

1885-**AVON**-1985

IN PURSUIT OF EXCELLENCE

*This brochure is dedicated to the many people, past and present – employees, shareholders, suppliers and customers, whose efforts and support have enabled Avon to celebrate its centenary.*



# One Hundred Years



The birthplace of Avon Rubber was in a small, near derelict cloth mill, known as Avon Mill, on the banks of the River Avon at Limpley Stoke, Wiltshire, a few miles from the historic city of Bath.

In 1875, having been first converted to a flour mill, Avon Mill manufactured articles made from rubber and was in business for ten years. It was acquired in 1885 by Messrs E. G. Browne and J. C. Margetson and Avon was born.

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SALISBURY

1885 was also the year in which Gottlieb Daimler invented the internal combustion engine, which in the following year powered the first motor vehicle. The event was to have a major effect on the development of both Avon and the world's rubber industry.

The new enterprise employed 20 men and the equipment included an engine, a boiler, two 60-inch calenders, two mixing machines, three heaters and four presses.

The earliest orders were obtained from the War Office and the India Office, railway companies, wagon works and collieries.

For the first time a motor car was allowed to travel on the highway without a two-man crew and a pedestrian preceding it – the celebrated 'red flag man'.

*Autocar* magazine proclaimed "This marks the throwing open of the highways and byways of our beautiful country to those who elect to travel thereupon in carriages propelled by motors, instead of in horsedrawn vehicles or upon bicycles."

In March 1897 the opportunity for developing pneumatic tyres was discussed by the directors – an interesting example of anticipating a market need, when it was subsequently revealed that there were less

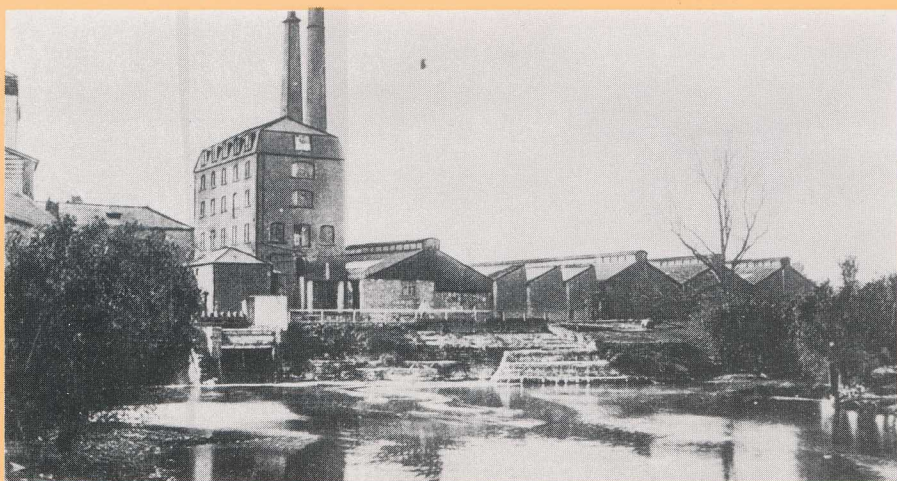
In 1902 three new mixers were purchased and nearly three acres of adjacent land acquired for expansion. The mechanical shop was extended and new spreading and waste-grinding shops were built. A new boiler and chimney were also erected.

In July 1902 The Society of Motor Manufacturers and Traders was founded with 50 members. The first Motor Show under its auspices was held at Crystal Palace in 1904, the year that Avon became a member.

In 1903 the first set of 29 beaded edge motor tyre moulds was ordered. By then the three main product groups were rubber components for railways and electrical engineering work, solid tyres and pneumatic bicycle tyres.

The year 1906 was a milestone in the development of the company – sales exceeded £100,000. Avon car tyres were advertised for the first time – in the magazine *Autocar*.

Cycle tyres were selling particularly well and one order from Rudge Whitworth was for 23,000 covers and 40,000 tubes. At the same time an order was won for 10½ miles of window strip. The managing director's diary records: "60 miles of orders. Not bad for today!"



The Avon Mill, pictured in 1907.

The business proved so successful that additional space was needed, so in 1889 the partners bought a derelict cloth mill and land at Melksham, (bounded by the same River Avon), the site of the present factory and headquarters. In 1890 it was decided to move the existing business to Melksham and to form a limited company to be named The Avon India Rubber Company.

The prospectus included a message that "The adoption of India Rubber appliances in all branches of trade is increasing daily . . . and there is every reason to believe that the company will become even more financially successful in the future." The public company began business on October 1 1890 – when it had a workforce of 20 men and four women.

The men worked a 12-hour shift from 6 a.m. and the women an hour less from 7 a.m.

Solid tyres were made in the new premises and other major products were rubber components for railways such as springs, buffers and vacuum brake pipes.

Sales for the first year amounted to £15,265 and wages to £1,065. The profit was £496 18s 4d.

November 14, 1896, was known as Emancipation Day in the motor industry.

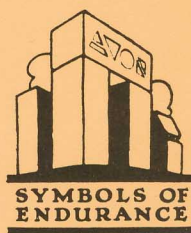
than 50 cars of British make on the roads.

As early as 1899 the company had built up a substantial trade in carriage tyreing and pneumatic cycle tyres.

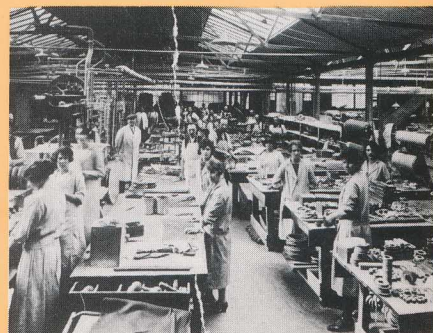
In 1900 the Melksham plant, premises and stock was valued at £7,700 – plus an additional £1,500 for three boilers.

The buildings then included a general mechanical moulding department, pneumatic tyre shop, laboratory, compound stores and warehouse. The site included: "A stable which housed Mr Margetson's pony and trap and a rough garden with a summer house, where he also kept a boat which came in useful during floods."

In 1901 a new pneumatic tyre shop was built and cycle tyre production had risen to an output valued at £1,000 per week.



The original Avon logo featured the Trilithon (Stonehenge) symbol.



Making up tables in the open cure department.

The workforce now numbered over 300. Site improvements included a new compound and rubber stores and a new telephone system. A small depot was opened in London at 31 Brook Street.

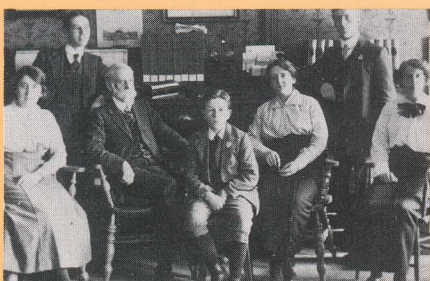
1908 was a good year for the company. Sales increased to £145,000 with a profit of £24,285 – this nearly doubled the previous record established in 1907.

On July 31, 1908 the Trilithon (Stonehenge) trade mark was registered with the phrase "Symbols of Endurance." It was explained thus: "The adoption of this noble and historical trade mark was decided upon in full consciousness of the high standard of excellence which such an emblem implied . . . because Avon products, in addition to other noble characteristics, possessed in a remarkable degree the two skills of strength and durability."

When a correspondent from the *London Times* visited Melksham in June 1914 he wrote: "A magnificent all-British business has been developed here from small and humble beginnings into full maturity. Established as a private family concern, it has thrived and prospered to a truly amazing extent. The Melksham factory employs more than a thousand hands . . . the output of the motor tyre department is enormous."

The outbreak of World War One almost coincided with an important and completely successful artillery transport test, organised by Earl Fitzwilliam. It involved 14 high-powered cars, all equipped with Avon pneumatic tyres, which moved a battery of heavy guns at 21 miles per hour without mishap. At the time it was noted: "As this epochal demonstration was carried out under direct War Office supervision, it is not surprising that throughout the war Avon tyres were largely used by all branches of H. M. Services."

In every theatre of war and under conditions of unprecedented severity, Avon tyres performed outstandingly well on naval and military bicycles, motorcycles, cars, lorries, aeroplanes, ambulances, travelling workshops, and mobile field kitchens. In order to conserve its productive capacity and to ensure adequate supplies of its products, Avon output was controlled by the Ministry of Munitions from November 1, 1915.



*Avon office staff, 1920.*

Within the first year of war being declared, over 300 Avon employees had volunteered for duty – and the number serving in the Armed Forces on Armistice Day 1918 was 566.

In 1915, the company took over the Sirdar Rubber Works at Bradford-on-Avon, adding some 300 more workers.

Apart from tyres, practically all Avon's output in the war years was directed to munitions of all sorts. These included suction and delivery hose for draining the trenches, fuse cap protectors by the million, and tubing of various types.

The Admiralty was a particularly large user of Avon products and in 1914 called for some 40 tons of rubber sheeting and 20,000 ft of hose and tubing. Avon was

the leading manufacturer of paravane diaphragms used in minesweeping operations.

It was in the Avon laboratories that petrol resistant tubing was evolved for the Air Ministry. This was so markedly superior to any other material that, with Avon's consent, the formula and processes were divulged to several competitors so that greater output could be obtained quickly to aid the war effort.



*Tyre production in 1926.*

Towards the end of the war the dwindling strength of skilled male workers created serious difficulties and occasioned much improvisation. However, it was noted that: "Women and girls stepped gallantly into the breach and performed with loyalty and efficiency many jobs which hitherto had been looked upon as suitable only for men."

In November 1917 Avon's Works were visited by His Majesty King George V, accompanied by Queen Mary, who showed themselves keenly interested in the various processes they inspected and also in the welfare work organised under lady superintendents.

Throughout 1919, men were returning to their pre-war jobs from all parts of the world. Before the end of the year, the number employed by Avon at Melksham had increased by 50 per cent.

Melksham House, a beautiful old mansion standing in delightful grounds, was purchased as the company club and sports centre.

Its purpose was explained thus: "The Company have always been very considerate with regard to the social welfare of their employees. The grounds have been laid out for playing fields for all kinds of sports. The house provides a canteen, theatre, and rooms for meetings, games etc. These attractions promote a great *esprit de corps* and tend to produce good feeling among all departments."

Increased production and expansion was the keynote of the early 1920s, and at Melksham several new ferro-concrete factory buildings came into use.

In 1921, the first tennis ball was made at Melksham and within a year thousands

of dozens weekly were being sold through the famous house of Wisden. The Avon tennis ball was the first to be mass produced in stitchless form.

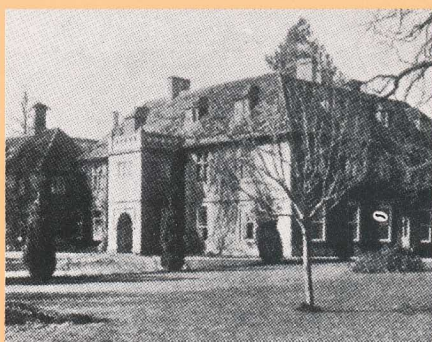
Then came the Great Slump – which provided a most decisive test of Avon's strength and resources. The years 1920-24 were weathered with unimpaired vitality.

Development had gone steadily forward; no building operations had been suspended; and modern plant had been installed wherever needed. For example, when the cord motor tyre came into being, Avon were amongst the earliest British makes to find favour with the motoring public.

It was said of the company at the time: "Avon has never been afraid to pioneer and its plant today is unquestionably modern and complete. It was among the first of tyre-making firms to adopt Doughty presses for cycle tyres, to build machine-made motor casings and to use the watch-case type of vulcanisers for the speedier cure of car and motorcycle tyres.

"Mighty mixers and calenders are in use, capacious presses and ovens of the latest type are available throughout the shops; and steam and electric power is adequate everywhere."

To take advantage of the opportunities provided by Great Britain's decision to depart from the Gold Standard, a major export drive was launched in the early 1930s with great success.



*An early shot of Melksham House.*

In 1933 Avon shares were issued on the London Stock Exchange and in the same year Avon tyres were chosen for the first time as original equipment for Rolls-Royce cars.

In 1934 there was a strike – lasting six weeks – which completely closed the Melksham site. A major role in the eventual settlement was played by a then union official who went on to hold high Government office, Mr Ernest Bevin. One of the benefits resulting from the dispute was the subsequent formation of the company's Joint Works Council and the creation of open lines of communication between the management and workforce.

In 1936 the Joint Works Council came into being and represented a workforce now numbering 1,331.

With the outbreak of World War Two in 1939, Avon together with other rubber manufacturers engaged its resources in a concerted war effort. Supplies of natural rubber were minimal following the loss of the plantations in Malaya and Indonesia, and new formulas and techniques had to be developed to use the early forms of synthetic rubber.

The factory worked to full capacity to meet military demands and many millions of gas masks were produced at Melksham. Amongst many new developments was the bonding of rubber tyres to steel for tank wheels – details of this process being made known to other companies to aid the war effort.

In October 1941 Queen Mary visited the Melksham factory, where it was noted: “close to 2,500 men and women are now employed.”



*Gas mask finishing during the Second World War.*

At a meeting at Melksham House in December 1941, 150 women from the town and district responded to the appeal by the company to discuss plans to employ women in part-time war work. It was said that those volunteering would be capable of earning one shilling per hour.

In 1942 Avon opened work centres which were set up so that women could put in as many hours as they could spare.

The war years saw the creation of some stirring and patriotic advertisements. In 1940 the company stated: “Since 1885, through crises and wars, depressions and good times, Avon has continued to contribute its full share towards the evolution and development of tyres and general rubber goods. Today, the company is proud to use its resources in furthering the common task. The demands of His Majesty’s Government receive absolute priority.”

In 1941 an Avon advertisement depicting a knight crusader on horseback declared: “We believe that nothing avails if tyranny prevails. That no sacrifice is too great, no cost too high, to ensure victory and freedom. The Avon workers and management are striving to produce the

goods the Nation needs and to maintain the highest degree of quality.”

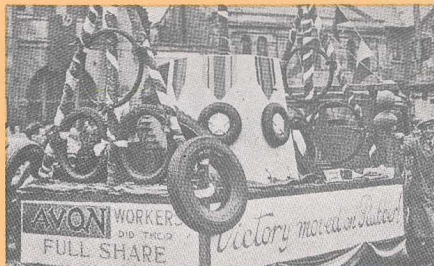
In 1942 an Avon campaign was based on Winston Churchill’s famous question of the Germans: “What sort of people do they think we are?”

Referring to the struggle of our seamen manning both naval and merchant vessels, the copy continued: “Every article you do without helps to reduce his work and his risks. So save paper, save rubber, save everything to win. Use your tyres as little as you can . . . and never misuse them!”

Throughout the war years turnover and sales grew but in the interests of National security, very little was said or published about the work being carried out by the company.

It was not until his report to shareholders at the annual general meeting in December 1945 that the chairman, Major R G Fuller said: “It is now permissible to tell shareholders something of our activities during the war. Of course, tyres formed the bulk of our work, but we also supplied 20 million gas masks and over 6,000 tons of general rubber goods for the Service departments of the Government and the essential services of the country.”

In a celebration carnival in Melksham in May 1946 to raise funds for the town’s “Welcome Home Fund” for returning servicemen, Avon’s prize-winning float proclaimed: “Avon workers did their full share – victory moved on rubber.”



*Avon’s prize-winning float in the May 1946 Victory Carnival at Melksham.*

The post-war years were a period of rapid growth which saw Avon transformed from a single company to a group of companies. In 1951 a footwear factory was opened at Bridgend in South Wales. In 1953 a tyre remoulding factory was opened in Nairobi, Kenya and later extended to take in the production of cycle tyres and footwear components. When George Spencer Moulton and Company was acquired in 1956, the pioneers of the rubber industry in the West of England were united.

Founded at Bradford-on-Avon in 1848 by Stephen Moulton, Spencer Moulton had achieved world renown for the design and development of its products for the railway industry.

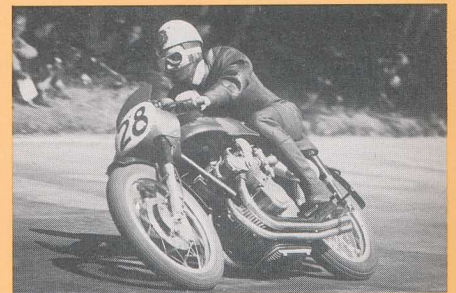
Subsequently, automobile and aircraft

products had been developed, as well as tennis balls. The acquisition included the jointly owned French company, Societe Francaise des Caoutchoucs Spencer Moulton, located in Paris and later moved to its present site in Malesherbes.

It was in 1956 that the Group decided to implement what was then considered to be the largest project in its history – the modernisation and expansion of its complete tyre manufacturing processes. This was successfully carried out over a 5-year period and productivity was increased by 50 per cent.

Also in 1956, Avon acquired J W & T Connolly of High Wycombe, manufacturers of wheels, hubs and axles for the agricultural industry.

In 1957 Avon bought Henley’s Tyre and Rubber Company of Gravesend, Kent and the manufacture of Henley tyres was transferred to Melksham.



*Six times World Motocycling Champion, Geoff Duke, racing on Avon tyres.*

Avon’s entry into the highly demanding sport of motor and motorcycle racing led to a long-lasting association with Geoff Duke and other leading international riders and drivers. In the six years 1958–63 every world solo motorcycle champion chose Avon tyres and many world records were broken by Avon users. The Le Mans 24-hour race and the World Sports Car Championships were won by Aston Martin on Avon tyres.

In 1960 Avon’s continuing dominance of the world motocycling scene was emphasised by John Surtees, who in the Senior TT in the Isle of Man achieved for the first time an average lap speed of over 100 mph. George Brown also set a new world record for the one kilometre standing start on his Avon-shod Vincent Special.

It was in 1959 that work began in Melksham on the development of inflatable dinghies. Manufacture was transferred to Abbey Mills at Bradford-on-Avon in January 1960 and the first range of four dinghies (Redstart, Redcrest, Redseal & Redshank) were exhibited at the London Show of that year.

Footwear production had also been expanded and in 1960 the Bridgend factory was producing 5,000 pairs of wellington boots each week.

The next 25 years of Avon's history were to record dramatic changes in its fortunes.

This period was divided into three distinct phases, each demanding quite different responses to the major challenges imposed by economic and social changes on a global scale.

Firstly, there was a period of rapid expansion in turnover, product range and personnel – followed by a period of economic recession, lasting from 1974 to 1980 and brought about by huge increases in the price of oil.

Latterly, in response to the effects of a further round of oil price increases, came the need to retract, reorganise and rebuild the Avon Rubber Group as it is today.

In 1961, as an era of seemingly unlimited promise continued, few anticipated the desperate problems lying ahead in the 1970s and early 1980s.

Some 5,000 employees contributed their efforts to a product range which was now being exported to 125 overseas markets.

The Melksham plant alone was producing 1½ million tyres annually, and wide acclaim was won by the development of a cling rubber tread compound for car and motorcycle tyres, which provided greatly improved wet road grip.

Expansion was the keynote in non-tyre areas as market leadership was established for components playing a vital part in many industries.

It was in 1963 that the word "India" was dropped from the title which was shortened to Avon Rubber Co Ltd.

By acquiring the Normeir Tyre company, Avon became involved with tyre distribution for the first time. This chain, strengthened by future acquisitions, was to form the basis of the present Motorway Tyres and Accessories company.

Further growth was achieved in 1964 with the acquisition of two companies. These were David Moseley and Sons Ltd, of Manchester, manufacturers of industrial rubber and plastics products, and their subsidiary Capon Heaton, makers of rubber and plastics components and a highly specialised range of medical products.

On August 15, 1966, the Great Fire at Melksham destroyed the finished goods store, in which it raged for many hours and threatened to engulf the whole factory.

It was an event which evoked a remarkable spirit of teamwork. Factory and office workers joined forces with the works and county fire brigades. Chains of employees passed tyres from hand to hand ahead of streams of molten rubber.



*The Great Fire of Melksham.*

The company lost 25 per cent of all its new stocks, plus all moulded rubber products awaiting despatch.

The biggest fire in Wiltshire's history cost more than £1 million but as a result of remarkable ingenuity and co-operation less than two production shifts were lost.

Technically the company faced a development which was to have a major and far reaching effect on the future of Avon – and indeed that of the total tyre industry.

It was in the early 1960s that advances in tyre technology led to the introduction of radial tyres. These gave a far greater mileage than their crossply counterparts which at first they complemented and eventually rendered almost obsolete.

Avon was among the pioneers of radial tyre construction and it was generally concluded that with the major differences in production techniques radials would have to be produced in separate manufacturing units.

As Government restrictions ruled out expansion of the Melksham factory, Avon's new radial plant was sited in one of the designated industrial development areas at Washington, County Durham.

Construction began in 1968, but economic factors and an analysis of the industry's future prospects, resulted in a change of plan and the decision to concentrate all tyre production at Melksham.

The new Washington factory was sold to Dunlop in 1969.

In the early 1970s the decision was made to expand Avon Medicals into the highly demanding business of designing and producing disposable blood transfusion sets and also dialysis equipment for patients suffering from kidney disease.

In 1972 a 33 per cent shareholding was acquired in another specialist company, Lippiatt Hobbs and Co Ltd. This company, based at Westbury, Wiltshire

contracted for and developed pipe sealing systems, particularly for the gas industry. The company was re-named Avon Lippiatt Hobbs.

Avon Industrial Polymers was actively reinforcing its reputation for innovation and technical excellence.

Following the granting of a licence by the National Economic Development Council to develop and manufacture hovercraft skirt components, work had been undertaken with the leading hovercraft manufacturers such as Vosper-Thornycroft and the British Hovercraft Corporation.

In recognition of Avon's contribution to this form of transport, the Department of Trade and Industry awarded the company a contract in January, 1973 to carry out development work on behalf of the hovercraft industry.



*An early Vosper hovercraft equipped with Avon-designed skirt and fingers.*

This had the stated objective of improving the life and performance of skirt materials by at least ten per cent, a target which was greatly exceeded.

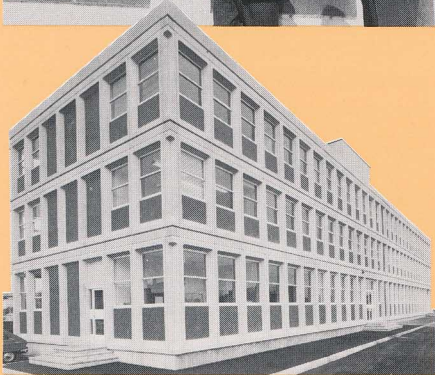
With little evidence of the economic problems ahead, Avon continued to grow and diversify.

In the early months of 1973 a new division was formed at Bridgend, grouping together products such as remould tyres and materials, wheel and undergear equipment, and the marketing of footwear and industrial tyres.

At Melksham, Avon Ames Ltd was formed as the result of a joint venture between Avon Industrial Polymers and the Ames Rubber Corporation of the United States.

Avon Ames designed, developed and manufactured reprographic roller coverings for the high speed copying machines which were quickly becoming an essential feature of modern business life.

Government recognition of Avon's continuing quest for excellence in product design and manufacture was provided in October, when the Minister for Industrial Development, Christopher Chataway,



*The opening in 1973 of the new technical block at Melksham by Christopher Chataway, then Minister for Industrial Development.*

opened the new technical block at Melksham and commissioned a new tyre incinerator and steam-raising unit which was then the most modern of its kind in the world.

At the end of this stimulating period in the company's history, the annual turnover of the Group had risen from £12.9 million in 1961 (profit £482,000) to £53 million in 1973 (profit £2.2 million).

### Recession and change

Suddenly, one major event transformed the fortunes of the industrial and developing countries. The decision by the oil-producing countries to impose massive price increases caused world-wide economic and social crises.

Energy costs soared, together with those of oil-related chemicals and rubbers, transport and other services.

A period of exceptional inflation and economic instability was the inevitable consequence.

Every sector of industry suffered and there were particular problems for the tyre manufacturers. With fewer new vehicles being sold and radials giving a far greater mileage, sales of new tyres plummeted. A serious world-wide over capacity of tyre production resulted and as competition for customers increased, declining profit margins caused severe financial problems.

As each manufacturer sought a route to salvation, Avon's solution was to intensify the search for new products and markets.

Avon Illinois Inc, located in Chicago, was established in May 1974 as a

marketing subsidiary of Avon Industrial Polymers – selling golf grips, aerosol gaskets, milking machine parts and automotive hoses.

The medicals business was providing fresh opportunities for expansion at home and overseas, so in February 1975 a new purpose-built factory for Avon Medicals was opened in Redditch. A joint venture company, Dravon Inc, was established in Portland, Oregon with Drake Willock, pioneers in the manufacture of kidney dialysis machines, providing Avon with a foothold in the large and potentially lucrative North American market.

In September 1977, British Gas awarded a licence to Avon Lippiatt Hobbs to promote the world-wide sales of products and systems relating to the maintenance and sealing of gas distribution pipelines.

The expansion of AIP's automotive hose business in Western Europe was highlighted by an order for three million radiator and heater hoses from Volkswagen of West Germany.

The military sector provided many fresh opportunities for Avon Industrial Polymers and its Bradford-on-Avon factory was the first to be approved to the highest level of Ministry of Defence quality approval – an award eventually won by all AIP divisions.

Despite the effects of the recession, these activities enabled Avon to achieve a record profit of £5.4 million in the financial year ending September, 1977.

As demand both in the United Kingdom and overseas grew for automotive hoses, production was transferred in May 1978 from Bradford-on-Avon to a new purpose-built factory at Trowbridge, the most modern facility of its kind in Western Europe.

In November of that year, Avon Industrial Polymers and the Ames Rubber Corporation formed a second joint venture company, based in New Jersey, USA. Ames Avon Industries began by manufacturing a range of injection



*A.I.P.'s Trowbridge hose factory.*

moulded gaiters for front-wheel drive American motor vehicles.

Also in November, Avon acquired the remaining 67 per cent shareholding in Avon Lippiatt Hobbs, a further example

of the Group's policy of increasing investment in areas where advanced technology could make a significant contribution to profitable growth.



*An Avonseal installation, by Avon Lippiatt Hobbs.*

Avon's mastery of hovercraft skirt technology was underlined in April 1979 with the opening of a new factory at Chippenham. This was soon doubled in size as demand rose, not only for hovercraft skirts but for dry diving suits, containers and other flexible fabrications.

In 1979, as Britain and the other leading industrial nations were recovering from the effects of recession, there was a further major increase in the price of oil.

Six years of recovery, achieved by the more efficient use of energy and greater productivity, was brought to a halt.

In Britain, the progressive decline of traditional industries which had been evident for some years was accelerated with traumatic social and financial consequences.

Extreme competition for the reduced volume of business caused a sharp decline in profits in 1980 and together with the cost of reorganisation led to losses being made in the following two years.

For Avon, an urgent programme of product rationalisation and costly reorganisation formed the basis of the Group's survival.

The first grim effects of recession had already begun with the closures of the Moseley factory in Manchester and of the Capon Heaton factory in Birmingham.

The Group sold Avon Medicals because its product development programme could not be supported from Avon's technical resources.

Avon Industrial Polymers was reorganised to provide a single management structure and a reduction in the size of its workforce.

After only two years of operation, the second Avon Inflatables manufacturing



unit at Hendy was closed, and all production concentrated at the Dafen site.

The Bridgend factory was closed with a loss of 260 jobs, and the manufacture of remould materials transferred to Melksham. The axle business was sold and a management buy-out agreed for Avonride suspension equipment. Footwear production and marketing had already ceased.

But it was at the very heart of the Group, at the Melksham headquarters, that the harshest and most widespread measures were taken to ensure the Group's survival.

In January 1982, 250 employees in the Tyre company were made redundant, and in October a drastic reorganisation plan for Tyres was announced. This resulted in the loss of 600 jobs, with total tyre output being reduced by a third, and involving major reductions in both passenger and truck tyres.

In 1983 the effectiveness of these measures became evident with a return to profit.



*The U.S. Coastguard use Avon Seariders for fast patrol and boarding purposes.*

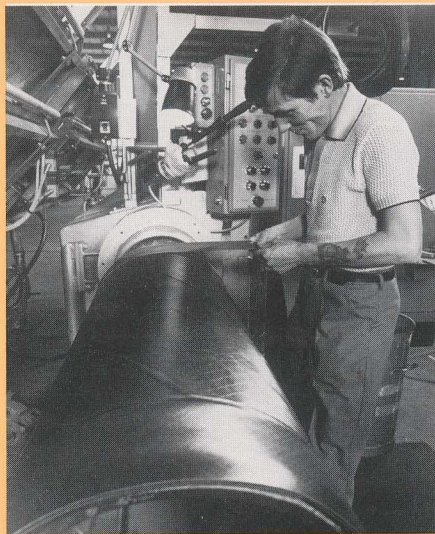
The search for new business opportunities, the broadening of the Group's market base and the concentration of effort to increase productivity were supported by an increased rate of investment in design and manufacturing resources.

The way ahead was signposted by a number of significant achievements in various areas of the Group's activities.

The award by the Ministry of Defence of the full development contract for a new general service respirator for the British Armed Forces, provided a major new opportunity for Avon Industrial Polymers.

A range of racing tyres developed by Avon Tyres quickly won successes in numerous championships and attracted orders from many parts of the world.

A technology package capable of being tailored to the needs of tyre manufacturers in developing countries, proved highly successful with technical aid agreements being established with several overseas companies.



*Building an Avon racing tyre.*

Avon Lippiatt Hobbs established a manufacturing and marketing company in the USA and purchased Norbren Resins of Rochdale, Lancs, a highly specialised formulator.



*Product design, quality control and performance analysis reinforce our international reputation as elastomer technologists.*

World-wide licences for patented techniques of trenchless pipe-laying were negotiated with British Gas and the Water Research Centre.

The range of leisure craft produced by Avon Inflatables was augmented by the introduction of boats for commercial and military purposes – necessitating a

considerable expansion of production facilities.

At Trowbridge, additional factory space was acquired for the manufacture of more complex and technically advanced ranges of automotive hoses.

The rapid development of hovercraft in the United States brought Avon into a joint venture with one of America's leading high technology groups.

Avon Industrial Polymers and Bell Aerospace Textron formed Bell Avon Inc, located at Picayune, Mississippi. This company produces hovercraft skirts and other flexible fabrications for military and commercial applications.

To reinforce the Group's finances, an approach was made to shareholders in September 1984, to support a one-for-one rights issue of 6.6 million new ordinary shares and this was fully subscribed.

As this brief summary has shown, the past 100 years have encompassed momentous international events and an unprecedented tempo of economic, technological and social change.

For Avon, it has meant adapting to the challenges of the time, seizing new opportunities, anticipating and satisfying the needs of our customers.



The processes, products and services illustrated on the following pages show how the technologies of Avon companies are being applied to the needs of their customers.

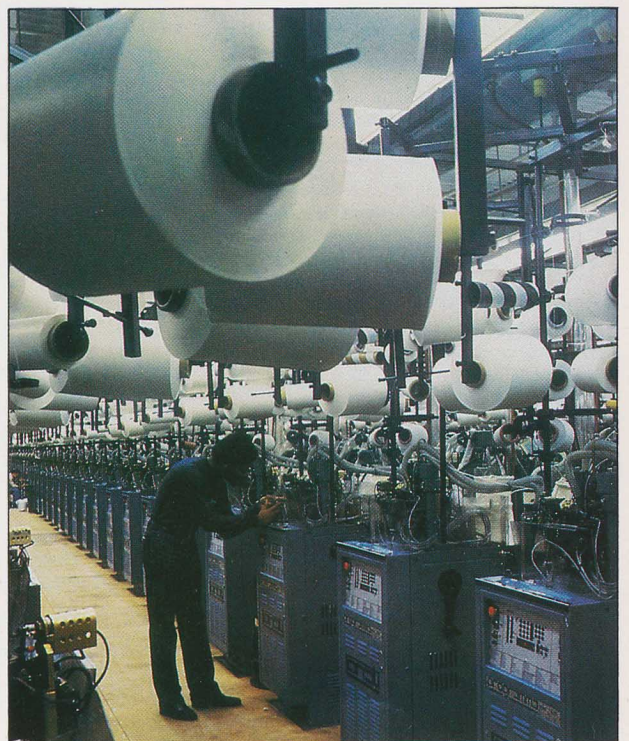
# Principal raw materials

TOP LEFT: Natural rubber from plantations in Malaysia, Indonesia and Nigeria.

BOTTOM LEFT: Synthetic rubber, carbon black and chemicals.

TOP RIGHT: Steel for radial tyres, moulds, etc.

BOTTOM RIGHT: Synthetic and natural fibres for tyres, hoses, hovercraft skirts, inflatable boats etc.



# and how they are processed

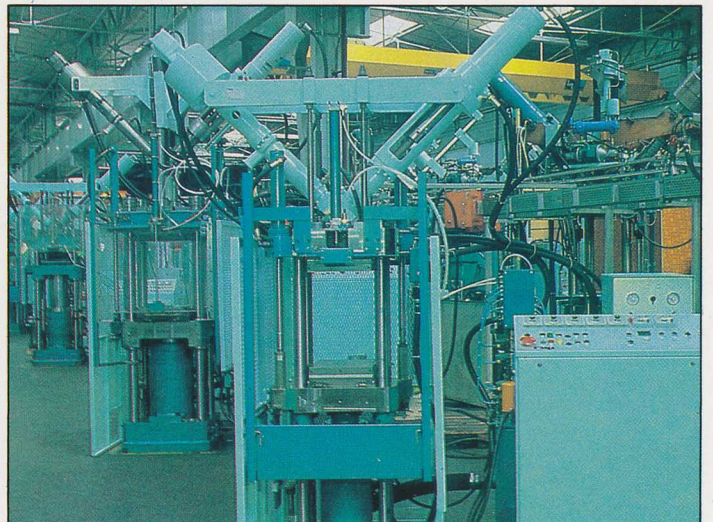
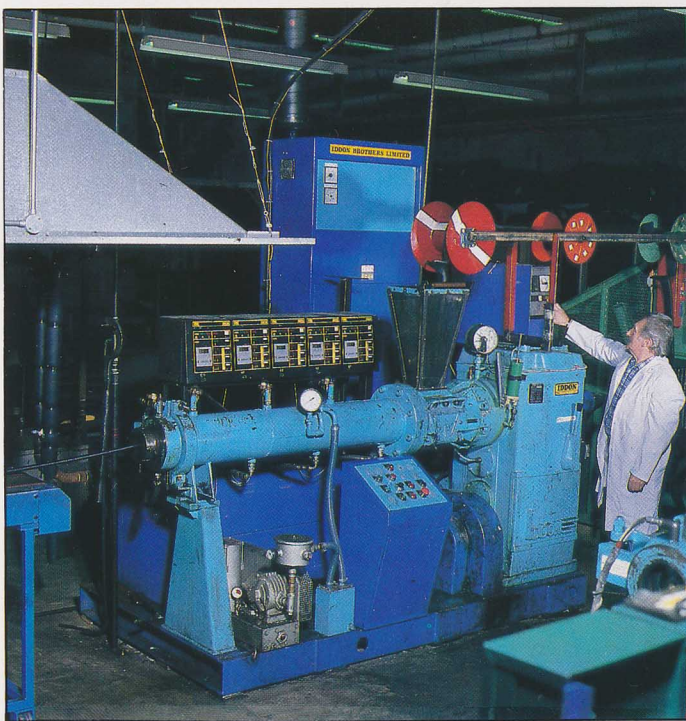
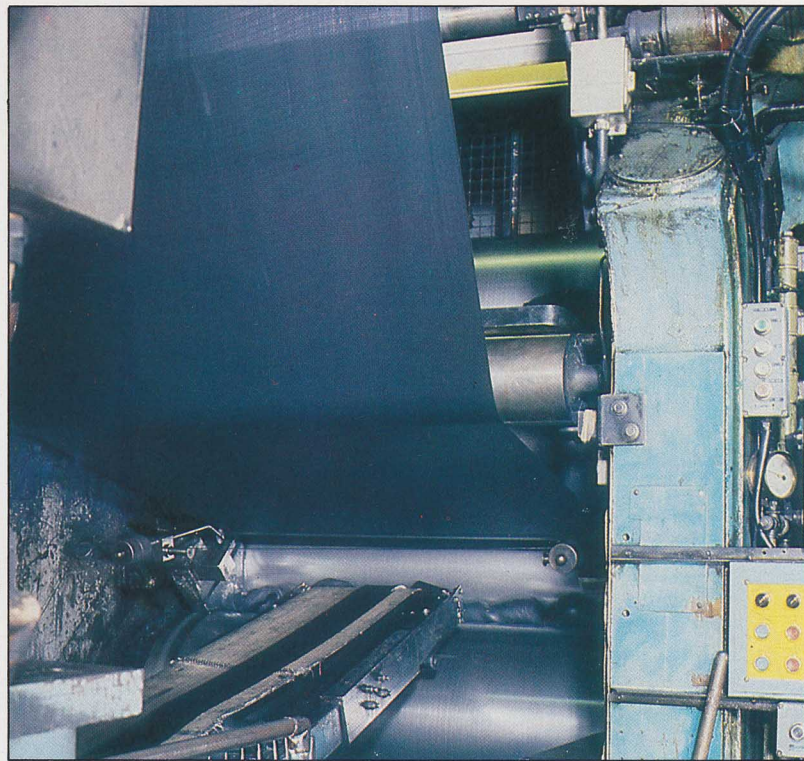
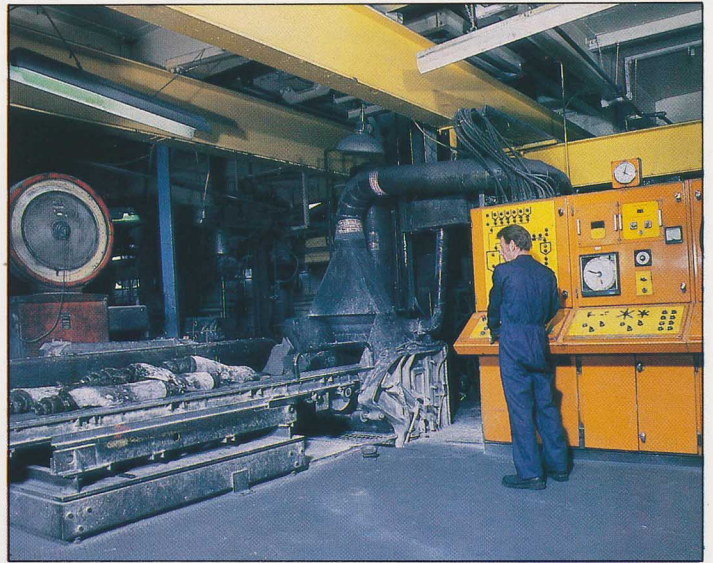
(top left) All incoming raw materials are checked against specification.

(top right) Rubber and chemicals are blended together in giant mixing machines.

After quality approval, compounds are released for calendering (centre right) into coated fabrics, sheeting etc;

(bottom left) into hoses, seals, fenders, etc.,

and moulding (bottom right) into engine mounts, tyres, milking machines liners, golf grips etc.



# Avon Industrial Polymers

Avon Industrial Polymers are specialists in elastomer engineering, and within their factories in Europe and North America design, develop and manufacture a range of technically advanced components made to the highest quality assurance standards.



(top)  
The United States Navy is equipping its forces with amphibious hovercraft LCACs (landing craft air cushion) – fitted with Avon skirt systems.

(centre left) Britain's latest battle tank, the Challenger, in common with its predecessors the Chieftain and Centurion, uses Avon running gear components.

(centre right) The Royal Air Force Harrier jump jet has its engines protected from dust and other debris by inflatable intake plugs used by many military and commercial aircraft when operating from airfields without adequate hangar facilities.

(right) The Avon dry diving suit is used by services and commercial divers throughout the world.

(far right) More effective speech transmission is one of the many improvements offered by the Avon S10, a new general service respirator for the British Armed Forces.



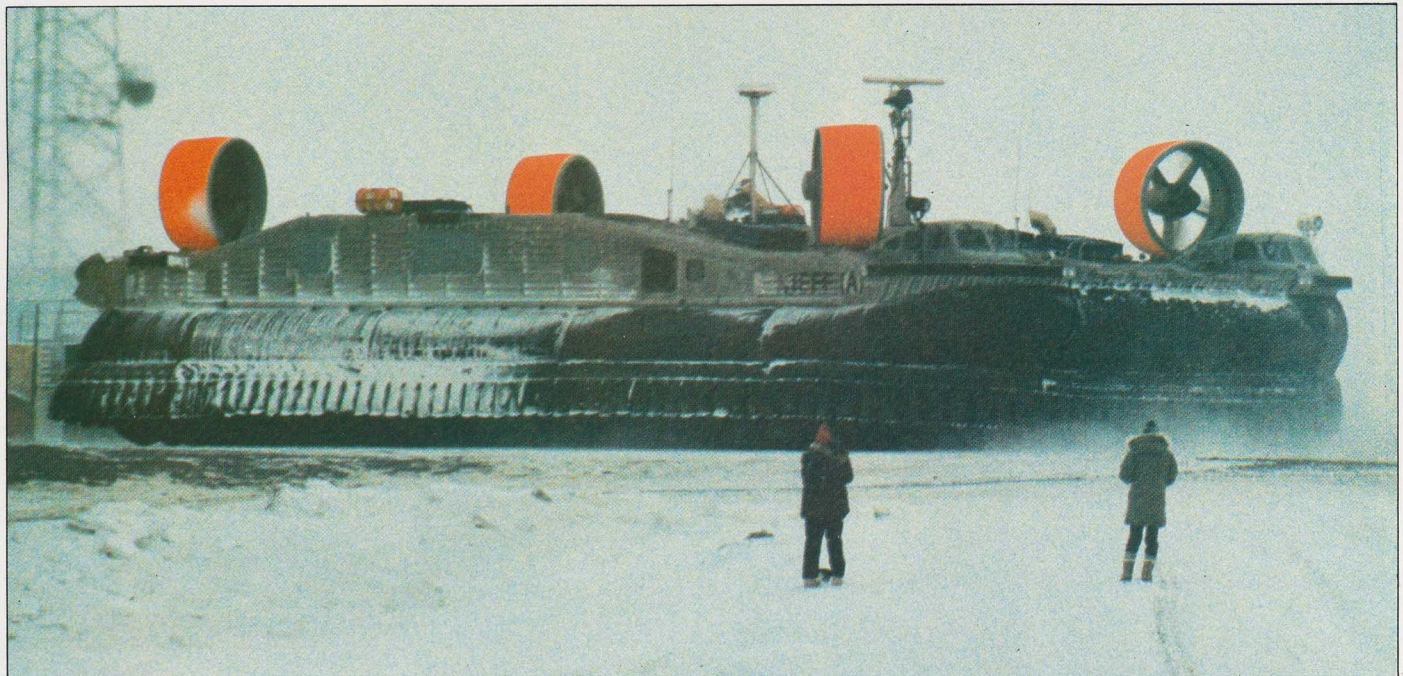
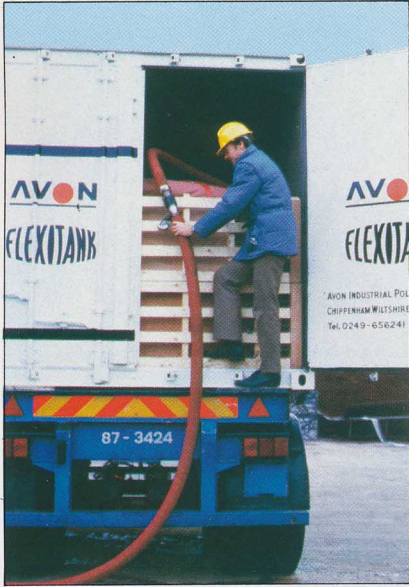
Major customers are the defence industries, land, sea and air, the automotive industry, civil engineering and offshore oil industries, communications, dairy and agriculture.

(top left and right) Wine, fruit juice concentrate and latex are but three examples of the many liquids and other substances transported across the world's oceans in container-borne Avon Flexitanks.

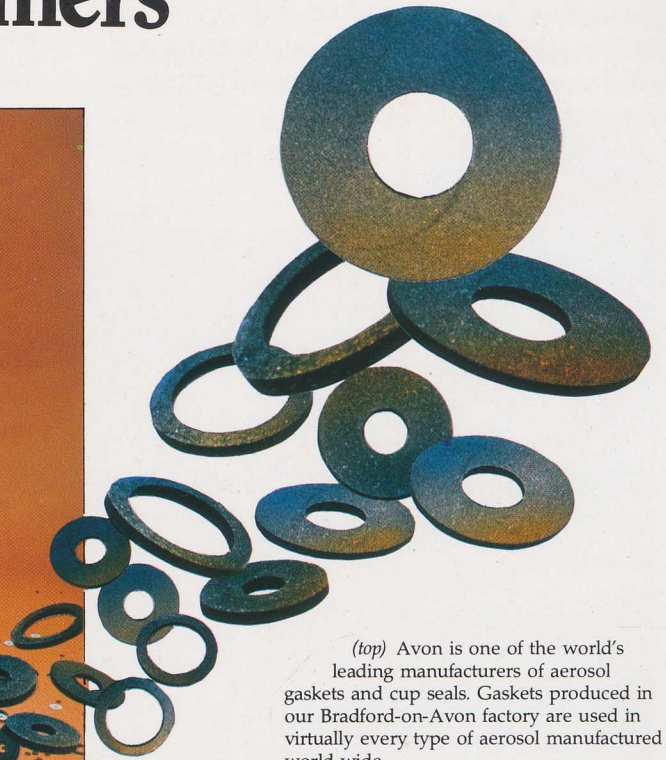
(centre left) An example of modern fendering used as standard equipment on the Voith tug operating out of Dover Harbour.

(centre right) The 125 inter-city expresses which spearhead British Rail's passenger locomotive fleet, are fitted with a range of Avon suspension units.

(bottom) Hovercraft technology is applied in the most extreme climates. A Hoverbarge fitted with an Avon designed and manufactured skirt system, is ferrying essential equipment, supplies and personnel across frozen Arctic wastes in the Yukon.



# Avon Industrial Polymers



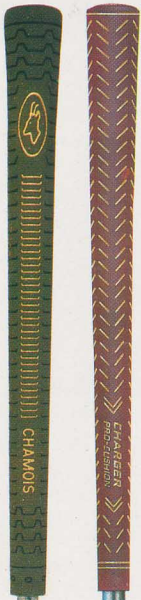
(top) Avon is one of the world's leading manufacturers of aerosol gaskets and cup seals. Gaskets produced in our Bradford-on-Avon factory are used in virtually every type of aerosol manufactured world-wide.

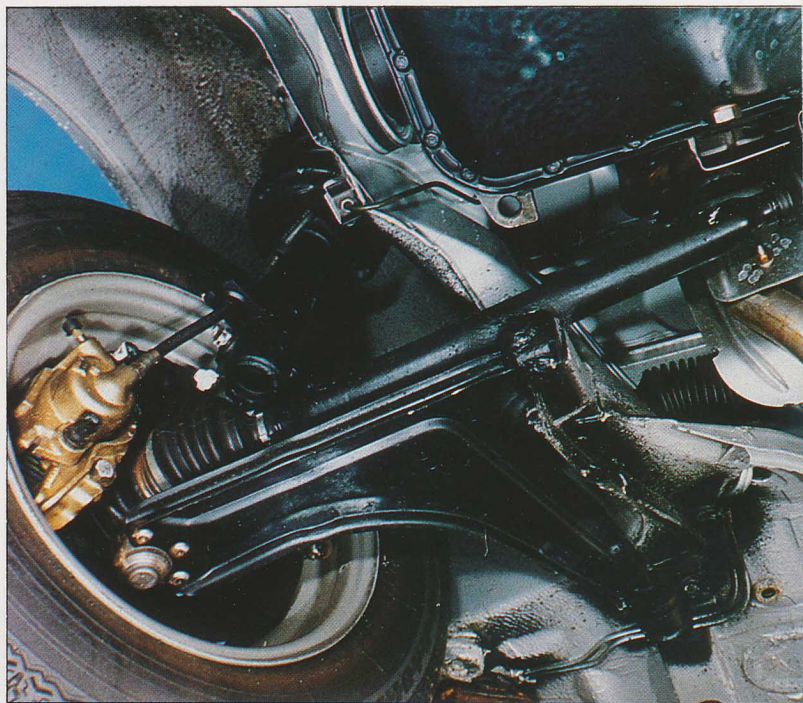


(centre left) Farmers throughout Europe and North America acknowledge the quality and reliability of Avon milking machine liners and tubing.

(bottom right) Avon-Ames manufactures reprographic roller coverings for the sophisticated high-speed office copying machines which have become such a familiar feature of modern commercial life.

(bottom left) Golfers throughout the world use Avon Golf grips, including the unique air-cushion Chamois and Charger models.





(top) Our Trowbridge hose plant is the most modern in Western Europe and supplies a range of heater and coolant hose to the leading European and American vehicle manufacturers.

(centre left) Advances in automotive design and technology have led to the development of increasingly complex radiator and heater hoses.

(centre right and bottom) Other products in the Avon automotive range include components for power units and suspension systems, and moulded flexible seals.



# Avon Tyres



(top) The high performance of this superb turbocharged Bentley required tyres of outstanding quality and reliability. Avon Turbosteels were specifically designed and manufactured as exclusive original equipment.

Avon Turbospeed radials are specified as original fitment for cars with a wide range of performance capabilities. Illustrated are the Morgan Plus-4 (above), the 3.5 litre Rover Vanden Plas (above right) and the Bristol Beaufort (below right).

(bottom right) Our Super Venom motorcycle tyres meet the exacting demands of the heaviest and fastest bikes on the road – complementing our market-leading Roadrunner range.





Avon Tyres - the only British-owned tyre manufacturer produces high quality car tyres and a range of truck, industrial, agricultural and motorcycle tyres.



(above) On and off-road tyres have very special qualities and Avon supplies Rangemaster tyres as original equipment to the Land-Rover 110. They are also fitted to the Range Rover.

(left) Agricultural tyres are another important sector. This slurry tanker is fitted with Flotation Supremes.

(below) In another specialised area Avon Tredlite (low ground pressure) tyres are used by off-road vehicles such as the lavishly-equipped shooting brake used for grouse-shooting parties.



# Avon Tyres



(top) Avon's unique Steermaster steer-axle tyres are used by British Airways and other leading companies for their vehicle fleets. This articulated cargo vehicle is also fully equipped with Avon Powermaster tyres for drive axles.

(above left and right) Industry is a major user of tyres within the factory perimeter. Lancer Boss side-loading and Lancing Bagnell front-loading fork lift trucks are examples of Avon original equipment fits.

(bottom) Avon Supervan radials keep the nation's light delivery vehicles on schedule.

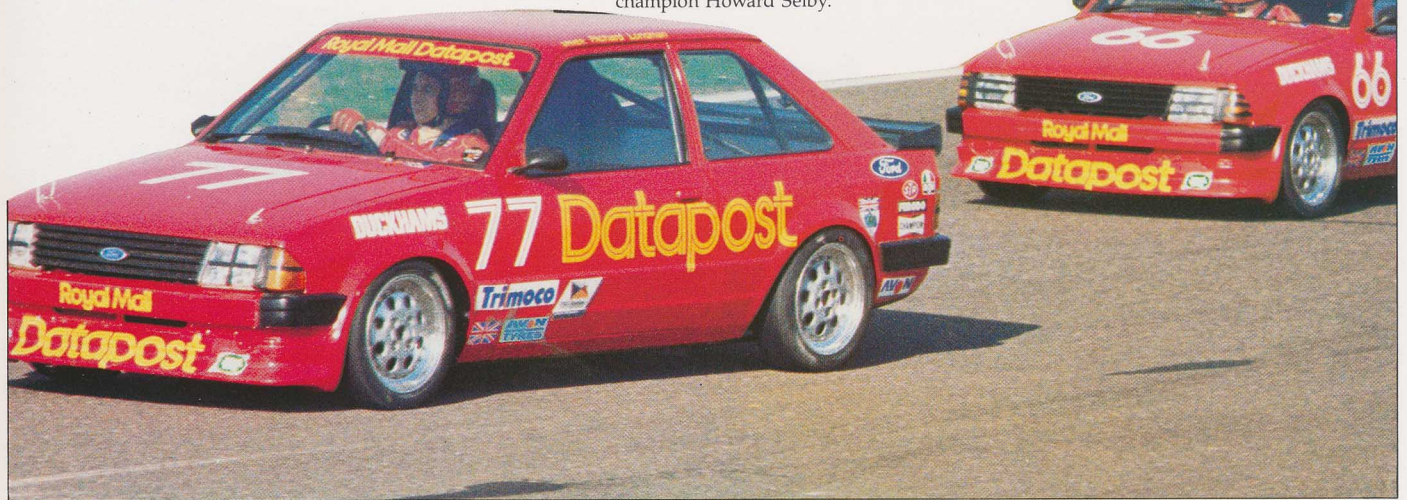


# Avon Racing

Avon racing tyres are produced in a modern, purpose-built production unit and are winning major championships and events in almost every category of international motorsport.

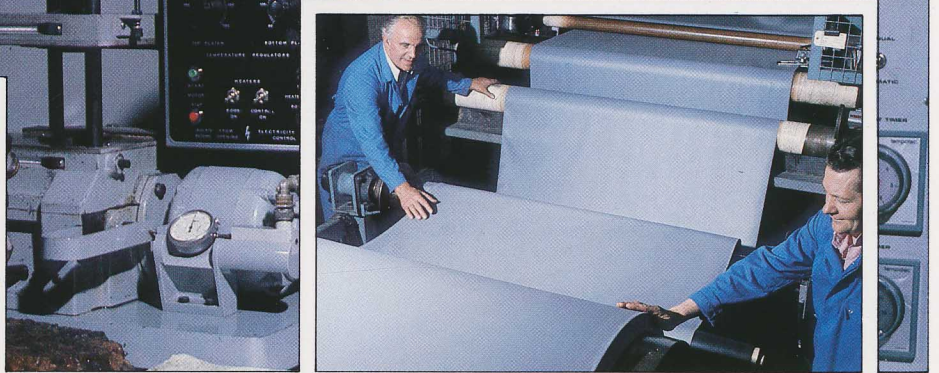
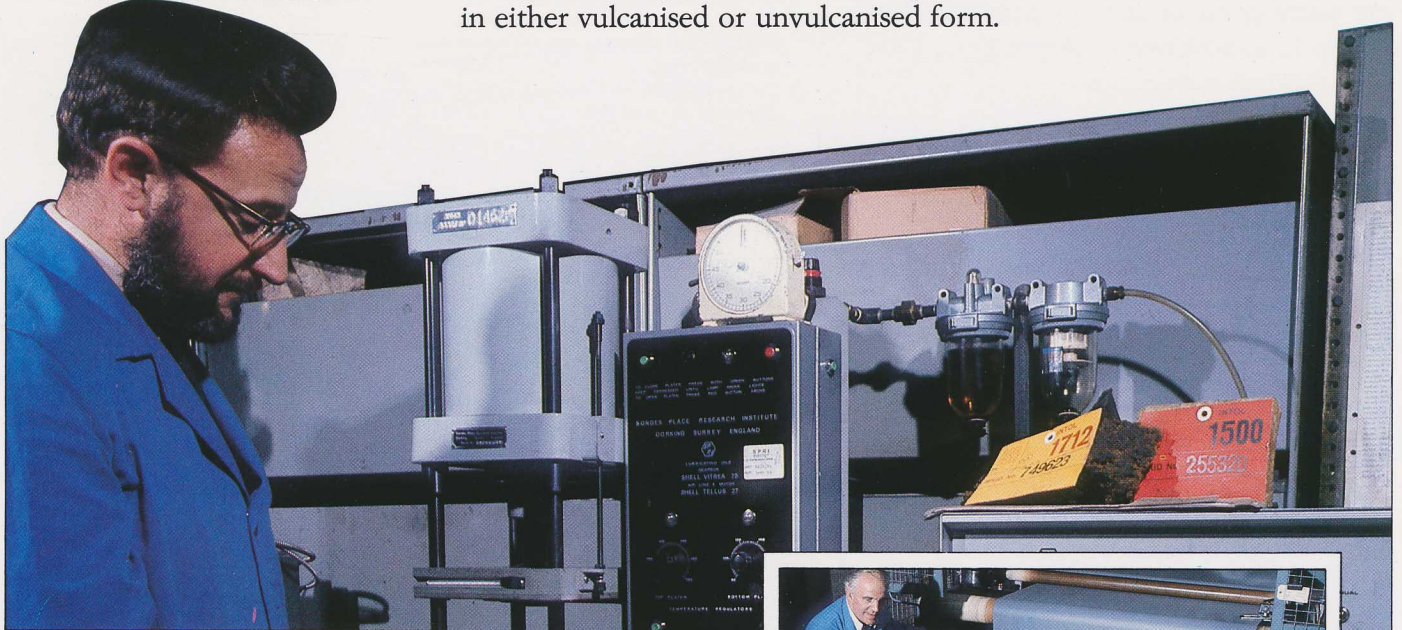
Champions all – (top) British saloon car experts Richard Longman and Alan Curnow. (centre left) Avon's major contribution to the new International Formula 3000 Championship was established after extensive pre-season testing at circuits such as Silverstone. (centre right) National Motorcycling champion Howard Selby.

(bottom left) British Formula 3 champion Johnny Dumfries. (bottom right) British Hillclimb champion Martin Bolsover.



# Processed Materials

Avon Processed Materials are market leaders. They are used for the remoulding of truck, aircraft, off-the-road, van and car tyres. Also manufactured is a wide range of coated fabrics and customised compounds in either vulcanised or unvulcanised form.



(top) Exacting quality control standards are rigidly enforced at every stage of manufacture. Well equipped laboratories constantly monitor incoming raw materials and check every stage of production.  
 (inset) Modern calender facilities produce coated fabrics, coated wire and non-reinforced sheeting.  
 (above) Tread rubber and sidewall veneer are included in the range.  
 (centre right) Processed materials are for tyres of every size up to giant earth-movers,  
 (bottom right) Most European airlines have tyres utilising Avon remould materials.

# Motorway Tyres & Accessories

Through a network of some 200 branches in the United Kingdom and Eire, Motorway provides a full service to the motoring public for tyres, accessories, batteries and exhausts.

Service to commercial users covers emergency breakdowns, regular checks of fleet vehicles, and the provision of on-site tyres and batteries for all types of vehicles and plant.



The Motorway depots pictured here at Croydon and Dumbarton (top right and centre) are typical in stocking a wide range of tyres for most vehicles.

(top left and centre) Motorway offers a 24-hour emergency breakdown service for commercial customers.

(above and bottom right) A comprehensive on-site tyre and battery service is provided for commercial vehicles and plant.

# Avon Inflatables

For the past 25 years Avon Inflatables has pioneered the development of high quality craft for all aspects of marine use - leisure, commercial, military and life-saving.

Avon yacht tenders, workboats, reconnaissance and assault craft, riverboats, rigid-hull inflatables, sportboats and liferafts are in service worldwide.



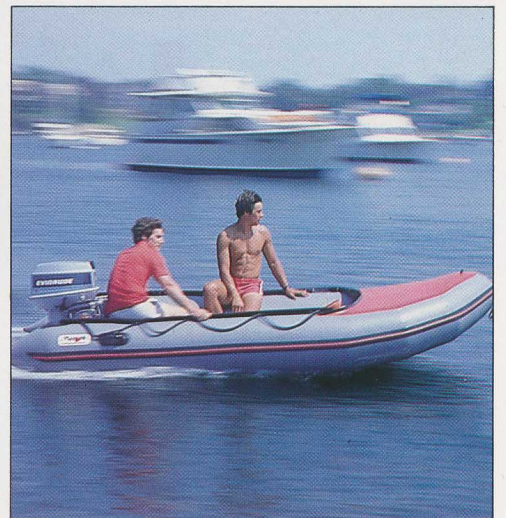
(top) Avon dinghies are used as yacht tenders on every sea and ocean.

(centre left) Avon Riverboats are the first choice of white water enthusiasts throughout the world.

(centre right) Among its many uses, the high-performance Searider range provides an ideal platform for underwater diving teams.

(bottom left) The Rover R.I.B. which utilises a lightweight glass fibre V-hull, is used as a fast tender, fun boat or run-about.

(bottom right) Avon Sportboats are designed to give excellent performance when fitted with medium power outboard motors.





(top) Rigid-hull Searider craft are in service with the Royal Navy and the United States Coastguard service. They are also used as safety boats by offshore oil companies.

(centre left) Seagoing multi-role Avons are used for a variety of military purposes.

(centre right) Heavy-duty Workboats, capable of speeds up to 28 knots, are used for many commercial applications including civil engineering, materials transfer and offshore oil developments.

(above left) Avon liferafts have saved the lives of many shipwrecked mariners – often in the most extreme conditions.

(above right) The Royal National Lifeboat Institution is one of many search and rescue organisations specifying Avons in an offshore rescue role.

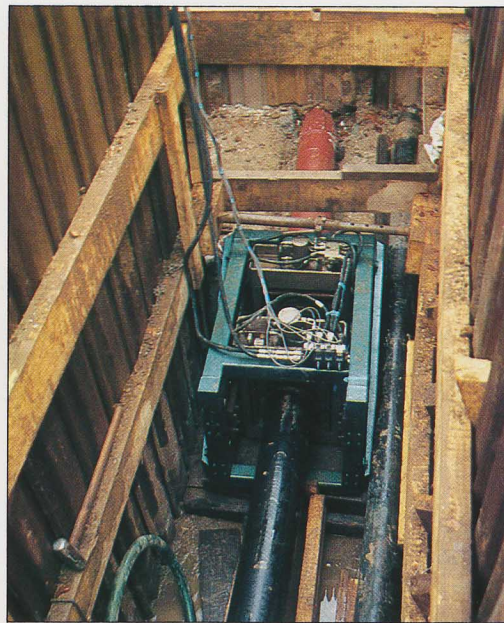
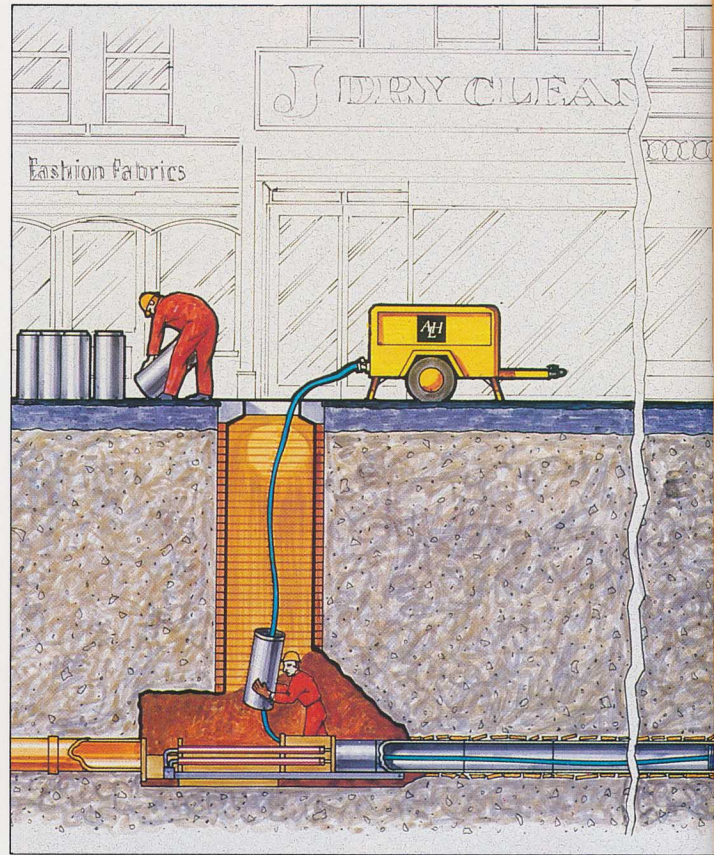
(right) Avon craft have for many years been the choice of leading explorers taking part in waterborne expeditions throughout the world.



# Avon Lippiatt Hobbs

Avon Lippiatt Hobbs are the leaders in the techniques of sealing and maintaining pipelines relating to gas, water, sewage and oil. An advanced range of sealing systems and protective coatings has been developed and the company maintains a close liaison with leading research and technical establishments.

The latest techniques being introduced in trenchless pipelaying are offered on a worldwide basis.

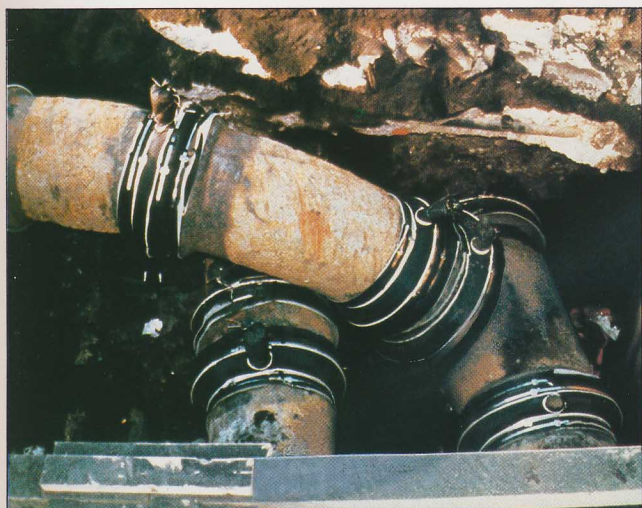
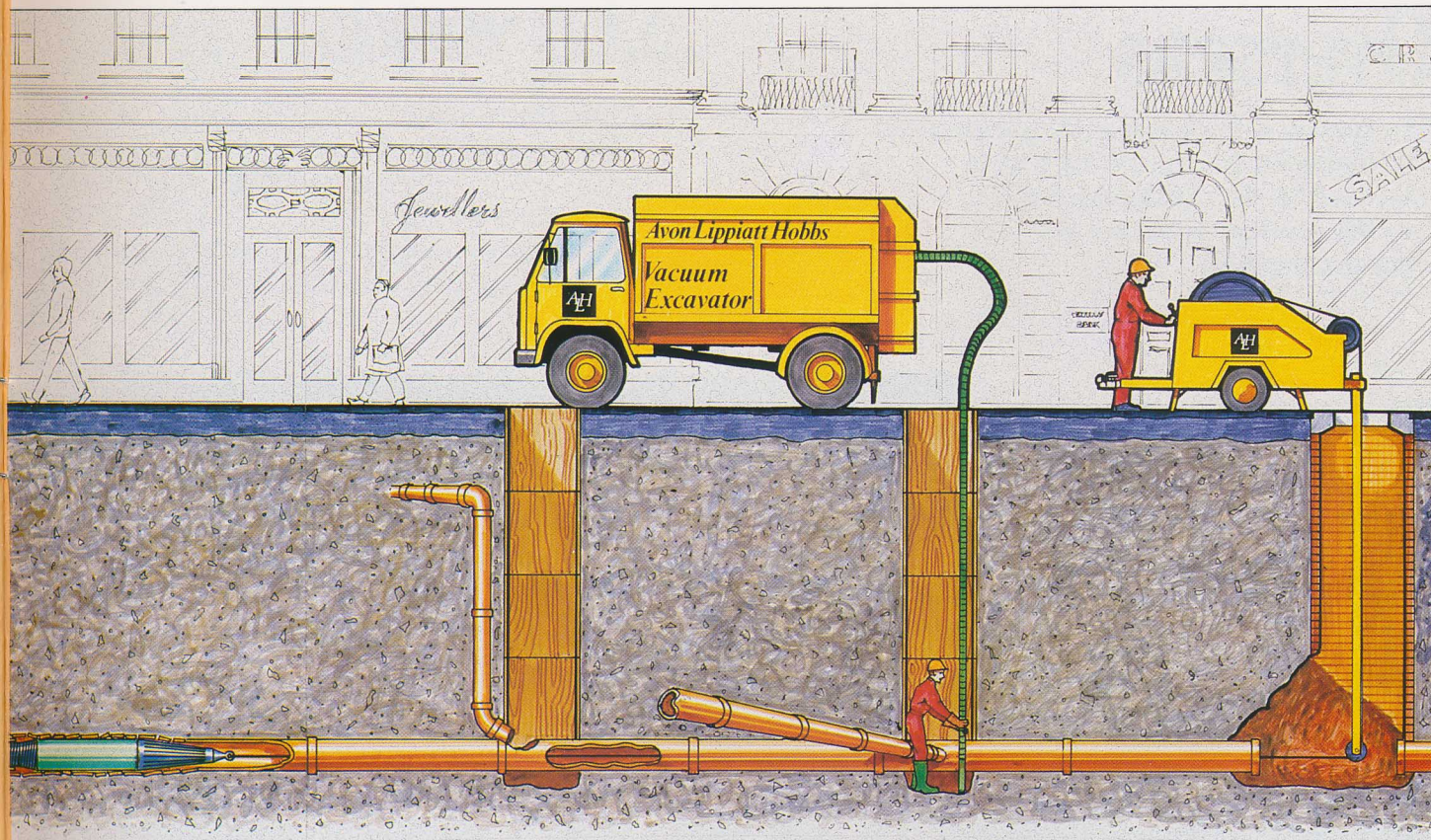


(top) The ability to replace sewers in situ by pipe-bursting is now a viable alternative to trenching.

(centre and bottom) This method can also be used for the replacement of cast iron gas and water mains.







The Avonseal (*centre right*) technique of joint repair is used for sealing lead yarn pipe joints.

Series Six (*centre left*) is the latest encapsulation system for pipeline joint repair.

Weco-seal (*bottom*) is an established system for the safe, effective internal sealing of joints in gas, water or sewerage pipes.



# Overseas

The strategy of broadening the geographical manufacturing and marketing base is illustrated by the development of the Group's overseas subsidiary and joint venture companies.

The five companies pictured are all manufacturing units, but the Group also has a network of marketing subsidiaries throughout Europe, Australasia and North America.

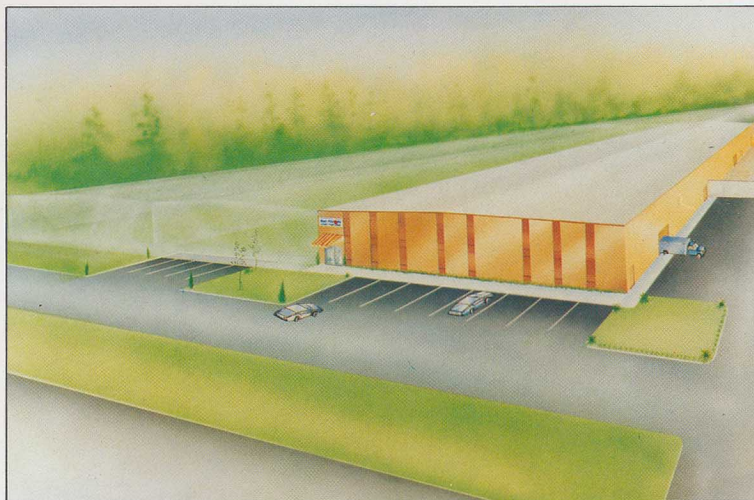
Avon Rubber (East Africa) (*right*) has its headquarters in Nairobi.

Ames-Avon Industries (*centre left*) is based at Wantage near Hamburg, New Jersey.

Bell Avon Inc (*centre right*) has begun operations at Picayune, Mississippi.

The Spencer-Moulton factory (*bottom left*) is located at Malesherbes near Paris.

(*bottom right*) ALH Systems Inc. operates from premises at Elk Grove Village, Chicago, Illinois.



# Avon Rubber p.l.c.

Central to the control and development of the Group are the specialist services located at the Melksham headquarters.

These comprise finance, legal, business services, purchasing, personnel, pensions, publicity and new product developments.



The achievements that are recorded and illustrated in this brochure provide the strength and confidence with which Avon begins its journey into the second century.

The pursuit of excellence continues . . .

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