

2017 / 2018

MANUFACTURING & SERVICES

The Parliamentary Review

A YEAR IN PERSPECTIVE

■ FOREWORDS

The Rt Hon Theresa May MP
Stephen Phipson CBE

■ ELECTRONIC REPRESENTATIVES

Ultra Electronics Communication &
Integrated Systems (CIS)

Electrocomponents

Precision Devices

RF Solutions Ltd

Intratest

Glen sound Electronics

CC Electronics

Daniamant Ltd

Patrick Brothers Communications

Aston Microphones

AP Technology

Qualitrol UK

KIGG

Aquavision

■ FEATURES

Review of the Year

Review of Parliament



The Rt Hon Theresa May MP

Prime Minister

British politics provides ample material for analysis in the pages of *The Parliamentary Review*. For Her Majesty's Government, our task in the year ahead is clear: to achieve the best Brexit deal for Britain and to carry on our work to build a more prosperous and united country – one that truly works for everyone.

We have already made good progress towards our goal of leaving the EU, so that we take back control of our laws, money and borders, while negotiating a deep and special partnership with it after we have left that is good for jobs and security. The EU Withdrawal Act is now on the statute books to provide legal certainty at the point of exit. We have reached agreement on protecting the rights of EU citizens living here in the UK and British citizens living in the EU, on an implementation period to give businesses time to prepare, and on a fair financial settlement. We are now pressing ahead to reach an agreement with the EU on our future relationship that honours the result of the EU referendum and sets the UK on course for a prosperous future.

Getting the right Brexit deal is essential; but it will not be sufficient on its own to secure a more prosperous future for Britain. We also need to ensure that our economy is ready for what tomorrow will bring. Our Modern Industrial Strategy is our plan to do that. It means Government stepping up to secure the foundations of our productivity. It is all about taking action for the long-term that will pay dividends in the future.

That is why we have set an ambitious goal of lifting UK public and private research and development investment to 2.4 per cent of GDP by 2027. It is why we are developing four Grand Challenges, the big drivers of social and economic change in the world today: harnessing artificial intelligence and the data revolution;

leading in changes to the future of mobility; meeting the challenges of our ageing society; and driving ahead the revolution in clean growth. By focusing our efforts on making the most of these areas of enormous potential, we can develop new exports, grow new industries, and create more good jobs in every part of our country.

Years of hard work and sacrifice from the British people have got our deficit down by over three quarters. We are building on this success by taking a balanced approach to public spending. We are continuing to deal with our debts, so that our economy can remain strong and we can protect people's jobs, and at the same time we are investing in vital public services.

I believe that Britain can look to the future with confidence. We are leaving the EU and setting a new course for prosperity as a global trading nation. We have a Modern Industrial Strategy that is strengthening the foundations of our economy and helping us to seize the opportunities of the future. We are building on our country's great strengths – our world-class universities and researchers, our excellent services sector, our cutting-edge manufacturers, our vibrant creative industries, our dedicated public servants – we can look towards a new decade that is ripe with possibility. The government I lead is doing all it can to make that brighter future a reality for everyone in our country.

“British politics provides ample material for analysis in the pages of *The Parliamentary Review*”



Stephen Phipson CBE

Chief Executive, EEF

Britain's strength is as a manufacturing and innovation trailblazer. Our industry has a trading relationship characterised by supply chains that weave between the UK and Europe in complex patterns. For many British manufacturing companies that trade with the EU, this is the only trading environment they've ever known.

The UK government estimates that 132,000 traders and businesses will have to make customs declarations for the first time once the UK leaves the EU.

In 2015 around 55 million customs declarations were made. The UK's exit from the EU could see the number of customs declarations which HMRC must process each year increase five-fold to 255 million. This is unprecedented and new territory for everyone. The negotiations on exiting the EU were always going to be complex.

For manufacturers, there is now an acceptance that the nature of the trading relationship with the EU could change. There is likely to be friction and added costs of doing business. Although business recognises it will have to change, there remains the need for a gradual adjustment process to the final new arrangements.

For UK companies to flourish post-Brexit, we want and need a bespoke trade arrangement between the UK and EU to become a reality.

Maintaining zero rate tariffs is critical to the manufacturing industry and the frictionless movement of goods to and from Europe. Any new arrangement must provide continuity of market access for our manufacturers and be a genuine free trade arrangement, where the tariffs applied on exports remain at zero.

For many of our members, facing even relatively low percentage tariffs would have significant cost implications. The introduction of tariffs on WTO terms, as some in the government want, would see a ten per cent tariff on cars, 20.5 per cent on sugar and confectionery items

and 4.7 per cent for chemicals, when exported as the finished product to the EU.

On leaving the EU Customs Union, and in the absence of a similar robust agreement, manufacturers in the UK will face the imposition of customs administration when exporting and importing goods to and from the EU. Even if systems are digitalised and streamlined, there will be time and transaction costs currently not experienced in the form of import and export declarations, levying of new duties, the production of origin certificates and the likelihood of physical inspections.

It is vital therefore that a future UK customs code is aligned with the current Union Customs Code.

This can ensure a range of pre-authorisations in documentation, reductions to inspections and checks of consignments at or in the proximity of the border between the UK and EU, and harmonisation of customs and trade facilitation systems between the UK and EU member state authorities on both sides of the border.

EEF is calling for continued access to the preferential trade arrangements. We want to retain preferential access to third country markets provided by the EU's existing agreements. Many of these markets, including Switzerland, South Africa, South Korea and the Mediterranean area, have become critical bases supporting EU/UK supply chains.

“For UK companies to flourish post-Brexit, we need and want a bespoke trade arrangement between the UK and EU to become a reality”

The Parliamentary Review

A message from Lord Pickles and Lord Blunkett

The ability to listen to and learn from one another has always been vital in parliament, in business and in most aspects of daily life. But at this particular moment in time, as national and global events continue to reiterate, it is uncommonly crucial that we forge new channels of communication and reinforce existing ones.

With ongoing fractures in Westminster, the reverberations of which are being felt across the country, it is essential that politicians have a firm understanding of the challenges with which British organisations must contend; and that leaders in both the public and private sectors are aware of the difficulties faced by those working in all levels of politics, from local government to the national arena.

This is why *The Parliamentary Review* combines political content with stories from a wide range of organisations – small and large; new and old; those at the peak of their powers and those who have peaks to surmount. It is why these stories seek to inspire and challenge all who read them.

And it is why we, as former Labour and Conservative cabinet ministers and current members of the House of Lords, feel it is important to put aside our political differences and work together to ensure these stories are given the platform they deserve.

In this publication, you will find an insightful take on the past year in politics from the BBC's Andrew Neil and a concise rundown of key events in industry and parliament. Most importantly, you will be able to read in-depth accounts from the individuals and organisations who make *The Parliamentary Review* what it is.

In this publication, some representatives display concerns over access to markets and labour. Other concerns raised in this document are over regulations and difficulties in compliance, with some representatives linking the two issues with Brexit. It is our great honour and pleasure to have helped provide the platform for these issues to be aired. We hope that you find these articles – which begin on page 15 with a piece from CIS – as thought-provoking and informative as we do.



Rt Hon The Lord Blunkett
Co-chairman, The Parliamentary Review



Rt Hon The Lord Pickles
Co-chairman, The Parliamentary Review

Economy thrives while politics divides

It's been over two years since the country voted to leave the European Union, but Brexit continues to hang over British politics like an all-encompassing dark, brooding cloud, discombobulating established relationships and upturning traditional verities wherever we look.

Social class no longer largely determines how you vote in the UK. The latest polls suggest the Tories now enjoy a lead among working-class voters. They've always won a chunk of working class votes – Disraeli called them his “Angels in Marble” – but never a majority.

As for Labour, even under its most left-wing leader ever, it now garners considerable support among the professional middle classes, especially in the major metropolitan conurbations.

The reason for this psephological seachange is Brexit. If you voted Leave, you are now more likely to vote Tory; if Remain, Labour.

Brexit is now *the* dividing line within Labour and the Conservatives. It splits the cabinet and shadow cabinet, backbenchers of both parties and their voters in the country. The Tory divisions are more obvious to see because they are the governing party and make big news. But Jeremy Corbyn has managed to lose 103 frontbenchers, often through Brexit-related resignations, which doesn't quite have the impact of Boris Johnson or David Davis walkouts, but must be something of a record nevertheless.

Brexit has also induced something of *rigor mortis* on both frontbenches. For nearly all of the past parliamentary year, cabinet ministers and leading Labour spokespeople have been unable to answer the simplest questions on our post-Brexit

state when it comes to the customs union, the Irish border, immigration policy and the single market. Only recently, with the Article 50 deadline looming, has some clarity emerged – and not always. I believe this widespread prevarication has added to voter disillusion.

Just as important, nearly all non-Brexit matters have been swept into a Brexit-induced Bermuda Triangle. This is understandable. But it has added to the gulf between parliament and the people.

The impact of Brexit on the parliamentary process has been generally unpredictable and often amusing. Left-wing Remainers now speak of the House of Lords as a bastion of democracy. Right-wing Leavers sound increasingly like peasants with pitchforks, determined to bring the whole edifice of the upper house tumbling down.

Jeremy Corbyn, who's spent his political career railing against the iniquities of the market economy, now poses as the champion of business (up to a point). Brexiteer Tories regularly mutter anti-business sentiments in unprintable language.

Overarching all this turmoil and uncertainty, as I explained in

The Parliamentary Review last year, is the resurgence of the two-party system in England, another consequence of Brexit. At the 2017 general election, the Leaver Right collapsed into the Tories and the Remainer Left flocked to Mr Corbyn's Labour party. It is beyond strange that the two main parties should be doing so well when many regard them as weaker, less talented and more divided than they've been in living memory. But they got easily over 80 per cent of the English vote between them in 2017 and all polls since suggest that is the new *status quo*.

The fundamental parliamentary fact in this post-referendum era is that there is no majority for what hardliners on either side of the Brexit divide would like. So, when it comes to determining the eventual shape of Brexit, parliament is very much in the driving seat, as the government has found out the hard way. The problem is it's not sure what parliament wants that shape to be.

Business might despair at what it sees as an increasingly dysfunctional political system. But it should take comfort from the fact that economics and politics are, for the moment, going their separate ways. No matter how much you might think politicians are mucking it up, the economy in general and business in particular continue to defy them.

I have thought for sometime that business and the economy are in much better shape than established opinion would have it. There were signs in the early summer of 2018 that this was indeed the case. But, by the time you read this, you'll have a much better idea if I'm right. Keep your fingers crossed – not for my sake, but for the country's!



Neil believes the two-party system is the new *status quo*

Breakthrough batteries



Researchers at Imperial College London have announced what has been described as a “paradigm shift” in battery technology

In March 2018, researchers at Imperial College London announced they had managed to fuse living and non-living cells together in a way that could allow batteries powered by photosynthesis.

Imperial’s Professor Oscar Ces said the breakthrough was a “paradigm shift” and could have other uses including tailored drugs.

The news came after the government signalled a major drive to make the UK a world leader in battery technology.

In November Greg Clark, the business secretary, confirmed details of the £120 million Faraday Battery Challenge.

Of this, £80 million is being invested in battery development for the car industry also, with a facility dedicated to this due to open in the West Midlands following a bid by Coventry and Warwickshire Local Enterprise Partnership (LEP) and Warwick Manufacturing Group.

Mr Clark said: “Battery technology is one of the most game-changing forms of energy innovation and it is one of the cornerstones of our ambition, through the Industrial Strategy and the Faraday Challenge, to ensure that the UK leads the world, and reaps

the economic benefits, in the global transition to a low carbon economy.

“The new facility, based in Coventry and Warwickshire, will propel the UK forward in this thriving area, bringing together the best minds from academia and industry together to deliver innovation and R&D that will further enhance the West Midlands’ international reputation as a cluster of automotive excellence.”

The Faraday Battery Challenge will see £40 million distributed to 27 projects, including the development of battery materials and cell manufacturing, improving thermal management and the recyclability of battery packs.

Innovate UK chief executive Ruth McKernan said “for the first time [there is] a co-ordinated programme of competitions across research, innovation and scale-up.”

Meanwhile a team at the University of Southampton invented a new design method for electronic systems, combining the computing power of analogue with the energy efficiency of digital technologies.

The team published a paper in *Nature Communications* titled “Seamlessly fused digital-analogue reconfigurable computing using memristors”.

New Electronics magazine reported that this “could prove a significant stepping-stone towards the next generation of ultra-low power, high battery life and adaptable electronics.”

It quoted the lead author of the paper on the benefits the energy efficiency could bring.

Dr Alexantrou Serb said: “Over the last five decades we have processed digital

signals and have computed using digital techniques, which has taken us very far.

“However, if we are to truly compute at the limits of energy efficiency, that the laws of physics allow, it would seem imperative that we need to move towards analogue computation techniques whilst being much savvier about how to mix analogue and digital signals for maximum effect.”

Previous memristor technology developed at the University of Southampton had managed to pack four times as much data onto a device as previously.

Professor Themis Prodromakis, head of the electronic materials and devices research group at Southampton’s Zepler Institute, told the magazine: “Memristors have gathered a lot of

interest as a next generation memory technology by being smaller, more power efficient and yet being able to support more memory states when compared to existing technologies that are routinely used in our smartphones and computers.

“We soon realised that there is much more to be learned by employing this technology beyond its obvious memory applications and have previously demonstrated how memristors can be used to emulate biological learning.”

In the recent past, data processing in electronics has relied on integrated circuits featuring large numbers of transistors – the promised improvements from the memristor technology could change all that as transistors reach their limits.

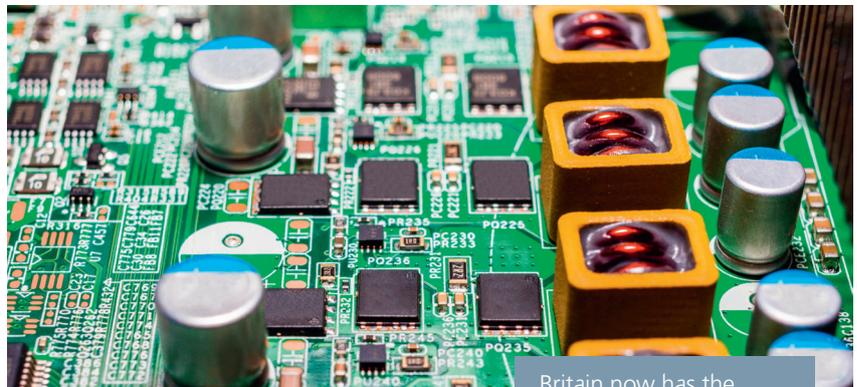
Chips with everything

In October 2017, the UK Electronic Skills Foundation reported that Great Britain had the sixth-largest electronics industry in the world and that 90 per cent of all smartphones had components manufactured in the UK in them. One million people were employed in related jobs, and the electronics sector contributed 6 per cent of the country’s GDP.

In February the *Financial Times* carried an interview with the chief executive of Arm Holdings, one of the world’s biggest producers of chips which power most smartphones. The Cambridge-based firm was one of the biggest tech firms in the UK until it was bought by Japanese bank Softbank in January 2016.

Simon Segars responded to concerns that a consolidation in the semiconductor industry would damage its market position.

He told the *FT*: “What does this mean for us? Fewer semiconductor companies,



Britain now has the sixth-largest electronics industry in the world

but larger semiconductor companies. It is an expensive game and you need a lot of scale. The sophistication [of the technology] is very high and the volume of chips is not going down.”

Arm designs have been used in more than 50 billion chips since 2014 and the executive said he expected that rate to double with the arrival of the next generation 5G mobile network. This is expected to connect even more devices to the internet, even as sales in the smartphone market fell last year, for the first time. The Japanese bank paid



Current market conditions mean that the demand for chip resistors is presently outstripping supply significantly

£24.3 billion for the company in 2016, and Mr Segars said it had increased the size of the company, with staff numbers expanding.

Chips were not the only growth area for electronics.

The International Federation of Robotics (IFR) reported in June that global sales of industrial robots rose by 29 per cent in 2017, hitting a record 380,550 units.

Nationally, the demand was driven by China, which saw an increase of 58 per cent. Roughly 138,000 industrial robots were installed in 2017, with South Korea second with 40,000 and Japan with 38,000. The United States and Germany installed 33,000 and 22,000 respectively.

However an IFR report in February showed Europe and America were still ahead of Asia in terms of overall density. The continents had 99 and 84 robotic units per 10,000 human employees respectively. Asia had 63.

By sector it was the metal industry that led the way, growing by 54 per cent year-on-year. After that was the electronics industry itself at 27 per cent, automotive at 21 per cent and the food industry at 19 per cent.

President of the IFR Junji Tsuda said: "The growth of industrial

robots continues at an impressive pace worldwide.

"Key trends such as digitalisation, simplification and human-robot collaboration will certainly shape the future and drive forward rapid development."

In May one manufacturer warned of an imminent drought in chip resistors.

The chief executive of Anglia Components told *EE News Europe* global demand is significantly outstripping supply, driven by increasing electronic content in cars, and industrial and consumer products.

Steve Rawlins told the magazine: "We are constantly looking at ways to help our customers and ensure that they are aware of the current market conditions. We foresaw that a shortage in chip resistors was coming about six months ago and invested heavily in inventory.

"It's ironic that a chip resistor might be one of the cheapest items, but without it, you can be looking at thousands in lost revenue if you are not able to complete the assembly of the end product it is going into."

In June UK manufacturer TT Electronics bought Minneapolis-based Precision Inc.

Precision works in the same sectors as TT Electronics – the industrial, aerospace and medical markets – but TT also works in the transport industry across Britain, the United States and Asia.

The British firm has a turnover of almost \$500 million, and chief executive Richard Tyson said in a statement: "The acquisition of Precision is an excellent fit with both our business and our strategy for growth and higher margins.

"It has a strong position in markets where the proliferation of electronics is increasingly important."

WEEE

More than £8 million was raised by the fees charged as part of the Waste Electrical and Electronic Equipment directive in 2017, it was announced in June.

The Joint Trade Association (JTA) said the money would be spent on a range of projects to further increase the recycling and reuse of electrical and electronic waste.

Roughly £4 million will be invested in local schemes, with a further £1 million in research over the next three years, with the fund accepting submissions for ideas for projects. The remaining £3 million will be spent on communications and behaviour change projects.

Website Government Opportunities said the £8 million fund marked a significant increase on the sums raised in previous years, giving 2015 as an example of when only £45,000 was raised and used to fund technical research projects only.

JTA chair and head of TechUK's environment and compliance programme Susanne Baker said: "The size of this year's fund means that we can make a significant difference to how the UK WEEE regime operates and functions.

"There is no urgency to spend the money quickly; the focus will instead be spending the fund carefully on projects that can deliver genuine and lasting improvements to the system with the buy-in and support from the community of local authorities, businesses and civic society groups that manage and deal with these products at the end of life."

One project already confirmed will look at persistent organic pollutants in plastics used in waste electrical products and electronics.



The Waste and Electrical Equipment Directive is a European Community directive which has set collection, recycling and recovery targets for all types of electrical goods

More than 522,000 tonnes of WEEE was collected in the UK last year.

In March WasteCare Group called on Department for the Environment, Food and Rural Affairs to increase the 2018 WEEE collection targets.

Website Letsrecycle.com reported the group's concerns about the difference between the amount of waste collected and the amount then placed on the market.

In a statement it said: "Our concern is that the potential risks to the environment of this missing tonnage from the formal treatment and recycling routes are not being taken into account in considering the targets."

The European Union target for WEEE collection is 65 per cent, whereas since 2013 the proportion collected through the UK's compliance system has been around the 40 per cent mark.

The website said some attributed this to "changing consumer behaviour, suggesting consumers are now 'hoarding' electricals in their homes", with others saying simply not enough is being done to collect it, particularly smaller waste items.

The Leeds-based firm called for a 3 per cent increase in the 2018 target.

It added: "As has been seen with the current crisis on paper and plastic exports, to simply adopt the lowest cost free-market approach undermines the UK's ability to not only meet the directive requirement, but also the government's aim to leave the environment in a better condition than when it started."

The government changed the rules on the way WEEE works in 2013.

In September last year the European Recycling Platform (ERP), the umbrella organisation for producers, released a report showing how far the sector had come in the ten years since the regulations were introduced.

ERP UK general manager John Redmayne said: "The move to flat screen [TV]s drove change throughout the system. We had to change how waste was collected, stored and sorted at local authority level, and in the decommissioning and separation of elements carried out by our partners further along the chain."

He said mobile phone usage had increased significantly since the turn of the millennium, with the number of households with a mobile phone rising from 47 per cent to 95 per cent last year. In 2007, when WEEE began, usage was 78 per cent.

Mr Redmayne said: "If we assume two phones per household are changed every two years, it adds up to an eye-watering 247 million phones in the last 10 years."

Industrial strategy takes shape



The Department for Business, Energy and Industry Strategy has announced a £725 million "Industrial Strategy Challenge Fund"

In April 2017, the government's consultation on the green paper for its industrial strategy closed.

Since then there has been a general election, a number of announcements, the autumn budget and an industrial strategy white paper.

The latter was introduced by Theresa May and the business secretary, Greg Clark, in November and was

accompanied by an announcement of a £725 million "Industrial Strategy Challenge Fund" and "sector deals" for artificial intelligence construction, the life sciences and automotive industries.

The announcement also set four "grand challenges" to the sector to put the UK at the forefront in developing the technologies of the future.

The £725 million fund will be spent over three years with £170 million earmarked for the construction industry and up to £120 million to stimulate the development of precision medicine.

The first wave of Industrial Strategy Challenge Fund projects had already committed £246 million to the next generation of battery technology and £86 million in robotics.

Longer term, the government hopes to increase the level of investment in research and development from the current 1.7 per cent to 2.4 per cent of GDP by 2027.

The prime minister said the strategy would “support businesses in seizing the big opportunities of our time”, citing artificial intelligence and big data in particular.

She said: “As we leave the European Union and forge a new path for ourselves, we need to focus on building a better future for our country and all the people who live in it.”

The strategy defined the “grand challenges” as harnessing artificial intelligence, making sure UK industry led on clean growth, meeting the needs of an ageing society and becoming a “world leader in the way people, goods and services move”.

Greg Clark said: “The way we earn and live our lives as workers, citizens and consumers is being transformed by new technologies. The UK is well placed to benefit from this new industrial revolution and we start from a position of significant strength. We have a thriving research and science base and are home to a wide range of innovative sectors, from advanced manufacturing



Greg Clark, the business secretary, has announced “sector deals” for artificial intelligence construction, the life sciences and automotive industries

and life sciences, to fintech and creative industries.”

Policies include increasing the rate of the research and development tax credit to 12 per cent and investing an additional £406 million to try to make up some of the lost ground in the skills-shortage areas of science, technology, engineering and maths.

Infrastructure investments include £500 million to support electric vehicles and working towards local industrial strategies.

Countdown to March 29

With a leaving date of March 2019, this year will be decisive for companies trying to prepare for the impact of Brexit.

In February a study from the University of Sussex was widely quoted in the media, with *The Guardian* reporting that Brexit could see manufacturing exports cut by a third, with “leave-voting areas like Sunderland, Coventry, Derby and County Durham suffering most as a result”.

The academic analysis from the UK Trade Policy Observatory assessed the impact of different Brexit scenarios across 122 different sectors and said even if the government struck free trade agreements with every other major country it could still see significant falls in exports.

They warned the effect might not be confined to low-tech parts of the manufacturing sector, saying “High, medium-high and medium research and development-intensive sectors all seem likely to suffer more from the effects of Brexit.

“This is an important result since the UK government’s industrial strategy seeks to promote high-tech sectors: Brexit might make it harder to achieve this objective.”

It estimated that the air and spacecraft industry would contract by 8.1 per cent.

Wired magazine quoted one of the study’s authors, Michael Gasiorek, saying: “Brexit will have very complex impacts



Hennik Research's Annual Manufacturing Report said nearly 75 per cent of manufacturers were confident about the prospects of overseas trade after Brexit

on industries ranging from impacting on imports and exports both because of possible tariff barriers and also complex non-tariff barriers (such as mutual recognition of testing and certification – ie proving that you produce to the right standards), impacting also supply chains both in terms of manufacturing and service inputs. That is not something that industrial strategy could easily counteract.”

The study considered five scenarios, from leaving with no deal to remaining a part of the European Economic Area.

Significant swathes of industry were preparing for the former scenario, according to a survey carried out by EEF, the voice of Britain's manufacturing sector.

A research paper it published in January said of the members prepared to give a view, one third were planning for the effects of a no-deal exit.

The EEF said in their sampling, larger companies were more likely to consider this than smaller firms. The report said: “Anecdotal feedback suggests these plans range from workforce planning to considering supply chain restructuring.”

But other findings from the research pointed to the mixed picture, and emphasised that a lot was still unknown about the final shape of Britain's trade relationship with the Continent.

55 per cent said the euro hitting a one-to-one parity with sterling would have a negative impact. A weaker pound has traditionally helped exporters, and roughly 15 per cent has been wiped off the value of the pound since the leave vote.

Apprenticeship levy – one year on

The one-year anniversary of the apprenticeship levy saw a chorus of condemnation from business leaders.

The Daily Telegraph said in April: “As anniversaries go, the apprenticeship levy's first is one the government might want to forget” and said it had drawn “heavy criticism” in the 12 months since its launch.

The levy requires businesses with a paybill of more than £3 million a year to pay 0.5 per cent of it into a training fund. *The Telegraph* said complaints ranged from it being too bureaucratic and inflexible to simply being a tax on business.

The levy was an attempt to address the skills shortage and covers 20,000 businesses, bringing in around £2 billion a year. The government's target is for three million people to have started an apprenticeship by 2020.

In April *The Times* reported the CBI's criticism of the scheme as “not fit for purpose”.

The lobby group's head of people and infrastructure, Neil Carberry, told the paper: “It doesn't incentivise businesses and it doesn't encourage the creation of the kind of training hubs that are characteristic of countries where [a levy] is working really well”.

In a tacit acknowledgment of some of the criticism of the bureaucracy involved, the spring statement from the chancellor, Philip Hammond, said £80 million would be set aside for small and medium-sized firms to navigate their way through the system.

Manufacturing trade body the EEF is one of the biggest critics of the scheme.

In July 2017 it warned “The Apprenticeship Levy is one of the most significant changes to the training and development of engineers and manufacturing talent in recent memory” and said many companies were “understandably concerned about getting the most out of their Levy funds.”

The fourth industrial revolution?

In March *The Times* carried a piece by EEF chief executive Stephen Phipson saying manufacturing was “on the cusp of the fourth industrial revolution”.

He said this period would see new technology and techniques that would alter the kind of products the sector produced and the way it made them, as well as the relationships between different parts of industry.

The fourth industrial revolution is considered to be the combination of cyber-networks and physical production processes that create new, largely autonomous networks.

The EEF gave the textiles sector as an example, saying soon customers would be able to personalise and 3D print their own clothing at home. Business planning, supply chains and production could be run more efficiently as communications technology improves.

Chris Richards, EEF’s head of business environment policy, said it was important to note that like previous industrial revolutions, change was largely bottom-up and was largely only recognised in retrospect. He warned of the accompanying risks, like cyber security and Britain’s poor digital infrastructure.

Mr Phipson wrote in *The Times*: “While the sector has hit a period of uncertainty following the outcome of the European



Businesses are being urged to address the impact of the next industrial revolution

Union referendum, faced with this pace of change happening globally, it cannot afford to stand still if it is going to deliver greater value to customers, improve productivity and remain competitive on the world stage.”

He said on the Continent the European Union was leading a series of programmes under the Digitising European Industry banner. Countries leading their own change programmes on this front included Germany’s Industrie 4.0, Sweden’s Produktion 2030, Fabbrica Intelligente in Italy and Industrie du Futur in France.

An EEF survey of its members said 80 per cent believed they had to invest in new technology as market expectations evolved, and three quarters said technology would fundamentally change what customers expected from the sector.

The publication of the Taylor Review



The Taylor Review was commissioned by the government to look into modern working practices

In February 2018 the government published its long-awaited response to the Taylor review of modern working practices.

Theresa May said: “We recognise the world of work is changing and we have to make sure we have the right structures in place to reflect those changes, enhancing the UK’s position as one of the best places in the world to do business. We are proud to have record levels of employment in this country but we must always ensure that workers’ rights are always upheld.

“Our response to this report will mean tangible progress towards that goal as we build an economy that works for everyone.”

The response, entitled “Good Work” said the government was committed to improving the quality of work in the country, rather than just the

quantity. But there was no firm commitment to implement any of the recommendations.

Matthew Taylor was commissioned to do the review in 2016 in response to concerns about the “gig economy” and the changes technology is making to the modern labour market.

The work followed a number of high-profile employment tribunals and other legal action around individuals who were technically self-employed but argued they were actually employees or workers.

“Good Work” saw a critical response from unions who saw it as an attempt to kick lots of the most contentious issues into the long grass.

The government said in four specific areas there would be further consultation – each of which the EEF said had the “potential to trigger far-reaching changes”.

It had recommended the introduction of a new “dependent contractor” status under employment law and noted that it was “almost impossible” for individuals to understand the complex principles developed in case law that determine someone’s employment status.

This would essentially extend to them some of the protections available to workers, including paid holiday, the right to the national minimum wage and the right not to be discriminated against.

3D Britain

This nation has one of the top five 3D printing sectors in the world, it was reported in June.

Research from HP and A.T. Kearney across 30 different countries placed the UK fifth overall in terms of readiness

to adopt 3D printing technology – coming in behind the US, Germany, Korea and Japan. It is the world’s third fastest-growing 3D printing market, also, being outperformed only by Italy and South Korea.

Britain was pipped only by Germany among European nations.

HP’s managing director for the UK and Ireland, George Brasher, said the government must focus on three key areas to increase efficiency in this sector – adoption, incentives and education.

He said: “The UK is at a critical juncture in these early days of the Fourth Industrial Revolution. We are well placed to lead the world in 3D printing, but there is no room for complacency when preparing the workforce for next-generation manufacturing.

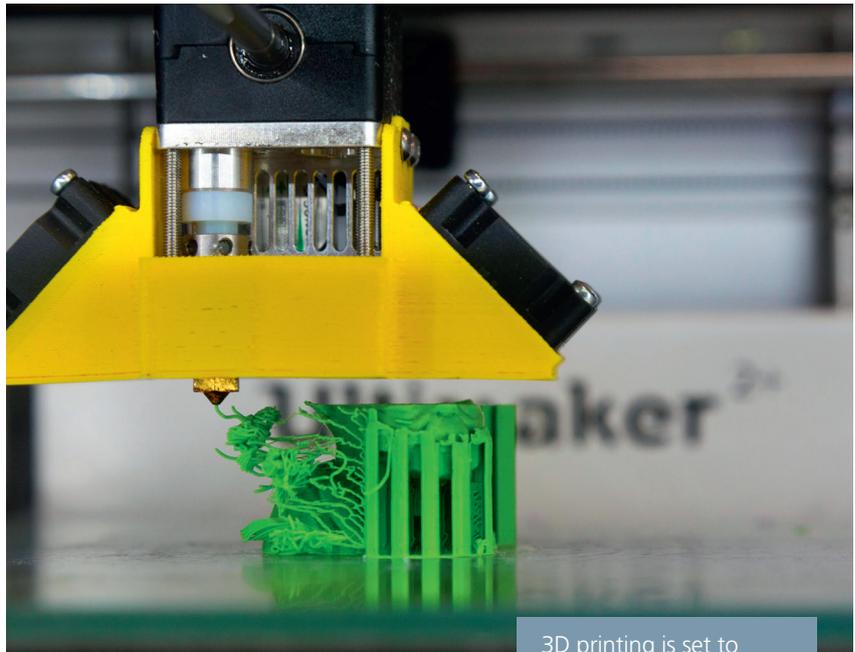
“The government can accelerate the domestic market by being an early adopter through its procurement policies, and by supporting uptake among small businesses. Eliminating customs duties and other trade barriers on 3D printers and materials is also essential.

“Government can nurture the growth of a sustainable 3D ecosystem in Britain, by encouraging investment in digital manufacturing capabilities through tax breaks and direct grants.”

An All-Party Parliamentary Manufacturing Group met with the firm and other industry experts in June. The group noted the forward-looking facilities at the University of Nottingham and the Manufacturing Technology Centre.

The meeting was chaired by veteran Labour MP for Huddersfield Barry Sheerman.

In February the BBC reported that a dog which could hardly walk was given a new lease of life after a 3D-printed leg was made for him.



3D printing is set to revolutionise Britain's manufacturing sector

Duke, an Irish retriever and rescue dog, was born with a defect in his front right leg and faced amputation.

But Swansea-based printing firm CBM made him a leg similar to the blades used by runners at the Paralympics.

Owner Phil Brown, from Bristol, told the corporation: “This is an absolute life changer for him, it really is. He can now walk on it, he can now run at a slow speed.”

CBM is a research company spun out of the University of Wales Trinity St David.

The leg took roughly a year to make and “was entirely printed out of a machine apart from a rubber foot, some Velcro and foam at the top to make it more comfortable for Duke”, the BBC said.

CBM product designer Benjamin Alport said the project had been a real challenge for his team and that they had worked with a consultant orthopaedic surgeon on the design.

3D printing is just one technology that is in the process of revolutionising British manufacturing. Others are alighted upon in the following articles from this year’s *Parliamentary Review* representatives.

Ultra Electronics Communication & Integrated Systems (CIS)



Rugged, reprogrammable crypto devices are future-proofed and long-lasting



Gavin Newport, managing director

Ultra Electronics Communication & Integrated Systems (CIS) produce market-leading secure communication systems, electronic warfare simulation, intelligence gathering and situational awareness technology for the world's most challenging environments, from fighter jets to the Sahara desert. Ultra CIS is part of the Ultra Electronics group, a world leader in the defence and aerospace, security and cyber, transport and energy markets, with a turnover of over £785 million. The group has a small head office and executive team that provide to individual businesses the same agile, responsive support that they provide to customers, as well as formulating Ultra's overarching corporate strategy. This provides CIS with the advantages of a small business mentality and agility together with big business backing. Here to describe the company at length is their managing director, Gavin Newport.

Our modus operandi

CIS has grown from being a spin-off of the communications and sonar business into a standalone organisation comprised of four units, with a turnover of £80 million and over 300 employees. This success has been built on providing niche secure communication solutions for a range of military and commercial systems. This has been achieved by forming a team of specialist engineers, coupled with manufacturing capability to assemble systems to the highest production standards in

FACTS ABOUT ULTRA ELECTRONICS COMMUNICATION & INTEGRATED SYSTEMS

- » Managing director: Gavin Newport
- » Established in 2009
- » Based in Greenford, London
- » Services: Production of defence solutions
- » No. of employees: 300
- » They work with MoD and Nato
- » www.ultra-cis.com

“Our customers demand that we protect their data both in the field and back home in the factory – a demand we meet”

a secure environment. Our customers demand that we protect their data both in the field and back home in the factory – a demand we meet.

Ongoing support to our systems is of great importance. We supply comprehensive packages to ensure our systems serve our customers well, whether that is guidance in its use and deployment or in field repair. This close proximity to our customers helps us to understand their needs and, in turn, develop future systems to match their requirements.

What we are solving

Our solutions are used by governments and commercial organisations to protect against corruption or information theft. This includes cryptographic solutions, secure communication, situational awareness and electronic warfare simulation and test systems. What is common throughout is that the threat is increasing, and therefore there exists an ongoing demand for these solutions. Another common theme is that the necessary systems and solutions must be flexible and have the ability to change in pace with, or

in advance of, the changing threat. The practical solutions to this are programmable devices (software-defined) and agility in being able to produce new functionality at pace. This functionality needs to work first time and continue working, so – to this end – we have invested in substantial capability, in both automated functional testing and environmental test solutions.

Another area that increases our agility is the utilisation of core IP across a number of developments and technologies. The aim is to design functional elements once, and then be able to utilise these elements across our portfolio. This is to underpin our technology, after which customised elements are added to tailor the solution to the customers’ needs. This is a mix of ingenuity and innovation: ingenuity, that is, to make the most use of existing capability, coupled with innovation to future-proof our solutions.

Examples of our capability

As part of the ECU RP programme, Ultra developed a modern, programmable, high-grade cryptographic solution that could replace legacy units. Physically, it is comprised of a considerably smaller core unit that can be housed in a range of enclosures to provide form-fit replacement for on-platform crypto, enabling quick integration without costly platform modifications. Designed to be future-proof, the software-definable technology enables it to be upgraded anywhere, anytime.

This programme enabled us to develop a close relationship with both the MoD and GCHQ – or, more specifically, NCSC. This close relationship, in tandem with collaboration with other suppliers, has resulted in a community that can fulfil the UK’s requirement for sovereign crypto and cyber solutions,

CIS tests all items produced to ensure that they can operate in the toughest environments



while also building capability within UK industry to take into the export market. The export campaigns can be direct Nato derivatives or expertise that influences the design of our commercial products.

In the communications sector, CIS developed the HIDL (High Integrity Data Link) radio, which has been utilised on the Watchkeeper UAV (unmanned air vehicle) to provide robust command and control to multiple UAVs and associated ground stations. The HIDL unique waveforms deliver a low probability of interception and detection with networked secure multi-way anti-jam communications.

The initial technical development has continued to be refined and utilised in a variety of products including the Hawk jet trainer. In the Hawk, HIDL is used to provide an air network which is used for radar simulation.

We also have a range of products that incorporate protection of critical national infrastructure. This includes situational awareness systems that protect oil and gas platforms, harbours, and even coastal diamond mines.

Looking to the future

CIS has seen its market change significantly, with growth in export and solutions for the commercial market. Export has increased partly through necessity as spend within the UK and Nato is challenged. This has presented opportunity where we have developed solutions that have wider applicability, but it has also had its challenges. There are areas where clearer guidance for ability to export products to specific nations would be beneficial. Moreover, assistance with financial mechanisms to assist with ensuring payment would be welcome.

People are the heartbeat of all business, and nurturing them is crucial to success. Recruiting and



Integrated multidisciplinary teams are essential for the successful delivery of our programmes

developing the engineering teams to provide the expertise needed to continue expanding in a specialised and technical field is a challenge. CIS works hard to develop talent, such that we can provide the necessary skills through a focused graduate development programme and involvement in STEM schemes.

It should be noted, though, that it is becoming increasingly difficult to find engineers with experience of these types of development. There's a lot of talent that has followed the path of software application development, and the more embedded engineering solutions are not as common as they once were. Finding people with this experience, therefore, is difficult. Consequently, a combination of requisite training, enhancing existing skills, nurturing young talent from apprenticeship schemes and university engagement is necessary.

As technology develops, the challenges increase, but so do the opportunities available – something to which we look forward.

“People are the heartbeat of all business, and nurturing them is crucial to success”

Electrocomponents



Lindsley Ruth, CEO



New Electrocomponents headquarters in London's Pancras Square

FACTS ABOUT ELECTROCOMPONENTS

- » CEO: Lindsley Ruth
- » Established in 1937
- » Based in London
- » Services: Global distributor of products for engineers
- » No. of employees: Over 6,000 worldwide
- » Operations in 32 countries
- » More than 500,000 products
- » Over one million customers
- » Ships more than 50,000 parcels a day
- » Over 2,500 leading suppliers
- » £1.71 billion revenue for the year ending March 31, 2018
- » FTSE 250 listed
- » www.electrocomponents.com

Based near King's Cross, London, Electrocomponents is a global, multichannel distributor of industrial and electronics products. Offering over 500,000 products from 2,500 leading suppliers, they ship more than 50,000 parcels daily to over one million customers. Their operations span 32 countries, and 61 per cent of their global revenues are digital. The Electrocomponents headquarters are located on Pancras Square – the recently rejuvenated area of King's Cross in London. Their vision is to become first choice for customers, suppliers and employees, with a strong commitment on top of that to managing the environmental impacts of their business. Expanding upon this is their CEO, Lindsley Ruth.

Who we are

Our operations in the UK, under the trading brand RS Components (RS), represent around 24 per cent of the company's global revenue and employ nearly 3,000 people across the country. We have two distribution centres in the UK: one in Nuneaton, Warwickshire, and the other in Corby, Northamptonshire, where our UK headquarters are also based. In addition to this, we have 16 RS Local trade counters nationwide.

Corporate responsibility is an integral part of our business and we strive to align our values and strategy with responsible and ethical business policies and practices. The group's key environmental impacts include energy use and the attendant CO₂ emissions, waste and recycling, packaging use and water consumption.

Our environmental policy articulates our commitment to protect the environment and to use energy and other resources efficiently to provide our products and services. Our target is to continuously improve environmental performance in all key areas.

We manage our environmental performance through a group-wide reporting and measurement process. We encourage sites to gain certification to the ISO 14001:2015 Environmental Management Standard where this supports our business objectives. Twenty-two of our sites worldwide are currently certified. The group also complies with the CRC (Energy Efficiency) regulations.

Energy usage

RS UK has led the way in addressing its environmental impact and over the past five years has reduced its CO₂ emissions relative to sales by 37 per cent. A customer audit (UVDB) of our environmental management systems and operational control, which was carried out by Achilles, resulted in a score of 100 per cent.

We have participated in the annual Carbon Disclosure Project (CDP) for ten years, and, in 2017, we were the top company out of 44 in the FTSE350 Information Technology sector with a score of A-, placing the group in the CDP "Leadership" category.

For the eighth consecutive year, RS UK received the Carbon & Energy Management and Reduction Scheme (CEMARS) Gold Certification Award. We have retained this certification by achieving the annual target of reducing, by at least 2.5 per cent, the principal sources of emissions relative to turnover. Over the past five years, we have continued to reduce carbon emissions (in scopes 1, 2, 3) by 27 per cent. Indeed, we are one of 180 organisations and the only

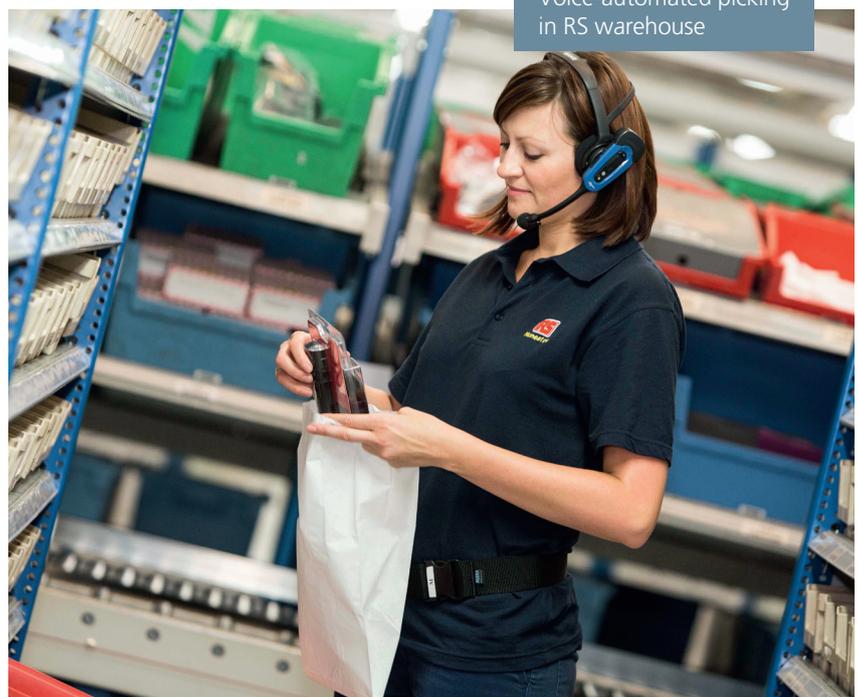
company within our industry sector to receive the certification. Working towards CEMARS and ISO 14064-1 accreditation means we have learnt a lot. With this knowledge we now have, we can also help our customers reduce their carbon footprint.

In fact, we routinely work with our customers and suppliers to reduce CO₂ emissions, and with our providers of third-party logistics, too, to assess CO₂ emissions due to our use of their services and those of their subcontractors. This work is ongoing and helps to reduce the carbon footprint of our distribution supply chain.

Throughout 2018, we undertook a series of projects and environmental programmes to help improve performance in the UK:

- » We have invested £400k for further lighting upgrades in our Corby and Nuneaton operations. We're also investigating an IoT initiative for monitoring equipment so that visitors can see our gas and electricity consumption. In the last year, we've reduced energy usage by over 15 per cent and taken the opportunity to ask for advice on energy reductions.

“We strive to align our values and strategy with responsible and ethical business policies and practices”



Voice-automated picking in RS warehouse



Planting trees to offset CO₂ emissions

“Over the past five years, we have continued to reduce carbon emissions (in scopes 1, 2, 3) by 27 per cent”

- » Automatic meter reading (AMR) has been installed, and, combined with regular reporting, is helping to improve energy awareness and to drive down usage. This has been supported by upgrades to heating, ventilation and air conditioning systems in the RS Local trade counters across the UK; moreover, a number of the trade counters have been moved to newer, more energy-efficient buildings.
- » Electric car charge points have been installed at a number of our UK locations, and we are encouraging the use of hybrid and electric vehicles, of which we now have 25 on the company car fleet.
- » We are partnering with Carbon Footprint Ltd and a number of local schools to plant 500 trees. This will help offset the CO₂ emissions due to air travel on company business.

Waste generation and recycling

Our primary waste streams include card, paper, wood and plastics (all of which are recycled), as well as general

commercial waste from our operations. By introducing digital devices and voice-automated picking, we have reduced the amount of paper we use in addition to increasing the accuracy of our deliveries. We also work with our customers and suppliers to increase the use of reusable packaging.

Our UK operation is a zero to landfill company with a recycling rate of 83 per cent. Zero to landfill is our target for all markets over the next five years. Furthermore, we aim to have 100 per cent recyclable packaging across the world by the end of March 2019.

Packaging

We continue to seek opportunities to reduce the quantity of packaging consumed per order, while also ensuring the effective protection of customer orders during transit. We continue to review our packaging and to train packaging teams about the importance of the efficient use of materials in preparing customer orders. Packaging use per £1 million in sales was down by 17.5 per cent over the last financial year.

For the second consecutive year, we have actively supported Earth Day, a global initiative which, this year, focused on the increasing risk of plastic pollution. Employees across the business organised a variety of activities to support this initiative, such as donating a number of 100 per cent recycled plastic benches to local schools.

We are proud of our environmental performance to date, but know that there is always more that can be done. We have many exciting plans for the future, and aim to continue demonstrating good environmental stewardship. Our hope is to remain a leading proponent of environmental excellence.

Precision Devices



Precision Devices
component transducer



Mark Barnes, Managing Director

Precision Devices is globally regarded as a leading manufacturer of high-end component loudspeaker transducers. Established in Rotherham in 1987, it is a family-owned and managed company which operates from its purpose-built manufacturing facility at Wakefield Europort, drawing upon the skills and rich engineering and manufacturing heritage of West Yorkshire. Mark Barnes, who has been the managing director since 2012, explains the journey that has allowed the company to remain competitive for over 30 years.

We have always been driven by a passion and philosophy to design and manufacture the world's finest professional audio speaker transducers, which are capable of achieving superior levels of acoustic performance and efficiency combined with the outstanding engineering characteristics of strength and reliability. Precision Devices transducers are synonymous with uncompromising quality and enviable performance, and are highly prized and desired by audio professionals around the world.

All Precision Devices loudspeakers are engineered using the finest materials, without compromise or exception. Manufactured in our factory in Castleford, West Yorkshire, our technical and engineering team has generations of experience in the production of high-quality audio components. Although measured performance is the goal of all professional audio development, science alone can never establish the true finite quality of a loudspeaker. Following in-depth scientific analysis, therefore, we subject all products to extended listening tests. It is only through this process that we can satisfy the ultimate audio reference – the human ear.

FACTS ABOUT PRECISION DEVICES

- » Managing director: Mark Barnes
- » Established in 1987
- » Based in Castleford, West Yorkshire
- » Services: Design and manufacture of precision loudspeaker components
- » No. of employees: 25
- » www.precision-devices.com

“Precision Devices gives the OEM the opportunity to differentiate themselves with their genuinely bespoke product to give them a unique advantage”

Design

At the design stage, audio simulation computer software is utilised to establish the correct component parts, considerably reducing conventional R&D lead times to achieve optimum acoustic performance in line with, or exceeding, our customers' required expectations. Our in-house toolroom and coil-winding expertise ensures R&D prototypes can be produced within extremely short timelines.

Our responsiveness to OEM requests for bespoke designs, our in-house engineering capabilities which greatly reduce lead times and our flexibility in providing large or small production runs according to customer need means that we are particularly well suited to working with systems manufacturers who are looking for something special to delineate themselves from their competition, a particular advantage in a market in which an increasingly limited number of product options from our competitors are being used interchangeably by a number of OEMs. Precision Devices gives the OEM the opportunity to differentiate themselves with their genuinely bespoke product (rather than an off-the-shelf variant), to give them a unique advantage and identity in terms of performance and branding.

Fully assembled transducers on one of our production lines awaiting final inspection



Case studies

Precision Devices were approached by a major UK OEM to participate in the development of a groundbreaking new product utilising a 24-inch chassis and a 6-inch twin voice coil. After a development time greatly reduced by our ability to act quickly to produce prototypes (through a combination of in-house engineering ability and excellent supply-chain flow from our local suppliers of CNC precision-machined steel parts in Yorkshire), we developed a product described as “the best performing solution”, eventually developing a double 6-inch voice coil motor with an unprecedented BL factor of 50 to give the necessary motive power.

Our loudspeaker technology and expertise also allow us to engineer creative solutions for situations outside the conventional parameters of the moving cone loudspeaker. We manufacture tactile transducers for applications such as drum throne monitoring, bass guitar platforms and in educational facilities for the hearing-impaired where the sensation provided by sound is “felt” rather than heard through a series of vibrations which are incredibly responsive through the frequency range.

Manufacture

UK-manufactured die-cast aluminium chassis, cones, suspensions and precision CNC-machined steel components are used in all Precision Devices loudspeakers. Random QC sampling at Goods Inwards followed by in-line QC production inspection ensures that every component part used is within specification.

Unlike other manufacturers we produce all our own voice coils – the motor of the loudspeaker – ranging from 1.5 to 6 inch diameter in both copper and copper-clad aluminium wire. The wire is coated with high-temperature enamel, and precision wound onto an epoxy resin-impregnated woven glass fibre

former using CNC-controlled bespoke machinery. Once this is completed, the whole assembly is cured at high temperature to give it a rigid and integrated structure.

Combining modern technology and artisanal skills, all component parts are assembled using bespoke jigs and fixtures in a factory designed to optimise production workflow. Each modular sub-assembly is individually tested and QC certified by the operator; final assembly and QC includes precise electronic testing.

The result is the optimal synergy between state-of-the-art technology and time-honoured craftsman processes to produce a product that delivers both aesthetic refinement and a distinct performance advantage.

People

Precision Devices is driven by a larger team of people who are the vital foundation of the company's success. It is their passion for sound that ensures our products are the best. Constantly working on refinements, new product development and improving production methods, we strive to efficiently manufacture the world's most high-performance loudspeakers.

Our most important asset and resource, we value the individual members of the workforce and invest in personal development through internal and external training programmes and maintaining a friendly working environment.

- » Multiskilled workforce allowing job rotation, minimising bottlenecks, balancing workflow and increased flexibility to achieve objectives.
- » NVQ training in multiple disciplines: warehousing, manufacturing operations, team leadership, management, customer service.
- » MAS on-site lean manufacturing training.
- » Modern engineering apprenticeships through college and on-site assessments.



The Precision Devices team

- » Regular employee appraisals recognising achievements and setting professional and personal development goals with promotion made from within the organisation as far as possible.

World-class manufacturing and best practice

We are committed to world-class manufacturing standards. Lean manufacturing using the Toyota Production System was formally implemented at Precision Devices in 2012 and is now a firmly embedded culture within the company with the objective of removing non-value-added activity; this is as relevant today as ever.

Another key principle is that of continuous improvement, which is inculcated through every aspect of the company and with full employee involvement and empowerment to facilitate positive change.

Collectively, these processes contribute towards Precision Devices being an outstanding manufacturer of high-end bespoke professional audio transducers.

» FUTURE

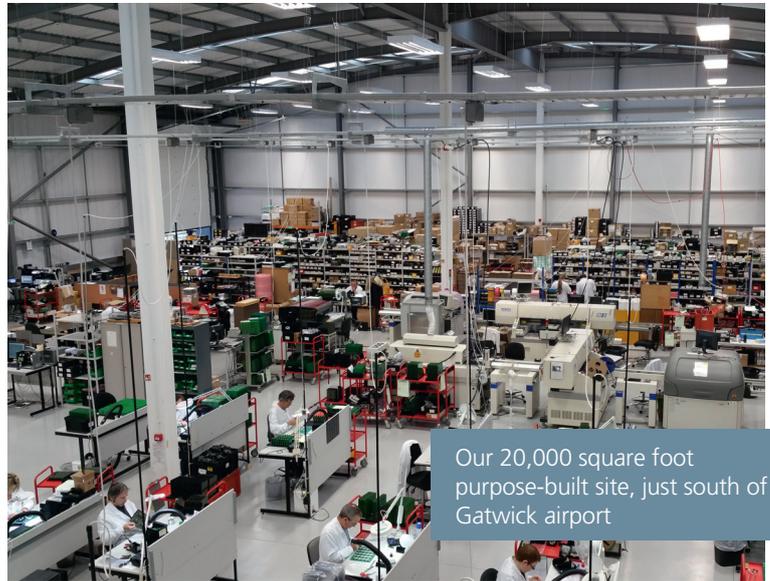
I am optimistic about the future as Precision Devices has always been highly esteemed internationally, with particularly strong followings in key growth markets such as China, India and Indonesia, where British products carry great prestige. In collaboration with the Department of Industry and Trade (DIT) and their worldwide research partners, we are focused upon developing our export sales outside Europe and are highly optimistic that the world economy offers outstanding opportunities for high-end British manufactured products in markets beyond the European Union. We approach the future with confidence and hope.

“The result is the optimal synergy between state-of-the-art technology and time-honoured craftsman processes”

RF Solutions Ltd



John Fairall, owner and founder



Our 20,000 square foot purpose-built site, just south of Gatwick airport

FACTS ABOUT RF SOLUTIONS LTD

- » Owner and founder: John Fairall
- » Established in 1992
- » Based in Burgess Hill, West Sussex
- » Services: Designers and manufacturers of high-tech radio electronics
- » No. of employees: 50
- » Supply radio remote control technology worldwide
- » Philosophy is "success through quality"
- » Growth through research and development
- » www.rfsolutions.co.uk

Based in West Sussex, RF Solutions Ltd specialise in radio frequency electronics. As designers and manufacturers of radio modules and remote control systems, they are at the cutting edge of technology. They supply a worldwide market, from SMEs to blue chip corporations, with their products being used in high-profile applications, including *Top Gear's* test track, various James Bond movies and even Jeremy Vine's election night "swingometer". Below is a more elaborate profile of the company.

A modest inception

After graduating in electrical and electronic engineering, John started as a design engineer in the nuclear industry at GEC Energy Systems, embedding the first microprocessors in control systems and gaining knowledge of engineering reality.

Moving on to applications engineering, John spent time in technical support roles before being headhunted by Phoenix-based Microchip Technology Inc., the world's leading supplier of microcontroller semiconductors. With a flair for design and commercial reality, John swiftly rose through the hierarchy from UK to European technical posts, to become the regional manager of Asia Pacific Region (based in Hong Kong).

In a career U-turn, John's decision to come back to the UK to start a company designing and manufacturing radio technology was a gamble, and after completing her degree in business and engineering, his wife Kay came on board too.

With no regular income from the company, having just got married, and with their first child on the way, this was a risk. With long hours and perseverance, the

company began to evolve, and now, after 25 years of commitment, the gamble has paid off for the two owner directors.

The company ethos is based around having a common goal “to succeed”, placing the emphasis on forming a relationship between the company, its staff and the needs of its customers.

As a company, we decided to implement rigid structure by immersing the company into ISO 9001 quality and IPC-610 manufacturing standards, despite being a small-scale facility. Company policies and procedures were put in place, a skills matrix and training policy was written for staff to aspire to and an accounting structure was established. All this laid down the foundation blocks for the success story we are today.

Because we invested in recognised quality standards and staff training and development early on, despite being only a small-scale production line placing 20 components per minute, we were able to attract reasonable-size contracts from reputable companies even in the early days.

The turning point

Our first £250,000 contract was with Microchip Technology, supplying a

branded version of our ICEPIC in-circuit emulator development tool, which they sold worldwide.

John’s successful track record within Microchip (and subsequent start-up strategy) meant RF Solutions were respected despite being above a pet shop in Lewes, Sussex. This was the big break: turnover grew, staff increased and stability became a reality.

We couldn’t have envisaged one day we would be 50 people with two fully automated SMT lines, placing 40,000 components per hour, capable of large-scale manufacture in our purpose-built facility.

We pride ourselves on high-quality design and manufacture and have the original structure firmly in place, even though it has evolved to accommodate the growing company needs.

Our greatest asset is our people, with staff retention being high (some with 10-20 years of service). When customers choose our products, we provide quality, and this can only be achieved through our dedicated team of skilled operatives and multidisciplinary experts across all departments, everyone tasked with the responsibility of consistently producing high-quality products, all with one goal: “to succeed”.

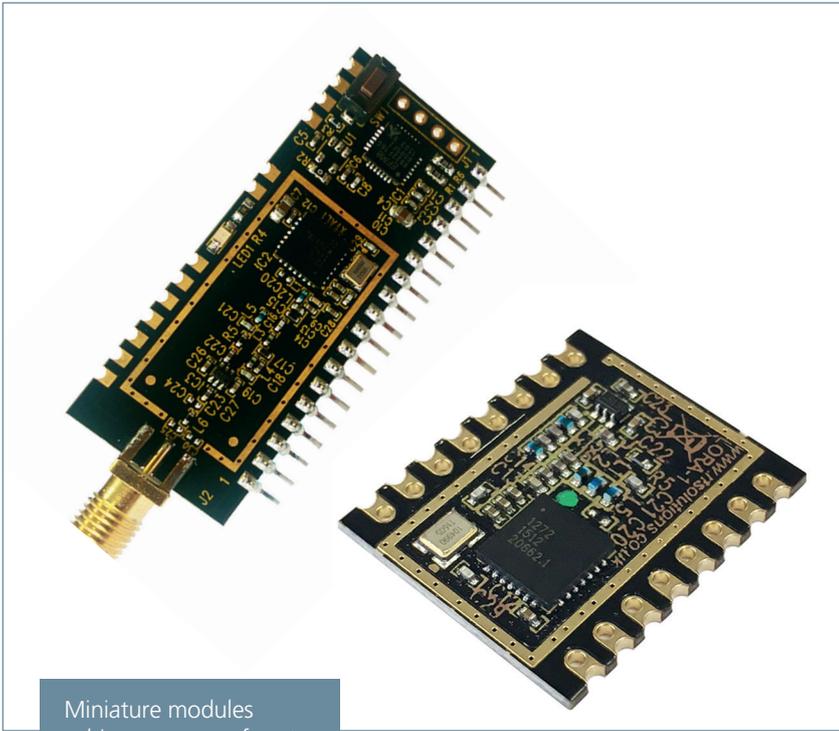


Rugged remote control

“We are always focused on designing ever newer and more functional products”

Our manufacturing facility





Miniature modules achieve a range of up to 16 kilometres

“Encouraging young people to join this sector should therefore be a part of the government’s work strategy”

Competing in the market

What makes us unique is that we provide more than a standard range of products; this flag-waving exercise demonstrates our capability to design and manufacture bespoke systems, right down to branding and packaging.

We have Asian manufacturing to contend with – a sector-wide problem in the UK. We’ve overcome this by constantly investing in the latest manufacturing systems and technologies. Components are ever reducing in size; therefore the need for manual labour (where Asia scores) reduces. There’s a size threshold below which the human hand and eye cannot work, so our automated high-tech production environment can compete on a small or larger scale.

For our customers, the key benefit is the direct supply chain interface, the opportunity to visit to monitor our processes and the reality of seeing their products in manufacture.

Asia manufacture carries risk. Normal practice is payment prior to manufacture and without knowledge of the actual manufacturing site.

There’s significant risk that the finished product may not meet expectations and it’s expensive to monitor.

Expansion

Our growth is fuelled by innovation and by an ever evolving product range. Moore’s law states: every two years the number of transistors in an integrated circuit doubles, which means we constantly focus on research and development.

We are “enabling technologies”, in other words, realising products that previously could never have been created. We were one of the first companies to launch a product using “spread spectrum modulation”, providing a ten-mile range from a module the size of a postage stamp.

Obstacles to work around

We have a great workforce, but we fear the future may not be so rosy. For young people with the potential for a career in STEM, research shows the opportunity to study engineering doesn’t come soon enough, in either secondary or further education. For instance, our son cannot study an electronics A level as this subject has recently been dropped from the curriculum.

The world is increasingly dependent on electronics and technology; encouraging young people to join this sector should be a priority for government and employers.

With all that said, we are optimistic, and are anticipating 30 per cent growth this year. Our industry is ubiquitous and a staple part of the modern world, and we therefore feel safe in this marketplace, so long as we’re committed to innovation. Our only struggle is meeting the insatiable demands for new technology, which is the perfect challenge for our modern engineering company.

Intratest



Our typical place of work



Martin Wyeth, managing director

Founded by managing director Martin Wyeth in 2012, Intratest is the only structural testing organisation in the UK with ISO 9001 certification that also works to the National Highways Sector Scheme 8 (NHSS 8). The company works in the street lighting industry to provide integrity-based solutions and thus improve standards across the country – for Intratest, compliance is the absolute be-all and end-all when it comes to their day-to-day work.

Our accreditations and focus on compliance do not only reassure existing and prospective customers; they also allow us to keep up to date with various methodologies regarding best practice across different sectors. This, in turn, enables us to keep pushing the boundaries and provide professional, cost-effective solutions for customers in a straightforward, no-nonsense and honest manner.

Company mission statement

Our mission is to develop integrity-based solutions that help customers manage risk in relation to lighting columns and other supporting structures in public places; we see to it that we achieve and deliver these solutions in an ongoing and sustainable manner. For those not involved in this rather unique sector, we also provide services aimed at maintaining the integrity of street lighting assets and other metal highway structures.

The solutions we provide assess the integrity of structures on the UK's motorways without compromising the stability of the structure itself. If the structure to be tested is accessible, our services do not require excavation, and are not mechanical

FACTS ABOUT INTRATEST

- » Managing director: Martin Wyeth
- » Established in 2012
- » Based in Bournemouth, Dorset, but services the UK
- » Services: Structural testing using truly non-destructive testing techniques for street lighting columns and other metal structures on UK highways and other public areas
- » No. of employees: 5
- » Striving for excellence in the street lighting industry
- » www.intratest.co.uk

“Our reports are meaningful; they are firmly rooted in a risk assessment process”

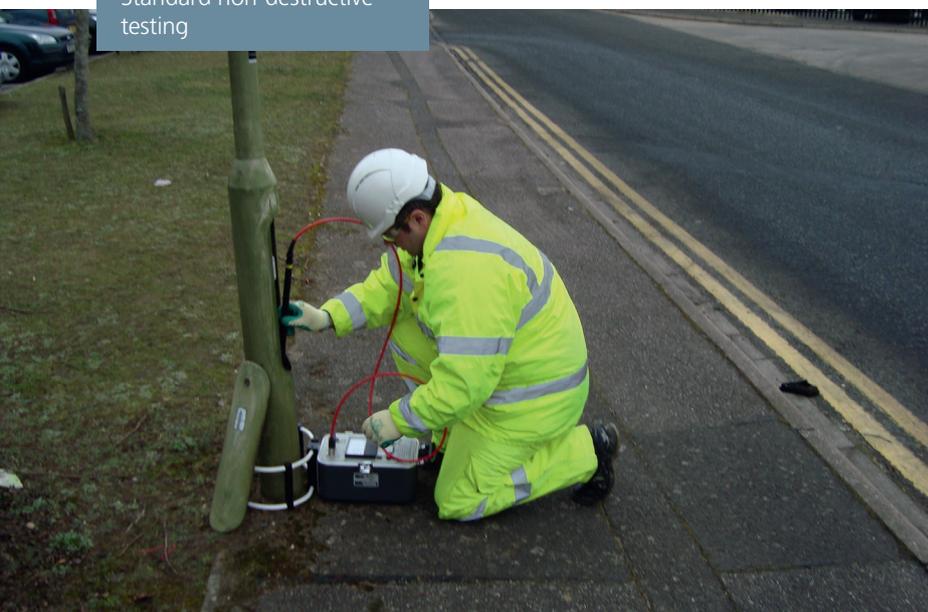
in nature; nonetheless, they still test everything from unseen corrosion to the presence of cracks in welds and metal structures.

The Intratest process

All solutions we provide begin with a visual inspection as standard, and progress to the following testing and maintenance services:

- » Standard non-destructive testing – uses a specialised, non-destructive inspection tool for the detection and estimation of corrosion damage near and below ground level.
- » Specialist non-destructive testing – uses various techniques such as ultrasonic, eddy current, and magnetic particle inspection, applying them to distinct types of structures including high masts, traffic mast arms, safety barriers and non-steel rooted lighting columns.
- » Electrical testing – periodic testing due every six years, as regulations require, for lighting columns, signs, illuminated bollards and beacons.
- » General or routine maintenance – this can be asset surveys, a bulk clean, capacitor and photocell replacement, LED replacement programmes and minor maintenance as required.

Standard non-destructive testing



Although we specialise in the non-destructive testing techniques, our flexible approach means we can easily develop integrated strategies. These help customers manage the risks associated with street lighting assets and other highway metal structures in a cost-effective manner.

Furthermore, our reports are meaningful; they are firmly rooted in a risk assessment process, which allows results to be warranted to specified “re-test periods”, something that should underpin any asset management programme.

Work with local authorities

It certainly has been an interesting journey since I established Intratest in 2012. I’ve drawn heavily on the wisdom that comes from over 35 years of commercial experience, 15 of which are specifically within the street lighting industry. This background has really helped us to resolve issues that have arisen, from conforming to a myriad of supply chain and industry-specific requirements through to educating customers as to the best testing technique to apply to any one of the variety of structures we work with.

This proactive company attitude has led to the successful deployment of a six-year rolling street lighting asset management programme for Reading Borough Council, connected to our standard non-destructive testing methodology.

David Moore, who works in technical services for Reading Borough Council, said of us earlier this year: “Intratest have worked in partnership with Reading Borough Council for the past six years, providing expert non-destructive testing for all types of street lighting assets, from high masts to cast iron and decorative columns. Intratest provide expert technical advice on the most economical and practical means

of achieving the required surveys in relation to testing frequencies and remedial works. Intratest have also helped to support Reading in the successful roll-out of our recent LED upgrade programme.”

Against the odds

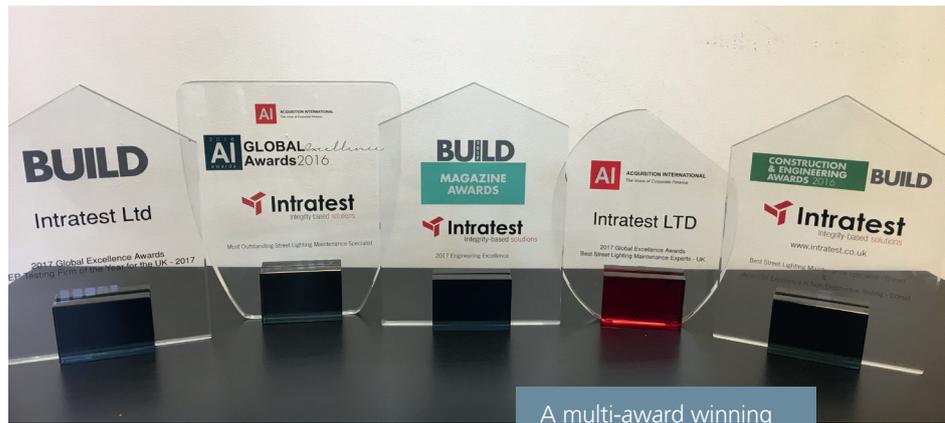
We are now a multi-award-winning structural testing business that can clearly demonstrate its credibility when it comes to consulting on and delivering our structural, electrical testing and general maintenance services.

In fact, our focus on demonstrating our credibility and integrity in an honest and straightforward manner has helped us achieve approved supplier status with over 12 major contractors and 10 local authorities. This has also been recognised by the Achilles’ Building Confidence procurement hub. This new, accredited status has allowed us to work at a variety of sites, including Gatwick airport. Furthermore, as a demonstration of customer satisfaction, we can proudly state that 100 per cent of our work is presently repeat business.

I certainly feel that our approach has enabled us to fight well above our weight, competing with larger organisations in the sector. We are living testament to the fact that SMEs are more than capable of providing integrity-based, cost-effective services that fulfil the requirements of contracts that historically may have been the exclusive territory of larger organisations.

What of the future?

Having spent the last 15 years in the street lighting industry, I believe the biggest factor affecting its integrity for the future is the level of knowledge and understanding required to service and maintain over eight million lighting



A multi-award winning business

units across the UK to a high standard. This does not necessarily apply to service providers, but more so those that own the assets and commission the maintenance.

This lack of knowledge and understanding, when coupled with restricted budgets, can easily manifest itself in a number of forms, including insufficient monitoring, inaccurate system updates, poor fact-based decision making and overspending. I, for one, will endeavour to continue educating and mentoring asset owners, their personnel and, potentially, the larger contractors, to ensure that cost-effective integrity-based solutions become the norm.

I would, however, relish the opportunity to really make a difference. Perhaps working with proactive, forward-thinking asset owners to create a dynamic, flexible and interactive management system that makes the most of digital technology would ultimately provide a cost-effective service grounded appropriately in tangible results. This, in turn, would allow asset owners to be confident they are doing all they can to minimise risk for the public.

Finally, we are looking forward to extending our professional approach and services to other industries and facilities, such as football stadiums, retail parks, and hospital car parks, as further opportunities present themselves.

“I would, however, relish the opportunity to really make a difference”

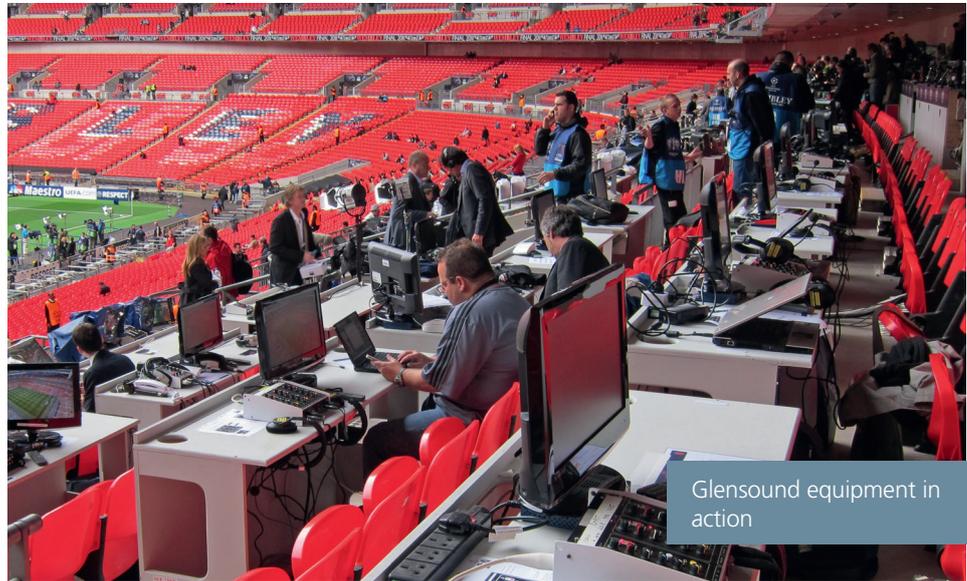
» CERTIFICATIONS

- » Certified to ISO 9001:2015 for our quality-based Business Management System, extended to include UKAS’ National Highway Sector Scheme 8
- » Certified to BS OHSAS 18001:2007 for our Occupational Health and Safety Management System, extended for Safety Schemes In Procurement (SSIP)
- » Registered to the Highway Electrical Registration Scheme (HERS), administered by the Highway Electrical Authority (HEA)
- » SafeContractor approved

GlenSound Electronics



Gavin Davis, managing director



GlenSound equipment in action

FACTS ABOUT GLEN SOUND ELECTRONICS

- » Managing director: Gavin Davis
- » Established in 1966
- » Based in Maidstone, Kent
- » Services: Design and manufacture of quality audio broadcast equipment
- » No. of employees: 25
- » Performed a large-scale overhaul of all audio equipment in both houses at the Palace of Westminster in 2016 and 2017
- » Annual sales in excess of \$5 million
- » www.glenSound.com

GlenSound Electronics Ltd is a longstanding, family-owned business that designs and manufactures audio broadcast equipment. Their customers range from the world's largest international broadcasters to self-employed freelancers from around the globe. The product range they offer is cutting-edge, and it constantly evolves to provide state-of-the-art solutions for customers, which are proudly manufactured from their own factories in Maidstone, Kent. Managing director Gavin Davis expands on their success and the essential factors that have contributed to it.

A brief history

We were founded in 1966 by my father, Len, a design engineer who left the BBC to develop a successful public address system company he had been running in his spare time. The equipment he utilised was designed and manufactured by himself in his garage. In 1969, ex-colleagues at the BBC, knowing about "Len's garage" and his expertise, commissioned him to design and manufacture a broadcast distribution amplifier for use at Prince Charles's investiture. Further commissions quickly followed, and, within a few years, the design and manufacture of specialised broadcast equipment became a full-time occupation. Demand for his designs increased rapidly, his first staff members were employed and larger premises were secured. My father's passion was for designing and manufacturing audio equipment, not for managing people, so expansion was kept to a minimum. By the late 1980s, there was a staff team of ten people.

A changing world

During the 1970s and 1980s, there were very few companies manufacturing high-quality audio broadcast equipment, and even fewer trading globally. Since that time, the broadcast market has changed dramatically, with a rapid expansion in the number of new radio and television channels; this opened huge potential opportunities for us in export and global marketing. The evolution from analogue to digital audio technologies drove changes in the marketplace during the 1990s, further accelerating the pace of change. During this time, we continued to prosper, mainly by providing tailored solutions and manufacturing solely to order. By the late 1990s, however, broadcasters were beginning to change the way they purchased their products. Long lead times and specialised products were no longer acceptable, and it was clear that a new approach was required.

Evolution

I joined the company in 1985, and later became managing director in 2005. The transition was deliberately cautious to counteract the possibly disconcerting effects of passing control from one generation to the next. Day-to-day operations were shared for several years, while I introduced changes to ensure the continued viability of the company within a rapidly changing marketplace.

Export was the obvious area for future growth and sustainability. New exhibitor grants provided by the Department for International Trade helped to meet the costs of attending overseas exhibitions, and were instrumental in helping us grow and develop our international trade. Initially, exhibitions in Europe and the Middle East were used to meet new



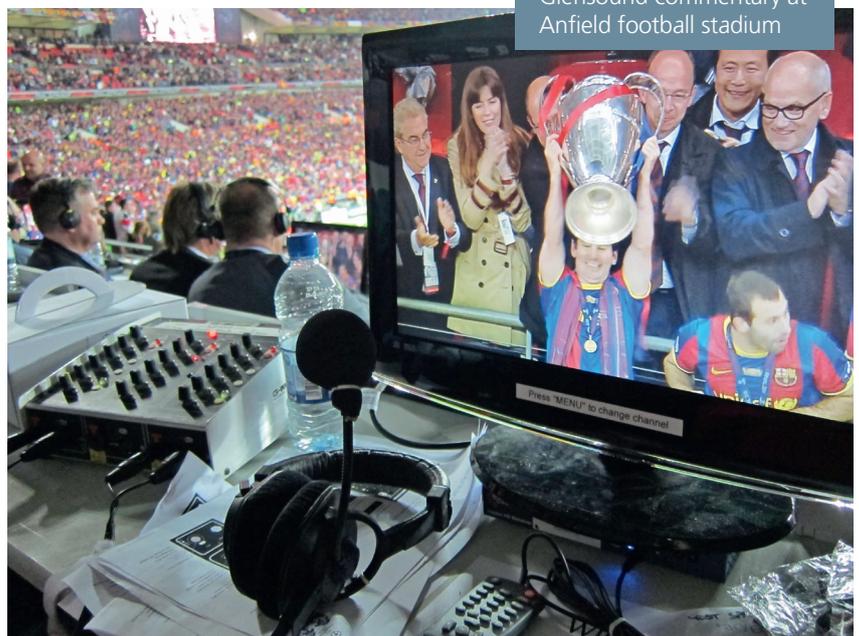
The Glensound team

customers and, importantly, form partnerships with new distributors.

Shortly afterwards, exhibitions in the Far East facilitated exports to customers in that area, followed in 2009 by our first appearance at an exhibition in America, at the National Association of Broadcasters' show in Las Vegas, Nevada. Traditionally, the American broadcast market has been difficult for UK manufacturers to break into, largely as the US has different technical standards that equipment must comply with, and they have their own home-grown suppliers. Within the past couple of years, however, sales to America have increased rapidly, as a result of the advanced technological solutions our products can provide.

We have been recognised within the industry for our innovative products. In

“Within the past couple of years, sales to America have increased rapidly as a result of the advanced technological solutions our products can provide”



Glensound commentary at Anfield football stadium



The Glensound Beatrice D4 at Australian cricket

“Our healthy past and ability to innovate gives us a solid foundation on which to design, build and shape the future of broadcasting”

2012, we received the IABM Award for Excellence in Design and Innovation for the world’s first broadcast HD Voice mobile phone range. Our commentary boxes have won awards at exhibitions in 2014, 2015, 2017 and 2018. We are proud of our heritage, but continue to be part of the vanguard when it comes to audio equipment design and innovation.

Growth and investment

Traditionally, broadcasters would plan purchases many months ahead, but equipment is now purchased last minute, and if it’s not in stock, it won’t be purchased. We have developed over 400 products, and realised that, with increasing demand, manufacturing that many different product lines for stock was not practical.

We overcame this challenge by investing in more engineers to help redesign, refine and streamline our product range. More manufacturing staff were employed, and a significant investment was made in machinery; with these changes, however, there came the need for extra space. Rather than search for alternative premises and further use up valuable resources,

however, we were able to extend one of our current factories and acquire new office space next door. We now operate out of four separate buildings, each performing distinct functions: metalwork and production; testing and prefabrication; design studios; and administration offices.

The future

Easy access to international markets is absolutely key for our future. Our international customers need to be certain that they can quickly and easily purchase equipment from our factory in the UK. This is also of significance when it comes to purchasing the raw materials used in our manufacturing processes, as many are imported with no UK source available. If ease of trade from within the UK is not preserved, then relocation to Europe may become necessary.

With annual sales in excess of \$5 million, we are at the forefront of innovative design and manufacture of quality audio broadcast equipment. Our healthy past and ability to innovate gives us a solid foundation on which to design, build and shape the future of broadcasting. The past 13 years have seen many carefully planned changes to the Glensound company and its operations. Under new leadership, we have evolved from a very small company that traditionally offered specialised designs and niche products, and have become the company we are today. We employ 25 people producing technologically advanced systems used by broadcasters around the world; we trade on a global scale and enjoy strong distribution partnerships on several continents. As we embark on the next stage of our evolution, we are undoubtedly focused on what the future will hold.

CC Electronics



"One source ... no limits"



David Maitland,
managing director

CC Electronics started to manufacture printed circuit boards (PCBs) in 1988. Over the years, they have progressed and developed into a leading UK manufacturer of high-technology PCBs for the aerospace, medical, industrial, military and contract manufacturing sectors. The key fundamentals of their service are quality, speed and flexibility. On a daily basis, they manufacture complex, multilayer PCBs in 24 hours. Below is a more thorough exposition by their managing director, David Maitland.

As a company, we continually invest in our manufacturing equipment, data-handling capability and people. Servicing the prototype market is a key part of our business model, and we can process 100 new jobs a week. Generally, 50 per cent of the jobs on the shop floor are new designs.

However, the magnitude and sophistication of our manufacturing facility in Winsford, Cheshire means we can also manufacture medium and large batches of PCBs on longer lead times. The success and progress of the organisation is best gauged against the backdrop of that; over the last 30 years, the number of UK PCB manufacturers has reduced by 70-plus per cent. This reduction can be attributed mostly to offshore competition.

China, however, is an opportunity and a threat. In an attempt to offer a complete supply option for our customers, we've developed strong working relationships with several offshore partners. All offshore partners have been audited for their capability and their approvals have been verified. We check the specific job data, test the incoming product and therefore manage the risk for our customers. Offshore can offer considerable benefits to a supply chain. However, if things go wrong, it can quickly turn into an expensive problem.

FACTS ABOUT CC ELECTRONICS

- » Managing director: David Maitland
- » Established in 1988
- » Based in Winsford, Cheshire
- » Services: Manufacture of high-tech PCBs
- » No. of employees: 75
- » 36,000 square foot facility
- » Multilayers manufactured in 24 hours
- » Manage import of PCBs from offshore
- » www.ccee.co.uk

“2017-18 has been our strongest and most successful year, to date”

The year 2017-18 has been our strongest and most successful one to date. We realised a 20 per cent increase in sales and introduced 80-plus new customers. This success can be attributed to our strategic planning, keeping abreast of new technologies, defined investment and developing our people to consistently produce a high-quality product, first time.

UK manufacturing

Our active customers range from large blue chip organisations to single designers. We export our products to Europe, South Africa, US and the Middle and Far East. Contract electronic manufacturers represent over 20 per cent of our customer base, but we also supply to many original equipment manufacturers (OEMs).

We have customers who are key players in the aerospace, medical, industrial, military and security sectors. Generally, we get involved with the initial R&D design, offering expert advice on design for manufacture. We're likely to make the prototypes on a quick turnaround, and manufacture subsequent medium volumes. As we're involved at the forefront of a design, it's crucial that we keep abreast of the latest chip designs and the implications that these technologies have on the key manufacturing parameters of the PCB.

We support any rigid laminate, for example FR4, high temperature FR4, polyimide, PTFE, IMS, among others. We're capable of manufacturing PCBs with blind and buried vias, copper and resin filled vias, 0.12mm smallest hole and 75µm track and gap – all, moreover, on short lead times. We have a large data handling capability, so we can tool 20 new jobs per day. We also have the ability to tool many designs on the same manufacturing panel. This allows us to be more efficient, thereby generating very competitive prototype pricing.

To successfully make these complex PCBs, it's vital that we invest in the latest manufacturing equipment. Last year, we were the first UK manufacturer to install and commission a Schmolz micromirror direct imaging system. The system uses a chip with two million 10µm mirrors, which generates the image of the tracking onto a dry film that is laminated onto the copper substrate. This exposing technology removes the need for artworks and therefore improves the quality of the image, reduces waste and enhances the product flow through many departments.

However, our biggest asset is our people. Most of the management team and senior manufacturing personnel have been making PCBs for over 20 years. This level of expertise and experience is quite unusual.

Manufacturing areas



Their knowledge of the processes, combined with their attention to detail, means we are able to successfully supply these complex products on short lead times. We advocate flexibility and commitment on day one and promote these disciplines as essential attributes to the culture within CC Electronics.

We manufacture PCBs to the industry standards of UL 94 V0 as well as IPC 610 class 2 and class 3. Additionally, our quality management system has recently been approved to the new standard ISO 9001 2015.

Offshore supply

In 2005, we were asked by several existing customers to manage the process of bringing boards in from offshore. This part of the business has continued to grow year on year and supports the needs of our customers. The level of integration and control has increased over the years. Generally speaking, we manufacture the boards in our own facility, and when the quantities get larger, we organise shipments from offshore with the agreement of the customer. In order to assure the quality of the imported boards, we have set up a robust process:

- » Offshore suppliers are audited for their level of control and capability. This ensures offshore orders are only sent to suppliers that are capable of manufacturing the product.
- » Other new potential offshore suppliers are benchmarked quarterly, and their approvals validated.
- » The board data is checked before being passed offshore.
- » There are at least two offshore partners in each technology category.
- » Offshore boards are delivered to the UK factory for microsectional and XRF analysis to check the condition of the through hole copper and the metal thickness of the solderable finish.



Experienced management team

- » An offshore board is electrically tested against the customer's files.
- » Boards are inspected in the UK.
- » Shortfalls can be covered by the UK facility.

Most of our offshore partners are Chinese. However, it is critical that the process and partners are well controlled and managed.

The future

Last year, we realised 20 per cent growth across the organisation, and we are presently working on strategies to repeat that growth this year. The vision for the UK manufacturing site is to continue making more complex boards on ever quicker timescales.

Time to market is a critical parameter for a significant number of our customers. Obtaining quality PCBs delivered on time and in full allows our customers to be more successful. Bringing boards from offshore will continue to be an important part of the business as it supports British manufacturing and satisfies our customers' needs for larger volumes of product. There's a constant drive to further optimise and improve the service for our customers.

“Obtaining quality PCBs delivered on time in full allows our customers to be more successful”

Daniamant Ltd



Kevin Rough, CEO



L160 lifebuoy light, winner of The Queen's Award for Innovation

FACTS ABOUT DANIAMANT LTD

- » CEO: Kevin Rough
- » Established in 2006
- » Based in Portsmouth
- » Services: Manufacture of survivor location lights
- » No. of employees: 37
- » www.daniamant.com
- » www.odeoflare.com
- » www.echopilot.com



Daniamant Ltd is a manufacturing company, based in Portsmouth, that produces survivor location lights for the marine, military, civil and aviation markets. Kevin Rough, CEO, has worked with Daniamant Ltd since they acquired his previous employer McMurdo in 2006. He explains that all products must meet strict quality standards set out under the Marine Equipment Directive (MED) and Safety of Life at Sea (SOLAS) regulations. Daniamant Ltd's clients include original equipment manufacturers (OEMs), the UK Ministry of Defence and distributors all over the world.

Despite a drop in UK defence sales and significant price pressure from the Far East, Daniamant Ltd continue to innovate and bring new products to market ensuring they grow their export business and remain competitive and profitable. Their head office is in Denmark where they have a second manufacturing facility aiming to diversify into different market segments within the marine sector.

Founded in 2006 Daniamant Ltd has had to continue to improve its existing product range, while developing new products and improving productivity and its cost base to ensure it remains competitive in a very tough commercial marine market. Daniamant Ltd has won numerous manufacturing and innovation awards over the last few years, but its highlight during this period was being the recipient of a Queen's Award for Innovation in 2014 for a lifebuoy light range designed to penetrate the European and US markets and open up a niche in the offshore sector.

With falling UK and military business Daniamant Ltd has had to actively target export markets through distribution and partners to survive. In 2006, Daniamant Ltd's export business represented 32 per cent of its £3.6 million turnover; in 2017, Daniamant Ltd's export business represented 73 per cent of its £5 million turnover. This growth was achieved while prices fell by over 50 per cent in the same period.

Forging strong long-term relationships and partnerships is key to this success, at the same time as remaining competitive and having a quality product that your partners can trust, especially with products that are used to save people's lives when all else has failed.

Remaining competitive has been tough; Brexit has had an impact on increasing raw material costs, and revenue at a group level has been reduced due to the approx. 20 per cent reduction in the Danish krona from all sales in the UK. The National Living Wage has further increased production costs, augmented by pension auto enrolment costs. All of this has meant that you need to find more efficient ways to produce your products, automate or design out older techniques and design in new innovative methods to keep production costs low and waste to a minimum.



The team in Portsmouth

Recently, Daniamant Ltd has diversified and started to cross over from its main commercial market into the leisure segment to increase sales further; however, caution is required. Although there are similarities in products required, a different approach is needed, as there is no legislation in the leisure market, so buyer behaviour is different. The new ODEO Flare™ is a recent example. It is an innovative product that can potentially replace pyrotechnics reducing hazards, transport and disposal costs, but with no legislation sales growth is slower. Lobbying the appropriate authorities, working with partners worldwide to justify the benefits is a slow process; however, hard work pays off and sales of this product have grown 100 per cent over the past three years.

“Forging strong long-term relationships and partnerships is key to this success”

Daniamant's timeline

1975	2005	2006	2007	2010	2012	2014	2016	2017
<ul style="list-style-type: none"> Daniamant ApS is founded in Slangerup, Denmark 	<ul style="list-style-type: none"> Dansk Generationskifte Kapital acquires Daniamant ApS Daniamant Holding A/S is founded in Denmark 	<ul style="list-style-type: none"> Dansk Generationskifte Kapital acquires McMurdo Ltd lights business Daniamant Ltd is founded in the UK 	<ul style="list-style-type: none"> Daniamant acquires Comet lifebuoy light 	<ul style="list-style-type: none"> NTR Holding A/S acquires Daniamant Holding A/S 	<ul style="list-style-type: none"> Daniamant acquires Uni-Safe Electronics A/S and is renamed Daniamant Electronics A/S 	<ul style="list-style-type: none"> Daniamant acquires ODEO Flare™ 	<ul style="list-style-type: none"> Daniamant acquires Jotron SL-300 and SL-400 lights 	<ul style="list-style-type: none"> Daniamant acquires EchoPilot 2D and 3D forward-looking sonar



The innovative ODEO Flare™

“I believe passionately in UK manufacturing, the fact that we can still compete with anyone in the world”

Despite Daniamant Ltd’s size and lean resource they demonstrate that small companies in the UK are still focused on and committed to developing innovative products and continually expanding into new markets. CEO Kevin Rough states, “UK companies can be and still are competitive when it comes to manufacturing; it is so important that we showcase the talent that we have here in the UK.”

The next few years will be important and Rough states that “tariff-free movement of goods to the EU is critical for UK companies to remain competitive; our business has grown in this area significantly and that hard work needs to be protected. Any imposition of tariffs would increase costs, make processes more complex and bureaucratic increasing our customers’ costs. Operating under the Marine Equipment Directive (and a myriad of other regulations and legislation) is hard for small businesses and how EU legislation is dealt with will be key. The current MED legislation puts responsibilities on manufacturers who are not located in the territory of at least one member state; Brexit has had a real impact here, but with offices in Denmark we can be compliant.”

Daniamant Ltd, in conjunction with its Danish facility, continues to look for new ways to apply its expertise in design and manufacturing in other products or identify gaps in the market for further growth. Despite the commercial marine market being in decline for the past three to four years there are now signs of growth, especially in the cruise segment, and Daniamant Ltd will work hard with its partners to exploit this potential. They have recently acquired another UK company manufacturing 3D forward-looking sonar, and this product will help reduce accidents and collisions with underwater objects. This is another step into a different marine segment to spread the risk of only having one target market.

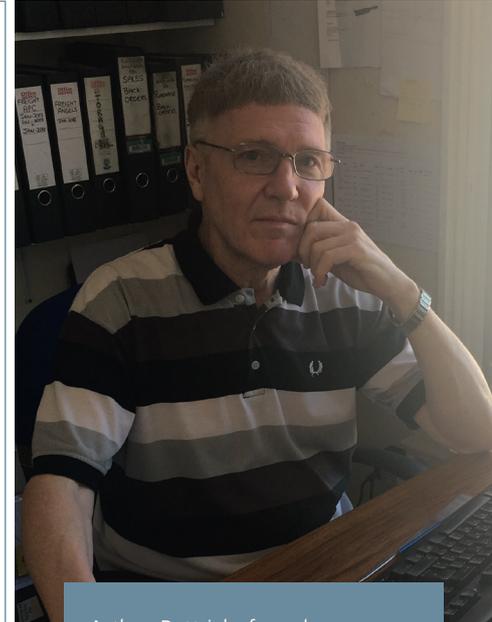
Daniamant Ltd continue to invest in new product development every year; a technical improvement, a cost reduction, a new product – without this continued investment Rough feels that Daniamant Ltd would be going backwards very quickly. You have to keep moving forward, even if sometimes it feels you are working hard to stand still. We have to help our customers and supply chain be more successful by being at the leading edge of our technology, ensuring high quality and offering them a product portfolio they can be competitive with.

Rough states “I have been in manufacturing for 30 years; I believe passionately in UK manufacturing, the fact that we can still compete with anyone in the world. Daniamant Ltd’s continued success demonstrates just that; a small company from Portsmouth can innovate and export and be recognised alongside the BAE and Jaguars of the world. It shows what talent we have here in the south and in the UK, and is the key to growing this country’s exports.”

Patrick Brothers Communications



Surge protected electrical socket with power overload warning



Arthur Patrick, founder

Patrick Brothers Communications, founded by Arthur Patrick, is based in Ilford, east London, where all design, marketing and accounting activities occur; warehousing and manufacturing are outsourced to companies based anywhere from London to north Wales. Operating nationwide, Patrick Brothers Communications specialises in developing accessories and devices for the telecommunication, computer and audio-visual consumer electronics markets, while ensuring compliance with and taking advantage of new regulatory standards and directives. Patrick Brothers products, as Arthur explains, are innovative and often groundbreaking within their field, reasonably priced, environmentally friendly and available across the country, both on the high street and online.

Keeping track of regulations

Buyers in our industry welcome news that keeps them informed of updates and developments. We consequently work with specialist consultants and engineers to stay abreast of information relating to regulatory issues as well as advising on any grievances with preproduction prototypes. Some of our advisers sit on various EU standards committees and/or attend various international conferences pertaining to our industry – this proves invaluable when gaining expert insight into what can be, at times, a complex field.

FACTS ABOUT PATRICK BROTHERS COMMUNICATIONS

- » Director: Arthur Patrick
- » Established in 1987
- » Based in east London, with offices in Ilford and Barking
- » Services: Design, development and marketing of consumer electronics
- » Customers include CPC-Farnell, Richer Sounds and Amazon
- » Recipients of several What Hi-Fi? magazine five-star ratings and “product of the year” awards
- » Subsidiary of PBC Holdings Ltd
- » Owner of TACIMA and KAUDEN brand names
- » www.kauden.co.uk

“It seems to us that many electronic gadgets and devices sold today fall short in regard to industry compliance”

Losing sight of regulatory progression can mean a warehouse full of useless inventory. It seems to us that many electronic gadgets and devices sold today fall short in regard to industry compliance, with scant respect or understanding of what is really required to apply CE marking to a product. The CE mark is affixed to products to ensure compliance with EU safety standards. It can take a long time to catch up if you fall behind the regulatory standards – there are a lot of product recalls out there waiting to happen.

As far as product development with our overseas suppliers is concerned, especially in east Asia, making sure the correct documentation is in order is of paramount importance. We review all documentation with a fine-tooth comb, for it is in this area that serious errors can come to light, including doctored certification or test reports; wrong UK or European technical standards applied; misunderstanding of technical issues within standards; fake documents/certificates; and an insufficient or absent materials flammability rating.

Brush faceplate with anti-fire noise reduction and heat retention properties



Product portfolio

Our product portfolio is split between our TACIMA and KAUDEN branding. Products bearing the TACIMA brand are developed jointly with local electro-technical specialists Roshe Power, whom we collaborate with on occasion. An example of a recent joint venture was a mains power upgrade which improved the sound and vision quality of television and audio-visual equipment by cleaning up and conditioning any interference in the mains supply. What Hi-Fi? magazine gave the product a five-star rating and bestowed on it the “best accessory of the year” award, which gave our product instant credibility and a five-fold increase in sales.

A favourable review was key to the success of this product and recalling the magazine’s review mantra – “pound for sound” – at the product’s design stage meant that the required retail price point was met. A five-star review has been awarded for all versions launched so far, and has also sold successfully in Singapore, Indonesia and Brunei.

A catalogue of innovation

Three projects we are currently involved with are the production of adaptors to prevent broadband interference, faceplates for wall sockets with built-in fire prevention technology and surge protected wall sockets.

Having trouble with one’s broadband is a miserable experience. Much of the population is still partially served by networks of copper wire, which can be subject to radio frequency interference – known as REIN noise – and cause internet signal to cut out. We have developed a small adaptor that very easily plugs into the router, not only assisting in stopping these radio interference glitches but improving the broadband speed – the benefit of

this product, and at a price under ten pounds, is self-evident. Another model will incorporate surge protection, for many homes have no protection against ripples from lightning strikes which can wipe out a router and leave houses with no service for days.

When a television is mounted on the wall there is usually an unsightly wire dangling. A variety of products abound that aim to hide these cables. This frequently entails making two three-inch square holes in the physical wall and running the wires behind it, in and out of special bristle-clad entry and exit cover plates. The problem with such a process is that the fire safety of the wall could be compromised in contravention of the building and electrical safety regulations. Our solution was to design a new faceplate with a specially developed embedded sponge that expands in the event of a fire, blocking any hole and preventing flames from spreading room to room. The novel dual layered sponge membrane ensures that ingress of noise and heat loss is also kept to a minimum, preserving the fire, acoustic and thermal integrity of the partition.

Electrical surges and spikes on the mains supply are not uncommon, and one usually buys a simple extension lead with surge protection to save your 42" TV or Bang & Olufsen speaker from taking a nasty hit. Recent legislation, however, now prevents these extension leads from offering 100 per cent protection as a result of discovered safety issues on the earth side. Our idea has been to incorporate the surge protection function within a normal twin-switched socket to overcome these issues, all the while protecting every socket on that wiring circuit. Looking ahead, and with fire safety in mind, we will also incorporate a power warning LED and buzzer, which will indicate if the socket is nearing its maximum load of 13 amps.



Broadband conditioner enhancer

Going green, going forwards

We have also made steps against plastic packaging, which has become a huge environmental issue in recent years. We are ahead of the game, eliminating single-use plastics from our range in the lead-up to 2019 when some customers will no longer allow products to come in plastic packaging. I had my epiphany following a visit to a local noodle takeaway restaurant – I had ended up with enough plastic containers to open a specialist plastics store on eBay. After a rethink and reimagining of our product offering, many of our products are now packed loose with a simple paper barcode tag, thus eliminating the polythene bag. In keeping with public and corporate expectations, the single-use issue and more eco-friendly packing in general is being constantly evaluated as we go forwards into a greener future.

“We are ahead of the game, eliminating single-use plastics from our range in the lead-up to 2019”

Aston Microphones



James Young, managing director



Stevie Wonder with Aston Spirit and Aston Halo

FACTS ABOUT ASTON MICROPHONES

- » Managing director: James Young
- » Established in 2015
- » Based in Hitchin, Hertfordshire
- » Services: Microphone manufacture
- » No. of employees: 20
- » The only mainstream British microphone company
- » Aston 33 panel is composed of top UK artists, producers and engineers who help in development of our products
- » www.astonmics.com

Located in Hitchin, Hertfordshire, Aston Microphones is the only mainstream British manufacturer of professional microphones – a rare gem given that most microphone equipment is designed and built in places like Germany, Japan and, of course, China. With 12 years of previous experience building microphones in China, the Aston team understood from the outset that they were competing in a difficult market, so utilised uniquely innovative techniques and a panel of 33 of the UK’s top producers and engineers to make their products both affordable and performance competitive with other market-leading brands. Managing director James Young gives an overview of Aston’s leap forward in audio technology.

Being different

What we’re doing at Aston Microphones is genuinely unique. Historically, microphone products are a result of the competing influences of sales, marketing and engineering departments, which tends, inevitably, towards dilution of ideas. We have instead given over the entire sound design process to some of the UK’s top music industry professionals: people at the pinnacle of the industry whose ears are finely tuned to the distinction between good and great audio.

This group of artists, producers and engineers, originally 33 strong with now over 120 members, are collectively known as the “Aston 33” (in deference to the original test panel) and include the likes of Rick Simpson (Coldplay), Chris Porter (George Michael), Andy Barlow (U2) and Ian Dowling (Adele) to name but a few. The Aston 33 are involved at every single stage of development, rigorously assessing our

products in double-blind listening. This way of working is without precedent in our industry, and it has enabled us to develop products which far out-perform their respective price points.

Our website reflects our deep level of involvement in the music industry, where we showcase Aston panel members in a series of in-depth biographical web pages. These pages are consumer friendly and read more like GQ interviews than niche technology editorials. With interview questions such as “What was the first song that made you cry?” we have been able to garner the support of publications such as NME, Kerrang! and Music Week to publish our music playlists every three months, directing a far wider audience to our pages than would normally be possible. No other brand in our industry does this kind of penetrating marketing, and this heavy focus on being so involved in the industry has allowed us to gain the support of artists including Noel Gallagher, Stevie Wonder and Foo Fighters in our first two years.

Part of the music community

In fact, this is something of an ethos for our company – namely, working respectfully with people on all levels, be it our team, collaborators, distribution and retail networks or end-users. We refer to all of these people as our Aston Family, something which is reciprocated by them all. We treat our Aston Family as an extension of our own team, including them in our ideals and goals: something which has brought us an extremely loyal following. We also seek out new, unsigned, British acts and give them a spotlight place among the stars in our artist pages, putting something back into the industry that we love. In addition to Aston 33 developer-panel members, our wider family of high profile industry professionals covers more than 500 top producers and artists worldwide, and this list is growing exponentially.

Our microphones, of course, are not within the exclusive domain of professional recording either. As well as working with acts like Radiohead and Queen, our largest potential

“As well as working with acts like Radiohead and Queen, our largest potential market caters for amateurs and semi-professionals”

Aston Origin – mic for the stars



Made in the UK – Aston Spirit, Aston Origin and Aston Starlight





Rami Jaffee from Foo Fighters with Aston Starlights

“We have consistently been ranked as the number one sub-\$1000 microphone brand by publications around the world”

market caters for amateurs and semi-professionals. We have managed to bridge the gap of quality and price as a result of our unique panel audio testing, and innovative engineering techniques. Employing the services of British architect and designer Jack Munro for the technical and aesthetic design of the products has also allowed us to use novel materials and production techniques. This has reduced labour costs, while sparking innovation (we have two patents pending) to improve existing technology. As a result, we have consistently been ranked as the number one sub-\$1000 microphone brand by publications around the world, and are the only microphone brand at this price point regularly compared in performance terms to brands ten times the price.

A great example of this innovation is how we finish our microphone chassis. Normally companies will powder coat or nickel plate a microphone body, processes which are labour intensive and have a high environmental cost. By contrast we use UK sourced solid stainless steel which has been tumbled for four hours to give a beautifully patinaed finish. Not only is this less expensive, it's also much harder wearing and looks stunning, so in one design stroke, we have improved the product quality, reduced environmental impact and cut production cost. Utilising a series of such ideas has allowed us to use British manufacturing for 90 per

cent of our product build, from the 23 UK based component manufacturers, to the three final assembly plants, and our own 20-strong team based in Hitchin.

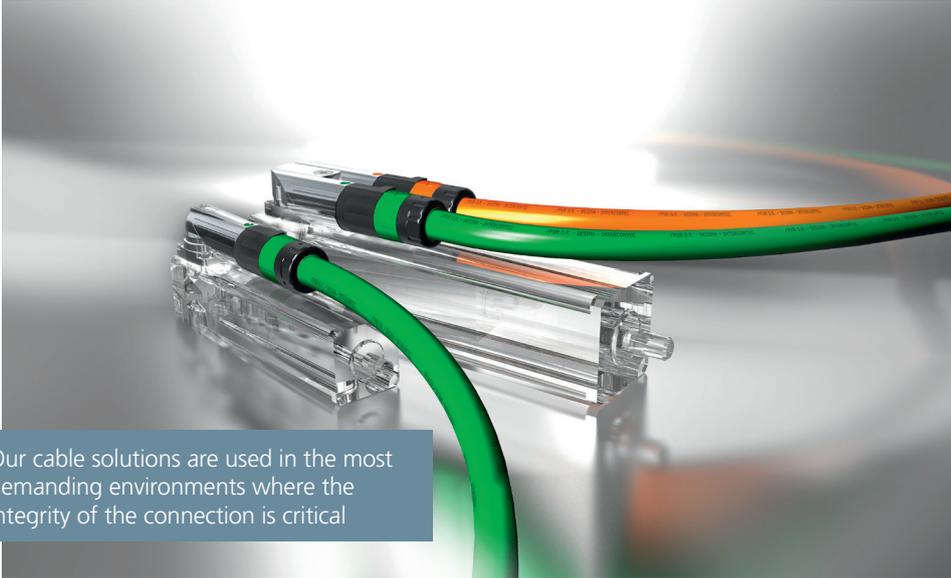
Difficulties along the way

Not everything has been plain sailing, as getting used to navigating this new production landscape is a steep learning curve. We receive no grant or subsidy from the UK government, which puts us at a huge disadvantage to some of our competitors. Rode, an Australian microphone brand, receive 50 per cent of their entire global marketing budget as government subsidies. We do not currently receive any government subsidies, so one of our aims this September is to discover ways in which we can get support for our UK based, global manufacturing brand. On the other hand, the government's promotion of internships is a development that we're working with. We are employing interns in multiple aspects of our business, including marketing. We hope to bring people into this industry and foster them from the ground up.

Looking forward

All in all, we are optimistic about our future. We closed our second financial year with a revenue of £2.5 million and post-tax profits of over £400,000, continuing controlled and strong growth. The addition of two new products scheduled for release in late 2018 and early 2019 should see our next financial year close in excess of £3.5 million. Compare this with the biggest brands, several of whom have microphone revenue in excess of £50 million, and there is clearly a lot more to come for Aston in a market worth more than £1.5 billion a year worldwide. The proliferation of home music production, in combination with our strong industry relationships and a little help from the government, will make our British brand one of the most influential in the world.

AP Technology



Our cable solutions are used in the most demanding environments where the integrity of the connection is critical



Stephen Bidwell,
managing director

Founded in 2001 and based in Hayes, west London, AP Technology is a specialist provider of interconnect products including cables, connectors, cable assemblies, wire and wire management products for a wide range of industries and requirements. They deliver an extensive range of materials from a wide range of specialised suppliers – shipping to manufacturers, subcontractors, installers and resellers across the globe so they can deliver an end-to-end solution for all their clients' interconnect needs. Their main differentiator is their service: in addition to their standard product offering, they offer a variety of custom products and supply chain solutions to meet a whole host of needs. Ensuring their quality, too, is their possession of an ISO 9001:2015 accreditation. On all things AP Technology, Stephen Bidwell, their managing director, elaborates in the following article.

Why our clients choose us

Because of the unparalleled level of service we offer – we believe it sets us apart. Our standard products really are half the picture; we offer tailor-made products and supply chain solutions for individual requirements, including:

- » In-house cable assembly production
- » Planned orders
- » No minimum order value for stock items
- » Cable cutting service
- » Custom labels and packaging
- » Global shipping

FACTS ABOUT AP TECHNOLOGY

- » Managing director: Stephen Bidwell
- » Established in 2001
- » Based in Hayes, west London
- » Services: Specialist distributor of electrical interconnection products
- » No. of employees: 24
- » IPC/WHMA-620-A certified in-house trainer
- » www.aptechnology.biz

“Our custom design-build solutions are what we are passionate about and where we stand out”

We are proud of our ability to work closely with our clients to make sure we really understand what’s required and give them a solution that meets their needs as well as those of the environment.

And we can both modify existing designs to enable fast delivery and use off-the-shelf cables in specialised applications. And after the cable is designed, we will create a drawing and data sheet that you can check before we put forward a quote. This ability to provide a broad range of solutions gives us a strong reputation in the sector. The result is that over 17 years we have developed cables for telecommunication, wind farm and industrial automation applications, as well as for diverse sectors such as the entertainment and defence industries.

Cable cut to length ready to flow through to the next phase of production



But I come back to our emphasis on custom design-build solutions – what we’re passionate about and where we stand out. Many can claim to offer to tailor their products, but in fact fall short when put to the test. We share a common understanding with our clients – of having shared values. And, importantly, having the knowledge that every individual component – each tiny length of wire or plug – bears our considered touch and purpose is central to why we do what we do. And this allows us to develop perfectly organised solutions to carry a message, communicate a vision or power an experience. We see that as a powerful mix, and it means we are seen as an asset to companies who deal with complex designs.

Growth and its enemies

Our custom is far from limited to just the UK, though; our products can be found the world over. Indeed, we are looking to expand into the United States. During this expansion, we have secured an exclusive agreement with a multinational, multi-billion pound company, who are now an automation and control partner and who very much share our values. Because of the scope of products they offer, we are now granted greater access into more markets.

Growth comes with its own set of challenges, however. In Greater London we have found that there is a dearth of manufacturing skills in our sector. Despite trying to work in alignment with government-sponsored apprenticeship schemes and local colleges, we struggle to find the right talent, mainly as the sort of custom work we do is intricate and requires much in-house training.

However, there is also a problem with respect to the sort of career path most electrical engineers want to take. Many would like to take the more lucrative



Constant innovation and a drive to deliver the best solution allow our customer's vision to come to life

route of working on a construction site as a skilled tradesman in London. Our industry is therefore not always the most sought-after. To remedy this, the mental horizon of opportunities for young people should be expanded. For us, we've managed to do this by seeking out those trainees with a natural curiosity for assembling and manipulating electrics. By finding and aligning the right trainees who match our culture and values of integrity, dedication, dynamism and respect, we have an excellent foundation on which to build.

Political opportunity

In short, Brexit causes me concern. We are currently reliant on supply from Europe, because most of the technology we sell comes from Germany or Italy. The uncertainty surrounding future trade and potential tariffs with these countries is something we'd prefer was absent. On the other hand, our customer base who export to us have begun to become more competitive as they mingle more with global markets. Ultimately, we'll take things as they come, but the sooner certainty arrives, the better.

Whatever the case, we believe there is much potential for British manufacturing. Many have feared for

a long time that competition from the developing world will displace this segment of our economy. We see things differently, though: British ingenuity is an inimitable quality that affords us an edge over other countries, even if our labour costs are higher. An important point, as we never forget that we are a successful business proudly made up of smart, open-minded, inquisitive people – valuable attributes as we become a part of the digital age.

Facing the future

Moving forward, I see things heading in a positive direction. Demand has been on the rise, and our own team is growing – in fact, we recently took on five new employees for the sales and operations side of the business. And the new exclusive agreement discussed earlier is already ushering AP Technology into a new and exciting era. And as we increasingly become aware of niche markets and understand our unique position within this sector, we will grow ever closer to companies who want cooperation in their engineering processes. This is a general trajectory that we hope to follow for the next three to five years, and it's with this optimism that we will build on the successes we've already enjoyed thus far.

“British ingenuity is an inimitable quality that affords us an edge over other countries”

Qualitrol UK



Bill Richardson, site leader



Qualitrol DMS, Glasgow

FACTS ABOUT QUALITROL UK

- » Site leader and director of operations: Bill Richardson
- » Established in 1945
- » Based in Glasgow and Belfast
- » Services: Asset monitoring
- » No. of employees: 65 in Glasgow and 153 in Belfast
- » www.qualitrolcorp.org

Established in 1945, in Fairport, New York, with continuous improvement as a constant business philosophy, Qualitrol provides condition-based monitoring services across the globe for utility assets. They are the largest and most trusted global leader for partial discharge monitoring, asset protection equipment and information products across generation, transmission and distribution. They operate five individual manufacturing sites: two in the US, one in Canada and two in the UK, specifically in Belfast and Glasgow. Bill Richardson, site leader and director of operations, here discusses their processes of continual improvement, and what Qualitrol's solutions can do for clients.

Our condition-based monitoring solutions use a combination of sensors, monitors and software to diagnose the health of electrical assets. With a history of working in every major energy vertical, we are equipped to provide customers with the equipment to collect and aggregate the information they need both to understand their asset's health and prioritise maintenance. In a climate that has seen global utilities under increasing pressure from government levies, we have seen on-time delivery of over 95 per cent across four million global installations across 93 countries. Our customer-centred passion for excellence ensures that we stay ahead of the competition.

Our British history and acquisitions

Originally founded in Denver, Colorado, with over 40 years of experience, Hathaway is a market leader in the development of power utility instrumentation

across the world. Their Belfast manufacturing centre of excellence produces models in the IDM and IDM+ ranges, which are the world's number-one installed digital fault recorders.

Based in Glasgow, UK, DMS are the supplier of choice for continuous partial discharge monitoring systems to major original equipment manufacturers (OEMs) and key power utility companies for the past 20 years. DMS developed the world's first commercial ultra-high-frequency-based continuous monitoring system, and continues now to pioneer the latest advanced technologies in its field.

In 2002 and 2009 respectively, Qualitrol acquired Belfast Hathaway and DMS.

A company culture of excellence

As a division of Fortive, we operate daily on the Fortive Business System, the foundation of every company under its umbrella. It drives our business performance, and serves as the tie that binds all subsidiary operating companies together.

As a result, we operate under the following values:

- » We build extraordinary teams for extraordinary results
- » Customer success inspires our innovation
- » Kaizen – a philosophy of continuous improvement – is our way of life
- » We compete for shareholders

These values influence the way our employees interact with each other, our customers and our shareholders.

Every day, we strive to be fact-based, data-driven managers who are, at heart, results orientated. Our work environment is fast paced and challenging. We expect outstanding individual work and contributions from our employees, as it must align with



Glasgow DMS manufacturing cell

the high expectations of our customers alongside Fortive and its shareholders.

Our unique selling points

We utilise a variety of tools at our disposal to drive improvement, and deploy visual management boards in every department to identify out-of-control conditions through key performance indicators (KPIs); this allows immediate risk mitigation to take place. Our daily stand-up meetings involve relevant employees from their respective departments, enabling all to contribute appropriately. The application of a “three second rule” that uses red and green colour coding to discern if action is necessary is a critical part of the success – even at distance, an employee can spot out-of-control conditions.

Our corporate social responsibility programme has gained momentum

“We expect outstanding individual work and contributions from our employees”



Belfast IP cabinet cell



Belfast site team

“As a high-performing company seeking to grow our workforce, we place a special emphasis on employee engagement”

over the past couple of years. In 2018, we will provide all employees time out to go and support a local charity. Throughout the year, our workforce supports local needs from mentoring teenagers to regular visits to the nearby hospices. Our community outreach also involves both thriving apprenticeship and graduate programmes, and, recently, we have been involved in providing work opportunities for young people with disabilities. This programme has been instrumental in attracting new, young talent to our businesses.

As a high-performing company seeking to grow our workforce, we place a special emphasis on employee engagement. Every department has an action plan in this regard, and each manager has a year-on-year objective to demonstrate point-to-point improvement. A key process driving this is our Stay Interview programme, where we invite reasonably long-serving employees to an annual sit-down that discusses their individual job satisfaction and processes of improvement. Another, the ELF programme, sees new employees matched up with a mentor for the purpose of assisting their settling into the business from the outset. DMS went from basic accreditation in 2015 to top accreditation in 2018 in the IIP (Investors in People) and IYIP (Investors in Young People) programmes. Belfast Hathaway are expected achieve accreditation in 2018.

Our CEO, Jim Lico, recently said: “We also promote a strong policy of inclusion and diversity. While diverse demographics are important, we want to focus on creating an environment where we are all free to bring our best selves to work. It’s about encouraging all voices to participate in the conversation, so that we can become the best in our field. It’s about each of us leveraging our unique strengths for the benefit of our customers and teams every single day, irrespective of race, religion, gender or sexuality.”

The value of our people and the future of Qualitrol

We recognise that the success of our company is directly linked to the capabilities, commitment, and contributions of our people. We actively encourage employees to contribute to improving our business.

Our development programmes encourage our employees to master the tools and internalise the values of the Fortive Business System, while our talent management process ensures that employees are provided opportunities in which to learn, develop and grow with our company.

Our employees enjoy the autonomy, breadth of responsibility and creativity that are part of a smaller, entrepreneurial environment, while still leveraging the resources, areas of best practice and career opportunities associated with a large, successful company.

Our employees are energetic, analytical and focused on working together to make tangible contributions to our company. We hope to see this continue over the coming months and years, and make way for the apprentices and graduates who will undoubtedly carry Qualitrol into the future.

KIGG



Internal R&D department



Lyndon Harfoot, CEO

KI Global Group (KIGG) existed in Hong Kong long before 2005. Lyndon Harfoot, its CEO, lived abroad for 26 years working as a consultant and project engineer, including a tenure at Swiss company Landis+Gyr. He focused there on delivering appropriate technology and quality support for the manufacture of electricity meters in developing countries. Thirteen years ago, he brought KIGG to Britain, establishing a new office in Sully, Glamorgan; he has since used the skills he acquired from a decorated international career to continue delivering services and support of that same celebrated quality.

Our core area of business is the original equipment manufacturer (OEM) supply of metering kits, and the entailing provision of support and further development of those kits, especially for industry in countries outside Europe. Though my background was in consultancy and engineering beforehand, we have now begun to focus more rigorously on research and development to ensure satisfaction and quality from there on; the initial supply of kits is, predominantly, straightforward, but the service we offer hand in hand with that is what really makes us unique.

We look at sectors in countries that may not necessarily have a complex enough infrastructure to provide highly qualified technical support. As a result, there is greater demand for an all-encompassing service that we can happily provide. One of our most significant partnerships has been a 14-year collaboration with Malaysia-based KMSB. We assisted beyond the supply of constituent technology for meters and appropriate further support, and facilitated a full-scale conversion of their premises, providing them now with a fully digital factory.

FACTS ABOUT KIGG

- » CEO and founder: Lyndon Harfoot
- » Established in 2005
- » Based in Penarth, South Wales
- » Services: Consultancy, OEM supply, R&D, technology transfer, training and project engineering
- » No. of employees: 7, with 30 available worldwide
- » 95 per cent of business is outside the UK and EU
- » www.kigg.com



Single phase smart meter

“Our slogan at KIGG is “focused quality solutions”, and that remains integral to what we do”

Forward-thinking, quality-focused and research-oriented

While this comprehensive service really is what has driven us for almost 15 years and led us to consistent success, KIGG really does excel when it comes to its research partnerships. We have worked alongside the University of South Wales for ten years, and where companies often want to benefit only financially from these collaborations, we have opted instead to invest in and maintain a mutually beneficial relationship. When we work with these bastions of knowledge and education, we look further ahead than most: the focus is on overwhelming results and groundbreaking research we can deliver on in four or five years’ time. We also have a decade-long relationship with Steve Gardner, the innovation and engagement fellow at the University of South Wales; he is a constant presence in our Sully office.

This collaborative attitude is just one of the myriad factors which have helped us consistently deliver where it matters. Our slogan at KIGG is “focused quality solutions”, and that remains integral to what we do. We operate to rigorous standards, including national weights and measures legislation considering our focus on metering, and have to be ISO 9001 certified if we want to speak to anyone within the industry.

Maintaining quality and exhibiting this in documentation is fundamental, and as we export most of our business, we typically have to adhere to strict, complex international standards.

Development and new programmes

When KIGG became operational in Britain in 2005, I was the only one working there. KMSB in Malaysia were our only client. We have since expanded to a core group of seven people in Sully and additionally operate now in India, Jordan, Nigeria and Saudi Arabia. The capacity to fluidly expand our staff on-site at any one factory is very much present; in India, we keep a core of 15 engineers but can quickly expand this to deploy 30 or more.

We have just secured a \$2.2 million contract working with the Ministry of Industry and Minerals in Diyala, Iraq; this will not only prove to be lucrative for the company but is the stepping stone to a 15-year management partnership which will provide 200,000 smart meters and 100,000 digital meters to Iraq, bringing about a large-scale infrastructure alteration. As a result of various trade restrictions and embargoes with Iraq, ensuring that our agreement and funding is breaching no international law has been a meticulous and difficult process to say the very least; no British bank will directly deal with any kind of Iraqi industry.

The revolutionary industry and manufacturing research that our partnership with the University of South Wales has brought about has been beneficial in maintaining and cultivating our international business, but at the heart of our client retention and appeal to new customers is one thing: quality. We provide the best service possible in tandem with a reasonable price. The foundations we provide to create a collaboration, rather than a typical supplier–client relationship, have ensured the longevity of our business.



Meter assembly



Three phase meter with modem



April visit to KMSB. Present: Ms Aiza, KMSB head of testing, Mr Trevor Edwards, KJGG, Eng. Abutair, JBM Jordan and Mr Hisham from Iraq

The domestic meter market and KJGG's future

We don't consider ourselves to have encountered failures – every potential failure has become a challenge, and one that we have learnt from. We often find that finance is a difficulty, though with the arrival of lucrative new international contracts, we hope the severity of this challenge will diminish in the near future. We have struggled with patenting items following research and development in tandem with the university and foresee fundamental issues with intellectual property rights, but, above all else, our biggest challenge has been the domestic market.

In Britain, the manufacturing cost of a basic digital meter is £8. For large engineering companies this is great; for us, it is a complete barrier that stops us from entering the domestic market. We would love to do so, but it is simply impossible; we have the excellent research and service pedigree required, but the market, for a business of our size, is simply uninhabitable. This extends to the industry in Europe – KJGG have taken

a contingent to the British Pavilion within the Hannover-Messe trade fair five or six times and never amassed enough interest. As a result, we feel that Brexit may actually prove to be somewhat beneficial for us; as European manufacturing and service become more expensive in the wake of a finalised agreement, we may be able to break into the market.

This is something that KJGG as a whole and I personally would love to see. With the financial momentum from our work in Iraq, we will have the ability and resources to finance large projects. Developing and implementing our product while ensuring manufacturing costs remain as low as they do for us elsewhere will be difficult, but I think it is plausible. Following investment in the Centre for Electronic Product Engineering at the University of South Wales, we already have 95 per cent of the design ready; seeing that become both material and financially viable will be no small feat, but, nonetheless, I am confident about our future endeavours, be they further international or domestic work.

“Every potential failure has become a challenge, and one that we have learnt from”

Aquavision



Alastair Benn, managing director



Quality, handmade British technology

FACTS ABOUT AQUAVISION

- » Managing directors: Alastair and Susan Benn
- » Established in 2002
- » Based in Stockport, Greater Manchester
- » Services: Design and manufacture of waterproof and in-wall televisions, both residential and commercial
- » No. of employees: 13
- » Alastair invented the first waterproof TV in 1997
- » Innovative and pioneering, always ahead of the curve
- » www.aquavision.tv

Led by Alastair and Susan Benn, Aquavision is a company that designs and manufactures bespoke, waterproof, mirror and in-wall television systems – with an extensive portfolio of high-end clients in a wide range of sectors, including the residential, commercial and hospitality industries; in recent times Aquavision have also won contracts within the marine sector, with their products being installed on luxury yachts around the world. The factors driving this successful expansion are described by Alastair and Susan in the following piece.

Beginning in 1997, I (Alastair) pioneered the concept of the waterproof in-wall television, producing the first one in my home garage. In 2002, I also identified a gap in the high-end luxury market, namely a lack of televisions that were suitable for unconventional parts of a residence and the considerable challenges in placing a television in a bathroom. Seeing this was the case, I decided to offer aesthetic, custom-made televisions suitable for bathroom use.

This effort paid off and, soon after, I won the opportunity to gain contracts around the world with major hotels and high-profile individuals. With that, the Aquavision brand was born.

Since then the company has moved beyond just bathroom televisions, to producing television systems for kitchens, living rooms, dining rooms and outdoor spaces. Aquavision also collaborate with the high-end Nordic audio-visual brand Bang & Olufsen. It is remarkable to reflect that all of this came from a company that began in the family home with our young children playing a helping role.

Trust at our core

The core value that underpins our success, we believe, has always been trust: we must ensure that our employees and clients trust in a company that will always have their best interests in mind. For example, in dealing with high-profile individuals such as celebrities and royalty around the world, an agreement must be established between us and them that we will not divulge personal information about them.

We make it clear that we are genuinely committed to providing them with this confidence, and this is what makes the transaction possible. More to the point, if we were not trustworthy, our reputation would diminish rapidly in such a small industry. Indeed, so niche and specialised is this industry that one of our clients bought a mountain for the sole purpose of using its marble for his bathrooms to ensure that it matched; this highlights just how important it is to attend to these projects and our clients very closely and carefully. These are, after all, projects close to their heart.

Our staff must also trust that we will provide them with the support necessary for them to work well and happily; indeed, it is not too great an exaggeration to say that our staff are like family to us. It is not unusual for us to go out for dinner together, for example. From this comes the loyalty which affords us the stability required for such a specialised trade.

This core value permeates throughout our business. Client acquisition and retention are not simply down to providing a quality product, but trust too. For instance, one way that we keep clients on board is by offering a "hole-in-the-wall guarantee", which provides assurance that whenever new television models come about, we can install the new

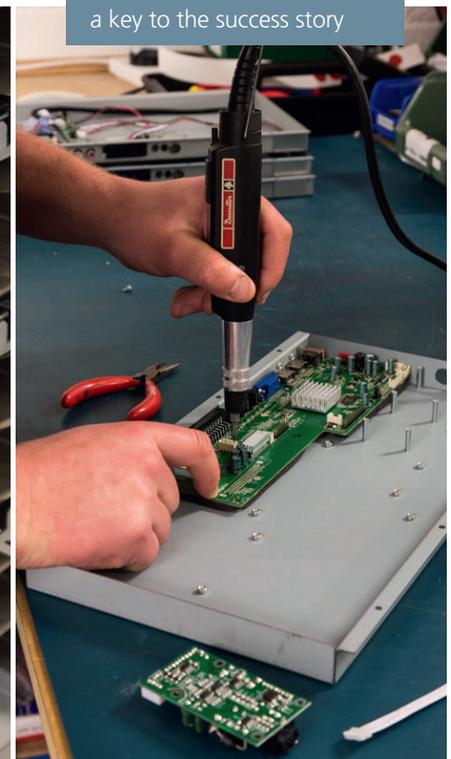
television into the wall where the previous unit was fitted before, without any remedial works being necessary. Trust also has its basis in the fact that our manufacturing takes place in the UK, a country in which regulatory standards are high. Aquavision products carry the "Made in Britain" marque, which lends us a considerable degree of legitimacy in the global market.

Moving forward and adapting

Among some of the challenges we face is the rapid pace of the technological industry. Hardly six months goes by without some great change in the technological landscape. Naturally, being involved in this sector requires a close eye on these changes, something that Alastair – with his knowledge, research and innovative impulse – can keep on top of, and relishes in doing so.

A challenge that is currently occupying our attention is further expansion on an international scale. Fortunately, we are firmly established

“Client acquisition and retention are not simply down to providing a quality product, but trust too”



Attention to detail has been a key to the success story



Aquavision televisions are often installed in luxury residential properties

“We are firmly established in the UK market, but work further afield is still in its infancy”

in the UK market, but work further afield is still in its infancy – principally, that of appointing new distributors around the world. The objective is to increase exports and attain a growth rate of over 20 per cent per annum within an 18-month to five-year window – something we are currently achieving.

Closer to home is the issue of employment and how best to acquire the calibre of talent for this specialised industry. Fortunately, the current government has been doing a lot to help in this area, particularly with respect to apprenticeship schemes. In recent times we have seen a broadening and increased support of apprenticeships and similar vocational schemes.

For example, one of our employees is now doing an apprenticeship in accountancy (90 per cent of which is funded by the government) and

another is taking a master’s level qualification in manufacturing and production. This is helping to provide our business with the skills we need to compete in a global market.

In terms of the global market, there have been concerns over the exchange rate after Brexit. However, for every up there has been a corresponding down, and the net effect as far as we are concerned at present is neutral. In other words, Brexit has not been deleterious for our company.

Our hope is that these encouraging trends continue, allowing us to meet our growth targets and reach those markets that we have not yet tapped into. With trust as our ethos, growth as our aim and innovation as our *modus operandi*, we believe we can take Aquavision further along this already successful journey.

A game of Chequers



The cabinet gathered at the prime minister's country residence of Chequers in Buckinghamshire for a crunch meeting

On Sunday, July 8, Britain was awash with sunshine and optimism. England football fans were preparing for their first world cup semi-final in nearly thirty years, while some Scots were hurriedly buying the chequered shirts and flags of England's opponents, Croatia. And the weather, the hottest summer since the seventies, was keeping everyone in good spirits. In other words, it was the perfect time for a political crisis.

While Gareth Southgate's team spent their Saturday doing battle with Sweden, Theresa May's spent theirs battling each other. Late on Sunday evening, after another day of disagreements, the results of the crucial cabinet meeting at Chequers (the prime minister's grace and favour country residence) began to materialise. The most significant of these was the resignation of David Davis as secretary of state for exiting the European Union.

Mr Davis found himself unable to support a proposal that would see the UK maintain a common rulebook with the EU for all goods. This would mean a co-operative arrangement with EU regulators and very little room for divergence.

The white paper that emerged after the Chequers summit focused on four key areas: economic partnership, security partnership, future areas of cooperation and the frameworks needed to enforce any eventual agreement. It contained details on the "facilitated customs arrangement", whereby the UK would collect tariffs on behalf of the EU.

It called for the end of the free movement of people but laid out plans for EU citizens to come here without visas for "paid work in limited and clearly defined circumstances". As regards benefits and social security, it advocated "reciprocal" arrangements with the EU.

A "joint institutional framework" would be established to interpret UK-EU agreements. In the UK, this would be overseen by our courts and in the EU it would be overseen by theirs. Some cases would be referred to the European Court of Justice, though it would be unable to resolve disputes between a UK and an EU court.

The white paper also confirmed that we will exit the European Union at 11 o'clock in the evening on March 29, 2019, which will be midnight central European time.

In her foreword for *The Parliamentary Review*, the prime minister suggests that a Brexit on these terms would mean we "take back control of our laws, money and borders."

In his resignation letter, Mr Davis took a different stance: "In my view the inevitable consequence of the proposed policies will be to make the supposed control by Parliament illusory rather than real."

If the Brexit secretary's departure threw the government into a spin, it was nothing compared to what came next. On Monday afternoon, with the ink on Davis' letter not yet dry, Boris Johnson announced that he was following suit. For two years, pundits had speculated about the imminent departures of the Brexit and foreign secretaries. Now they were both gone within 24 hours. In his letter, Mr Johnson said the prime minister was leading the UK into a "semi-Brexit" with the "status of a colony".

Jeremy Hunt, who had just become the longest serving health secretary in history, was chosen to replace him, with culture secretary Matt Hancock moving to the Health Department. Mr Davis was replaced by Dominic Raab. Further resignations included Steve Baker, Maria Caulfield and Ben Bradley.

It was under this cloud that Gareth Southgate's Three Lions took on, and were defeated by, Croatia. After which, from both a sporting and a political point of view, it was fair to say that England had been chastened by chequers.

If Mrs May was in need of a brief reprieve, she was unlikely to get one with Donald Trump arriving for his long-awaited UK visit. Amid huge protests, Mr Trump decided to give an interview with *The Sun*, in which he lambasted Mrs May's Brexit negotiations and suggested that Boris Johnson would make "a great prime minister". This was followed by a characteristic backtrack, where he said he would support whatever stance the "incredible" Mrs May took on Brexit.

No sooner had the president left than Mrs May was back in the bear pit of parliament. On the Monday, her customs bill faced a series of amendments from the pro-Brexit European Research Group, two of which were accepted by the government and each passed with a majority of just three votes.



President Trump's trip to the UK added to the political drama of an already hectic month before the summer recess

The first of these called for the UK to refuse to collect duties for the EU unless member states did likewise. The second compelled us to have an independent regime for VAT. Labour MP Stephen Kinnock responded: "By capitulating to their proposals on the Customs and [the] Trade Bill she is accepting that the Chequers deal is now dead in the water."

Two days later, Mr Johnson decided to deliver a resignation speech in the House of Commons, in which, while praising the prime minister for a number of things, he contrasted her Lancaster House speech of January 2017 with what was agreed at Chequers, speaking favourably of the former and less so of the latter.

Shortly before *The Parliamentary Review* went to print, Johnson's former cabinet colleague, the trade secretary Liam Fox said he believed a "no-deal" Brexit was now odds-on. As the following articles demonstrate, parliamentary intransigence makes it incredibly difficult for agreements to be reached. With no clear majority for any one Brexit plan, a "no deal" scenario may well become a reality.

Whatever happens, it's likely that 2019 will see an MP address parliament and compare what was agreed at Chequers with whatever is agreed, or not agreed, with Brussels on March 29 as the central European clock strikes twelve.

The meaning of the meaningful vote



David Davis, the then-Brexit Secretary, warned that the Lords amendment could be used by some to frustrate the process of leaving the EU

In June, seven months on from his success in attaching a “meaningful vote amendment” to the EU (Withdrawal) Bill in the Commons, the former attorney-general Dominic Grieve was still fighting the same cause on the same bill.

In what proved to be the final round of the long parliamentary battle over the bill, MPs were considering changes made in the Lords, which included a tougher version of the meaningful vote than Mr Grieve’s original. In earlier rounds of consideration he had accepted a compromise proposal from the government, only for the consensus around it to break down when Downing Street presented an analysis of what it would mean that seemed far weaker than Mr Grieve had thought.

That in turn prompted the Lords to replace the compromise with a beefed-up version – and this was what MPs, for the second time in a week, were now considering.

The issue remained the narrow but potentially crucial question of what leverage MPs would have in the event that either parliament rejected the Brexit deal between the UK and the European Union or no deal was reached at all. Should there be a vote

in the Commons to instruct ministers on what to do next?

The day before, peers had voted in favour of plans to give MPs a greater say – a move that David Davis, the then-Brexit secretary, warned could undermine the prime minister’s negotiating position because it seemed to foreclose the possibility of Britain walking away with no deal. Mr Davis now offered another compromise that would, he said, ensure that there would be a ministerial statement and a motion to the House of Commons in the event of no deal, but the key point was that his plan would not offer MPs a chance to instruct ministers – because the motion that would be put down would not be amendable.

But Mr Davis added that the procedural details were far less important than the expressed mood of the House of Commons in a moment of crisis, and he warned that the Lords amendment could become a mechanism for frustrating Brexit.

As part of the elaborate legislative dance, Mr Grieve had put down a new amendment. But now a compromise had been offered, he dropped it: “Having finally obtained, with a little more difficulty than I would have wished, the obvious acknowledgement of the sovereignty of this place over the executive, I am prepared to accept the government’s difficulty, support them and accept the form of amendment they want.”

The government proposal seemed to put the issue into the hands of the Speaker, who, in the event of no deal, would have to decide if a future motion would be amendable. There were attempts to ask the Speaker, John Bercow, what he would do in those circumstances, but he declined to say.

What was not clear to MPs was who was climbing down. Had Mr Grieve allowed ministers a face-saving solution, which gave him what he wanted? Or had he flinched from rebellion and accepted a fig leaf in place of the guarantees he really sought?

Labour's shadow Brexit secretary, Sir Keir Starmer, hoped that MPs would still vote for the Grieve amendment: "Standing back, that looks like common sense. It is unthinkable that

any prime minister would seek to force through a course of action that would have significant consequences for many years which the majority in [the House of Commons] did not approve of... the idea that that is how we would achieve an orderly Brexit is for the birds."

In the end, six Conservatives voted for the Grieve amendment, while four Labour MPs defied their party whip and voted with the government. And later that evening, peers accepted the bill – which allowed it to become law.

Parliament approves a third runway at Heathrow airport

Fifty years after the Wilson government set up the Roskill Commission to examine options for London airport expansion, MPs backed a planning document that endorsed a third runway for Heathrow with a resounding majority: 415 votes to 119.

The decision to endorse a national policy statement (NPS) for airports, which supported a third runway, followed an intense 90-minute debate. The result was not really in doubt – Conservative MPs were on a three-line whip, which meant that they were ordered to back the NPS, while Labour MPs, reflecting the considerable differences of view in their party, were given a free vote.

Transport secretary Chris Grayling laid out his case: "All five of London's main airports will be full by the mid-2030s, and Heathrow is full today. We are seeing business leave the UK and go to airports like Frankfurt, Amsterdam and Paris, which have made additional capacity provision... We are losing those connections to other countries, and we are losing the investment that goes around those connections."

He promised that there would be tough environmental conditions: the runway would not be allowed to open if it



Heathrow airport: MPs vote in favour of expansion

failed to meet air quality standards. There would be a generous £2.6 billion compensation package for people displaced by the new runway, plus a noise insulation programme for homes and schools.

But there was considerable resistance. Labour's shadow transport secretary, Andy McDonald, warned that the Heathrow expansion would "generate many winners, not least the shareholders of Heathrow Airport Ltd, but it risks making losers of many, including the communities in which thousands of people will lose hundreds of homes." He was interrupted by a Labour colleague, John Spellar, who

said that, globally, aviation would grow anyway – the question was whether Britain would share in that growth.

Some of the most wounding criticism came from Conservatives, notably the former transport secretary, Justine Greening, whose Putney constituency is directly under the Heathrow flight path.

Another Conservative, Greg Hands, resigned as trade minister in order to keep his election promise to vote against the Heathrow expansion.

The short debate ended up with a majority of 296 in favour of the NPS. In the end, eight Conservative MPs voted against the government and Labour was split almost in half, with slightly more Labour MPs supporting the expansion than opposing it. Their leader, Jeremy Corbyn, was against it. The NPS does not grant final planning permission for the third runway: it sets the policy framework against which planners (and probably the courts) will judge whether the scheme should go ahead.

Tributes to Tessa Jowell in a debate on cancer treatment



Tessa Jowell was hailed as an inspiration during her battle with cancer

When former Labour culture secretary Tessa Jowell was diagnosed with a brain tumour, she launched a personal campaign to highlight the need for better cancer treatment. The result was two emotional debates in the Lords and the Commons, with speeches from her many friends in both houses.

The Commons debate was opened by Labour MP Sarah Jones, who was part

of the team working for Lady Jowell on the bid to hold the 2012 Olympics in London. Lady Jowell watched with her family in the under-gallery of the Commons.

There was praise for Lady Jowell from the then health secretary, Jeremy Hunt, who said that she left two great legacies and- unusually- the Speaker, John Bercow, intervened from the chair: “As somebody who is living with cancer you have shone a light on a cruel curse and the need for collaborative, resourced and unflagging devotion to the effort to tackle that curse. [Sarah Jones] said that you loved this place. I hope that it is blindingly obvious to you, Tessa, that we love you.” In her seat in the gallery, Lady Jowell was visibly moved. She died a few weeks later, on May 18, 2018.

Lessons from the collapse of Carillion

The government was accused of failing to tackle the problems at the public sector mega-contractor Carillion as the company headed for collapse. The chair of the Commons’ powerful financial watchdog, the public accounts committee, Labour’s

Meg Hillier, told MPs that a confidential risk assessment of the company had shown rising concern about the finances of the company, which provided key public services, including school maintenance and prison management.

The collapse cost thousands of jobs and left the government to pick up those functions. The government's risk assessments were released to the public accounts committee and, after holding hearings on them, Meg Hillier delivered a statement giving her committee's verdict.

"The Carillion papers identify clear and compelling problems with the business in the months leading to its collapse," she told the House. "... although Carillion had been rated as 'amber', owing to its performance against contracts with the Ministry of Defence and the Ministry of Justice, it was not until after Carillion issued a profit warning in July last year that the government downgraded it to 'red'. It therefore appears that the government

was not aware of Carillion's financial distress until that point. In November last year, officials recommended a provisional 'black' rating for Carillion – that information has come directly from the papers that we have published – but following representations from the company, the Cabinet Office did not confirm that designation. Carillion collapsed less than two months later."

The committee now planned to hold more hearings on the relationship between the government and strategic suppliers because, she said, some big contractors were now "too big to fail". Carillion itself had continued to believe that it would receive a government bailout right up to the moment of collapse in January.

The Salisbury poisoning

In March, the prime minister issued a grave warning to the Russian government after a double agent and his daughter, now resident in Britain, were poisoned with a military-grade nerve agent at their home in Salisbury.

Sergei Skripal, a Russian defector to Britain, and his daughter Yulia were exposed to Novichok, a nerve agent developed by Russia. Theresa May gave Russia 24 hours to provide answers about the incident or face sanctions from Britain.

In a statement to the Commons, the prime minister praised the professionalism of the emergency services and armed forces in responding to the incident. She said that the chemical had been identified by "world-leading" experts at the Defence Science and Technology Laboratory at Porton Down and that, given the Russian government's record of state-sponsored assassinations, ministers had concluded that it was "highly likely" that Russia was responsible.



Officers in hazardous chemical suits in Salisbury

"There are, therefore, only two plausible explanations for what happened in Salisbury on March 4," she added. "Either this was a direct act by the Russian state against our country or the Russian government lost control of its potentially catastrophically damaging nerve agent and allowed it to get into the hands of others."

Labour leader Jeremy Corbyn said that the events in Salisbury were "shocking" but added a cautious note: "We need to see both the evidence and a full account from the Russian authorities in the light of the emerging evidence to which the

prime minister referred... we need to continue seeking a robust dialogue with Russia on all the issues – both domestic and international – currently dividing our countries, rather than simply cutting off contact and letting the tensions and divisions get worse and, potentially, even more dangerous.”

He also called on the prime minister to toughen up the Sanctions and Anti-Money Laundering Bill, then before MPs, and to accept Labour proposals to add so-called “Magnitsky powers”, which would allow direct financial sanctions against individuals implicated in human rights abuses. He faced heckling from the Conservative benches when he said that there had been more than £800,000 of donations to the Conservative Party from Russian oligarchs and their associates.

Mr Corbyn’s response produced a stream of criticism from the Labour MPs behind him. One, John Woodcock,

said that UK national security would be at risk if the country were led by anyone who did not understand the gravity of the Russian threat.

The Scottish National Party’s Westminster leader, Ian Blackford, demanded a robust response: “firm and strong action must be taken to send a clear message to the Kremlin that we will not accept Russian interference in our democracy or in our way of life.”

In July, two additional UK citizens were poisoned with the same nerve agent. Dawn Sturgess, 44, died on Sunday 8th while Charlie Rowley, 45, was in a serious condition but was discharged on Monday 20th. Police have identified Sturgess’ perfume bottle as the container that was used to house the agent. They also believe they have identified the suspected perpetrators of the attack but, as *The Parliamentary Review* goes to print, no arrests have yet been made.

Airstrikes on Syria



People marching against the Assad regime in London

When the prime minister ordered British forces to take part in airstrikes against chemical weapons held by the Assad regime in Syria, she came to the Commons after the Easter recess to defend her decision – and ran into criticism for not seeking parliamentary approval in advance.

She said that the attack was a response to the use of chemical weapons by pro-Assad forces, which had left up to

75 people dead. She said that the images of the suffering were “utterly haunting: innocent families seeking shelter in underground bunkers found dead with foam in their mouths, burns to their eyes and their bodies surrounded by a chlorine-like odour, and children gasping for their lives as chemicals choked their lungs.” Such an atrocity was “a stain on our humanity,” she added.

She did not believe that evidence on the scale available could be falsified, and she said that the Syrian regime was seeking to cover up the atrocity by searching refugees, in case they tried to smuggle out samples of the chemicals that had been used – it was clear that only President Assad’s regime had the capability to carry out such an attack.

The prime minister also defended the legality of the UK action: Russia had blocked a UN resolution to establish

an independent investigation into the latest attack. She said that to argue that the UK could only act with a UN resolution was to accept a Russian veto on British foreign policy. She said that military action was justified to prevent further gas attacks – there was no alternative course of action and the attacks were necessary and proportionate.

Labour leader Jeremy Corbyn responded that the prime minister was accountable to parliament, not to the US president, and added that Britain needed a War Powers Act to transform what he called a “now broken convention” into a legal obligation.

There were angry shouts when he said that the UK action was legally questionable, and he questioned whether the government could be sure that the chemical attack was the work of the Assad regime. He called for a

diplomatic solution to end the war and the refugee crisis it had caused.

Senior Conservative Kenneth Clark backed the government’s action, but he queried the lack of parliamentary debate before the event, given that President Trump had announced his intention to strike against the Assad regime well in advance.

The Scottish National Party’s Westminster leader, Ian Blackford, reminded Mrs May that she led a minority government, adding: “It was perfectly possible for House to have been recalled in advance of the Saturday morning airstrikes.”

Lib Dem leader Sir Vince Cable agreed with this and asked if there might be more airstrikes, in light of President Trump’s comment that it was “mission accomplished”.

But the prime minister would not be drawn on that.

The last word

This edition of *The Parliamentary Review* has overseen yet another extraordinary year in British politics. Cabinet ministers have departed, Commons debates have raged long into the night and, at times, it has felt like little has been achieved. From our standpoint, it is clear that this has not been caused by a lack of trying. The members of parliament with whom we have crossed paths, from all parties and none, have each been working incredibly hard to further what they feel is in the best interests of the constituency, and the country, they serve.

And, though the political realm has been a source of frustration for many, it is clear, as Andrew Neil observes in the opening pages of this publication, that those operating at the micro level of the British economy are not only working tirelessly, they are also achieving great things. The articles from this year’s *Review* representatives exemplify this.



Lord Pickles addresses the 2017 Parliamentary Review gala in the House of Commons

A country is not a perfect blueprint put into action: it is the sum of millions of autonomous parts. Individuals who motivate their staff, inspire their students or simply do their job to the best standard they can muster. And, though there are always adjustments and improvements to be made, it is our conviction that British parts are in fine working order.

Acknowledgements

Senior Editors: Ross Hindle, Craig Wilmann, Rt Hon David Curry and Joshua Jackson

Journalists: Thomas Wilson, Andrew Neil, Bill Winter, Andrew Barlow, Nikolaus Cox, Mark D'Arcy, Scott Challinor, Sean Coughlan, Dave Lee, Tony Harrington, Jon Masters, Beth Stevenson and Robyn Wilson

Designers: Constantin Nimigean and Andreea Cioran

Copy-editors: Jonathan Sherrington, James Patrick Thomas, Rupert Douglas and Full Media

Photograph procurement: Jonathan White

Westminster Publications is also grateful to the following people:

Daniel Yossman, Jamie Oglesby, Lord Pickles, Lord Blunkett, Rt Hon Theresa May, Rt Hon Chris Grayling, Rt Hon Damian Hinds, Rt Hon Gavin Williamson CBE, Rt Hon Esther McVey, Rt Hon Claire Perry, Tracey Crouch MP, Dr Tristram Hunt, Paul Everitt, Julian Davids, Professor Ted Baker, Ian Wright, Brian Berry, Adam Mansell, Chris Atkin, Liz Field, Josh Terry, Frank Lampard, Julia Hartley Brewer, Rt Hon Michael Gove, Sir Nick Clegg, William Graves, Marcin Bulka, Hannah Riding, Devina Lavji, Fern Hall and John Hammersmith

Images in this publication have been reproduced courtesy of Alamy and Flickr.

COPYRIGHT © WESTMINSTER PUBLICATIONS 2018

All rights reserved by Westminster Publications. No part of this publication may be reproduced, stored or transmitted in any form or by any means without prior written permission from Westminster Publications. Westminster Publications warrants that reasonable skill and care has been used in preparing this publication. Notwithstanding this warranty Westminster Publications shall not be under liability for any loss of profit, business, revenues or any special indirect or consequential damage of any nature whatsoever or loss of anticipated saving or for any increased costs sustained by the client or his or her servants or agents arising in any way whether directly or indirectly as a result of reliance on this publication or of any error or defect in this publication. Westminster Publications shall not in any circumstances be under any liability whatsoever to any other person for any loss or damage arising in any way as a result of reliance on this publication.
