



CORPORATE PARTICIPANTS

D. Warren A. East *Rolls-Royce Holdings plc - CEO & Executive Director*

Jennifer Ramsey *Rolls-Royce Holdings plc - Head of IR*

Stephen Wayne Daintith *Rolls-Royce Holdings plc - CFO & Executive Director*

CONFERENCE CALL PARTICIPANTS

Andrew Edward Humphrey *Morgan Stanley, Research Division - VP*

Andrew Paul Gollan *Joh. Berenberg, Gossler & Co. KG, Research Division - Senior Analyst*

Harry William Freeman Breach *MainFirst Bank AG, Research Division - Research Analyst*

Unidentified Analyst -

PRESENTATION

Jennifer Ramsey *Rolls-Royce Holdings plc - Head of IR*

Great. Okay. So thank you for joining us here at the London Stock Exchange and for those of you joining online. My name is Jennifer Ramsey, and I lead the Investor Relations team at Rolls-Royce. It's my pleasure to welcome you to the 2019 half year results.

The agenda for today's presentation is that Warren will start with a presentation to talk around his perspectives of the business, the progress we've made in the first half. And Stephen will, our Chief Financial Officer, will talk about our financial results. And then Warren will round up with his view for the year ahead.

Our presentation today is expected to take around 50 minutes and then we'll have time for Q&A, and that will be both from the audience and online, if you can feed those through online. And if you wish to ask a question, you can do that through the webcast services if you're online. We'll endeavor to those -- answer those questions along with those in the room.

Finally, can I ask you to switch off your mobile phones so that we make sure there's no interference. And we're not expecting any emergencies today, so if an alarm does go off, please make an orderly exit.

And with that, I'll hand over to Warren. Thank you.

D. Warren A. East *Rolls-Royce Holdings plc* - CEO & Executive Director

Good. Thanks very much, Jennifer. Good morning, everybody. Thank you all for coming out and joining us. And I was just sort of looking at the number of chairs in the room and thinking that either something must be going on or it's the middle of summer. So for those of you who made it here, thank you very much. I'll do a little overview of sort of from a group perspective and then a summary by business.

So starting off with a slide with which you're familiar, sort of key numbers. And we summarized this whole sort of set of results really when we were talking about it as further progress. And I think you can see some progress in these numbers. And as we get into more detail, you will see progress on both financial performance, from an operational point of view and from a strategic point of view. And I hope we can cover all that in this presentation.

But anyway, to start with, we're pleased to see a good uptick in underlying revenue and a growth in operating profit driven by our Civil Aerospace business, approaching breakeven, and good strong growth in Power Systems as well. And obviously that drove an increase in underlying profit before tax.

Core free cash flow was an outflow of approaching GBP 400 million. That is normal seasonality, and Stephen will talk about the drivers of that, but there's quite a bit of inventory build in that, which in absolute terms was a similar level to the inventory build that we saw in the first half of last year.

The dividend per share, constant for now. And obviously that's a matter for our Board to discuss in due course. But for the time being, that's constant. Underlying EPS looks like a very disappointing number. There is an associated change in a tax charge that sits behind that, and I'm sure we can cover that in the detail.

Looking at highlights from all around the business. Civil Aerospace, obviously 50% of our business, good engine flying hour growth, about 8% engine flying hour growth. And we were very pleased to see the OE loss reduced for our large engines. I'm pleased to see good progress on the Trent 1000 issues, and I'll talk about that in a little more detail in a short while. And around the turn of the year, there were some serious questions around Trent 7000, and that's the engine that powers the A330neo. And it's good to see a big turnaround in Trent 7000 shipments, and so we saw a good number of those being delivered in the first half of the year.

Power Systems, very healthy progress in the first half. Good bookings. Book-to-bill ratio, 1.1. We're seeing continued steady progress on connectivity in the installed base, which is driving a shift towards more long-term service agreements. That's sort of data connectivity of the engines that are out there driving that shift. But the order is really being driven by PowerGen-type applications and a move to more systems away from pure standalone engines.

Defence, again, a good first half, very strong order intake, book-to-bill of 1.5. And along with that order intake came some healthy customer deposits. That is part of the business model that sits behind Defence where we get paid early. So it's a -- that's the sort of financial dynamics of that business, so that was good to see some of those payments coming through. It was also good to see some of the efficiency improvements in our U.S. operations coming through to offset some of the lower-margin activities that we saw elsewhere in the business. And again, I'll talk about that bit more, later.

In ITP, I think good revenue growth. Clearly, it's exposed to Civil Aerospace, exposed to our Civil Aerospace business and others. And we're seeing growth right across the piece there. Lower profit, this is phasing of different programmes. And so actually, what's driven the lower profit is more of an engine mix issue, and we'll see that mix issue change with phasing in the second half of the year.

More generally, across the group, our restructuring programme, in line with our plans set out at the Capital Markets Day in June 2018. And the summary on financial, I think we can see good revenue growth. We are comfortable with the free cash flow phasing, its typical seasonality. And if I look to the balance sheet, an improvement in net cash position. And so later on, we'll discuss why we remain comfortable with the GBP 700 million free cash flow expectation for the year as a whole.

Now I'm going to step through 3 slides with slightly different perspectives. First from a shareholder perspective, then I'll look to a sort of external perspective and then I'll look at an employee perspective. So as far as an ownership sort of perspective is concerned, this is a reminder of the goals that we set out at our Capital Markets Day just over a year ago. And those goals have not changed one bit, and we remain absolutely on track to deliver on those goals.

So free cash flow ambition, going out beyond 2019 to at least GBP 1 billion in 2020 and GBP 1 per share of free cash flow as a midterm ambition. We are comfortable with those goals. We talked last year about disciplined capital allocation, and we're comfortable with how we're doing that at the moment. And in terms of strengthening the balance sheet, we completed some disposals this year, and that was good to see.

I think I'd remind people, at this stage, it's not just about disposals. So you saw some bolt-on acquisition activity that's happening as well, and that's helping us accelerate some of our strategic initiatives. We set out a type to that capital allocation. We set out some goals in terms of quality of cash return. And again, we're comfortable that we're still on track to return that measure through the cycle.

And as far as payment to shareholders is concerned, then it's not really a 2019 issue for us. As I've said, that's constant for the time being, but we're absolutely confident that we can start returning to some sensible levels sometime very soon. But the basic point is, what we set out at the Capital Markets Day a year ago, we're comfortable with those goals.

If I switch now to more of an external perspective. One thing we've noticed over the last 6 months is a little bit of a aviation as being set up as the villain of the piece as far as environmental damage is

concerned. Well, yes, aviation is built on setting fire to hydrocarbons. And we've been talking for some time about the fact that we, along with a whole load of other sectors, need to wean ourselves off that and wean ourselves off it quite quickly. But from a business point of view, we would contend that it's up to us and our customers and others in the ecosystem to lead rather than react to public opinion. And so we are about creating a more sustainable future. But I think it's important as a business that we remember we have to generate the returns now in order to fund the R&D that's required to make those changes.

So if I look at our products, well, our products do probably drive -- they drive the carbon footprint. They are about converting stored energy into useful power. And today, that stored energy is in the form of hydrocarbon fuels. But our engines continue to get more efficient. Most of our R&D is spent on making those engines more efficient. Some portion of our R&D is around new technologies, particularly around electrification to address this issue.

Internally, from an operational point of view, we've set ourselves a goal to be zero carbon, except for that, that we use to test our gas turbines by 2030. And we're comfortable with that goal. And from a people point of view, within the business, we think it's important to create an environment and a culture for the people of the next several decades. And so we're setting about doing that.

So talking of people and internally and the changes that we have to make to our business internally, the key objective is really not in the key objectives box. It's here on the left-hand side of this slide. The key objective is basically to create a more sustainable, but importantly, competitive business. And in order to do that, we are setting about reducing our central costs. We are setting about making sure that decisions are made closer to the customers within businesses. And I'm pleased with the progress that we're making on those objectives.

If I quantify some of that in terms of run rate cost savings from our restructure programme, we are saying with our release this morning GBP 134 million run rate cost reduction from the restructure programme so far. Obviously we set out last year GBP 400 million annualized run rate by the end of 2020. And at GBP 134 million to date, we believe we are actually on track.

You'll see more in the second half as we, flipping down to the bottom of the slide, as we make more progress on simplification. I've talked a little bit about the balance sheet and simplifying the portfolio. But internally, we're concentrating on introducing new systems, new processes. These are new systems dealing with people and talent management; finance and how we handle our finances; engineering, how we design our products; product change processes, how we ensure the integrity and safety of our products when we make design changes to reduce costs; purchasing and so on and so on. And these are not incremental tweaks to our systems and processes. This is where we're taking out as much as 50% of the steps in processes affecting thousands of people around the group.

So we've been putting the building blocks in place to make many of those changes over the last 12 months. And we're actually initiating using some of those, some of those new processes right now in Q3.

And that will translate into further headcount reduction in the second half of this year. And so we expect to be at about 2,700 headcount reduction by the end of this year.

So now a little bit of a business update, looking around all the businesses. I'll start with Civil Aerospace, obviously our largest business. I'm pleased to see flying hour growth at 8%. That's ahead of market traffic growth. That's really because, of course, our fleet is growing, and it was pleasing to see that being driven by Trent 1000 and XWB.

XWB has also been a key driver in the reduction of the OE loss that we make, the loss that we make when we sell each engine. So on XWB, that came down by 1/3 over the last 6 months. And that contributed to an average reduction year-on-year of GBP 0.2 million or 13%, which we're quite pleased with.

Trent 7000. There were a few questions at the turn of the year around Trent 7000 and the rate at which we were able to deliver these engines. That rate improved in the first quarter of the year and sustained in the second quarter of the year. And so by the halfway through the year, we've delivered over 50 of these engines and we're comfortable that, that is now in production.

XWB, I mentioned great as a driver for engine flying hour growth and unit cost reduction. If we just look at the stats for that particular engine now, it accounts for 11% of our fleet. So the reason we're so keen on things like the average cost of an XWB and the loss that we won't be making, that we'll actually be breakeven by the end of 2020 on XWB, is because it is the largest volume engine coming out of Rolls-Royce over the next several years. So far, that engine is with -- is operating very reliably with 27 airlines around the world and it's clocking up plenty of flying hours.

Business aviation. We shouldn't forget business aviation. There's a lot of emphasis on large engines when we talk about our Civil Aerospace business. 12 months ago, I stood here and surprised everybody with the launch of the Pearl family and the Pearl 15. We've now completed all the necessary certification around the Pearl 15 so that, that will enter service between -- sometime between now and the end of the year. And it's up to the airframer and not us anymore because we've delivered everything we need to deliver in terms of a production standard engine. And that's giving us a lot of confidence around the Pearl family and the opportunity that, that gives us to gain further market share in the business aviation sector.

I can't not talk about Trent 1000. So let me start by saying this is still causing a number of our customers significant disruption. And our main focus when we talk about Trent 1000, obviously we report it to the investor community, but our main focus is our customers because these are the people who've bet the farm on choosing Rolls-Royce engines for their Dreamliners, and we are causing some disruption. The good news is we're causing an awful lot less disruption than we were causing 12 months ago. The number of aircraft on the ground today is about half of what it was a year ago, which is very encouraging.

And that happened because we have got on with redesigning blades. We're now in the Pack C version. You can see Pack C accounts for approximately 50% of the Trent 1000 fleet. Every time we're replacing compressor blades on Pack Cs, we're replacing with certified new blades and so that engine flies off and it's healthy. And that's why I say that the health of the Trent 1000 fleet is steadily improving. It's a steady improvement because a lot of those engines are flying around absolutely fine and they won't need replacing for some time. So it is going to take us a while to roll the new design into all of the fleet. There's no need to do that immediately. The other versions of the engine, the redesigns of the compressor blades are underway. And we expect the TEN version to be ready for installation before the end of this year with Pack Bs following soon after that.

However, earlier this year, switching to the far right-hand side of the slide now, we did find that the reduced life expectancy of the high-pressure turbines on the TEN version of the Trent 1000 turned out to be even more reduced than we expected it to be. So the life limit of 1,000 cycles, let's be clear, is completely unacceptable for a typical customer. And so we were redesigning the turbine blades. However, we found that some of these blades come off a couple of hundred cycles before then and need replacing sooner. So even more unacceptable for our customers. We've obviously spent quite a lot of time and effort investigating this. We anticipate that this will affect around 1/3 of our TEN fleet. And you can see the portion of the overall fleet which is TEN, and so you can see what 1/3 of that would look like.

And in order to deal with that problem, at the moment, we're redesigning the blades. We're also managing those affected airplanes. That is putting an additional load on our repair and overhaul facilities. We've already grown our repair and overhaul facilities, but this additional load is extending the turnaround times in those shops. And that means that for the Pack Bs and Pack Cs in the middle of the slide there, we are going to take a little bit longer to return those fleets to a position of single-digit aircraft on ground. It is possible we'll get there for the end of the year. But it's also very possible that the polluting effect of the TEN will cause that to delay a bit longer. And that, unfortunately, is where we are. I'm still pleased with the progress we're making on managing and fixing all these issues, but the reality is that we've still got a lot of hard work to do before it's out of the way.

So that's Trent 1000. That's Civil Aerospace. Moving to Power Systems. Power Systems, this is a picture of a data center because quite a lot of our Power Systems products go into backup power supplies for a data center. I was very keen to have a data center picture that looked unambiguously like a data center rather than a factory, so you get the inside view, not the outside view. The reason I was keen on that is because this is a sector that, if we were actually playing in it, is growing at a compound annual growth rate of 25% or so per annum. So that fuels a huge demand for backup power, and that's why we're seeing such a lot of backup power demand in this sector for our Power Systems.

That's helped drive a very healthy order intake. And additionally, the regional penetration of these products is small in some parts of the world, and we see a fantastic opportunity to grow our market share in some of those areas. Our business here is much more resilient than that of some of our competitors, which is -- whose businesses are more narrowly focused on certain sectors. We have a very broad spread of applications in our Power Systems business, and that makes it much more resilient than

some of our competitors. That regional penetration did contribute to some of the inventory build, by the way, and I think Stephen will talk about that in a few moments.

I'm pleased to see the operating profit performance as well. And if I look towards the right-hand side of the slide and look towards the future, we see a continuous evolution in the markets and applications for our Power Systems business. And we're very excited by microgrids where our products are enabling the uptake of renewable power and renewable power technologies. And microgrids, generally, I had a picture of a train at the last presentation, that's a microgrid that hybrid trains -- a microgrid that goes along the railway track. We're seeing quite a lot of stationary applications now in renewable power, and we've established a joint venture activity or a partnership activity with ABB to accelerate that.

Defence. Defence really characterized by strong order intake and associated customer deposits that's coming with that. I talked about efficiency. And in the modernization box there, our facility in Indianapolis, we embarked on a modernization programme a few years ago. We're seeing that come through now. We're starting to actually produce in the new facilities. We're busy demolishing some of the older facilities. And that extra efficiency is enhancing the profitability of those products, which is helping to offset some of the profitability headlines -- headwinds, rather, we're seeing in other parts of the business. It's been a healthy period for sales on the F-35. And it's been a healthy period for future products and future opportunities as well, both a couple there in the U.K., Tempest and the hypersonics programme announced by the MoD a little while back, but also elsewhere around the world.

And finally, on ITP Aero, good to see the revenue growth there, as I say, heavily exposed to the Civil Aerospace sector generally. About half of the business being Rolls-Royce, so we know jolly well the growth that ITP is exposed to there. There was a temporary product mix effect, which we will see unwound. And we're actually investing in that business and continuing to grow it, investment in new facilities. As far as new technology is concerned, we're collaborating with the folks at ITP around some of our new technologies in UltraFan.

With that, I'm going to hand over to Stephen, and he's going to talk through the results in a bit more numerical detail. Thank you.

Stephen Wayne Daintith *Rolls-Royce Holdings plc - CFO & Executive Director*

Okay. Good morning, everybody. Thank you, Warren. So our results for the first half. First of all, a reminder of our reporting format. Our core business, Civil Aerospace, Power Systems and Defence and ITP Aero, that's our core business, and firmly cementing ITP in there as a core business for us.

Our half year results, pretty much as we expected 6 months in. Good revenue growth across the group, 7% core business underlying growth. And good profit growth as well, growing to GBP 203 million of operating profit. We also see the typically seasonal first half cash outflow. If you look back over the last sort of 5, 10 years, you'll see this in Rolls-Royce. We build in the first half of the year, we deliver in the second half of the year, so it's pretty typical seasonality. And I'll go into the drivers of the free cash flow in a little while.

Looking at the income statement through a slightly different lens, broken down into its parts. There's the revenue growth again. Gross margin, improving somewhat, the gross margin percentage, and actually quite pleasing when you consider that we highlighted the Civil Aerospace drag on gross margin in the first half of 2019 due to the mix of shop visits, and I'll come to that point shortly.

Commercial and admin costs, I'll talk about this, probably the one more disappointing number in our results today. We want to make more progress there. We expect to in the second half and even more progress in 2020. R&D costs are up slightly, but at cash cost, they come down because we're capitalizing less R&D than we did previously, just to explain that number.

There's the profit growth. The financing costs, that includes the first-time inclusion of the costs attached to the IFRS 16 inclusion for the capitalized assets, which come into our accounts for the first time as from January. And there's the cash flow number down at the bottom there and cash flow per share.

So looking at the -- on our revenue streams and the mix of revenue streams. All revenue streams growing nicely. I think probably what's most encouraging, LTSA service revenue, high-margin business, growing very well, 14%; organic change of 13% revenue growth. Service revenue is still growing nicely as well. A lot of this is the time and material type of revenue in Civil Aerospace on some of our older legacy engines. But OE revenue is growing at 4% around deliveries in Power Systems and Civil Aerospace.

And looking at the mix of our revenues. We now have 54% of our revenues as service revenues, and this is going to be a growing proportion of our revenue base as well. So higher margin and growing proportion of our revenue mix over the next 5 years.

So the progress on our key levers. Now these are the key levers that we called at our Capital Markets Day pretty much this time last year. And we highlighted 3 core drivers that between them would contribute GBP 1.75 billion of incremental cash flow to Rolls-Royce in the midterm.

Those 3 core drivers are: first of all, reducing the loss on the engines -- on the unit loss on each engine that we sell in Civil Aerospace, wide-body engine deficit reduction; secondly, the improved aftermarket cash margin, the receipts that we collect from our airlines in advance of the shop visits and the margin when you compare the costs, the receipts against the cost, and I'll show that in a second; and then bending the fixed cost curve, bringing down the proportion of our revenues that we put towards R&D, CapEx and commercial and admin costs.

Progress achieved against those targets on each of those. I'm going to go through the detail of them, but in short, we've seen a GBP 50 million benefit in the half on the OE deficit reduction. We've seen a further GBP 100 million benefit in the improved aftermarket cash margin. And we continue to bring down the proportion of costs that we're applying to R&D, CapEx and commercial and admin costs.

So a bit more detail on each of those. First of all, so GBP 200,000 improvement per engine, that's half

year on half year. That's GBP 1.5 million to GBP 1.3 million half year versus half year loss per engine. Over 250 engines, that gives you your GBP 50 million benefit in the half year.

And you can see the wide-body deliveries, 257 delivered. We've put 14 in there, that's made up of 239 installed and 18 spare engines, 1 spare engine lower than the first half of last year. And I'll come back to that 18 number when we talk about the second half and what's anticipated there for spare engines. But we've also highlighted 14 engines here that have been shipped. They're sitting on the assembly line of the airframers. So that's part of our inventory build, this inventory that's just waiting for -- ready to be invoiced. We've got a further 36 completed engines in inventory, so 50 in total. At the end of the year, we'll be closer to 15, so I'll come back to that number shortly when I explain the inventory build.

Looking at the top right, a very nice and successful transition to the Trent 7000. So just comparing first half last year with first half this year, we invoiced 41 Trent 700s pretty much coming to the end of its OE life. But starting its OE life, the Trent 7000s, 61 -- sorry, 54 Trent 7000s and just 7 Trent 700s. So a very successful transition to that new engine.

Bottom left there, engine sales volumes. You can see how the mix is changing. These big 4 engines are going to dominate our OE production in Civil Aerospace over the next 10 years, which will shift -- make for, I would hope, a better coordinated supply chain and assembly line in Civil Aerospace as well and the benefits that will come from that. And there on the bottom right is the improvement that we've made over the various halves on the wide-body average loss per engine.

The aftermarket cash margin. The biggest single driver of our cash flow growth in the midterm is going to be the aftermarket cash margin. Remember that GBP 750 million aggregate improvement compared to 2017. In the half, we saw a GBP 100 million improvement half year versus half year. And what this chart does is highlight the income that comes in, at the top half of this chart and down at the bottom here are the costs to the income, is driven by the size of the installed base. The flying hours that, that installed base generates, 6.9 million engine flying hours this time last year, 7.5 million in the first half this year. That's an 8% growth. We're pleased with that growth. And that comes on the back of, if you recall, the 20% growth in the first half last year. So 20% and then 8%, that's 2 periods of good growth, driven by the installed base, the size of the installed base, but also the increased utilization of our engines as well. Being newer engines, that's an important factor in this one.

And then down below, what's the cost side of the equation? It's the cash costs, an important difference here. This is the cash cost of the shop visits that take place during the period. So in the first half last year, we had 137 major refurbs; and 141, pretty much the same number. These are the scheduled shop visits that take place.

The check and repair though, a very different dynamic. About 20% growth in check and repair visits. Shorter visits often at customer request and a big growth there in that. And that's driving the 18% growth that we're seeing in the long-term service agreement revenues in Civil Aerospace. That's the driver of that growth, not the engine flying hours itself. An important point on this one, we recognize the

revenue and the profit in the aftermarket when the shop visit takes place. We're collecting cash all the time. We recognize the revenue and the profit only when the service takes place. That's why the volume of shop visits is an important dynamic.

One thing -- one more thing to say as well about this. Gross margin will be highly dependent period-on-period by the mix of shop visits that take place in the reporting period. In the 141 shop visits in the first half of this year, we had a lot more Trent 900 and 1000 visits than we had, say, 700 visits in the mix this time last year. 700, higher-margin business; 1000, 900, less good. And that explains the gross margin impact that we called out, the net potential negative gross margin in the aftermarket cash margin.

So GBP 100 million improvement in the underlying cash margin. Typically, we're expecting anywhere between sort of GBP 150 million to GBP 200 million per annum, so very much on track for the overall improvement in the aftermarket cash margin.

The third driver, bending the fixed cost curve. Core cash R&D at 6% of sales. Important to note here that we are coming out of investment cycle. We've brought to the market 7 new engines, Civil Aerospace, over the last 10 years. There's been a 70% increase in our R&D, looking at the bottom right-hand corner there, in R&D since 2010. So the 6% midterm ambition is very much in line with industry peers. If you look around, that's pretty much the industry standard, that 60 -- 6% there.

Core CapEx as a percent of sales, we've built capacity across our particularly OE line over the last few years to accommodate that ramp-up in OE deliveries. We expect it and aspire to a midterm ambition of 4% of sales. We're already in this year bringing down our CapEx by about GBP 75 million. R&D, should have mentioned, is coming down by GBP 100 million this year. That's the guidance that we've given. What you will see though in capital expenditure, you'll see a change in mix in CapEx over the next few years as we invest more in our MRO supply chain to accommodate that growing service business. That's certainly what you would expect.

C&A cost as a percentage of sales, I think this is where we would like to see more progress in the second half and certainly into 2020. And then finally, on the -- I just talk on the right-hand side there about R&D and CapEx. An important point as well is that the R&D cash cost reduction is largely driven by headcount reduction. The 1,300 heads that left the company last year as part of our restructuring, 2/3 of that were in engineering. So you would expect to see most of the benefits from restructuring that was carried out last year in our R&D line rather than the C&A line.

So -- and I should call out as well that what you will see over the next few years is R&D in Defence rising somewhat for some exciting initiatives that we have in there, largely around -- sorry, and largely around electrification, the growing investment there as well, which Warren talked about as part of his presentation.

So the progress on restructuring. The top part of this chart shows where we are year on -- for each reporting period on the gross headcount reduction, the net headcount reduction and then the

cumulative at the end of the period. So at the end of 2018, we had a net headcount reduction of 1,300 heads, a gross reduction of 2,000. The first half, 540 gross headcount reduction; net 300. Therefore, at this stage, we're 1,600 heads into our 4,600 headcount reduction.

We have had some questions is that, can't you move at a faster pace? What we're addressing at Rolls-Royce is the underinvestment in technology, systems and process. And Rolls-Royce, over many years, its investment has gone into, as one might imagine, gas turbine engines. We're addressing that. So therefore, it's not so easy to take headcount out in the absence of that investment, which we're now putting back in to allow for the headcount reductions to take place.

During 2019, we will, notwithstanding that comment, see a further net headcount reduction of 1,400, taking us to a cumulative net headcount reduction of 2,700. And then in -- by 2020, delivering the full 4,600 headcount reduction. Table down -- at the bottom half of this table there shows the cash cost for each period and also the P&L charge as well. And highlighting once again the run rate savings at the period end of GBP 134 million that Warren called out.

Summary funds flow, really important slide. What we do with this table is we reconcile our underlying operating profit, the GBP 203 million that you'll recognize from those earlier slides, with the trading cash flow and, subsequently, the group free cash flow that we're reporting today. This is not the reported profit which, of course, is netted on a different base. So they have adjustments in between, we have Forex and so on, so this is the underlying operating profit that you saw in those previous slides.

Okay. So let's go through this. There are 5 key drivers of the free cash flow outflow of GBP 391 million compared to the operating profit of GBP 203 million. First of all, we do have higher profit, GBP 62 million. Inventory build, you'll see here inventory is GBP 433 million, higher than it was at the start of the year, not dissimilar though from the build that we saw to Warren's earlier comment in the first half of last year.

The Civil Aerospace net LTSA balance change, this represents the deferred revenue, the cash that we've received from our customers that we're not trading through the profit and loss account in the period. I've got a table that shows that in a second.

The movement on provisions -- sorry, I should say the change in net receivables/payables is GBP 391 million. That's almost entirely driven by the customer deposits that we saw in Defence that Warren mentioned, around GBP 300 million attached to those customer deposits in Defence, largely around 2 Ministry of Defence contracts and 1 Middle Eastern contract. So very good order wins there and the deposits that flowed with them. The movement on provisions of GBP 271 million, that's almost entirely made up of the Trent 1000 cash costs that we incurred in the first half of the year. Net interest paid and received, not much to talk about there.

And getting us down to our trading cash flows, let me just go through those key items, the 5 key drivers: the profit, the inventory build, customer deposits, the further growth in the receipts and the Trent 1000

costs. So the key drivers of the cash flow performance, underlying profit. Underlying profit across the group, clearly for the second half of the year, we're going to expect to see further improvement. If we're going to deliver our operating profit guidance of GBP 700 million, GBP 500 million of underlying operating profit expected in the second half of the year.

Inventory, down GBP 433 million. That reflects the typical seasonality and planned inventory build in Civil Aerospace and Power Systems. I've got a chart in a second that shows that detail. We expect to see in the second half of the year at least a GBP 500 million unwind in the second half. You'll recall that when we gave guidance for our 2019 cash flow, we did indicate that it would be an inventory upside or wind-down from the opening position at the start of 2019. So clearly, given that sort of GBP 433 million increase, there's a GBP 500 million-plus improvement expected in inventory in the second half of the year.

Receivables and payables, the inflow largely due to those customer deposits and advances of around GBP 300 million, driven by those recent order wins in Defence that I mentioned. Broadly neutral on trade receivables otherwise, and growth is offset by better overdue debt collection. And I have talked about this before, there's a lot that we can do on good old-fashioned working capital management of bringing in our aged debt better than we have done in the past. There's still lots of opportunity there.

Underlying increase in the deferred engine flying hour revenue, GBP 120 million. This is the contribution from the higher invoiced engine flying hours in excess of the revenue that we've recognized as our installed base grows. We recognize the revenue when the shop visit takes place. We collect the cash all the time, but only the revenue when the shop visit takes place. I've got a chart that shows this. It is lower year-over-year by GBP 175 million. That's primarily due to the absence of the material aftermarket deposits that we saw in the first half last year. We had one big customer that converted onto a TotalCare arrangement. There was a buying fee attached to that, that explains almost all of that GBP 175 million.

Provision utilization, the GBP 271 million, that reflects the utilization of the Trent 1000 exceptional provision. Total in-service cash costs were GBP 219 million. You can see the vast majority of that GBP 271 million. In the first half, it's worth highlighting that costs were not covered by a provision. We didn't have a provision then. So those costs in the first half of the year of just over GBP 100 million would have flowed through the income statement, or the LTC balance, either of those two. The remainder due to increased utilization of other provisions that we have around the group.

So inventory. Where does the build come from? And how does it unwind? That's what this chart does, and I'll try not to spend too long on here. There's a lot of detail in here. But in very simple terms, it's across the two businesses of Power Systems and Defence. So in Power Systems, there's been a build of buffer stock in India. We're moving the Series 1600 engine production from Friedrichshafen to Pune in India. We've got a joint venture with Force Motors, based down in the southwest of India. And they have partnered -- they're a partner of Mercedes, for example, a key partner with Mercedes. That comes online in the second half of the year. We've built buffer stock for that particular initiative to -- in anticipation of that move to India in the second half.

We've also built inventory for China. We're anticipating strong China sales growth in the second half. This inventory is built and in the supply chain on the oceans, on its way to China or into China, going through the supply chain, waiting to be invoiced in the second half. Very good visibility around that inventory.

Warren talked about building PowerGen systems solutions rather than moving -- changing our mix from loose engines towards a systems solutions. That has a longer lead time, for the build of those systems, and that's part of the inventory build as well. And again, that will flow through in the second half. There have been 1 or 2 project delays, particularly a large project in Chile, mostly customer-caused. And those projects, we're confident around those being completed in the second half and invoicing them.

And then finally, there were some earlier parts purchase in Power Systems to smooth the second half production as well, which will wind down during Q3 and Q4. So good visibility of how the inventory has got built, but also very good visibility of how it unwinds in the second half.

Civil Aerospace, inventory build for what we're anticipating to be a good delivery in the second half and good build in the second half, including 14 engines that are currently already on the airframer assembly line. Those will unwind, of course, in the second half. And there's, therefore, going to be a reduction of finished goods held in inventory right now. Right now, in inventory, we have 50 finished goods, 14 of which are on the assembly line. At the end of the year, we're looking -- our typical end-of-year run rate is about 15, so 50 down to 15 over the course of the year. That's, again, a key driver of the reduction. So there's a very clear pathway to reducing the inventory in the second half of the year.

The long-term contract creditor. An important point to think about the long-term creditor, this is all about revenue. It's not margin, it's not costs, it's revenue. It's the buildup of the revenue that we collect - the cash that we collect, I should say, as our engines fly and the flying hours generate the cash from our customers. We debit the cash and we credit the balance. We started with GBP 4.5 billion on the balance sheet. We collect more cash as the half progresses, GBP 1.7 billion of cash collected. That's a function of the number of flying hours and the yield per flying hour. And then off -- we deduct from the creditor the revenue that we attach to a shop visit when it takes place.

So what we do under IFRS 15, we look at the stage of completion of the contract based on the cost that we've incurred and the cost to go. We know, therefore, what cost -- progress that we've made on the contract and we recognize the revenue that we then need to record in respect to that particular shop visit that's taken place. And we deduct, therefore, the revenue that moves then into the profit and loss account, debit this one and the credit goes into the P&L account.

There's an FX adjustment of GBP 150 million. And what this does is accommodate for the fact that you have a balance sheet here at a certain spot rate, you have a balance sheet over there at a certain spot rate, and in between, you have cash flows at our achieved rate. So we're accommodating and triangulating normally -- normalizing all of that. And there's an equal and opposite GBP 150 million that would otherwise be in the other line in the summary funds flow, but we've taken -- we've netted those

two off for the ease of presentation.

So an important point, this is deferred revenue, reflects the difference between invoiced flying hour receipts and the P&L revenues traded. This is a piece of work that we did in April, May earlier this year, following all the various calls that we had on this particular item and how it worked, but hopefully this simplifies it.

So looking at our balance sheet. We are well-funded. We've got liquidity of GBP 6.7 billion. You can see we've got net cash on the balance sheet at the half year of GBP 4.2 billion, debt of GBP 6.2 billion, that net position of GBP 1.9 billion. We've had a group free cash outflow of GBP 429 million. But we have got the proceeds from Commercial Marine, net proceeds of GBP 451 million. We also completed the disposal of Power Developments and that gave us GBP 29 million. We've got no material maturities coming up now until October of 2020. And we remain focused on our ambition to return to a single A rating. The drivers of the GBP 42 million higher financing cost, I highlighted that earlier on, it's the inclusion of IFRS 16 in those capitalized assets.

Our capital allocation priorities remain unchanged, a strong balance sheet and improving our credit rating, as I just talked about earlier. Funding organic investments, Warren talked much about this, to drive growth and technology leadership, particularly in the current environment of the airline industry and coming under close scrutiny with environmental concerns.

Payment to shareholders, increasing our dividend as free cash flow grows, an important ambition for us, and Warren alluded to that earlier on. M&A, we'll be disciplined and selective. I think it's fair to say that the focus right now in Rolls-Royce is driving operational improvement of our existing business rather than looking at M&A priorities.

We're committed to restoring our shareholder payments to an appropriate level over time. Free cash flow will be the key driver of growth and best indicator as the time -- when the time to do that. And we view it in the context of overall capital allocation priorities.

Business unit review, just running through our businesses one by one reasonably quickly. Civil Aerospace, organic revenue growth of 11%, good growth. And you can see that strong services growth there of 18% that I mentioned earlier. But also strong services growth in time and materials, growing at 17%, still growing very, very nicely. Gross margin improvement, notwithstanding that mix of shop visits that I alluded to earlier, and you can see the progress we've made on the operating loss.

Civil, very much moving towards profitability. We gave guidance at closer to breakeven. You never know, with a fair wind we might even see profitability in the second half and perhaps even on a full year basis, but we shall see. Lots to do still. The drivers, highlighted down the bottom there, anything else that I haven't called off. Gross profit and margin, of course, is improved by the OE losses. And what else? I've talked around those. The operating loss improvement, perhaps not as great as one might have thought. The R&D charge is higher, and the C&A cost increase is impacted by the absence of prior year credits that

was in the 2018 number.

A little bit more detail, OE revenue growth. Good OE growth of 6%. Strong growth in business jets as well. These are offset by a material decline in the V2500, which is now pretty much a service revenue business for us. Services revenue growing by 18%; that 20% growth in large engine shop visits that we called out earlier. Business jets, again 29% growth, led by again the volume of shop visits but also some positive catch-up adjustments in that business.

Large engine fleet, I've talked about these numbers, up by 7% year-over-year; 8% flying hour growth, very good growth against that challenging comparison of 20% growth in the previous period. The outlook, around 10% revenue growth, Civil Aerospace, profit closer to breakeven. This is unchanged guidance from that which we gave in April this year when we gave our full year results for 2018.

Power Systems. Notwithstanding some market nervousness about these markets, very good growth in Power Systems, 6% revenue growth. Gross margin improvement and decent profit growth as well. A strong second half expected for Power Systems. Revenues will be about GBP 500 million, GBP 600 million higher than the first half as well. And a strong profit contribution from Power Systems in the second half of the year, very much a reflection of that delivery on that inventory build in the first half of the year.

OE revenue growth, 6%. Warren alluded to this and showed the photographs, strong demand for Power Generation products in data center markets. And this growth that we're reporting, despite the nonrecurrence of the 2018 pre-buying effects on the emissions regulations around construction and agricultural markets, so very pleasing revenue growth with that potential headwind.

Services revenue growing at 7%; and an increase in the installed base, well over 150,000 engines in Power Systems. And good progress in the LTSA strategy. It's growing nicely, still only 7% of service revenues but growing nicely. And again, good order intake in Power Systems, so good confidence around 2020.

Looking a bit more, then moving on to Defence. Underlying revenue growth in Defence for -- I think the story for Defence the first half of the year are some big order wins and some big customer deposits and a good book-to-bill ratio and a good order book ahead for Defence. So a very solid performance for our Defence business. Gross profit is higher as well. Operating margin is stable despite the higher R&D spend on future technology with some good C&A improvement there.

The gross profit is hit, to an extent, by the lower U.K. combat profits, offset by benefits from the operational efficiency in our facilities. You recall the Condor investment, the benefits very clearly flowing through there to protect us against what would otherwise be dampened margins due to the cessation of the Tornado support contract.

Breaking that into a little bit more detail. Revenue growth, 4%, combat and naval growth, in particular, although lower transport volumes, particularly on the medium-range tanker transport engine. Service

revenue growth of 1%. Strong order book, GBP 2.3 billion of orders coming in and a 1.5x book-to-bill. So really strong order performance in Defence in the first half of the year.

And then finally, ITP Aero, good revenue growth driven by higher Civil Aerospace OE volumes across Trent and the Pratt & Whitney programmes. So the aftermarket decline is due to phasing there. And we called it out there that we've got lower high-margin aftermarket sales in this mix. So it's a mix impact in ITP in the first half of the year. We very much expect it and have good visibility around the unwind we expect to take place in the phasing in the second half of the year and maintaining our guidance at that 10% revenue growth and margin stable against 2018.

So just highlighting there that the margins are at lower levels of high-margin spare sales. That will improve in the second half. And they've got temporary OE mix headwinds that is, again, dampening the profitability in the first half of the year that will unwind in the second half.

So the guidance for 2019. Here's how we get from our GBP 400 million outflow in the first half of the year to a GBP 700 million inflow on a full year basis. Three big drivers of contribution: one is the higher underlying profit led by Power Systems, improvement in ITP Aero and Civil Aerospace moving closer to breakeven. In aggregate, contributing around GBP 500 million in the second half.

We're going to see at least a GBP 500 million unwind of those inventory levels in Civil Aerospace and Power Systems. And one point, I think, that's worth making on inventory is that we should expect to see inventory improvements and we should aspire to inventory improvements over the next 5 years. We carry GBP 4 billion of inventory on our balance sheet, which is around 6 months' worth of inventory. So there's a lot to go for in this space even after having done this unwind that we're seeing in -- that we are expecting and looking for in the second half of the year. Very good visibility around that.

And then the final piece is the GBP 100 million contribution from the growth of the engine flying hours ahead of sales. That's the deferred revenue, the long-term contract creditor growing by that much. And those are the 3 core drivers that get us to that GBP 700 million inflow on a full year basis.

Guidance. This slide is unchanged from the one that you saw earlier in the year and very much a further good step towards at least GBP 1 billion of free cash flow in 2020.

Thank you very much.

D. Warren A. East Rolls-Royce Holdings plc - CEO & Executive Director

Thanks, Stephen. I'm just going to make a few comments before we hand over to Q&A. And I thought we'd start with a little bit of an external perspective on the markets in which we're playing.

Top half of this slide, Civil Aerospace. There's been quite a lot of discussion about the wide-body market and its condition. So as we look forward, we look at the -- in terms of shipments of airplanes and, therefore, engines for us, we can see the airframes that we're designed into at the moment. And we can

see what the airframers are predicting in terms of build rates, and that translates into an engine delivery rate as far as we're concerned. And if I'd been standing here a few years ago, you might have seen about 600 in that box. And you're looking at 500 today. That is where we are in terms of build rates.

When we analyze that, however, it is just putting into numbers what we have been saying in various investor meetings over the last year or so. After a period of ordering above trend, then we're seeing actual shipments of airframes align more closely with the underlying rate of growth of demand in the market. And that looks like about 500 engines over the next several years.

Don't forget, our installed base is comprised of the engines that are there, minus the retirements, plus the engines that get shipped in the period. And so the installed base that we expect to see in a few years' time, we can see going through the 6,500 mark in a few years' time. The 257-or-so engines invoiced in the first half of the year, offset by about 36 retirements in the first half of this year, so there's this kind of picture there. Actually the installed base is probably the more important number for us, but we mustn't ignore the rate at which we're modernizing our fleet. That's the market environment.

In Power Systems, market environment there, I'd characterize that as what are the drivers there? And we're seeing a couple of drivers. We're seeing really environmental concern causing people to want cleaner power solutions. That's creating opportunity for us, particularly around microgrids and the like. We talked about data centers. It looks like that's set to continue for some time, data centers, and also expansion into parts of the world where we, frankly, don't have that much of a market share which we think we can go after. So those are the drivers there.

In Defence. Then in addition to the standards that you see on the slide there, which is really our key markets, I mean the U.S. customer for us is approximately 50% of our Defence business, the U.K. is approximately 25% and the rest of the world is the remaining 25%. And you can see the reasons for growth there. I think in addition, we're seeing new technologies. And particularly in the U.S., we're seeing investment now going into new technologies for Defence. And electrification plays across all 3 of these sectors. In Defence, it's much more about capability than environmental concern. So that's really the -- and I've already covered ITP Aero effectively in Civil Aerospace.

That's an external view. As far as we're concerned, we have a strategy which is unchanged. So this is a slide with which you are familiar. We think this is a framework which equips us well for the future. Activity in the first half was good in supporting these various initiatives, and I think the commentary that came out of the Paris Air Show demonstrates a healthy momentum there. So I'm not going to talk about that in more detail.

The power that matters is increasingly low carbon. We don't propose that Rolls-Royce is the panacea that's -- the company that's going to solve all the world's climate problems. We can play our part, however. And similarly, electrification is not the one answer to everything, but it will play a significant part in that. And electrification really flows through all of those boxes on the slide.

So just to summarize where -- what we're up to this year and looking forward. We broke it down. This is a slide I showed you a couple of months -- a few months ago. We look at customers, we look at technology, we look at what we're doing inside and how all of those translate into financial progress. I think we made, as I said at the start, good progress in terms of financial metrics, good progress both operationally and strategically as well in the first half.

But I stop at this point, and we'll go on to some questions and answers.

QUESTIONS AND ANSWERS

D. Warren A. East *Rolls-Royce Holdings plc* - CEO & Executive Director

First one. We need to move the microphone along.

Unidentified Analyst -

I'd like to ask 2 questions, if possible, which are quite different from each other. Firstly, on working capital, we can have a really good go, I think, at modeling LTSA, cash profits and so on. But the, if you like, the conventional working capital, the other working capital is extremely hard to model. It's very volatile period-to-period and it was a big positive in '17 and '18. So what I wanted to ask was, what are you assuming within the GBP 1 billion free cash flow in 2020 and the GBP 1 per share of free cash flow subsequently? And are there any clues as to how we model that, if you like? What set of assumptions should we apply going forward?

And then should I ask the other question at the same time? The totally different question really for Warren is you've called out the electrification issue very early, and agree with your enthusiasm about it. The motor industry is a little bit further down the line. It's going through a big process of consolidation, JV-ing and so on, to sort of cope with the cost of that. Rolls-Royce is, if you like, medium size within the aerospace industry. And UTC and Raytheon, at least part of their rationale for their merger, is that they need to be bigger to cope with practical electrification. So where does Rolls-Royce sit in, in that? How are you going to afford it going forward? And how does that sit with the 4% to 6% R&D as a percentage of sales sort of aspiration that you outlined?

D. Warren A. East *Rolls-Royce Holdings plc* - CEO & Executive Director

Okay. Want to do working capital?

Stephen Wayne Daintith *Rolls-Royce Holdings plc* - CFO & Executive Director

Okay. So working capital, so what have we modeled for 2020? Well, I think you'll be relieved or pleased to know that we haven't modeled any benefit from either receivables or payables in 2020 in our working capital models. We have, however, modeled further improvement in inventory reductions, which, going back to my earlier comments, I think, is very attainable. In our very simple model, we have between GBP 200 million to GBP 300 million of further improvement in inventory. That's beyond that which we expect to deliver in the second half of 2019, but nothing well beyond that.

D. Warren A. East *Rolls-Royce Holdings plc - CEO & Executive Director*

Okay. And on the electrification question, well, I think it's early days at the moment. But I would point out that one of the reasons why we are so keen on the activities that go on in our Power Systems business is because our Power Systems business is exposed to applications where electrification is playing a key role today. And so I've always said that it's much better, I think, to develop our technologies, systems solutions and the like with real customers and real applications rather than develop them in a lab and then hope you can fly them one day. And that's what we're doing with our Power Systems business.

So as far as the 4% to 6% is concerned, 2 things: one, we're developing a lot of that technology on the back of existing revenue today; and secondly, I think you have to remember the context. As Stephen mentioned, we've been through a period -- a whole decade, actually, of huge investment in R&D to deliver our gas turbines that we have as -- in the portfolio today. The Pearl 15 was the seventh new production engine in a decade. And I said on the wires call this morning, that is the richest period of new engine development for Rolls-Royce in its entire history. We don't have to develop those engines anymore. They're developed. Obviously, we're spending time and effort taking cost out of them, improving the efficiency, improving the durability and so on.

But we're already seeing the ability to basically shift resource away from those programmes and deploy some of that resource. Had I had more time to talk about the last slide, I would have talked about the changing skill mix that we're looking for, different shaped engineers and so on. But basically, we believe that we can approach this problem with the resources that we have within the R&D envelope that we currently have. I mean when I say within, it will fluctuate by perhaps GBP 100 million or so in either direction, but it is quite a substantial level at the moment.

Unidentified Analyst -

Can I just follow up slightly on the working capital question. I mean, normally, a growing manufacturer, you'd expect to use working capital a bit, although obviously you feel that you can squeeze inventory somewhat. So for our sort of longer-term modeling assumption, should we just sort of grow working capital with sales? Or do we assume that you can beat that?

Stephen Wayne Daintith *Rolls-Royce Holdings plc - CFO & Executive Director*

I think you can assume that we can beat that. And the reason why is that I do think there are opportunities, there are opportunities in receivables. I think there are old debts there to collect that run into small hundreds of millions of pounds to go for. And inventory durations, we can do a lot better on our supply chain to synchronize our supply chain than we do. Our S&OP process, sales and operations planning, is not what it should be despite all the effort that goes into it. So I think there's -- I'd point to the inventory opportunity as a way of dampening those what would otherwise be headwinds, as you've rightly point out, whether working capital outflows and challenges from the growing business.

But the one thing I would point out, it is -- whilst it's easy to model working capital, it's very difficult to

know for certainty. Because, of course, you can have some big order wins in Defence, as we've seen in the first half that help, which is good news. And that's part of the characteristics of that business. So we have got a very clear model. It's largely around inventory improvement to offset any working capital drag.

D. Warren A. East *Rolls-Royce Holdings plc* - CEO & Executive Director

Okay. Going back.

Andrew Paul Gollan *Joh. Berenberg, Gossler & Co. KG, Research Division* - Senior Analyst

It's Andrew from Berenberg. Two questions. One on OE losses and one on Defence. So on the OE losses point, I think you said the XWB was down by about 1/3 on -- in scale terms. So firstly, how much of that was operational? And how much of that was pricing? And then a kind of follow-on from that. Overall, can you say anything about the other engine programmes? Did they actually contribute? Or was it all driven by XWB?

And then on the Defence question. I think, Warren, you said several times about the profit headwinds in the Defence business being offset by operational performance in the U.S. What exactly was that? Is that just a mix? I think you said about the Tornado contract. What are we talking about, some kind of structural shift here that's just being offset by new facilities?

D. Warren A. East *Rolls-Royce Holdings plc* - CEO & Executive Director

Okay. Shall I just answer that Defence one and you can look up the numbers on the engines. So on the Defence one, I said that 1/2 the business is roughly U.S. and 1/2 -- and 1/4 is the U.K. and 1/4 is the rest of the world. We are seeing particular pricing pressure in the U.K. with single-source regulations and the like. And if it were not for operational efficiency gains elsewhere, then that would be showing through in the numbers. So that's the offset that's happening. There's more efficiency to come. We've only just started. Our Condor programme doesn't really finish until end of this year, beginning of next year, when we've got all the overhead cost out that is coming from withdrawing from the older facilities. But when that is in place, we will have executed a programme to improve basically the fixed costs of running our operation in Indianapolis. And that will continue to be a benefit.

I think on Stephen's slide, there was something about profitability in Defence over the next few years. You will see a bit of investment in R&D. I talked about new opportunities in Tempest in the U.K., hypersonics in the U.K. I talked about the success that we've had with Bell on vertical lift in the U.S. There are also opportunities around B-52 that we are very optimistic we've got an excellent solution for reengine-ing the B-52. It's great that we've got an excellent solution, but we don't get it designed in without investing a little around that excellent solution to make sure that it gets designed in and then to make sure that we can produce it at a sensible economic cost. So there is, over the next several years, a little bit of a profit headwind in Defence caused by some increased R&D.

Stephen Wayne Daintith *Rolls-Royce Holdings plc* - CFO & Executive Director

But I think a key point is that Defence will remain a nicely profitable margin business for us. It's on the

margin that we're talking about.

D. Warren A. East *Rolls-Royce Holdings plc* - CEO & Executive Director

No, but those OE loss reduction on XWB, yes, it is a mixture of continued removal of launch discounts from the mix and ongoing cost reduction. And XWB is the biggest driver of our average cost reduction. But those cost reduction programmes are running across -- or the cost reduction activities, rather, are running across all the engine programmes. And it depends whether it's a particular component change or a change in a methodology. If it's a change in the methodology, which we are introducing, creating a lot more automation in our component production facilities, then clearly that applies across all the engine programmes.

Andrew Edward Humphrey *Morgan Stanley, Research Division* - VP

It's Andrew Humphrey at Morgan Stanley. Three questions on 3 different engine programmes, if I may. First, on Trent 1000. As we look over the next couple of years, there still seem to be quite a few open slots where aircraft have been ordered but don't yet have engine orders attached to them. So how should we be thinking about that? Are you seeing any change in terms of customer body language around preparedness to order? How tight they can get to the delivery slot before ordering?

Second, on the Trent 7000. The A330 was a particular area, I think, where Airbus has seen some pressure from Boeing on the 787. I think you've indicated you've made some concessions on aftermarket pricing for that engine to make that aircraft as a package more affordable for customers. How material an impact on that -- on medium-term cash flow targets is that in the mix?

And thirdly, on XWB, I think we're coming up to the 5-year anniversary of some of the earliest engines in service. We should start to see material volumes coming in for first shop visits over the next year or 2. Can we draw any conclusions, I guess, from the earlier engines that are anniversary-ing their 5-year period at the moment?

D. Warren A. East *Rolls-Royce Holdings plc* - CEO & Executive Director

Gosh, 3 questions, all Civil Aerospace. So on Trent 1000, our assumptions are that we maintain the market share that we have today, that we -- which is approximately 35%. On a customer-by-customer basis, if the customer is a Rolls-Royce house, we would say we're more likely to win that, but we're not taking anything for granted. And we celebrate if there's a bit of a turnover. And I'm sure that the other guys do exactly the same. It is quite aggressive at the moment. However, if you look in the first quarter of the year, we were very successful. We took 100% of the orders in the first half of the year -- sorry, first quarter of the year on 787s. We have subsequently lost a couple to GE. We're not surprised to lose Qatar. They're an existing GE customer on the 787. We were disappointed to lose Air New Zealand. However, it was a small volume. It was only 8 aircraft, and the customer told us there was an extraordinary offer that was non-refusable from our competitors.

And whilst -- moving on to the second bit of your question really around A330. Whilst obviously in a competitive environment, one needs to respond to aggression with aggression, there are limits of

commercial common sense. And so we won't always go there. We will endeavor to be aggressive in secure business where we can. I don't think there's a material sort of center of gravity shift going on. There's always a spectrum. And we have a sort of expected business case. And we are taking some business way above that and some business way below that, and we look at it on a portfolio basis. And that applies to how we do Trent 1000 and how we sell 7000s on the A330neos at the moment as well.

And yes, of course, we have seen Boeing be very competitive towards Airbus and the Dreamliner pricing, I mean, now and giving the A330neo a run for its money. But actually, in the first half of the year, I think if you look at the mood music now compared with 12 months ago, then the story on A330neo is really very different from where it was 12 months ago.

On XWB shop visits, it's still a little bit early to draw any conclusions. The fleet leaders are -- well, the fleet leaders are getting to the time when it's due, but actually the engines are performing very well. And so they're not actually -- we haven't had as many shop visits as we would have expected so far. We do expect those shop visits to start happening as we get towards the fourth quarter and into the first half of next year. And so probably next March is a better time for that question.

Stephen Wayne Daintith *Rolls-Royce Holdings plc - CFO & Executive Director*

And just on that pricing point that you mentioned and how it might impact medium-term cash flows. Very little, is the answer because, of course, it will only represent a very, very small proportion of our installed base, which will by then be 6,000-plus engines. So a tiny impact. Margin compression on that particular engine programme, to an extent, but still the volume impact will offset that of the size of installed base, the growing installed base and the flying hours and the cash that, that generates.

D. Warren A. East *Rolls-Royce Holdings plc - CEO & Executive Director*

We have some coming from online, and I'm conscious of the time and the online demand. So should we just, do you mind, just switch to online for a moment and then we'll come back.

Jennifer Ramsey *Rolls-Royce Holdings plc - Head of IR*

All right. We've got -- well, there are quite a few online. So I will do a four-part question, apologies for that.

Firstly, on free cash flow seasonality, a question about industry seasonality and why it's stronger in H2. And Airbus -- it's obviously an issue for Airbus. And Airbus have spoken about their ambition to fix it and whether or not we have any ambition around that.

The second question is on sustainable share of time and materials aftermarket growth because that has been very strong, and it continues to be strong, was strong in last year as well.

A question about our capacity. We've now spoken about delivering 500 large civil engines per annum. And previously, we've spoken about 600 and having a capacity of 600. So what would we be doing with any extra overhead recovery if we were actually delivering 500 per annum?

And then finally, on the LTSA, we have a question that talks about how quickly we would burn through the creditor. And given the fact that we've come down -- it's GBP 120 million this year, would this reduce to 0 in terms of on a 12-month run rate? The question is whether our order backlog would reduce to 0 and the LTSA creditor reduce. And if you can discuss a little bit more about the LTSA creditor.

D. Warren A. East *Rolls-Royce Holdings plc* - CEO & Executive Director

All right. We're going to start off. Stephen is going to answer the first one about seasonality.

Stephen Wayne Daintith *Rolls-Royce Holdings plc* - CFO & Executive Director

Yes. So seasonality, it's a good question because you can say, well, why is there seasonality in the industry? Because there isn't, engines are flying all the time and passengers are flying and so on. So why seasonality? I think it's just the nature of the industry. Just sort of, there's a -- it's build first half, deliver second half. And you'll see it's across the industry. The Airbus have the same issues. We know that other engine manufacturers with exactly the same issue as well. So that's just the natural cycle. There's no clever answer to this, I'm afraid. That just seems to be the way that the industry operates.

D. Warren A. East *Rolls-Royce Holdings plc* - CEO & Executive Director

We'd love to smooth that out, if they want to. I think it will make a difference. And we're a supplier, so we will naturally benefit from their initiative.

Time and material is longevity. I mean time and materials contracts generally apply to older engines. And our older engine fleets, and there are a couple of portions, there's a regional fleet and a large fleet. The large fleet is about 1,000 engines at the moment. So out of around 5,000 we've got roughly 4,000 Trents and roughly 1,000 older engines. They are time and materials. And gradually, those engines are retiring.

But what we're seeing is that as older engines transition to subsequent owners, there is a greater propensity to move to time and materials or some of the long-term service agreements with Flex, with a greater proportion of a greater time and materials content even though it's a long-term service agreement. And so I think its longevity is going to be there to stay. The only thing that would destroy it is if we made our insurance contracts of the long-term service agreements so attractive, that it would wean people off time and materials. But you don't get something for nothing in this world. And if we made them so attractive, then they'd probably become less profitable for us. And so I think the mix is here to stay.

Overhead recovery. Well, I know the engine volume is reducing from 600 to 500. But don't forget, there's an installed fleet out there of nearly 5,000 engines today, large engines. Most of Rolls-Royce production facilities are used to create components. And a lot of those components are going into servicing the 5,000 engines rather than assembling the 500 or 600 engines. And so I think there's -- obviously we will, in terms of variable cost that would be dedicated to assembly, then we can respond to that change quite quickly and take the cost down. But as far as the fixed cost of installing capacity are concerned, it is mostly around the components. And so I don't see a serious issue with that.

And when we think about LTSA?

Stephen Wayne Daintith *Rolls-Royce Holdings plc - CFO & Executive Director*

No, I mean it's a good question. As you might imagine, we model this as well. I mean, essentially, it's a function of the size of our installed base, the flying hours that generates, the utilization of our engines and then we also model the shop visits that go with that installed base. And our plans assume a growing installed base. And if we look over the next sort of 5 to 10 years, a rule of thumb, a good rule of thumb is that the long-term contract creditor should grow by around anywhere between GBP 300 million to GBP 400 million per annum. That's a good rule of thumb. It can vary in that space according to shop visit experienced during the particular period.

And therefore, the GBP 4 billion will carry on growing. That deferred revenue on the balance sheet will carry on growing. That will ultimately trade through the profit and loss account in time when the shop visits take place, but it should carry on growing. So I won't put a number on it on that sort of what the number might be in 10 years' time. But if you use that sort of simple maths that I've given, you can get there. But certainly, it's not going to be winding down. It's still going to carry on growing.

D. Warren A. East *Rolls-Royce Holdings plc - CEO & Executive Director*

Okay. I think we better come back here into the room. Have we got any more online, by the way? Okay.

Harry William Freeman Breach *MainFirst Bank AG, Research Division - Research Analyst*

Harry Breach from MainFirst. Can I just pick up, firstly, just the T&M question that got asked online. Just the 17% year-on-year growth in the first half, just in terms of trends you're seeing at the moment in the shop network, are you seeing that sustaining July, August at the moment?

And then second question, if I can, and forgive me if I missed an explanation to this earlier on. But just the point of view about no longer accruing deferred tax in the U.K., a sort of a simpleton like me might assume that, that might indicate you're not assuming much taxable profit generation in the future in the U.K. Can you correct my mistake and just help us to understand a little more about why we didn't accrue that?

And then finally, again, I'm a bit of a simpleton. The hedge book, I think, in the release you said still at, what, \$1.54? We're 3 years after sterling started to crater following the Brexit vote in June '16. Can you just help me understand why the hedge book rate is still so much so far above spot?

D. Warren A. East *Rolls-Royce Holdings plc - CEO & Executive Director*

Yes, sure. The short-term time and materials...

Stephen Wayne Daintith *Rolls-Royce Holdings plc - CFO & Executive Director*

You do the time and materials, and I'll do the next 2.

D. Warren A. East *Rolls-Royce Holdings plc* - CEO & Executive Director

Yes. Okay, right. So unfortunately, Harry, that's just too short term. I'm not going to comment on that. I mean most of our day-to-day MRO discussion right now is about juggling things around to make sure we have sufficient capacity to deal with our customers that are getting disrupted by the Trent 1000 situation. And so that's our number 1 sort of MRO issue that we deal with.

I think the growth year-on-year in time and materials is clearly not a sustainable level of growth. I mean all of these things will trend to the underlying growth of market demand for air travel. But you saw a little blip and it's a healthy, healthy blip that we have at the moment. And such things will happen from time to time.

Stephen Wayne Daintith *Rolls-Royce Holdings plc* - CFO & Executive Director

Okay. So the deferred tax asset. Well, first of all, what is it? So well, it's GBP 1.1 billion. That represents the tax, in very simple terms, the tax, the U.K. tax on the cumulative U.K. tax losses that we have that we will use in the future. So there's no time limit to using those losses. We will use them. Deferred tax asset stands at GBP 1.1 billion at the end of 2018.

When we look at the recovery period, in other words when we're going to recover those tax losses, it's actually a 25-year-or-so recovery period for those tax losses in the U.K. In the U.K., we make losses using a round number of around GBP 500 million. We make very good profits in the U.S. And in Germany, we get taxed from those profits in those jurisdictions. But in the U.K., pay very little cash tax in the U.K., so of course, we're making losses in the U.K.

So in order to use that deferred tax asset, we have to be making profits in the U.K. And the recoverability period for the full GBP 1.1 billion, to get full use of that, is 25 years. We took the view that it was prudent to draw the line at 25 years. This assumption makes no change whatsoever to cash flows. It's just the effective rate of tax because, of course, when you've got a very small profit number and you're not getting any benefit for that GBP 500 million or so of U.K. losses, you're being charged on your U.S. and Germany profits, giving you a very high tax charge on a very small profit number, resulting in that very high, if not loss number, that very high effective negative tax rate, if that makes sense. I hope it does.

Harry William Freeman Breach *MainFirst Bank AG*, Research Division - Research Analyst

So would that effective tax rate be one we should model at continually?

Stephen Wayne Daintith *Rolls-Royce Holdings plc* - CFO & Executive Director

No, not at all. I mean just to put this in perspective, if we didn't have that effect, we're probably down at a 40% or so tax rate this year. Long term, what you should model, as we move into U.K. profitability, is something in the low 20s, which is really the -- what you might expect because that's a mix of the U.S. and Germany taxes both in the low 20s and the U.K. tax rate is at 17%. So that's what you should be modeling from sort of -- well, I won't put a date on it. But in the medium term, we should be modeling a low-20 tax rate. But the key, of course, is turning to profitability in the U.K.

And then the hedge book, yes, you're dead right, we did have a full hedge book of in excess of \$40 billion. We have been winding that down to an extent through natural usage. But also, we haven't entered into any new hedges in the last, what is it now, the last 8 months now. So we were already locked in at that \$1.54 rate that we're seeing for 2019 several years ago. And indeed that has been the rate in '18 and '17 as well, there or thereabouts.

You will start to see decline over 2020, 2021. And then in '22 and '23, you'll start to see, if you look at the shape of the hedge book, a sharp decline, assuming we don't take out any hedge rates. But even if we were at the forward rate, we would still see a material decline in our achieved rate. So it's going to be some time before we start to see the benefit -- the real benefit of the achieved rate being significantly lower and, therefore, taking benefit of that strong dollar. Just reminding ourselves, we have around \$6 billion of cash inflows coming into this business to pay for U.K. costs every year.

D. Warren A. East *Rolls-Royce Holdings plc - CEO & Executive Director*

Okay, thanks. I think that has to be the penultimate question, I'm afraid. So we've got time for one more because some people have to go.

No? We've got one more on -- should we do the last one from online then? Yes, Jennifer.

Jennifer Ramsey *Rolls-Royce Holdings plc - Head of IR*

Sure. Can you just quickly comment on restructuring plans? Because the results talk about exceptionals related to the June '18 restructuring plan, but there are other restructuring charges as well. Can you talk about the other restructuring?

D. Warren A. East *Rolls-Royce Holdings plc - CEO & Executive Director*

There were a handful ongoing before June. Do you know the numbers?

Stephen Wayne Daintith *Rolls-Royce Holdings plc - CFO & Executive Director*

There's no material change to what we highlighted at the full year other than an increase of around GBP 60 million in our provision for the cessation of the Airbus 380 programme.

Jennifer Ramsey *Rolls-Royce Holdings plc - Head of IR*

Yes. It is related to restructuring.

Stephen Wayne Daintith *Rolls-Royce Holdings plc - CFO & Executive Director*

I'm sorry, well, we've given the numbers that we've highlighted today. Nothing to add beyond that, actually.

D. Warren A. East *Rolls-Royce Holdings plc - CEO & Executive Director*

I mean there were some ongoing restructuring programmes in place when we announced the programme that we talked about a year ago in June '18. And I would imagine the exceptionals being referred to are from those legacy restructuring programmes that are still happening at the same time as

we're doing this major activity.

Stephen Wayne Daintith *Rolls-Royce Holdings plc - CFO & Executive Director*

They primarily relate to Power Systems and our Defence business with the closure of the Oakland site.

D. Warren A. East *Rolls-Royce Holdings plc - CEO & Executive Director*

Okay. With that, I'm afraid we're out of time. But thank you all very much for coming along and for your support.
