



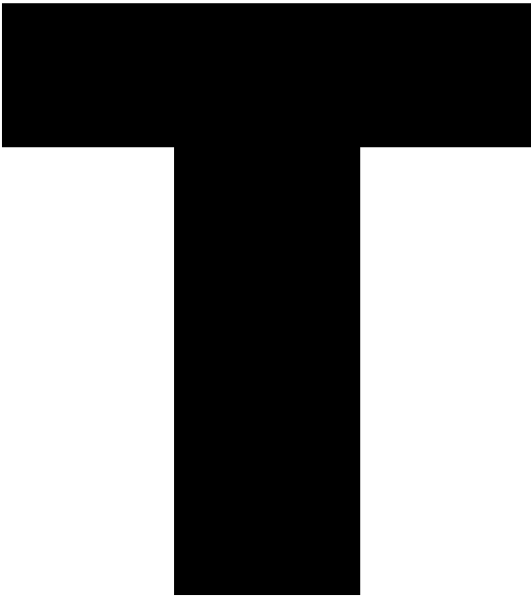
British manufacturing is undergoing a period of transformation. Traditional factories still turn out goods we recognise – cars, ships, trains, textiles – but the most successful sector of manufacturing is in niche products such as industrial sensors or medical diagnostics, whose functions are more difficult to understand.

Over the past year, a group of photographers from Magnum Photos has been documenting the state of manufacturing in Britain as part of **Open for Business**, a project initiated by Multistory, the West Midlands arts organisation. In visiting more than 100 companies, they have photographed everything from shipbuilding and aircraft manufacturing to precision engineering, food preparation, renewable energy projects and medical R&D.

Though technology is driving manufacturing forward, the photographers found that skills such as saddle-making, millinery, model-making and digital animation of the sort that has made *Wallace & Gromit* a global export are also part of the story. In this special issue of FT Weekend Magazine, we present work from eight of the Magnum photographers involved, each of whom has written about their experience.

Later this month, the first of a series of exhibitions based on the project will open at the National Media Museum, Bradford

**BRITISH
INDUSTRY**
A PHOTOGRAPHY SPECIAL



he story of industrial decline in Britain has become so familiar, it takes some effort to realise that things might not be so gloomy after all. In fact, British manufacturing is performing well – though not in the traditional ways that most people understand it. As the shape of world manufacturing has shifted over the past 30 years, Britain has altered too and, in many ways, the country is ahead of the game when it comes to the necessary factors for 21st-century industrial success. It could turn out to be one of the biggest winners in the new industrial age.

Britain is no longer a mass manufacturer of many basic products that are made mainly in large and highly visible plants. Instead the country’s industry has become predominantly a collection of fairly small companies making specialist items reliant on clever technology and new business thinking. In statistical terms, UK industry – for all the impact of the 2008-09 recession – still punches above its weight. With less than 1 per cent of the world’s population, the country is responsible for just under 2 per cent of total manufacturing output, according to the United Nations, putting it number 11 in the league table by output. In the conditions that now prevail in world manufacturing, Britain is full of people with the attributes required to succeed. The essential ingredients include a broad mix of engineering and design skills, an interest in innovation, an ability to think globally across disciplines – and, importantly, a certain cussedness and willingness to swim against the tide.

This relatively upbeat way of looking at the UK is reinforced by an unusual and ambitious survey of its manufacturing earlier this year by a group of photographers from the Magnum agency. Although they visited many household names – including UK subsidiaries of leading international companies such as Siemens, the German engineering conglomerate – they also discovered that some of the best performers are little-known enterprises such as BCB, a

Cardiff-based maker of camouflage nets and survival equipment for soldiers. While many of the companies are in niches of familiar sectors such as textiles, others make items that are esoteric, such as medical gadgets or industrial sensors. A link between virtually all the product fields is that individual items are fairly easy to alter – or “configure” in the technical argot – so that they match the requirements of the user. This fits in with the idea that the ability to efficiently – and relatively inexpensively – “customise” or “personalise” goods of many types will be one of the key traits of 21st-century production.

The patron saint – at least in Britain – of this new type of manufacturing is Sir David McMurtry, the long-standing chairman and chief executive of Renishaw. The company, founded by McMurtry and John Deer, now deputy chairman, in 1973, employs more than 1,200 people in Gloucestershire. It is the world leader in making touch-sensitive probes that monitor with extraordinary accuracy the performance of machine tools and are, therefore, crucial to virtually every type of global production, whether a gas turbine plant in Shanghai or a car factory in Stuttgart. For all the technological excellence and world-beating position of these highly complex measuring devices, most consumers have never seen one, and know very little of the people who produce them.

Another UK business blazing the trail for the new shape of manufacturing – and which likewise makes things virtually impossible for the non-technical person to visualise – is AES Engineering. This Rotherham-based enterprise – run by Chris Rea, a determined and contrary former economist – makes mechanical seals in thousands of variations for ensuring machines in factories making anything from chocolate to chemicals work effectively.

By contrast, among companies making far more recognisable objects but which again fit into specialist sectors of global production are Calder Textiles in Yorkshire, which produces specialist yarn, and Princess Yachts of Plymouth, one of the world’s leading producers of luxury leisure craft. Frank Baines in Walsall combines modern ideas in design and leather-cutting with 300-year-old craft skills to make saddles and other riding accessories in a huge number of variants.

A feature of many of these leading companies is that they have frequently needed to use a mix of disciplines – combining a range of technologies and often blending service thinking with manufacturing capabilities – to survive and prosper during the economic difficulties of the past 20 years. An outstanding example is Aardman Animations in Bristol, which runs a specialist model-making workshop and uses this as the key element in creating highly successful films based on computer animation, among them the *Wallace & Gromit* series.

Touch Bionics, another small company, tucked away on an industrial estate in Livingston, near Edinburgh, is a world force in making replacement human hands. Apart from “tailored” prosthetic devices based around an amalgam of electronic and mechanical engineering, the company offers counselling services for customers

who have suffered a traumatic injury or a lifelong birth defect. This customer-support function is a vital part of what this and similar businesses do and without which the manufacturing parts of their operations might be difficult to sustain.

Britain’s car industry has been reshaped in the past decade through foreign owners using a blend of UK engineering skills to create niche types of high-end vehicles suited to a global customer base. A good example is Nissan of Japan, which runs the UK’s biggest automotive plant, in Sunderland. It turns out models such as the Leaf electric car and the Qashqai small sport utility vehicle that are some way from the mainstream of global automotive production. Meanwhile, another noted success story in UK industry is the Formula 1 racing business. This relies on a hybrid mix of manufacturing and service skills to create exotic high-speed vehicles. It also acts as an incubator of technologies that often have uses in other sectors.

It would be foolish to pretend British industry is without problems. The sector would benefit from more large and recognisable UK-owned companies that could act as national standard bearers. Such companies – apart from a few such as Rolls-Royce, BAE Systems, JCB and GKN – have largely disappeared as a result of management mistakes and foreign acquisitions. The successful companies that survive spend heavily on technology and are, almost by definition, global. Just as important is that their presence reminds the rest of the population that manufacturing may have a decent future. Therefore, they help to draw in new employees to the sector, especially among young people. Many of the smaller companies that now characterise UK manufacturing are short of both capital and skilled workers – a measure of the lack of attractiveness of the sector over much of the recent past.

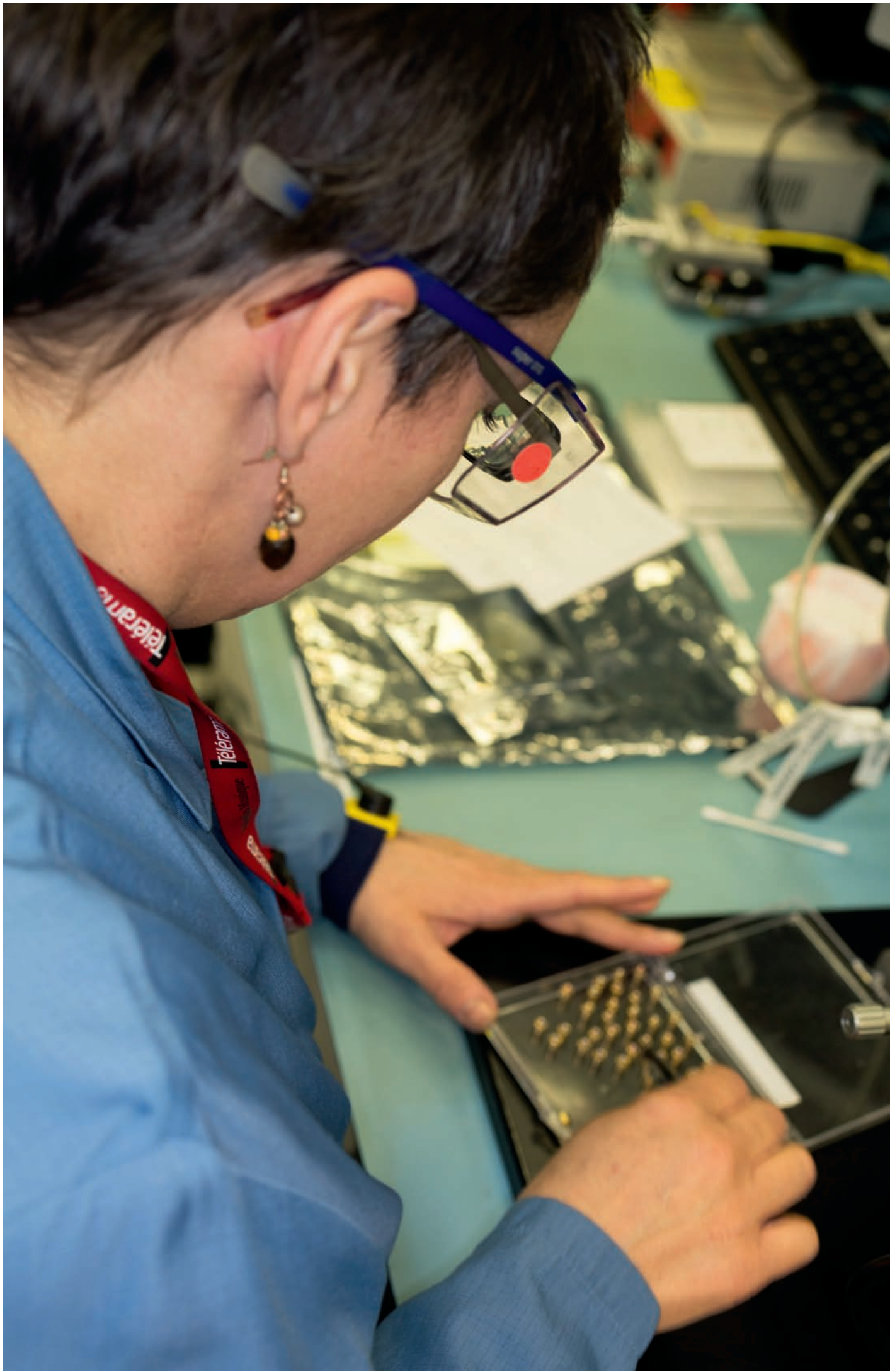
But even given these more negative factors, an analysis of UK industry’s current position encourages optimism. It is noteworthy that China – now the world’s biggest manufacturing country by output – is alive to the new factors required for modern-day industrial success. The country realises that the essential elements of its strong manufacturing growth record of the past 20 years, based on cheap labour and modest infusions of technology, mainly from non-Chinese companies, will be insufficient to cope with the pressures of the coming era. This means learning from nations such as Britain that, to some degree, are already moving in step with the changes that will be needed. In the past few years, successive UK governments have woken up to the key economic role of manufacturing – another reason to be moderately hopeful about the sector’s future. Having endured a century or so in which progress has been almost entirely downhill, British manufacturing is in a good position to start revving up. **FT**

Peter Marsh is the author of “The New Industrial Revolution: Consumers, Globalization and the End of Mass Production” (Yale University Press; Chinese edition published by China Citic Press) and the FT’s former manufacturing editor



Previous pages **Nissan, Sunderland**
Workers on the Qashqai production line.
Photograph by Mark Power

Right **Aardman Animations, Bristol**
One of the studio’s most popular characters, The Farmer, from the BBC series *Shaun the Sheep*, gazes at a portrait of The Shepherdess.
Photograph by Martin Parr



**MARTIN
PARR**

I love to photograph people at work. There is a real challenge in capturing that strange love/hate relationship we have with our jobs. Depending on the work and the people doing it, the balance of that relationship changes but there is always a degree of tension as well as satisfaction and I am looking for ways to express this in my pictures.

What a chance, then, to visit a range of factories and try to show the current state of British manufacturing. I worked around Bristol, my local area, where we have GKN, Airbus and Rolls-Royce, and I photographed one of BAE's research sites in the city. But really I wanted to see their nuclear submarine yard in Barrow-in-Furness.

So a couple of months later I walked into what must be the biggest shed in British industry, where two nuclear subs were slowly being assembled. It was quite a sight to behold – the man shown striding across the floor gives some indication of the scale.

Renishaw, based in Gloucestershire, is a real success story. Founded in 1973 by two ex-Rolls-Royce employees, it has filled the niche for precision engineering, much of which is applied to the medical industry, and is now a global company. Renishaw invests heavily in research and development, which keeps it well ahead of the pack.

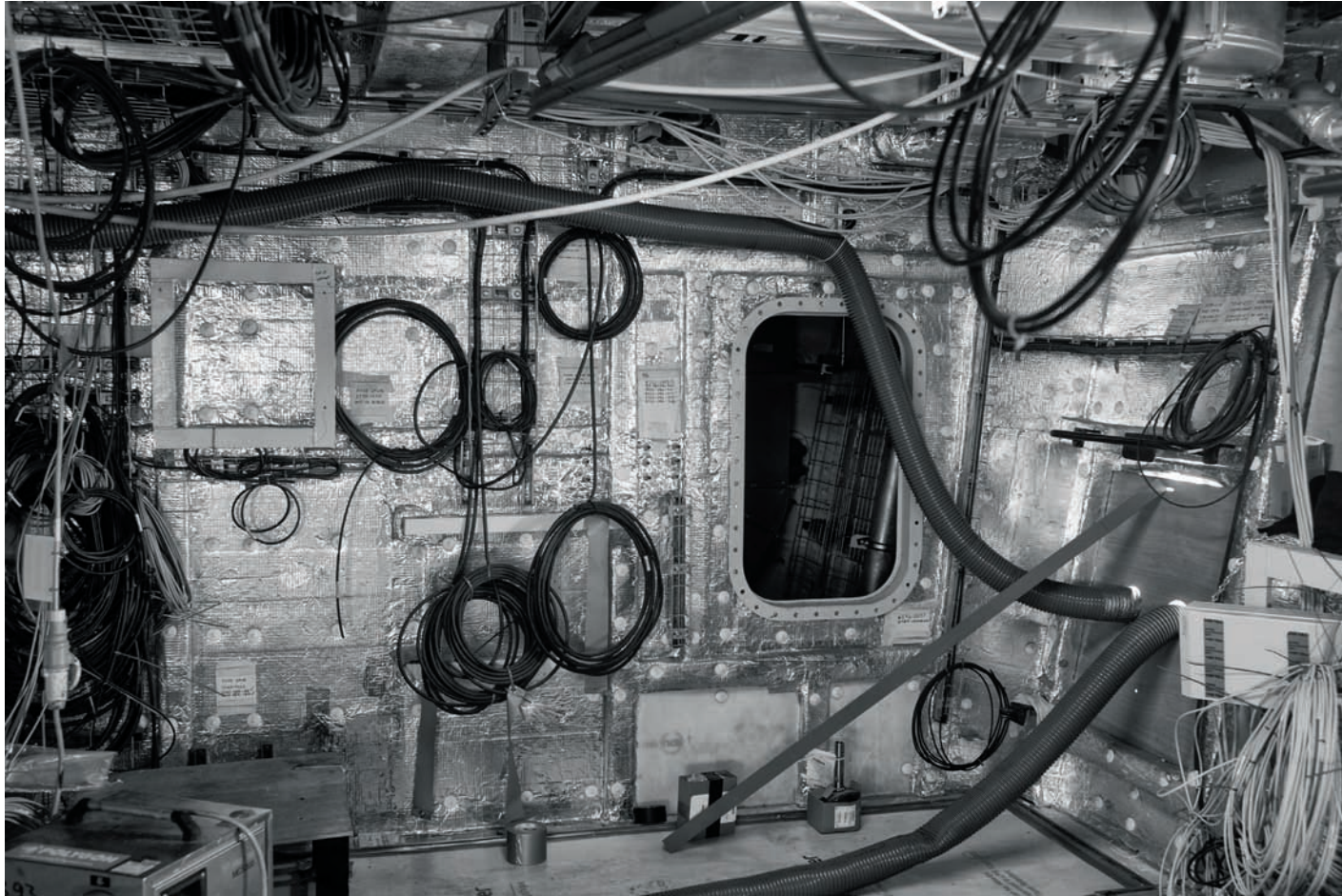
I have watched Aardman, one of Bristol's most famous companies, grow exponentially during my time living here. I knew David Sproxton, one of the founders, long before he started up and before *Wallace & Gromit* took the world by storm. Watching the filming in their studios is fascinating, as the progress is so slow – getting five seconds of animation done in a day is really going it.

Left Renishaw, Wotton-under-Edge, Gloucestershire
Workers on the assembly line at the precision engineering plant

Facing page, top BAE Systems Maritime, Barrow-in-Furness
The shop floor of the huge construction facility, where nuclear-powered submarines are built for the Royal Navy

Right Aardman Animations, Bristol
Richard Molden, a rigger, on the set of *Shaun the Sheep*. A *Shaun* movie is due in 2015. Details of the plot have not been revealed but it is reported to be a "city-based adventure"





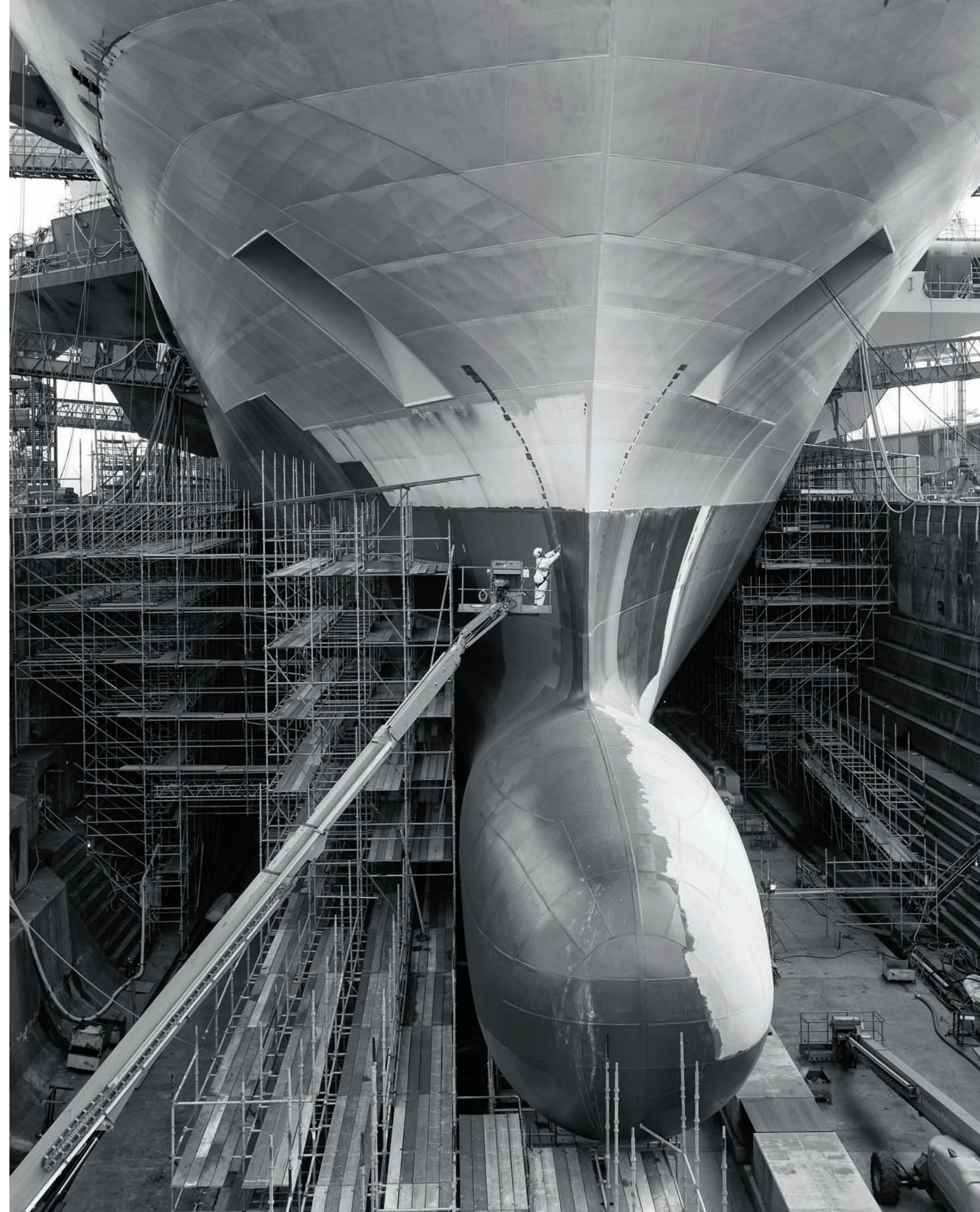
STUART FRANKLIN

The sea, the coast and port towns have always interested me. Some of my early photographs were taken in La Libertad, El Salvador, of banana boats being unloaded. I was 19. Three years later, as a student in 1978, I documented the switch from general cargo to container shipping, crossing to New York on the SS Atlantic Conveyor with Captain Ian North DSC. Four years later "Captain Birdseye", as he was known, was one of 12 crew members of the requisitioned container ship to perish after an Exocet missile attack during the Falklands war.

In 1986, I witnessed the last ship to be launched on the River Tees by the Smith's Dock Company before it folded in 1987. The workforce and their families stood behind ropes on the quayside, gazing up at the bunting. The moment passed with so little note that the event failed to make the evening news. Smith's had built the second world war anti-submarine convoys described in ►

Above **Rosyth Naval Dockyard, Fife, Scotland**
One of the high-tech computer consoles being installed beneath the bridge of the HMS Queen Elizabeth – one of two new aircraft carriers being built by Aircraft Carrier Alliance, a partnership between Babcock, BAE Systems, Thales UK and the UK Ministry of Defence

Right **Rosyth Naval Dockyard**
The bulbous bow of HMS Queen Elizabeth



◀ Nicholas Monsarrat's *The Cruel Sea*. Later, I documented the break-up of the Tyne shipyards and those on the Clyde.

So, offered the chance to document British industry in 2013, I opted for shipbuilding. The only significant sector remaining in Britain is government-funded and the biggest project by far, employing 10,000 people and costing more than £6bn, is the Queen Elizabeth Class (QEC) aircraft carrier construction at Rosyth, on the Firth of Forth. Arriving there earlier this year I found a world of predominantly white men toiling away night and day in a dry dock on a huge ship, then retiring to shoddy, pebble-dashed houses above the yard. It was a scene from the 1950s: men in blue overalls coming and going together in large groups to work, to eat or to rest.

It was most interesting to photograph at night, since much of the work was happening on the flight deck, theatrically lit and visible from the dizzy height of an overhead Goliath crane. From there, at least, the ship looked like an aircraft carrier. The size of the vessel was always a challenge to convey: small figures painting the hull gave a sense of scale. My abiding memory will always be of the disparity between the vessel as work camp – all steel, air and shuttered cable – and its future role after 2017 as a warship, carrying fighter jets off to battle.



Right Rosyth Naval Dockyard
The flight deck of the aircraft carrier illuminated at night



JONAS BENDIKSEN

I didn't know much about Bradford or wool before I went to photograph there. I knew this was the birthplace of the industrial revolution, and being from weatherworn Norway I wear a lot of wool. But for me this was about exploring something new.

I was pretty apprehensive, as I often find it very difficult to photograph industry and manufacturing. Modern facilities are mostly incredibly sterile. It's not great fun to photograph people in a clean room, monitoring an automatic process on a computer screen. I figured I had to be prepared to find a way round this.

But when I walked into my first mill, William Halstead, I quickly realised that I was wrong. The old buildings were filled with tangible history and the mills themselves were populated by a great cast of characters, many of whom had spent their entire working lives in them. I was intrigued by how much the processes of weaving, scouring and dyeing wool had a very human touch to them, and I was fascinated, too, by how much it all resembled what wool production must have looked like 100 years ago.

There is always something alluring about seeing what goes into producing the things we consume. Often there is an ugly truth to the production that we don't want to admit to. But in the mills I was struck by the innately beautiful nature of the processes. There was something mesmerising, even hypnotic, about all the steps the wool goes through before it turns into cloth.

Right Calder Dyeing, Dewsbury, West Yorkshire
Trevor Wroe lifting dyed wools into the drying machine. Now in his sixties, years of manual labour and workouts have given him the appearance of a man 30 years younger

Opposite page, top Abraham Moon & Sons, Guiseley, West Yorkshire Carding machines. Abraham Moon is one of the only wool mills left in the UK that undertakes all stages of production through to weaving

Far left William Halstead, Bradford, West Yorkshire
The production of fine mohairs and worsted yarn, though done on automated machines, still depends on human skill

Left Calder Dyeing Many of the mill buildings are steeped in history. I could feel years of chemicals, sweat and work in the atmosphere – like in this wall-mounted gauge, half-covered by corrosion



MARK
POWER

Photographers have often used “work” as a subject. The American photographer Lewis Hine, for example, campaigned against child labour at the beginning of the 20th century before, years later, celebrating the men who constructed the Empire State Building. In prewar Germany, the great August Sander made portraits of every type of worker he could find.

Even today, many photography colleges set “man/woman at work” as an early project, asking students to describe a particular job through a single picture. This is much more difficult than it may sound; a photograph might superficially illustrate a process, even aestheticise it, but it struggles to show toil, danger, heat, cold, boredom – or even skill. Instead it exposes the inadequacies of the medium: what it cannot do.

That said, when I learnt I’d be photographing in the Bombardier train factory in Derby, I was excited. Not because I have a peculiar affection for engines (I don’t) but because it sounded like an interesting place to see.

I began by visiting the great photographic archive held at the National Railway Museum in York. Its collection of images of the Derby Works (as it was then called) show, in epic scale and detail, a dark and grimy Victorian world of steam engines. Great steel monsters are surrounded by an army of tiny, ant-like men.

Starting with the archive was a mistake. I knew the modern site wouldn’t look ►

Right Bombardier, Derby
Fitting a complex electrical wiring system into a train carriage

Facing page, top left
Working in the office at Bombardier

Facing page, top right
The paint-spattered overalls of an employee on the shop floor

Facing page, bottom
The office floor at Bombardier is a large open-plan space, with the usual assortment of pot plants and electrical wiring. Looking beneath the desks for a new angle, Power came across this shoe: “I was nervous that the fellow in the shoe would stop me taking the picture or put his foot flat to the floor but, thankfully, he played along”





◄ the same but I was still a little disappointed to discover how clean and tidy it actually was. When times are good (and they aren't always), the factory in Derby produces approximately one train every day.

The production line is long and slow-moving; it's certainly not spectacular. So, as well as trying to make pictures, we made recordings of schmaltsy, girly pop music booming out of greasy, paint-spattered radios turned up far too loud, incongruous in such a male-dominated space. They will add a layer of sound to the pictures when they are used in the exhibition.

My last two days were spent at Nissan, in Sunderland – the biggest car plant in Europe. Now this *was* spectacular but, again, my camera failed to get anywhere near the real experience. Moreover, what my photographs don't say is that I liked these people and was grateful for their friendly openness and willingness to be photographed. I became a little wiser about the intricacies of making trains or cars, but not very much. All I can ever do is try to make pictures I want to look at. It's enough for me.

Camira Fabrics, Mirfield, West Yorkshire At the filing cabinet. Holdsworth Fabrics, part of the Camira Group, has been making custom-designed fabrics for rail carriages for over 150 years

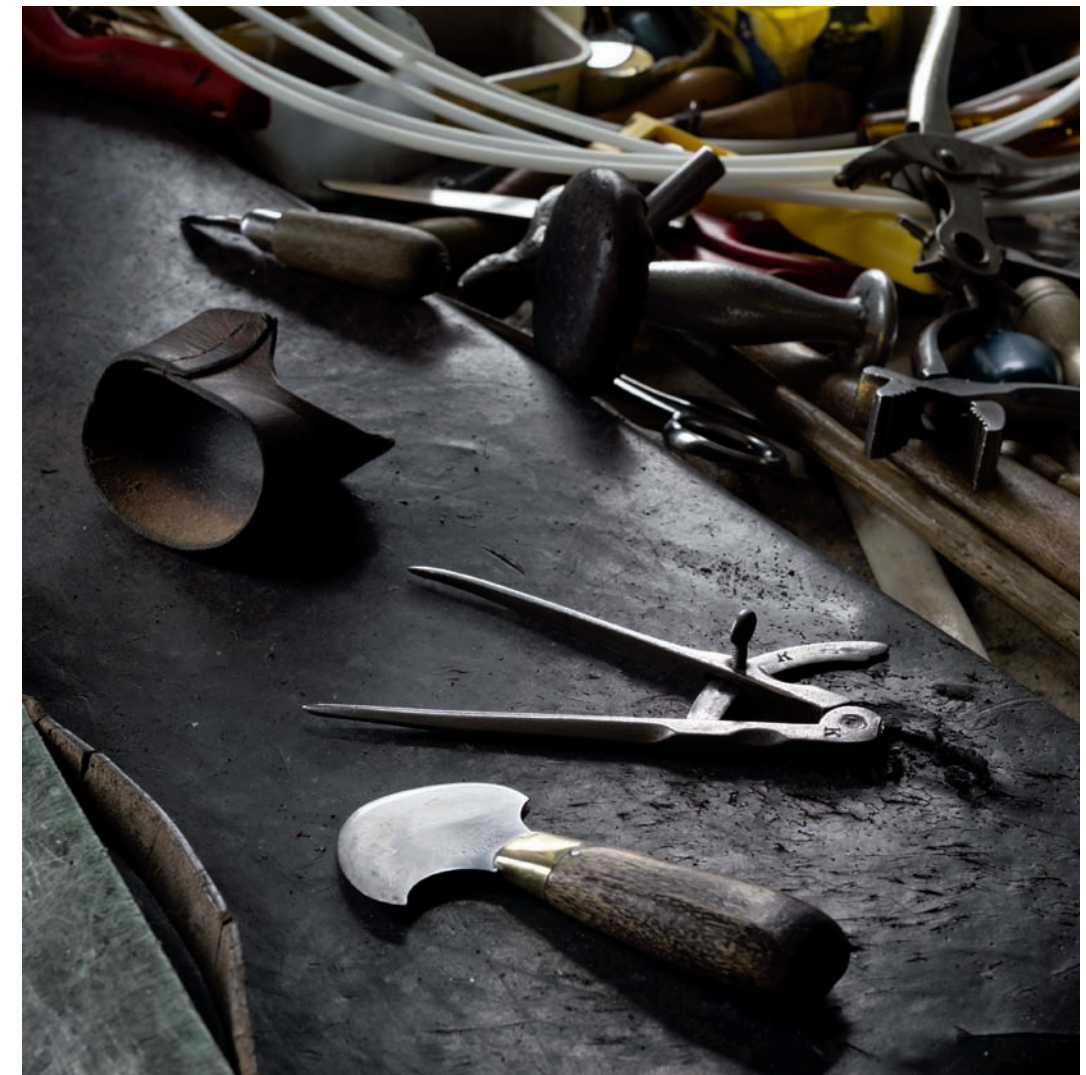


PETER MARLOW

In the course of this project, I visited 20 or so companies and always searched for elegance, beauty and a nice light within highly varied and often unstructured environments. I was initially attracted to the more traditional processes, which were visually arresting but were also the source of much dull and repetitive work.

At Frank Baines's saddlery in Walsall, though, there was no need for a production line. The small team – Frank, his son Garry and daughter Victoria included – works on individual saddles for which they are personally responsible. I was amazed at the quality of the final products, made entirely by hand, with what looked like very rudimentary, but very sharp, tools.

In the steamy and spotless mixing area of Panesar Foods, the small team of mostly Polish workers was making barbecue sauce. The ingredients were being poured into a vast stainless-steel cooking pot and the final mixture pumped via a 4in stainless-steel pipe to the next-door bottling plant. Panesar started as a family business in 1992 and now produces a range of more than 750 speciality foods and sauces.



Left **Panesar Foods, Tipton, West Midlands** A food-processor operative, Rafal Joppeck, waits while molasses, spices, brown sugar, salt and vinegar are mixed and heated to make a supermarket own-label barbecue sauce. Joppeck, 37, is Polish and has worked at Panesar for five years

This page, top **Frank Baines Saddles, Walsall, West Midlands** Patterns for clients' saddles are all stored as a record of each unique, made-to-measure item

Right **Frank Baines Saddles** A selection of traditional tools on saddle-maker Simon Woolley's bench. He has been with the company for more than 20 years and is accountable for the quality of each saddle he produces



CHRIS STEELE-PERKINS

I'd expected more automation – robots with a few supervisors – but the places I visited around Plymouth still required a lot of labour, much of it skilled and a surprising amount of it from eastern Europe. I jumped around the food chain, from Tideford Organics – where they have been making soups and pesto sauces and dreaming up new recipes since 1966 and still taste everything themselves (I took part in a soup tasting, which was delicious) – to Westaways, a family business whose owner, Charles Baughan, calls himself as “a sausage evangelist”. His plans for the future include selling sausages from a handcart outside the Houses of Parliament, converting the Chinese – he accompanied David Cameron on his trade mission to China last year – and continuing his search for the secret of keeping cooked sausages straight.

At Princess Yachts, they make the kind of boats that Bond villains – and no doubt some fine, upstanding people, too – like to be seen in. The company has acres of buildings to make the boats in and acres more in which to stack, cut, polish, paint wood and plastic panels and store screws, hooks, handles, pipes, switches, windows, wires and bulbs. While the fundamental structure of its 72ft yachts remains fixed, they are usually extensively customised inside to provide the space and finish the owner requires. Luxury is selling well these days.

Left **Princess Yachts, Plymouth**
Four employees peering, at my request, through one of the many plywood panels that go into a luxury yacht

Top right **Westaways Sausages, Newton Abbott**
Charles Baughan, the owner of the company, testing his prototype straight sausages inside his roadside van, which was still under construction

Right **Tideford Organic Foods, Totnes**
From left: James Glenn, Dave Perrera, Alex Bowers and Steve Treston. This is the bottling room where the soup is put into plastic pots. The process is mainly automated but pots are regularly checked and weighed by hand





DAVID HURN

I have spent more than two-thirds of my working photographic life based in my home country, Wales. It can be a very joyous country; it can be very depressing. I have documented the annihilation of the coal industry and the more-or-less decimation of steel – so many put out of work, so many still out of work. But I wanted to be positive, so I chose small industries based on individual skill and craft, which, experience has taught me, usually bring with them job satisfaction and quality goods.

Who could not be enchanted by a firm set up in 1892 by the present owner's great-great-grandfather, a miner who suffered from cold feet, to sell socks to other miners in the area? Corgi Hosiery now has more than 50 skilled workers, some of whom have been there for over 50 years. They make socks of the highest quality, among them the Corgi Regimental Collection, commissioned by the Prince of Wales for the regiments of which he is Colonel-in-Chief. For every pair sold, a donation goes to the charity Combat Stress.

Alison Tod makes hats, but what hats! Each one is hand-made, each a production of creative inspiration. I would class her as a sculptor.

BCB started out selling cough medicine under the name "Dr Brown's Cough Bottle" to soldiers in the Crimean war. Now the company specialises in survival products. Their patented Blast Boxers offer soldiers Kevlar protection to the groin area from buried improvised explosive devices and have proved invaluable in reducing injuries. They also produce camouflage face paint, insect repellent and sun cream.

Left, top and centre Alison Tod Milliners, Abergavenny Women wearing Alison Tod's creations at the Vale Resort near Cardiff. Distinctive boxes for Tod's couture hats

Below left BCB International, Cardiff The company's camouflage paint compact, which is supplied to the Ministry of Defence and is standard issue to armed forces worldwide

Facing page, above and right Corgi Hosiery, Ammanford The cavernous room is full of machines, some automated but most manually operated by workers who live within a five-mile radius. Socks from Corgi's Regimental Collection (from left, the Welsh Guards, the Mercian and the Queen's Own Yeomanry regiments)





ALESSANDRA SANGUINETTI

I never tire of observing others, looking out for clues to their lives. Photography acts as my official permission to do this and not be punched. Walking into the manufacturing world, faced with the impersonal rows of desks, computers, machinery, fluorescent lighting and the fast pace of production, I chose to isolate people and their work, visually, separating them from their surroundings. They would be the focus of attention and I had an excuse to have them stop working long enough for us to meet eye to eye.

One common thread within these very disparate businesses was the way people seemed at ease and proud of their tasks. Whether it was welding custom-made industrial filters or research on the strongest material in the world, there was a matter-of-fact, getting-on-with-it approach to the job and a cheerfulness that seemed uniquely British. This manner was contagious and made me do my own strange job (observing other people doing theirs) in the same way. I carried on, snooping into people's cubicles with a foolish smile, always welcomed by a laugh.



Top left **Siemens, Congleton, Cheshire**
Trudi Madden is a cashier at the plant's canteen, which supplies meals for the 500 employees there

Left **Croft Filters, Risley, Cheshire**
Dan Travis started at Croft Filters as a trainee when he left school, and now, eight years later, has risen to the position of engineering production supervisor. Croft, based near Warrington, has been in business for 27 years, designing and manufacturing metal industrial filters for sectors worldwide

Right **2-DTech, Manchester**
Branson Belle is head of graphene research at 2-DTech, a University of Manchester spin-out company. Graphene, first isolated by peeling layers from a stick of graphite with sticky tape, is the thinnest, strongest and most conductive material in the world



"Open for Business" is a collaboration between Multistory and Magnum Photos, funded by Arts Council England and nine UK cultural institutions. A nationwide touring exhibition with work from all nine photographers opens at the National Media Museum, Bradford, on January 31. For further details about the project, including tour dates, please visit www.openforbusiness.uk.com