


BMC Mini-Cooper
Saab
Triumph Herald 1200
MGA
Sunbeam Alpine



**CHOICE
CAR SUPPLEMENT**

OCTOBER 1962

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PREVIOUS SUPPLEMENTS

(post-budget prices which include heater and windscreen washers with estimated fitting costs where relevant)

FIRST SUPPLEMENT (APRIL 1962)

	£	s.	d.
BMC Mini-Car de-luxe	535	4	0
Ford Anglia de-luxe	632	5	3
Ford Popular de-luxe	524	1	0
Morris Minor 2-door de-luxe	600	10	3
Renault Dauphine	659	12	9
Triumph Herald S	644	10	3
Volkswagen de-luxe	717	7	9

The Austin A40 was also included in this Supplement, but the version we tested has been replaced by the Austin A40 Mk II.

SECOND SUPPLEMENT (JUNE 1962)

Austin A60 de-luxe	832	17	9
Ford Classic 4-door de-luxe	795	1	6
Hillman Super Minx	805	7	9
Singer Vogue	901	12	9
Vauxhall Victor Super (4-speed gearbox)	773	2	9

We also tested the Ford Consul 375, now off the market.

THIS SUPPLEMENT

MODELS AND PRICES

(version tested in **bold**: prices include heater and windscreen washers with estimated fitting costs where relevant)

		£	s.	d.
BMC Mini-Cooper	Saloon	640	7	9
(Austin or Morris)				
Saab 96	Saloon	826	0	3
Triumph Herald 1200	Saloon	673	7	9
	Coupe	700	17	9
	Convertible	744	17	9
	Estate car	767	11	6
M.G. MGA 1600 Mk II	With hood	931	9	6
	Coupe	1,015	7	0
Sunbeam Alpine Series II	With hood	978	17	3
	Hard top	extra 66	10	0
	Overdrive	extra 58	8	9

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AUSTRALIAN READERS—See note on page 112.

In this supplement we report on two groups—first, three small saloons which compare, generally, with the cars in our first supplement. The TRIUMPH HERALD 1200 is a more powerful version of the TRIUMPH HERALD S and seems to be more popular amongst our members. The BMC MINI-COOPER is a more powerful version of the BMC MINI-CAR. The third is the SAAB 96. The second group in this supplement consists of two sports cars closely comparable in price and engine size—the M.G. MGA 1600 Mk II and the SUNBEAM ALPINE Series II.

The BMC MINI-COOPER—available under both AUSTIN and MORRIS labels, the one we tested being an AUSTIN—is the most expensive, except for the RILEY ELF variation, of all the MINI-CARS. Its seats are those used in the Super version of the MINI-CAR.

Besides the ordinary saloon version of the TRIUMPH HERALD 1200 which we tested, there are coupe, convertible and estate car versions.

The SAAB 96 is only available in this country in the form we tested. It has a two-stroke engine as opposed to the more conventional four-stroke. (The differences this made in practice are mentioned in the relevant sections.)

We tested the versions with hoods of both sports cars. The MGA is also available as a coupe and the SUNBEAM ALPINE with a hard-top, at extra cost. We did not test the overdrive, which you can get as an extra on the SUNBEAM ALPINE.

As these cars are mostly of interest to the more enthusiastic driver, we incorporated in our test running of 11,000 miles, a tour of France at high average speeds in which we covered some 2,500 miles in just over a week. This gave much useful information about the way in which the cars stood up to road conditions considerably worse than those normally encountered in this country, and to high speed touring of a kind to which their owners will probably want to subject them.

Although the cars in this supplement are two separate groups which we will not want to compare directly we are, to save space and for general convenience, discussing them under the same headings.

Just before we went to press, we followed our normal procedure and asked the manufacturers whether any modifications had been introduced

TABLE I
Dimensions and weight

	Overall Dimensions				Ground clearance (fully laden)			Weight (fuel tank full, no occupants)	
	Length	Width	Garage width*	Height (unladen)	Minimum clearance	Minimum clearance in central strip 2 ft wide	Lowest point in central strip	Total	Front/rear distribution ratio
	ft. in.	ft. in.	ft. in.	ft. in.	in.	in.		lb	
BMC Mini-Cooper	10 1	4 8	5 9½	4 4	4¼	4¼	Silencer	1,449	61/39
Saab	13 1½	5 2	6 2½	4 9½	5¼	5¼	Exhaust pipe	1,792	58/42
Jump Herald 1200	12 10	5 1	6 1	4 5½	5¼	5¼	Sump, exhaust pipe, axle housing	1,799	52/48
MGA	13 0	4 10	6 4	4 2	5	5	Exhaust pipe	2,086	52/48
Sunbeam Alpine ..	12 11	5 1	6 1½	4 4	5¼	5¼	Frame cross section	2,226	50/50

*With driver's door open just enough to get in

since we bought our cars. The information they gave, where it might affect our test results, is summarised on p. 111.

HOW EFFICIENT?

To compare the performance of the various cars, we carried out tests of starting, acceleration, top speed, climbing hills, cooling efficiency, handling characteristics and braking. For all these tests (except the hill climb) the saloon cars carried a load of 450 lb (equivalent to three people) and the two sports cars, 390 lb (equivalent to two people and luggage).

STARTING

It was sometimes very difficult to start the SUNBEAM ALPINE when it was very cold and to restart even when the engine was warm, particularly when facing uphill. It tended to stall when idling at traffic lights, for instance, and ran unevenly until the engine warmed up. All our efforts failed to overcome this completely.

It was not difficult to start the others. But the SAAB, with its two-stroke engine, let out clouds of blue smoke on starting from cold.

The MGA and the SUNBEAM ALPINE both had starting handles. None of the saloon cars was supplied with one.

ACCELERATION

We have changed our acceleration tests. We have kept our test of timing the cars from a standing start over one third of a mile, as a general measure of the car's ability to move away rapidly from a standstill. To complement this, we have also made calculations of how long, and what distance, it would take each car to overtake another car in three situations—from 30 mph in third gear (second in the SAAB) and from 40 mph and 50 mph in top gear. We have assumed that the car overtaken keeps the same initial speed and that the overtaking car starts one car's length (14 ft) behind for every 10 mph of speed and does not draw back in front of the overtaken car until it is clear of it by the same amount.

The standing start figures given in Table III are the averages of ten runs, five runs in each direction, one run in each direction being made by each of five drivers. We have calculated the overtaking distances and times from recordings

TABLE II

	Price*		Engine					Transmission		
	£	s. d.	Capacity cc	No. of cylinders	Compres- sion	Net bhp at rpm	Top gear mph (a. 1,000 ft/ min. pis- ton speed	Drive	For- ward gears	Synchromesh on
BMC Mini-Cooper ..	640	7 9	997	4	9.0 : 1	55 @ 6,000	33.1	Front	4	2nd, 3rd and top
Saab 96	826	0 3	841	3	7.3 : 1	38 @ 4,250	27.6	Front	3	2nd and top
Triumph Herald 1200 ..	673	7 9	1,147	4	8.0 : 1	41 @ 4,500	31.5	Rear	4	2nd, 3rd and top
MGA 1600 Mk II ..	931	9 6	1,622	4	8.9 : 1	90 @ 5,500	30.6	Rear	4	2nd, 3rd and top
Sunbeam Alpine Series II	978	17 3	1,592	4	9.1 : 1	80 @ 5,000	34.4	Rear	4	2nd, 3rd and top

*Including heater and windscreen washers, but not number plates or delivery charges

made at 200 ft intervals over the whole of our one third of a mile level course. Runs were made in both directions except for the 50 mph test in which we were only able to run the cars one way because of limited space available at the end of the track.

Over one third of a mile from a standing start, the BMC MINI-COOPER was considerably quicker than the SAAB and TRIUMPH HERALD 1200. Compared with the cars in our first supplement, the MINI-COOPER was much quicker and indeed would out-accelerate the cars in our second supplement. The SAAB and TRIUMPH HERALD 1200 were as quick as the quickest of the cars in our first supplement (the BMC MINI-CAR) and the slowest of those in our second supplement (the FORD CONSUL). The TRIUMPH HERALD 1200 was considerably quicker than the TRIUMPH HERALD S.

In the second—overtaking—test, the BMC MINI-COOPER needed less distance for overtaking than the other two cars from 30 mph in third gear and 50 mph in top. The SAAB was as good as the BMC MINI-COOPER from 40 mph in top gear. (The BMC MINI-COOPER had a third gear which was useful at this speed, whereas the SAAB and TRIUMPH HERALD 1200 were happier in top.)

The MGA was quicker than the SUNBEAM ALPINE from a standing start, but needed more distance to overtake in our tests. (The MGA also had a third gear which was useful at

50 mph, and its top gear gave better acceleration than the SUNBEAM ALPINE at speeds over 70 mph.)

TOP SPEED

Table III also gives the top speeds which we found for the various cars, taken as a mean of three runs in each direction. Of the saloon cars, the BMC MINI-COOPER was by far the fastest and there was no real difference between the SAAB and the TRIUMPH HERALD 1200.

The MGA was much faster than the SUNBEAM ALPINE. Both speeds were measured with hoods up.

CLIMBING HILLS

To test the car's ability to start on, and climb, steep hills, we made six runs from a standing start up a 1 in 4.5 hill. The average times taken to cover 100 ft are in Table III.

The saloon cars were tested with a load of 690 lb (equivalent to four people and luggage). The SAAB and the TRIUMPH HERALD 1200 took about the same time. The TRIUMPH HERALD 1200 showed no signs of effort. With the SAAB, the steering wheel and gear lever shook violently as the car started moving, and it overheated by the end of the six runs. The BMC MINI-COOPER did not always complete the run; when it did, it took longest. Its front wheels span fiercely, and the clutch was starting to slip by the end of the sixth run.

Maker's specifications

Final drive ratio	Brakes			Tyre Size	Coolant Capacity including heater pints	Oil Capacities		
	Drum/disc diameter		Lining area sq. in.			Crankcase† pints	Gearbox pints	Differential pints
	Front in.	Rear in.						
3.77 : 1	7½	7	44.8	5.20 × 10	6½	9	Inclusive	
5.3 : 1	9	8	105.0	5.20 × 15	13½	—	3½	Inclusive
4.11 : 1	8	7	73.0	5.20 × 13	8½	7	1½	1
4.1 : 1	11½	10	89.1	5.90 × 15**	10	7½	4½	2½
3.89 : 1	9½	9	80.6	5.90 × 13**	15	8	2½	1½

†Includes filter

‡Disc brakes

**High speed

The MGA and SUNBEAM ALPINE were loaded with 390 lb (equivalent to two people and luggage). Neither found any difficulty in completing six runs.

COOLING EFFICIENCY

Our tests for cooling efficiency were designed to show whether the cooling system would be likely to boil if the car were driven continuously at top speed or left idling for a long time. The figures are calculated from measurements taken at lower ambients than those required

to boil the engine. For the tests, thermostats were fixed in a fully open position to prevent the action of the thermostats affecting the results. The TRIUMPH HERALD 1200 came out best. See Table IV.

HANDLING

Our tests for handling characteristics included an objective test to discover the way the cars behaved, characteristically, and the subjective assessment of our drivers. The qualities we look for are the ability to hold a straight course

TABLE III
Acceleration, top speed and climbing hills

	Acceleration							Top Speed mph	Climbing Hills Av. time to cover 100 ft of 1 in 4.5 hill from rest sec
	Standing start one third mile sec	Overtaking times and distances							
		Third gear 30 mph sec	Top gear			yards	sec		
BMC Mini-Cooper ..	27.1	7.0	136	11.4	265			13.4	378
Saab	29.5	8.3	155	11.0	257	16.0	441	71	8.8
Triumph Herald 1200	29.5	8.1	152	11.8	272	16.0	441	72	9.2
MGA	24.2	6.9	135	11.1	255	13.4	378	109	6.4
Sunbeam Alpine ..	25.1	6.6	130	10.5	247	11.5	331	94	6.1

TABLE IV

Air temperature needed to boil cooling system

	<i>Continuous top speed</i>	<i>Idling in still air</i>
	<i>°F</i>	<i>°F</i>
BMC Mini-Cooper	103	98
Saab	92	112
Triumph Herald 1200 ..	149	104
<hr/>		
MGA	131	81
Sunbeam Alpine	144	92

TABLE V

Angle of roll

	<i>(Degrees)</i>
BMC Mini-Cooper	4.5
Saab	4.7
Triumph Herald 1200 ..	5.1
<hr/>	
MGA	3.1
Sunbeam Alpine	4.1

steadily; the ability to take corners as the driver wants without the need for correction or too much effort; good road holding; and finally, not too much rolling when going round corners. A car which has all these qualities feels precise to steer and gives the driver a feeling of confidence.

Our objective test was to drive the cars round a 75 ft radius circle at increasing speed, having first found the amount the steering wheel had to be turned to keep the car on the 75 ft radius curve, going as slowly as possible. The results, including the amount the steering wheel had to be turned, are in Diagram 1, expressed in terms of the increase in steering wheel angle for different radial accelerations, measured in terms of g (the acceleration caused by gravity—32.2 ft/sec/sec).

In general, the results of the objective test correlated very closely with the subjective assessments of our testers.

The three saloon cars all handled very well. The BMC MINI-COOPER's steering was very precise and sensitive in moderate cornering.

With more ruthless cornering, understeering became more and more marked—that is, as the speed increased, the driver had to turn the steering wheel more and more to keep the car on the same curve. This is represented by the line on the graph going upwards. Characteristically, it was the front tyres which broke away first. This happened particularly when the road was slippery or the front tyres were worn. Since the car wore out its front tyres quickly it is as well to pay constant attention to them. In general it was safe and sure in its handling.

The handling of the SAAB, which also had front wheel drive, was much the same in character as that of the BMC MINI-COOPER but it did not have the same precision or verve. But the car felt very solid indeed and the front tyres were very reluctant to break away.

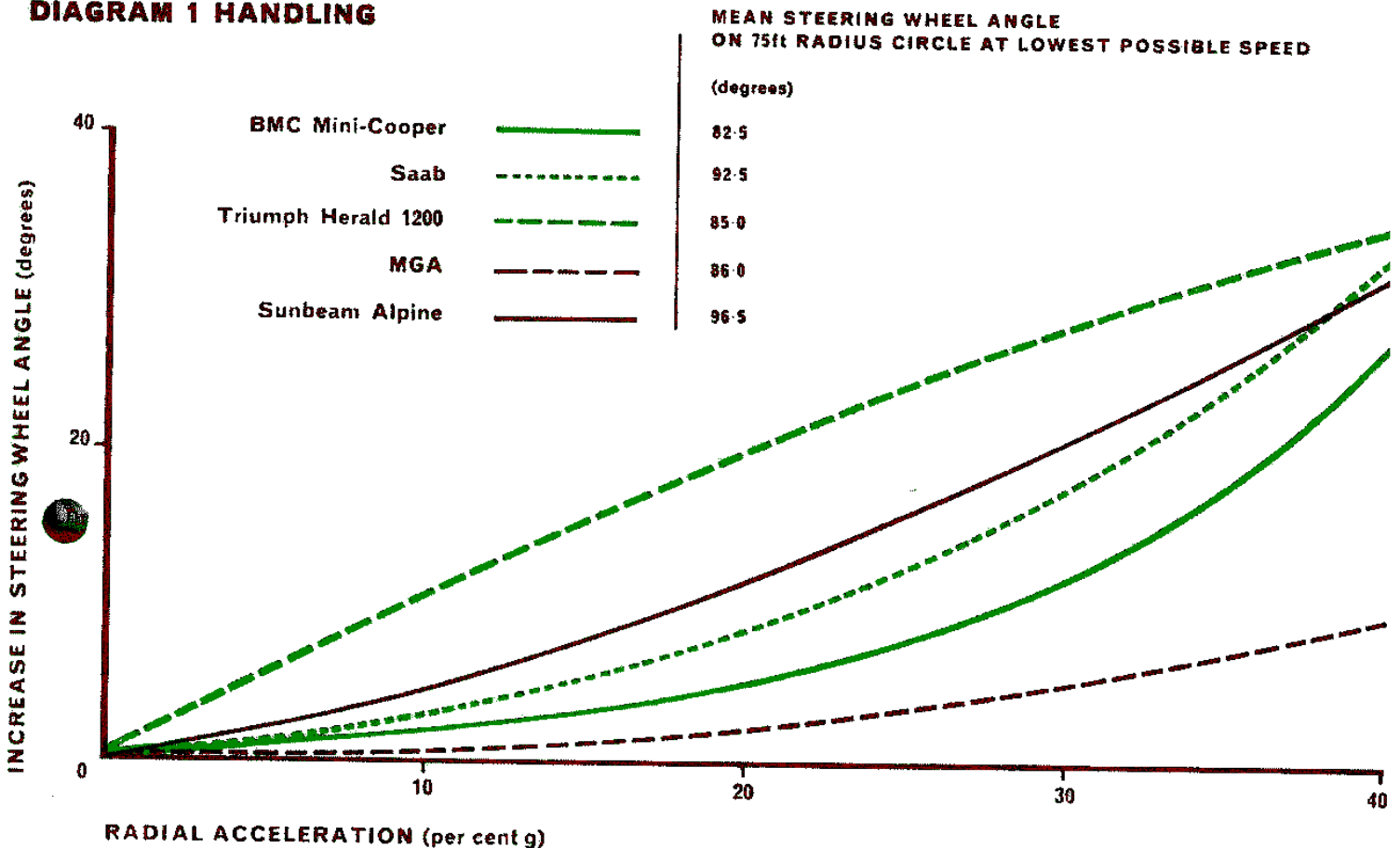
With cars which have front wheel drive, there is a tendency for the front to turn into the corner when you take your foot suddenly off the accelerator. This did not present any great problems with the BMC MINI-COOPER and SAAB, once the driver got used to it.

The TRIUMPH HERALD 1200 behaved in a very similar way to the TRIUMPH HERALD S. The transition from understeering to oversteering—when the rear wheels tend to turn the car more than the driver wants—was smooth and very easily followed. The car could be handled with confidence in spite of bad surfaces. Characteristically, the back tyres tended to break away first, though not easily.

The MGA's graph shows that its handling characteristics were very nearly neutral, with a very slight degree of understeer. It was an extremely pleasant car to handle and the steering gave a feeling of great precision and confidence. At high speeds on a straight course, it was almost too precise so that the car had to be very carefully controlled.

The graph shows that the SUNBEAM ALPINE had marked understeering tendencies, and our drivers did not like its handling nearly as well

DIAGRAM 1 HANDLING



as the MGA's. Its handling was described as 'mushy' and our drivers said that it tended to 'wallow' in corners. This understeering meant that the driver—if he cornered fast—had a considerable amount of hard work to do on the steering wheel.

Side Winds

None of the three saloon cars was much affected.

The MGA was very little affected. Our drivers found that the SUNBEAM ALPINE was quite susceptible to side winds.

Roll

We measured the angle to which the cars rolled at a speed of just under 25 mph on a 75 ft radius turn (a radial acceleration of 50 per cent g). The limits of accuracy of this measurement are plus or minus about 0.5° . See Table V.

Differences between the saloon cars were not significant.

The MGA rolled less than the SUNBEAM ALPINE.

Turning Circle

Diagram 2 shows the turning circles of the cars when turned at full lock, 'kerb-to-kerb' and 'wall-to-wall'.

The TRIUMPH HERALD 1200 had appreciably smaller turning circles than the BMC MINI-COOPER which in turn had appreciably smaller turning circles than the SAAB. This means that the TRIUMPH HERALD 1200 would need least manoeuvring to turn in a narrow road, the SAAB the most.

The MGA had slightly smaller turning circles than the SUNBEAM ALPINE.

BRAKING

The qualities we looked for in the foot brakes were consistency in ordinary braking, good stopping power without too much effort in an emergency, and the ability to stand up to continuous hard work and water. We also tested the hand brake for use on hills and in an emergency.

The BMC MINI-COOPER had disc brakes on the front wheels, drum brakes on the back,

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while the SAAB and TRIUMPH HERALD 1200 had drum brakes on both. Both the MGA and SUNBEAM ALPINE had front disc brakes. In general, disc brakes are considered to withstand hard work better than drum brakes, but may need heavier pressures.

To assess the consistency and power of the brakes, we measured the amount of deceleration produced by given foot pressures at 30 and 60 mph. The results—given separately for each speed in Diagram 3—are based on three tests for each car.

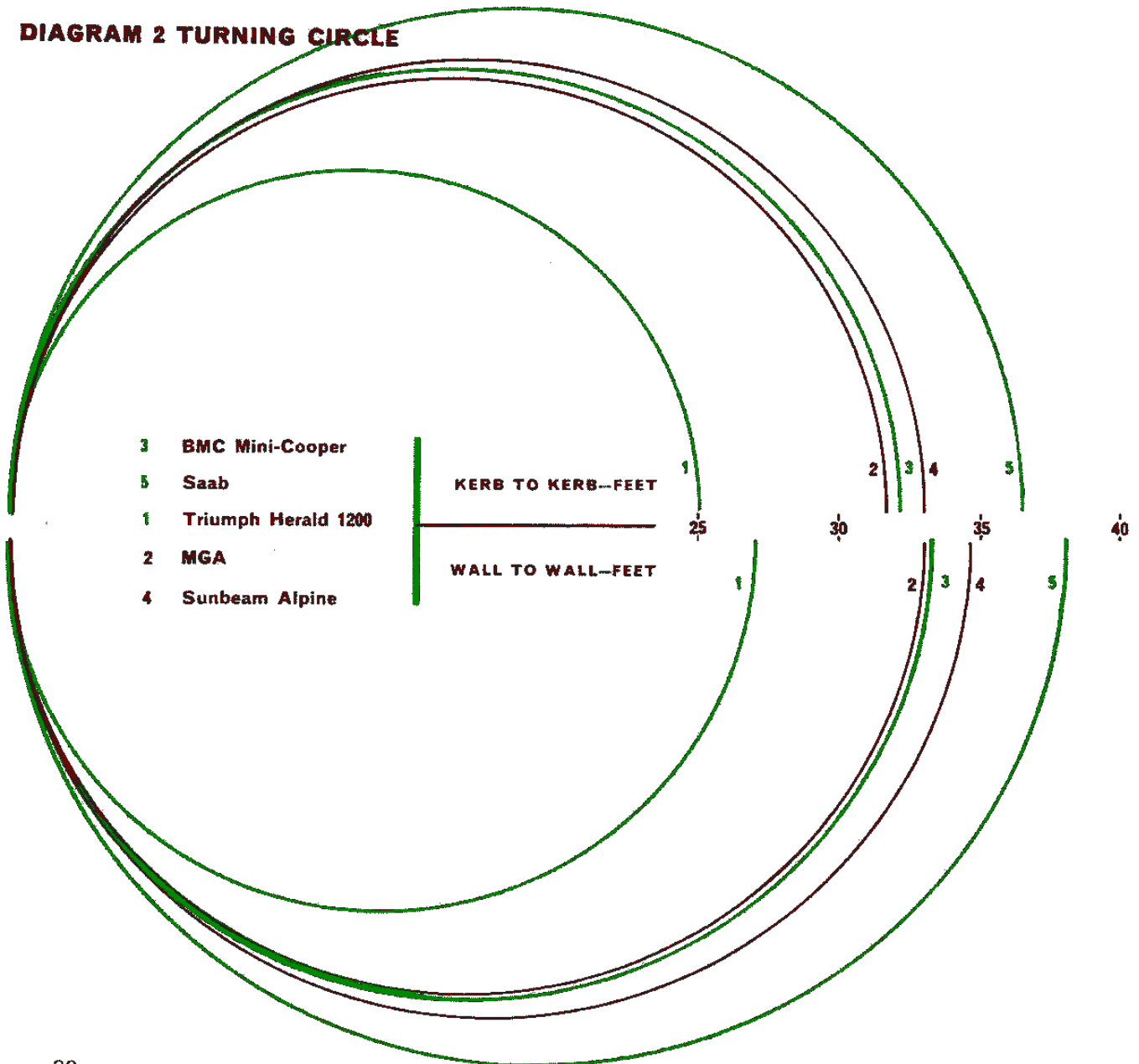
Of the saloon cars, the TRIUMPH HERALD

1200 gave the most satisfactory performance. It needed very similar—and not unduly heavy—pressures at both 30 and 60 mph. All four wheels tended to lock at the same time—the best alternative to locking none.

The BMC MINI-COOPER's did next best, also giving very consistent results at both 30 and 60 mph, but they were not as powerful as the TRIUMPH HERALD 1200's and the front wheels tended to lock first. They were certainly better than those on the ordinary BMC MINI-CAR we tested.

The SAAB was least satisfactory. It needed

DIAGRAM 2 TURNING CIRCLE



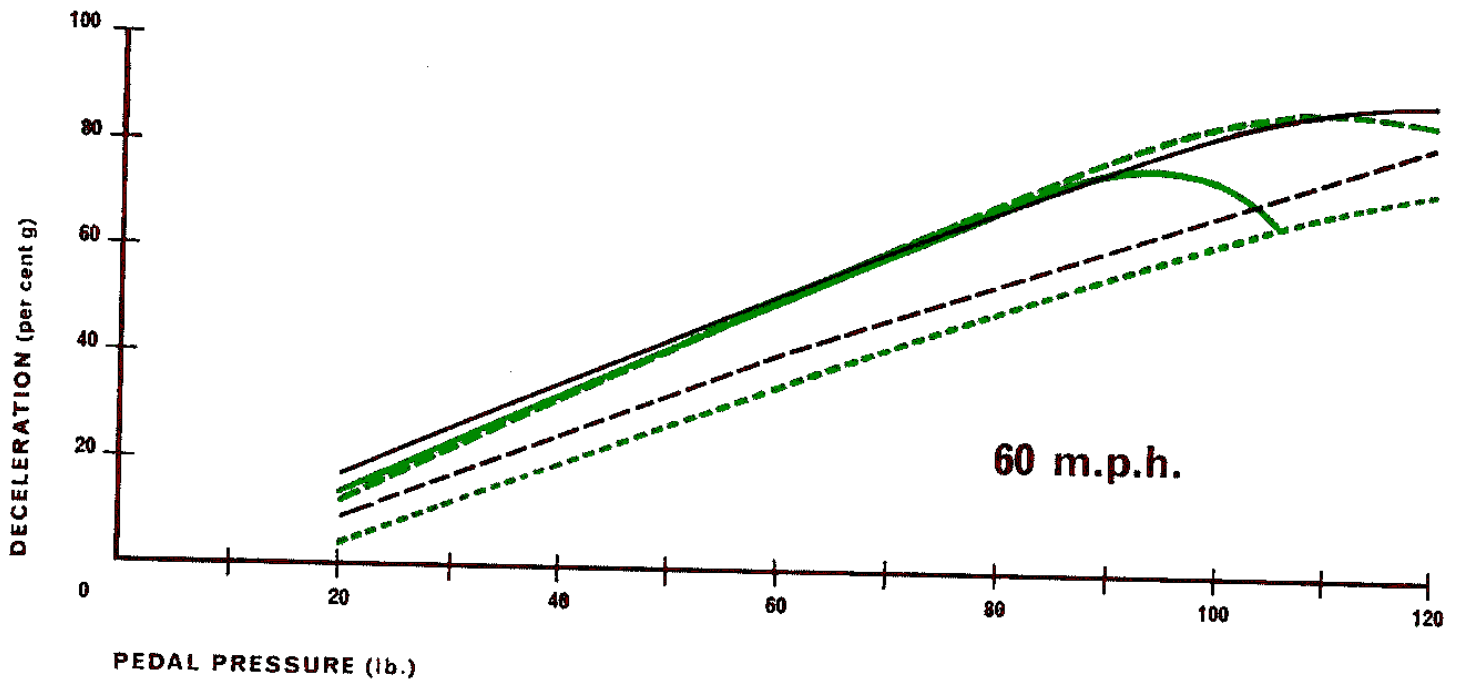
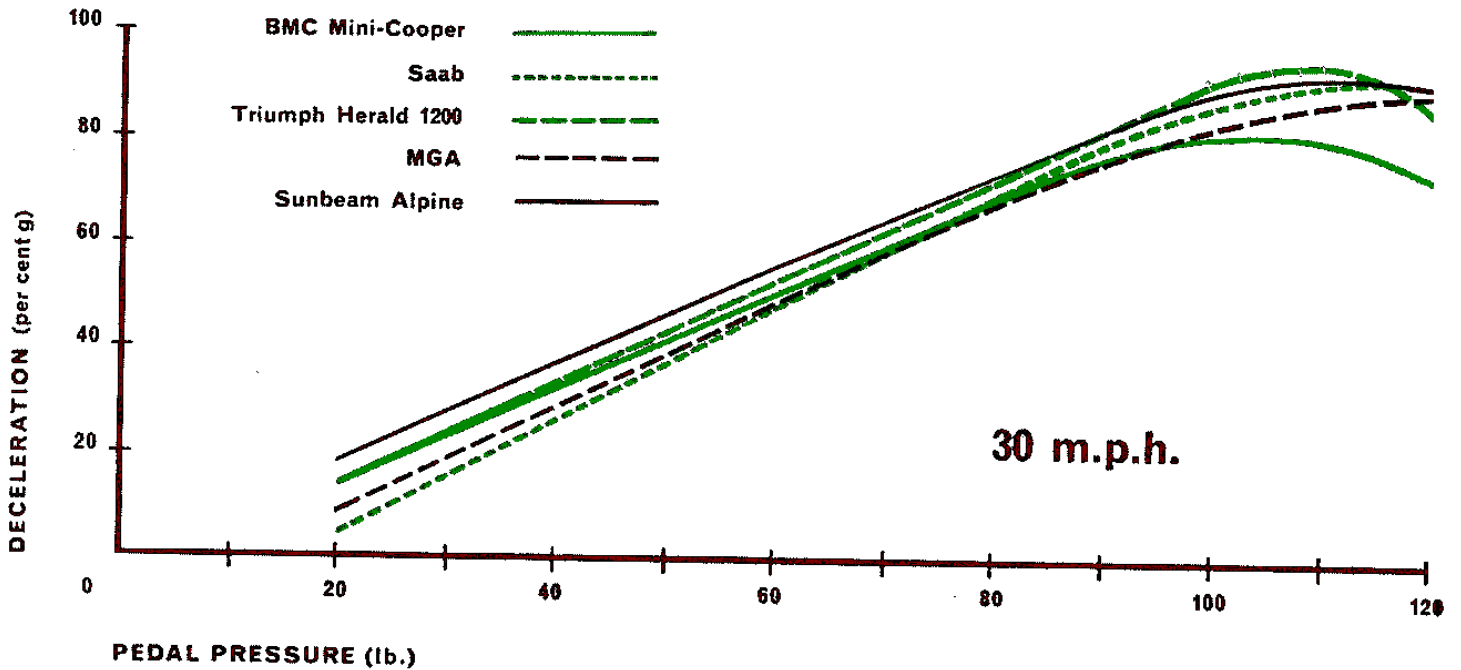
heavier pressure for the moderate decelerations used in ordinary braking than any other car we have tested. At 60 mph it needed very heavy pressure to produce its rather limited maximum stopping power. Our drivers continually complained of the effort needed.

The SAAB also has a device, called a 'free wheel', which you can use at will, which automatically disconnects the engine from the

wheels when you release the pressure on the accelerator. This means that, although a gear is engaged, the car is, in fact, coasting. The object is to save petrol and rest the engine, but the disadvantage is that you get no braking effect at all from the engine. And it is a way of driving that takes some getting used to.

Of the two sports cars, the SUNBEAM ALPINE was more satisfactory, stops at both 30 and 60

DIAGRAM 3 BRAKING



mph needing very similar efforts. The MGA needed heavier pressures. Neither car could match the braking performance of the **FORD CONSUL 375** (see June 1962 Car Supplement). As they can go much faster, this is a pity.

Continuous hard work

All the cars did well in our fade tests—two 25 minute series of stops at one minute intervals from three quarters of maximum speed at a deceleration of 50 per cent g.

Of the three saloon cars, the **BMC MINI-COOPER** did best, losing slightly less of its efficiency than the **SAAB**, although both did well, the **SAAB** never needing more than an additional 19 lb pedal effort. Although the **TRIUMPH HERALD 1200**'s brakes did not lose any of their stopping power, they pulled from side to side in the second part of both series of tests.

The **MGA**'s brakes did not fade at all. But during the time the car was recovering from the test, the brakes 'grabbed' very badly, because the friction pad assemblies on the front wheels had moved in the caliper units. The **SUNBEAM ALPINE**'s brakes faded very slightly. Although

they did very well in the track test, they always felt 'spongy' and lacked firmness and precision. Driving down long slopes in France, the brakes gradually deteriorated, eventually becoming completely ineffective, and the master and rear wheel cylinders had to be replaced. The brakes did not appear to be able to stand up to long periods of hard work. An alp, in fact, might prove a bit too much for our **SUNBEAM ALPINE**.

Water

All the cars did reasonably well in our tests for resistance to water—a series of stops at 1 minute intervals at 30 mph after driving the cars through water for 10 minutes.

The **SAAB** brakes lost most effectiveness and had not recovered by the end of 30 minutes. The **BMC MINI-COOPER** and **TRIUMPH HERALD 1200** were affected in much the same way as each other, but the **TRIUMPH HERALD 1200** recovered in 20 minutes whilst the **BMC MINI-COOPER** had not recovered at the end.

The **SUNBEAM ALPINE** lost slightly less effectiveness than the **MGA** initially and recovered in 20 minutes to the **MGA**'s 30 minutes.

DIAGRAM 4 HAND BRAKE (pull required in lb.)

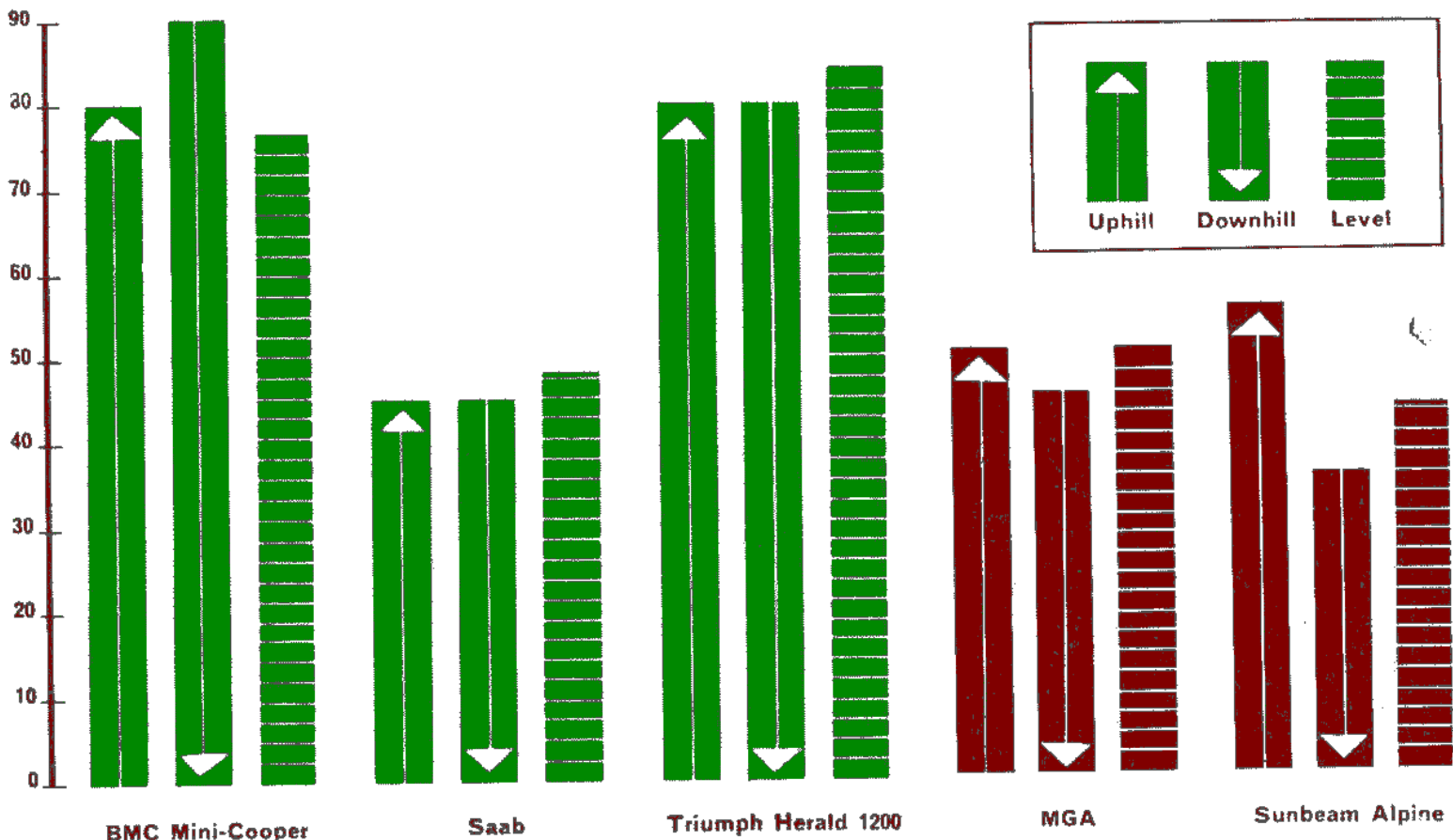


TABLE VI

Deceleration produced by 100 lb pull on hand brake

	%g
BMC Mini-Cooper	35
Saab	30
Triumph Herald 1200	28
MGA	40
Sunbeam Alpine	45

Summary

Of the three saloon cars, the TRIUMPH HERALD 1200 did best in ordinary braking and in resistance to water, but was unstable in the fade test. So the brakes were good for ordinary driving but not so good for hard driving.

A design characteristic in the braking system was that one brake shoe lining on both rear brakes wore excessively because the hand brake mechanism did not return properly after use. Although the brakes of the BMC MINI-COOPER and the SAAB did well in our tests for fade and resistance to water, neither had a particularly high maximum stopping power at 60 mph and the SAAB needed far too much effort.

There were disadvantages with the brakes of both sports cars. The MGA's brakes stood up well to fade, but needed a great deal of effort, while those of the SUNBEAM ALPINE, which needed less effort, did not stand up at all well to the use that was required from them in high speed continental touring.

Hand brake

The SAAB's hand brake needed least effort of the saloon cars—although still quite a lot. It was, however, placed out of easy reach of the driver. The hand brakes of the BMC MINI-COOPER and TRIUMPH HERALD 1200 both needed far too much effort—over 50 lb—if used on a steep hill or in an emergency.

There was little difference in the efforts needed for the MGA and SUNBEAM ALPINE hand brakes, neither being light. See Diagram 4 and Table VI.

HOW MUCH ROOM?

Table VII gives details of the room available in the front and back seats of the car, and the measurements recommended to accommodate the tallest or broadest people.

We have given details of the total width available in the front although all the cars had two separate front seats. This measurement excludes the permanent centre armrest in the two sports cars. The TRIUMPH HERALD 1200 was the only car where the front seats could be adjusted vertically, separately from the adjustment for length. But the adjustment was only through 1 in. rather than the 4 in. which we think desirable. The SAAB had the most head room for the driver of any car we have tested so far and was the only one to have enough head room for even the tallest drivers. Head room for the driver was limited in the SUNBEAM ALPINE with the hood up, and tall drivers found themselves supporting the hood with their heads.

In the back seat, the SAAB had almost enough head room for the very tallest passengers and the back of the seat cushion could be raised through about 3 in. Head room in the BMC MINI-COOPER and TRIUMPH HERALD 1200 was limited. The SAAB also had more hip room than any of the cars in our first supplement, except the RENAULT DAUPHINE and VOLKSWAGEN, more shoulder room than any except the VOLKSWAGEN, and not a great deal less than the cars in our second supplement. The back seat might take three small people in reasonable comfort. Knee room was limited, however, very much so with the front seat right back.

It would be possible for an adult to sit in a womb-like posture in the back of the SUNBEAM ALPINE, although this could not be described as comfortable. Two very small and very hardy children might just manage to travel in the back. It would be virtually impossible for anyone to sit in the back of the MGA in any position.

HOW MUCH LUGGAGE?

Table VIII shows the volume of suitcases which we could get into the boots of the cars. With none of them could you get to the spare wheel, if the boot was full of luggage.



Limited knee room in Saab back seat, with front seat right back

The SAAB and the TRIUMPH HERALD 1200 held much the same amount of luggage, more than twice as much as the BMC MINI-COOPER.

The SUNBEAM ALPINE's boot held more luggage than the MGA's, in which the spare wheel took up a great deal of space. There was also a great deal of room, which would take 4.9 cu ft of our luggage, behind the front seats in the SUNBEAM ALPINE.

HOW MUCH STORAGE INSIDE?

The BMC MINI-COOPER, like the ordinary MINI-CAR, had a great deal of storage space

TABLE VIII

Luggage compartment capacity with spare wheel in place

	(cu ft)
BMC Mini-Cooper	3.0
Saab	7.4
Triumph Herald 1200	8.0
MGA	1.6
Sunbeam Alpine	2.8

inside. The full width front parcel shelf had slightly less room because the central instrument panel was larger. Small articles got wedged under the instrument panel. It was difficult to put anything very much on the back parcel shelf without reducing rear vision. There were large compartments in each of the doors and at each side of the back seat, and locker space under it.

The TRIUMPH HERALD 1200's dashboard compartment, unlike that in the HERALD S, had a lid which limited the size of the things which could be put in it, but could be locked. There was a small tray on the top of the gearbox hump useful for small things like cigarettes, two small pockets on each side of the back seat and a very narrow back parcel shelf. The SAAB had a medium sized dashboard compartment with a lockable lid and a small pocket in each door. The wide back parcel shelf was not much use because there was little to stop anything on it sliding off and, in any case, anything large on it would seriously hinder vision rearwards. The back seat squab folded forwards, giving an opening into the boot.

There was only limited storage room inside the MGA. There were compartments in each

TABLE VII
Front and back seat dimensions (in.)

		Shoulder room	Hip room	Head room	Seat height	Back seat	
						Knee room (with front seat in standard position)	Knee room (shortest)
Recommended minimum*	58 (for 3 abreast)	58	39	10 to 14**	27½	27½
BMC Mini-Cooper Front Back	45½ 44¼	45½ 42	36½ 36¼	12½ 12½	25	24½
Saab Front Back	45½ 47½	50† 49	39‡ 38‡	12 14‡	25	21½
Triumph Herald 1200 Front Back	47½ 44½	50 37½	36‡ 36½	13‡ 12½	24½	22
MGA Front Back	45½ No back seat	43 No back seat	37½	7½	No back seat	
Sunbeam Alpine Front Back	48 45	49 37½	34 30	7 8½	18½	14½

*McFarland and Stoudt, Harvard School of Public Health, SAE paper SP-142A
 †Armrests on front doors intrude 2½ in.
 ‡Measured with seat in lowest position.
 **Recommendation applies to front seat only.

door in which things tended to get lost. There was room behind the seat to take largish parcels, but not suitcases. The SUNBEAM ALPINE had a medium sized compartment in the left of the dashboard and a lockable one in the centre armrest which would take a vacuum flask. The large space behind the front seats was useful.

The BMC MINI-COOPER and TRIUMPH HERALD 1200 had one ash tray in the front and two in the back. Those in the BMC MINI-COOPER were small and difficult to remove. The SAAB had two in the front and one in the back.

The SUNBEAM ALPINE had one ash tray which was difficult to remove. The MGA had none.

HOW COMFORTABLE?
GETTING IN AND OUT

All the saloon cars only had two doors and therefore passengers could not get in the back while the front seats were occupied. The SAAB was easiest to get in and out of and the TRIUMPH

HERALD 1200 next easiest. It was difficult to get in and out of the BMC MINI-COOPER, and its doors were the only ones not to latch open. The TRIUMPH HERALD 1200 had key-operated locks on both doors. The interior light in the SAAB only came on when the passenger's door was opened.

It was not too difficult to get in and out of the SUNBEAM ALPINE. It was very difficult to get in and out of the MGA. Both the SUNBEAM ALPINE's doors had key-operated locks. Neither of the MGA's doors had locks of any kind. Neither car's doors latched open.

SEATING

Driver

Of the three saloon cars, the BMC MINI-COOPER was the least comfortable. Most of our drivers found the seat squab too upright. The adjustment backwards was completely inadequate for taller drivers, and indeed, to make life tolerable for them, we had to modify the

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seat with a home-made bracket. The combination of the upright squab and the high steering wheel made drivers adopt a cramped attitude leaning forward. They several times complained of back and stomach aches, after long drives. There was plenty of room for the left foot.

The SAAB seat was very comfortable and there was plenty of horizontal adjustment and room in general. The squab angle was adjustable—an excellent idea. The steering wheel was set high, which made it rather difficult for small people to keep their hands in a 'ten-to-two' position. There was plenty of room for the left foot but the pedals were set rather far to the left and somewhat cramped.

The TRIUMPH HERALD 1200 seat was more comfortable than that in the HERALD S we tested and compared very favourably with any of the cars we have tested. The squab gave very good support sideways. The range of horizontal adjustment was adequate. There was also some adjustment for tilt and height, and room to rest the left foot. Right knees of tall men tended to hit the door handle. The steering column was adjustable.

Several complaints of back and other aches were made by drivers in the MGA. The SUNBEAM ALPINE's seat was generally preferred. Neither gave much support sideways. In neither was there much space to rest the left foot except on the dip-switch. The angle at which this had to be done in the SUNBEAM ALPINE produced leg cramp in some taller drivers.

Front passengers

The front passenger in the TRIUMPH HERALD 1200 was very comfortable. The position in the SAAB was spoilt by the intrusion of the wheel arch which meant that the passenger had to sit slightly sideways. Front passengers were similarly handicapped in the BMC MINI-COOPER which was less comfortable anyway.

In the MGA some short-legged front passengers could not reach the toe board and they had great difficulty in bracing themselves when the car was cornering. In the SUNBEAM ALPINE, the front passenger complained of lack of support sideways.



Uncomfortable posture for tall driver in BMC Mini-Cooper

Back passengers

The back seat of the BMC MINI-COOPER was more comfortable than that in the ordinary MINI-CAR we tested—the cushion gave better support. However, the squab was still rather hard and gave little support sideways. There was a sharp edge at shin level. The squab in the SAAB gave quite good sideways support, foot room was ample but there was a sharp edge at shin level. The TRIUMPH HERALD 1200 was quite comfortable in the back although passengers tended to slip sideways when cornering.

RIDE

Although the BMC MINI-COOPER was comfortable to ride in on smooth roads, it was extremely uncomfortable when driven on many French roads. Passengers were hardly insulated at all from road shocks and the car was inclined to develop an unpleasant pitching motion. At speed on rough roads, the car became difficult to hold on course and our drivers found a safety belt more useful in holding them in position.

The SAAB and the TRIUMPH HERALD 1200 both gave extremely comfortable rides even on the roughest surfaces. We thought the SAAB was slightly the better, its ride being more level, smooth and quiet. In fact, we found its ride as

good as that of any other car we have tested so far. One disadvantage with the TRIUMPH HERALD 1200 was that in bends and on straight roads with a high camber it developed an unpleasant diagonal pitching motion. Its suspension was noisy on rough surfaces.

The MGA, like the BMC MINI-COOPER, gave a very harsh ride on rough surfaces. Again, our drivers found a safety belt extremely useful—especially as the driver's door came open repeatedly in these circumstances. The harshness of its ride meant that it was difficult for the driver to control over rough surfaces and this seriously limited the speed at which we were able to drive. In contrast, it was possible to maintain high speed over quite deep holes in the SUNBEAM ALPINE and its suspension absorbed bad surfaces very well. Road imperfections which made the MGA difficult to control were hardly noticeable in the SUNBEAM ALPINE.

NOISE

For the saloon cars, we made recordings of noise levels, in the front and back, during vigorous acceleration and at a steady 70 mph, with windows 1 inch open, and with them closed with the heater blower on and off.

The BMC MINI-COOPER was noisier in the front than in the back. During acceleration, the SAAB and TRIUMPH HERALD 1200 were noisier in the back.

The BMC MINI-COOPER was by far the noisiest of the three saloon cars during vigorous acceleration—the noise was very loud and uncomfortable. There was not much difference between the SAAB and TRIUMPH HERALD 1200 in the front but the SAAB was noisier in the back. At a steady 70 mph the BMC MINI-COOPER was the noisiest, the SAAB comparatively quiet.

For the sports cars, we recorded noise levels while the cars were accelerating, with the hood up; at 70 mph with the hood up and heater blower on; and at the same speed with the hood down and heater blower off.

The MGA was much noisier than the SUNBEAM ALPINE during acceleration and the noise it made was extremely uncomfortable. There

was little difference between these two cars at a steady 70 mph with hood up or down.

HOODS

The hood of neither of the sports cars was particularly easy to cope with, though the SUNBEAM ALPINE's was easier than that of the MGA. Its wind down windows were much more convenient than the detachable side-screens provided with the MGA.

Neither car had a tonneau cover—to protect the inside—as standard equipment.

HEATERS

To compare the heaters, we took measurements at night at a steady 20 mph on a level road with the heaters full on.

Of the saloon cars, the SAAB gave more heat than the other two, which our drivers found inadequate, but took longer to warm up.

The SUNBEAM ALPINE's heater gave much more heat, more quickly than the MGA's. Indeed, it made the car warmer than any, except the FORD CLASSIC, among all the cars we have tested, but it tended to roast the driver's left foot. Our drivers found the heat provided by the MGA insufficient.

In all the cars, the feet of those in the front were kept warmer than their faces, as we think they should be. But the feet of the back passengers in both the BMC MINI-COOPER and the TRIUMPH HERALD 1200 were far colder than their faces—an uncomfortable situation. The SAAB was better, keeping feet and faces at much the same temperature.

VENTILATION

Our drivers praised the ventilation system in the SAAB which supplied fresh air without opening the windows. They disliked the difficulty of getting adequate ventilation without draughts in the BMC MINI-COOPER, which also had a heater which recirculated stale air.

With the hood up the MGA was very draughty. On the other hand, the ventilation in the SUNBEAM ALPINE was very good.

CONVENIENT FOR THE DRIVER?

CLUTCH PEDAL EFFORT

We measured the pressure needed to depress the clutch to $\frac{1}{2}$ in. beyond the point at which it disengaged.

The SAAB and TRIUMPH HERALD 1200 needed less effort than the BMC MINI-COOPER.

The MGA needed less of an effort than the SUNBEAM ALPINE, which needed a considerable amount. Table IX gives the figures.

STEERING WHEEL EFFORT

Table X gives details of the effort needed on the steering wheel rim to turn the wheel when the car was stationary and when it was moving. The SAAB needed a rather heavier pull to turn the wheel when it was stationary than the BMC MINI-COOPER and TRIUMPH HERALD 1200. There was not much difference between them when the cars were moving. There was sometimes a slight judder on the steering wheel of the SAAB when it was being turned.

The MGA and SUNBEAM ALPINE were fairly similar.

GEAR CHANGING

Gear changing in the TRIUMPH HERALD 1200 was particularly good and easy. On the SAAB the steering-column-mounted gear change was somewhat imprecise. The synchromesh was inadequate for fast gear changes on the BMC MINI-COOPER, and it deteriorated as the miles mounted.

Gear changing on both the MGA and SUNBEAM ALPINE occasionally gave trouble. First, second and reverse gears were sometimes difficult to engage on the MGA and all gears, except top, on the SUNBEAM ALPINE, in which it was also sometimes possible to catch reverse gear by mistake.

HAND BRAKE POSITIONS

The SAAB hand brake—between the front seats—could not be reached without leaning forward.

PEDAL CONTROLS

Some drivers found the pedals in the BMC MINI-COOPER too high off the floor. The pedals

TABLE IX
Clutch effort

	lb
BMC Mini-Cooper	40
Saab	28
Triumph Herald 1200	28
MGA	35
Sunbeam Alpine	49

TABLE X
Steering wheel effort (lb)

	Car stationary	Car moving		
		25 ft rad. turn		40 ft rad. turn
		5 mph	10 mph	15 mph
BMC Mini-Cooper ..	21	5	14	14
Saab	27	5	12	15
Triumph Herald 1200	22	3	14	17
MGA	28	7	13	13
Sunbeam Alpine ..	23	6	15	16

were rather cramped in the SAAB. On the whole, our drivers liked the pedal controls in the TRIUMPH HERALD 1200.

The pedal controls in the MGA were rather cramped; the left foot had to be manoeuvred under the clutch to get to the dipswitch. The pedal controls in the SUNBEAM ALPINE were less cramped.

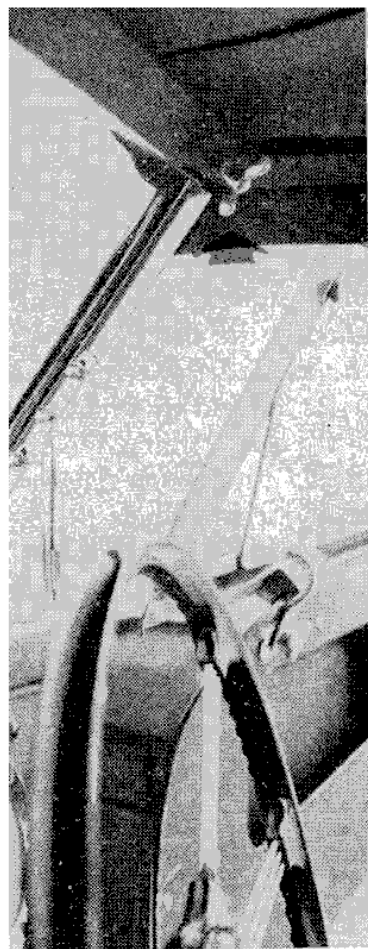
If you want to, you can 'heel-and-toe'—work brake and accelerator at the same time—easily on the TRIUMPH HERALD 1200 and SUNBEAM ALPINE, with difficulty on the others.

OTHER CONTROLS

The dashboard controls in the BMC MINI-COOPER were out of easy reach for all drivers except those with particularly long arms. The



*Hazards to heads:
Hood irons in
Sunbeam Alpine*



Hood screw in MGA

toggle switches for lights and windscreen wipers were unmarked and easily confused, especially at night. The door handles and window catches were awkward to use.

Most of our drivers found the SAAB controls easy to use, even in the dark. They found the combined windscreen wiper and washer control convenient.

As on the TRIUMPH HERALD S, our drivers found some difficulty in coping with the dashboard controls of the TRIUMPH HERALD 1200, which were arranged in splendid symmetry, but with no relation to their function.

The MGA had what seemed a forest of dashboard controls of similar shape. The controls were grouped by function, however, and our drivers found that they tended to confuse them only at night.

The only controls which our drivers confused on the SUNBEAM ALPINE were those for the panel and exterior lights. In general they liked the layout.

It is a pity that these two sports cars did not have the combined windscreen washer/wiper controls present on some of the cars in our second supplement and the SAAB.

INSTRUMENT DISPLAYS

Our drivers found the displays in the SAAB easiest to use, both by day and night.

The TRIUMPH HERALD 1200 instruments were easy to see in the day, but the turn-indicator pilot light was too bright at night.

With the driver's hands in the 'ten-to-two' position on the steering wheel on the BMC MINI-COOPER the speedometer, odometer and fuel gauge were obscured.

Our drivers made no general complaints about the instrument displays in the MGA and SUNBEAM ALPINE.

HOW SAFE?

We checked the cars for various points which records of accidents show have a definite bearing on safety.

Steering column

The BMC MINI-COOPER had a slightly flexible but undished steering wheel. The steering wheel of the SAAB was rigid and undished, that of the TRIUMPH HERALD 1200 rigid and only slightly dished. In both the steering column was designed to give way under an impact.

The steering wheels of the MGA and SUNBEAM ALPINE were undished but flexible.

Projections inside

There was no padding on the dashboard of the BMC MINI-COOPER or TRIUMPH HERALD 1200. There was on the SAAB.

The top of the dashboards of the sports cars, and the bottom of the SUNBEAM ALPINE's, were padded.

If interior mirrors are not framed, there is more danger from broken glass in a crash. Rigid mountings may be more dangerous to heads.

The interior mirror in the BMC MINI-COOPER was rimless and rigidly mounted. The mirrors of the SAAB and TRIUMPH HERALD 1200 were both framed, though rigidly mounted.

The MGA mirror had no rim, and was rigidly mounted. The mirror of the SUNBEAM ALPINE was framed but mounted on a rigid bracket which pointed into the car.

The BMC MINI-COOPER had the same horrid sharp-edged sun-visor brackets of which we

CAR SUPPLEMENT

complained in the AUSTIN A40, BMC MINI-CAR and MORRIS MINOR. The edge of its parcel shelf was only thinly padded. Padded sun visors protected most of the width of the junction of the windscreen and roof of the SAAB. The TRIUMPH HERALD 1200 had the same sharp metal coat hooks in the back as the TRIUMPH HERALD S.

In the MGA, screws for fixing the hood projected into the car at head level on each side of the windscreen. One of the hood irons ran horizontally over the occupants' heads, but there was reasonable head clearance except for the tallest drivers. We did not like the arrangement of the hood irons in the SUNBEAM ALPINE: metal bars ran very close to the heads of the occupants. As there was very little head room, drivers only a little taller than the male average regularly banged their heads against them.

Projections outside

The fronts of both the BMC MINI-COOPER and the SAAB were smoothly rounded without dangerous projections. However the TRIUMPH HERALD 1200 had sharp eyebrows over the headlamps which might increase the injuries of any pedestrian the car hit.

The MGA had no sharp projections forward. The SUNBEAM ALPINE had fairly sharp eyebrows over the headlamps.

Safety Belts

The SUNBEAM ALPINE was the only car which did not have points for safety belt anchorages as standard.

Windscreens

All the cars had toughened glass windscreens fitted as standard except the MGA, which had laminated glass. The main difference between toughened glass and laminated glass is that when it is shattered—by a flying stone for in-

stance—a toughened glass windscreen 'crystallises' into small particles which are difficult to see through. Laminated glass on the other hand merely 'stars' around the point of impact, leaving the driver perfectly able to see through the rest of the windscreen. However, the particles formed by toughened glass are usually not particularly sharp, while laminated glass usually breaks into sharp dagger-like sections. So in an accident in which people are thrown through the windscreen laminated glass inflicts far more severe injuries. What this means for the ordinary driver is that you are probably better off behind laminated glass than ordinary toughened glass provided you wear a safety belt.

Two windscreens on our BMC MINI-COOPER—made of toughened glass—shattered. Two laminated windscreens in the MGA also cracked, but the driver could still see through them quite well. Besides the two failures of windscreens on our BMC MINI-COOPER, two windscreens also failed on our BMC MINI-CAR. We did not report this specifically before because the windscreen shattering could have been purely fortuitous. But it now looks as if the BMC MINI-CARS may be more liable than the other cars we have tested to the shattering of windscreens.

The balance of advantage between 'zone-toughened' glass—discussed in our last supplement, but not used on any of these cars—and laminated glass is much closer. Because zone-toughened glass has only recently been introduced, there is little available information on its behaviour in accidents.

Windscreen washers

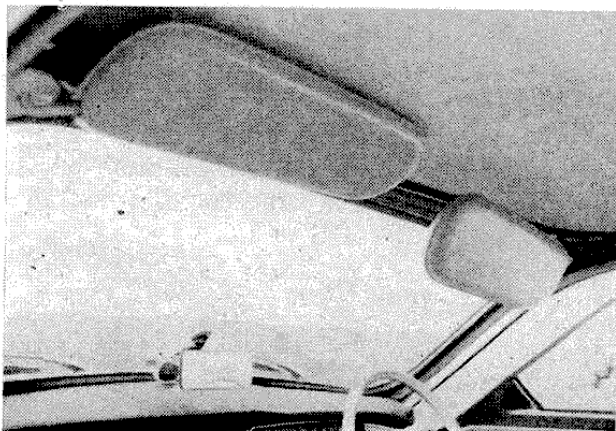
Windscreen washers were provided as standard equipment on all the saloons. All worked well.

Windscreen washers were standard equipment on neither of the sports cars—unfortunately, we think, in cars which will go so fast, and for which, therefore, a clean windscreen is so important. Those fitted as an extra at our request—and expense—worked satisfactorily.

Bumpers

The bumpers of the BMC MINI-COOPER were fastened directly to the body work. Their purpose can be little more than decorative.

Large, padded sun visors in Saab



The bumpers of the SAAB were made of reasonably heavy gauge metal.

The bumpers on the TRIUMPH HERALD 1200 consisted merely of a shaped part of the body panelling covered in white rubber.

Rubber-covered bumpers are in principle a good idea. Doctors who have studied the injuries inflicted by motor cars on pedestrians have suggested that rubber-covered bumpers might help to make the injuries less severe. It also seems sensible to make bumpers of a material which does not corrode after being damaged. Although the TRIUMPH HERALD 1200's bumpers were rubber-covered, the furthest projections at both front and back were, in fact, the overriders which were chrome-covered. This removed most of the advantages of covering the bumpers with rubber. Moreover the rubber was inclined to come away from the bumper.

The bumpers of the MGA were of light gauge metal with not particularly heavy brackets. The bumpers of the SUNBEAM ALPINE were of a heavier gauge and had stout brackets at each end, but none in the centre.

Door catches

None of the door catches was completely child-proof. But the pop-up knob on the SAAB's passenger door was almost so.

LIGHTING

The position of all lamps and reflectors conformed with Ministry of Transport regulations. All the indicators' flasher times fell within the legal limits.

All the saloon car headlamps gave a bright enough light. Our drivers felt they wanted more light at high speeds on the two sports cars.

In the BMC MINI-COOPER and SAAB, side and rear lights were visible from the side—a good thing. The rear lights of the TRIUMPH

HERALD 1200 were visible from the side, but the front side lights were only just.

The front side lights of both the MGA and SUNBEAM ALPINE were visible from the side. It was difficult to see the rear lights of the SUNBEAM ALPINE from the side and very difficult to see those of the MGA.

The BMC MINI-COOPER and the MGA had amber front indicators—a good thing. The SAAB's rear indicators were red—not a good thing.

The indicators at front and rear in the BMC MINI-COOPER, SAAB and TRIUMPH HERALD 1200 were all visible from the side, but the front ones in the BMC MINI-COOPER and TRIUMPH HERALD 1200 were difficult to see. All indicators were visible from the side in the MGA, as were the front indicators in the SUNBEAM ALPINE, but the rear ones were difficult to see.

Fuses

Ideally, all electrical circuits should be individually fused, with the fuses clearly labelled.

The SAAB had ten fuses, covering all its electrical circuits, except the panel lighting and ignition circuits. In the BMC MINI-COOPER, MGA and SUNBEAM ALPINE, the main lighting circuits were not covered by fuses. This means that if a fault occurred in their lighting system part of the wiring could easily burn out.

The TRIUMPH HERALD 1200 had no fuses at all nor could we find any other safety device in any of its circuits. Whenever a fault in the wiring occurred it could easily result in part of the circuit's burning out.

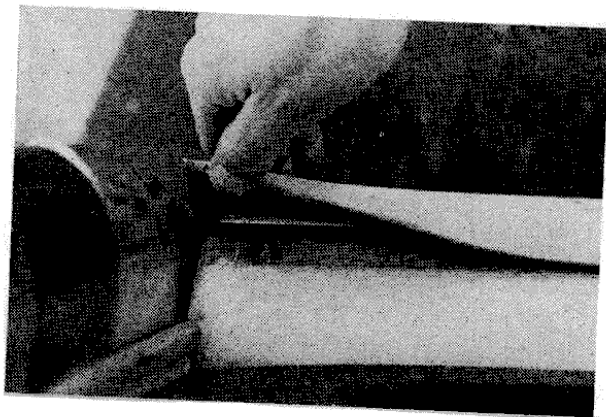
VISIBILITY

We used the code of practice recommended in SMMT Standard No. 5, which is based on a single standardised driving position.

None of the right-hand windscreen pillars interfered significantly with the view forward. The MGA and SUNBEAM ALPINE were both particularly good in this respect.

On all the cars, when it was raining or the windscreen was dirty, the combination of the unwiped area on the right and the right-hand windscreen pillar obscured the driver's view forward significantly. All the cars were unsatisfactory to about the same extent in this respect.

Rubber coming off Triumph Herald 1200 bumper



The BMC MINI-COOPER's windscreen wipers wiped too small an area at eye level.

The bottom edge of the interior mirror on both the BMC MINI-COOPER and the TRIUMPH HERALD 1200 interfered with the driver's vision.

The interior mirrors on the MGA and SUNBEAM ALPINE both obscured the driver's view.

None of the mirrors gave less than the minimum width of vision backwards recommended by the Standard, but the BMC MINI-COOPER only gave marginally more and our drivers found it very limiting in use. The SUNBEAM ALPINE gave a particularly wide field of view. In the BMC MINI-COOPER the view behind was cut off at about 100 yards on a level road although it should not be cut off at all. All the other cars were satisfactory.

Table XI gives the distances from the car of the furthest position on the ground in front obscured by any part of the car and the nearest point visible behind the car through the interior mirror. The smaller the figures the better. The view behind at ground level was much obscured in the MGA and, especially, the SAAB.

All-round visibility

Of the saloon cars, our drivers preferred the all-round visibility of the TRIUMPH HERALD 1200 to that of the BMC MINI-COOPER, and put the SAAB last. Small drivers in particular found that its high bonnet obscured the view forward.

In wet weather in the SAAB, the rear window soon became covered in raindrops and it was virtually impossible to see the road behind through the inside mirror. Since the wiper arc left the right wing mirror obscured, it became extremely difficult to see behind at all.

Our drivers continually complained of the BMC MINI-COOPER's misting up inside. The demister unit was not able to cope properly with

TABLE XI

Visibility

	<i>Furthest position in front obscured by bonnet or wing</i>	<i>Nearest point visible through interior mirror</i>
	<i>yards</i>	<i>yards</i>
BMC Mini-Cooper ..	6	12
Saab	11	276
Triumph Herald 1200	9	21
MGA	10	36
Sunbeam Alpine ..	8	7

the windscreen and it became extremely difficult to see through the other windows.

With hoods down, all-round visibility in both the MGA and SUNBEAM ALPINE was very good, except that the MGA's high bonnet interfered with the view forward. With the hood up, both had disadvantages. The SUNBEAM ALPINE had no transparent corner panels at the rear of the hood and so it was impossible to look over one's shoulder for traffic—at a roundabout, for instance.

In the MGA, the plastic side windows became scratched and opaque, and were very difficult to see through, particularly after dark.

The rear wings could be seen when reversing in the TRIUMPH HERALD 1200 and SUNBEAM ALPINE. The flattish rear end of the BMC MINI-COOPER made it easy to judge how near one was to an obstruction.

Sun visors

The SAAB had large sun visors, which would adjust to the side. Our drivers liked them. In

Raindrops collecting on Saab rear window

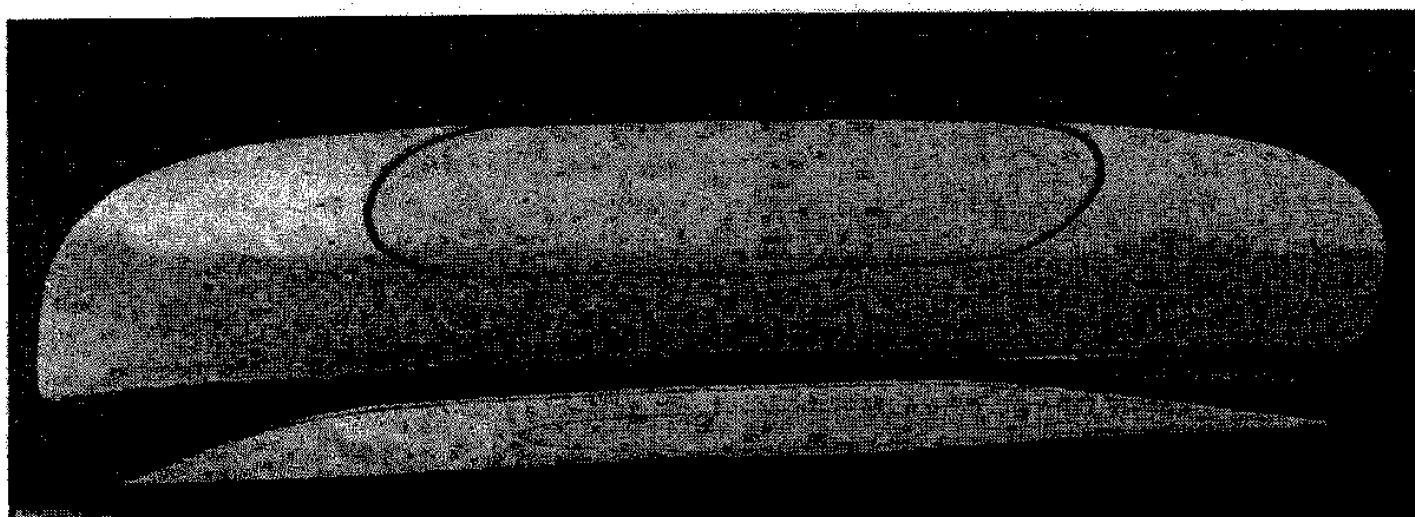


TABLE XII
Petrol and oil consumption

	Track test Test A	Test B	Constant 70 mph	Overall petrol consumption		Overall oil consumption miles per quart
				mpg	Cost per 10,000 miles	
BMC Mini-Cooper	22.8	42.0	29.4	33	£76	700
Saab	17.7	34.3	26.1	34	£69	—
Triumph Herald 1200	19.1	38.5	25.6	33	£74	2,300
MGA	14.9	29.4	29.1	27	£93	1,100
Sunbeam Alpine	11.5	30.1	25.9	25	£98	1,000

neither the BMC MINI-COOPER nor the TRIUMPH HERALD 1200 would the sun visors adjust to the side, and those in the BMC MINI-COOPER were too small to be of much use.

Neither the MGA nor the SUNBEAM ALPINE had sun visors.

HOW ECONOMICAL?
PETROL CONSUMPTION

We again measured consumption over all the mileage up to the time when our performance tests started—8,000 miles or more.

We have simplified the track tests of petrol consumption so that they now consist of two tests—twelve stops to the mile accelerating to 30 mph between stops (Test A), and at a steady 40 mph slowing down to 15 mph to take the bends at the end of the track (Test B). We looked at the results to see whether the petrol consumption of some cars changed more with acceleration and stops than others. When a car's performance does change, you are more likely

to be able to improve your petrol consumption by careful driving or to make it worse by constant movement of the accelerator.

Finally, we measured petrol consumption at a speed of 70 mph to see what petrol consumption would be at steady high speed cruising on motorways.

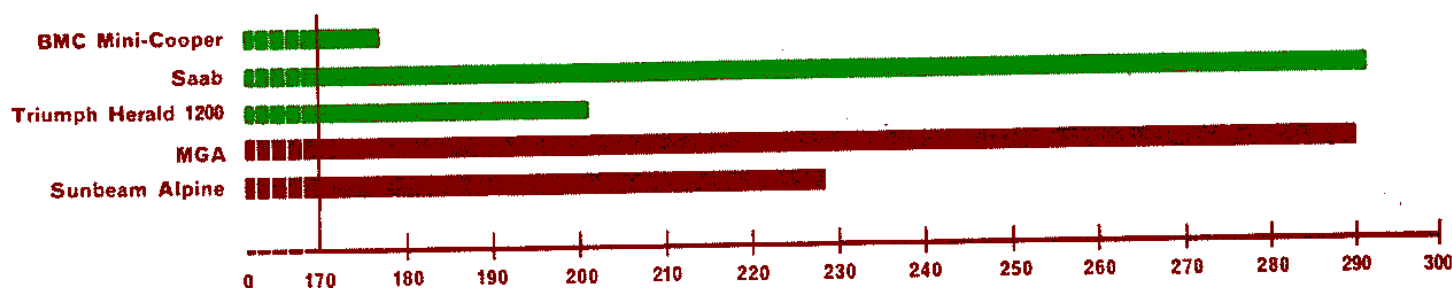
At a steady 70 mph, the BMC MINI-COOPER used less petrol than the SAAB and the TRIUMPH HERALD 1200.

The MGA used less than the SUNBEAM ALPINE.

In the track tests, the SUNBEAM ALPINE's consumption went up with acceleration more than the MGA's. The saloon cars were all affected to much the same extent.

There was very little difference in overall consumption between the three saloon cars. The BMC MINI-COOPER was heavier on petrol than the ordinary BMC MINI-CAR. The TRIUMPH HERALD 1200 was much the same as the TRIUMPH HERALD S.

DIAGRAM 5
PETROL TANK
mileage available from full tank



The MGA used slightly less petrol than the SUNBEAM ALPINE.

Diagram 5 shows the cars' range on a full tank of petrol at our overall petrol consumption. The SAAB had much the longest range of the saloons; the MGA the longer of the sports cars.

Costs

The BMC MINI-COOPER used the most expensive grade of petrol—about 5s 0½d a gallon. The SAAB used the cheapest grade of petrol, about 4s 5d, with oil added. The TRIUMPH HERALD 1200 used 'premium' grade—about 4s 10½d. To give a comparable cost over a year, we have shown in Table XII the cost of fuel—including oil for the SAAB at 1s 9d a pint—for the first 10,000 miles, at our overall consumption figure. The SAAB was the cheapest of the saloons, the BMC MINI-COOPER the dearest.

The MGA used the most expensive petrol, the SUNBEAM ALPINE premium. The MGA was slightly the more economical.

Mixing the petrol and oil for the SAAB proved no serious difficulty because the necessary oil could be poured straight into the petrol tank with the petrol. It was often a nuisance to get the garage man to use the right proportions.

OIL CONSUMPTION

The BMC MINI-COOPER used a lot of oil—more than the TRIUMPH HERALD 1200. The SAAB only used the oil put in with the petrol.

There was little difference between the MGA and SUNBEAM ALPINE.

BRAKE LINING LIFE

We calculated brake lining life from measurements of the thickness of the linings after the cars were run in and again before performance tests started. Brake lining life does depend in part on the way the car is driven. **Therefore our figures while useful for comparing different cars cannot necessarily be taken as the life you yourself will get from brake linings of these cars.**

The SAAB was lighter on brake linings than the TRIUMPH HERALD 1200 which was in turn lighter than the BMC MINI-COOPER.

There was little overall difference between the MGA and SUNBEAM ALPINE. See Table XIII.

TABLE XIII
Brake and tyre life (calculated)

	Brake lining life (miles)		Tyre life (miles)	
	Front	Back	Front	Back
BMC Mini-Cooper	14,000	23,500	5,500	14,500
Saab	39,000	36,000	10,000	39,500
Triumph Herald 1200	28,500	13,000	8,500	9,000
MGA	19,000	43,500	15,500	12,500
Sunbeam Alpine ..	30,000	31,000	11,500	11,000

TYRE LIFE

Again this depends in part on the way the car is driven and the continuous high speed driving over poor road surfaces in France may well have increased wear.

However again the figures *are* useful comparatively. See Table XIII.

The BMC MINI-COOPER wore out two sets of front tyres in the time we had it, the first set in 5,500 miles. The SAAB was more economical of tyres than either the BMC MINI-COOPER or the TRIUMPH HERALD 1200.

The MGA was a little more economical of tyres than the SUNBEAM ALPINE. We used high speed tyres on both.

MAINTENANCE

We checked to see how easy it was to carry out normal driver maintenance—checking levels of engine oil, radiator water, battery electrolyte, windscreen washer liquid and tyre pressures.

Our drivers found the engine very accessible in the TRIUMPH HERALD 1200 and the checks easy to carry out. There was no engine oil level to check in the SAAB. It was extremely difficult to get at one battery cell because of a sheet metal cross member directly over it. It was somewhat difficult to top up the windscreen washer reservoir in the BMC MINI-COOPER. It was also very difficult to get at and see into the battery, as it was on the ordinary BMC MINI-CAR.

The SUNBEAM ALPINE's dipstick was marked 'quart' between the high and low positions. In both it and the MGA the battery was behind the seats. It was very difficult to get at it in the MGA.

TOOLS

Besides jacking equipment with all the cars, the BMC MINI-COOPER had a half wheel brace/nave plate remover and a plug spanner. The TRIUMPH HERALD 1200 had a box wheel spanner, a plug spanner, a feeler gauge and a nave plate remover/screwdriver. The SAAB had a box wheel spanner, two screwdrivers, two open-ended spanners, one adjustable spanner and a pair of pliers.

The MGA had a full wheel brace, a plug spanner and a nave plate remover. The SUNBEAM ALPINE had a half wheel brace, which also acted as the handle for the jack, four open-ended and one adjustable spanners, a plug spanner, a screwdriver, a nave plate remover, feeler gauge, tyre valve key, contact breaker key and a pair of pliers.

JACKING

We found out how easy the jacks were to use both with the cars on level ground and in an extremely severe situation—fully loaded on a 1 in 4.5 hill. The BMC MINI-COOPER jack was easily fitted and operated but its handle came off when it was used. It coped very well when fully loaded on the hill except that it would not lift the rear wheels completely clear of the ground when facing uphill. For the SAAB jack to be easily used the door had to be opened. This

could be dangerous if the car had to be jacked up on a public road. With the door closed the jack was slow and monotonous to use. The TRIUMPH HERALD 1200 jack was rather awkward to place and difficult to fit together. It—like the jack of the TRIUMPH HERALD S—failed during our test. The jacking system coped well on the hill except that the rear wheels did not leave the ground with the car facing uphill.

The MGA had a very awkward, old-fashioned jack. To get it into position you had to lie down on the road. This means that the tool kit should really include waterproof overalls or ground sheet—not supplied by the manufacturers. The SUNBEAM ALPINE jack was very easily fitted and was easy to operate. The only problem either on the level or on the hill was that knuckles could bang against the rear fins.

CLEANING

The outside of the SAAB was very easy to clean, the only problem being the tops of the rear wheels which were covered by the rear wings. It was also fairly easy to clean inside and the rubber floor mats could be wiped clean without being removed. The only problems with cleaning the TRIUMPH HERALD 1200 were that it was difficult to get behind the front overriders and that, unless one was careful, it was easy to get water inside the headlamp glasses through a gap round the top. In the BMC MINI-COOPER it was difficult to clean around the front and back overriders, the bumper ends and the indicator lights. The boot floor was awkward to get out for cleaning. Inside, the ashtrays were a bit tight and could be messy to remove.

Putting the MGA jack into position



TABLE XIV
Servicing costs for first 10,000 miles

	Prescribed cost of servicing			Cost of oil changes		
	£	s.	d.	£	s.	d.
BMC Mini-Cooper ..	16	14	11	2	17	0
Saab	12	4	0	13	6	
Triumph Herald 1200 ..	10	10	0	2	17	5
MGA	14	0	4	3	11	8
Sunbeam Alpine	14	12	6	4	7	1

The MGA was easy to clean outside although one could catch one's fingers round the rear number plate. Inside, it was a bit difficult to get underneath the steering wheel and dashboard. It was difficult to clean round the front side lights and to get the radiator grille clean in the SUNBEAM ALPINE. Inside, it was reasonably easy to clean except that the ashtray was a bit tight to take out.

SERVICING

Table XIV gives the cost of routine servicing for the first 10,000 miles and costs of oil changes during this servicing.

The BMC MINI-COOPER needed most routine servicing. Oil changes were recommended at

3,000 mile intervals, and greasing at eight points at 1,000 mile intervals.

Oil changes for the TRIUMPH HERALD 1200 were recommended every 3,000 miles and greasing at six points every 12,000 miles.

Oil changes of the combined gearbox and final drive unit of the SAAB were recommended every 7,000 miles. Greasing of nine points was recommended at 1,750 mile intervals.

Oil changes for the MGA were recommended at 3,000 mile intervals with twelve points to be greased every 1,000 miles. Oil changes for the SUNBEAM ALPINE were at 2,000 mile intervals with greasing of 15 points every 1,000 miles.

One problem with the SAAB is that at the moment there are only 68 distributors and dealers in the United Kingdom.

Manufacturers gave fixed price repair schedules for the BMC MINI-COOPER and MGA.

HOW RELIABLE?
INSTRUMENT ACCURACY

Table XV shows how wrong the speedometer was at 30 mph, 40 mph and 60 mph; the odometer error; and the amount by which the fuel level differed from its indicated level when the gauge registered $\frac{3}{4}$, $\frac{1}{2}$ and $\frac{1}{4}$ full; the amount of usable fuel left when the gauge read empty; and the usable tank capacity we found.

The TRIUMPH HERALD 1200's speedometer was about 10 per cent fast—as was the speedometer of the TRIUMPH HERALD S.

TABLE XV
Instrument accuracy

	Speedometer True speed when speedometer reading			Odo-meter Error %	Fuel level difference from indication when gauge reads:				Usable tank capacity found by CA gal.
	30 mph	40 mph	60 mph		$\frac{3}{4}$ full pints	$\frac{1}{2}$ full pints	$\frac{1}{4}$ full pints	Empty pints	
BMC Mini-Cooper ..	29.0	38.1	58.4	+0.6	-1	-2	-1	+1	5 $\frac{1}{2}$
Saab	27.7	37.4	58.8	-3.7	-5	-4	+2	+8	8 $\frac{1}{2}$
Triumph Herald 1200	27.5	36.1	55.9	+1.2	0	0	-1	0	6 $\frac{1}{2}$
MGA	28.8	37.2	58.7	-0.9	-4	0	+2	+10	10 $\frac{1}{2}$
Sunbeam Alpine ..	29.7	38.9	56.8	+0.4	+1*	+2*	+3*	+7	9 $\frac{1}{2}$

*Gauge marked 7, 5 and 3 gal. respectively.

TABLE XVI
Paintwork

	<i>Resistance to</i>			<i>Adhesion</i>	<i>Exposure to salt spray</i>	<i>Exposure to ultra-violet</i>		<i>Outdoor exposure (8 weeks)</i>
	<i>Denting</i>	<i>Bending</i>	<i>Scratching</i>			<i>loss of gloss</i>	<i>change of colour</i>	
BMC Mini-Cooper .. (off-white)	Good	Very good	Good	Good	Very good	Slight	None	Satisfactory
Saab	Poor	Very good	Good	Good	Very good	Very slight	None	Satisfactory
Triumph Herald 1200 (pale yellow)	Poor	Good	Good	Good	Very good	Considerable	None	Satisfactory
MGA	Fair	Poor	Good	Fair*	Very good	Appreciable	None	Some edge flaking
Sunbeam Alpine .. (light grey)	Fair	Good	Good	Good	Very good	Appreciable	Slight	Some edge rusting

*Aluminium underneath—see text.

The SAAB's odometer was badly wrong.

The TRIUMPH HERALD 1200's petrol gauge had an irritating fault: the tank ran dry before it showed empty. This was not too serious, however, as the car had a reserve tank, holding about a gallon. You had to stop the car, get out and go to the boot to use it.

UNDERBODY PROTECTION

The SAAB had complete underbody protection, the BMC MINI-COOPER only on the inside of the wheel arches and the TRIUMPH HERALD 1200 none at all.

The SUNBEAM ALPINE had complete underbody protection and the MGA none.

PAINTWORK

We removed the boot lid of each car and subjected it to a number of standard tests: resistance to denting, bending and scratching; adhesion; and exposure to a salt spray, ultra-violet radiation and artificial weathering. The tests were the same as those in our previous supplements except that the artificial weathering test could only be continued for 520 hours because of the difficulty we experienced in getting spare parts for the SAAB.

We also left painted parts exposed on a roof in an industrial city for eight weeks.

All parts showed very considerable loss of gloss, the sports cars, slight change of colour, in the artificial weathering test. The other results are in Table XVI.

There was little to choose between the three saloon cars in either the laboratory or exposure tests, although the BMC MINI-COOPER's paintwork resisted denting better than the other two.

The MGA's paintwork was not quite so good as that of the SUNBEAM ALPINE in the laboratory tests. It was somewhat brittle and, perhaps because the metal of the boot lid (like the bonnet lid) was aluminium, less adherent. The results elsewhere on the body might have been different.

The edges of both deteriorated slightly in the outdoor exposure test.

PLATING

We carried out the same standard laboratory tests on plating as those in our previous reports. The tests, with results, are in Table XVII. In every case the thickness of chromium was over 0.01 thou. in. Again, because of the difficulty in getting body parts, we were unable to continue our artificial weathering tests as long as we would like.

Besides the laboratory tests on overriders and door handles, we left bumpers out on the roof for eight weeks.

TABLE XVII
Plating

	Plating thickness		Adhesion	Resistance to				Outdoor exposure of bumpers (8 weeks)
	Nickel (thou. in.)	Copper (thou. in.)		Sulphur dioxide	Salt spray	Humidity	Artificial weathering	
BMC Mini-Cooper								
Overriders ..	2.2	—	Good	Good	Good	Good	Good	Some rusting at bottom and top
Door handles ..	1.3	0.6	Good	Good	Very good	Good	Good	
Saab								
Door handles ..	1.2	1.7	Good	Fair	Very good	Good	Good	Some dulling and browning
Triumph Herald 1200								
Overriders ..	1.8	—	Good	Good	Very good	Good	Fair	Slight rusting edges
Door handles ..	2.5	0.6	Fair	Good	Very good	Good	Good	
MGA								
Overriders ..	1.9	—	Good	Good	Very good	Good	Good	Slight rusting at edges
Sunbeam Alpine								
Overriders ..	1.6	—	Good	Very poor	Very good	Good	Poor	Satisfactory
Door handles ..	1.1	0.3	Fair	Good	Very good	Good	Good	

The SUNBEAM ALPINE'S overriders did comparatively badly in the laboratory tests, but its bumper stood up well to outdoor exposure. Otherwise, there was little to choose between the plating on all the cars.

EXPERIENCE ON DELIVERY AND DURING 11,000 MILES

It is encouraging to report that two cars—the SAAB and TRIUMPH HERALD 1200—were de-

Last April, we asked our members to help us by giving us their experiences with their own cars. About 2,000 who had bought a car within the last 18 months replied. For this report, we were very pleased—and grateful—to be able to draw on the experience of those who owned the cars we were testing. Eighty-two told us about their TRIUMPH HERALD 1200, 11 about the SUNBEAM ALPINE, 7 about the BMC MINI-COOPER, and 3 each the SAAB and MGA.

All this experience has been immensely useful to us in seeing how far the defects we found in our cars were general and so, in knowing what emphasis to give to them in this report.

We very much hope that even more members will help us to widen the scope of our reports by giving us the benefit of their experience. We should be most grateful if any member who has bought a new car in the last 18 months and has not written to us already will fill in the postcard enclosed.

livered in good mechanical condition with most things adjusted and tightened up properly. However both spoil this pleasant picture with defects in bodywork—a large number in the case of the TRIUMPH HERALD 1200. Our sad tale of delivery defects continued with the BMC MINI-COOPER, MGA and SUNBEAM ALPINE, all of which produced the now all too familiar serious of faults.

The BMC MINI-COOPER lasted through our tests generally satisfactorily except for three things, one minor and two major. The minor thoroughly irritating, fault was the continual difficulty in getting doors and windows to work properly. The first major fault was the difficulty experienced with gear selection and synchro-mesh which suggests that the BMC MINI-COOPER, like the ordinary BMC MINI-CAR, may be intrinsically liable to this sort of trouble; the second, the continual carburation trouble, which meant that the engine tended to misfire and stall when idling, and accelerate hesitantly.

The SAAB did very well except for the trouble with the radiator blind, which had a badly designed control. The bodywork, at the end of our tests, was beginning to rust in a few

places. A major problem was that its 2-stroke engine needed very careful running in over 2,000 miles. Two sets of sparking plugs were needed—one for normal use and one for fast driving over long distances. If enough of the right oil is not put in with the petrol it is quite possible for a piston to seize up in vigorous driving.

The TRIUMPH HERALD 1200 also did well, much better than the HERALD S we tested in our first supplement. Although there were several rain traps in the bodywork and the finish of the external paint work deteriorated comparatively badly, it remained generally sound at the end of our test, in marked contrast to our previous HERALD.

The MGA suffered two disasters: a major engine failure and the movement of the brake disc pads in their carriers. Although both were very serious, and clearly should not have occurred, we would ascribe them to poor workmanship rather than bad design, and so they would not necessarily recur in other samples. Apart from this the car came through the tests very well.

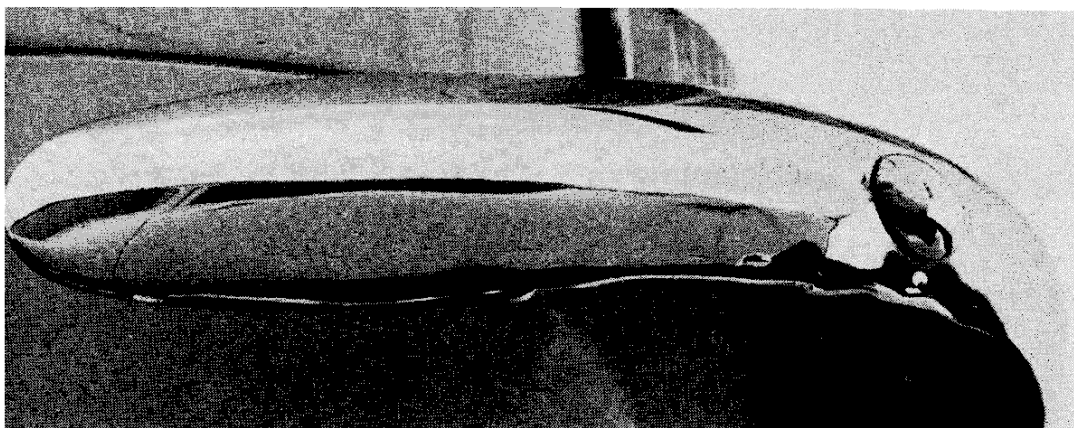
The SUNBEAM ALPINE also gave trouble, had faulty carburation, leaked oil continually and its brakes were unequal to the demands of high speed driving in continental conditions. Its bodywork did not stand up as well as the MGA.

BMC MINI-COOPER

Defects on Delivery

Nuts holding inlet and exhaust manifold slack; exhaust gas leaking through manifold-to-downpipe joint; three valve clearances incorrect; choke control cable wrongly assembled, sticking badly; fan belt slack; oil pressure gauge union slack; rattle from gear train between clutch and gear box; reverse gear selector stop spring weak; bolt nuts on transmission shaft universal joints slack; front wheels toeing in excessively; right track rod end locking tabs not turned over; tyre valve cap missing from right rear wheel; all wheels out of balance,

Ragged bottom edge of Sunbeam Alpine bumper



the right rear wheel considerably so—needing 6 oz. to balance it. The brake paths on both front discs were very roughly machined (two dealers said this was quite normal and did not warrant replacements, but brake pads, which contact the discs along the brake paths, were badly cracked and crazed by 8,500 miles); brake pedal spongy; bumper bracket bolts loose; bonnet lock stiff and lock assembly misaligned; paint overspray above windscreen and on left rear body panel; rough sticky substance on front of roof; paint chipped off side of bonnet and scratch on right door pillar; driver's inside door handle loose; left side windows tight; front of head lining wrongly fitted; car interior generally dirty; ignition switch loose; panel light bulb not working; screen washer reservoir punctured.

Main defects during running

Water and oil leaks from front left cylinder head stud within 1,000 miles; exhaust gas leak from manifold-to-downpipe joint also recurred within 1,000 miles. Choke control remained stiff for 5,000 miles. The carburettors gave trouble throughout our mileage with the engine misfiring, occasionally refusing to idle and accelerating hesitantly from low speeds. Gear selection was stiff and difficult and the synchromesh did not seem very effective. Also, the clutch could not be made to clear properly. There were continuous rattles and vibrations from the transmission. The right front wheel hub and bearing retaining nut was found slack just before 2,000 miles. Persistent rattle from under dashboard; right door weather strip worked loose just after 2,000 miles; all doors and windows difficult to close; driver's inside door handle snapped off after 9,000 miles; right head lamp bulb replaced after 4,000 miles; head lamp switch replaced after 7,000 miles; screen washer plunger failed at 3,000 miles and left screen wiper unit replaced after 8,500 miles. Front brakes squeaked from 6,000 miles onwards.

Condition after test

The car was mechanically in good condition except that the welding was splitting on the exhaust downpipe; there was a slight rattle from the gear train, slight clutch judder, poor synchromesh on gears and the reverse gear gate stop was weak. The brake line had come adrift from a clip near the pressure control valve at rear of body. The body was generally sound except for some slight rusting along roof seams in gutters. The sliding windows were very stiff. The carpets were wearing badly. The driver's door was very difficult to open and its handle was slack. The door check straps were disintegrating.

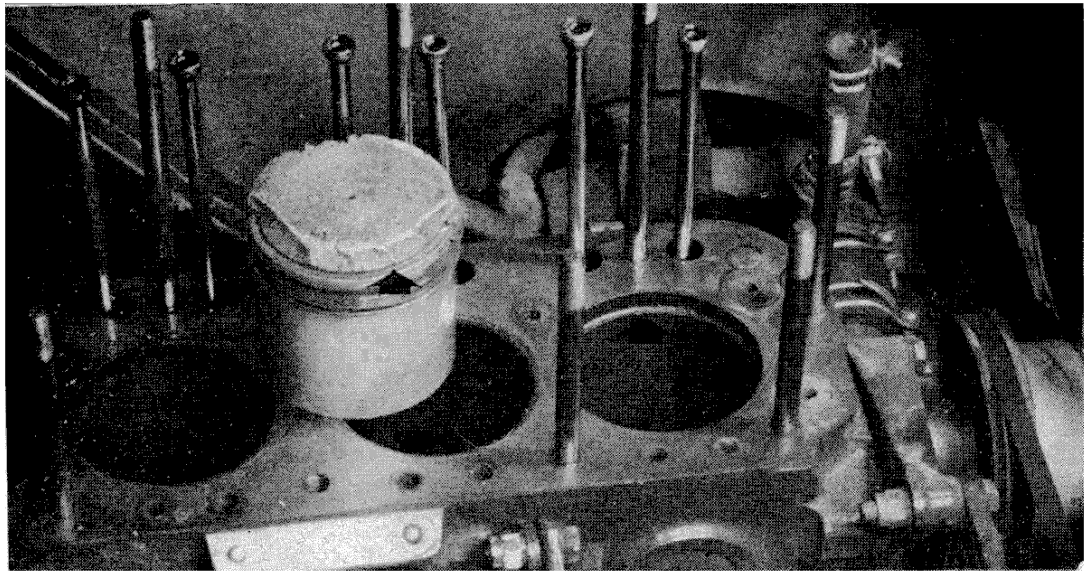
SAAB

Defects on delivery

Sparking plug gap too wide; mixture control screw damaged; front drive joint covers cracked; all wheels out of balance—4 oz was needed to balance front left wheel; brake bleed valves not secure; brakes needed adjustment. There were some paint 'runs' on the luggage boot lid, the paint finish on the bottom of the luggage boot inside was poor and one or two body components had not been painted at all. Dashboard compartment catch was stiff and the lid rattled. Water came in through lower edge of right door window.

Defects during running

Radiator blind jammed three times so that blind cord—modification now on all cars, fitted by dealer to ours—tangled with fan belt and snapped. Water hose had to be rerouted at 8,000 miles to prevent wearing through on throttle linkage; steering column-to-dashboard bolts worked loose after 8,500 miles; screen reservoir leaked after 7,500 miles; driver's door lock jammed at 5,500 miles; heater control knobs worked loose several times and fresh air control would not always stay in off position.



MGA engine failure: Cylinder liner dropped; piston crown damaged

Condition after test

The car mechanically was in very good condition. The radiator blind was very stiff and its control cord broken. The fragile brackets on which the control pulleys were mounted had bent and were out of line. The drive shaft rubber boots were badly cracked. There was considerable shudder from the transmission during acceleration which made the gear lever rattle and the steering wheel vibrate. The body was in very good condition apart from some rusting around the bonnet. The sealing strip had come adrift behind the air intake on the left side.

TRIUMPH HERALD 1200

Defects on delivery

Fan belt slack, exhaust pipe flange needed tightening; front wheels toeing out incorrectly; wheels slightly out of balance—one wheel needing $4\frac{1}{2}$ oz to balance; rear spring clips needed tightening; petrol gauge full reading incorrect; front left brake fitted with badly damaged shoe which meant that the steel shoe itself came into contact with the brake drum: as a result brake linings on both front wheels had to be renewed. There were 20 points needing attention or incorrect in the bodywork ranging from a leak through the front ventilating pane to the fact that a split dashboard assembly had been fitted, the damage being concealed by the demister outlet surround, and the rear fins of the body were not properly aligned.

Defects during running

Accelerator pedal sticking after 192 miles, accelerator cable connection to pedal loose after 917 miles, accelerator pedal cable stretched after 9,200 miles; front brakes 'grabbed' and squeaked from 4,000 miles onwards. Gear lever continually slipped out of reverse after 8,000 miles; slight transmission whine after 5,000 miles; rattle from right side of dashboard; water leaked on to floor on front passenger's side; draughts from driver's door and ventilating pane; paint peeling off lower part of passenger door outside at 9,000 miles; the direction indicator switch faulty at 3,000 miles and 9,000 miles.

Condition after test

Mechanically the car was in good condition. The brake line was not in its clip on the front cross member and it was being chafed in a hole through the chassis frame. There was also some free play in both of the front wheel bearings. The paintwork however was in comparatively poor condition, with rust developing in a number of places in water traps and at joints in the bodywork. Paint was cracked in a number of places.

MGA

Defects on delivery

Valve clearances too close; ignition retarded 2 degrees; carburettor mixture adjustment wrong and idling setting fast. Radiator water level low; all hose clips loose; sparking plugs set too close; manifold and side plate bolts loose; fan belt tension needed adjustment and

exhaust tail pipe needed resetting to prevent it hitting the body. Right front wheel seriously out of alignment vertically (with a $1\frac{1}{2}$ degrees negative camber); right front wheel arch $1\frac{1}{2}$ in. higher than left front wheel arch; front wheels toeing out incorrectly; all wheels out of balance—both right wheels considerably so, needing 5 and 6 oz to balance; rear shock absorber and 'U' bolts nut slack; front hub bolts holding brake discs slack; front wing bolts slack, two having stripped threads; cross member bolts on rear of chassis loose; paint chipped on left front wing, paint blistered and discoloured round filler cap; petrol level gauge unit loose on side of tank.

Defects during running

Major engine failure occurred after 9,000 miles when the top ring of No. 1 piston hooked over the cylinder liner which had dropped $\frac{1}{8}$ in. Part of the piston crown was forced off and the combustion chamber in the cylinder head was damaged. The cause seems to have been bad workmanship in the machining or fitting of the liner into the cylinder block. On several occasions the engine 'ran on' after ignition was switched off. Disc brake friction pad assemblies tilted in their caliper units and rubbed against discs outside normal brake path. Free play developed at right-hand end of steering rack; exhaust pipe-to-manifold flange and supporting brackets had to be welded back in place after 7,000 miles; petrol gauge became faulty at 8,000 miles; driver's door opened repeatedly on rough roads; lock-operating cable became disconnected at 7,000 miles; rain came in through side screens and door on passenger side and from beneath via joints in the floor; knobs fell off the dashboard controls; horn button stuck in; right head lamp bulb failed at 8,000 miles.

Condition after test

The car was in good mechanical condition—a new engine had of course, been fitted and attention had been given to the braking system. The left rear road spring had a greater curvature than the one on the right. The bodywork was sound. The paintwork was badly chipped in a number of places and was flaking off near the fuel filler cap. Adhesive was beginning to fail on the seam of the hood, and the sliding window grip had come off the left door; both side screens were scored by the sliding of the windows and the front section of the right-hand side screen was distorted.

SUNBEAM ALPINE

Defects on delivery

Engine valve clearances too close; mixture setting of one carburettor out of adjustment; front wheels toeing out incorrectly; all wheels needed balancing, right front wheel needing 5 oz; a tyre valve cap was imbedded between the inside wall of tyre and inner tube of left rear wheel, which could have caused a blow out; too much tube of left rear wheel, which could have caused a blow out; rear spring clip nuts and fuel tank mounting nuts needed tightening; temperature gauge and petrol gauge faulty; door locks needed lubrication and doors resetting; seat adjustment screw loose; bolt missing from heater assembly; rust stains visible at body panel joints. The standard of paint finish was low, with an 'orange peel' effect in some places. Water leaked in by the top left side of the hood.

Defects during running

In spite of continual tuning, the carburettors gave trouble throughout our mileage. The engine hesitated when accelerating, especially when cold, and would not idle smoothly. A sticking exhaust valve gave trouble at about 1,500 miles. Engine oil pressure relief valve partly seized at 7,000 miles. Engine oil leaks from crankshaft seals became severe after 9,000 miles. Heater inlet hose almost worn through from throttle linkage after 1,300 miles. Rear axle pinion seal leaked oil after 9,000 miles and oil also leaked from rear end of gearbox. After 9,000 miles a severe vibration shaking the whole car developed between 60 and 70 mph. The brake master cylinder failed at 5,800 miles and had to be replaced. The 'spongy' feel of the brake pedal could not be overcome. Rain entered car through the top of both side windows and from the windscreen on the passenger's side. The driver's door was very tricky to shut because it had to be closed extremely gently. The demister hose came adrift; the rear number plate light failed; the ignition key barrel came away from the lock.

Condition after test

The car was generally only in fair mechanical condition. Rust had built up around the thermostat housing. There was some free play on the left front wheel bearing. The bodywork was in reasonably sound condition. The paint was cracking at the joint between the front wing and apron. The chrome bars of the front grille were rusting badly. The passenger door had dropped very slightly. Two snap fasteners had come off the hood.

GUARANTEES

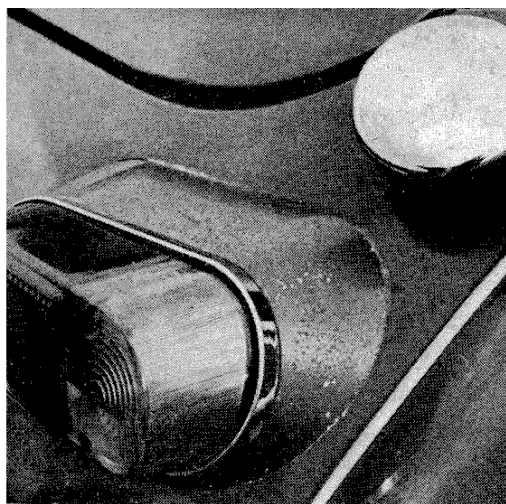
The guarantees for the BMC MINI-COOPER and MGA were the same as the guarantee for the AUSTIN A60, which we discussed in the second car supplement. The guarantee for the SUNBEAM ALPINE had the same conditions as the Rootes guarantees, which we also discussed in the second supplement. The changes which we were told were under consideration have not yet been brought into effect. The Standard-Triumph guarantee remains the same as in the first supplement.

The SAAB guarantee was for six months, did not make clear what the position would be if carriage had to be paid, and excluded tyres, electrical equipment and instruments and accessories as well as 'consumption articles such as bulbs, spark plugs, etc.' It excluded consequential loss and restricted the customer's rights at common law. It was not transferable to a new owner. Neither it nor any of the other guarantees satisfied our criteria for an ideal guarantee (see WHICH? August 1961).*

INSURANCE

The TRIUMPH HERALD 1200 will usually cost more to insure than the TRIUMPH HERALD S, which had a smaller engine. It should not cost very much more to insure the SAAB than the

*See also *Choice*, April 1962. (ACA Note.)



Paint coming off MGA below petrol filler cap

cars in our first supplement. Insuring the BMC MINI-COOPER may be a problem. Insurers are quite likely to impose special conditions or charge a higher rate of premium, and some may be very reluctant to insure it at all.

Insurers of motor cars do not, in general, like sports cars. You may find that higher premium rates or special conditions are imposed. The MGA may cost more than the SUNBEAM ALPINE because its engine is a little larger.

SECONDHAND VALUE

At the moment the rate of price depreciation for a TRIUMPH HERALD 1200 is perhaps a shade better than the average for the cars in our first supplement. It is very difficult to say anything sensible about the likely secondhand prices of the BMC MINI-COOPER and the SAAB. The BMC MINI-COOPER is new and still in short supply secondhand. Some dealers, however, are likely to suspect that it has been driven hard and may not be very enthusiastic to buy it. So few SAAB's are available secondhand that what you will get for it is more than usually a matter for individual negotiation.

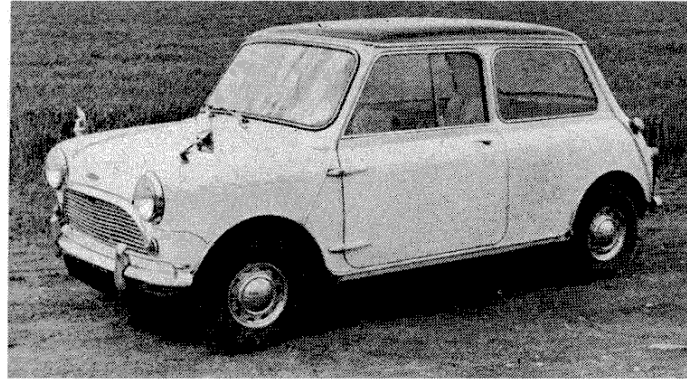
Both the MGA and SUNBEAM ALPINE are well established on the secondhand market and their likely depreciation, if traded in for a new car, is only a little greater than that of saloon cars of similar prices—we would think about 23 per cent in the first year, 35 per cent after two years and 46 per cent after three.

SUMMARIES

BMC MINI-COOPER

997 cc £640 7s. 9d.

It had very good acceleration and a top speed as high as the fastest car in our second supplement. It found some difficulty in coping with very steep hills from a standing start. It handled extremely well though not always when the front tyres were badly worn. Its foot brake was reliable but needed rather a lot of effort. Its hand brake needed too much effort. There was a lot of storage room inside, but a small boot. The seats and seating positions were not very comfortable. It gave a very uncomfortable ride over all but the best road surfaces. The heating and



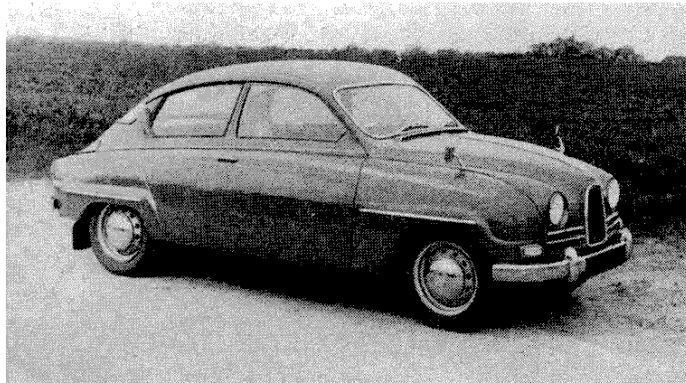
ventilation were poor. It was extremely noisy. It used as much petrol as any of the cars in our first

supplement. It was heavy on oil, tyres and brake linings. Quite a lot went wrong with the car tested.

SAAB 96

841 cc £826 0s. 3d.

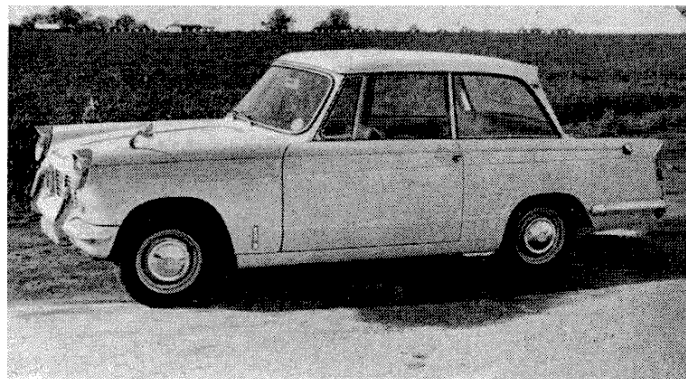
Its acceleration was not as good as the BMC MINI-COOPER's, but compared well with the cars in our first supplement. It handled well. Its foot brake needed much too much effort. It was extremely comfortable for driver and passengers even on the roughest roads. Its boot was almost as large as the largest in our first supplement. It had good heating and ventilation and was fairly quiet. Visibility, especially rearwards, was limited. It used as much petrol as any of the cars in our first supplement. It was light on tyres and brake linings. Very little went wrong with the car tested.



TRIUMPH HERALD 1200

1,147 cc £673 7s. 9d.

Its acceleration was about the same as the SAAB's. It coped reasonably well with very steep hills. It handled very well. Its foot brake was very good but its hand brake needed too much effort. It was extremely comfortable for the driver and front passenger, slightly less so for the back passengers. Its ride was comfortable. The heating system was not very good. Not too noisy. It used as much petrol as any of the cars in our first supplement. It was quite heavy on tyres. Very little went wrong mechanically with the car tested but the body finish deteriorated comparatively rapidly.

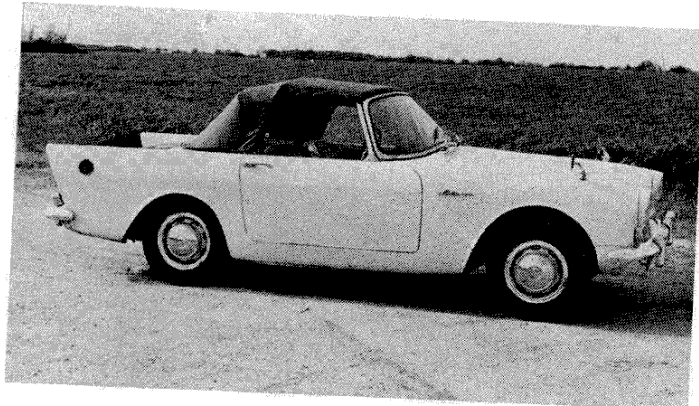


M.G. MGA 1600 Mk II
1,622 cc £931 9s. 6d.

and

SUNBEAM ALPINE
Series II
1,592 cc £978 17s. 3d.

The SUNBEAM ALPINE was sometimes difficult to start. The MGA had better acceleration from a standing start but not in all normal overtaking situations. Of the two, the MGA had a much higher top speed. Both coped very well with very steep hills. The MGA's handling qualities were the better. The SUNBEAM ALPINE's brakes needed less effort than the MGA's but did not stand up to fairly severe use. The SUNBEAM ALPINE was the more comfortable and had more storage room inside and more luggage room. The SUNBEAM ALPINE had better heating and better ventilation with the hood up and was much quieter than the MGA, which was very noisy. The MGA had the better petrol consumption. The MGA had a very inconvenient jacking system. Quite a lot went wrong with both cars in our tests.



MODIFICATIONS

We bought the cars we tested in December 1961 and January 1962. Just before we went to press we asked the manufacturers if they had introduced any modifications since the production of the cars we bought. We were told of no modifications on the BMC MINI-COOPER and MGA.

Saab told us that the braking system had been modified so that lower pressures are needed. A stabiliser has been fitted to the gearbox to stop gear lever rattle.

There is now only one coat hook in the TRIUMPH HERALD 1200.

Rootes have told us that safety belt anchorages are now fitted as standard and that the dashboard compartment is lockable.

VALUE FOR MONEY

To begin with, the TRIUMPH HERALD 1200 (£673) is a better buy than the TRIUMPH HERALD S at £645—more than worth the extra £28.

It was as good as the best of the cars in the first supplement in several respects—performance, handling, brakes and comfort. But, comparatively, it used a lot of petrol and its external finish deteriorated comparatively rapidly. This makes it very difficult to choose between the VOLKSWAGEN (£717), TRIUMPH HERALD 1200 (£673) and FORD ANGLIA (£632)—current prices.

The most positive virtues of the BMC MINI-COOPER (£640), about the same price as the FORD ANGLIA and TRIUMPH HERALD S, were its



acceleration and overtaking ability, top speed and its handling. It is the fastest way of getting from one place to another, over a variety of roads, of any of the cars we have tested—except possibly, the two sports cars. However, for these virtues we had to put up with quite a lot; noise, lack of comfort and quite a number of things going wrong. At its price, its performance was unique, but you had to pay for it in discomfort.

The SAAB (£826) was as good as the best of the cars in our first supplement in comfort, space and performance—though it had some vices and inconveniences—and it was the only car we tested which fitted exceptionally tall people. But its price puts it among the cars in the second supplement. And at this price, even with the improved braking system now claimed by the manufacturer, we would prefer the joint Best Buys: AUSTIN A60 (£833) and FORD CLASSIC (£795).

The choice between the MGA and SUNBEAM ALPINE will really depend on what you want from your sports car. The MGA handled better and was faster and obviously some drivers would prefer it on these grounds alone. But it also had many of the crudities traditionally associated with sports cars—noise, draughts, a harsh ride, heavy brakes and nowhere to put anything. The SUNBEAM ALPINE was a more civilised car. People who want high speed and good acceleration without sacrificing comfort will obviously prefer it. Both developed serious faults. A combination of the virtues of both cars, which was more reliable, would be a very good car indeed.

Australian readers should bear in mind that this supplement is reprinted from "Which?", published by Consumers' Association Ltd, London, and that the vehicles reported on are those on sale in Great Britain. The models obtainable in Australia, although of basically the same design, usually have a number of modifications to suit local conditions, or to fit in with local manufacturing processes. Comments regarding depreciation, insurance, second-hand values, etc., also apply to conditions in Great Britain.

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