Preliminary Results 2022

Renishaw plc

15 September 2022

Preliminary announcement of results for the year ended 30 June 2022

Record results and strong strategic progress

	2022	2021	Change
Revenue (£m)	**671.1**	565.6	+19%
Adjusted[1] profit before tax (£m)	**163.7**	119.7	+37%
Adjusted[1] earnings per share (pence)	**185.5**	132.0	+41%
Dividend per share (pence)	**72.6**	66.0	+10%
Statutory profit before tax (£m)	**145.6**	139.4	+4%
Statutory earnings per share (pence)	**165.4**	153.2	+8%

Performance highlights

- Record revenue of £671.1m, 19% higher than FY2021 revenue of £565.6m
- Manufacturing technologies revenue[2] increased by 20% to £634.6m, with:
    - record demand for encoders, driven by sustained semiconductor and electronics capital investment;
    - repeat purchase of high-value solutions by key customers in additive manufacturing and 5-axis metrology; and
    - rising sales of flexible gauging and machine tool products for automated machining, notably in the consumer electronics sector.
- Analytical instruments and medical devices revenue[2] increased by 4% to £36.5m, with:
    - strong growth in H2 to give record spectroscopy revenues, as backlog of duty-exemption certificates in China eased; and
    - reduced neurological revenue during FY2022, though we are talking with multiple large pharmaceutical companies to use our unique drug delivery technology in clinical trials.
- Record Adjusted profit before tax of £163.7m (FY2021: £119.7m), an increase of 37%
- Return on sales increased to 24% (FY2021: 21%)
- Statutory profit of £145.6m compared with £139.4m last year
- Strong balance sheet, with net cash and bank deposits of £253.2m at 30 June 2022, compared with £215.0m at 30 June 2021

[1] Note 29, 'Alternative performance measures', defines how Adjusted profit before tax, Adjusted earnings per share, Adjusted operating profit and Revenue at constant exchange rates are calculated.

[2] Results relating to sales of additive manufacturing machines to medical and dental customers are no longer recognised in the Analytical instruments and medical devices operating segment. Comparative figures have been reclassified accordingly, see note 2.

Strategic progress

- Successfully launched new products in the year including an ultrasonic probe for REVO, our market-leading measurement system for CMMs
- Gained key customer accounts, including in close-adjacent markets, following the launch of products such as our FORTiS enclosed encoder and the NC4+ Blue tool setter in recent years
- Made more of our products compatible with third-party software, helping to open up new markets
- Committed around £64m to increase the footprint of our production facilities at Miskin, Wales, and are investing in production equipment to increase both capacity and productivity, with a focus on automation
- Focused on the reward, retention and development of our people, including a salary benchmarking exercise that we expect to increase FY2023 labour costs by £19m compared with FY2022
- Agreed our Net Zero commitment, aiming to achieve Net Zero for Scope 1 and 2 emissions by 2028, and no later than 2050 for Scope 3.

Sir David McMurtry, Executive Chairman commented: "Our performance has been built on years of strategic focus. We've developed the innovative products required to meet the challenges faced by manufacturers in growing markets, while ensuring that we have the global infrastructure and skilled people to deliver those opportunities".

About Renishaw

We're a world leading supplier of measuring systems and production systems. Our products give high accuracy and precision, gathering data to provide customers and end users with traceability and confidence in what they're making. This technology also helps our customers to innovate their products and processes.

We're a global business, with 56 customer-facing locations across our three sales regions; the Americas, EMEA, and APAC. Most of our R&D work takes place in the UK, with our largest manufacturing sites located in the UK, Ireland and India.

We are guided by our purpose: Transforming Tomorrow Together. This means working with our customers to make the products, create the materials, and develop the therapies that are going to be needed for the future.

We believe that our purpose is incredibly relevant in today's environment where the pace of change in technology is faster than ever. We also know that the future will be a world of scarce resources, needing high-performance, intelligent, personalised solutions that make the best use of these resources, and our expertise can help deliver this.

Results presentation today

There will be a webcast presentation of the results together with a question and answer session at 10:00 a.m. (BST).

Details of how to register for and access the webcast are available at the following link:

https://www.renishaw.com/en/register-for-the-2022-full-year-results-webcast--47618

A recording of the webcast and the presentation slides will be made available by Friday 16 September 2022 at: www.renishaw.com/investors.

Enquiries: communications@renishaw.com

Achieving record results

Introduction

I'm delighted to report a record year for both revenue and Adjusted profit before tax. Our revenue for FY2022 was £671.1m. This was 19% higher than FY2021 revenue of £565.6m and was achieved against a backdrop of a global recovery in all our key markets. Adjusted profit before tax was £163.7m (FY2021: £119.7m), an increase of 37%. Statutory profit before tax was £145.6m (FY2021: £139.4m). Both revenue and Adjusted profit before tax are consistent with the trading update we provided in May.

Our performance has been built on years of strategic focus. We've developed the innovative products required to meet the challenges faced by manufacturers in growing markets, while ensuring that we have the global infrastructure and skilled people to deliver those opportunities. The right products, the right place and the right people – all helping us to deliver on our purpose of Transforming Tomorrow Together.

What is clear to me is that these record results couldn't have been achieved without the huge commitment of our employees, who have faced enormous personal and professional challenges over the course of the pandemic. They worked tirelessly during the year to serve our customers in the face of strong demand for our products and considerable supply chain challenges. They have made me very proud, and I would like to convey my thanks and that of the Board, for everything that they've achieved.

After the end of the formal sale process (FSP) in July 2021, John Deer and I made it clear to the Board and our employees that we remain committed to Renishaw. I do not doubt that the process caused some uncertainty among our employees, and we are very grateful for the commitment they've demonstrated to Renishaw. As a Board, we were encouraged with how well everyone delivered 'business as usual' during the process, and I feel this excellent set of results demonstrates this, as well as underlining the strength of our business.

Board changes bring new experience to Renishaw

A strong and experienced Board is essential to the success of a complex, global business like Renishaw and I'm delighted with the new appointments that were made during the year. I would firstly like to thank Carol Chesney and John Jeans, who, during the year, stepped down from the Board as Non-executive Directors after nine years' service. In their place we've appointed Juliette Stacey, currently Senior Independent Director at Fuller, Smith & Turner plc, and Stephen Wilson, currently Chief Executive of Genus plc. Juliette brings extensive experience with her strong finance and leadership background, while Stephen brings strategic, financial and business development experience in the software sector.

Sir David McMurtry
Executive Chairman

Sir David McMurtry talks to attendees at our Investor Day in May 2022.

We remain committed to high standards of corporate governance. We always consider key stakeholders when making decisions, in the belief this will protect our business and its long-term sustainable success.

Responding positively to a new world

Last year I wrote about the profound changes to our society, trading environment and business practices brought about by the pandemic. We have positively embraced those changes and the opportunities that they have presented for growth and to increase focus on employee welfare. It seems to me that our vision of transforming capabilities in manufacturing, science and healthcare through precision, productivity and practicality is absolutely relevant to helping meet societal needs in the coming years.

We've also responded positively to the global challenges of climate change. We have achieved significant reductions in our carbon emissions in recent years but as a large business with a global footprint, we want to make a step change in our efforts.

This year, the Board approved significant commitments to help deliver this step change, and Will Lee explains our Net Zero commitment in more detail on the following pages. I am acutely aware that society has high expectations of companies like ours when it comes to setting environmental targets, and I'm pleased to see that we've made this commitment. The Board is determined to ensure that we make meaningful, measurable progress. That's why we will have our targets verified by the independent Science Based Targets initiative, and we will not succumb to 'greenwashing'.

As part of our sustainability commitments, our new Sustainability Committee identified three of the UN's Sustainable Development Goals (SDGs) that are most relevant to our business. The Board agreed that we should link our sustainability commitments and targets to these goals, demonstrating our support for decent work and economic growth, responsible consumption and production, and climate action. We're now developing a plan on how we will measure our progress against these SDGs.

Continuing to embed our values to support our culture

As I mentioned in my introduction, our employees have continued to demonstrate resilience throughout the pandemic. This has highlighted the importance of our strong working culture, underpinned by our core values of innovation, inspiration, integrity and involvement.

This year we've continued to actively communicate and embed these values across the business, from policy documents and training materials, to the careers pages of our corporate website. These values embody our culture, where our people are encouraged:

- to be innovative and challenge convention;
- to always inspire each other, our customers and our wider communities;
- to act with integrity; and
- to be fully involved and support each other in contributing to the success of Renishaw and our communities.

Ensuring these values were well communicated and understood was particularly important to the Board. We listened to feedback from workshops across the business, and Will helped launch the communications campaign.

Recognition and reward is an important way that a company can embed its values. That's why, towards the end of the year, we launched a global competition encouraging teams to share how they demonstrate our values in action. Our Executive Committee will select one winning team per value, with each team choosing a charity to receive a £5,000, or local currency equivalent, donation.

As part of our value of involvement, we are committed to equality and diversity at all levels of the company. Our UK Diversity & Inclusion group continued to produce thought-provoking awareness campaigns throughout the year, including a focus on sexuality and gender, disability, and how inclusion drives understanding in the workplace.

Looking ahead

While there continues to be some global uncertainties due to the geopolitical environment and rising costs for consumers and manufacturers, the last two years have demonstrated the great resilience of our business and people. I therefore feel that whatever challenges and opportunities we may face in the coming years, we'll be able to respond positively and continue to deliver on our purpose.

Sir David McMurtry
Executive Chairman

15 September 2022

* Note 29, Alternative performance measures, defines how Adjusted profit before tax is measured.

Global success from a solid strategy

Will Lee
Chief Executive

Last year I spoke about the strong position that we were in to take advantage of the many opportunities presented by the global recovery in our markets. We've capitalised well on those opportunities this year, delivering the best set of financial results in our history. It wasn't easy, however, and our people around the world have had to work incredibly hard to deliver these record results given the huge challenges we have faced.

The rapid upturn in the global economy placed supply chains under great stress, with serious shortages of electronic components. Combined with strong demand and a highly competitive labour market, we faced significant challenges in meeting our customers' needs. Our teams responded brilliantly, increasing output and re-engineering certain products when components weren't available. Our work over the past few years to build our inventory levels also helped us overcome these problems.

This record set of results also clearly demonstrates that our business is in an even stronger position than when we launched the FSP last year, and we continue to be confident in our strategic direction.

Having introduced our new purpose, vision and strategy last year, I'm encouraged by how well we've embedded these in the business this year. Our purpose of Transforming Tomorrow Together has helped guide us this year, reinforcing the importance of working with our customers to help them make the products, create the materials, and develop the therapies that will be needed for the future.

A record set of results driven by strong revenue growth

As Sir David has said, we've achieved a record set of results. We had strong revenue growth in all regions, with the strongest growth in our Manufacturing technologies segment. This has been driven by increased investments in the semiconductor and electronics sectors, and demand for industrial automation due to skills shortages and labour costs. In our Analytical instruments and medical devices segment, our spectroscopy products also achieved record revenue with growing research and industrial applications for Raman microscopy.

Our revenue for the year ended 30 June 2022 was £671.1m, compared with £565.6m last year. This is a direct result of our new strategy, that builds from our existing strength in working closely with our customers to develop the products they need to grow. Our ability to make these products in-house to tight timescales, while offering local support as a global business, has been essential to our success this year.

We achieved record Adjusted profit before tax of £163.7m compared with £119.7m last year, and this means Adjusted* earnings per share was 185.5p compared with 132.0p last year. Adjusted measures are the ones we use as a Board to measure our underlying trading performance, and we're pleased with our improvements given that we've faced significant increases in some production costs and made investments in pay and reward.

Statutory profit before tax for the year was £145.6m compared with £139.4m last year, leading to Statutory earnings per share of 165.4p compared with 153.2p last year. Allen Roberts provides more detail of our financial performance in the Commentary by the Group Finance Director.

Excellent progress in our customer-focused strategy

Our strategy is designed to deliver sustainable, profitable growth by ensuring we have the agility and resources to identify and respond to opportunities in our markets. I'm really encouraged with the progress our two segments have made here this year, and in the four strategic pillars that support our segments.

As I mentioned above, our teams have gone above and beyond this year to support our customers. Many of the markets we work in have experienced a rapid and significant recovery from the economic effects of the pandemic, and our approach of providing local support to our customers has helped us to respond to this.

We've continued to launch new products, such as an ultrasonic probe for REVO (our market-leading multi-sensor system for CMMs). Ultrasonic probes offer an advantage over traditional tactile probes for parts where it's hard to access internal features, such as drive shafts and hollow aerospace blades. This is a great example of what we already do so well; understanding the problems our customers are having and then using our expertise to make a product that helps them solve the issue.

We've also continued to improve our existing products. When it launched last year, our NC4+ Blue set the standard for non-contact tool setting, thanks to its industry-first blue laser. We've since launched the next generation product this year. Both this and the RUP ultrasonic probe demonstrate how we can grow our business by developing products in our existing markets.

This innovation, and our approach of building a long-term relationship with customers, is helping us to gain new customers and outperform market growth. I'm particularly proud of the success of our Encoder business this year, gaining key customer accounts in recent months and not just in the semiconductor sector.

As part of how we're moving into new markets we've also expanded our offer to customers this year. We've been working on making more of our products compatible with third-party software, such as our popular Equator gauging system. Doing this helps us open new opportunities in areas where customers and end users may already be using a different software system.

Our design and engineering teams have made good progress this year with our flagship product projects. These are the ones we prioritise because the products are most important to our long-term growth, or where we expect them to bring significant revenue growth quickly. One of our first flagship products to launch last year was FORTiS, our enclosed encoder for use in machine tools. One of our strategic priorities is to develop non-substitutional products in adjacent markets, and FORTiS is exactly this. It's been really well received by our customers and again shows how we can grow our business within new markets.

The skills and flexibility of our manufacturing teams have been central to achieving this success. We've recruited around 300 people into these teams this year, and significantly increased our productive hours ahead of this rise in headcount. This in-house manufacturing expertise means we've been able to meet the rising demand this year while still maintaining our exacting standards, and have kept our gross profit margin at 53% (FY2021: 52%) despite the global rise in costs, such as raw materials, gas and electricity.

Sustainable, responsible business

We're committed to being a responsible business in everything we do, and want to ensure that our people understand their role in achieving this. This year we introduced 'Responsible Renishaw', our global umbrella brand for compliance matters, guiding our people to do business responsibly in line with our value of integrity. We launched the new brand with a week of focused communications, and 'Responsible Renishaw Week' will now be an annual event.

Following the Russian invasion of Ukraine in February 2022, we immediately stopped the supply of goods from the Group to Russia and certain parts of Ukraine. We have now ceased our operations in Russia. Although we've spent many years growing our business in Russia and were conscious of the effect this would have on our employees in Moscow and Perm, it was the right decision to make. We are also actively managing any attempts to procure our products through alternative routes.

Sustainability is an integral part of our business. It's at the heart of our purpose of Transforming Tomorrow Together, working with our people, customers, suppliers and communities to create a more sustainable world. This year, we've committed to a science-based Net Zero emissions target of no later than 2050 for our entire business and a target of 2028 for Scope 1 and 2 emissions.

For us, Net Zero means achieving a 90% reduction in greenhouse gas (GHG) emissions compared to our FY2020 baseline emissions. For the remaining 10% of emissions, we will invest in credible carbon offsetting and removal programmes. Although we've set an overall target of achieving Net Zero by 2050, we expect we can do more. We've therefore set ourselves a target of measuring our Scope 3 emissions by March 2023, with the aim of then setting an earlier target year for achieving Net Zero for all our emissions.

The move to Net Zero also represents many opportunities for our business, since our products positively contribute to our customers' own sustainability ambitions, by reducing energy consumption and minimising waste.

* Note 29, Alternative performance measures, defines how Adjusted profit before tax is measured.

Our success is testament to our people

Sir David has already acknowledged the huge contribution of our employees during another highly challenging year. I'd also like to add my own thanks for everything that they did to help achieve this record year for the business. With such significant sales growth and supply chain pressures, we've been stretched in so many operational areas. Nonetheless, I've been inspired by the resilience, skill, dedication and innovation shown by our people this year.

We've made excellent progress this year on responding to feedback from our people, and have focused on modernising our approach to pay and reward, improving our performance reviews, and supporting career progression. The Group-wide pay benchmarking review is a major part of this. As a result of the reviews to date, and excluding other factors such as headcount growth, we expect our labour costs to increase by around £19m in FY2023 compared with FY2022.

To support our growth, we welcomed over 400 additional people into our business, ending the year with around 5,100 people across the world. We continue to take a long-term view and plan for the future success of the Group, so this year we recruited nearly 150 apprentices and graduates, and also took on more than 40 industrial placements. Having started here as a sponsored student myself, I know we've always been committed to developing our people to both build and retain their skills within the business. This includes supporting people through further study, with more than 200 colleagues currently enrolled on apprenticeship programmes.

COVID-19 update

We continue to monitor the impact of COVID-19 on our people and business, and retain some measures designed to minimise the risk of in-company transmissions. However, most of our operations are now operating on a more normal basis. We were affected by the spring lockdowns in China, with our local headquarters in Shanghai closed for two months, but were able to respond well to this. For example, we used technical webinars to stay in touch with customers, and used our extensive network of offices and employees across the country to supply key customers and satisfy urgent orders. I'd like to recognise the huge efforts made by colleagues in China throughout this challenging period.

Although the pandemic has clearly been a difficult time for so many people, I think it's important to reflect on what we've learnt from it. We've demonstrated our resilience, and the ability and dedication of our people to respond to rapid changes. We've been able to make better use of digital technology to work with each other, our customers and our suppliers, meaning we can work in a more environmentally conscious way by travelling less. More digital engagement with customers is also opening up more sales opportunities, and our online sales are growing too.

Outlook

We have made a positive start to FY2023 and our order book remains strong. We have, however, recently seen a weakening in order intake from the semiconductor and electronics sectors, and general market sentiment is becoming more cautious. In light of this, we are managing costs carefully and focusing on productivity.

Having strong cash reserves also helps us take a long-term view and weather shorter-term challenges. We believe our markets offer very positive long-term growth opportunities, and that we're making the right investments to benefit from them. We have some innovative new products in the pipeline to support our growth in new and adjacent markets with both machine builders and end users.

The work I noted above on retaining, rewarding, and developing our people to fulfil their potential is a critical part of delivering our growth plans. Having seen what our people have already achieved this year, I know this potential is enormous.

Overall, I'm confident in our strategy and the actions we're taking to deliver sustainable, long-term growth, and I look forward to the year ahead.

Will Lee
Chief Executive

15 September 2022

We launched the second generation of our innovative FORTiS enclosed encoders this year.

A strong performance with record results

I'm delighted to report record revenue for the year amounting to £671.1m, an increase of 19% compared with £565.6m last year.

We've also achieved record Adjusted profit before tax of £163.7m, an increase of 37% compared with £119.7m last year. Statutory profit before tax was £145.6m. We continue to be in a strong financial position, with net cash and bank deposit balances of £253.2m at 30 June 2022 (FY2021: £215.0m).

Revenue by region

	2022 revenue at actual exchange rates £m	Change from 2021 %	2021 revenue at actual exchange rates £m	Underlying change at constant exchange rates %
APAC	**317.0**	+15	274.8	+16
EMEA	**205.8**	+22	169.1	+22
Americas	**148.3**	+22	121.7	+18
Total Group revenue	**671.1**	+19	565.6	+18

Allen Roberts
Group Finance Director

Revenue analysis

We've seen strong revenue growth in all our regions this year. Our APAC region was the first to recover in the previous financial year, but recent growth has been more evenly spread. This rapid upturn has placed supply chains under great stress in many sectors, most notably semiconductor and electronics, where substantial investments are in progress to ease capacity constraints.

Manufacturing technologies revenue grew by 19.6% to £634.6m this year, and we have seen increased demand for all our product lines. The most notable growth was in our Position Measurement business, with our encoder product line benefitting from significant global investments in the electronics capital equipment market, including semiconductor manufacture. This has been driven by an increase in both consumer and commercial demand for electronic products. Magnetic encoders designed and manufactured by our associate company, RLS, also experienced strong growth due to increased demand for industrial automation products. All our Industrial Metrology product lines grew due to a recovery in investments in metal cutting machinery and the need to measure the outputs from those processes, including increased investments in shopfloor metrology.

Revenue from our Analytical instruments and medical devices business grew by 4.0% to £36.5m this year. Our Spectroscopy business achieved growth across our three regions, delivering record revenue, driven by customers releasing funds on capital expenditure projects. Despite a challenging year for our neurological business, we still see many opportunities to grow this business and have a strong pipeline for drug delivery revenue.

Operating costs

Our extensive in-house manufacturing operations, proactive inventory management and continual assessment of alternative components has allowed us to mitigate continued supply chain constraints, caused, in large part, by the global shortage of electronic components.

Against this backdrop, we're pleased to have maintained our production costs (see note 4) at 35% of revenue. Like many businesses, we've experienced cost increases, but by improving our efficiency through increasing production volumes and making process improvements we've been able to mitigate this.

The Group headcount increased during the financial year, reaching 5,097 at the end of June 2022. This compares to 4,664 at the end of June 2021. We have recruited additional manufacturing staff to ensure we have sufficient capacity to meet demand, as well as targeting headcount growth to support product development, and expanding our future talent programmes. The average headcount during the year was 4,931, an increase of 11% compared with last year. Total labour costs (including bonuses) for the year were £254.4m compared with £223.9m last year.

The cost increase results mainly from the headcount increase, pay reviews for our employees and increased performance related bonuses.

As part of our reward and retention programmes, we have carried out extensive salary benchmarking exercises in certain parts of the business, including all our UK employees. Our intention is to benchmark all Group employees by the end of this calendar year. As a result of benchmarking and other pay reviews already completed (and excluding other factors such as headcount growth), we expect annual labour costs to increase by around £19m in FY2023 compared with FY2022.

Certain other operating costs, such as travel and exhibitions, are higher this year compared to last year as some pandemic-related restrictions have been lifted. We have also experienced a notable increase in utilities costs, caused by increasing energy prices and usage.

During the financial year, £3.7m (FY2021: nil) of expenditure on services relating to the implementation of a Group-wide ERP software has been recognised in Administrative expenses in the Consolidated income statement.

Following the Russian invasion of Ukraine in February 2022, we immediately stopped the supply of goods from the Renishaw Group to Renishaw Russia and by 30 June 2022 we had ceased our operations in Russia. Typically, combined sales to Russia and Belarus have represented around 1% of total Group revenue. We recorded £2.1m of impairments against our assets in Russia, and we do not anticipate any further costs or impairments.

No other significant asset impairments have been recognised this year, as a result of upward demand trends across most of our geographic areas and business units. In the previous year, we recognised impairments of £4.7m in Administrative expenses relating to an associate company.

Research and development

We remain committed to our long-term strategy of delivering growth through the development and introduction of innovative and patented products.

During the year, we incurred research and development expenditure of £59.4m, compared with £58.6m last year (see note 4). We also incurred £26.4m (FY2021: £18.0m) on other engineering expenditure, to support existing products and technologies. There has been an increased focus on existing products and technologies during the year due to global supply chain issues, which have, in some instances, required product or process redesigns.

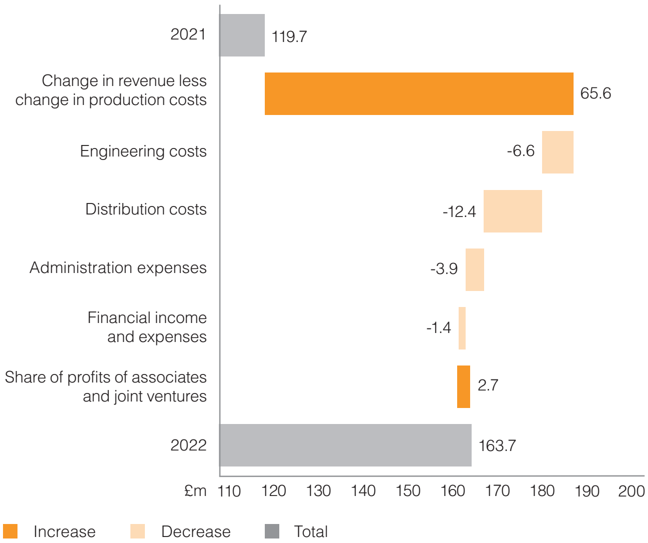
Profit and tax

Adjusted profit before tax amounted to £163.7m compared with £119.7m in FY2021, an increase of 37%. Statutory profit before tax was £145.6m compared with £139.4m in the previous year.

There are sometimes infrequently occurring events which impact on our financial statements, recognised according to applicable IFRSs, that we believe should be excluded from adjusted performance measures in order to give readers a more understandable and comparable view of our underlying performance.

Items excluded from Adjusted profit before tax include: losses of £8.3m from forward contracts deemed ineffective for cash flow hedging (FY2021: £23.0m gain); third-party fees relating to the FSP of £0.2m gain (FY2021: £3.2m loss); a revised estimate of 2020 restructuring provisions of £1.7m gain (FY2021: nil); and a defined benefit (DB) pension scheme remeasurement loss relating to augmentation of members' benefits totalling £11.7m (FY2021: nil). These have not affected cash flow during the financial year.

Adjusted profit before tax bridge



Adjusted profit before tax:	2022 £'000	2021 £'000
Adjusted profit before tax	**163,742**	119,666
Revised estimate of 2020 restructuring provisions	**1,688**	–
Third-party FSP costs	**200**	(3,222)
UK defined benefit pension scheme past service cost	**(11,695)**	–
Fair value (losses)/gains on financial instruments	**(8,349)**	22,995
Statutory profit before tax	**145,586**	139,439

Adjusted operating profit in our Manufacturing technologies segment was £158.6m compared with £114.1m last year, while in our Analytical instruments and medical devices segment, Adjusted operating profit was £2.8m compared with £4.5m last year.

The overall effective rate of tax was 17.3% (FY2021: 20.1%). We operate in many countries around the world and the overall effective tax rate is a result of the combination of the varying tax rates applicable throughout these countries. In addition, the tax rate has benefited from tax incentives (patent box and capital allowances super-deduction) and higher profits from associates and joint ventures. Note 7 provides further analysis of the effective tax rate.

Consolidated balance sheet

We have invested £31.0m in property, plant and equipment and vehicles during the year, of which £6.7m was spent on property and £24.3m on plant and machinery, IT equipment and infrastructure, and vehicles. Property expenditure in the year included the completion of a new distribution facility in South Korea, amounting to £3.8m, while plant and equipment expenditure mostly comprised manufacturing equipment in the UK.

Within working capital, we have increased our inventories to £162.5m from £113.6m at the beginning of the year. This is in line with increases in global demand and reflecting planned increases in certain component safety stock levels to mitigate global supply shortages. We continue to focus on inventory management while remaining committed to our policy of holding sufficient finished goods to ensure customer delivery performance, given our short order book.

Trade receivables increased from £114.7m to £127.6m due to increased revenue and a currency translation gain of £5.3m.

Debtor days remained constant year-on-year at 61 days. We continue to experience low levels of defaults, and hold a provision for expected credit losses at 0.2% of trade receivables (FY2021: 0.3%).

Total equity at the end of the year was £815.2m, compared with £703.3m at 30 June 2021. This is primarily a result of profit for the year of £120.4m and gains from the remeasurement of defined benefit pension scheme liabilities of £53.1m, offset by dividends paid of £49.5m.

Cash and liquidity

We have further improved our liquidity position this year, with net cash and bank deposit balances at 30 June 2022 of £253.2m (FY2021: £215.0m). This is a result of our strong trading performance, offset by our previously noted investments and working capital movements, and dividends paid of £49.5m.

In line with our capital allocation strategy, the chart below summarises our sources and uses of cash for the year.

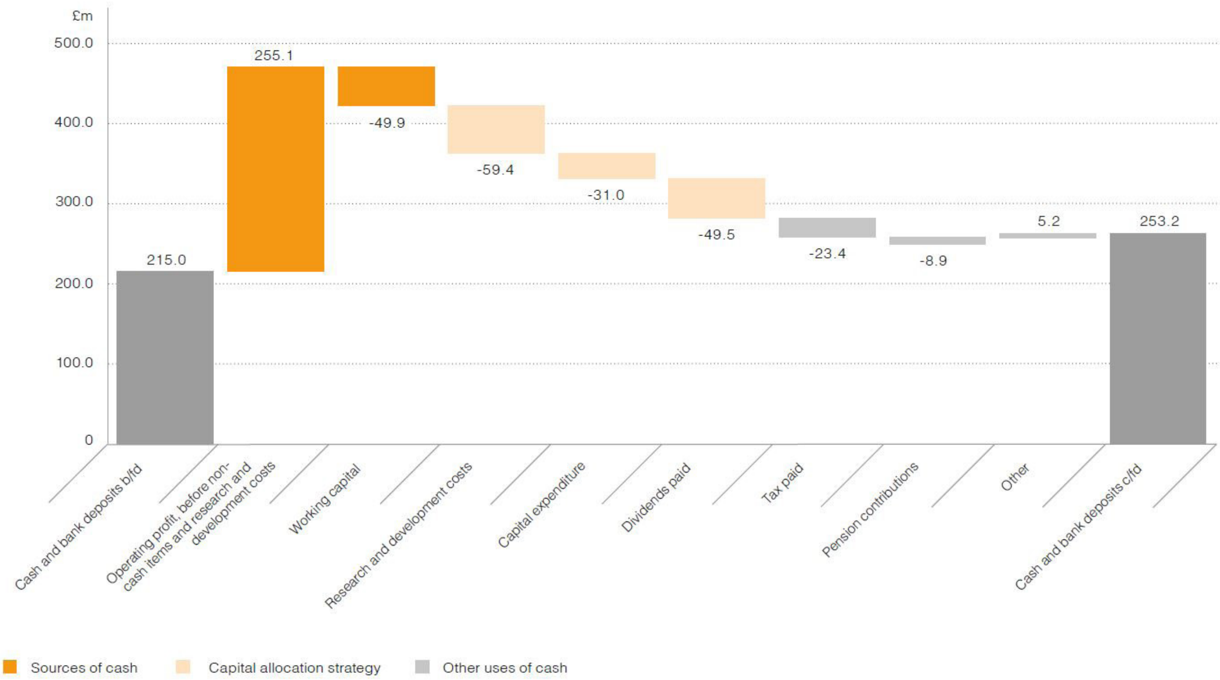
We disclose details of 'severe but plausible' scenario forecasts used in our going concern and viability assessments in note 1 and conclude that we have a reasonable expectation that we will retain a liquid position and be able to continue in operation for at least the next three years.

Capital allocation strategy

Our Board regularly reviews the capital requirements of the Group, in order to maintain a strong financial position to protect the business and provide flexibility to fund future growth.

We've consistently applied our capital allocation strategy for many years. We're committed to R&D investment for new products, manufacturing processes and global support infrastructure to generate growth in future returns and improve productivity while managing expenditure appropriate to trading conditions. This is evidenced in the year by our capital expenditure and investments in R&D.

Sources and uses of cash



Actual and forecast returns, along with our strong financial position, support our progressive dividend policy, which aims to increase the dividend per share while maintaining a prudent level of dividend cover.

Pensions

The Company and trustees have successfully implemented a number of changes to the UK Defined Benefit Pension scheme during the year.

Following the Queen's Counsel opinion received in FY2021, primarily in respect of the periods over which revaluation and late retirement factors are applied, the liabilities of the scheme reduced by £14.3m last year with the credit reported in other comprehensive income and expense.

This year the scheme rules have been changed to align with the historic administrative method for calculating the revaluations and early retirement factors. The resulting increase in liabilities, totalling £11.7m, has been recognised as a past service cost in the Consolidated income statement. This cost has been excluded from Adjusted profit before tax (see note 29 for further details). We also agreed that the Company will have the unconditional right to a refund of any surplus on wind-up of the scheme, allowing for the recognition of the IAS 19 scheme surplus this year. Following the agreement of the September 2021 actuarial valuation, the £10.6m held in escrow as security has now been released from charge and the net book value of UK properties subject to charge has reduced from £81.7m last year to £54.2m this year.

At the end of the year, our defined benefit pension schemes, now closed for future accrual, showed a surplus of £42.2m, compared with a deficit of £23.7m at 30 June 2021. Our defined benefit pension schemes' assets at 30 June 2022 decreased to £216.7m from £231.4m at 30 June 2021, primarily reflecting investment performance during the period.

Pension scheme liabilities decreased from £255.1m to £174.5m, on an IAS 19 basis. This primarily reflects the net effect of:

- an increase in the discount rates of the UK and Ireland schemes;
- changes to the UK scheme rules which allows recognition of a surplus position; and
- the change in the UK scheme rules relating to members' benefits discussed above.

See note 23 for further details on employee benefits.

Treasury policies

Our treasury policies are designed to manage the financial risks that arise from operating in a number of foreign currencies, with the majority of sales made in these currencies, but with most manufacturing and engineering carried out in the UK, Ireland and India.

We use forward exchange contracts to hedge a proportion of anticipated foreign currency cash inflows and the translation of foreign currency denominated intercompany balances. There are forward contracts in place to hedge against our Euro, US Dollar and Japanese Yen cash inflows, and to offset movements on Renishaw plc's Euro, US Dollar and Japanese Yen intercompany balances. We do not speculate with derivative financial instruments.

Most of these forward contracts are subject to hedge accounting under IFRS 9 'Financial Instruments'. The hedged item in these contracts is the revenue forecasts of Renishaw plc and Renishaw UK Sales Limited, and during the year these forecasts were increased due to the improved economic conditions. This means that all forward contracts have passed hedge effectiveness testing in the year. Gains and losses, which recycle through the Consolidated income statement as a result of contracts previously found to be ineffective, are excluded from adjusted profit measures. See note 25 for further details on financial instruments and note 29 on alternative performance measures.

Our treasury policies are also designed to maximise interest income on our cash and bank deposits and to ensure that appropriate funding arrangements are available for each of our companies.

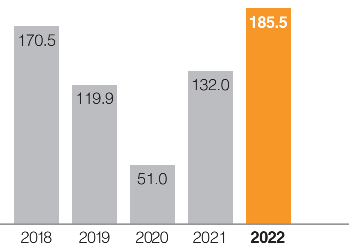
We have always valued having cash in the bank to protect the core business from downturns, and we monitor our cash against a minimum holding according to forecast overheads and revenue downturn scenarios. This cash also enables us to react swiftly as investment or market capture opportunities arise, while we expect to significantly increase our investments in capital expenditure in the coming years.

Earnings per share and dividend

Adjusted earnings per share is 185.5p, compared with 132.0p last year, while statutory earnings per share is 165.4p, compared with 153.2p last year.

Adjusted earnings per share

185.5p
(2021: 132.0p)



We paid an interim dividend of 16.0 pence per share (FY2021: 14.0p) on 11 April 2022 and are pleased to propose a final dividend of 56.6 pence per share in respect of the year (FY2021: 52.0p).

Looking forward

While there remains some global economic uncertainty, we have many drivers in our key markets to deliver long-term revenue growth and we continue to invest in the infrastructure required to meet the expected future demand. Supported by our strong balance sheet, we have committed around £64m to increasing the footprint of our production facilities at Miskin, Wales, and are investing in production equipment to increase both capacity and productivity, with a focus on automation. Where possible, we are mitigating cost inflation by increasing the sale price of our products and are focused on delivering productivity improvements across the business.

Allen Roberts
Group Finance Director
15 September 2022

Principal risks and uncertainties

Our performance is subject to a number of risks – the principal risks, factors impacting on them and mitigations are ranked in the table below, as well as an indication of the movement of the risk in the last year, our appetite towards that risk, and how the risk links to our strategy. The Board has conducted a robust assessment of the principal risks facing the business.

Risk movement

Increased risk ↑
Decreased risk ↓
Stable risk ↔

Link to strategy

SM	Sales & Marketing	**E**	Engineering	**P**	People and culture
M	Manufacturing	**SS**	Support Services	**S**	Sustainability

Appetite

LOW	Minimal risk exposure is considered the safest approach, which may mean lower returns.
MEDIUM	A balanced approach which carefully considers the risks and rewards.
HIGH	Greater risk tolerance, which may involve maximum risk for maximum return.

People ↑

Appetite	Link to strategy	Risk owner
MEDIUM	P	Head of Group HR

Risk description

Our people are fundamental to the success of our business.

Inability to attract, retain, and develop key talent at all levels of the organisation could mean we fail to successfully deliver on our strategic objectives.

Potential impact

- Loss of expertise, skills, and specialist talent could affect delivery of objectives.
- Poor retention and engagement could slow the delivery of our strategic objectives and product delivery.
- Failure to develop future leaders, insufficient talent progression.
- Loss of market share, reduced revenue, poor customer service, and reduced profit.

What we are doing to manage this risk

- Targeted approach to attract, reward, and retain our talent globally, including the roll out of a new benchmarking programme for annual salary reviews and major investment in reward to ensure our pay is competitive.
- Continued investment in our STEM and Early Career programmes, as well as talent development and succession planning.
- Advancing our employee engagement through multi-media communications, promoting wellbeing, evolving feedback mechanisms, and further developing our inclusion strategy.
- Establishing continuity plans to enable rapid adaptation to changing circumstances.

Innovation strategy ↑

Appetite	Link to strategy	Risk owner
HIGH	E	Product Group Directors

Risk description

Failure to create new cutting-edge, high-quality products, or failing to protect the intellectual property that underpins these products, which allows us to differentiate ourselves from our competitors.

As a business driven by innovation, there is a higher risk with new ventures outside our traditional field of expertise where the science and engineering are less proven.

Potential impact

- Failing to meet customer needs for high-quality and complex products.
- Loss of market share.
- Reduced revenue, profit and cash generation.
- Failing to recover investment in R&D.

What we are doing to manage this risk

- Increasing focus on presenting and understanding technology development and commercialisation roadmaps. R&D and flagship projects are prioritised and regularly reviewed against milestones. Medium to long-term R&D strategies are monitored regularly by the Board and Executive Committee.
- All Board meetings now have a standing agenda item to review disruptive technology.
- Market developments are closely monitored and product development is based on input from customers.
- Patent and intellectual property protection are core to new product development, with management and review integrated into the Product Innovation Process (PIP) procedure.

Supply chain dependencies

Appetite	Link to strategy	Risk owner
LOW	M	Head of Group Manufacturing

Risk description

We're exposed to the risk that critical components, or some components that we buy from single-source suppliers, make us vulnerable to an interruption in supply.

Potential impact

- Inability to fulfil customer orders, leading to a reduction in revenue and profits, and damage to reputation.
- Failure to meet contractual requirements.
- Increased cost of alternative sourcing or redesign.
- Loss of market share.

What we are doing to manage this risk

- Continued focus on, and review of, sourcing of key components.
- Increase in buffer inventory.
- Cost-effective alternative sources of supply actively sought (including in-house manufacturing) to reduce dependency on single-source suppliers.
- Specifications are reviewed and updated where necessary to facilitate alternative sourcing.

Industry fluctuations

Appetite	Link to strategy	Risk owner
HIGH	SM, M, E	Chief Executive

Risk description

We're exposed to the cyclical nature of demand from aerospace, automotive and consumer electronics industries, which may be more severe if downcycles in these key industries coincide.

Potential impact

- Increased competition on prices.
- Loss of market share.
- Reduced revenue, profit and cash generation.

What we are doing to manage this risk

- Closely monitoring market developments.
- Expanding our range in order to meet the demands of a number of different industry sectors and markets.
- Identifying and meeting the needs of emerging markets, for example in robotic automation.
- Maintaining a strong balance sheet with the ability to flex manufacturing resource levels.

Economic and political uncertainty

Appetite	Link to strategy	Risk owner
HIGH	All	Chief Executive

Risk description

As a global business, we may be affected by political, economic or regulatory developments in countries that we operate in. This could include a global recession, US/China trade relations, or the current war in Ukraine.

Potential impact	What we are doing to manage this risk
– Loss of financial and physical assets in a region. – Supply issues leading to failures to meet contractual obligations. – Reduced revenue, profit and cash generation.	– Monitoring external economic and commercial environments, and identifying relevant headwinds. – Maintaining sufficient headroom in our cash balances. – Increase in buffer inventory. – Closely monitoring all markets in which we operate.

Route to market/customer satisfaction model

Appetite	Link to strategy	Risk owner
MEDIUM	SM	Chief Executive

Risk description

Inherent complexity in the move to systems integration and the sale of capital goods.

Potential impact	What we are doing to manage this risk
– Low capital efficiency – high people costs and low productivity. – Higher engineering and distribution costs. – Adversely affects customer satisfaction levels, revenue, and profits.	– Closely monitoring customer feedback. – Collaborating with complementary third parties. – Adopting new approaches to the sale of capital goods.

Capital allocation

Appetite	Link to strategy	Risk owner
MEDIUM	E	Group Finance Director

Risk description

This risk could be triggered by a failure to properly allocate budget between core and emerging activities.

Potential impact	What we are doing to manage this risk
– Investing in declining or less profitable areas at the expense of more profitable and strategically important areas. – Reduced profits. – Loss of market share. – Impact on innovation.	– Defining, prioritising, and developing strategies for all core and emerging areas of the business. – Scrutinising all expenditure, including regular reporting on labour costs and capital expenditure. – Regular reporting of cash balances. – Tracking of performance objectives including regular reporting on flagship project progress.

Competitive activity

Appetite	Link to strategy	Risk owner
LOW	All	Chief Executive

Risk description

Failure to adapt to market and/or technological changes.

Potential impact	What we are doing to manage this risk
– Reduced revenue, profits and cash generation. – Loss of market share. – Erosion of prices. – Loss of reputation as a leader in innovation.	– We are diversified across a range of products, industries, and geographies. – Closely monitoring market developments, particularly across our core product areas. – Local sales and engineering support to quickly identify changing local needs. – Strong historic and ongoing commitment to R&D investment to continue to build our product portfolio (see note 4 for details of R&D expenditure).

Cyber

Appetite	Link to strategy	Risk owner
LOW	All	Director of Group Operations

Risk description

External and internal threat which could result in a loss of data including intellectual property, or our ability to operate our systems which could severely affect our business.

Potential impact	What we are doing to manage this risk
– Loss of intellectual property and/or commercially sensitive data. – Inability to access, or disruption to, our systems leading to reduced service to customers. – Financial loss and reputational damage. – Impact on decision-making due to lack of clear and accurate data, or disruption caused by the lack of service.	– Substantial resilience and back-up built into our systems, which are continuously updated for current threats and good industry practice. – Regularly discuss cyber and security risks at Board meetings, including the strength of our control environment. – Deploy physical, logical, and control measures to protect our information and systems, and external penetration testing is conducted as appropriate. – Conduct regular security awareness training, including phishing simulation exercises, which are proving effective.

IT transformation failure

Appetite	Link to strategy	Risk owner
LOW	All	Director of Group Operations

Risk description

The upgrade of our IT systems to Microsoft Dynamics 365, to remove legacy systems and ensure our business is better integrated, could affect our business if there are major technical issues, or it is poorly integrated. This risk could also result in problems if there are significant delays to the programme or it runs significantly over budget.

Potential impact	What we are doing to manage this risk
– Major disruption to our systems, causing delay to our operations. – Affect our ability to process or issue invoices and customer orders, or to procure goods and services. – Increased costs, including to fix technical issues and restore or upgrade other affected systems. – Project delay would leave us supporting legacy systems for longer than desired.	– Risk assessments carried out for all key systems likely to be affected by the upgrade. – A clear roadmap with measurable milestones, and planning to implement lower risk companies first. – Assigning project managers who have clear oversight of the project and any issues. – Promptly identifying and dealing with any significant issues.

Loss of manufacturing output

Appetite	Link to strategy	Risk owner
LOW	M	Head of Group Manufacturing

Risk description

Manufacturing output can be adversely affected by factors including environmental hazards, technical delays or outages, plant or equipment failure, inadequate resourcing levels, or factors affecting the workforce, such as a pandemic.

Potential impact

- Inability to fulfil customer orders leading to a reduction in revenue, failure to meet contractual requirements and damage to reputation.
- Increased costs of alternative sourcing or redesign.
- Impact on maintenance of buffer inventory.
- Loss of market share.

What we are doing to manage this risk

- Duplication of high-dependency processes, such as component manufacturing and finishing, electronic printed circuit board assembly, and microelectronics assembly, across multiple manufacturing locations.
- Ensuring we have flexible manufacturing capacity and sufficient resilience across our manufacturing sites.
- Standardised approaches to assembly, annual risk assessments, and business continuity planning.
- Reviewing and maintaining business interruption and other insurance cover.

Exchange rate fluctuations

Appetite	Link to strategy	Risk owner
MEDIUM	SM	Group Finance Director

Risk description

Due to the global nature of our operations, with over 90% of the revenue generated outside the UK, we're exposed to volatility in exchange rates that could have a significant impact on our results.

We're exposed to exchange rate risks, including the strengthening of Sterling against our major trading currencies, currency cash flow, currency translation risk, and the currency risk on intercompany balances.

Potential impact

- Significant variations in profit.
- Reduced cash generation.
- Increased competition on product prices.
- Increased costs.

What we are doing to manage this risk

- Rolling forward contracts for cash flow hedges in accordance with Board-approved policy, and one-month forward contracts to manage risks on intercompany balances.
- Tracking of overseas net assets value compared to the market capitalisation.
- Obtaining input from external sources including our banks.

Climate change

New risk

Appetite	Link to strategy	Risk owner
LOW	All	General Counsel & Company Secretary

Risk description

We could be exposed to physical risks, potentially triggering an inability to operate, and other transition risks regarding our plans to achieve Net Zero. We could fail to react adequately to new climate-related legislation, technology or market factors.

Failure to respond to large-scale natural hazards, such as hurricanes, floods, fires or pandemics, could result in operations failure.

Potential impact

- Increased costs – potentially costly and uncertain supplies of renewable energy certificates and/or offsetting schemes to achieve Net Zero commitment, and underestimating Net Zero costs.
- Damage to reputation and loss of future business.
- Impact on macroeconomic landscape.
- Disruption to operations caused by natural hazards.

What we are doing to manage this risk

- Sustainability and climate change are regularly discussed at Board and Executive Committee meetings.
- Our Sustainability team supports the Risk Committee in evaluating and understanding the possible effect of climate-related risks and opportunities.
- Reviewing and maintaining business interruption and other insurance cover to minimise any financial loss that may occur in the event of disruption caused by climate events.

Pensions

Appetite	Link to strategy	Risk owner
MEDIUM	P	Group Finance Director

Risk description

Investment returns and actuarial assumptions of our defined benefit pension schemes are subject to economic and social factors outside our control.

Potential impact

- Any deficit may need additional funding in the form of supplementary cash payments to the plans or the provision of additional security.
- Significant management time.
- External support costs.
- Damage to reputation.

What we are doing to manage this risk

- Implemented recovery plan for the UK defined benefit scheme in June 2019 with the aim of funding to self-sufficiency by 2031.
- Appointed a corporate Trustee in June 2022, with the previous Trustees stepping down. This will help reduce management time and support costs.
- Active engagement with the Trustee(s) on investment strategy.
- The Trustee(s) work to a statement of investment principles, and the Company and Trustee(s) seek appropriate independent professional advice if needed.

Non-compliance with laws and regulations

Appetite	**Link to strategy**	**Risk owners**
LOW	All	General Counsel & Company Secretary/Director of Renishaw Neuro Solutions

Risk description

We operate in a large number of territories and in some highly-regulated sectors. We are subject to a wide variety of laws and regulations, including those relating to anti-bribery, anti-money laundering, sanctions, competition law, privacy, health and safety, product safety, and medical devices.

There is a risk that somewhere in the Group we may not be fully compliant with these laws and regulations.

Potential impact

- Damage to reputation and loss of future business.
- Potential penalties and fines, and cost of investigations.
- Management time and attention in dealing with reports of non-compliance.
- Inability to attract and retain talent.

What we are doing to manage this risk

- Whistleblowing hotline available for use by all employees which means that our people can make us aware of any potential non-compliance issues.
- Global compliance programmes in place for all high risk areas, which includes policies, key controls, and effective communication. Training also includes refreshed mandatory anti-bribery and anti-corruption modules.
- Promotion of all compliance functions under the umbrella brand 'Responsible Renishaw'. This helps to raise awareness about compliance, and makes it easier for our people to find the information they need to comply.
- Implementing a global privacy programme.

Product failure

Appetite	**Link to strategy**	**Risk owners**
LOW	E, M	Group Quality Manager/Renishaw Neuro Solutions Quality Manager

Risk description

The quality of our products could be adversely affected by internal threats, such as inadequate quality management procedures. Product quality could also be affected by external threats, such as substandard resourcing from third-party suppliers.

This risk is particularly notable in our neurological products, where failure could result in significant personal injury claims.

Potential impact

- Damage to reputation.
- Claims, including personal injury.
- Potential penalties and fines, and cost of investigations.
- Inability to fulfil customer orders leading to a reduction in sales.

What we are doing to manage this risk

- Rigorous internal product development and testing procedures (during development, manufacturing, and release) to international standards where applicable, to ensure high levels of quality assurance.
- Extensive interaction with customers and regulators to obtain and address feedback.
- Regular monitoring of third-party suppliers to ensure incoming parts and sub-contracted activity meet requirements.
- Liability is limited by our terms and conditions of sale and we have liability insurance. For clinical studies, we have separate trial insurance.

Consolidated income statement

for the year ended 30 June 2022

from continuing operations	notes	2022 £'000	2021 £'000
Revenue	2	**671,076**	565,559
Cost of sales	4	**(313,527)**	(269,852)
Gross profit		**357,549**	295,707
Distribution costs		**(122,455)**	(110,087)
Administrative expenses		**(69,736)**	(69,257)
UK defined benefit pension scheme past service cost	23	**(11,695)**	–
(Losses)/gains from the fair value of financial instruments	25	**(10,413)**	21,978
Operating profit		**143,250**	138,341
Financial income	5	**932**	3,406
Financial expenses	5	**(2,938)**	(3,991)
Share of profits of associates and joint ventures	13	**4,342**	1,683
Profit before tax		**145,586**	139,439
Income tax expense	7	**(25,235)**	(27,980)
Profit for the year		**120,351**	111,459
Profit attributable to:			
Equity shareholders of the parent company		**120,351**	111,459
Non-controlling interest	26	**–**	–
Profit for the year		**120,351**	111,459
		pence	pence
Dividend per share arising in respect of the year	26	**72.6**	66.0
Dividend per share paid in the year	26	**68.0**	14.0
Earnings per share (basic and diluted)	8	**165.4**	153.2

Consolidated statement of comprehensive income and expense

for the year ended 30 June 2022

	notes	2022 £'000	2021 £'000
Profit for the year		**120,351**	111,459
Other items recognised directly in equity:			
Items that will not be reclassified to the Consolidated income statement:			
Current tax on contributions to defined benefit pension schemes		**1,653**	1,653
Deferred tax on contributions to defined benefit pension schemes		**(1,653)**	(1,653)
Remeasurement of defined benefit pension scheme liabilities	23	**69,078**	33,285
Deferred tax on remeasurement of defined benefit pension scheme liabilities		**(15,997)**	(6,052)
Total for items that will not be reclassified		**53,081**	27,233
Items that may be reclassified to the Consolidated income statement:			
Exchange differences in translation of overseas operations	26	**12,151**	(14,752)
Exchange differences in translation of overseas joint venture	26	**118**	(728)
Current tax on translation of net investments in foreign operations	26	**(1,529)**	735
Deferred tax on translation of net investments in foreign operations	26	**–**	735
Effective portion of changes in fair value of cash flow hedges, net of recycling	26	**(28,423)**	51,590
Deferred tax on effective portion of changes in fair value of cash flow hedges	7,26	**6,155**	(9,790)
Total for items that may be reclassified		**(11,528)**	27,790
Total other comprehensive income and expense, net of tax		**41,553**	55,023
Total comprehensive income and expense for the year		**161,904**	166,482
Attributable to:			
Equity shareholders of the parent company		**161,904**	166,482
Non-controlling interest	26	**–**	–
Total comprehensive income and expense for the year		**161,904**	166,482

Consolidated balance sheet

at 30 June 2022

	notes	**2022 £'000**	2021 £'000
Assets			
Property, plant and equipment	9	**243,853**	246,242
Right-of-use assets	10	**9,950**	12,429
Investment properties	11	**10,568**	–
Intangible assets	12	**44,218**	43,795
Investments in associates and joint ventures	13	**20,570**	16,634
Finance lease receivables	14	**6,961**	6,241
Employee benefits	23	**43,241**	–
Deferred tax assets	7	**22,893**	21,292
Derivatives	25	**–**	12,484
Total non-current assets		**402,254**	359,117
Current assets			
Inventories	16	**162,482**	113,563
Trade receivables	25	**127,551**	114,661
Finance lease receivables	14	**3,348**	1,763
Contract assets		**578**	332
Short-term loans to associates and joint ventures		**302**	598
Current tax		**8,901**	1,600
Other receivables	25	**27,068**	30,021
Derivatives	25	**7,121**	9,639
Pension scheme cash escrow account	23	**–**	10,578
Bank deposits	15	**100,000**	120,000
Cash and cash equivalents	15,25	**153,162**	95,008
Total current assets		**590,513**	497,763
Current liabilities			
Trade payables	25	**30,947**	24,715
Contract liabilities	18	**12,956**	6,120
Current tax		**10,078**	4,680
Provisions	17	**4,244**	6,259
Derivatives	25	**17,890**	5,594
Lease liabilities	20	**3,714**	3,904
Borrowings	21	**919**	992
Other payables	19	**51,949**	51,716
Total current liabilities		**132,697**	103,980
Net current assets		**457,816**	393,783
Non-current liabilities			
Lease liabilities	20	**6,466**	8,658
Borrowings	21	**5,160**	6,457
Employee benefits	23	**996**	23,698
Deferred tax liabilities	7	**22,815**	10,402
Derivatives	25	**9,463**	355
Total non-current liabilities		**44,900**	49,570
Total assets less total liabilities		**815,170**	703,330
Equity			
Share capital	26	**14,558**	14,558
Share premium		**42**	42
Own shares held	26	**(750)**	(404)
Currency translation reserve	26	**14,459**	3,719
Cash flow hedging reserve	26	**(10,923)**	11,345
Retained earnings		**798,541**	674,603
Other reserve	26	**(180)**	44
Equity attributable to the shareholders of the parent company		**815,747**	703,907
Non-controlling interest	26	**(577)**	(577)
Total equity		**815,170**	703,330

These financial statements were approved by the Board of Directors on 15 September 2022 and were signed on its behalf by:

Sir David McMurtry **Allen Roberts**

Directors

Consolidated statement of changes in equity

for the year ended 30 June 2022

Year ended 30 June 2021	Share capital £'000	Share premium £'000	Own shares held £'000	Currency translation reserve £'000	Cash flow hedging reserve £'000	Retained earnings £'000	Other reserve £'000	Non-controlling interest £'000	Total £'000
Balance at 1 July 2020	14,558	42	(404)	17,729	(30,455)	546,100	(129)	(577)	546,864
Profit for the year	–	–	–	–	–	111,459	–	–	111,459
Other comprehensive income and expense (net of tax)									
Remeasurement of defined benefit pension scheme liabilities	–	–	–	–	–	27,233	–	–	27,233
Foreign exchange translation differences	–	–	–	(13,282)	–	–	–	–	(13,282)
Relating to associates and joint ventures	–	–	–	(728)	–	–	–	–	(728)
Changes in fair value of cash flow hedges	–	–	–	–	41,800	–	–	–	41,800
Total other comprehensive income and expense	–	–	–	(14,010)	41,800	27,233	–	–	55,023
Total comprehensive income and expense	–	–	–	(14,010)	41,800	138,692	–	–	166,482
Share-based payments charge	–	–	–	–	–	–	173	–	173
Dividends paid	–	–	–	–	–	(10,189)	–	–	(10,189)
Balance at 30 June 2021	**14,558**	**42**	**(404)**	**3,719**	**11,345**	**674,603**	**44**	**(577)**	**703,330**
Year ended 30 June 2022									
Profit for the year	–	–	–	–	–	120,351	–	–	120,351
Other comprehensive income and expense (net of tax)									
Remeasurement of defined benefit pension scheme liabilities	–	–	–	–	–	53,081	–	–	53,081
Foreign exchange translation differences	–	–	–	10,622	–	–	–	–	10,622
Relating to associates and joint ventures	–	–	–	118	–	–	–	–	118
Changes in fair value of cash flow hedges	–	–	–	–	(22,268)	–	–	–	(22,268)
Total other comprehensive income and expense	–	–	–	10,740	(22,268)	53,081	–	–	41,553
Total comprehensive income and expense	–	–	–	10,740	(22,268)	173,432	–	–	161,904
Share-based payments charge	–	–	–	–	–	–	180	–	180
Own shares transferred on vesting	–	–	404	–	–	–	(404)	–	–
Own shares purchased	–	–	(750)	–	–	–	–	–	(750)
Dividends paid	–	–	–	–	–	(49,494)	–	–	(49,494)
Balance at 30 June 2022	**14,558**	**42**	**(750)**	**14,459**	**(10,923)**	**798,541**	**(180)**	**(577)**	**815,170**

More details of share capital and reserves are given in note 26.

Consolidated statement of cash flow

for the year ended 30 June 2022

	notes	2022 £'000	2021 £'000
Cash flows from operating activities			
Profit for the year		**120,351**	111,459
Adjustments for:			
Depreciation of property, plant and equipment, and investment properties	9,11	**25,898**	24,317
Loss on sale of property, plant and equipment	9	**157**	31
Impairment of property, plant and equipment	9	**1,259**	–
Depreciation of right-of-use assets	10	**4,205**	4,463
Impairment of right-of-use assets	10	**1,837**	–
Amortisation of development costs	12	**4,698**	9,019
Amortisation of other intangibles	12	**1,225**	1,205
Impairment of development costs	12	**–**	1,092
Write-off of intangible assets	12	**3,510**	–
Share of profits from associates and joint ventures	13	**(4,342)**	(1,683)
Profit on disposal of investment in associate	13	**(582)**	–
Impairment of investment in associate		**–**	1,674
Impairment of long-term loan to associate		**–**	2,633
Write-off of lease liabilities	20	**(1,985)**	–
UK defined benefit pension scheme past service cost	23	**11,695**	78
Financial income	5	**(932)**	(3,406)
Financial expenses	5	**2,938**	3,991
Losses/(gains) from the fair value of financial instruments	25	**8,349**	(22,995)
Share-based payment expense	24	**180**	173
Tax expense	7	**25,235**	27,980
		83,345	48,572
Increase in inventories		**(48,919)**	(8,066)
Increase in trade and other receivables		**(11,301)**	(25,703)
Increase in trade and other payables		**12,288**	27,216
(Decrease)/increase in provisions		**(2,015)**	668
		(49,947)	(5,885)
Defined benefit pension scheme contributions	23	**(8,866)**	(8,866)
Income taxes paid		**(23,410)**	(9,991)
Cash flows from operating activities		**121,473**	135,289
Investing activities			
Purchase of property, plant and equipment, and investment properties	9,11	**(30,960)**	(10,873)
Sale of property, plant and equipment		**687**	33
Development costs capitalised	12	**(7,966)**	(9,844)
Purchase of other intangibles	12	**(929)**	(3,000)
Decrease/(increase) in bank deposits	15	**20,000**	(110,000)
Interest received	5	**834**	625
Dividends received from associates and joint ventures	13	**525**	–
Purchase of additional shareholding in joint venture		**–**	(749)
Proceeds from sale of shares in associate	13	**582**	–
Payments from pension scheme cash escrow account	23	**10,578**	–
Cash flows from investing activities		**(6,649)**	(133,808)
Financing activities			
Increase in borrowings	21	**–**	636
Repayment of borrowings	21	**(974)**	(3,477)
Interest paid	5	**(591)**	(386)
Repayment of principal of lease liabilities	22	**(4,081)**	(4,815)
Own shares purchased	26	**(750)**	–
Dividends paid	26	**(49,494)**	(10,189)
Cash flows from financing activities		**(55,890)**	(18,231)
Net increase in cash and cash equivalents		**58,934**	(16,750)
Cash and cash equivalents at the beginning of the year		**95,008**	110,386
Effect of exchange rate fluctuations on cash held		**(780)**	1,372
Cash and cash equivalents at the end of the year	15	**153,162**	95,008

Notes (forming part of the financial statements)

1. Accounting policies

This section sets out our significant accounting policies that relate to the financial statements as a whole, along with the critical accounting judgements and estimates that management has identified as having a potentially material impact on the Group's consolidated financial statements. Where an accounting policy is applicable to a specific note in the financial statements, the policy is described within that note.

Basis of preparation

Renishaw plc (the Company) is a company incorporated in England and Wales. The Group financial statements consolidate those of the Company and its subsidiaries (together referred to as the Group, and 'we') and equity account the Group's interest in associates and joint ventures. The parent company financial statements present information about the Company as a separate entity and not about the Group.

The financial information set out in the announcement does not constitute the Group's statutory accounts for the years ended 30 June 2022 or 30 June 2021. The financial information for the year ended 30 June 2021 is derived from the statutory accounts for that year, which have been delivered to the Registrar of Companies. The auditor reported on those accounts; their report was unqualified, did not draw attention to any matters by way of emphasis without qualifying their report and did not contain a statement under s498 (2) or (3) Companies Act 2006. In respect of the year ended 30 June 2022, an unqualified auditor's report was signed on 15 September 2022. The statutory accounts will be delivered to the Registrar of Companies following the Group's annual general meeting. The consolidated financial statements are presented in Sterling, which is the Company's functional currency and the Group's presentational currency, and all values are rounded to the nearest thousand (£'000).

The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these Group financial statements. Judgements made by the Directors, in the application of these accounting policies, that have a significant effect on the financial statements and estimates with a significant risk of material adjustment in the next year are noted below.

Critical accounting judgements and estimation uncertainties

The preparation of financial statements in conformity with IFRS requires management to make judgements, estimates and assumptions that affect the application of policies and reported amounts of assets and liabilities, income and expenses. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances. The results of this form the basis of making judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may therefore differ from these estimates. The estimates and underlying assumptions are reviewed on an ongoing basis.

The areas of key estimation uncertainty and critical accounting judgement that have a significant risk of causing a material adjustment to the carrying amount of assets and liabilities in the next financial year are summarised below, with further details included within accounting policies.

Item	**Key judgements (J) and estimates (E)**
Taxation	E – Estimates of future profits to use deferred tax assets
Research and development costs	J – Whether a project meets the criteria for capitalisation
Goodwill and capitalised development costs	E – Estimates of future cash flows for impairment testing
Inventories	E – Determination of net realisable value
Defined benefit pension schemes	E – Valuation of defined benefit pension schemes' liabilities
Cash flow hedges	E – Estimates of highly probable forecasts of the hedged item

When reviewing the above critical judgements and estimates, management also considered the effect of climate change, including our own Net Zero commitment. For the year ended 30 June 2022 we concluded that climate change did not have a material effect on any of the above judgements and estimates. The Directors reached the same conclusion when reviewing the Group's going concern and viability assessment.

While the Group could benefit significantly from changing demand as customers and end-users make progress with their own Net Zero targets, we recognise that climate change may pose a greater risk to the Group over time. We will continue to review the effect of climate change on financial statements in the future, and update our accounting and disclosures as the position changes.

New, revised or changes to existing accounting standards

The following accounting standard amendments became effective as at 1 January 2021 and have been adopted in the preparation of these financial statements, with effect from 1 July 2021:

- amendments to IFRS 4, IFRS 7, IFRS 9, IFRS 16 and IAS 39, Interest Rate Benchmark Reform Phase 2; and
- amendments to IFRS 16, COVID-19-Related Rent Concessions.

These have not had a material effect on these financial statements.

1. Accounting policies (continued)

Going concern

In preparing these financial statements, the Directors have adopted the going concern basis. The decision to adopt the going concern basis was made after considering:

- the Group's business model and key markets;
- the Group's risk management processes and principal risks;
- the Group's financial resources and strategies; and
- the process undertaken to review the Group's viability, including scenario testing.

In the viability review the Directors assessed the period to 30 September 2025, using the 'highly probable' revenue forecasts used by the Group for hedge accounting, and 'severe but plausible' downside scenarios. In making the going concern assessment, the Directors used the same forecasts but assessed the period to 30 September 2023.

Each scenario used the same starting point, taking the revenue forecast as the pessimistic view in our five-year business plan (which we also refer to as the 'highly probable' revenue forecast for hedge accounting). The starting point for overheads, capital expenditure, and other cash outflows was taken from the optimistic plan. Together, this means that the scenarios started by assuming that revenue growth is at the lowest end of our corporate view while still incurring the costs in the next three years that are needed to achieve revenue growth in later years. For context, revenue in the first year of this starting point is a small increase from FY2022's revenue of £671.1m.

The seven scenarios then took this same starting point and then added in the following elements:

A – Reduction in revenue if we were unable to buy certain critical ASIC chips for twelve months.

B – Reduction in revenue from encoder, CMM, and machine tool products.

C – Economic and political uncertainty, causing a reduction in revenue, an increase in labour costs, and an increase in materials, utilities, and logistics costs.

D – A cyber-attack causing a loss of networks and systems for three weeks (management's assessment of a worst-case scenario for total network loss).

E – The effect on our business if we lost the use of our main hall at Miskin, our largest factory, for six months.

F – The effect of a further 10% and 15% strengthening in Sterling, compared to management's existing assumptions.

G – A 50% increase in our estimated Net Zero capital expenditure.

For risks such as People, Innovation strategy, and Capital allocation, the Directors felt that if these risks crystallised they would result in the restriction of longer-term growth rather than having a significant financial effect in the medium term. We therefore didn't include these risks in the scenarios above.

We also performed reverse stress testing to identify what would need to happen in the period to 30 September 2023 to result in the Group having negative bank deposit and cash balances. We found that this would occur if revenue fell to £19m per month before mitigating actions were taken; this is considerably lower than forecast.

In making their going concern assessment, the Directors also considered the strong demand currently being experienced and how well we've responded to challenges such as the pandemic and global supply chain disruption.

Based on this assessment, incorporating a review of the current position, the scenarios, our principal risks and mitigation, the Directors have a reasonable expectation that we'll be able to continue operating and meet our liabilities as they fall due over the period to 30 September 2023.

1. Accounting policies (continued)

Basis of consolidation

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to or has rights to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. In assessing control, the Group takes into consideration potential voting rights that are exercisable. The acquisition date is the date on which control is transferred to the acquirer. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. Losses applicable to the non-controlling interests in a subsidiary are allocated to the non-controlling interests even if doing so causes the non-controlling interests to have a deficit balance.

Associates and joint ventures are accounted for using the equity method (equity-accounted investees) and are initially recognised at cost. The Group's investment includes goodwill identified on acquisition, net of any accumulated impairment losses.

The consolidated financial statements include the Group's share of the total comprehensive income and equity movements of equity accounted investees, from the date that significant influence commences until the date that significant influence ceases. When the Group's share of losses exceeds its interest in an equity accounted investee, the Group's carrying amount is reduced to nil and recognition of further losses is discontinued except to the extent that the Group has incurred legal obligations or made payments on behalf of an investee.

Intragroup balances and transactions, and any unrealised income and expenses arising from intragroup transactions, are eliminated on consolidation. Unrealised gains arising from transactions with equity accounted investees are eliminated against the investment to the extent of the Group's interest in the investee. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

Foreign currencies

On consolidation, overseas subsidiaries' results are translated into Sterling at weighted average exchange rates for the year by translating each overseas subsidiary's monthly results at exchange rates applicable to each of the respective months. Assets and liabilities denominated in foreign currencies at the balance sheet date are translated into Sterling at the foreign exchange rates prevailing at that date. Differences on exchange resulting from the translation of overseas assets and liabilities are recognised in Other comprehensive income and are accumulated in equity.

Monetary assets and liabilities denominated in foreign currencies are reported at the rates prevailing at the time, with any gain or loss arising from subsequent exchange rate movements being included as an exchange gain or loss in the Consolidated income statement. Foreign currency differences arising from transactions are recognised in the Consolidated income statement.

Separately disclosed items

The Directors consider that certain items should be separately disclosed to aid understanding of the Group's performance.

Gains and losses from the fair value of financial instruments are therefore separately disclosed in the Consolidated income statement, where these gains and losses relate to certain forward currency contracts that are not effective for hedge accounting. Restructuring costs are also separately disclosed where significant costs have been incurred in rationalising and reorganising our business as part of a Board-approved initiative, and relate to matters that do not frequently recur.

During the period, a change to the UK defined benefit pension scheme rules, per note 23, resulted in a significant non-recurring amount being recognised in the Consolidated income statement. This has also been separately disclosed.

These items are also excluded from Adjusted profit before tax, Adjusted operating profit and Adjusted earnings per share measures, as explained in note 29 Alternative performance measures.

Alternative performance measures

The financial statements are prepared in accordance with adopted IFRS and applied in accordance with the provisions of the Companies Act 2006. In measuring our performance, the financial measures that we use include those which have been derived from our reported results, to eliminate factors which distort year-on-year comparisons.

These are considered non-GAAP financial measures. We believe this information, along with comparable GAAP measurements, is useful to stakeholders in providing a basis for measuring our operational performance. The Board use these financial measures, along with the most directly comparable GAAP financial measures, in evaluating our performance (see note 29).

2. Revenue disaggregation and segmental analysis

We manage our business by segment, comprising Manufacturing technologies and Analytical instruments and medical devices, and by geographical region. The results of these segments and regions are regularly reviewed by the Board to assess performance and allocate resources, and are presented in this note.

Accounting policy

The Group generates revenue from the sale of manufacturing technologies and analytical instruments and medical devices goods, capital equipment and services. These can be sold both on their own and together.

a) Sale of goods, capital equipment and services

The Group's contracts with customers consist both of contracts with one performance obligation and contracts with multiple performance obligations.

For contracts with one performance obligation, revenue is measured at the transaction price, which is typically the contract value except for customers entitled to volume rebates, and recognised at the point in time when control of the product transfers to the customer. This point in time is typically when the products are made available for collection by the customer, collected by the shipping agent, or delivered to the customer, depending upon the shipping terms applied to the specific contract.

Contracts with multiple performance obligations typically exist where, in addition to supplying product, we also supply services such as user training, servicing and maintenance, and installation services. Where the installation service is simple, does not include a significant integration service and could be performed by another party then the installation is accounted for as a separate performance obligation. Where the contracts include multiple performance obligations, the transaction price is allocated to each performance obligation based on the relative stand-alone selling prices. The revenue allocated to each performance obligation is then recognised when, or as, that performance obligation is satisfied. For installation, this is typically at the point in time in which installation is complete. For training, this is typically the point in time at which training is delivered. For servicing and maintenance, the revenue is recognised evenly over the course of the servicing agreement except for ad-hoc servicing and maintenance which is recognised at the point in time in which the work is undertaken.

b) Sale of software

The Group provides software licences and software maintenance to customers, sold both on their own and together with associated products. For software licences, where the licence and/or maintenance is provided as part of a contract that provides customers with software licences and other goods and services then the transaction price is allocated on the same basis as described in a) above.

The Group's distinct software licences provide a right of use, and therefore revenue from software licences is recognised at the point in time in which the licence is supplied to the customer. Revenue from software maintenance is recognised evenly over the term of the maintenance agreement.

c) Extended warranties

The Group provides standard warranties to customers that address potential latent defects that existed at point of sale and as required by law (assurance-type warranties). In some contracts, the Group also provides warranties that extend beyond the standard warranty period and may be sold to the customer (service-type warranties).

Assurance-type warranties are accounted for by the Group under IAS 37 'Provisions, Contingent Liabilities and Contingent Assets'. Service-type warranties are accounted for as separate performance obligations and therefore a portion of the transaction price is allocated to this element, and then recognised evenly over the period in which the service is provided.

d) Contract balances

Contract assets represent the Group's right to consideration in exchange for goods and services that have been transferred to a customer, and mainly includes accrued revenue in respect of goods and services provided to a customer but not yet fully billed. Contract assets are distinct from receivables, which represent the Group's right to consideration that is unconditional.

Contract liabilities represent the Group's obligation to transfer goods or services to a customer for which the Group has either received consideration or consideration is due from the customer.

e) Disaggregation of revenue

The Group disaggregates revenue from contracts with customers between: goods, capital equipment and installation, and aftermarket services; operating segment; and geographical location.

Management believe these categories best depict how the nature, amount, timing and uncertainty of the Group's revenue is affected by economic factors.

2. Revenue disaggregation and segmental analysis (continued)

Within the two operating segments there are multiple product offerings with similar economic characteristics, similar production processes and similar customer bases. Our Manufacturing technologies business consists of industrial metrology, position measurement and additive manufacturing (AM) product lines, while our Analytical instruments and medical devices business consists of spectroscopy and neurological product lines. More details of the Group's products and services are given in the Strategic Report.

Year ended 30 June 2022	**Manufacturing technologies £'000**	**Analytical instruments and medical devices £'000**	**Total £'000**
Revenue	**634,588**	**36,488**	**671,076**
Depreciation, amortisation and impairment	**36,552**	**2,570**	**39,122**
Operating profit before losses from fair value of financial instruments and UK defined benefit pension scheme past service cost	**162,549**	**2,809**	**165,358**
Share of profits from associates and joint ventures	**4,342**	**–**	**4,342**
Net financial expense	**–**	**–**	**(2,006)**
UK defined benefit pension scheme past service cost	**–**	**–**	**(11,695)**
Losses from the fair value of financial instruments	**–**	**–**	**(10,413)**
Profit before tax	**–**	**–**	**145,586**

Year ended 30 June 2021*	Manufacturing technologies £'000	Analytical instruments and medical devices £'000	Total £'000
Revenue	530,445	35,114	565,559
Depreciation, amortisation and impairment	37,909	2,187	40,096
Operating profit before gains from fair value of financial instruments	111,978	4,385	116,363
Share of profits from associates and joint ventures	1,683	–	1,683
Net financial expense	–	–	(585)
Gains from the fair value of financial instruments	–	–	21,978
Profit before tax	–	–	139,439

*In previous years, we reported the results of additive manufacturing machines marketed and sold to medical and dental customers within Analytical instruments and medical devices (formerly Healthcare), reflecting how we managed this business. The management of this now sits within the AM product line, with a similar customer base and risk profile to this product line, with results and operational matters reported to the Executive Committee and Chief Operating Decision Maker accordingly. We now therefore report the medical and dental results within Manufacturing technologies rather than Analytical instruments and medical devices. Comparative figures have been reclassified accordingly. For the year ended 30 June 2021, revenue of £4,254,000, depreciation and amortisation of £993,000, and operating profit before gains from fair value of financial instruments of £1,480,000 have been reclassified from Analytical instruments and medical devices to Manufacturing technologies.

There is no allocation of assets and liabilities to operating segments. Depreciation, amortisation and impairments are included within certain other overhead expenditure which is allocated to segments on the basis of the level of activity.

The following table shows the analysis of non-current assets, excluding deferred tax, derivatives and employee benefits, by geographical region:

	2022 £'000	2021 £'000
UK	**181,530**	179,039
Overseas	**155,725**	146,393
Total non-current assets	**337,255**	325,432

No overseas country had non-current assets amounting to 10% or more of the Group's total non-current assets.

The following table shows the disaggregation of Group revenue by category:

	2022 £'000	2021 £'000
Goods, capital equipment and installation	**615,641**	513,675
Aftermarket services	**55,435**	51,884
Total Group revenue	**671,076**	565,559

Aftermarket services include repairs, maintenance and servicing, programming, training, extended warranties, and software licences and maintenance. There is no significant difference between our two operating segments as to their split of revenue by type.

2. Revenue disaggregation and segmental analysis (continued)

The analysis of revenue by geographical market was:

	2022 £'000	2021 £'000
APAC total	**317,023**	274,765
UK (country of domicile)	**31,536**	26,923
EMEA, excluding UK	**174,290**	142,219
EMEA total	**205,826**	169,142
Americas total	**148,227**	121,652
Total Group revenue	**671,076**	565,559

Revenue in the previous table has been allocated to regions based on the geographical location of the customer. Countries with individually material revenue figures in the context of the Group were:

	2022 £'000	2021 £'000
China	**152,772**	141,690
USA	**128,531**	103,850
Japan	**69,829**	51,523
Germany	**58,636**	51,095

There was no revenue from transactions with a single external customer which amounted to more than 10% of the Group's total revenue.

3. Personnel expenses

The remuneration costs of our people account for a significant proportion of our total expenditure, which are analysed in this note.

The aggregate payroll costs for the year were:

	2022 £'000	2021 £'000
Wages and salaries	**207,783**	183,235
Compulsory social security contributions	**24,497**	21,766
Contributions to defined contribution pension schemes	**21,988**	19,759
Government grants – employment support	**–**	(989)
Share-based payment charge	**180**	173
Total payroll costs	**254,448**	223,944

Wages and salaries and compulsory social security contributions include £16,179,000 (2021: £13,208,000) relating to performance bonuses.

The average number of persons employed by the Group during the year was:

	2022 Number	2021 Number
UK	**3,132**	2,742
Overseas	**1,799**	1,695
Average number of employees	**4,931**	4,437

Key management personnel have been assessed to be the Directors of the Company.

The total remuneration of the Directors was:

	2022 £'000	2021 £'000
Short-term employee benefits	**3,763**	2,697
Post-employment benefits	**121**	111
Share-based payment charge	**180**	173
Total remuneration of the Directors	**4,064**	2,981

4. Cost of sales

Our cost of sales includes the costs to manufacture our products and our engineering spend on existing and new products, net of capitalisation and research and development tax credits.

Included in cost of sales are the following amounts:

	2022 £'000	2021 £'000
Production costs	**234,919**	197,805
Research and development expenditure	**59,415**	58,618
Other engineering expenditure	**26,356**	18,019
Gross engineering expenditure	**85,771**	76,637
Development expenditure capitalised (net of amortisation)	**(3,268)**	(825)
Development expenditure impaired	**–**	1,092
Research and development tax credit	**(3,895)**	(4,857)
Total engineering costs	**78,608**	72,047
Total cost of sales	**313,527**	269,852

Production costs includes the raw material and component costs, payroll costs and sub-contract costs, and allocated overheads associated with manufacturing our products.

Research and development expenditure includes the payroll costs, material costs and allocated overheads attributed to projects identified as being related to new products or processes. Other engineering expenditure includes the payroll costs, material costs and allocated overheads attributed to projects identified as being related to existing products or processes.

5. Financial income and expenses

Financial income mainly arises from bank interest on our deposits, while we are exposed to realised currency gains and losses on translation of foreign currency denominated intragroup balances and offsetting financial instruments.

Included in financial income and expenses are the following amounts:

Financial income	notes	**2022 £'000**	2021 £'000
Fair value gains from one-month forward currency contracts	25	**98**	2,781
Bank interest receivable		**834**	625
Total financial income		**932**	3,406

Financial expenses	notes	**2022 £'000**	2021 £'000
Net interest on pension schemes' assets/liabilities	23	**306**	876
Currency losses		**1,414**	2,660
Realised currency reserve losses from discontinuation of foreign operation	30	**575**	–
Lease interest	20	**481**	335
Interest payable on borrowings	21	**52**	69
Other interest payable		**110**	51
Total financial expenses		**2,938**	3,991

Currency losses relate to revaluations of foreign currency-denominated balances using latest reporting currency exchange rates. The losses recognised in 2021 and 2022 largely related to an appreciation of Sterling relative to the US dollar affecting US dollar-denominated intragroup balances in the Company.

Certain intragroup balances are classified as 'net investments in foreign operations', such that revaluations from currency movements on designated balances accumulate in the Currency translation reserve in Equity. Rolling one-month forward currency contracts are used to offset currency movements on remaining intragroup balances, with fair value gains and losses being recognised in financial income or expenses. See note 25 for further details.

At 30 June 2022, the Group's trading operations in Russia had ceased and the net assets of OOO Renishaw were written down to nil (see note 30). In accordance with IAS 21, cumulative translation losses relating to the company totalling £575,000 have been removed from the currency translation reserve and realised in the Consolidated income statement.

6. Profit before tax

Detailed below are other notable amounts recognised in the Consolidated income statement.

Included in the profit before tax are the following costs/(income):

	notes	2022 £'000	2021 £'000
Depreciation and impairment of property, plant and equipment, and investment properties (a)	9,11	**27,157**	24,317
Loss on sale of property, plant and equipment (a)		**157**	31
Depreciation and impairment of right-of-use assets (a)	10	**6,042**	4,463
Amortisation, impairment and write-off of intangible assets (a)	12	**5,923**	11,316
Impairment of investment in associates and joint ventures (c)		**–**	1,674
Impairment of long-term loans to associates and joint ventures (c)		**–**	2,633
Profit from sale of shares in associate (c)	13	**582**	–
Impairment of net assets of foreign operation (b)	30	**2,126**	–
Grant income (a)		**(2,840)**	(1,421)

These costs/(income) can be found under the following headings in the Consolidated income statement: (a) within cost of sales, distribution costs and administrative expenses, (b) within distribution costs, and (c) within administrative expenses. Further detail on each element can be found in the relevant notes.

Grant income relates to government grants, which are recognised in the Consolidated income statement as a deduction against expenditure. Where grants are received in advance of the related expenses, they are initially recognised in the Consolidated balance sheet and released to match the related expenditure. Where grants are expected to be received after the related expenditure has occurred, and there is reasonable assurance that the entity will comply with the grant conditions, amounts are recognised to offset the expenditure and an asset recognised.

Costs within Administrative expenses relating to auditor fees included:

	2022 £'000	2021 £'000
Audit of these financial statements	**718**	403
Audit of subsidiary undertakings pursuant to legislation	**526**	458
Other assurance	**32**	12
All other non-audit fees	**–**	–
Total auditor fees	**1,276**	873

7. Taxation

The Group tax charge is affected by our geographic mix of profits and other factors explained in this note. Our expected future tax charges and related tax assets are also set out in the deferred tax section, together with our view on whether we will be able to make use of these in the future.

Accounting policy

Tax on the profit for the year comprises current and deferred tax. Tax is recognised in the Consolidated income statement except to the extent that it relates to items recognised directly in Other comprehensive income, in which case it is recognised in the Consolidated statement of comprehensive income and expense. Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in previous years.

Deferred tax is provided on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The following temporary differences are not provided for: the initial recognition of goodwill; the initial recognition of assets or liabilities that affect neither accounting nor taxable profit other than in a business combination; and differences relating to investments in subsidiaries, to the extent that they will probably not reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the balance sheet date.

Key estimate – Estimates of future profits to support the recognition of deferred tax assets

Deferred tax assets are recognised to the extent it is probable that future taxable profits (including the future release of deferred tax liabilities) will be available, against which the deductible temporary differences can be used, based on management's assumptions relating to the amounts and timing of future taxable profits. Estimates of future profitability on an entity basis are required to ascertain whether it is probable that sufficient taxable profits will arise to support the recognition of deferred tax assets relating to the corresponding entity.

7. Taxation (continued)

The following table shows an analysis of the tax charge:

	2022 £'000	2021 £'000
Current tax:		
UK corporation tax on profits for the year	**9,288**	7,535
UK corporation tax – prior year adjustments	**(28)**	(4,376)
Overseas tax on profits for the year	**16,734**	13,237
Overseas tax – prior year adjustments	**(176)**	27
Total current tax	**25,818**	16,423
Deferred tax:		
Origination and reversal of temporary differences	**(1,372)**	7,692
Prior year adjustments	**166**	4,438
Derecognition of previously recognised tax losses and excess interest	**623**	–
Recognition of previously unrecognised tax losses and excess interest	**–**	(3,909)
Effect on deferred tax for changes in tax rates	**–**	3,336
	(583)	11,557
Tax charge on profit	**25,235**	27,980

The tax for the year is lower (2021: higher) than the UK standard rate of corporation tax of 19% (2021: 19%). The differences are explained as follows:

	2022 £'000	2021 £'000
Profit before tax	**145,586**	139,439
Tax at 19% (2021: 19%)	**27,661**	26,493
Effects of:		
Different tax rates applicable in overseas subsidiaries	**(1,834)**	(150)
Permanent differences	**978**	1,431
Companies with unrelieved tax losses	**–**	100
Share of profits of associates and joint ventures	**(825)**	(320)
Tax incentives (patent box and capital allowances super-deduction)	**(1,400)**	–
Prior year adjustments	**(38)**	89
Effect on deferred tax for changes in tax rates	**–**	3,336
Recognition of previously unrecognised tax losses and excess interest	**–**	(3,909)
Derecognition of previously recognised tax losses and excess interest	**623**	–
Use of unrecognised losses	**(25)**	(162)
Irrecoverable withholding tax	**2**	1,052
Other differences	**93**	20
Tax charge on profit	**25,235**	27,980
Effective tax rate	**17.3%**	20.1%

We operate in many countries around the world and the overall effective tax rate (ETR) is a result of the combination of the varying tax rates applicable throughout these countries. In addition, the 2022 tax rate has benefited from patent box and capital allowances super-deduction tax incentives and higher profits from associates and joint ventures.

The Group's future ETR will mainly depend on the geographic mix of profits and whether there are any changes to tax legislation in the Group's most significant countries of operations.

Deferred tax

Deferred tax assets and liabilities are offset where there is a legally enforceable right of offset and there is an intention to net settle the balances. After taking these offsets into account, the net position of £78,000 asset (2021: £10,890,000 asset) is presented as a £22,893,000 deferred tax asset (2021: £21,292,000 asset) and a £22,815,000 deferred tax liability (2021: £10,402,000 liability) in the Consolidated balance sheet.

Where deferred tax assets are recognised, the Directors are of the opinion, based on recent and forecast trading, that the level of profits in current and future years make it more likely than not that these assets will be recovered.

7. Taxation (continued)

Deferred tax balances at the end of the year were:

	2022			2021		
	Assets £'000	**Liabilities £'000**	**Net £'000**	Assets £'000	Liabilities £'000	Net £'000
Property, plant and equipment	**517**	**(19,966)**	**(19,449)**	425	(17,546)	(17,121)
Intangible assets	**–**	**(2,980)**	**(2,980)**	–	(2,609)	(2,609)
Intragroup trading (inventories)	**20,158**	**–**	**20,158**	14,539	–	14,539
Intragroup trading (fixed assets)	**1,457**	**–**	**1,457**	1,252	–	1,252
Defined benefit pension schemes	**125**	**(11,173)**	**(11,048)**	4,548	(201)	4,347
Derivatives	**3,508**	**–**	**3,508**	–	(2,930)	(2,930)
Tax losses	**3,893**	**–**	**3,893**	8,365	–	8,365
Other	**4,953**	**(414)**	**4,539**	5,083	(36)	5,047
Balance at the end of the year	**34,611**	**(34,533)**	**78**	34,212	(23,322)	10,890

Other deferred tax assets include timing differences relating to inventory provisions totalling £1,774,000 (2021: £2,001,000), other provisions (including bad debt provisions) of £975,000 (2021: £683,000), and employee benefits relating to Renishaw KK of £853,000 (2021: £668,000), with the remaining balance relating to a number of other temporary differences.

The movements in the deferred tax balance during the year were:

	2022 £'000	2021 £'000
Balance at the beginning of the year	**10,890**	39,142
Movements in the Consolidated income statement	**583**	(11,557)
Movement in relation to the cash flow hedging reserve	**6,155**	(9,790)
Movement in relation to the currency translation reserve	**–**	902
Movement in relation to the defined benefit pension scheme liabilities	**(17,650)**	(7,705)
Total movement in the Consolidated statement of comprehensive income and expense	**(11,495)**	(16,593)
Currency translation	**100**	(102)
Balance at the end of the year	**78**	10,890

The deferred tax movement in the Consolidated income statement is analysed as:

	2022 £'000	2021 £'000
Property, plant and equipment	**(2,328)**	(3,193)
Intangible assets	**(371)**	(1,345)
Intragroup trading (inventories)	**5,619**	579
Intragroup trading (fixed assets)	**205**	(819)
Defined benefit pension schemes	**2,255**	156
Derivatives	**284**	(2,185)
Tax losses	**(4,472)**	(5,712)
Other	**(609)**	962
Total movement for the year	**583**	(11,557)

The Company has fully used the tax losses incurred in 2020, reducing the deferred tax asset in respect of losses from £3,299,000 at 30 June 2021 to nil at 30 June 2022. Deferred tax assets of £3,893,000 in respect of losses are recognised across other Group companies where it is considered likely that the business will generate sufficient future taxable profits.

Deferred tax assets have not been recognised in respect of tax losses carried forward of £4,815,000 (2021: £4,459,000), due to uncertainty over their offset against future taxable profits and therefore their recoverability. These losses are held by Group companies in France, Switzerland, Brazil, Australia and the US, where for 95% of the losses there are no time limitations on their utilisation.

In determining profit forecasts for each Group company, revenue forecasts have been estimated using consistently applied external and internal data sources, which is the key variable in the profit forecasts. Sensitivity analysis indicates that a reduction of 5% to relevant revenue forecasts would result in an impairment to deferred tax assets recognised in respect of losses and intragroup trading (inventories) of less than £100,000, while an increase of 5% would result in additions to deferred tax assets in respect of tax losses not recognised of less than £200,000.

It is likely that the majority of unremitted earnings of overseas subsidiaries would qualify for the UK dividend exemption. However, £61,204,000 (2021: £43,858,000) of those earnings may still result in a tax liability principally as a result of withholding taxes levied by the overseas jurisdictions in which those subsidiaries operate. The tax liabilities for the earnings for which management intend to repatriate in the foreseeable future are not material and consequently no deferred tax liability has been recognised.

8. Earnings per share

Basic earnings per share is the amount of profit generated in a financial year attributable to equity shareholders, divided by the weighted average number of shares in issue during the year.

Basic and diluted earnings per share are calculated on earnings of £120,351,000 (2021: £111,459,000) and on 72,774,147 shares (2021: 72,778,904 shares), being the number of shares in issue. The number of shares excludes 14,396 (2021: 9,639) shares held by the Employee Benefit Trust (EBT). On this basis, earnings per share (basic and diluted) is calculated as 165.4 pence (2021: 153.2 pence).

There is no difference between the weighted average earnings per share and the basic and diluted earnings per share.

For the calculation of adjusted earnings per share, per note 29, earnings of £120,351,000 (2021: £111,459,000) are adjusted by post-tax amounts for:

- fair value (gains)/losses on financial instruments not eligible for hedge accounting (reported in Revenue), which represents the amount by which revenue would change had all the derivatives qualified as eligible for hedge accounting, £1,672,000 gain;
- fair value (gains)/losses on financial instruments not eligible for hedge accounting (reported in Gains/(losses) from the fair value of financial instruments), £8,435,000 loss;
- a revised estimate of 2020 restructuring costs, £1,367,000 gain;
- a UK defined benefit pension scheme past service cost, £9,473,000 loss; and
- costs relating to the 2021 formal sales process, £200,000 gain.

9. Property, plant and equipment

The Group makes significant investments in distribution and in-house manufacturing infrastructure. During the year we completed a new distribution facility in South Korea and invested in our manufacturing equipment in the UK. We expect to significantly increase our investments in property, plant and equipment in the next few years.

Accounting policy

Freehold land is not depreciated. Other assets are stated at cost less accumulated depreciation and accumulated impairment losses, if any. Depreciation is provided to write off the cost of assets less their estimated residual value on a straight-line basis over their estimated useful economic lives as follows:

- freehold buildings, 50 years;
- plant and equipment, 3 to 25 years; and
- vehicles, 3 to 4 years.

Year ended 30 June 2022	Freehold land and buildings £'000	Plant and equipment £'000	Motor vehicles £'000	Assets in the course of construction £'000	Total £'000
Cost					
At 1 July 2021	**216,783**	**242,432**	**7,421**	**7,109**	**473,745**
Additions	**5,715**	**16,756**	**1,150**	**7,144**	**30,765**
Transfers of assets in the course of construction	**2,800**	**3,972**	**–**	**(6,772)**	**–**
Transfers to Investment properties	**(11,563)**	**–**	**–**	**–**	**(11,563)**
Disposals	**97**	**(3,587)**	**(1,269)**	**–**	**(4,759)**
Currency adjustment	**3,988**	**3,984**	**218**	**–**	**8,190**
At 30 June 2022	**217,820**	**263,557**	**7,520**	**7,481**	**496,378**
Depreciation					
At 1 July 2021	**38,530**	**182,557**	**6,416**	**–**	**227,503**
Charge for the year	**4,623**	**20,029**	**1,056**	**–**	**25,708**
Impairment	**1,259**	**–**	**–**	**–**	**1,259**
Transfers to Investment properties	**(1,222)**	**–**	**–**	**–**	**(1,222)**
Disposals	**81**	**(2,837)**	**(1,180)**	**–**	**(3,936)**
Currency adjustment	**545**	**2,465**	**203**	**–**	**3,213**
At 30 June 2022	**43,816**	**202,214**	**6,495**	**–**	**252,525**
Net book value					
At 30 June 2022	**174,004**	**61,343**	**1,025**	**7,481**	**243,853**
At 30 June 2021	178,253	59,875	1,005	7,109	246,242

During the year, a third-party valuation of one of our properties in the US resulted in an impairment of £1,259,000.

See note 11 for detail on the reclassification of Property, plant and equipment to Investment properties.

9. Property, plant and equipment (continued)

Year ended 30 June 2021	Freehold land and buildings £'000	Plant and equipment £'000	Motor vehicles £'000	Assets in the course of construction £'000	Total £'000
Cost					
At 1 July 2020	225,556	247,986	8,526	6,363	488,431
Additions	194	6,930	143	3,606	10,873
Transfers	345	2,515	–	(2,860)	–
Disposals	(136)	(9,628)	(951)	–	(10,715)
Currency adjustment	(9,176)	(5,371)	(297)	–	(14,844)
At 30 June 2021	216,783	242,432	7,421	7,109	473,745
Depreciation					
At 1 July 2020	35,842	175,864	6,676	–	218,382
Charge for the year	4,084	19,407	826	–	24,317
Disposals	(124)	(9,658)	(858)	–	(10,640)
Currency adjustment	(1,272)	(3,056)	(228)	–	(4,556)
At 30 June 2021	38,530	182,557	6,416	–	227,503
Net book value					
At 30 June 2021	178,253	59,875	1,005	7,109	246,242
At 30 June 2020	189,714	72,122	1,850	6,363	270,049

Additions to assets in the course of construction comprise £826,000 (2021: £817,000) for land and buildings and £6,318,000 (2021: £2,789,000) for plant and equipment.

Losses on disposals of Property, plant and equipment amounted to £157,000 (2021: £31,000).

At 30 June 2022, properties with a net book value of £54,208,000 (2021: £81,679,000) were subject to a fixed charge to secure the UK defined benefit pension scheme liabilities. The number of properties on fixed charge has decreased in the year, see note 23.

10. Right-of-use assets

The Group leases properties and cars from third parties and recognises an associated right-of-use asset where we are afforded control and economic benefit from the use of the asset.

Accounting policy

At the commencement date of a lease arrangement the Group recognises a right-of-use asset for the leased item and a lease liability for any payments due. Right-of-use assets are initially measured at cost, being the present value of the lease liability plus any initial costs incurred in entering the lease and less any incentives received. See note 20 for further detail on lease liabilities. Right-of-use assets are subsequently depreciated on a straight-line basis from the commencement date to the earlier of the end of the useful life or the end of the lease term.

Year ended 30 June 2022	**Leasehold property £'000**	**Plant and equipment £'000**	**Motor vehicles £'000**	**Total £'000**
Net book value				
At 1 July 2021	**10,297**	**102**	**2,030**	**12,429**
Additions	**1,293**	**115**	**1,058**	**2,466**
Depreciation	**(2,805)**	**(102)**	**(1,298)**	**(4,205)**
Impairment	**(1,837)**	**–**	**–**	**(1,837)**
Currency adjustment	**1,107**	**2**	**(12)**	**1,097**
At 30 June 2022	**8,055**	**117**	**1,778**	**9,950**

Year ended 30 June 2021	Leasehold property £'000	Plant and equipment £'000	Motor vehicles £'000	Total £'000
Net book value				
At 1 July 2020	10,287	–	2,385	12,672
Additions	3,548	232	1,234	5,014
Depreciation	(2,903)	(121)	(1,439)	(4,463)
Currency adjustment	(635)	(9)	(150)	(794)
At 30 June 2021	10,297	102	2,030	12,429

An impairment of £1,837,000 was recognised in the period relating to a leased property in Russia. See note 30 for further detail.

11. Investment properties

The Group's investment properties consist of four facilities in the UK, Ireland and India. During the year, we have transferred these to investment properties, from property, plant and equipment, following a change in use of the UK and India properties. This includes the occupation of these properties by rent-paying third parties during the year.

Accounting policy

Where property owned by the Group is deemed to be held to earn rentals or for long-term capital appreciation it is recognised as investment property.

Where a property is part-occupied by the Group, portions of the property are recognised as investment property if they meet the above description and if these portions could be sold separately and reliably measured. If the portions could not be sold separately, the property is recognised as an investment property only if a significant proportion is held for rental or appreciation purposes.

The Group has elected to value investment properties on a cost basis, initially comprising an investment property's purchase price and any directly attributable expenditure. Depreciation is provided to write off the cost of assets on a straight-line basis over their estimated useful economic lives, being 50 years. Amounts relating to freehold land is not depreciated.

Year ended 30 June 2022	Total £'000
Cost	
At 1 July 2021	–
Transfers from Property, plant and equipment	**11,563**
Additions	**195**
Disposals	**(102)**
Currency adjustment	**249**
At 30 June 2022	**11,905**
Depreciation	
At 1 July 2021	–
Transfers from Property, plant and equipment	**1,222**
Charge for the year	**190**
Disposals	**(81)**
Currency adjustment	**6**
At 30 June 2022	**1,337**
Net book value	
At 30 June 2022	**10,568**
At 30 June 2021	–

The Group has no restrictions on the realisability of its investment properties and no contractual obligations to purchase, construct or develop investment properties.

Amounts recognised in the Consolidated income statement relating to investment properties:

	2022 £'000
Rental income derived from investment properties	**453**
Direct operating expenses (including repairs and maintenance)	**105**
Profit arising from investment properties	**348**

The fair value of the Group's investment properties totalled £14,626,000 at 30 June 2022. Fair values of each investment property have been determined by independent valuers who hold recognised and relevant professional qualifications and have recent experience in the location and category of each investment property being valued.

12. Intangible assets

Our Consolidated balance sheet contains significant intangible assets, mostly in relation to goodwill, which arises when we acquire a business and pay a higher amount than the fair value of its net assets, and capitalised development costs. We make significant investments into the development of new products, which is a key part of our business model, and some of these costs are initially capitalised and then expensed over the lifetime of future sales of that product.

Accounting policy

Goodwill arising on acquisition represents the difference between the cost of the acquisition and the fair value of the net identifiable assets acquired, net of deferred tax. Identifiable intangibles are those which can be sold separately or which arise from legal rights regardless of whether those rights are separable.

Goodwill is stated at cost less any accumulated impairment losses. It is not amortised but is tested annually for impairment or earlier if there are any indications of impairment. The annual impairment review involves comparing the carrying amount to the estimated recoverable amount and recognising an impairment loss if the recoverable amount is lower. Impairment losses are recognised in the Consolidated income statement.

Intangible assets such as customer lists, patents, trade marks, know-how and intellectual property that are acquired by the Group are stated at cost less amortisation and impairment losses. Amortisation is charged to the Consolidated income statement on a straight-line basis over the estimated useful lives of the intangible assets. The estimated useful lives of the intangible assets included in the Consolidated balance sheet reflect the benefit derived by the Group and vary from five to 10 years.

Expenditure on research activities is recognised in the Consolidated income statement as an expense as incurred. Expenditure on development activities is capitalised if: the product or process is technically and commercially feasible; the Group intends and has the technical ability and sufficient resources to complete development; future economic benefits are probable; and the Group can measure reliably the expenditure attributable to the intangible asset during its development.

Development activities involve a plan or design for the production of new or substantially improved products or processes. The expenditure capitalised includes the cost of materials, direct labour and an appropriate proportion of overheads. Other development expenditure is recognised in the Consolidated income statement as an expense as incurred.

Capitalised development expenditure is amortised over the useful economic life appropriate to each product or process, ranging from five to 10 years, and is stated at cost less accumulated amortisation and less accumulated impairment losses. Amortisation commences when a product or process is available for use as intended by management. Capitalised development expenditure is removed from the balance sheet 10 years after being fully amortised.

All non-current assets are tested for impairment whenever there is an indication that their carrying value may be impaired. An impairment loss is recognised in the Consolidated income statement to the extent that an asset's carrying value exceeds its recoverable amount, which represents the higher of the asset's fair value less costs to sell and its value-in-use. An asset's value-in-use represents the present value of the future cash flows expected to be derived from the asset or from the cash-generating unit to which it relates. The present value is calculated using a discount rate that reflects the current market assessment of the time value of money and the risks specific to the asset concerned.

Goodwill and capitalised development costs are subject to an annual impairment test.

Key judgement – Whether a project meets the criteria for capitalisation

Product development costs are capitalised once a project has reached a certain stage of development and these costs are subsequently amortised over their useful economic life once ready for use. Costs are capitalised from the point the product has passed testing to demonstrate it meets the technical specifications of the project and it satisfies all applicable regulations. Judgements are required to assess whether the new product development has reached the appropriate point for capitalisation of costs to begin. Should a product be subsequently obsoleted, the accumulated capitalised development costs would need to be immediately written off in the Consolidated income statement.

Key estimate – Estimates of future cash flows used for impairment testing

Determining whether goodwill is impaired requires an estimation of the value-in-use of cash-generating units (CGUs) to which goodwill has been allocated. The value-in-use calculation involves an estimation of the future cash flows of CGUs and also the selection of appropriate discount rates, which involves judgement, to calculate present values. Similarly, determining whether capitalised development costs are impaired requires an estimation of their value-in-use which involves significant judgement.

12. Intangible assets (continued)

Year ended 30 June 2022	Goodwill £'000	Other intangible assets £'000	Internally generated development costs £'000	Software licences and intellectual property £'000	Total £'000
Cost					
At 1 July 2021	**19,533**	**15,783**	**177,291**	**24,962**	**237,569**
Additions	**–**	**53**	**7,966**	**876**	**8,895**
Write-off	**–**	**–**	**–**	**(3,510)**	**(3,510)**
Disposals	**–**	**(11,211)**	**(17,045)**	**–**	**(28,256)**
Currency adjustment	**942**	**4**	**–**	**51**	**997**
At 30 June 2022	**20,475**	**4,629**	**168,212**	**22,379**	**215,695**
Amortisation					
At 1 July 2021	**9,028**	**13,254**	**151,807**	**19,685**	**193,774**
Charge for the year	**–**	**201**	**4,698**	**1,024**	**5,923**
Disposals	**–**	**(11,211)**	**(17,045)**	**–**	**(28,256)**
Currency adjustment	**–**	**(4)**	**–**	**40**	**36**
At 30 June 2022	**9,028**	**2,240**	**139,460**	**20,749**	**171,477**
Net book value					
At 30 June 2022	**11,447**	**2,389**	**28,752**	**1,630**	**44,218**
At 30 June 2021	10,505	2,529	25,484	5,277	43,795

Year ended 30 June 2021	Goodwill £'000	Other intangible assets £'000	Internally generated development costs £'000	Software licences and intellectual property £'000	Total £'000
Cost					
At 1 July 2020	20,518	15,829	167,447	22,063	225,857
Additions	–	–	9,844	3,000	12,844
Currency adjustment	(985)	(46)	–	(101)	(1,132)
At 30 June 2021	19,533	15,783	177,291	24,962	237,569
Amortisation					
At 1 July 2020	9,028	13,105	141,696	18,664	182,493
Charge for the year	–	101	9,019	1,104	10,224
Impairment	–	–	1,092	–	1,092
Currency adjustment	–	48	–	(83)	(35)
At 30 June 2021	9,028	13,254	151,807	19,685	193,774
Net book value					
At 30 June 2021	10,505	2,529	25,484	5,277	43,795
At 30 June 2020	11,490	2,724	25,751	3,399	43,364

Disposals of internally generated development costs have been recognised during the year in accordance with the Group's accounting policy to remove capitalised development expenditure from the balance sheet 10 years after being fully amortised.

Goodwill

Goodwill has arisen on the acquisition of a number of businesses and has an indeterminable useful life. It is therefore not amortised but is instead tested for impairment annually and at any point during the year when an indicator of impairment exists. Goodwill is allocated to cash generating units (CGUs), which are either the statutory entities acquired or the group-wide product line. This is the lowest level in the Group at which goodwill is monitored for impairment and is at a lower level than the Group's operating segments.

The analysis of goodwill is:

	2022 £'000	2021 £'000
itp GmbH	**2,985**	2,959
Renishaw Mayfield S.A.	**2,055**	1,873
Renishaw Fixturing Solutions, LLC	**5,677**	5,018
Other smaller acquisitions	**730**	655
Total goodwill	**11,447**	10,505

12. Intangible assets (continued)

The recoverable amounts of acquired goodwill are based on value-in-use calculations. These calculations use cash flow projections based on the financial business plans approved by management for the next five financial years. The cash flows beyond this forecast are extrapolated to perpetuity using a nil growth rate on a prudent basis, to reflect the uncertainties over forecasting beyond five years.

The following pre-tax discount rates have been used in discounting the projected cash flows:

Business acquired	CGU	**2022 Discount rate**	2021 Discount rate
itp GmbH	itp GmbH entity ('ITP')	**11.3%**	10.6%
Renishaw Fixturing Solutions, LLC	Renishaw fixturing product line ('RFS')	**11.5%**	10.2%
Renishaw Mayfield S.A.	Renishaw Mayfield S.A. entity ('Mayfield')	**22.9%**	21.4%

The Group post-tax weighted average cost of capital, calculated at 30 June 2022, is 9% (2021: 8%). Pre-tax discount rates for Manufacturing technologies CGUs (ITP and RFS) are calculated from this basis, given that they are aligned with the wider Group's industries, markets and processes. The Analytical instruments and medical devices CGU (Mayfield) has a higher risk weighting, reflecting the less mature nature of this segment. This risk weighting is unchanged from 2021.

For there to be an impairment in the RFS, ITP or Mayfield CGUs the discount rate would need to increase to at least 11.7%, 26% and 29% respectively. An increase of 5% in the discount rates would result in an impairment of around £1.2m in the RFS CGU. At 30 June 2022, there was headroom of £151,000 for the RFS CGU.

The following bases have been used in determining cash flow projections:

CGU	**2022 Basis of forecast**	2021 Basis of forecast
itp GmbH entity	**five-year business plan**	five-year business plan
Renishaw fixturing product line	**five-year business plan**	five-year business plan
Renishaw Mayfield S.A. entity	**five-year business plan**	five-year business plan

These five-year business plans are considered prudent estimates based on management's view of the future and experience of past performance of the individual CGUs, and are calculated at a disaggregated level. Within these plans, revenue forecasts are calculated with reference to external market data, Renishaw past outperformance, and new product launches, consistent with revenue forecasts across the Group. Production costs, engineering costs, distribution costs and administrative expenses are calculated based on management's best estimates of what is required to support revenue growth and new product development. Estimates of capital expenditure and working capital requirements are also included in the cash flow projections.

The key estimate within these business plans is the forecasting of revenue growth, given that the cost bases of the businesses can be flexed in line with revenue performance. Given the average revenue growth assumptions included in the five-year business plans, management's sensitivity analysis involves modelling a reduction in the forecast cash flows utilised in those business plans and therefore into perpetuity. For there to be an impairment there would need to be a reduction to these forecast cash flows of 60% for ITP, 2% for RFS and 24% for Mayfield. Management deems the likelihood of these reductions to be unlikely.

Internally generated development costs

During the period, management reassessed the useful economic life of certain capitalised projects from five to 10 years, to align with latest expectations of product lifecycles. As a result, amortisation during the period was £2,211,000 less than under the previous useful economic life.

The key assumption in determining the value-in-use for internally generated development costs is the forecast unit sales over the useful economic life, which is determined by management using their knowledge and experience with similar products and the sales history of products already available in the market. Resulting cash flow projections over five to 10 years, the period over which product demand forecasts can be reasonably predicted and internally generated development costs are written off, are discounted using pre-tax discount rates, which are calculated from the Group post-tax weighted average cost of capital of 9% (2021: 8%).

There were no impairments of internally generated development costs in the year (2021: £1,092,000).

For the largest projects, comprising over 95% of the net book value at 30 June 2022, a 10% reduction to forecast unit sales, or an increase in the discount rate by 5%, would result in an impairment of less than £100,000.

13. Investments in associates and joint ventures

Where we make an investment in a company which allows us significant influence but not full control, we account for our share of their post-tax profits in our financial statements. Following a full divestment in HiETA during the year, we now have joint venture arrangements with two companies, RLS and MSP.

The Group's investments in associates and joint ventures (all investments being in the ordinary share capital of the associate and joint ventures), whose accounting years end on 30 June, except where noted otherwise, were:

	Country of incorporation and principal place of business	**Ownership % 2022**	Ownership % 2021
RLS Merilna tehnika d.o.o. ('RLS') – joint venture	Slovenia	**50.0**	50.0
Metrology Software Products Limited ('MSP') – joint venture	England & Wales	**70.0**	70.0
HiETA Technologies Limited ('HiETA') (31 December) – associate	England & Wales	**nil**	33.3

In January 2022 an agreement was reached between Renishaw plc and Meggitt plc for the sale of Renishaw's 33.33% shareholding in HiETA Technologies Limited to Meggitt plc. This resulted in a net gain on disposal of £582,000, which was recognised in the Manufacturing technologies operating segment.

Although the Group owns 70% of the ordinary share capital of MSP, this is accounted for as a joint venture as the 'control' requirements of IFRS 10 are not satisfied. This is primarily because the shareholders agreement includes that for so long as the Group's holding is less than 75% of the total shares of MSP, Renishaw agrees to exercise its voting rights such that it only votes as if it has the same aggregate shareholding as the remaining Management Shareholders.

Movements during the year were:

	2022 £'000	2021 £'000
Balance at the beginning of the year	**16,634**	16,604
Additions	**–**	749
Dividends received	**(525)**	–
Share of profits of associates and joint ventures	**4,342**	1,683
Impairment	**–**	(1,674)
Exchange differences	**119**	(728)
Balance at the end of the year	**20,570**	16,634

Summarised financial information for joint ventures:

	RLS		MSP	
	2022 £'000	2021 £'000	**2022 £'000**	2021 £'000
Assets	**42,308**	31,535	**4,601**	4,211
Liabilities	**(7,422)**	(3,719)	**(963)**	(1,056)
Net assets	**34,886**	27,816	**3,638**	3,155
Group's share of net assets	**17,443**	13,908	**2,547**	2,209
Revenue	**35,247**	25,145	**2,492**	2,239
Profit/(loss) for the year	**7,886**	4,800	**570**	(182)
Group's share of profit/(loss) for the year	**3,943**	2,400	**399**	(91)

The financial statements of RLS have been prepared on the basis of Slovenian Accounting Standards.

The financial statements of MSP have been prepared on the basis of FRS 102.

14. Leases (as lessor)

The Group acts as a lessor for Renishaw-manufactured equipment on finance and operating lease arrangements. This is principally for high-value capital equipment such as our additive manufacturing machines.

Accounting policy

Where the Group transfers the risks and rewards of ownership of lease assets to a third party, the Group recognises a receivable in the amount of the net investment in the lease. The lease receivable is subsequently reduced by the principal received, while an interest component is recognised as financial income in the Consolidated income statement. Standard contract terms are up to five years and there is a nominal residual value receivable at the end of the contract.

Where the Group retains the risks and rewards of ownership of lease assets, it continues to recognise the leased asset in Property, plant and equipment. Income from operating leases is recognised on a straight-line basis over the lease term and recognised as Revenue rather than Other revenue as such income is not material. Operating leases are on one to five year terms.

The total future lease payments are split between the principal and interest amounts below:

	2022			2021		
	Gross investment £'000	**Interest £'000**	**Net investment £'000**	Gross investment £'000	Interest £'000	Net investment £'000
Receivable in less than one year	**3,703**	**355**	**3,348**	1,919	156	1,763
Receivable between one and two years	**2,882**	**252**	**2,630**	2,641	215	2,426
Receivable between two and three years	**2,015**	**148**	**1,867**	2,129	173	1,956
Receivable between three and four years	**1,779**	**70**	**1,709**	1,365	111	1,254
Receivable between four and five years	**770**	**15**	**755**	696	91	605
Total future minimum lease payments receivable	**11,149**	**840**	**10,309**	8,750	746	8,004

The total of future minimum lease payments receivable under non-cancellable operating leases were:

	2022 £'000	2021 £'000
Receivable in less than one year	**1,246**	361
Receivable between one and four years	**2,365**	306
Total future minimum lease payments receivable	**3,611**	667

During the year, £1,184,000 (2021: £582,000) was recognised in Revenue from operating leases.

15. Cash and cash equivalents and bank deposits

We have always valued having cash in the bank to protect the Group from downturns and enable us to react swiftly to investment or market capture opportunities. We currently hold significant cash and bank deposits, which is mostly in the UK and spread across a number of banks with high credit ratings.

Accounting policy

Cash and cash equivalents comprise cash balances, and deposits with an original maturity of less than three months or with an original maturity date of more than three months where the deposit can be accessed on demand without significant penalty for early withdrawal and where the original deposit amount is recoverable in full.

Cash and cash equivalents

An analysis of cash and cash equivalents at the end of the year was:

	2022 £'000	2021 £'000
Bank balances and cash in hand	**141,208**	93,514
Short-term deposits	**11,954**	1,494
Balance at the end of the year	**153,162**	95,008

At 30 June 2021, the Company held a pension scheme escrow account amounting to £10,578,000 as part of the security given for the UK defined benefit pension scheme. Following agreement by the Company and Trustees in 2022 (see note 23), this amount is no longer subject to a registered floating charge, and is recognised in short-term deposits in cash and cash equivalents at 30 June 2022.

Bank deposits

Bank deposits at the end of the year amounted to £100,000,000 (2021: £120,000,000), of which £50,000,000 matured on 30 August 2022 and £50,000,000 is on a 90-day notice account.

16. Inventories

We have increased our inventories in the year, in line with increases in global demand and reflecting planned increases in certain component safety stock levels to mitigate global supply shortages, and remain committed to high customer delivery performance.

Accounting policy

Inventory and work in progress is valued at the lower of actual cost on a first-in, first-out (FIFO) basis and net realisable value. In respect of work in progress and finished goods, cost includes all production overheads and the attributable proportion of indirect overhead expenses that are required to bring inventories to their present location and condition. Overheads are absorbed into inventories on the basis of normal capacity or on actual hours if higher.

Key estimate – Determination of net realisable inventory value

Determining the net realisable value of inventory requires management to estimate future demand, especially in respect of provisioning for slow moving and potentially obsolete inventory. When calculating an inventory provision, management use historic usage levels (capped at 18 months), demand from customer orders and manufacturing build plans as a basis for estimating the future annual demand of individual stock items, except in the following instances:

- for key products and their components, provisions are typically made for quantities held in excess of three years' demand. A demand basis lower than three years is used for those key products and related components where the sales history is more volatile; and
- where strategic purchases of critical components have been made, an outlook beyond three years is considered where appropriate.

An analysis of inventories at the end of the year was:

	2022 £'000	2021 £'000
Raw materials	**56,034**	38,973
Work in progress	**31,002**	21,750
Finished goods	**75,446**	52,840
Balance at the end of the year	**162,482**	113,563

During the year, the amount of inventories recognised as an expense in the Consolidated income statement was £211,209,000 (2021: £177,963,000) and the amount of write-down of inventories recognised as an expense in the Consolidated income statement was £481,000 (2021: £269,000). At the end of the year, the gross cost of inventories which had provisions held against them totalled £17,520,000 (2021: £17,389,000).

17. Provisions

A provision is a liability recorded in the Consolidated balance sheet, where there is uncertainty over the timing or amount that will be paid, and is therefore often estimated. The main provisions we hold are in relation to warranties provided with the sale of our products.

Accounting policy

The Group provides a warranty from the date of purchase, except for those products that are installed by the Group where the warranty starts from the date of completion of the installation. This is typically for a 12-month period, although up to three years is given for a small number of products. A warranty provision is included in the Group financial statements, which is calculated on the basis of historical returns and internal quality reports.

Warranty provision movements during the year were:

	2022 £'000	2021 £'000
Balance at the beginning of the year	**6,259**	5,591
Created during the year	**1,975**	2,500
Unused amounts reversed	**(1,688)**	–
Utilised in the year	**(2,302)**	(1,832)
	(2,015)	668
Balance at the end of the year	**4,244**	6,259

The warranty provision has been calculated on the basis of historical return-in-warranty information and other internal reports. It is expected that most of this expenditure will be incurred in the next financial year and all expenditure will be incurred within three years of the balance sheet date.

Included within the warranty provision is £1,912,000 (2021: £4,200,000) where the warranty cost has been reassessed to be the cost of replacing certain AM machines where the business will not have the capability to honour the warranty on these machines going forward as a result of restructuring activities in 2020. As we will not have the ability to repair or maintain these machines, the warranty cost reflects the cost of replacing these machines. It was expected that these warranty costs would be incurred in 2021, however this is now expected to be in 2023. During 2022, a revised estimate of the number of machines we are more-likely-than-not to replace, in addition to a revision to the cost of replacement, resulted in a net reduction to this provision of £1,688,000.

18. Contract liabilities

Contract liabilities relate to where we have obligations to transfer goods or services to a customer, where we have already received consideration. Our balances mostly comprise advances received from customers and payments for services yet to be completed.

Balances at the end of the year were:

	2022 £'000	2021 £'000
Goods, capital equipment and installation	**1,470**	1,431
Aftermarket services	**4,471**	4,689
Deferred revenue	**5,941**	6,120
Advances received from customers	**7,015**	–
Balance at the end of the year	**12,956**	6,120

Advances received from customers have increased this year. As the balance at 30 June 2022 was material, we have included these within Contract liabilities. In previous years, they were included within Other payables, and amounted to £3,922,000 in 2021.

The aggregate amount of the transaction price allocated to performance obligations that are unsatisfied at the end of the year is £12,956,000 (2021: £6,120,000). Of this, £1,620,000 (2021: £1,682,000) is not expected to be recognised in the next financial year.

19. Other payables

Separate to our trade payables and contract liabilities, which directly relate to our trading activities, our Other payables mostly comprises amounts payable to employees, or relating to employees.

Balances at the end of the year were:

	2022 £'000	2021 £'000
Payroll taxes and social security	**6,823**	7,924
Performance bonuses	**16,179**	13,208
Holiday pay and retirement accruals	**7,810**	7,200
Indirect tax payable	**1,762**	200
Other creditors and accruals	**19,375**	23,184
Total other payables	**51,949**	51,716

Holiday pay accruals are based on a calculation of the number of days' holiday earned during the year, but not yet taken.

Other creditors and accruals includes £1,312,000 (2021: £3,365,000) of receivables in payable positions where there is no right of offset, and a number of other smaller accruals.

20. Leases (as lessee)

The Group leases mostly distribution properties and cars from third parties and recognises an associated lease liability for the total present value of payments the lease contracts commits us to.

Accounting policy

At the commencement date of a lease arrangement the Group recognises a right-of-use asset for the leased item and a lease liability for any payments due. Lease liabilities are initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the incremental borrowing rate of the applicable entity. The lease liability is subsequently measured at amortised cost using the effective interest method and is remeasured if there is a change in future lease payments arising from a change in an index or rate (such as an inflation-linked increase) or if there is a change in the Group's assessment of whether it will exercise an extension or termination option. When this happens there is a corresponding adjustment to the right-of-use asset. Where the Group enters into leases with a lease term of 12 months or less, these are treated as 'short-term' leases and are recognised on a straight-line basis as an expense in the Consolidated income statement. The same treatment applies to low-value assets, which are typically IT equipment and office equipment.

Lease liabilities are analysed as below:

	2022			
	Leasehold property £'000	Plant and equipment £'000	Motor vehicles £'000	Total £'000
Due in less than one year	**2,916**	**33**	**930**	**3,879**
Due between one and two years	**1,857**	**18**	**523**	**2,398**
Due between two and three years	**805**	**10**	**278**	**1,093**
Due between three and four years	**624**	**9**	**78**	**711**
Due between four and five years	**553**	**3**	**7**	**563**
Due in more than five years	**3,611**	**–**	**–**	**3,611**
Total future minimum lease payments payable	**10,366**	**73**	**1,816**	**12,255**
Effect of discounting	**(1,993)**	**(1)**	**(81)**	**(2,075)**
Lease liabilities	**8,373**	**72**	**1,735**	**10,180**

20. Leases (as lessee) (continued)

2021	Leasehold property £'000	Plant and equipment £'000	Motor vehicles £'000	Total £'000
Due in less than one year	3,022	42	1,110	4,174
Due between one and two years	2,497	15	591	3,103
Due between two and three years	1,638	9	249	1,896
Due between three and four years	728	5	55	788
Due between four and five years	571	4	1	576
Due in more than five years	5,026	–	–	5,026
Total future minimum lease payments payable	13,482	75	2,006	15,563
Effect of discounting	(2,936)	(2)	(63)	(3,001)
Lease liabilities	10,546	73	1,943	12,562

Lease liabilities are also presented as a £3,714,000 (2021: £3,904,000) current liability and a £6,466,000 (2021: £8,658,000) non-current liability in the Consolidated balance sheet.

Amounts recognised in the Consolidated income statement relating to leases were:

	2022 £'000	2021 £'000
Depreciation expense of right-of-use assets	**4,205**	4,463
Impairment of right-of-use assets	**1,837**	–
Derecognition of lease liabilities	**(1,985)**	–
Interest expense on lease liabilities	**481**	335
Expenses relating to short-term and low-value leases	**51**	139
Total expense recognised in the Consolidated income statement	**4,589**	4,937
Total cash outflows for leases	**4,613**	5,289

During the year we decided to withdraw from Russia, including moving out of a leased property by August 2022. We have therefore derecognised amounts relating to the leased property totalling £1,985,000, with a corresponding impairment to the right-of-use asset of £1,837,000. See note 30 for further detail.

21. Borrowings

The Group's only source of external borrowing is a fixed interest loan facility in our Japanese subsidiary, entered into to directly finance the purchase of a new distribution facility in Japan in 2019.

Third party borrowings at 30 June 2022 consist of a five year loan entered into on 31 May 2019 by Renishaw KK, with original principal of JPY 1,447,000,000 (£10,486,000). Principal of JPY 12,000,000 is repayable each month, with a fixed interest rate of 0.81% also paid on monthly accretion. The residual principal at 31 May 2024 of JPY 739,000,000 can either be repaid in full at that time, or extended for another five years. All covenants have been complied with during the year.

Movements during the year were:

	2022 £'000	2021 £'000
Balance at the beginning of the year	**7,449**	11,543
Additions	**–**	636
Interest	**52**	69
Repayments	**(974)**	(3,477)
Currency adjustment	**(448)**	(1,322)
Balance at the end of the year	**6,079**	7,449

Borrowings are also presented as a £919,000 (2021: £992,000) current liability and a £5,160,000 (2021: £6,457,000) non-current liability in the Consolidated balance sheet. Borrowings are held at amortised cost.

There is no significant difference between the book value and fair value of borrowings, which is estimated by discounting contractual future cash flows, which represents level 2 of the fair value hierarchy defined in note 25.

22. Changes in liabilities arising from financing activities

	1 July 2021	**Cash flows**	**Other**	**Currency**	**30 June 2022**
Lease liabilities	12,562	**(4,081)**	**513**	**1,186**	**10,180**
Borrowings	7,449	**(974)**	**52**	**(448)**	**6,079**
	20,011	**(5,055)**	**565**	**738**	**16,259**

	1 July 2020	Cash flows	Other	Currency	30 June 2021
Lease liabilities	13,166	(4,815)	4,815	(604)	12,562
Borrowings	11,543	(2,841)	69	(1,322)	7,449
	24,709	(7,656)	4,884	(1,926)	20,011

See notes 20 and 21 for further details on borrowing and leasing activities.

23. Employee benefits

The Group operates contributory pension schemes, largely for UK, Ireland and USA employees, which were of the defined benefit type up to 5 April 2007, 31 December 2007 and 30 June 2012 respectively, at which time they ceased any future accrual for existing members and were closed to new members. The Group's largest defined benefit scheme is in the UK.

Accounting policy

Defined benefit pension schemes are administered by trustees who are independent of the Group finances. Investment assets of the schemes are measured at fair value using the bid price of the unitised investments, quoted by the investment manager, at the reporting date. Pension scheme liabilities are measured using a projected unit method and discounted at the current rate of return on a high-quality corporate bond of equivalent term and currency to the liability. Remeasurements arising from defined benefit schemes comprise actuarial gains and losses, the return on scheme assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest). The Company recognises them immediately in Other comprehensive income and all other expenses related to defined benefit schemes are included in the Consolidated income statement.

The pension schemes' surpluses, to the extent that they are considered recoverable, or deficits are recognised in full and presented on the face of the Consolidated balance sheet under Employee benefits. Where a guarantee is in place in relation to a pension scheme deficit, liabilities are reported in accordance with IFRIC 14 'The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction'. To the extent that contributions payable will not be available as a refund after they are paid into the plan, a liability is recognised at the point the obligation arises, which is the point at which the minimum funding guarantee is agreed. Overseas-based employees are covered by a combination of state, defined benefit and private pension schemes in their countries of residence. Actuarial valuations of overseas pension schemes were not obtained, apart from Ireland and USA, because of the low number of members.

For defined contribution schemes, the amount charged to the Consolidated income statement represents the contributions payable to the schemes in respect of the accounting period.

Key estimate – Valuation of defined benefit pension schemes' liabilities

Determining the value of the future defined benefit obligation requires estimation in respect of the assumptions used to determine the present values. These include future mortality, discount rate and inflation. Management makes these estimates in consultation with independent actuaries.

The total pension cost of the Group for the year was £21,988,000 (2021: £19,759,000), of which £121,000 (2021: £111,000) related to Directors and £5,292,000 (2021: £5,256,000) related to overseas schemes.

The latest full actuarial valuation of the UK defined benefit pension scheme was carried out as at 30 September 2021 and updated to 30 June 2022 by a qualified independent actuary. The mortality assumption used for 2022 is the S3PxA base tables and CMI 2021 model, with long-term improvements of 1% per annum. Adjustments have been made to both the core base tables and CMI 2021 model to allow for the scheme's membership profile and best estimate assumptions of future mortality improvements.

Major assumptions used by actuaries for the UK, Ireland and US schemes were:

	30 June 2022			30 June 2021		
	UK scheme	**Ireland scheme**	**US scheme**	UK scheme	Ireland scheme	US scheme
Rate of increase in pension payments	**3.05%**	**2.45%**	**–**	3.10%	1.70%	–
Lump sum – assumed settlement rate	**–**	**–**	**4.50%**	–	–	0.75%
Discount rate	**3.60%**	**3.20%**	**4.50%**	1.85%	1.10%	2.85%
Inflation rate (RPI)	**3.10%**	**2.45%**	**–**	3.20%	1.70%	–
Inflation rate (CPI)	**2.10% pre-2030** **3.10% post-2030**	**–**	**–**	2.20% pre-2030 3.10% post-2030	–	–
Retirement age	**64**	**65**	**65**	64	65	65

The life expectancies for the UK scheme implied by the mortality assumption at age 65 and 45 are:

	2022 years	2021 years
Male currently aged 65	**21.5**	22.0
Female currently aged 65	**23.8**	23.9
Male currently aged 45	**22.2**	22.7
Female currently aged 45	**24.7**	24.9

The weighted average duration of the UK defined benefit obligation is around 22 years.

23. Employee benefits (continued)

The assets and liabilities in the defined benefit pension schemes were:

	30 June 2022 £'000	**% of total assets**	30 June 2021 £'000	% of total assets
Market value of assets:				
Equities	**111,025**	**51**	140,717	61
Multi-asset funds	**82,442**	**38**	63,017	27
Credit and fixed income funds	**19,489**	**9**	18,833	8
Fixed interest gilts	**1,502**	**1**	1,457	1
Index linked gilts	**1,489**	**1**	1,843	1
Property	**–**	**–**	802	–
Cash and other	**802**	**–**	4,686	2
	216,749	**100**	231,355	100
Actuarial value of liabilities	**(174,504)**	**–**	(255,053)	–
Surplus/(deficit) in the schemes	**42,245**	**–**	(23,698)	–
Deferred tax thereon	**(11,048)**	**–**	4,347	–

Note C.41 gives the analysis of the UK defined benefit pension scheme. For the other schemes, the market value of assets at the end of the year was £22,888,000 (2021: £26,396,000) and the actuarial value of liabilities was £20,973,000 (2021: £30,930,000). The UK and US schemes were both in net surplus positions at 30 June 2022 (2021: both net deficit positions), totalling £43,241,000, and are therefore presented in non-current assets in the Consolidated balance sheet. The Ireland scheme was in a net deficit position at 30 June 2022 (2021: net deficit position), totalling £996,000, and is therefore presented in non-current liabilities.

Equities are held in externally-managed funds and primarily relate to UK and US equities. Credit and fixed income funds, fixed interest gilts, and index linked gilts relate to UK, US and Eurozone government-linked securities, again held in externally-managed funds. The fair values of these equity and fixed income instruments are determined using the bid price of the unitised investments, quoted by the investment manager, at the reporting date and therefore represent 'Level 2' of the fair value hierarchy defined in note 25. Multi-asset funds are also held in externally-managed funds, with active asset allocation to diversify growth across asset classes such as equities, bonds and money-market instruments. The fair value of these funds is determined on a comparable basis to the equity and fixed income funds, and therefore are also 'Level 2' assets.

The UK scheme is closed for future accrual and is expected to mature over the coming years, and therefore while the focus of the investment strategy remains on growth the trustees are gradually de-risking the investment portfolio when appropriate.

The agreed target investment strategy for the UK scheme as at 30 June 2022 was to hold 54% of investment assets in equities, 30% in diversified growth funds, 10% in multi-asset credit and 6% in defensive fixed income (government and corporate bonds). Contributions over the year were predominantly invested in multi-asset credit, which in combination with a disinvestment from equities has brought the mandate up to the target allocation of 10% of assets. Post 30 June 2022, the Trustees and Company have agreed to disinvest 10% of assets from the diversified growth fund allocation, with a view to making a new investment into a Liability Driven Investment mandate that looks to hedge the sensitivities of the liabilities to interest rates and inflation, thereby reducing the volatility of the funding position. No scheme assets are directly invested in the Group's own equity.

The movements in the schemes' assets and liabilities were:

Year ended 30 June 2022	**Assets £'000**	**Liabilities £'000**	**Total £'000**
Balance at the beginning of the year	231,355	(255,053)	(23,698)
Contributions paid	8,866	–	8,866
Interest on pension schemes	4,337	(4,643)	(306)
Remeasurement loss from augmentation of members' benefits	–	(11,695)	(11,695)
Remeasurement gain/(loss) under IAS 19, the asset ceiling and IFRIC 14	(17,264)	86,342	69,078
Benefits paid	(10,545)	10,545	–
Balance at the end of the year	**216,749**	**(174,504)**	**42,245**

Year ended 30 June 2021	**Assets £'000**	**Liabilities £'000**	**Total £'000**
Balance at the beginning of the year	188,619	(253,514)	(64,895)
Contributions paid	8,866	–	8,866
Interest on pension schemes	2,933	(3,809)	(876)
Remeasurement loss from GMP equalisation	–	(78)	(78)
Remeasurement gain/(loss) under IAS 19, the asset ceiling and IFRIC 14	36,824	(3,539)	33,285
Benefits paid	(5,887)	5,887	–
Balance at the end of the year	231,355	(255,053)	(23,698)

23. Employee benefits (continued)

The analysis of the amount recognised in the Consolidated statement of comprehensive income and expense was:

	2022 £'000	2021 £'000
Actuarial gain/(loss) arising from:		
Changes in demographic assumptions	**3,860**	(2,669)
Changes in financial assumptions	**67,442**	4,643
Experience adjustment	**(7,818)**	2,631
Adjustment related to the application of revaluation and late retirement factors	**–**	14,300
Return on plan assets excluding interest income	**(17,264)**	36,823
Adjustment for the asset ceiling	**3,280**	(3,280)
Adjustment to liabilities for IFRIC 14	**19,578**	(19,163)
Total amount recognised in the Consolidated statement of comprehensive income and expense	**69,078**	33,285

The cumulative amount of actuarial gains and losses recognised in the Consolidated statement of comprehensive income and expense was a loss of £22,419,000 (2021: loss of £91,497,000).

The net surplus of the Group's defined benefit pension schemes, on an IAS 19 basis, has increased from a £23,698,000 liability at 30 June 2021 to a £42,245,000 asset at 30 June 2022, primarily reflecting the net effect of:

- an increase in the discount rates of the UK and Irish schemes, based on increases in corporate bond yields;
- changes to the UK scheme rules which allows recognition of a surplus position; and
- an adjustment for changes in the UK scheme rules relating to members' benefits, which is discussed further below.

For the UK scheme, the latest actuarial report prepared in September 2021 shows a deficit of £52,800,000, which is based on funding to self-sufficiency and uses prudent assumptions. IAS 19 requires best estimate assumptions to be used, resulting in the IAS 19 net surplus being higher than the actuarial deficit.

For the UK defined benefit scheme, a guide to the sensitivity of the value of the respective liabilities is as follows:

	Variation	Approximate effect on liabilities
UK – discount rate	Increase/decrease by 0.5%	-£12.9m/+£14.6m
UK – future inflation	Increase/decrease by 0.5%	+£11.5m/-£11.3m
UK – mortality	Increased/decreased life by one year	+£5.9m/-£5.9m

In October 2020, the Trustees of the Renishaw Pension Fund ('the UK defined benefit scheme') notified the Company of a difference between the calculated estimate of liabilities in the scheme for administration purposes and for accounting purposes. Specifically, this discrepancy related to the application of revaluation and early and late retirement factors. In May 2021, following joint instruction from the Trustees and Company, a Queen's Counsel (QC) opinion was given on the correct interpretation of the Trust Deed and Rules of the Fund in relation to this matter. The most significant part of QC's opinion was that no revaluation increases should be applied between ages 60 and 65 (or earlier retirement). The 2021 financial statements reflected the impact that would arise from correcting the benefits in payment and the valuation of future benefits to be in line with QC's opinion, with a gain of £14,300,000 recognised in the Consolidated statement of comprehensive income and expense.

In 2022, the Company agreed to an augmentation of members' benefits to reflect current and historic administrative revaluation practice. The augmentation is a change to the benefits provided in the UK scheme, which has been effected in the Rules through a Deed of Amendment to the Trust Deed and Rules, signed by the Trustees and Company on 20 June 2022. The impact on liabilities of this plan amendment, totalling £11,695,000, has been recognised as a past service cost in the Consolidated income statement. This amount has been excluded from adjusted profit measures, see note 29 for further detail.

The deficit funding plan for the UK defined benefit pension scheme is unaffected by the changes to the Rules. Under the plan, the Company is paying £8,700,000 per annum into the scheme for five years with effect from 1 October 2018. However, the Deed of Amendment granted the Company the unconditional right to a refund of any surplus on wind-up of the UK scheme. IFRIC 14 is an interpretation of IAS 19 which requires consideration of minimum funding commitments a company has made to its pension scheme and whether this gives rise to additional liabilities. In particular, whether a company has an unconditional right to a refund of surplus from a scheme dictates whether there is an impact on the accounting. As a result of the change to the Rules to allow recognition of a surplus, a gain of £3,280,000 has been recognised in the year in respect of the removal of the asset ceiling restriction in place in 2021, and a gain of £19,578,000 recognised in respect of not needing to recognise an additional liability in consideration of minimum funding considerations.

The Company and Trustees also agreed reductions to the charges the scheme has on the Company's assets. An escrow bank account with a balance of £10,578,000 at 30 June 2021 is no longer subject to a registered floating charge, while the number of UK properties owned by the Company subject to registered fixed charges has decreased. The net book value of properties subject to fixed charges at 30 June 2022 was £54,208,000 (2021: £81,679,000).

23. Employee benefits (continued)

The current agreement will continue until 30 June 2031 and any outstanding deficit paid at that time. The agreement will end sooner if the actuarial deficit (calculated on a self-sufficiency basis) is eliminated in the meantime.

The charges may be enforced by the Trustees if one of the following occurs: (a) the Company does not pay funds into the scheme in line with the agreed plan; (b) an insolvency event occurs in relation to the Company; or (c) the Company does not pay any deficit at 30 June 2031.

Under the Ireland defined benefit pension scheme deficit funding plan, a property owned by Renishaw Ireland (DAC) is subject to a registered fixed charge to secure the Ireland defined benefit pension scheme's deficit.

24. Share-based payments

The Group provides share-based payment arrangements to certain employees in accordance with the Renishaw plc deferred annual equity incentive plan. The Governance section provides information of how these awards are determined.

Accounting policy

Renishaw shares are granted in accordance with the Renishaw plc deferred annual equity incentive plan (the Plan). The share awards are subject only to continuing service of the employee and are equity settled. The fair value of the awards at the date of grant, which is estimated to be equal to the market value, is charged to the Consolidated income statement on a straight-line basis over a three-year vesting period, with appropriate adjustments made to reflect expected or actual forfeitures. The corresponding credit is to Other reserve.

The number of shares to be awarded is calculated by dividing the relevant amount of annual bonus under the Plan by the average price of a share during a period determined by the Remuneration Committee of not more than five dealing days ending with the dealing day before the award date. These shares must be purchased on the open market and cannot be satisfied by issuance of new shares or transfer of existing treasury shares.

The Renishaw Employee Benefit Trust (EBT) is responsible for purchasing shares on the open market on behalf of the Company to satisfy the Plan awards. These are held by the EBT until transferring to the employee, which will normally be on the third anniversary of the award date, subject to continued employment. Malus and clawback provisions can be operated by the Committee within five years of the award date. During the vesting period, no dividends are payable on the shares. However, upon vesting, employees will be entitled to additional shares or cash, equivalent to the value of dividends paid on the awarded shares during this period. This amount is accrued over the vesting period.

Own shares held are recognised as an element in equity until they are transferred at the end of the vesting period, and such shares are excluded from earnings per share calculations.

The total cost recognised in the 2022 Consolidated income statement in respect of the Plan was £180,000 (2021: £173,000). See note 26 for reconciliations of amounts recognised in Equity.

In accordance with the Plan, amounts equivalent to £1,915,000 (2021: £734,317) of shares are to be awarded in respect of 2022.

25. Financial instruments

The Group has exposure to credit risk, liquidity risk and market risk arising from its use of financial instruments. This note presents information about the Group's exposure to these risks, along with the Group's objectives, policies and processes for measuring and managing the risks.

Accounting policy

The Group measures financial instruments such as forward exchange contracts at fair value at each balance sheet date in accordance with IFRS 9 'Financial Instruments'. Fair value, as defined by IFRS 13 'Fair Value Measurement', is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. This note provides detail on the IFRS 13 fair value hierarchy.

Trade and other current receivables are initially recognised at fair value and are subsequently held at amortised cost less any provision for bad and doubtful debts and expected credit losses according to IFRS 9. Loans to associates and joint ventures are initially recognised at fair value and are subsequently held at amortised cost. Trade and other current payables are initially recognised at fair value and are subsequently held at amortised cost.

Financial liabilities in the form of loans are initially recognised at fair value and are subsequently held at amortised cost. Financial liabilities are assessed for embedded derivatives and whether any such derivatives are closely related. If not closely related, such derivatives are accounted for at fair value in the Consolidated income statement.

25. Financial instruments (continued)

Foreign currency derivatives are used to manage risks arising from changes in foreign currency rates relating to overseas sales and foreign currency-denominated assets and liabilities. The Group does not enter into derivatives for speculative purposes. Foreign currency derivatives are stated at their fair value, being the estimated amount that the Group would pay or receive to terminate them at the balance sheet date, based on prevailing foreign currency rates.

Changes in the fair value of foreign currency derivatives which are designated and effective as hedges of future cash flows are recognised in Other comprehensive income and in the Cash flow hedging reserve, and subsequently transferred to the carrying amount of the hedged item or the Consolidated income statement. Realised gains or losses on cash flow hedges are therefore recognised in the Consolidated income statement within revenue in the same period as the hedged item.

Hedge accounting is discontinued when the hedging instrument expires or when the hedging instrument or hedged item no longer qualify for hedge accounting. If the forecast transaction is still expected to occur, but is no longer highly probable, the cumulative gain or loss in the cash flow hedge reserve remains in that reserve until the transaction occurs. If the forecast transaction is no longer expected to occur, the cumulative gain or loss in the cash flow hedge reserve is immediately reclassified to the Consolidated income statement.

Changes in fair value of foreign currency derivatives, which are ineffective or do not meet the criteria for hedge accounting in IFRS 9, are recognised in the Consolidated income statement within Gains/losses from the fair value of financial instruments.

In addition to derivatives held for cash flow hedging purposes, the Group uses short-term derivatives not designated as hedging instruments to offset gains and losses from exchange rate movements on foreign currency-denominated assets and liabilities. Gains and losses from currency movements on underlying assets and liabilities, realised gains and losses on these derivatives, and fair value gains and losses on outstanding derivatives of this nature are all recognised in Financial income and expenses in the Consolidated income statement.

Key estimate – Estimates of highly probable forecasts of the hedged item

Derivatives are effective for hedge accounting to the extent that the hedged item is ‘highly probable’ to occur, with ‘highly probable’ indicating a much greater likelihood of occurrence than the term ‘more likely than not’. Determining a highly probable sales forecast for Renishaw plc and Renishaw UK Sales Limited, being the hedged item, over a multiple year time period, requires judgement of the suitability of external and internal data sources and estimations of future sales.

Fair value

There is no significant difference between the fair value of financial assets and financial liabilities and their carrying value in the Consolidated balance sheet. All financial assets and liabilities are held at amortised cost, apart from the forward foreign currency exchange contracts, which are held at fair value, with changes going through the Consolidated income statement unless subject to hedge accounting.

The fair values of the forward foreign currency exchange contracts have been calculated by a third-party expert, discounting estimated future cash flows on the basis of market expectations of future exchange rates, representing level 2 in the IFRS 13 fair value hierarchy. The IFRS 13 level categorisation relates to the extent the fair value can be determined by reference to comparable market values. The classifications are: level 1 where instruments are quoted on an active market; level 2 where the assumptions used to arrive at fair value have comparable market data; and level 3 where the assumptions used to arrive at fair value do not have comparable market data.

Credit risk

The Group's liquid funds are substantially held with banks with high credit ratings and the credit risk relating to these funds is therefore limited. The Group carries a credit risk relating to non-payment of trade receivables by its customers. The Group's policy is that credit evaluations are carried out on all new customers before credit is given above certain thresholds. There is a spread of risks among a large number of customers with no significant concentration with one customer or in any one geographical area. The Group establishes an allowance for impairment in respect of trade receivables where recoverability is considered doubtful.

An analysis by currency of the Group's financial assets at the year end is as follows:

	Trade & finance lease receivables		Other receivables		Cash and bank deposits	
Currency	**2022 £'000**	2021 £'000	**2022 £'000**	2021 £'000	**2022 £'000**	2021 £'000
Pound Sterling	**21,391**	16,915	**19,565**	23,752	**201,668**	174,905
US Dollar	**45,433**	39,603	**867**	815	**13,965**	9,511
Euro	**28,314**	23,476	**1,568**	1,144	**8,712**	8,118
Japanese Yen	**19,480**	16,568	**457**	173	**5,720**	3,786
Other	**23,242**	26,103	**4,611**	4,137	**23,097**	18,688
	137,860	122,665	**27,068**	30,021	**253,162**	215,008

Short-term loans to associates and joint ventures and contract assets are mostly denominated in Pound Sterling.

25. Financial instruments (continued)

The above trade receivables, finance lease receivables, other receivables and cash are predominately held in the functional currency of the relevant entity, with the exception of £21,271,000 of US Dollar-denominated trade receivables being held in Renishaw (Hong Kong) Limited and £1,852,000 of Euro-denominated trade receivables being held in Renishaw UK Sales Limited, along with some foreign currency cash balances which are of a short-term nature.

The ageing of trade receivables past due at the end of the year was:

	2022 £'000	2021 £'000
Past due zero to one month	**9,548**	10,537
Past due one to two months	**3,879**	2,704
Past due more than two months	**5,252**	6,283
Balance at the end of the year	**18,679**	19,524

Movements in the provision for impairment of trade receivables during the year were:

	2022 £'000	2021 £'000
Balance at the beginning of the year	**3,826**	5,965
Changes in amounts provided	**(834)**	(1,994)
Amounts used	**(452)**	(145)
Balance at the end of the year	**2,540**	3,826

The Group applies the simplified approach when measuring the expected credit loss for trade receivables, with a provision matrix used to determine a lifetime expected credit loss.

For this provision matrix, trade receivables are grouped into credit risk categories, with category 1 being the lowest risk and category 5 the highest. Risk scores are allocated to the customer's country of operation, their type (such as distributor, end-user and OEM), their industry and the proportion of their debt that was past due at the year-end. These scores are then weighted to produce an overall risk score for the customer, with the lowest scores being allocated to category 1 and the highest scores to category 5. The matrix then applies an expected credit loss rate to each category, with this rate being determined by adjusting the Group's historic credit loss rates to reflect forward-looking information.

Where certain customers have been identified as having a significantly elevated credit risk these have been provided for on a specific basis. Both elements of expected credit loss are shown in the matrix below and have been shown separately so as not to distort the expected credit loss rate.

Year ended 30 June 2022	**Risk category 1 £'000**	**Risk category 2 £'000**	**Risk category 3 £'000**	**Risk category 4 £'000**	**Risk category 5 £'000**	**2022 Total £'000**
Gross trade receivables	**2,742**	**51,598**	**70,298**	**5,453**	**–**	**130,091**
Expected credit loss rate	**0.19%**	**0.20%**	**0.22%**	**0.24%**	**–**	**0.21%**
Expected credit loss allowance	**5**	**104**	**154**	**13**	**–**	**276**
Specific loss allowance	**–**	**–**	**1,502**	**762**	**–**	**2,264**
Total expected credit loss	**5**	**104**	**1,656**	**775**	**–**	**2,540**
Net trade receivables	**2,737**	**51,494**	**68,642**	**4,678**	**–**	**127,551**

Year ended 30 June 2021	Risk category 1 £'000	Risk category 2 £'000	Risk category 3 £'000	Risk category 4 £'000	Risk category 5 £'000	2021 Total £'000
Gross trade receivables	9,154	38,759	65,870	3,806	898	118,487
Expected credit loss rate	0.28%	0.31%	0.31%	0.36%	0.39%	0.31%
Expected credit loss allowance	26	119	205	14	3	367
Specific loss allowance	–	–	2,080	1,138	241	3,459
Total expected credit loss	26	119	2,285	1,152	244	3,826
Net trade receivables	9,128	38,640	63,585	2,654	654	114,661

Finance lease receivables are subject to the same approach as noted above for trade receivables, while contracts assets and short-term loans to associates and joint ventures are not material to the Group.

Derivative assets are assessed based on the credit risk of the banks counterparty to the forward contracts.

Other receivables include mostly prepayments, a proportion of the R&D tax credit receivable, and indirect tax receivables. Prepayment balances are reviewed at each reporting period to confirm that prepaid goods or services are still expected to be received, while tax balances are reviewed for recoverability.

25. Financial instruments (continued)

Other receivables at the year end comprised:

	2022 £'000	2021 £'000
Indirect tax receivable	**9,010**	7,458
Software maintenance	**7,430**	4,917
Grants	**1,250**	624
R&D tax credit recoverable	**442**	8,352
Other prepayments	**8,936**	8,670
Total other receivables	**27,068**	30,021

The total R&D tax credit recoverable has reduced from £8,352,000 at 30 June 2021 to £4,337,000 at 30 June 2022. As the Company can now offset the tax credit against its corporation tax liability, £3,895,000 of the total balance at 30 June 2022 has been recognised in current tax assets, with £442,000 remaining in Other receivables at 30 June 2022.

The maximum exposure to credit risk is £425,211,000 (2021: £389,817,000), comprising the Group's trade, finance and other receivables, cash and cash equivalents and derivative assets.

The maturities of non-current other receivables, being only derivatives, at the year end were:

	2022 £'000	2021 £'000
Receivable between one and two years	**–**	12,484
Receivable between two and five years	**–**	–
	–	12,484

Liquidity risk

Our approach to managing liquidity is to ensure, as far as possible, that we will always have sufficient liquidity to meet our liabilities when due, without incurring unacceptable losses or risking damage to the Group's reputation. We use monthly cash flow forecasts on a rolling 12-month basis to monitor cash requirements.

With net cash and bank deposits at 30 June 2022 totalling £253,162,000, an increase of £38,154,000 from 30 June 2021, the Group's liquidity has improved in the period.

In respect of net cash and bank deposits, the carrying value is materially the same as fair value because of the short maturity of the bank deposits. Bank deposits are affected by interest rates that are either fixed or floating, which can change over time, affecting the Group's interest income. An increase of 1% in interest rates would result in an increase in interest income of approximately £1,000,000.

The contractual maturities of financial liabilities at the year end were:

				Contractual cash flows		
Year ended 30 June 2022	**Carrying amount £'000**	**Effect of discounting £'000**	**Gross maturities £'000**	**Up to 1 year £'000**	**1–2 years £'000**	**2–5 years £'000**
Trade payables	**30,947**	**–**	**30,947**	**30,947**	**–**	**–**
Other payables	**51,949**	**–**	**51,949**	**51,949**	**–**	**–**
Borrowings	**6,079**	**82**	**6,161**	**926**	**5,235**	**–**
Forward exchange contracts	**27,353**	**–**	**27,353**	**17,890**	**9,463**	**–**
	116,328	**82**	**116,410**	**101,712**	**14,698**	**–**

				Contractual cash flows		
Year ended 30 June 2021	Carrying amount £'000	Effect of discounting £'000	Gross maturities £'000	Up to 1 year £'000	1–2 years £'000	2–5 years £'000
Trade payables	24,715	–	24,715	24,715	–	–
Other payables	51,716	–	51,716	51,716	–	–
Borrowings	7,449	144	7,593	992	6,601	–
Forward exchange contracts	5,949	–	5,949	5,594	355	–
	89,829	144	89,973	83,017	6,956	–

25. Financial instruments (continued)

Market risk

As noted in the Strategic Report under Principal risks and uncertainties, the Group operates in a number of foreign currencies with the majority of sales being made in these non-Sterling currencies, but with most manufacturing being undertaken in the UK, Ireland and India.

A large proportion of sales are made in US Dollar, Euro and Japanese Yen, therefore the Group enters into US Dollar, Euro and Japanese Yen derivative financial instruments to manage its exposure to foreign currency risk, including:

i. forward foreign currency exchange contracts to hedge a significant proportion of the Group's forecasted US Dollar, Euro and Japanese Yen revenues over the next 24 months;

ii. foreign currency option contracts, entered into alongside the forward contracts above until May 2018 as part of the Group hedging strategy, are ineffective for cash flow hedging purposes. Note 29, 'Alternative performance measures', gives an adjusted measure of profit before tax to reflect the original intention that these derivatives were entered into for hedging purposes. The final option contract matured in November 2021; and

iii. one-month forward foreign currency exchange contracts to offset the gains/losses from exchange rate movements arising from foreign currency-denominated intragroup balances of the Company.

The amounts of foreign currencies relating to these forward contracts and options are, in Sterling terms:

	2022		2021	
	Nominal value £'000	**Fair value £'000**	Nominal value £'000	Fair value £'000
US Dollar	**306,270**	**(26,249)**	399,065	4,192
Euro	**129,799**	**1,711**	146,120	6,040
Japanese Yen	**37,941**	**4,306**	68,938	5,942
	474,010	**(20,232)**	614,123	16,174

The following are the exchange rates which have been applicable during the financial year:

	2022			2021		
Currency	**Average forward contract rate**	**Year end exchange rate**	**Average exchange rate**	Average forward contract rate	Year end exchange rate	Average exchange rate
US Dollar	**1.34**	**1.22**	**1.33**	1.37	1.38	1.36
Euro	**1.12**	**1.16**	**1.18**	1.09	1.17	1.14
Japanese Yen	**132**	**165**	**156**	136	154	145

Hedging

In relation to the forward currency contracts in a designated cash flow hedge, the hedged item is a layer component of forecast sales transactions. Forecast transactions are deemed highly probable to occur and Group policy is to hedge around 75% of net foreign currency exposure for USD, EUR and JPY. The hedged item creates an exposure to receive USD, EUR or JPY, while the forward contract is to sell USD, EUR or JPY and buy GBP. Therefore, there is a strong economic relationship between the hedging instrument and the hedged item. The hedge ratio is 100%, such that, by way of example, £10m nominal value of forward currency contracts are used to hedge £10m of forecast sales. Fair value gains or losses on the forward currency contracts are offset by foreign currency gain or losses on the translation of USD, EUR and JPY based sales revenue, relative to the forward rate at the date the forward contracts were arranged. Foreign currency exposures in HKD and USD are aggregated and only USD forward currency contracts are used to hedge these currency exposures. Sources of hedge ineffectiveness according to IFRS 9 Financial Instruments include: changes in timing of the hedged item; reduction in the amount of the hedged sales considered to be highly probable; a change in the credit risk of Renishaw or the bank counterparty to the forward contract; and differences in assumptions used in calculating fair value.

During 2020, global macroeconomic uncertainty resulted in a reduction to the 'highly probable' revenue forecasts of Renishaw plc and Renishaw UK Sales Limited, being the hedged item, which resulted in proportions of forward contracts failing hedge effectiveness testing, with nominal value amounting to £247,547,000. Following maturities during 2021 and 2022, the remaining nominal value of ineffective forward contracts at 30 June 2022 totalled £63,045,000 (2021:£153,585,000), with fair value losses of £11,551,000 (2021: £22,824,000 gain) recognised in the Consolidated income statement relating to movements in the mark-to-market valuations of these outstanding contracts.

In 2021 and 2022, improvements in global macroeconomic conditions and business performance have resulted in subsequent increases to the 'highly probable' revenue forecasts of the hedged item, such that no additional contracts have become ineffective. A decrease of 10% in the highly probable forecasts would result in no additional forward contracts becoming ineffective.

25. Financial instruments (continued)

For both the Group and the Company, the following table details the fair value of these forward foreign currency derivatives according to the categorisations of instruments noted previously:

	2022		2021	
	Nominal value £'000	Fair value £'000	Nominal value £'000	Fair value £'000
Forward currency contracts in a designated cash flow hedge (i)				
Non-current derivative assets	–	–	172,165	9,865
Current derivative assets	77,460	7,077	127,548	7,512
Current derivative liabilities	128,950	(12,046)	74,652	(3,063)
Non-current derivative liabilities	179,149	(9,463)	34,245	(322)
	385,559	(14,432)	408,610	13,992
Amounts recognised in the Consolidated statement of comprehensive income and expense	–	28,423	–	51,590
Forward currency contracts ineffective as a cash flow hedge (i)				
Non-current derivative assets	–	–	56,357	2,619
Current derivative assets	–	–	31,011	428
Current derivative liabilities	63,045	(5,504)	59,529	(1,653)
Non-current derivative liabilities	–	–	6,687	(33)
	63,045	(5,504)	153,585	1,361
Amounts recognised in Gains/(losses) from the fair value of financial instruments in the Consolidated income statement	–	(11,551)	–	22,824
Foreign currency options ineffective as a cash flow hedge (ii)				
Non-current derivative assets	–	–	–	–
Current derivative assets	–	–	–	1,699
Current derivative liabilities	–	–	–	(216)
Non-current derivative liabilities	–	–	–	–
			–	1,483
Amounts recognised in Gains/(losses) from the fair value of financial instruments in the Consolidated income statement	–	1,138		(846)
Forward currency contracts not in a designated cash flow hedge (iii)				
Current derivative assets	4,880	44	–	–
Current derivative liabilities	20,526	(340)	51,929	(662)
	25,406	(296)	51,929	(662)
Amounts recognised in Financial income/(expense) in the Consolidated income statement	–	98	–	2,781
Total forward contracts and options				
Non-current derivative assets	–	–	228,522	12,484
Current derivative assets	82,340	7,121	158,559	9,639
Current derivative liabilities	212,521	(17,890)	186,110	(5,594)
Non-current derivative liabilities	179,149	(9,463)	40,932	(355)
	474,010	(20,232)	614,123	16,174

For the Group's foreign currency forward contracts at the balance sheet date, if Sterling appreciated by 5% against the US Dollar, Euro and Japanese Yen, this would increase pre-tax equity by £18,360,000 and increase profit before tax by £4,212,000, while a depreciation of 5% would decrease pre-tax equity by £20,293,000 and decrease profit before tax by £4,655,000.

26. Share capital and reserves

The Group defines capital as being the equity attributable to the owners of the Company, which is captioned on the Consolidated balance sheet. The Board's policy is to maintain a strong capital base and to maintain a balance between significant returns to shareholders, with a progressive dividend policy, while ensuring the security of the Group is supported by a sound capital position. The Group may adjust dividend payments due to changes in economic and market conditions which affect, or are anticipated to affect, Group results. This note presents figures relating to this capital management, along with an analysis of all elements of Equity attributable to shareholders and non-controlling interests.

Share capital

	2022 £'000	2021 £'000
Allotted, called-up and fully paid 72,788,543 ordinary shares of 20p each	**14,558**	14,558

The ordinary shares are the only class of share in the Company. Holders of ordinary shares are entitled to vote at general meetings of the Company and receive dividends as declared. The Articles of Association of the Company do not contain any restrictions on the transfer of shares nor on voting rights.

Dividends paid

Dividends paid comprised:

	2022 £'000	2021 £'000
2021 final dividend paid of 52.0p per share (2020: nil)	**37,850**	–
Interim dividend paid of 16.0p per share (2021: 14.0p)	**11,644**	10,189
Total dividends paid	**49,494**	10,189

A final dividend of 56.6p per share is proposed in respect of 2022, which will be payable on 5 December 2022 to shareholders on the register on 4 November 2022.

Own shares held

The EBT is responsible for purchasing shares on the open market on behalf of the Company to satisfy the Plan awards, see note 24 for further detail. Own shares held are recognised as an element in equity until they are transferred at the end of the vesting period.

Movements during the year were:

	2022 £'000	2021 £'000
Balance at the beginning of the year	**(404)**	(404)
Disposal of own shares on vesting of awards	**404**	–
Acquisition of own shares	**(750)**	–
Balance at the end of the year	**(750)**	(404)

On 10 December 2018, 9,639 shares were purchased on the open market by the EBT at a price of £41.66, costing a total of £404,348. The fair value of these awards at the grant date, being 2 August 2018, was £519,542. These shares vested during the period on 2 August 2021 with no forfeitures.

On 25 November 2021, 14,396 shares were purchased on the open market by the EBT at a price of £52.10, costing a total of £750,017. The fair value of these awards at the grant date, being 28 October 2021, was £734,317. These shares will vest on 28 October 2024, with no forfeitures expected at 30 June 2022.

Other reserve

The other reserve relates to additional investments in subsidiary undertakings and share-based payments charges according to IFRS 2 in relation to the Plan.

Movements during the year were:

	2022 £'000	2021 £'000
Balance at the beginning of the year	**44**	(129)
Share-based payments charge in respect of shares vesting in 2022	**16**	–
Transfer of own shares on vesting of awards	**(404)**	–
Share-based payments charge in respect of shares vesting in 2024	**164**	173
Balance at the end of the year	**(180)**	44

Further explanations for these movements can be found in the above Own shares held section and note 24.

26. Share capital and reserves (continued)

Currency translation reserve

The currency translation reserve comprises all foreign exchange differences arising from the translation of the financial statements of the overseas operations and currency movements on intragroup loan balances classified as net investments in overseas operations.

Movements during the year were:

	2022 £'000	2021 £'000
Balance at the beginning of the year	**3,719**	17,729
Gain/(loss) on net assets of foreign currency operations	**3,529**	(7,009)
Transfer of accumulated loss relating to net assets of Russian operation	**575**	–
Gain/(loss) on intragroup loans classified as net investments in foreign operations	**8,047**	(7,743)
Tax on translation of net investments in foreign operations	**(1,529)**	1,470
Gain/(loss) in the year relating to subsidiaries	**10,622**	(13,282)
Currency exchange differences relating to associates and joint ventures	**118**	(728)
Balance at the end of the year	**14,459**	3,719

See notes 5 and 30 for further information on intragroup loans classified as net investments and the cessation of activities in Russia.

Cash flow hedging reserve

The cash flow hedging reserve, for both the Group and the Company, comprises all foreign exchange differences arising from the valuation of forward exchange contracts which are effective hedges and mature after the year end. These are valued on a mark-to-market basis, are accounted for in Other comprehensive income and expense and accumulated in Equity, and are recycled through the Consolidated income statement and Company income statement when the hedged item affects the income statement, or when the hedging relationship ceases to be effective. See note 25 for further detail.

Movements during the year were:

	2022 £'000	2021 £'000
Balance at the beginning of the year	**11,345**	(30,455)
Losses on contract maturity recognised in revenue during the year	**(3,385)**	(608)
Revaluations during the year	**(25,038)**	52,198
Deferred tax movement	**6,155**	(9,790)
Balance at the end of the year	**(10,923)**	11,345

Non-controlling interest

Movements during the year were:

	2022 £'000	2021 £'000
Balance at the beginning of the year	**(577)**	(577)
Share of profit for the year	**–**	–
Balance at the end of the year	**(577)**	(577)

The non-controlling interest represents the minority shareholdings in Renishaw Diagnostics Limited – 7.6%.

27. Capital commitments

At the end of a financial year, we typically have obligations to make payments in the future, for which no provision is made in the financial statements. This year, we have committed to the expansion of one of our production facilities in Wales, UK, which is expected to cost around £64m over the next three years.

Authorised and committed capital expenditure at the end of the year were:

	2022 £'000	2021 £'000
Freehold land and buildings	**65,328**	412
Plant and equipment	**22,760**	3,255
Motor vehicles	**319**	79
Software licences and intellectual property	**–**	68
Total committed capital expenditure	**88,407**	3,814

28. Related parties

We report our two joint venture companies, RLS Merilna tehnika d.o.o. and Metrology Software Products Limited, as related parties. A previous associate company, HiETA Technologies Limited, was entirely sold to a third party during the year.

Associates, joint ventures and other related parties had the following transactions and balances with the Group:

	Joint ventures		Associate	
	2022 £'000	2021 £'000	**2022 £'000**	2021 £'000
Purchased goods and services from the Group during the year	**553**	711	**711**	642
Sold goods and services to the Group during the year	**29,355**	22,175	**–**	–
Paid dividends to the Group during the year	**525**	–	**–**	–
Amounts owed to the Group at the year end	**1**	146	**–**	2,747
Amounts owed by the Group at the year end	**3,950**	2,556	**–**	–
Loans owed to the Group at the year end	**350**	598	**–**	–

There were no bad debts relating to related parties written off during 2022. Loans and finance leases owed to the Group by an associate totalling £3,030,000 were impaired in 2021.

By virtue of their long-standing voting agreement, Sir David McMurtry (Executive Chairman 36.23% shareholder) and John Deer (Non-executive Deputy Chairman, together with his wife, 16.59%), are the ultimate controlling party of the Group. The only significant transactions between the Group and these parties are in relation to their respective remuneration.

29. Alternative performance measures

There are sometimes infrequently occurring events which impact on our financial statements, recognised according to applicable IFRS, that we believe should be excluded from adjusted performance measures in order to give readers a more understandable and comparable view of our underlying performance.

In accordance with Renishaw's alternative performance measures (APMs) policy and ESMA Guidelines on Alternative Performance Measures (2015), APMs are defined as - Revenue at constant exchange rates, Adjusted profit before tax, Adjusted earnings per share and Adjusted operating profit.

Revenue at constant exchange rates is defined as revenue recalculated using the same rates as were applicable to the previous year and excluding forward contract gains and losses.

Revenue at constant exchange rates:	**2022 £'000**	2021 £'000
Statutory revenue as reported	**671,076**	565,559
Adjustment for forward contract gains	**(744)**	(1,427)
Adjustment to restate current year at previous year exchange rates	**(2,682)**	–
Revenue at constant exchange rates	**667,650**	564,132
Year-on-year revenue growth at constant exchange rates	**+18.3%**	–

Year-on-year revenue growth at constant exchange rates for 2021 was +13.0%.

Adjusted profit before tax, Adjusted earnings per share and Adjusted operating profit are defined as the profit before tax, earnings per share and operating profit after excluding costs relating to a revision to a provision made in 2020 relating to restructuring, third-party costs relating to the formal sales process ('FSP'), a UK defined benefit pension scheme past service cost, and gains and losses in fair value from forward currency contracts which did not qualify for hedge accounting and which have yet to mature.

Restructuring costs, where applicable during a year, are reported separately in the Consolidated income statement and excluded from adjusted measures on the basis that they relate to matters that do not frequently recur. During 2022, a revised estimate of a warranty provision relating to restructuring in 2020 resulted in a reduction to this provision of £1,688,000. As this provision was initially excluded from adjusted measures, the revised estimate has also been excluded.

Third-party legal and advisory costs relating to the 2021 FSP were excluded from adjusted measures in 2021. During 2022, £200,000 was released from an accrual made in respect of these costs relating to indirect tax, which has been excluded this year.

In 2022, the Company agreed to an augmentation of UK defined benefit pension scheme members' benefits. This was effected in the scheme Rules through a Deed of Amendment to the Trust Deed and Rules, signed by the Trustees and Company on 20 June 2022, therefore relates to a matter which is not expected to frequently recur. The impact on liabilities of this plan amendment, totalling £11,695,000, have therefore been recognised as a past service cost, reported separately in the Consolidated income statement and excluded from adjusted profit measures. See note 23 for further detail.

29. Alternative performance measures (continued)

From 2017, the gains and losses from the fair value of financial instruments not effective for cash flow hedging have been excluded from statutory profit before tax, statutory earnings per share and statutory operating profit in arriving at Adjusted profit before tax, Adjusted earnings per share and Adjusted operating profit to reflect the Board's intent that the instruments would provide effective hedges. This is classified as 'Fair value (gains)/losses on financial instruments not eligible for hedge accounting (i)' in the following reconciliations. The amounts shown as reported in revenue represent the amount by which revenue would change had all the derivatives qualified as eligible for hedge accounting.

Gains and losses which recycle through the Consolidated income statement as a result of contracts deemed ineffective during 2020, as described in note 25, are also excluded from adjusted profit measures, on the basis that all forward contracts are still expected to be effective hedges for Group revenue, while the potentially high volatility in fair value gains and losses relating to these contracts will otherwise cause confusion for users of the financial statements wishing to understand the underlying trading performance of the Group. This is classified as 'Fair value (gains)/losses on financial instruments not eligible for hedge accounting (ii)' in the following reconciliations.

The Board considers these alternative performance measures to be more relevant and reliable in evaluating the Group's performance.

Adjusted profit before tax:	**2022 £'000**	2021 £'000
Statutory profit before tax	**145,586**	139,439
Revised estimate of 2020 restructuring provisions	**(1,688)**	–
Third-party FSP costs	**(200)**	3,222
UK defined benefit pension scheme past service cost	**11,695**	–
Fair value (gains)/losses on financial instruments not eligible for hedge accounting (i):		
– reported in revenue	**2,621**	1,882
– reported in (gains)/losses from the fair value of financial instruments	**(1,138)**	846
Fair value (gains)/losses on financial instruments not eligible for hedge accounting (ii):		
– reported in revenue	**(4,685)**	(2,899)
– reported in (gains)/losses from the fair value of financial instruments	**11,551**	(22,824)
Adjusted profit before tax	**163,742**	119,666

Adjusted earnings per share:	**2022 pence**	2021 pence
Statutory earnings per share	**165.4**	153.2
Revised estimate of 2020 restructuring provisions	**(0.3)**	–
Third-party FSP costs	**(1.9)**	4.4
UK defined benefit pension scheme past service cost	**13.0**	–
Fair value (gains)/losses on financial instruments not eligible for hedge accounting (i):		
– reported in revenue	**2.9**	2.1
– reported in (gains)/losses from the fair value of financial instruments	**(1.3)**	0.9
Fair value (gains)/losses on financial instruments not eligible for hedge accounting (ii):		
– reported in revenue	**(5.2)**	(3.2)
– reported in (gains)/losses from the fair value of financial instruments	**12.9**	(25.4)
Adjusted earnings per share	**185.5**	132.0

Adjusted operating profit:	**2022 £'000**	2021 £'000
Statutory operating profit	**143,250**	138,341
Revised estimate of 2020 restructuring provisions	**(1,688)**	–
Third-party FSP costs	**(200)**	3,222
UK defined benefit pension scheme past service cost	**11,695**	–
Fair value (gains)/losses on financial instruments not eligible for hedge accounting (i):		
– reported in revenue	**2,621**	1,882
– reported in (gains)/losses from the fair value of financial instruments	**(1,138)**	846
Fair value (gains)/losses on financial instruments not eligible for hedge accounting (ii):		
– reported in revenue	**(4,685)**	(2,899)
– reported in (gains)/losses from the fair value of financial instruments	**11,551**	(22,824)
Adjusted operating profit	**161,406**	118,568

29. Alternative performance measures (continued)

Adjustments to the segmental operating profit:

Manufacturing technologies	**2022 £'000**	2021* £'000
Operating profit before losses from fair value of financial instruments and UK defined benefit pension scheme past service cost	**162,549**	111,978
Revised estimate of 2020 restructuring provisions	**(1,688)**	–
Third-party FSP costs	**(197)**	3,061
Fair value (gains)/losses on financial instruments not eligible for hedge accounting (i):		
– reported in revenue	**2,576**	1,797
Fair value (gains)/losses on financial instruments not eligible for hedge accounting (ii):		
– reported in revenue	**(4,605)**	(2,734)
Adjusted manufacturing technologies operating profit	**158,635**	114,102

Analytical instruments and medical devices	**2022 £'000**	2021* £'000
Operating profit before losses from fair value of financial instruments and UK defined benefit pension scheme past service cost	**2,809**	4,385
Third-party FSP costs	**(3)**	161
Fair value (gains)/losses on financial instruments not eligible for hedge accounting (i):		
– reported in revenue	**45**	86
Fair value (gains)/losses on financial instruments not eligible for hedge accounting (ii):		
– reported in revenue	**(80)**	(166)
Adjusted analytical instruments and medical devices operating profit	**2,771**	4,466

* Results relating to sales of additive manufacturing machines to medical and dental customers are no longer recognised in the Analytical instruments and medical devices operating segment. Comparative figures have been reclassified accordingly, see note 2.

30. Cessation of operations in Russia

The Group has now ceased all operations in Russia, which were previously carried out through our wholly owned subsidiary, OOO Renishaw. This has not been classified as a discontinued operation as the results of the company were not material to the Group.

Following the start of the Russian invasion of Ukraine in February 2022, the Group immediately took measures to reduce its operations in Russia through its wholly owned subsidiary, OOO Renishaw. This included:

- stopping the supply of goods from the Renishaw Group to OOO Renishaw;
- returning advanced payments to customers where local stock was not available to fulfil orders;
- giving notice on the leased office property in Moscow, which was vacated in August 2022; and
- relocating or offering redundancy to all employees of OOO Renishaw.

By 30 June 2022, all trading operations had ceased, and by August 2022 the subsidiary was effectively wound up. The following amounts were recognised in 2022 accordingly:

- cash held locally, with an equivalent value of £1,392,000, was unable to be repatriated and has been fully impaired;
- outstanding amounts relating to the leased property equivalent to £1,985,000 were released from lease liabilities, with a corresponding impairment to the right-of-use asset of £1,837,000;
- fixed assets mostly relating to fit-out and furnishings of the leased property were impaired, totalling £636,000;
- remaining net assets of the subsidiary equivalent to £98,000 were impaired; and
- cumulative translation losses relating to the company on consolidation, totalling £575,000, were removed from the currency translation reserve and realised in the Consolidated income statement, according to IAS 21.

The net impact on the Consolidated income statement in 2022 totalled £2,553,000, and net assets and equity relating to OOO Renishaw totalled nil at 30 June 2022. There is not expected to be any impact of operations in Russia on future financial statements.