should be reported as an exceptional item. No such material items were identified. As part of this assessment we challenged management's rationale for the designation of certain items as exceptional or one-off and assessed such items against the Group's accounting policy considering the nature and value of those items. We tested management's calculation to translate foreign currency transactions to reflect the achieved foreign exchange rates based on foreign currency contracts settled in the year, and to translate year end assets and liabilities at foreign currency rates that are expected to be achieved in the future. We corroborated these rates to the Group's hedging contracts. We also assessed whether the discretion used by management over the date on which forward foreign exchange contracts are settled indicated any evidence of bias. Overall we found that the classification judgements made by management were in line with their policy for underlying results and exceptional items, had been consistently applied and found no material exceptions from our testing. We also assessed the appropriateness and completeness of the disclosures of the impact of one-off or non-underlying items in note 1 and note 2 and other related notes to the Consolidated Financial Statements and found them to be appropriate.

Key audit matter	How our audit addressed the key audit matter
Response to deferred prosecution and leniency agreements in connection with alleged bribery and corruption in overseas markets *(relevant to the Consolidated and Company Financial Statements)* *Pages 101 (Safety & Ethics Committee report – Ethics and compliance) and page 163 (Note 23 to the Consolidated Financial Statements – Contingent liabilities)* In January 2017 the Group became party to deferred prosecution agreements with the UK Serious Fraud Office ("SFO") and the US Department of Justice ("DOJ") and a leniency agreement with the Brazilian Federal Prosecution Service ("MPF") (collectively the "Agreements") as a consequence of allegations of fraudulent payments to overseas intermediaries and prosecution was deferred provided that the Group fulfils certain requirements, including the settlement of a financial penalty. The Group operates in industries which are characterised by competition for individually significant contracts with customers which are often directly or indirectly associated with governments, and in a number of territories where the use of intermediaries is viewed as normal practice. This means that the risk of future instances of corruption remains present. The possible implications of these high profile and sensitive Agreements on the future business if the terms are not met, including additional fines and prosecution, are significant.	We planned and designed our audit approach to this area in conjunction with our in-house forensic specialists and after reading the Agreements and compliance reports made to the SFO and DoJ during the year. Where applicable, we vouched the assertions made by management to objective evidence. We assessed the overall control environment and 'tone at the top', including understanding and assessing the Group's internal investigations processes which identify and assess possible non-compliance, such as whistle-blowing hotlines. We evaluated key controls over the appointment, monitoring and payments made to intermediaries. We made inquiries of the Safety and Ethics Committee and the Audit Committee as to whether the Group is in compliance with laws and regulations relating to bribery and corruption. We met with management including the head of ethics and compliance to assess the risk of occurrence of inappropriate activities, the status of the ongoing control improvement process, and the possibility of further fines or penalties. We independently circularised and spoke with the Group's external legal counsel to obtain their views about the status of the Agreements and to test management's assertions of the likely outcome. We tested journals and other transactions with unusual characteristics, including searching for transactions with previously rejected intermediaries and for words that could indicate that inappropriate commercial payments have been made. We designed additional inquiries to be performed in certain markets not otherwise included in the Group audit scope to assess the risk of arrangements being in place in those markets, which may require follow-up procedures to be performed. Taking into account the findings from our audit procedures we then assessed the appropriateness of the contingent liability disclosure in note 23 of the Consolidated Financial Statements, and found it to be reasonable and consistent with the information we obtained during the course of our audit.
Capitalisation and amortisation of development costs *(relevant to the Consolidated Financial Statements)* *Pages 119 to 120 (Note 1 to the Consolidated Financial Statements – Accounting policies – Research and development, and pages 136 to 138 (Note 9 to the Consolidated Financial Statements – Intangible assets)* The value of development costs (including participation payments) on the balance sheet is financially significant. In addition, there is a high degree of judgement involved in determining the point at which capitalisation should commence and cease and when subsequent expenditure which enhances the performance of an engine should be capitalised. The basis for amortising capitalised development costs also represents an area of judgement, as is the carrying value in light of overall programme performance.	We reviewed projects where development costs are recognised for ongoing viability and considered management's assessment of the carrying value for those assets which may be impaired. Our focus was on those assets with a higher risk of impairment, including the Trent 900 programme following the announcement of the cessation of A380 deliveries after 2021. We tested a sample of additions in the year to assess the appropriateness of capitalisation and the amortisation period set based on an assessment of the point at which technical feasibility and commercial viability have been reached. This also included underlying testing of standard labour and material rates used to determine the value of the capitalised amounts. We performed a review of changes to amortisation rates in the year and assessed whether these were appropriate based on our understanding of the underlying programmes or other explanations from management. We also assessed the consistency of assumptions across programmes and customers with reference to publically available data where available.

Key audit matter	How our audit addressed the key audit matter
Capitalisation and amortisation of development costs (continued)	For capitalised programme assets our procedures included the following: – We obtained the Directors' trigger assessment which is performed at a programme level to identify whether any programme assets should be subject to an impairment assessment; – Specific focus was placed on the Trent 900 programme given the announcement of the cessation of A380 deliveries after 2021; – We obtained the impairment models prepared by management and assessed the key assumptions used and agreed the underlying cash flows with respect to aftermarket contracts to underlying books and records that support the long-term contract results. We also challenged management on the key estimates, such as the pre-tax discount rate used and evidence to support forecast profits from engines in the secondary market, following the completion of the initial aftermarket contract; – For the Trent 900 programme we also agreed the updated cash flows to the latest delivery forecast; and – We challenged management as not all programme dedicated assets were initially included in the impairment models. In addition, we challenged the inclusion of the Joint Venture overhaul base profits given these are separate cash generating units. Models were subsequently updated to reflect both of these points. We did not identify any uncorrected material exceptions from our audit work.
Deferred tax asset recognition *(relevant to the Consolidated Financial Statements)* *Page 78 (Audit Committee report), page 117 (Note 1 to the Consolidated Financial Statements – Accounting policies – Taxation), and pages 131 to 134 (Note 5 to the Consolidated Financial Statements – Taxation)* The Group has recognised significant deferred tax assets on the basis of future levels of profitability in the relevant tax jurisdictions. The magnitude of the assets recognised necessitates the need for significant judgement in assessing the levels of profitability over an extended period. The recent increase in the assets recognised and hence the forecasting period presents a heightened risk that deferred tax assets are recognised inappropriately and there is an inherent increased level of uncertainty in the forecasting process over an extended period.	We evaluated management's assessment as to whether there will be sufficient taxable profits in future periods to support the recognition of deferred tax assets by tax jurisdiction. We assessed the future cash flow forecasts and the assumptions which underpinned them in light of the extended period. Where applicable we reconciled the forecasts used to justify the recognition of deferred tax assets to those used elsewhere in the business including for long-term contract accounting or for the Directors' viability and going concern statements. The right of offset of certain deferred tax liabilities and deferred tax assets was also assessed which led to the identification of a correction to the opening balance sheet which has been reflected in the Consolidated Financial Statements. We also assessed the adequacy of disclosures over this area. We note that the period of time over which this asset will be utilised is estimated at between 20 to 30 and this has been disclosed in note 5. Given this time period for utilisation the balance will need to be constantly re-assessed against the Group's future performance. We did not identify any uncorrected material exceptions from our audit work.

Key audit matter	How our audit addressed the key audit matter
Translation of foreign currency denominated transactions and balances *(relevant to the Consolidated Financial Statements)* *Page 117 (Note 1 to the Consolidated Financial Statements – Accounting policies – Foreign currency translation)* Foreign exchange rate movements influence the reported income statement, the cash flow and closing net funds balance. One of the Group's primary accounting systems translates transactions denominated in foreign currencies at a fixed rate. Foreign currency denominated transactions and balances are then re-translated to actual average and spot rates through manual adjustments. Due to the manual nature and significance of the recurring adjustment there is a risk that transactions and balances denominated in foreign currencies are inappropriately translated in the Consolidated Financial Statements.	In addition to our testing in other areas of the various financial statement line items we performed the following specific audit procedures over this area: – Obtained an understanding of the process employed by management to correct the translation of foreign currency balances and transactions; – Tested system reports identifying transactions and balances in source currency by agreeing these to general ledger balances; – Reperformed manual calculations of the adjustment needed to correct the translation of the foreign currency denominated transactions and balances; – Where assumptions are used to calculate the adjustment necessary, for example, assumptions that certain categories of transactions, revenue or costs, are foreign currency denominated, we assessed the reasonableness of this and then reperformed management's calculation; – We reconciled the balances and transactions requiring adjustment by source currency to source data and assessed the completeness of these balances and transactions; – For exchange rates used in management's calculations for the translation adjustments we agreed these to an independent source; and – For each adjustment sampled we assessed whether the foreign currency denominated balance or transaction was translated at the appropriate exchange rate depending on its nature. We did not identify any material uncorrected exceptions from this work.

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the Group and the parent Company, the accounting processes and controls, and the industry in which they operate.

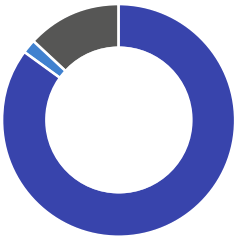
Our scoping is based on the Group's consolidation structure. We define a component as a single reporting unit which feeds into the Group consolidation. Of the Group's 362 reporting components, 35 individual components (including 3 joint ventures) were subject to full scope audits for group purposes, which following an element of consolidation, equates to 16 group reporting opinions; and 7 components performed targeted specified procedures.

In order to achieve audit coverage over the financial statements, under our audit methodology, we test both the design and operation of relevant business process controls and perform substantive testing over each financial statement line item.

The Group operates Finance Service Centres (FSCs) to bulk process financial transactions in Derby (UK), Indianapolis (US) and Bangalore (India). Based on our assessment with management it is not possible to fully test revenue and profit centrally as certain key processes, such as long-term contracting, remain within the business due to their nature.

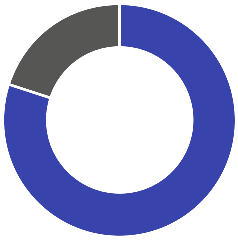
Our audit covered 87% of revenue, 80% of loss before tax and 84% of total assets. All entities that contribute in excess of 3% of the Group's revenue were included in full scope.

Revenue



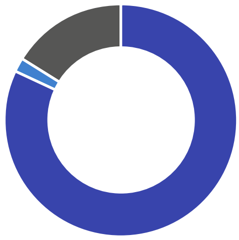
- 85%
- 2%
- 13%

Loss before tax



- 80%
- 0%
- 20%

Total assets



- 82%
- 2%
- 16%

- Full scope
- Specified procedures
- Out of scope

Further specific audit procedures over central functions, the Group consolidation and areas of significant judgement (including taxation, goodwill, intangible assets, treasury and post-retirement benefits) were directly led by the Group audit team.

Where work was performed by component auditors, we determined the level of involvement we needed to have in the audit work at those reporting units to be able to conclude whether sufficient appropriate audit evidence had been obtained as a basis for our opinion on the Consolidated Financial Statements.

We issued formal written instructions to all component auditors setting out the audit work to be performed by each of them and maintained regular communication with the component auditors throughout the audit cycle. These interactions included attending certain component clearance meetings and holding regular conference calls, as well as reviewing and assessing any matters reported. The Group engagement team also reviewed selected audit working papers for certain component teams.

In addition, senior members of the Group engagement team visited component teams across all group segments in the United Kingdom, United States of America, Germany, Spain, Norway and Singapore. These visits included meetings with local management and with the component auditors.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Consolidated Financial Statements	Company Financial Statements
Overall materiality	£56 million	£128 million
How we determined it	0.4% of total underlying revenue	1.0% of total assets
Rationale for benchmark applied	The benchmark used has changed compared to that used in prior years by the predecessor auditors. Historically a benchmark based on a three-year average of profit before tax, adjusted for exchange impacts was used. The reason for our change is that there has been considerable volatility in this profit before tax figure which has been further exacerbated by the impact of IFRS 15. Underlying revenue is much less volatile and remains a key focus for investors as evidenced by its inclusion as a key performance indicator.	We determined our materiality based on total assets, which is more applicable than a performance-related measure as the company is an investment holding company for the Group.

For each component in the scope of our Group audit, we allocated a materiality that is less than our overall group materiality and set a performance materiality threshold lower than the allocated materiality that was used to determine the nature, timing and extent of audit procedures on individual accounts or balances at a component level. This was set so as to reflect the risk of misstatements and experience of audit adjustments arising from our work. The range of performance materiality thresholds determined for components was between £4 million and £32 million. Certain components were audited to a local statutory audit materiality that was also less than our overall Group materiality.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above £2 million as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Going concern

In accordance with ISAs (UK) we report as follows:

Reporting obligation	Outcome
We are required to report if we have anything material to add or draw attention to in respect of the Directors' statement in the financial statements about whether the Directors considered it appropriate to adopt the going concern basis of accounting in preparing the financial statements and the Directors' identification of any material uncertainties to the Group's and the parent Company's ability to continue as a going concern over a period of at least twelve months from the date of approval of the financial statements.	We have nothing material to add or to draw attention to. As not all future events or conditions can be predicted, this statement is not a guarantee as to the Group's and parent Company's ability to continue as a going concern. For example, the terms on which the United Kingdom may withdraw from the European Union, which is currently due to occur on 29 March 2019, are not clear, and it is difficult to evaluate all of the potential implications on the Group's and Company's trade, customers, suppliers and the wider economy.
We are required to report if the directors' statement relating to Going Concern in accordance with Listing Rule 9.8.6R(3) is materially inconsistent with our knowledge obtained in the audit.	We have nothing to report.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The Directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic Report and Directors' Report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, the Companies Act 2006 (CA06), ISAs (UK) and the Listing Rules of the Financial Conduct Authority (FCA) require us also to report certain opinions and matters as described below (required by ISAs (UK) unless otherwise stated).

Strategic Report and Directors' Report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic Report and Directors' Report for the year ended 31 December 2018 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements. (CA06)

In light of the knowledge and understanding of the Group and parent Company and their environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic Report and Directors' Report. (CA06)

The directors' assessment of the prospects of the Group and of the principal risks that would threaten the solvency or liquidity of the Group

We have nothing material to add or draw attention to regarding:

- The directors' confirmation on page 64 of the Annual Report that they have carried out a robust assessment of the principal risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity.
- The disclosures in the Annual Report that describe those risks and explain how they are being managed or mitigated.
- The directors' explanation on page 55 of the Annual Report as to how they have assessed the prospects of the Group, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

We have nothing to report having performed a review of the directors' statement that they have carried out a robust assessment of the principal risks facing the Group and statement in relation to the longer-term viability of the Group. Our review was substantially less in scope than an audit and only consisted of making inquiries and considering the directors' process supporting their statements; checking that the statements are in alignment with the relevant provisions of the UK Corporate Governance Code (the "Code"); and considering whether the statements are consistent with the knowledge and understanding of the Group and parent Company and their environment obtained in the course of the audit. *(Listing Rules)*

Other Code Provisions

We have nothing to report in respect of our responsibility to report when:

- The statement given by the directors, on page 105, that they consider the Annual Report taken as a whole to be fair, balanced and understandable, and provides the information necessary for the members to assess the Group's and parent Company's position and performance, business model and strategy is materially inconsistent with our knowledge of the Group and parent Company obtained in the course of performing our audit.
- The section of the Annual Report on pages 76 to 81 describing the work of the Audit Committee does not appropriately address matters communicated by us to the Audit Committee.
- The directors' statement relating to the parent Company's compliance with the Code does not properly disclose a departure from a relevant provision of the Code specified, under the Listing Rules, for review by the auditors.

Directors' Remuneration

In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006. *(CA06)*

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Statement of the Directors' Responsibilities set out on page 105, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the Group's and the parent Company's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Group or the parent Company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

Use of this report

This report, including the opinions, has been prepared for and only for the parent Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Other required reporting

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the parent Company, or returns adequate for our audit have not been received from branches not visited by us; or
- certain disclosures of directors' remuneration specified by law are not made; or
- the parent Company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

Appointment

Following the recommendation of the audit committee, we were appointed by the members on 3 May 2018 to audit the financial statements for the year ended 31 December 2018 and subsequent financial periods. This is therefore our first year of uninterrupted engagement.

Ian Chambers (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London
28 February 2019

SUSTAINABILITY ASSURANCE STATEMENT

To the stakeholders of Rolls-Royce Holdings plc

Independent limited assurance statement

Introduction and objectives of work

Bureau Veritas UK Limited (Bureau Veritas) has been engaged by Rolls-Royce Holdings plc (the Company) to provide limited assurance over selected sustainability performance indicators for inclusion in its 2018 Annual Report for the year ended 31 December 2018 (the Report) and on its website. This Assurance Statement applies to the related information included within the scope of work described below.

Scope of work

The scope of our work was limited to assurance over the following information included within the Report (the 'Selected Information'):

- energy consumption;
- scope 1 & 2 greenhouse gases (GHG) emissions;
- total reportable injury; and
- the number of people reached through the STEM education outreach programmes.

Reporting criteria

The Selected Information is reported according to the Rolls-Royce 'Basis of Reporting', a copy of which can be found in the sustainability section at www.rolls-royce.com/sustainability.

Limitations and exclusions

Excluded from the scope of our work is verification of any information relating to:

- activities outside the defined verification period; and
- other information included in the Report.

This limited assurance engagement relies on a risk-based selected sample of sustainability data and the associated limitations that this entails. This independent statement should not be relied upon to detect all errors, omissions or misstatements that may exist.

Responsibilities

This preparation and presentation of the Selected Information in the Report are the sole responsibility of the management of the Company.

Bureau Veritas was not involved in the drafting of the Report or of the Reporting Criteria. Our responsibilities were to:

- obtain limited assurance about whether the Selected Information has been prepared in accordance with the Reporting Criteria;
- form an independent conclusion based on the assurance procedures performed and evidence obtained; and
- report our conclusions to the management of the Company.

Assessment standard

We performed our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 Revised, Assurance Engagements Other than Audits or Reviews of Historical Financial Information (effective for assurance reports dated on or after 15 December 2015), and in accordance with the main requirements of ISO 14064:2006 Part 3 – Specification with Guidance for the Validation and Verification of Greenhouse Gas Assertions.

Summary of work performed

As part of its independent verification, Bureau Veritas undertook the following activities:

- assessed the appropriateness of the Reporting Criteria for the Selected Information;
- conducted interviews with relevant personnel;
- carried out nine site visits, selected employing a risk-based approach, in the UK, US, France, Spain and Poland;
- reviewed the data collection and consolidation processes used to compile the Selected Information, including assessing assumptions made, the data scope and reporting boundaries;
- reviewed documentary evidence produced by the Group;
- agreed a sample of the Selected Information to the corresponding source documentation; and
- re-performed aggregation calculations of the Selected Information.

Conclusion

On the basis of our methodology and the activities described above, nothing has come to our attention to indicate that the Selected Information has not been properly prepared, in all material respects, in accordance with the Reporting Criteria.

Statement of independence, integrity and competence

Bureau Veritas is an independent professional services company that specialises in quality, environmental, health, safety and social accountability with over 185 years history. Its assurance team has extensive experience in conducting verification over environmental, social, ethical and health and safety information, systems and processes.

Bureau Veritas operates a certified [1] Quality Management System which complies with the requirements of ISO 9001:2008, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Bureau Veritas has implemented and applies a Code of Ethics, which meets the requirements of the International Federation of Inspections Agencies (IFIA) [2] across the business to ensure that its employees maintain integrity, objectivity, professional competence and due care, confidentiality, professional behaviour and high ethical standards in their day-to-day business activities.

The assurance team for this work does not have any involvement in any other Bureau Veritas projects with the Group.

Bureau Veritas UK Limited
London
18 February 2019

1 Certificate of Registration FS 34143 issued by BSI Assurance UK Limited
2 International Federation of Inspection Agencies – Compliance Code – Third Edition

OTHER FINANCIAL INFORMATION

Foreign exchange

Foreign exchange rate movements influence the reported income statement, the cash flow and closing net funds balance. The average and spot rates for the principal trading currencies of the Group are shown in the table below:

		2018	2017	Change
USD per GBP	Year-end spot rate	**1.28**	1.35	-5%
	Average spot rate	**1.33**	1.29	+4%
EUR per GBP	Year-end spot rate	**1.12**	1.13	-1%
	Average spot rate	**1.13**	1.14	-1%

The Group's global corporate income tax contribution

The Group's total corporation tax payments in 2018 were £248m. Around 85% of this was paid in the US, Germany, UK and Singapore which reflects the fact that the majority of the Group's business is undertaken, and employees are based, in these countries. The balance was paid in around 40 other countries.

In common with most multinational groups the total of all profits in respect of which corporate income tax is paid is not the same as the consolidated loss before tax reported on page 107. The main reasons for this are:

(i) the consolidated income statement is prepared under Adopted IFRS, whereas tax is paid on the profits of each Group company, which are determined by local accounting rules;

(ii) accounting rules require certain income and costs relating to our commercial activities to be eliminated from, or added to, the aggregate of all the profits of the Group companies when preparing the consolidated income statement ('consolidation adjustments'); and

(iii) specific tax rules including exemptions or incentives as determined by the tax laws in each country.

The level of tax paid in each country is impacted by the above. In most cases, (i) and (ii) are only a matter of timing and therefore tax will be paid in an earlier or later year. As a result they only have a negligible impact on the Group's underlying tax rate. The core underlying tax rate can be found on page 19. This is due to deferred tax accounting, details of which can be found in note 5 to the Consolidated Financial Statements. The impact of (iii) will often be permanent depending on the relevant tax law.

Further information on the tax position of the Group can be found as follows:

- Audit Committee Report (page 77) – The group tax director gave a presentation to the Audit Committee during the year which covered various matters including tax risks and how they are managed;
- note 1 to the Consolidated Financial Statements (pages 114 and 117) – Details of key areas of uncertainty and accounting policies for tax; and
- note 5 to the Consolidated Financial Statements (pages 131 to 134) – Details of the tax balances in the Consolidated Financial Statements together with a tax reconciliation. This explains the main drivers of the tax rate.

At this stage we expect these items to continue to influence the underlying tax rate. The reported tax rate is more difficult to forecast due to the impact of significant adjustments to reported profits, in particular the net unrealised fair value changes to derivative contracts and the recognition of advance corporation tax.

Information on the Group's approach to managing its tax affairs can be found at www.rolls-royce.com/sustainability.

Investments and capital expenditure

The Group subjects all major investments and capital expenditure to a rigorous examination of risks and future cash flows to ensure that they create shareholder value. All major investments, including the launch of major programmes, require Board approval.

The Group has a portfolio of projects at different stages of their lifecycles. All of our major investments and projects are assessed using a range of financial metrics, including discounted cash flow and return on investment.

Financial risk management

The Board has established a structured approach to financial risk management. The Financial risk committee (Frc) is accountable for managing, reporting and mitigating the Group's financial risks and exposures. These risks include the Group's principal counterparty, currency, interest rate, commodity price, liquidity and credit rating risks outlined in more depth in note 17. The Frc is chaired by the Chief Financial Officer or Group Controller. The Group has a comprehensive financial risk policy that advocates the use of financial instruments to manage and hedge business operations risks that arise from movements in financial, commodities, credit or money markets. The Group's policy is not to engage in speculative financial transactions. The Frc sits quarterly to review and assess the key risks and agree any mitigating actions required.

Capital structure

£m	2018	2017
Total equity	(1,052)	933
Cash flow hedges	106	112
Group capital	946	1,045
Net funds	611	(305)

Operations are funded through various shareholders' funds, bank borrowings, bonds and notes. The capital structure of the Group reflects the judgement of the Board as to the appropriate balance of funding required. Funding is secured by the Group's continued access to the global debt markets. Borrowings are funded in various currencies using derivatives where appropriate to achieve a required currency and interest rate profile. The Board's objective is to retain sufficient financial investments and undrawn facilities to ensure that the Group can both meet its medium-term operational commitments and cope with unforeseen obligations and opportunities.

The Group holds cash and short-term investments which, together with the undrawn committed facilities, enable it to manage its liquidity risk.

During the year, the Group replaced the £1,500m and £500m committed bank borrowing facilities with a new £2,500m facility with a maturity date of 2023. This facility was undrawn at the period end. Also during 2018, the Group issued €1,100m of bond notes of which €550m mature in 2024 and €550m in 2028. At the year end, the Group retained aggregate liquidity of £7.5bn, including cash and cash equivalents of £5.0bn and undrawn borrowing facilities of £2.5bn. Circa £858m of drawn borrowings mature in 2019.

The maturity profile of the borrowing facilities is regularly reviewed to ensure that refinancing levels are manageable in the context of the business and market conditions. There are no rating triggers in any borrowing facility that would require the facility to be accelerated or repaid due to an adverse movement in the Group's credit rating. The Group conducts some of its business through a number of joint ventures. A major proportion of the debt of these joint ventures is secured on the assets of the respective companies and is non-recourse to the Group. This debt is further outlined in note 11.

Credit rating

	Rating	Outlook	Grade
Moody's Investors Service	A3	Negative	Investment
Standard & Poor's	BBB+	Negative	Investment
Fitch	A-	Stable	Investment

The Group subscribes to Moody's, Standard & Poor's and Fitch for independent long-term credit ratings. At the date of this report, the Group maintained investment-grade rating from all three agencies.

As a capital-intensive business making long-term commitments to its customers, the Group attaches significant importance to maintaining or improving the current investment-grade credit ratings.

Accounting

The Consolidated Financial Statements have been prepared in accordance with International Financial Reporting Standards (IFRS), as adopted by the EU.

IFRS 15 *Revenue from Contracts with Customers* and IFRS 9 *Financial Instruments* were adopted from 1 January 2018 and the impacts are described in note 1 and note 27 of the Consolidated Financial Statements. In particular, IFRS 15 has had a material impact, with a reductions of net assets of £4.5bn and £5.2bn at 31 December 2016 and 2017 respectively.

IFRS 16 *Leases* is effective from 1 January 2019 and the estimated impact is set out in note 1 of the financial statements.

Share price

During the year, the share price reduced by 2% from 847p to 830p, compared to a 13% reduction in the FTSE aerospace and defence sector and a 11% reduction in the FTSE 100. The Company's share price ranged from 759p in December 2018 to 1094p in August 2018.

OTHER STATUTORY INFORMATION

Share capital

On 31 December 2018, the Company's issued share capital comprised of:

1,895,710,451	Ordinary shares	20p each
29,071,130,784	C Shares	0.1p each
1	Special Share	£1

The ordinary shares are listed on the London Stock Exchange.

Payment to shareholders

The Company issues non-cumulative redeemable preference shares (C Shares) as an alternative to paying a cash dividend.

Shareholders can choose to:

- redeem all C Shares for cash;
- redeem all C Shares for cash and reinvest the proceeds in the C Share Reinvestment Plan (CRIP); or
- keep the C Shares.

The CRIP is operated by Computershare Investor Services PLC (the Registrar). The Registrar will purchase ordinary shares in the market for shareholders electing to reinvest their C Share proceeds. Shareholders wishing to participate in the CRIP or redeem their C Shares in July 2019 must ensure that their instructions are lodged with the Registrar no later than 5.00pm (BST) on 3 June 2019 (CREST holders must submit their election in CREST before 3.00pm (BST) on 3 June 2019). Redemption will take place on 4 July 2019.

At the 2019 AGM, the Directors will recommend an issue of 71 C Shares with a total nominal value of 7.1p for each ordinary share. The C Shares will be issued on 1 July 2019 to shareholders on the register on 26 April 2019 and the final day of trading with entitlement to C Shares is 25 April 2019. Together with the interim issue on 3 January 2019 of 46 C Shares for each ordinary share with a total nominal value of 4.6p, this is the equivalent of a total annual payment to ordinary shareholders of 11.7p for each ordinary share.

Further information for shareholders is on pages 204 and 205.

Share class rights

The full share class rights are set out in the Company's Articles of Association (Articles), which are available at www.rolls-royce.com. The rights are summarised below.

Ordinary shares

Each member has one vote for each ordinary share held. Holders of ordinary shares are entitled to: receive the Company's Annual Report; attend and speak at general meetings of the Company; appoint one or more proxies or, if they are corporations, corporate representatives; and exercise voting rights. Holders of ordinary shares may receive a bonus issue of C Shares or a dividend and on liquidation may share in the assets of the Company.

C Shares

C Shares have limited voting rights and attract a preferential dividend of 75% of LIBOR on the 0.1p nominal value of each share, paid on a twice-yearly basis. The Company has the option to redeem the C Shares compulsorily, at any time if: the aggregate number of C Shares in issue is less than 10% of the aggregate number of all C Shares issued on or prior to that time or the event of a capital restructuring of the Company; the introduction of a new holding company; the acquisition of the Company by another company; or a demerger from the Group.

On a return of capital on a winding-up, the holders of C Shares shall be entitled, in priority to any payment to the holders of ordinary shares, to the repayment of the nominal capital paid-up or credited as paid-up on the C Shares held by them, together with a sum equal to the outstanding preferential dividend which will have been accrued but not been paid until the date of return of capital.

The holders of C Shares are only entitled to attend, speak and vote at a general meeting if a resolution to wind up the Company is to be considered, in which case they may vote only on that resolution.

Special Share

Certain rights attach to the special rights non-voting share (Special Share) issued to the UK Secretary of State for Business, Energy & Industrial Strategy (Special Shareholder). These rights are set out in the Articles. Subject to the provisions of the Companies Act 2006 (the Act), the Treasury Solicitor may redeem the Special Share at par value at any time. The Special Share confers no rights to dividends but in the event of a winding-up it shall be repaid at its nominal value in priority to any other shares.

Certain Articles (in particular those relating to the foreign shareholding limit, disposals and the nationality of the Company's Directors) that relate to the rights attached to the Special Share may only be altered with the consent of the Special Shareholder. The Special Shareholder is not entitled to vote at any general meeting or any other meeting of any class of shareholders.

Restrictions on transfer of shares and limitations on holdings

There are no restrictions on transfer or limitations on the holding of the ordinary shares or C Shares other than under the Articles (as described here), under restrictions imposed by law or regulation (for example, insider trading laws) or pursuant to the Company's share dealing code. The Articles provide that the Company should be and remain under UK control. As such, an individual foreign shareholding limit is set at 15% of the aggregate votes attaching to the share capital of all classes (taken as a whole) and capable of being cast on a poll and to all other shares that the Directors determine are to be included in the calculation of that holding. The Special Share may only be issued to, held by and transferred to the Special Shareholder or his successor or nominee.

Shareholder agreements and consent requirements

The Company and Bradley Singer are party to a relationship agreement with ValueAct (a summary of which can be found at www.rolls-royce.com).

No disposal may be made to a non-Group member which, alone or when aggregated with the same or a connected transaction, constitutes a disposal of the whole or a material part of either the nuclear propulsion business or the assets of the Group as a whole, without the consent of the Special Shareholder.

Authority to issue shares

At the AGM in 2018, authority was given to the Directors to allot new C Shares up to a nominal value of £500m as an alternative to a cash dividend.

In addition, an ordinary resolution was passed authorising the Directors to allot new ordinary shares up to a nominal value of £123,347,889 equivalent to one-third of the issued share capital of the Company. This resolution also authorised the Directors to allot up to two thirds of the total issued share capital of the Company, but only in the case of a rights issue.

A further special resolution was passed to effect a disapplication of pre-emption rights for a maximum of 5% of the issued share capital of the Company.

These authorities are valid until the AGM in 2019 or 2 August 2019, whichever is earlier, and the Directors propose to renew each of them at the 2019 AGM. The Board believes that these authorities will allow the Company to retain flexibility to respond to circumstances and opportunities as they arise.

ITP Aero

Following approval from the relevant authorities in Spain, on 19 December 2017 the Group acquired a 53.1% shareholding in ITP Aero from SENER resulting in ITP Aero becoming a wholly-owned subsidiary of the Company. The consideration of €718m will be settled over a two-year payment period, payable in eight equal instalments, and the agreement with SENER allows the Company flexibility to settle up to 100% of the consideration in the form of ordinary shares. Five payments were settled in 2018, all in the form of ordinary shares, as follows:

Instalment	No. of ordinary shares	Date
1st	9,612,581	15 January 2018
2nd	9,624,396	19 March 2018
3rd	9,719,544	19 June 2018
4th	8,398,166	19 September 2018
5th	10,202,227	19 December 2018

Final consideration as to whether the remaining three instalments will be settled in the form of cash or ordinary shares will be determined by the Company during the remaining payment period.

Authority to purchase own shares

At the AGM in 2018, the Company was authorised by shareholders to purchase up to 185,021,833 of its own ordinary shares representing 10% of its issued ordinary share capital.

The authority for the Company to purchase its own shares expires at the conclusion of the AGM in 2019 or 2 August 2019, whichever is the earlier. A resolution to renew the authority will be proposed at the 2019 meeting.

Deadlines for exercising voting rights

Electronic and paper proxy appointments, and voting instructions, must be received by the Registrar not less than 48 hours before a general meeting.

Voting rights for employee share plan shares

Shares are held in an employee benefit trust for the purpose of satisfying awards made under the various employee share plans. For shares held in a nominee capacity or if plan/trust rules provide the participant with the right to vote in respect of specifically allocated shares, the trustee votes in line with the participants' instructions. For shares that are not held absolutely on behalf of specific individuals, the general policy of the trustees, in accordance with investor protection guidelines, is to abstain from voting in respect of those shares.

Change of control

Contracts and joint venture agreements

There are a number of contracts and joint venture agreements which would allow the counterparties to terminate or alter those arrangements in the event of a change of control of the Company. These arrangements are commercially confidential and their disclosure could be seriously prejudicial to the Company.

Borrowings and other financial instruments

The Group has a number of borrowing facilities provided by various banks. These facilities generally include provisions which may require any outstanding borrowings to be repaid or the alteration or termination of the facility upon the occurrence of a change of control of the Company. At 31 December 2018, these facilities were less than 19% drawn (2017: 22%).

The Group has entered into a series of financial instruments to hedge its currency, interest rate and commodity exposures. These contracts provide for termination or alteration in the event that a change of control of the Company materially weakens the creditworthiness of the Group.

Employee share plans

In the event of a change of control of the Company, the effect on the employee share plans would be as follows:

- PSP – awards would vest pro rata to service in the performance period, subject to Remuneration Committee judgement of Group performance.
- APRA deferred shares – the shares would be released from trust immediately.
- Sharesave – options would become exercisable immediately. The new controlling company might offer an equivalent option in exchange for cancellation of the existing option.
- Share Incentive Plan (SIP) – consideration received as shares would be held within the SIP, if possible, otherwise the consideration would be treated as a disposal from the SIP.
- LTIP – awards would vest on the change of control, subject to the Remuneration Committee's judgement of performance and may be reduced pro rata to service in the vesting period. Any applicable holding period will cease in the event of a change in control.

Accounting policies, financial instruments and risk

Details of the Group's accounting policies, together with details of financial instruments and risk, are provided in notes 1 and 17 to the Consolidated Financial Statements on pages 117 and 144.

Employment of disabled people

Rolls-Royce is an inclusive employer committed to building a diverse workforce. We give full and fair consideration to all applications for employment by disabled persons together with the continued employment of any employee who suffers disability whilst employed by the Group. All employees are able to take advantage of our training programmes in developing their careers and promotion opportunities are open to employees regardless of disability. For more information please see page 44.

Major shareholdings

At 31 December 2018, the following shareholders had notified an interest in the issued ordinary share capital of the Company in accordance with the DTR:

Shareholder	Date notified	% of issued ordinary share capital *
ValueAct Capital Master Fund, L.P.	1 February 2018	10.94
The Capital Group Companies, Inc	13 October 2017	5.07
Credit Suisse Group AG	3 May 2017	3.91

* Percentages are shown as a percentage of the Company's issued share capital when the Company was notified of the change in holding.

On 4 January 2019, in accordance with the DTR, BlackRock, Inc. disclosed an increase in their shareholding to 5.01% *. As at 28 February 2019, no further changes had been notified.

Directors

The names of the Directors who held office during the year are set out on page 63.

Directors' Indemnities

The Directors have the benefit of an indemnity provision contained in the Company's Articles of Association. In addition, the Directors have been granted a qualifying third party indemnity provision which was in force throughout the financial year and remains in force. Also, throughout the year, the Company purchased and maintained Directors' and Officers' liability insurance in respect of itself and for its Directors and Officers.

Disclosures in the Strategic Report

The Board has taken advantage of Section 414C(11) of the Act to include disclosures in the Strategic Report including:

- employee involvement;
- the future development, performance and position of the Group;
- the financial position of the Group;
- R&D activities;
- the principal risks and uncertainties; and
- particulars of important events affecting the Company since the financial year end.

Political donations

The Company's policy is that it does not, directly or through any subsidiary, make what are commonly regarded as donations to any political party. However, the Act defines political donations very broadly and so it is possible that normal business activities, such as sponsorship, subscriptions, payment of expenses, paid leave for employees fulfilling certain public duties and support for bodies representing the business community in policy review or reform, which might not be thought of as political expenditure in the usual sense, could be captured. Activities of this nature would not be thought of as political donations in the ordinary sense of those words. The resolution to be proposed at the AGM, authorising political donations and expenditure, is to ensure that the Group does not commit any technical breach of the Act.

During the year, expenses incurred by Rolls-Royce North America, Inc. in providing administrative support for the Rolls-Royce North America political action committee (PAC) was US$111,961 (2017: US$118,104). PACs are a common feature of the US political system and are governed by the Federal Election Campaign Act.

The PAC is independent of the Group and independent of any political party. The PAC funds are contributed voluntarily by employees and the Group cannot affect how they are applied, although under US law, the business expenses are paid by the employee's company. Such contributions do not count towards the limits for political donations and expenditure for which shareholder approval will be sought at this year's AGM to renew the authority given at the 2018 AGM.

Greenhouse gas emissions

In 2018, our total greenhouse gas (GHG) emissions were 596 kilotonnes carbon dioxide equivalent ($ktCO_2e$). This represents a decrease of 5% compared with 627 $ktCO_2e$ in 2017.

We have revised our total GHG emissions for 2017 to reflect the actual figures for the full year, rather than estimated figures prepared in line with our basis of reporting. This has had a material impact on previously reported figures. The figures for 2016, 2017 and 2018 include emissions associated with ITP Aero. Emissions associated with L'Orange have been removed from these figures but do not have a material impact.

We have included the reporting of fugitive emissions of hydrofluorocarbons (HFCs), associated with air conditioning equipment, into our GHG emissions figures from 2016. Figures from 2014 and 2015 exclude emissions from these sources. These include emissions from our facilities in the UK, US, Canada and France only. We do not anticipate that emissions from other facilities will have a material impact.

Total GHG emissions ($ktCO_2e$)	2014	2015☑	2016☑	2017☑	2018☑
Direct emissions (Scope 1)	456	374	368	331	305
Indirect emissions (Scope 2)	396	375	336	296	291
Total emissions (Scope 1 + Scope 2)	852	749	704	627	596
Intensity ratio (total emissions normalised by revenue) ($ktCO_2e$/£m)	0.062	0.055	0.047	0.043	0.038

☑ We engaged Bureau Veritas to undertake a limited assurance engagement, reporting to Rolls-Royce Holdings plc, using the assurance standards ISAE 3000 and ISAE 3410 over the energy, GHG, TRI rate and STEM data that has been highlighted with ☑ and as set out on pages 43 to 47 and in the table above. The sustainability assurance statement is included on page 197.

With the exceptions noted above, we have reported on all of the emission sources required under the Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013. These sources fall within our Consolidated Financial Statements. We do not have responsibility for any emission sources that are not included in our Consolidated Financial Statements.

We have used the GHG Protocol Corporate Accounting and Reporting Standard (revised edition) as of 31 December 2014, data gathered to fulfil our requirements under the Carbon Reduction Commitment (CRC) Energy Efficiency scheme and emission factors from the UK Government's GHG Conversion Factors for Company Reporting 2018.

Further details on our methodology for reporting and the criteria used can be found within our basis of reporting, available to download at www.rolls-royce.com/sustainability.

Branches

Rolls-Royce is a global company and our activities and interests are operated through subsidiaries, branches of subsidiaries, joint ventures and associates which are subject to the laws and regulations of many different jurisdictions. Our subsidiaries, joint ventures and associates are listed on pages 178 to 185.

Financial instruments

Details of the Group's financial instruments are set out in note 17 to the Consolidated Financial Statements.

Related party transactions

Related party transactions are set out in note 24 to the Consolidated Financial Statements.

Information required by UK Listing Rule (LR) 9.8.4

There are no disclosures to be made under LR 9.8.4.

Management report

The Strategic Report and the Directors' Report together are the management report for the purposes of Rule 4.1.8R of the DTR.

Disclosure of information to auditors

Each of the persons who is a Director at the date of approval of this report confirms that so far as the Director is aware, there is no relevant audit information of which the Company's auditor is unaware. The Director has taken all steps that he or she ought to have taken as a director in order to make himself or herself aware of any relevant audit information and to establish that the Company's auditor is aware of that information.

This confirmation is given, and should be interpreted, in accordance with the provisions of section 418 of the Act.

SHAREHOLDER INFORMATION

Financial calendar 2019-2020

APR 2019

25 APRIL
Ex-entitlement to C Shares

26 APRIL
Record date for entitlement to C Shares

MAY 2019

2 MAY 11.00AM
AGM
Ashton Gate Stadium
Ashton Road
Bristol
BS3 2EJ

JUN 2019

3 JUNE 5.00PM
Deadline for receipt by Registrar of C Share instructions (3.00pm for CREST holders)

3 JUNE
Record date for cash dividend on C Shares

JUL 2019

1 JULY
Allotment of C Shares

2 JULY
Payment of cash dividend on C Shares

4 JULY
Payment of C Share redemption monies

22 JULY
New share certificates issued (at the latest)

AUG 2019

6 AUGUST
Announcement of half-year results

SEP 2019

OCT 2019

24 OCTOBER
Ex-entitlement to C Shares

25 OCTOBER
Record date for entitlement to C Shares

NOV 2019

15 NOVEMBER
Record date for cash dividend on C Shares

DEC 2019

2 DECEMBER 5.00PM
Deadline for receipt by Registrar of C Share instructions (3.00pm for CREST holders)

31 DECEMBER
Financial year end

JAN 2020

3 JANUARY
Allotment of C Shares

6 JANUARY
Payment of cash dividend on C Shares

6 JANUARY
Payment of C Share redemption monies

20 JANUARY
New share certificates issued (at the latest)

FEB 2020

MAR 2020

FEBRUARY/ MARCH
Announcement of full-year results and Annual Report published

Managing your shareholding

Your shareholding is managed by Computershare Investor Services PLC (the Registrar). When making contact with the Registrar please quote your Shareholder Reference Number (SRN). This is a 10-digit number prefixed with the letter 'C' that can be found on the right-hand side of your share certificate or in any other shareholder correspondence.

You can manage your shareholding at www.investorcentre.co.uk, speak to the Registrar on +44 (0)370 703 0162 (8.30am to 5.30pm Monday to Friday) or you can write to the Registrar at Computershare Investor Services PLC, The Pavilions, Bridgwater Road, Bristol BS13 8AE.

If you hold your shares in a share dealing account (sometimes referred to as a nominee account) then you must contact your account provider with any questions about your shareholding.

Payments to shareholders

The Company makes payments to shareholders by issuing redeemable C Shares of 0.1p each. You can redeem C Shares for cash and either take the cash or reinvest the cash to purchase additional ordinary shares providing you complete a payment instruction form, which is available from the Registrar. Once you have submitted your payment instruction form, you will receive cash or additional ordinary shares each time the Company issues C Shares. If you choose to receive cash we strongly recommend that you include your bank details on the payment instruction form and have payments credited directly to your bank account. This removes the risk of a cheque going astray and means that cleared payments will be credited to your bank account on the payment date.

Share dealing

The Registrar offers shareholders an internet dealing service at www.computershare.co.uk and a telephone dealing service (+44 (0)370 703 0084). Real-time dealing is available during market hours, 8.00am to 4.30pm, Monday to Friday excluding bank holidays. Orders can still be placed outside of market hours. The fee for internet dealing is 1% of the transaction value subject to a minimum fee of £30. The fee for telephone dealing is 1% of the transaction value plus £35. Stamp duty of 0.5% is payable on all purchases. This service is only available to shareholders resident in certain jurisdictions. Before you can trade you must register to use the service. Other share dealing facilities are available but you should always use a firm regulated by the FCA (see www.fca.org.uk/register).

Your share certificate

Your share certificate is an important document. If you sell or transfer your shares you must make sure that you have a valid share certificate in the name of Rolls-Royce Holdings plc. If you place an instruction to sell your shares and cannot provide a valid share certificate, the transaction cannot be completed and you may be liable for any costs incurred by the broker. If you are unable to find your share certificate please inform the Registrar immediately.

American Depositary Receipts (ADR)

ADR holders should contact the depositary, JP Morgan, by calling +1 (800) 990 1135 (toll free within the US) or +1 (651) 453 2128 (outside the US) or emailing adr@jpmorgan.com.

Warning to shareholders – investment scams

We are aware that some of our shareholders have received unsolicited telephone calls or correspondence, offering to buy or sell their shares at very favourable terms. The callers can be very persuasive and extremely persistent and often have professional websites and telephone numbers to support their activities. These callers will sometimes imply a connection to Rolls-Royce and provide incorrect or misleading information. This type of call should be treated as an investment scam – the safest thing to do is hang up.

You should always check that any firm contacting you about potential investment opportunities is properly authorised by the FCA. If you deal with an unauthorised firm you will not be eligible for compensation under the Financial Services Compensation Scheme. You can find out more about protecting yourself from investment scams by visiting the FCA's website at www.fca.org.uk/consumers, or by calling the FCA's consumer helpline on 0800 111 6768 (overseas callers dial +44 20 7066 1000). If you have already paid money to share fraudsters contact Action Fraud immediately on 0300 123 2040, whose website is www.actionfraud.police.uk.

Remember: if it sounds too good to be true it probably is.

Visit Rolls-Royce online

Visit www.rolls-royce.com to find out more about the latest financial results, the share price, payments to shareholders, the financial calendar and shareholder services.

Keeping up to date

You can sign up to receive the latest news updates to your phone or email address by visiting www.rolls-royce.com and registering for our alert service.

Dividends paid on C Shares held

C Share calculation period	C Share dividend rate (%)	Record date for C Share dividend	Payment date
1 July 2018 – 31 December 2018	0.30	16 November 2018	3 January 2019
1 January 2018 – 30 June 2018	0.22	4 June 2018	3 July 2018

Previous C Share issues

	Apportionment values					CGT apportionment				
Issue date	No. of C Shares issued per ordinary share	Record date for entitlement to C Shares	Latest date for receipt of payment instruction forms by Registrar	Price of ordinary shares on first day of trading (p)	Value of C Share issues per ordinary shares (p)	Ordinary shares (%)	C Shares (%)	Date of redemption of C Shares	CRIP purchase date	CRIP purchase price (p)
3 January 2019	46	26 October 2018	3 December 2018	788.20	4.6	99.42	0.58	7 January 2019	8 January 2019	846.0466
2 July 2018	71	27 April 2018	1 June 2018	975.00	7.1	99.28	0.72	5 July 2018	5 July 2018	983.6912

For information on earlier C Share issues, please refer to www.rolls-royce.com.

Analysis of ordinary shareholders at 31 December 2018

Type of holder	Number of shareholders	% of total shareholders	Number of shares	% of total shares
Individuals	170,690	97.65	87,362,888	4.61
Institutional and other investors	4,112	2.35	1,808,347,563	95.39
Total	174,802	100.00	1,895,710,451	100.00
Size of holding (number of ordinary shares)				
1 – 150	56,186	32.14	5,128,416	0.27
151 – 500	84,667	48.44	22,851,592	1.21
501 – 10,000	32,298	18.48	49,522,520	2.61
10,001 – 100,000	1,143	0.65	31,244,558	1.65
100,001 – 1,000,000	334	0.19	113,567,593	5.99
1,000,001 and over	174	0.10	1,673,395,772	88.27
Total	174,802	100.00	1,895,710,451	100.00

GLOSSARY

ABC	anti-bribery and corruption
ACARE	Advisory Council for Aviation Research and Innovation in Europe
AGM	Annual General Meeting
AMRCs	Advanced Manufacturing Research Centres
AOG	aircraft on ground
Articles	Articles of Association of Rolls-Royce Holdings plc
ASC	Authorised Service Centres
bps	basis points
Brexit	UK exit from the European Union
C Shares	non-cumulative redeemable preference shares
C&A	commercial and administrative
CARs	contractual aftermarket rights
CEO	chief executive officer
CFO	chief financial officer
CGT	capital gains tax
Our Code	Global Code of Conduct
revised Code	UK Corporate Governance Code 2018
the Code	UK Corporate Governance Code 2016
Company	Rolls-Royce Holdings plc
CPS	cash flow per share
CRIP	C Share reinvestment plan
CROIC	cash return on invested capital
DJSI	Dow Jones Sustainability Index
DoJ	US Department of Justice
DPAs	deferred prosecution agreements
DTR	the FCA's Disclosure Guidance and Transparency Rules
EASA	European Aviation Safety Agency
ELG	Enterprise Leadership Group
EPS	earnings per share
ERG	employee resource group
ESG	environment, social and governance
EU	European Union
EUR	euro
EVTOL	electric vertical take-off and landing
FCA	Financial Conduct Authority
FCF	free cash flow
FRC	Financial Reporting Council
FTE	full time equivalent
FX	foreign exchange
GBP	Great British pound or pound sterling
GHG	greenhouse gas
Group	Rolls-Royce Holdings plc and its subsidiaries
HSE	health, safety and environment
IAE	International Aero Engines AG
IASB	International Accounting Standards Board
IFRS	International financial reporting standards
ITP Aero	Industria de Turbo Propulsores S.A.
KPIs	key performance indicators
$ktCO_2e$	kilotonnes carbon dioxide equivalent
kW	kilowatts
LGBT+	lesbian, gay, bisexual and transgender
LIBOR	London inter-bank offered rate
LTIP	long-term incentive plan
LTPR	long-term planning exchange rate
LTSA	long-term service agreement
MOU	memorandum of understanding
MPF	Ministério Público Federal, Brazil
MRO	maintenance repair and overhaul
MW	megawatts
NCI	non-controlling interest
NOx	nitrogen oxide
OCI	other comprehensive income
OE	original equipment
OECD	Organisation for Economic Co-operation and Development
OEM	original equipment manufacturer
P&L	profit and loss
PBT	profit before tax
PPE	property, plant and equipment
PSMS	product safety management system
PSP	performance share plan
R&D	research and development
R&T	research and technology
REACH	registration, evaluation, authorisation and restriction of chemicals
Registrar	Computershare Investor Services PLC
RRSAs	risk and revenue sharing arrangements
SENER	SENER Grupo de Ingeniería, S.A.
SFO	UK Serious Fraud Office
SMR	small modular reactors
SSA	Special Security Agreement
STEM	science, technology, engineering and mathematics
TCFD	Taskforce on Climate-related Financial Disclosures
Trent 1000 TEN	Thrust, Efficiency and New technology
TRI	total reportable injuries
TSR	total shareholder return
USD/US$	United States dollar
UTCs	University Technology Centres

Trade marks

The following trade marks which appear throughout this Annual Report are trade marks registered and owned by companies within the Rolls-Royce Group:

BR710®
CorporateCare®
Flex®
Gnome®
LiftSystem™
MTU®
MTU PowerPacks®
Pearl®
Pioneering the power that matters™
RB211®
Reman®
TotalCare®
Trent®
UltraFan®

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Rolls-Royce Holdings plc
Registered office:
62 Buckingham Gate
London
SW1E 6AT

T +44 (0)20 7222 9020
www.rolls-royce.com

Company number 7524813