

SPORTS CARS OF THE "BIG FIVE"

**"Motor Sport" Visits
the Factories in which
the M.G. MGA,
Triumph TR3 and
Austin-Healey 100-Six
are Assembled**



*NANCY MITCHELL at the Standard works
with the Triumph TR3 hard-top she is to drive in
the Mille Miglia race on May 11/12th.*

HAVING published our impressions of automobile factories in Germany and France it is only fair that we should visit representative British manufacturers. This account concerns the sports cars of the "Big Five," in other words the M.G. MGA, the Triumph TR3 and the Austin-Healey 100-Six.

THE M.G. FACTORY

Our first port of call was Abingdon, where M.G.s have been made since 1929 in a factory which came into being during the 1914/18 war for the production of Army boots, which explains the tannery next door. Here Mr. John Thornley, the General Manager, and Mr. N. A. Iley, the Assistant Works Manager, made us welcome and conducted us round the works, which have expanded considerably since the era of the late Cecil Kimber but which are still devoted solely to the assembly of sports and high-performance cars.

To this factory in this comparatively rural Berkshire town come B-series B.M.C. engines in covered trailers from the Austin plant at Longbridge and MGA body shells in batches of six on open trailers from Pressed Steel at Coventry. These body shells are delivered painted and trimmed. The M.G. MGA has a proper chassis, of which M.G. buy the side-members but weld in the tubular cross-members and "goalpost" scuttle girder section at Abingdon. Some of the old machine tools are employed stamping out minor chassis parts and after the chassis frame has been welded together on a jig inspection is made of each welded section and 1 per cent. of the output is checked for dimensional accuracy.

The completed chassis frame is conveyed automatically (on part of an old overhead conveyor commandeered from Cowley) to a paint bath in which it is immersed and then lifted straight Out and taken through an infra-red gas-agitated drying oven.

Assembly of the M.G. MGA takes place on two hand-fed assembly lines that were originally intended for an output of 250 cars per week. This has since more than doubled. This M.G. is, of course, a composite design, using a B-series B.M.C. 1½-litre engine, Y-type coil

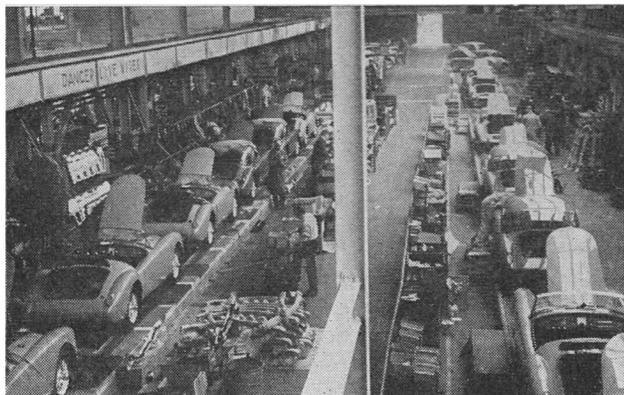
spring i.f.s. and B-series 4.3 to 1 back axle from the former Wolseley factory, and B-series gearbox with a cast extension for the remote-control gear-change. The required power is obtained by the use of two semi-downdraught S.U. carburettors, special camshaft, stronger valve springs, modified distributor, automatic advance and retard, and different manifolds; 72 b.h.p. is obtained at 5,500 r.p.m.

After the engine has been delivered, often on a transport arriving at night to deposit its load "in the garden," manifolds, carburettors and mounting rubbers are fitted at Abingdon, as is the gearbox extension, although the casting for this is "bought out." The engine and other components are bought to the assembly lines on trolleys.

The bodies are completed on the first floor of the factory and lowered by means of Feldo electric cranes to the assembly lines, along which the cars are moved by hand on steel runners or concrete runways. The M.G. floor trim is now part of the body and little remains to be done before the MGA body is ready to meet its chassis. The combination of the aforesaid "goalpost" scuttle member, wooden floor and the rigid "mantelpiece" or scuttle results in a satisfactorily stiff structure.

A note in code on the windscreen advises the operatives as to whether bolt-on or centre-lock wire wheels are to be fitted, the type of lamps, speedometer required and whether l.h. or r.h. steering is specified. The brake master cylinder is bled *in situ*, after which it is slung on a "sky hook" to enable the body to be fitted on the chassis. After completion MGA engines are lifted by means of Ardegar hoists on travelling gantries, to be positioned for lowering into the chassis at the appropriate point on the assembly line.

At the end of the assembly line steering is correctly tracked and the lamp beams adjusted, after which each car is taken, by one of a team of eleven test drivers, for a road-test of about 12 miles over a standard test-route. By using the same route for each car a driver is able to assess easily any shortcomings in acceleration and general performance. Engines are not tested on the bench at



M.G.s IN THE MAKING.—A bird's-eye view of the two MGA assembly lines as seen from the first floor of the Abingdon factory.

Abingdon, but each B-series unit has been electrically motored-in with the sump removed, at Longbridge.

A rectification bay is regarded as an important part of production tactics at Abingdon. Here MGAs and Magnettes come in at the rate of about 15 an hour for blemishes to be retouched and polished out where chalk rings indicate that this is necessary and any other defects remedied. The inspectors and testers responsible for locating defects play no part in the subsequent rectification and consequently they are encouraged to be extremely thorough, knowing that their observations will not load them with additional work which could blunt their perception. Every car has a log book, composed of a chassis and a body card stapled together, which carries details of any defects the factory has put right and which serves as a valuable check on the vehicle throughout its life in the hands of the owner. Cars in this department are hand-fed along a line under neon lights and finally finished to a state where they are passed as 100 per cent., provided with a protective covering of "export jam" if required, and driven, often by women drivers, to storage parks at Cowley, a bus service being operated to bring drivers the 13 miles back to Abingdon.

Wheels and tyres are supplied mainly by Dunlop, although we noticed a wire-wheeled Michelin-shod MGA on the assembly line. The wheels come in primed and spray-painted at Abingdon and tyres fitted in a separate shop, in which small parts like rear lamps, etc., are painted. Mr. Iley told us that 60 per cent. of MGA customers order centre-lock wire wheels and that the most popular finish is white, which represents 60 per cent. of the MGA output.

There is an impression of spaciousness at Abingdon fostered by the natural lighting of all the shops in this compact two-storey factory, which on the day we were there had been visited by Lord Nuffield. The M.G. factory covers an area of 350,000 sq. ft. on a developed site of 12 acres and there are 11 acres available for development. The removal of two spare-parts bays to Cowley will soon release 24,000 sq. ft. of floor space in the existing factory.

On the day of our visit 73 MGA two-seaters and 21 coupes were scheduled for completion and the average daily output is over 90 MGAs each day of a five-day week, and about 30 Magnettes a day. Very soon it is hoped to step this up from an average of 590 cars a week to an output of 505 MGAs and 150 Magnettes a week. The MGA is made in two-seater, in hard-top with sliding windows, and in coupe forms, the last-named having wind-up windows. The proportion as production rises is likely to be about 135 coupes and 370 two-seaters per week.

The roomy M.G. ZB Magnette saloon consists of a B-series B.M.C. power unit with two semi-downdraught S.U. carburettors and minor mods, as for the MGA, although a normal camshaft is used and the exhaust manifold is different to clear the steering on left-hand-drive cars. This produces an output of 68 b.h.p. at 5,400 r.p.m. A 4.55-to-1 B-series back axle is used, the body shell is the same as that for the Wolseley 15/50 and a new front suspension has been adopted, based on that of the Wolseley.

Because the Magnette has an integral body/chassis structure the assembly process differs from that of the MGA. The front cross-member which carries the i.f.s. units is delivered by John Thompson and because it plays such an important part in stiffening the structure it is given a 100 per cent. check on a test-jig at Abingdon. The walnut veneer dash for the M.G. Magnette is also jig-tested. The Magnette body has a wrap-round back window in the case of the duo-tone cars, which is made at the body-shop of Morris Motors as a

"knife and fork" job. Otherwise the Magnette body arrives as a bare shell, which has been painted at Cowley but which is largely finished and trimmed on the first floor of the Abingdon factory before being lowered by a one-ton crane through a well to the ground floor for completion. However, before being lowered to the floor, where the cars are hand-fed along the line on rail-trolleys, the exhaust pipe, back-axle and power unit are fitted, the latter operation being a very skilful one, for two operatives receive the engine on an overhead crane and manipulate it into the shell. An engine is fitted every 20 minutes.

To obviate a hold-up due to delivery delays, which fog or other "natural causes" might create, something like three-quarters of a day's output of MGA body shells is held in reserve and there was a considerable number of Magnette body shells in the factory, while some old 1½-litre body shells were seen suspended from the roof of one shop, these being surplus to the Cowley spares store. Incidentally, grey is proving a popular colour with Magnette owners.

Apart from the active assembly of M.G. MGA and Magnette cars the M.G. Competition Department is centred at Abingdon, in the charge of Marcus Chambers. It is very encouraging to learn that B.M.C. value highly the research and publicity benefits of participation in racing and rallies. They like where possible to foster private entries, but Chambers retains three "works" rally cars, and there is an experimental test-bed set away from the works where two Froude test-benches are available for experimental work. It is possible that research work carried out for the 1955 Tourist Trophy Race may have a direct bearing on future M.G. models. A small drawing office, with four "boards," serves the experimental department. One "board" was devoted to a "hush-hush" project, in the form of a new M.G. record-breaker, not unlike a scaled-down Railton-Mobil-Special, with central engine and very pronounced crab-track. This M.G., smaller than Gardner's well-known Ex. 135 record-car, will attempt International Class F records in August, Stirling Moss being flown out to Utah in an endeavour to drive it at four-miles-a-minute over the short f.s. distances. Incidentally, an old craftsman at Abingdon makes the necessary scale models for these and similar projects.

Mr. Iley told us that the company is particularly pleased with the outcome of tests made at the Dunlop test track. From being the second-fastest production car round this course, beaten only by Aston Martin, modifications to the rate of the MGA suspension and tyre changes have raised the former speed in this test by 3 m.p.h. The considerable time spent on this suspension research represents a considerable improvement which, because it involves "know how" and does not involve extra material, is passed on to the customer without charge.

On this note it seems appropriate to close this brief account of the M.G. Car Company. It is pleasing that a concern which got away to a flying start in 1923 when Cecil Kimber conceived the very first M.G. is still functioning effectively as a member of the great British Motor Corporation and is still active in the field of racing, record-breaking and rally motoring. The M.G. Company is fortunate in having as its Manager John Thornley, who knows everything worth knowing about M.G. models past and present. The company now employs a total staff of 1,030 and it is a measure of its importance to this country that it earns 500 dollars-per-operative a week, for export sales represent 99 per cent. of MGA production and 83 per cent. of total M.G. production, equal to half-a-million dollars a week.



TWO-SEATER AND COUPE.—The two M.G. MGAs sampled during our visit to the M.G. factory, outside which the cars are standing.

Before we left Abingdon for the Midlands we sampled two examples of the M.G. MGA, of which, incidentally, over 18,000 have been built to date. The first car tried was a coupe, and to the impression that the MGA is a very pretty car was added that of excellent visibility and spaciousness imparted by the big rear window. The roadholding and excellent braking power also earned our admiration and the pleasure of using the M.G. remote-control gear-change was renewed. The dashboard is impressively stocked with switches and dials, with rev.-counter and speedometer before the driver, the excellent and well-placed fly-off handbrake is a legacy from M.G. models of earlier days and we liked the tiny pull-up handles used for opening the doors of this MGA coupe. We next tried a two-seater MGA, which was a very hard-worked 1955 model—in fact, the third of the type to be built. It went well but suffered from very pronounced steering kick-back over bad surfaces, which we were told was due to unbalanced front wheels. Both M.G.s were taut, safe cars of no mean performance, nearly 6,000 r.p.m. coming up if the eye strayed from the rev.-counter, and although in a country where a flat-rate tax prevails and in territories where petrol is relatively inexpensive, there may be customers who are not prepared to sacrifice absolute performance for modesty in literage. Mr. Iley reminded us that this 1½-litre M.G. should not return less than 28 m.p.g. *even when driven as hard as possible*. The long record of M.G. racing successes, dating from 1930, still pays dividends in terms of prestige, especially in the States, and at Abingdon Mr. Iley makes a point of laying on hospitality for the many overseas' visitors, many of whom make the Abingdon pilgrimage much as keen Englishmen used to travel to Molsheim before the war to visit the home of the Bugatti.

A VISIT TO THE TRIUMPH WORKS

The next day we headed for Coventry and drove along the Ring Road to the factory of the Standard Motor Company Ltd., where Triumph TR3s are assembled.

Here we were royally entertained by Mr. I. J. Penrice, the Publicity Manager, and Jack Croft, the Press Officer. However, duty before pleasure and prior to a memorable lunch we were shown the TR3 assembly line by a young apprentice. A single conveyor line, moving at perhaps an inch every second, is in operation for the production of Triumph TR3 sports models, that brilliantly-conceived car evolved after the war from Standard Eight and Vanguard and Triumph Mayflower components, and today, with 2-litre twin-carburettor engine and disc front brakes, one of the finest value-for-money sports cars it is possible to obtain.

The TR3 bodies arrive from Mulliners with their base frame welded-in and complete with seats, screen and upholstery. They are lowered on to the assembly line for the addition of trim, lamps, hood and tonneau cover, sidescreens, etc., after which the grille and nose-piece complete with headlamps is added. Lister trucks motor about bringing supplies to the line, on which an occasional Standard pick-up truck mingles with the sports cars. Standard now make the hoods, sidescreens and tonneau covers themselves, beside the assembly line, employing the inevitable Singer sewing machines.

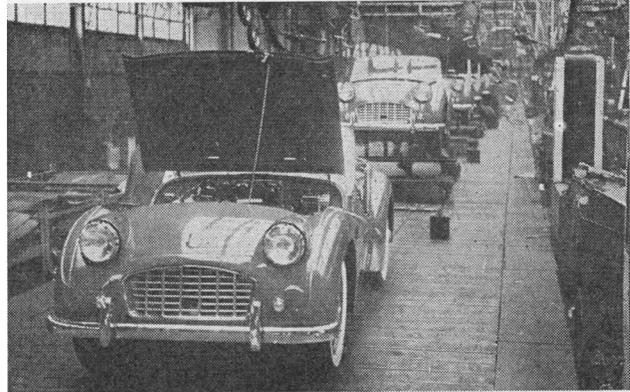
The TR3 has a separate chassis, which is assembled on a line at right-angles to the body finishing line. As a completed body arrives at the end of its line the entire line is automatically stopped; when a chassis is ready the body is lifted by overhead crane and planted on a wheeled trolley, after which the body line re-commences its slow movement. The body is then wheeled to meet its chassis and the cars now move slowly at knee-height on a chain-conveyor, and engine, suspension units, axles, wheels, etc., brought to the right place by overhead conveyors, are fitted by hand. Axles arrive from Banner Lane, and the Girling disc brakes come as units complete with hubs of both bolt-on and centre-lock type.

After the engine and axles have been fitted each chassis is spray-painted. Engines are brought from the engine assembly-shop on 5-cwt. overhead hoists, rather as money used to be shot in hanging boxes about old-fashioned draper's shops.

As the completed cars near the end of the line the wheel nuts are tightened with pneumatic braces, oil and petrol are added through the appropriate orifices and each Triumph TR3 goes for a road-test of some 20 miles before coming into the checking shop, where any blemishes in finish, and mechanical defects, are eradicated.

All component parts are fed to the assembly conveyors from one store-room and as they meet the production line they are fitted by mechanics using automatic screwdrivers and braces, the four back-axle mounting nuts, for example, being tightened with one such tool in a single application.

Engines for Vanguard and TR3 are line-assembled, those intended for the sports car having a large "TR3" marked on the crankcase, so that the correct twin-S.U. manifold shall be fitted when that



NEARLY OFF.—A Triumph TR3 at the end of the assembly line in the Coventry factory. The line moves at the rate of about one inch per second, producing more TR3s than Standard Vanguard saloons.

stage is reached. Gearboxes are fitted to the TR3 engines on the assembly line but not to the Vanguard engines, as in this case the gearbox is run-in before being mated to the engine. This is unnecessary in the case of the TR3 because each power unit is bench-run, whereas Vanguard engines are mounted, up to ten at a time, on a circular bench and motored electrically for 20 minutes. Each TR3 engine is run on a Heenan & Froude brake, of which 28 are available, for about three-quarters of an hour at progressively increasing speed, and any engine that does not develop 74 b.h.p. or reach 3,500 r.p.m. in this comparatively stiff condition is rejected.

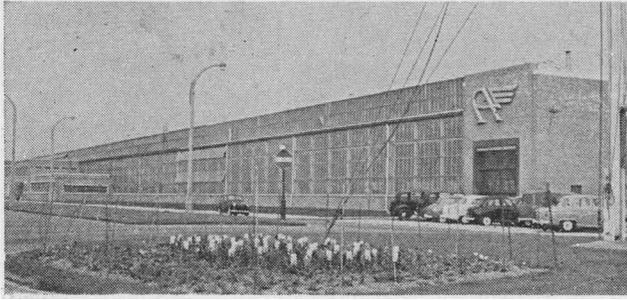
The Standard factory is working a 5-day week, with a night-shift for tractor assembly. Their average daily output is 190 Eights and Tens, 40 Vanguards and Vanguard Sportsmen, 45 TR3s and 290 Ferguson tractors, adding up to a total weekly output of 2,825 vehicles, or a daily automobile output of 275. It is interesting that Triumph TR3 sports cars are now produced in greater numbers than the Vanguard III saloons; however, large stocks of the latter were standing, a dingy sight where soot had settled on the weather-preservative, in fields outside the factory buildings. So popular is the TR3, particularly in America, that 90 per cent, of the output is exported and there is now a three-month delivery delay in this country.

Successful participation in competition events has helped to bring about this popularity and it was nice to encounter in the factory posters proclaiming the first and second placings in their class of TR3s in the very-recent Sebring race. The Triumph TR Owners' Club, originated by Mr. Penrice, is an excellent means of concentrating enthusiasm as well as spreading "know-how" about these cars, and Jack Croft, who drove us to lunch in a Vanguard Sportsman, was leaving for Brussels at the end of the week to lead the second Triumph O.C. Continental tour.

Before lunching in Standard's own beautiful dining-room we called on Ken Richardson and looked over the Competition Department, which occupies the old Service Department. Richardson has three skilled mechanics to work on rally cars and has on his books eight TR3s and four Standard Tens. The three TR3s for the Tulip Rally were there, in a very tasteful shade of green, and some Tens were awaiting their next assignment. We were told that of the Sebring Triumphs, one had previously done the Rome-Liege-Rome Rally and all had done the Swedish and Alpine Rallies. Yet, apart from Standard Tens facing the R.A.C. Rally of the Tests, Richardson prefers to enter virtually catalogue motor cars.

At lunch we met Nancy Mitchell, who was at Coventry to make arrangements about the Mille Miglia, in which fantastic race she will drive a TR3 hard-top, after flying back from the Tulip Rally (in which she shares an M.G. with Patsy Burt) with only a day to spare—some assignment, especially as she intends to drive the entire race herself! She was duly photographed with the actual Alpine Rally car she will use in the Mille Miglia, and which is unlikely, we gather, to depart very far from normal specification, although racins: Ferodo pads will naturally be used for the disc brakes and a 25-gallon fuel tank with quick-action filler, a 4.1-to-1 back-axle ratio and Le Mans reflectors in the headlamps will be fitted.

Before we left the home of the TR3 we were able to enjoy a brief drive in one of these accelerative 100-b.h.p. motor cars. This one went readily to a speedometer 160 k.p.h. and we experienced again the pleasure of using the rigid remote gear-lever and "flv-off" hand-brake and found the fade-free and powerful disc front brakes a very



AUSTIN OF ENGLAND.— the imposing Longbridge factory as seen by visitors approaching Austin's famous Exhibition Hall. The lamp-standards must have been imported from Subtopia !

worth-while feature of the car. The overdrive is impressive, too, functioning as it does on the three upper gear ratios, giving seven forward speeds. The Triumph engineers are to be congratulated on pioneering the use of disc brakes on a low-priced sports car and, while their competitors are undoubtedly considering following suit, by the time such brakes become commonplace on the front wheels of other fast cars it is possible they will be found on *all four* wheels of the Triumph. As with B.M.C., Standard/Triumph use dispersed factories, components travelling by road to each assembly plant. Castings are obtained away from the Coventry factory.

In a short survey of this sort it would be invidious to compare British with foreign plants, but in natural lighting of the shops and good working conditions there seems little to choose between ourselves and Continentals. If dispersed factories are, naturally, smaller than self-contained plants such as those at Wolfsburg and Flins, the newest assembly hall at Longbridge, for instance, is their equal in spaciousness and cleanliness. It was, however, rather a shock to find i.c.-engined Aerolift trucks about the Austin-Healey factory, their exhaust pipes led vertically upwards above the driver, but decanting smoke nevertheless.

HOW AUSTIN-HEALEYS ARE ASSEMBLED

On the third day of our pilgrimage we went to the works of the Austin Motor Company, Ltd., at Longbridge, on the outskirts of Birmingham, where Mr. John Bowman, the Press Officer, and his assistant met us in the fabulous Exhibition Hall, where Austin, Wolseley and Austin-Healey models could be inspected in elegant and spacious surroundings, and where in the entrance foyer are to be found silver miniatures of some historic Austin cars.

The comparatively-new Austin-Healey 100 Six sports car is assembled in the same shop as the brightly-coloured Nash-Metropolitans. The bodies arrive from the Jensen factory at West Bromwich in batches of four on transporters and are lifted by hoist to be stored until required. They are delivered with the Thompson chassis frame welded in place. After being lowered on to wheeled trolleys they join the single chain-conveyor line, where they have the engine, suspension units and back axles fitted at ground level. The Austin A105 engines are made at Coventry, only A35, Morris Minor and A55



LEISURELY ASSEMBLY— The single production-line of Austin-Healeys at Longbridge is mainly at floor level, with Nash-Metropolitans completed on a higher plane in the same shop.

engines being produced at Longbridge. Each A105 engine is electrically motored-in and 10 per cent, of these power units undergo a bench-test of about an hour's duration, during which a power check is made.

The Austin-Healey assembly line is quite a short one, because the bodies are supplied complete with seats, etc. After the power unit and suspension units have been assembled the cars go up a ramp for under-chassis pipework, greasing, brake-bleeding, etc., to be completed from a pit, after which they come back to floor level for the fitting of gearbox-tunnel cover, carpets (which are then rolled up and stowed in the boot until needed for final fitting) and a slave seat for the use of the test driver. Every wheel is statically balanced on a Weaver balancing machine. Dunlop supply all the wheels, which are painted by Austin, and the "Road Speed" tyres, which arrive at the assembly line on overhead conveyors.

A skilled electrician who has been with Austin for some 35 years checks all electrical wiring on the car before the completed Austin-Healey is supplied with petrol, oil and water and taken to a bay where the engine is run slowly while carburettor adjustments are made, after which it leaves for a brief road-test. If the car is found to be generally satisfactory it is taken by a girl driver round the shop to another bay, any further adjustments required are carried out and the carpets and seats are fitted, any blemishes both exterior and under the bonnet are attended to, spanner marks removed from pipe unions, under-bonnet flaws rectified by hand painting and the fan shield painted red, etc. A further road-test is then undertaken by a different test driver. Each Austin-Healey then goes to the rectification bay, in a corner of the latest vast assembly hall, and a very careful inspection is carried out.

There is an air of leisure about the assembly of these popular sports cars. The production line is hand-fed throughout, some operations are carried out with normal spanners by calm operatives, the final inspection is very thorough and altogether, in this shop where, before the war, Austin bodies were feverishly produced, there is the impression that the Austin-Healey is to some extent a hand-produced product. In fact, if bodies and other components do not fall in short supply, Mr. Wagstaff, who is in charge, can feed Austin-Healeys off the line at the rate of more than 40 a day. That, in a 5-day 42½-hour week, represents over 200 sports cars which are selling well in dollar markets. Indeed, 95 per cent, of production is of left-hand-drive cars. Since Austin-Healey production began 59 per cent, have been exported to America, earning 13½ million dollars up to January this year and just under another million dollars from Canada. Moreover, U.S. exports have increased from 56 per cent, of four-cylinder Austin-Healey production to 63 per cent, of the new six-cylinder model. The Austin Company would not divulge production figures for its other models.

Incidentally, although centre-lock wire wheels are an extra, only a few Austin-Healeys are now ordered with bolt-on disc wheels. Six testers do the main road-testing and these men carry out their own carburettor adjustments, etc.

We did not have time to see the transfer drilling of B.M.C. cylinder blocks, which at this factory would, in any case, not have been relevant to the Austin-Healey, but it is significant that when, some six years back, Austin wanted transfer machines and no machine-tool concern was prepared to make them, they set about manufacturing their own and are now consulted about this highly-specialised aspect of engine production. Automation at Longbridge is controlled by electric relays and control offices situated far from the scene of the complicated operations they control. Another pleasing piece of information is that Austin prototypes are wind-tunnel tested to obtain drag and cooling data.

There was no attempt to disguise the fact that the new six-cylinder Austin-Healey 100 is slower and in some ranges less accelerative than the four-cylinder model it replaces. The six-cylinder engine, on the other hand, is very smooth and comparatively quiet and is working well within its capacity. That it should be capable of considerable development is evident from the 200-m.p.h. record set up at Bonneville with a streamlined, supercharged version.

The Austin branch of B.M.C. is well aware of the value of competition work and Austin models entered for rallies are prepared at Abingdon in the M.G. Competition Department. Donald Healey looks after the quicker-than-standard Austin-Healeys. In conversation it was confirmed that most of the World's cars are bought by B.M.C. for research purposes, the latest being a Skoda, of which, we gather, they do not think very much of the finish. There still seems to be a tendency to regard the cost of retooling as a big deterrent to major design changes but we were asked if we had tried the seating of the Austin A55, the comfort of which is attributed to a keen driver having been given a free hand in the development of this model.

After another excellent lunch, at Bellbroughton, we drove to

Worcester and back in an Austin-Healey 100-Six two-seater, which made an interesting contrast with our own (four-cylinder) Austin-Healey 100M. The windscreen, replacing the former inclinable screen, is more rigid, sliding sidescreeens replace the old-style side-screens, the doors have useful interior and exterior handles, the hood releases from within, the gear-lever has shorter lateral and transverse movements, the dash is nicely finished in leathercloth, the overdrive switch has been re-positioned to advantage but the heater controls have now crawled up into full view. The owner of the 100M pronounced the six-cylinder to have better brakes, a smoother engine and the same pleasant sensation of sitting squarely on the road, an understeer tendency when cornering changing to modest oversteer around the mile-a-minute mark. The engine accelerates with a purposeful hiss from the twin S.U.s to its safe limit of 4,800 r.p.m. The speedometer, checked roughly against rev.-counter readings, appeared to be 8/10 m.p.h. fast but 80 m.p.h. in normal-top came up quickly, and the smooth, effortless functioning of this 102-b.h.p. engine was a notable feature of the car. Since the last London Motor Show the bonnet panel has been given stiffening ribs which stop it dancing in unison with scuttle vibration which is still evident.

After tea in the gaily-decorated restaurant of Sir Leonard Lord's Exhibition Hall we inspected a hard-top Austin-Healey 100-Six, which is a nicely-proportioned car, although lacking the full Continental treatment, probably because the stylist had to keep the back of the hard-top high enough to clear the children in the back seats, who, although they lack legs presumably possess heads. In a two-seater the top could be that much lower and the back window swept nearer the tail. But this is a very fine-looking car nevertheless.



FINISHED PRODUCT, awaiting test while the Editor is wined and dined. This Austin-Healey 100-Six has greater refinement than the old four-cylinder model and uses a different shape radiator grille. Centre-lock wire wheels are an "extra" that is ordered almost without exception.

That concluded our visit to three leading British sports-car factories. To supplement this brief description of how these cars are made we hope, with the makers' co-operation, to publish in future issues our impressions of how they go.—W. B.