

Motor India

1953 - November

Vol - 3 . No - 4



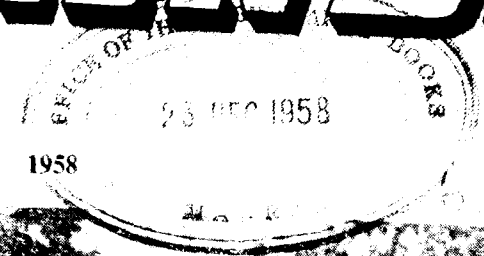
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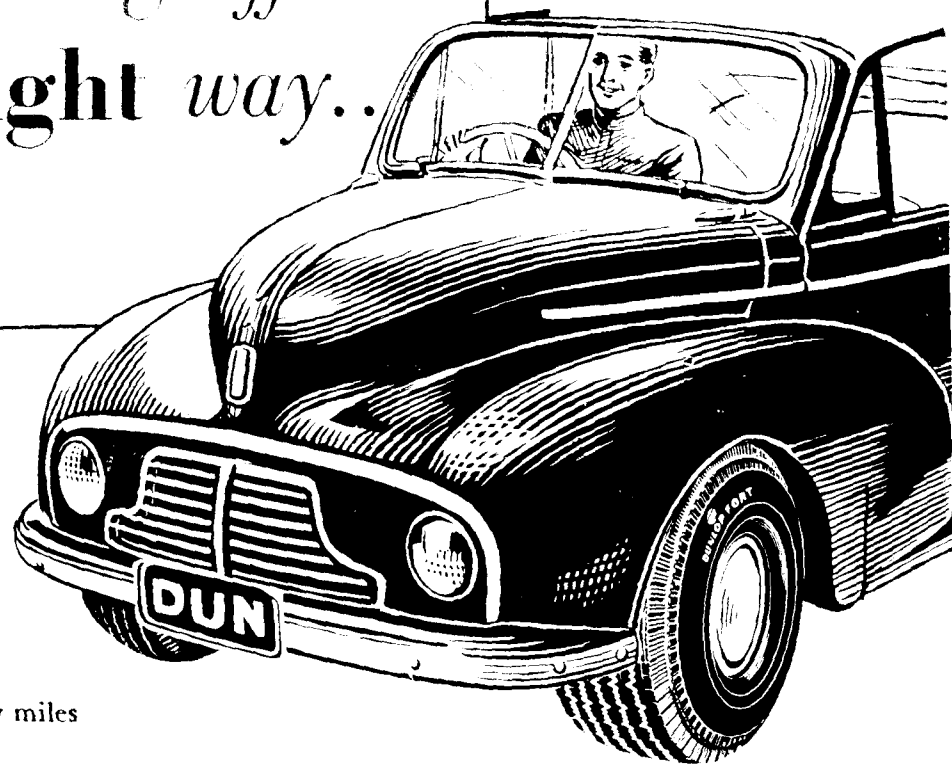


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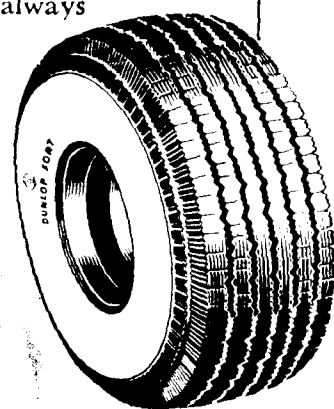


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MOTORINDIA

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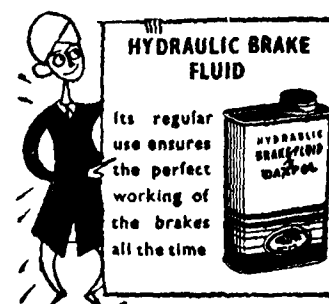
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Vol. 3

NOVEMBER 1958

No. 4

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## CONTENTS

|                                                | Page |
|------------------------------------------------|------|
| Editorial                                      | 5    |
| Andy the Automobile by A. Holden               | 7    |
| The London Motor Show by Gordon Wilkins        | 11   |
| Commercial Motor Show                          | 25   |
| 1959 Mercedes Benz                             | 26   |
| The Story of Self-starter by Meharwan J. Patel | 28   |
| India-built vehicles                           | 29   |
| Of interest to the Operator                    | 30   |
| Road Traffic Survey                            | 31   |
| Alliance Internationale de Tourism             | 32   |
| U. S. Auto Repairmen                           | 34   |
| Madras Motor Parts Dealers' Association        | 35   |
| Dealer News                                    | 37   |
| The Picture Page                               | 38   |
| I.A.T.A.                                       | 39   |
| New Lockheed Electra                           | 41   |
| Track Down that Oil Leak                       | 42   |
| Ups and Downs in Crude Production              | 44   |
| Models and Their Prices                        | 48   |

## INDEX TO ADVERTISERS

|                                                           |    |
|-----------------------------------------------------------|----|
| Annamalai Trading Co.                                     | 24 |
| Asbestos Magnesia & Friction Materials Ltd.               | 14 |
| Automobile & Agricultural Industries Corp.                | 12 |
| Auto Sales Co.                                            | 36 |
| Bharat Motors                                             | 37 |
| Bower Battery Manufacturing Co.                           | 37 |
| Burmah-shell Oil Storage & Distributing Co. of India Ltd. | 10 |
| Central Trading Co.                                       | 6  |
| Chemical Enterprises Private Ltd.                         | 36 |
| Coir Board                                                | 8  |
| Dunlop Tyre & Rubber Co.                                  | 22 |
| Glass & Miniature Bulb Industries                         | 1  |
| Goetze (India) Private Ltd.                               | 16 |
| Gurmukh Singh & Sons (Regd.)                              | 18 |
| Hyderabad Allwyn Metal Works Ltd.                         | 35 |
| Indian Engineering & Trading Co.                          | 37 |
| Kasi & Sethu                                              | 36 |
| Khanna Auto Corporation                                   | 20 |
| Lucas Indian Service Private Ltd.                         | 43 |
| Miniature Bulb Industries of India                        | 20 |
| Motor Industries Co. Ltd.                                 | 16 |
| Nettiefolds of India Private Ltd.                         | 24 |
| Payen-Talbro's Private Ltd.                               | 36 |
| Premier Automobiles Ltd.                                  | 35 |
| Purushotham Murarjee                                      | 37 |
| Senior Auto Diesel Store                                  | 37 |
| Shantilal C. Mehta                                        | 22 |
| Spare Kits                                                | 4  |
| Standard Batteries Ltd.                                   | 2  |
| Standard Motor Products of India Ltd.                     | 3  |
| Standard Vacuum Oil Co.                                   |    |
| Sundram Iyengar & Sons Private Ltd. T.V.                  |    |
| Waxpol Industries Ltd.                                    |    |

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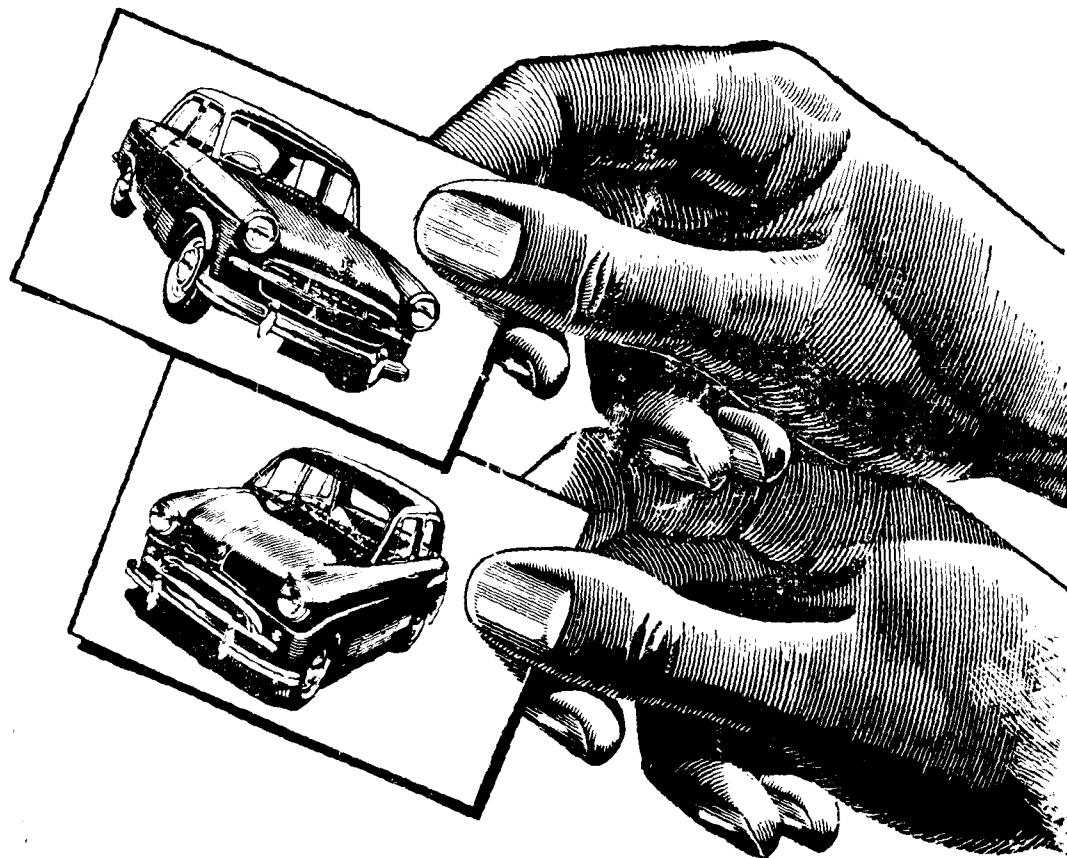
THE MADRAS MOTOR PARTS DEALERS' ASSOCIATION

THE MYSORE AUTOMOBILE PARTS & ALLIED

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INDIAN NATIONAL EXHIBITION



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Keynote Speech

## editorial

Readers would by now have read the various exclusive features appearing in our October issue. This particular issue of MOTORINDIA focusses attention on the remarkable progress that has been made in this country by manufacturers of automobile and ancillary parts as revealed by their participation in the India 1958 Exhibition now running the second month at New Delhi. All those interested in the development of modern transport, particularly road transport, should be grateful not only to the manufacturers who have taken up the cause so seriously in recent years, but also to the Government Departments for such of those facilities that have made progressive manufacture possible.

Another feature of interest to the automobile industry and motor enthusiasts in the world is the illustrated coverage of the Round Australia Mobilgas Rally which has been exclusively featured in the October issue. A perusal of the pictures and the report of this Rally held in Australia indicates the extent to which manufacturers of automobiles from various parts of the world have taken active interest in the Rally not with a view to mainly showing up their cars, but mostly with a view to testing the strength and efficiency of their manufactures in an international Rally. We wonder what prevented the progressive manufacturers of automobiles in this country from entering their vehicles in such an international Rally and get great credit to their products. True, good progress has been made in the matter of progressive manufacture of automobiles in this land, but we feel that those now engaged in the task of manufacture, should not only produce the goods, but should think of taking that legitimate pride in their manufacture which is absolutely essential if any progress is to be maintained on an international level.

It is high time that Indian made cars are also enabled to enter such exhibitions as the Earls' Court where cars from practically every manufacturing country were shown to advantage. Participation in such International events give not only ideas for future improvement in our manufacture, but they also keep our national prestige high indeed. Fortunately for us the word 'India' or 'Indian' elicits a magic warmth and response from practically every country in the world. There is no doubt any Indian made product like the automobile will have the same enthusiastic reception in whichever country such products are sent for participation in international events. We trust that by the time the next World Event is organised either in Australia or in other parts of the world, the manufacturer of the Indian automobile will be ready to arrange for its participation therein.

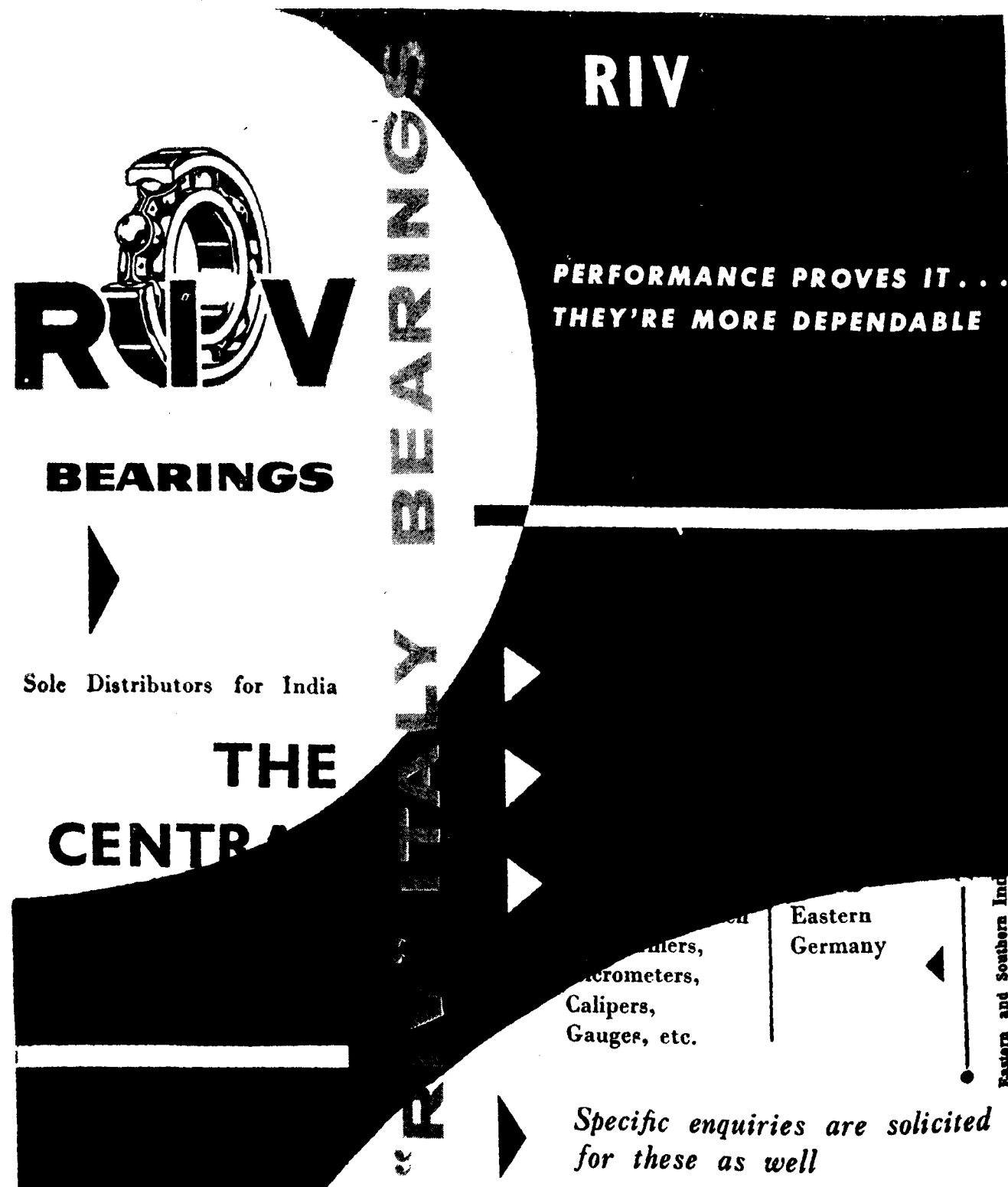
THANKS—for small Mercies

The Import Policy for the current half year has been announced, though some weeks later than usual.

We are glad to note that in spite of the terrific headache we have had in the matter of foreign exchange, the Commerce Ministry has managed to allow imports of automobile spares at least at the skeleton level at which importers were able to get the goods during the last half year. It is understood however that applications from established importers are to be made before the end of November. The Policy itself having been announced just four weeks before this date, it will be really impossible for most importers to get the applications ready before this time.

It is to be hoped that the Commerce Ministry of the Government will heed representations made on this behalf by interested parties and that soon an extension of this date for application for imports will be announced.

[P.S.—As we go to Press the dates have been extended. Well done—Editor.]



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# ANDY THE AUTOMOBILE

BY A. HOLDEN

Hullo, there! My name is Andy. You must surely remember me! You know, I'm that motor-car, the one you've often seen passing when you are on your way to school or running messages for mother.

I'm the blue sedan motor-car (we're also called automobiles, limosines, or plain cars) with the polished duco, the shining chrome radiator grill and bumper bars. I'm the car that you wished your father owned.

Remember now? Of course you do!

I hope I haven't frightened you as you were crossing the road, but really you should take more care walking or crossing any roads, because although my brakes are usually in good condition, sometimes it is difficult to stop in a hurry. If you, as a pedestrian, can help to make our task easier, you will also be making it safer for yourselves, too, won't you? We don't like seeing children playing on the roadways, it makes us quite nervous.

We, like most boys and girls, easily become tired after a day's activities. We need frequent rests, and we become annoyed if we are treated badly, and we need constant attention to see that we have enough food in the form of water for the battery and the radiator, petrol for the engine and oil and grease.

We also like to run along well-made roads, not rough bush tracks and that is where we differ from boys and girls, who are fond of climbing over cliffs and through the countryside where there are no roads. We also respond to different climates, and yes, we can, if we like, be very obstinate (surely only a few boys and girls are ever obstinate!) and if the mood takes us we can be quite contrary, refusing to perform to our owner's expectations.

We likewise need to be cleaned often, nicely polished and washed, and if we need an overhaul, we can go to a doctor, only we know him as a "mechanic," and under his care we are soon purring along the roads, happy again. We may have need to have our brakes checked, our tyres re-grooved, or new parts fitted to our engines.

For myself, I've had some very interesting experiences in recent times that I'd like to tell you about.

I am not very fond of climbing steep hills, particularly if I am loaded with heavy luggage, and sometimes I have to stop half-way up to have a breather, to let my engine cool down. Now and then I have to take a drink of cool water.

But when I reach the crest of the hill, and pause for a short while to admire the scenery, I love to tear down the other side, with my engine turning over with power and precision. On such occasions I like to sing happily a little song that goes:

"I'm Andy the motor-car

And travelling near and far

I always keep my eye on the road—

I never forget MY SAFETY CODE!"

I remember on one occasion I was standing at the top of a hill down near the sea, watching the scene below, when a road vibration caused one of my joints connecting with the brake to become loose. Without warning I began to roll downhill, backwards, at first slowly then faster and faster, until I thought I would turn over.

Peering through the rear vision mirror I was able to see that no other cars or people were about, and I was able to steer a fairly straight course, swerving to avoid street trees, until the road levelled out, and I was able to stop of my own accord.

I don't mind telling you I was very scared that I would hit some-

*A story for Juniors*

thing and injure myself badly, perhaps need hospital treatment at the local garage.

Then there was the time I was travelling along a country road when my engine began to ache and my throat felt quite dry. It was a hot day and I knew I wasn't thirsty because Mr. George (he was the kindly man who owned me) had only given me a drink of fresh water a short time before. However, before I knew what was happening, I had stopped. Right in the middle of the roadway, too.

Mr. George pressed the starter button, pulled out the choke, tested the spark plug, so necessary to keep me moving, looked at the oil gauge, did all sorts of things, but he could not find out what was amiss. Try as I would I simply could not move—until almost at the same moment Mr. George and I came to the same conclusion—I had run out of petrol.

You know, at most week-ends, Mr. George would say to Mrs. George: "Well, dear, let's take the children for a drive. It is a nice day, and the outing should do us all a lot of good."

And in a short time we would be on our way to some distant reserve.

Well, on one of these days it was much hotter than usual, and as I travelled along the bitumen roadway, I could feel the hot tar burning my tyres. The faster I went the hotter they became, and even when I slowed down it was no better. I could feel blisters forming, and nobody likes blisters, do they?

And as Mr. George was pointed out a strange bird in a nearby tree, I felt a sudden pain in the left tyre at the back, and there followed a slow hissing noise of escaping air.

"What's that sound?" asked Mrs. George, listening intently. "That," said Mr. George in an instant, as he stopped me. "That

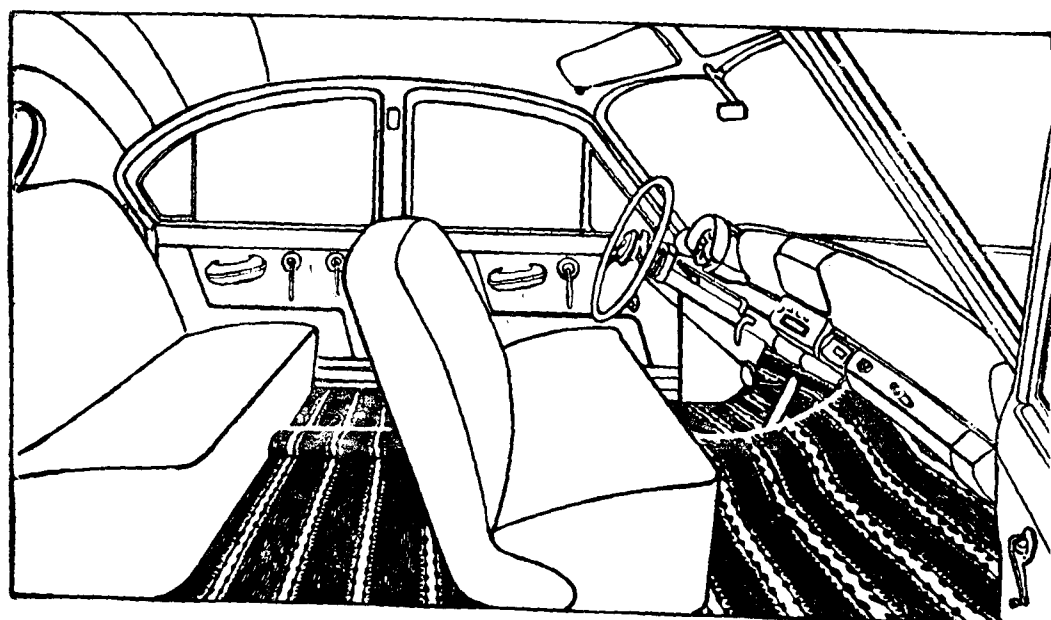


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MOTORINDIA

EP

November 1958

is a flat tyre." And I can tell you it is no fun standing on three good tyres on a hot and sticky day, and later having to travel some many miles in that condition—because Mr. George had forgotten to carry a spare tyre!

I shall never forget the time I was waiting quietly outside our local post office while Mr. George went to post a letter. As he was in a hurry he did not turn my engine off, but left the key in the ignition, so that I could purr contentedly to myself as I waited his return.

I did not notice anything was wrong until I felt a door close with a bang, and a foot press down viciously on the accelerator, while the hand brake was released with a swish. As I was forced to move forward, I suddenly realised that this was not Mr. George at the wheel.

For Mr. George had crossed the road and was shouting after me: "Stop thief! Stop that car!" A young man, I now observed, was seated grim-faced behind the wheel and was forcing me to run away from my rightful owner. I did not like this one bit, and I tried to show my feelings, but apparently the man was a skilful driver, because he speeded up and made me hurry down the main street.

"I cannot have somebody steal me, like this!" I said to myself. "I must do something about it!" But for the moment I just could not think what. Then I conceived a plan of running off the road, but, well, I was afraid I might get injured, and then, too, something might hurt the young man, who after all, was just a silly, thoughtless boy.

As he raced me around corner after corner as the road led out through the suburbs, I tried to prevent him turning properly. I stiffened my axle and my connecting rods. I tried to slow down so that he would be forced to abandon me. As I raced along I spied a hedge by the roadside just where a curve had to be made towards the left.

"That's it!" I said as I headed straight for the hedge. Try as he did to turn me off my course, the young man found he just could not do so, and then he tried to open the door to leap out, but I plunged

into the hedge and rolled over on my side. I was shaking visibly, had several scratches on my side and front mudguards, while my front wheels were spinning wildly when Mr. George drove up in a borrowed car.

The young man was still sitting in the driving seat, stunned and looking very sorry for himself.

No car likes being passed by another member of its family when travelling, and when a distant relative, far older than I, sped past at a great pace the other day, Mr. George did not like it either, and turning to his wife said: "Fancy that old car passing me like that! He did not even blow his horn! Watch me catch up with him!"

Pressing my horn so that I gave an excited beep-a-beep, we gave chase. In a short while we were racing almost neck and neck, then I ranged alongside, but as I did so, the other car swerved towards me, and I was forced to reduce my speed so that we would not hit one another.

With expert driving, Mr. George soon had drawn level again, but by now the road was beginning to turn to the left around a cliff face, where I could see another car coming in the opposite direction. As the car we were chasing moved inwards its sudden side movement forced Mr. George off the bitumen on to some soft sandy surface.

In an instant, I had found myself turning to the left, then easing up to a sudden stop. My wheels spun around as I tried to pull myself out of the sand. Mr. George, helped me to rev. the engine, but still I was unable to move either backwards or forwards. I was slowly sinking deeper into the sand, which was beginning to cover the exhaust pipe.

Mr. George, Mrs. George and the two children had to get out and unload the luggage before, carefully at first, then more confidently, I was able to move forward, my tyres gripping the bushes laid on top of the sand. Eventually, I reached the solid road surface again. "That will teach you to try and

race another car!" said Mrs. George to her perplexing husband. "It is a dangerous and thoughtless thing to do."

One day a few weeks later I heard Mrs. George say to her husband: "I would love to learn to drive. Could you teach me, dear?" Very reluctantly, and not without some thought Mr. George finally agreed to teach her.

That afternoon, with a sense of anticipation and excitement, I felt Mrs. George take her place in the driving seat where she was lectured on the gears, the wheel, the clutch, the rules of the road, the hand signals the brakes—until I began to feel quite dizzy listening to Mr. George's droning voice.

"That is enough!" said Mrs. George. "I know all about car driving now. Let me try on my own." At the same time I was put into reverse as I stood silently in the garage, and her foot came down gradually on the accelerator, and slowly, I made my way under her instructions towards the front gate.

"Slowly does it! Slowly!" said Mr. George encouragingly. "Now put your foot down on the clutch. The clutch!" he repeated.

And, boys and girls, do you know what she did? She put her foot on the accelerator. As a result I was forced down the pathway at a great pace and struck against the gate post. "Well," said Mr. George, surveying the scene. "That is the end of the first and the last driving lesson. We've not only suffered a smashed mudguard, a bent bumper bar, a broken rear light, but the gate has been damaged also, and three bricks are broken!"

It took me several days to recover and much longer for the front gate to be repaired. And now whenever we go for an outing, Mrs. George does not show the slightest interest in driving.

I wonder why?

MOTORINDIA

November 1958



a winner every time...  
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CW-6

# THE LONDON MOTOR SHOW

By GORDON WILKINS

The London Motor Show offers no surprises of any importance for the industry is so firmly committed to exporting a large proportion of its output that the immediate sales effect of the show has dwindled. However, it is still a valuable shop window for foreign and home buyers alike and 65,000 invitations were sent out to overseas visitors this year.

Thanks largely to the rapid expansion of the North American market, the industry has escaped the effects of the trade recession during the past year and is at present turning out cars at the rate of 20,000 a week. Car exports for the first nine months of this year were 374,499 against 311,745 for the same period last year. Mr. George Harriman, Managing Director of the B.M.C. estimated that in the full year, the export of vehicles and parts by the industry will bring Britain £510 millions in foreign currency. But in the same period, home market buyers will have paid £100 millions by way of purchase-tax. (60 per cent on the trade price of the car) to which must be added a much larger sum collected through the tax of over 125 per cent on fuel.

U.S.A. is now by far the largest export market for British cars, having taken 109,045 in the first nine months of the year, against 46,050 by Australia which used to be the leading export market but is now insisting on local manufacture to solve its own trade balance problems. Third comes South Africa with 36,356 cars and then Canada with 32,731.

At present only about 16 per cent of British exports go to European countries and the British industry is hoping that the development of a Free Trade area will give it easier access to European markets like France, and Italy where British car imports are at present reduced to token quantities by import restrictions and quotas. Imperial Preference is a dwindling asset and sales by European constructors in the countries of the Commonwealth

are bound to increase as they establish their own assembly or manufacturing plants.

In practice the big constructors now regard about 2½-litres as the practical limit for a car which is to have a big sale. This takes into account continued high taxation, the long term results of the economic war being waged by Soviet Russia and the preference of the American market for small imported cars. Thus the Humber Super Snipe of 2,651 c.c. falls broadly into this category although one might have expected it would have an engine of about 3½ litres. More and more the market for big and luxurious cars at high prices is being left to subsidiary companies of the big aircraft manufacturing groups Rolls-Royce and Bentley have a healthy output and are making a big effort to increase their export trade, but others like Armstrong Siddeley, who have just introduced a Star Sapphire, with bigger engine, disc brakes, power assisted steering and automatic transmission at a much higher price than the old one, Alvis, whose 3-litre now has bodywork built by Park Ward to designs by Graber of Switzerland and Bristol, who must hold the record for price per cubic centimeters, may hope to achieve rather more prestige than profit in the present competitive car market.

A cheaper way of obtaining a luxuriously finished car suitable for business executives has been adopted by the B.M.C. who have introduced a special version of the Austin 105 with interior finished by Vandan Plas with leather, walnut, and all the traditional trappings of custom coachwork.

The limousine market has now shrunk to the state where it is very difficult to make a profit. Rootes abandoned the Humber Pullman when faced with the necessity for new body tooling, although they held a large proportion of the available market but B.M.C. are persevering with the Princes, Armstrong Siddeley still show their long wheel-base limousine, Daimler produce a few of their limousiness and the Rolls-Royce Silver Wraith is always

available with bodywork by the leading custom coach-builders to those who can afford a price of about £5,500 including tax.

To give their products an international appeal, several British manufacturers have engaged Italian stylists to produce new body designs for them. The Austin A 40 by Pinin Farina, the Aston Martin DB 4 with body-chassis unit by Carrozzeria Touring, and the face-lifted Standard Vanguard are the first examples. The Standard, is the first interim effort by Michelotti, who has also done a range of new bodies to be produced in 1960-61 and is quite successful. Larger windscreen and rear window, a new grille, more logical division between two-tone colour schemes and slim vertical tail lamps in place of the ugly big round ones have quite transformed the appearance of this car. It is available with three-speed gearbox with column lever, or four-speed box with central lever without any difference in price as an extra. Incidentally this automatic box is now used on about 26 British models. It has replaced the Rolls-Royce Hydra-matic on the Armstrong Siddeley and they have evolved an interesting refinement in the form of a lever working on a quadrant on the instrument panel, by which one can select the exact speed at which the box will change from Intermediate gear into top.

Automatic clutches, offered by all of the big British manufacturers and some of the small ones at last year's London Show, have had a very poor reception from the buying public, and little is now heard of them, although they can still be had on demand.

Disc brakes, which have been fully proved on sports and racing cars are now being used on the larger and heavier saloon cars like the Armstrong Siddeley, the Jaguar Mark IX (similar to the Mark VIII but with 3.8 litre instead of 3.4 litre engine) the Bristol 406, the Daimler Majestic. All of these cars also illustrate the trend towards bigger engines, for they replace or supplement models which were

similar but had less power. Among smaller cars the trend is illustrated by the Hillman Minx, the Sunbeam Rapier and the Hillman Husky, all of which have been given bigger engines this year. Incidentally, the Rootes group maintain an independent style policy, which has been rewarded by the Grand Prix for the best styling on production models at the concours d'elegance in Rome, of all place. Their attention to detail is shown in the excellent interior finish of the Super Snipe which features plentiful use of walnut and leather.

Dunlop, Girling and Lockheed seem to have arrived independently at the same solution for a commercial disc brake. They are all producing designs with fixed callipers having two operating pistons, one on each side of the disc, and segment shaped pads instead of the circular buttons of lining which were used on the first experimental designs. However, the Humber Snipe and the new 3-litre Rover use the Girling two-trailing shoe brake with vacuum servo. This is a design with a high resistance to fade as it does not depend on any self-servo effect between lining and drum.

When the DB 4 Aston Martin appeared, it was claimed that it could accelerate from a standstill 160 k.m.h. 90 m.p.h. and brake to a stop again in 30 seconds. This was evidently an under-statement. At the MIRA proving ground, the car has just completed six such runs in six minutes and the average time was 27.2 seconds! Convincing evidence of the fade resistance of its servo-assisted Dunlop disc brakes. The DB 3 has had its braking pedal pressures reduced by the Baldwin brake booster, a simple device consisting of a compound piston in the fluid line which is already used by Fiat in Italy.

One of the few last-minute surprises is the Stirling (nothing to do with Stirling Moss). It is the latest creation of Laurence Bond, designer of the original Bond three-wheeler, the Berkeley and the Opperman Unicar. Like the latter two it has a unit body-chassis structure in resin-bonded glass fibre reinforced with metal at the attachment point of engine and suspension. It is a small sports coupe with two-cylinder two-stroke air-cooled engine of 424 c.c. (25 b.h.p. at 5,500 r.p.m.)

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at the rear. Drive is via four-speed gearbox and thence by open chain to the rear wheels. Suspension is all independent. By double wishbones with coil spring and damper struts at the front, and by swing axles with radius arms, like a reversed Goggomobil arrangement at the rear.

Another miniature sports car is the Frisky Sprint, derived from the tubular-chassis Frisky, but with three-cylinder 492 c.c. two-stroke air cooled Excelsior engine mounted transversely at the rear. Cooling air is taken from a front grille through a central tunnel to the engine. There is also an electric fan with thermostatic control for use when stationary. Berkely have produced a long wheelbase four-seater version of their little car, with more plentiful steel reinforcement of the structure; it comes as open tourer with detachable hard top

Incidentally, Rover have cleaned up the front of the new 3-litre by omitting the Rover name plates from the front wings.

## JAGUAR MARK IX

5/6 seat saloon 3/8 litres 225 bhp. Disc Brakes.

Servo-assisted steering—Automatic Transmission Optional

At the London Show Jaguar is exhibiting the new Mark IX saloon derived from the Mark VIII but with engine of 3.8 litres, disc brakes and servo-assisted steering. It is a luxurious closed car capable of accelerating from 0 to 100 mph. in about 35 seconds with a maximum speed of 115 mph.

The engine is developed from the 3,442 c.c. unit but bore is increased from 83 to 87 m.m. giving 3,781 c.c. Maximum power is raised to 225 bhp. at 5,500 r.p.m. and the maximum torque is 240 lb. fr. at 3,000 r.p.m. A new cylinder block is used with dry cylinder liners in groups of three, with water

passages milled between them to cool the upper halves. The bearings are all in copper lead. Two SU carburettors are used with a new electrically controlled cold starting device which supplies fuel to the manifold near to each inlet port.

The Burman steering unit uses recirculating balls and a built-in-hydraulic piston receiving oil under pressure from a pump on the rear end of the dynamo. Dunlop disc brakes are on all four wheels, with vacuum servo to reduce the pedal effort required.

Interior finish is very luxurious and capacity of the heater has been increased from 3½ to nearly 5 k.w. Laycock de Normanville overdrive or Borg Warner automatic transmission are available at extra cost. Basic price in England is £1,329 which is £110 more than for the Mark VIII which is continued. Also on show for the first time, in Europe is the XK 150-S two-seater with modified engine which has hitherto been reserved for the U.S.A. and has been concealed from European eyes.

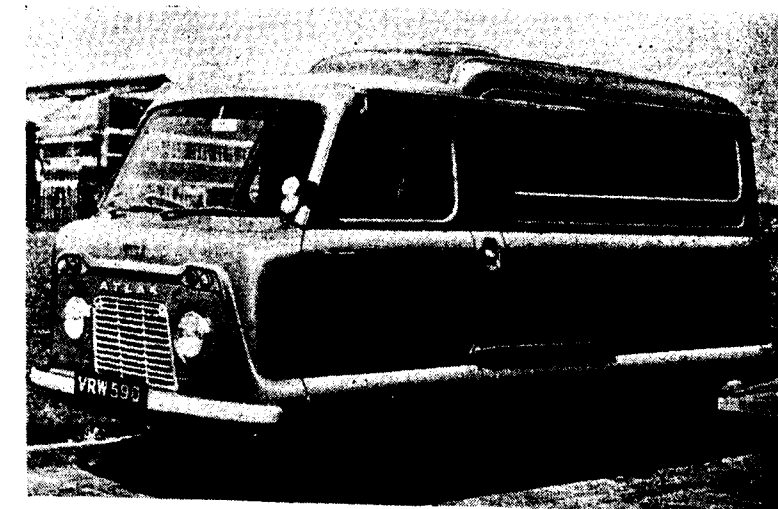
## STANDARD ATLAS

### A new light commercial vehicle

Standard have introduced a new range of light commercial vehicles with forward control using the 948 c.c. engine of the Standard Ten Car. There are two models, a box van and an open pick-up with carrying capacity of 1120 to 1350 lb. The van has a freight space of 180 cu.ft. The driver's cab has two hinged doors and there is a single door at the rear. At extra cost sliding front doors can be fitted or alternatively an extra side door in the carrying compartment. The sliding front doors are a new design in which the door fits flush but moves back outside the bodywork to avoid intrusion into the carrying space.

The vehicle has a separate chassis on which the steel body is mounted. Engine, radiator, gearbox and front suspension are mounted on a detachable sub-frame which can be removed for major overhauls. Compression ratio of the 948 c.c. ohv. power unit has been reduced to 7:1 to permit use of commercial grade fuel. With a full load it is claimed to give 35 m.p.g. on straight runs and 25 m.p.g. on multi-stop urban city runs. Although economical the vehicle has quite a brisk performance with top speed of over 50 m.p.h. and acceleration with a full load from standstill to 30 m.p.h. in 15 secs. Standard equipment includes sun visor, speedometer with

Sliding doors and a functional appearance are two features of the new Standard ATLAS 10/12 cwt. Forward Control Van.



November 1958

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The low loading height of the Standard 6 cwt. van is a feature which appeals to tradesmen carrying out multi-stop delivery work. The van continues in production without change.

trip recorder, parcel shelf and rubber floor covering in the cab. Sound deadening material is used in the door panels and the cab head lining is of washable plastic. The roof light illuminates both cab and carrying space. An adjustable passengers seat and rear mounted roof lamp are optional extras. Ventilation is provided by pivoted glass panels and sliding windows in the cab doors and a roof ventilator in the cargo section. Twin external driving mirrors and flashing indicators front and rear are standard equipment. The vehicles have been extensively tested on rough roads in Spain and on the rough track at the M.I.R.A. test ground. A feature is the low loading height 22½ in. from the ground. Dimensions of the van carrying space are 92 x 63 by 55 inches and a half partition behind the driver allows him to unload small packages from the cab while protecting him from movement of heavy loads. High manoeuvrability on city delivery work is conferred by a turning circle of 29 ft. The independent front suspension is by transverse leaf spring and single wishbone. Front track is only 3 ft. 9 in. against 4½ ft. 4 in. at the rear, so as to allow the front wheels to turn within the body contour. This calls for increased roll resistance at the front and the transverse spring is therefore clamped at two points leaving the centre

free in accordance with current practice. Brakes are hydraulic. Dry weights are : Van 2,040 lb. Pick-up 2,015 lb. Typres are 6.40-13.

Wheelbase 84 in. Track front 45 in. Track rear 52½ in. Length 160½ in. Width 67 in. Height (unladen) 79½ in.

Engine output 35 b.h.p. at 7,500 r.p.m.

Max torque 46.6 lb. ft. at 2,750 r.p.m. Road speed at 1,000 r.p.m. in 4th speed 10.5 m.p.h.

### NEW 3-LETTER ROVER

Seven-bearing Engine. Unit Construction Body with Detachable Sub-frame. Manual or Automatic Transmission. Laminated Torsion Bar Front suspension. Two-trailing shoe brakes.

The Rover 3-litre is an entirely new fast touring car added to the existing range for 1959. It has an entirely new 5-7 seater unit construction body with wrap-round windscreen, big windows and a large trunk. Construction is unusual, as engine, gearbox, steering and front suspension are mounted on a detachable sub-frame insulated from the main body by six rubber mountings. The engine is a six-cylinder unit of customary Rover F-head design with seven-bearing crankshaft and gives 115 b.h.p. gross output on a compression ratio of 8.75 to 1.

Transmission is manual four-speed with option of Laycock de Normanville overdrive or the Borg Warner fully automatic. Front suspension is new, using wishbones and laminated torsion bars and brakes are Girlings with two trailing shoes at the front and servo-assistance.

In appearance the new model reflects modern ideas but it shows Rover's customary rugged individuality in execution. The grille is the usual Rover shape, but bolder than before and there are the usual side lamps in the wings, now fitted with small red plastic tell-tales to show that they are lit. Near them, right on the corners of the car, are the amber turn indicators. There are no swivelling ventilation panes on the doors. Their function is performed by new adjustable air ducts at the lower corners of the wrap-round screen, which demist the glass and provide fresh air for the interior. The air is taken in through a die-cast grille at the base of the screen, well away from the exhaust gases of other cars. Over each window there is a plastic deflector which permits them to be opened slightly without causing draughts or admitting rain. Each door has an adjustable armrest (adjustable by press buttons on front doors) and the inside door handles have special catches to prevent children using them. Walnut is employed purely as decoration on facia and door ledges and it is bordered by chromium beadings to protect the edges. Instruments are grouped in front of the driver under a cowl, the whole assembly being finished in matt black to minimise reflections. Dials in the centre include speedometer, water thermometer, ammeter, fuel gauge, oil pressure gauge. The switches which are illuminated at night operate panel light, wipers, lights, fuel reserve tap, ignition starter and the engine oil level indicator. The steering wheel is a neat new design with recessed centre and horn ring; below it are triggers to work headlamps, turn indicators and overdrive (the overdrive can also be cut out by kicking down the accelerator). There are two glove boxes and a neat group of heater controls.

Manual transmission models are four-pedal cars. There is an organ

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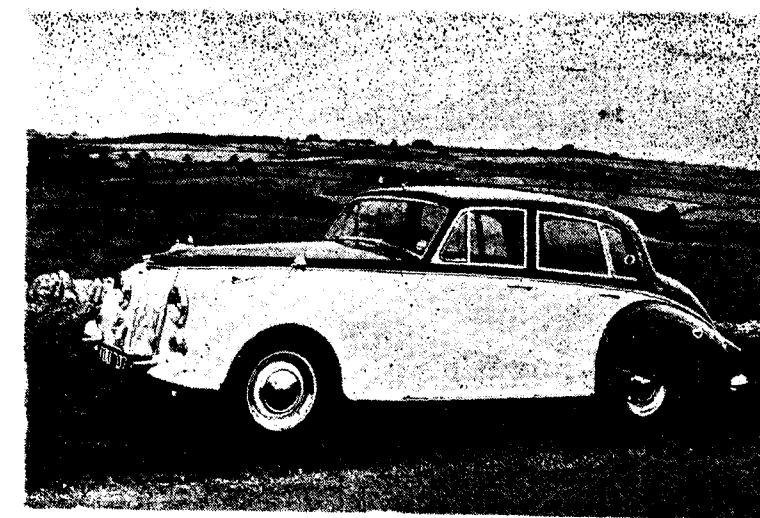
MOTORINDIA

November 1958

accelerator pedal and on the opposite side is a left foot-rest to match. Pressing it works the headlamp dipper. Gear lever is central remote control as on 90 and 105. The safety pad along the top of the instrument panel is continued along the door ledges and along the parcel shelf. There are two interior lights over the front doors and two more in the rear quarters. The leather upholstery, like all the interior trim shows the usual Rover attention to detail. Front seats are large and comfortable benches separate seats being available on request. Included in the standard equipment are cigarette lighter, ashtrays, sun visors, hand grips, electric clock, windscreen washer and the usual complete tool kit, in moulded rubber casing under a drawer under the fascia.

The engine is developed from the 90 and 105 power unit, with bore increased from 73.03 to 77.8 m.m. and stroke unchanged at 105, giving 2,995 c.c. Compression ratio is 8.75 to 1 but 7.5 to 1 is available on demand. The crankshaft now runs in seven copper lead main bearings. To accommodate the extra bearing the width of the big end bearings has been reduced by about  $\frac{1}{8}$  inch (3 m.m.) but Rover engineers are satisfied there is still an ample safety margin. Roller tappets, as recently introduced on the Land Rover permit quicker valve opening. The timing chain has a hydraulic tensioner. The inlet manifold, partly cast into the cylinder head, is water heated and carries one large SU diaphragm-type carburetter. On the opposite side of the engine is the cast six-branch exhaust manifold, feeding into a single exhaust pipe with one triple-pass baffled silencer and one small absorption type.

The clutch, hydraulically operated and 10-inches in diameter, is larger than on other models, but the gearbox is unchanged. Rover have however, abandoned their own automatic transmission and have adopted the Borg-Warner as optional alternative for the 3-litre. A control on the fascia allows the Intermediate gear to be held when required. It is not electric, but acts through a cable on the governor control lever. The propeller shaft is in two sections, with rubber-



**ARMSTRONG SIDDELEY STAR SAPPHIRE 6 LIGHT SALOON.** Borg-Warner Automatic Transmission, Girling disc front brakes and Burman integral power steering fitted as standard.

insulated centre bearing and four grease points. Otherwise all regular chassis greasing is eliminated in the usual Rover manner by use of rubber bushes, pre-packed bearings, oil reservoirs sealed for life, or oil reservoirs which only require attention twice a year. Final drive is by spiral bevel.

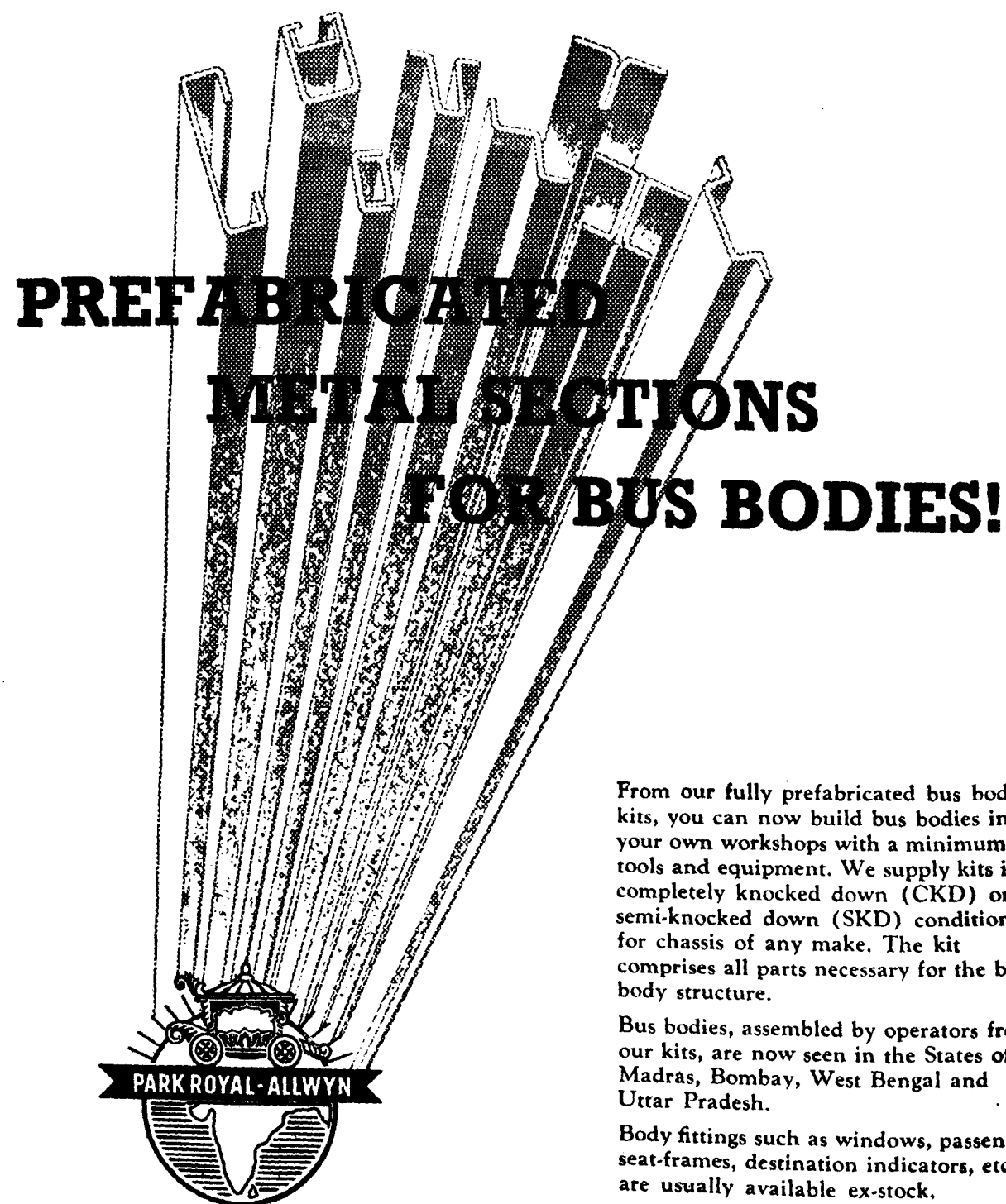
Brakes are fade resistant Girlings with two trailing shoes at the front and a servo of the suspended vacuum type, with vacuum reservoir. The detachable rubber-insulated sub-frame represents a determined effort to kill the bogey of a road rumble often experienced in unit-construction cars. The switch to laminated torsion bar suspension is also concerned with it. It was necessary to raise the front roll centre (it is now 5 $\frac{1}{2}$  in. (14 c.m.) above the ground) and also move the lower wishbone pivots from their rather vulnerable position low down in front of the engine. The answer was to use shorter wishbones, with pivots placed higher, and at the same time the pivot axes were angled to counteract nose diving during hard braking. To cut down road noise a torsion bar offered better prospects than a coil spring, but a simple torsion bar would have had to be so long that it would have extended well back under the body. A laminated torsion bar which has a shorter length for the same characteristics was therefore adopted.

The search for silence has also produced an interesting method of mounting the rear half elliptic springs. The front attachment is a circular Metalstik bush, with the second leaf of the spring wrapped round it as a safety measure. At the rear, the conventional shackle is replaced by a small triangular bracket bolted to the spring leaf, and bonded to two rubber pastiles which are said to combine sufficient longitudinal flexibility with good lateral control. The springs have eight leaves and a helper leaf for heavy loads. They are wider than those on other models (3 in against 2 $\frac{1}{2}$ ) (7.6 c.m. against 6.3) and longer (50 in against 46) (127 c.m. against 117) and are covered with grease-filled gaiters. A roll understeer effect is obtained by inclination of the springs.

Steering is by Burman recirculating ball system with three-piece track rod. The steering ball joints have sealed lubricant reservoirs and only require inspection at long intervals. Body, doors, bonnet and trunk lid are all steel, unlike other Rovers where aluminium is used for unstressed panels. The reason for the change is largely one of cost. The underside of the body is dipped in paint and sprayed in black, then coated with anti-corrosion sealing compound. The spare wheel is carried in a separate cradle below the trunk and the battery

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is in one of the rear wings, standing in a fibreglass tray.

Other Rover models are continued with the new grille and bumpers (except the automatic transmission version of the 105). They now have padded instrument panels and a slim chromium moulding at the waistline as on last year's two-colour models. Export deliveries will commence in the Spring of 1959.

Rove 3-litre. Engine 6-cyl 77.8 x 105 m.m. 2,995 c.c. (3.063 x 4.134 in.—183 cu.in.) 115 b.h.p. (SAE gross) at 4,250 r.p.m. 164 lb. ft. at 1,500 r.p.m. 136 lb./sq. in BMEP o.h. inlet, side exhaust valves. 7-bearing crankshaft.

Transmission. 10 in dia. dry clutch hydraulically operated. Four-speed gearbox with centre lever. Laycock de Normanville overdrive optional. Borg Warner automatic with Intermediate gear hold optional. Overall ratios with manual box 14.516 8.775 5.921 4.3 to 1. Overdrive 3.35 to 1. Reverse 12.762 to 1. Axle ratio with automatic 3.9 to 1.

Suspension and steering. Upper wishbone and lower radius arm with diagonal strut and laminated torsion bar at front. Ball joint pivot and anti-roll bar. Semi-elliptic rear. Telescopic dampers. Recirculating ball steering gear. Brakes. Girling with two trailing shoes at front and suspended-vacuum servo. Front drums 11 x 3 in. Rear 11 x 2½ in. Dimensions: Wheelbase 110.5 in. Track front 55 in. rear 56 in. Length 186.5 in. Width 70 in. Height 60.25 in. Ground clearance 72 in. Kerb weight 3,400 lb.

## BRISTOL 406

Following the production of a small series of the Bristol 406 with coupe bodywork by the Swiss coachbuilder Beutler, Bristol have now begun production of this model with coupe body of their own construction on a chassis with improved rear suspension. Manufacture of other Bristol models has ceased.

The body has slimmer lines than the 405, with a notched back, lower front and neater air intake, but it also has more interior space. Panels are of steel on a composite frame of sheet metal and wood. By carrying the spare wheel in the left hand front wing the whole tail locker, extending right out to the full width of the car, is free for luggage. Interior finish is very luxurious; the two separate front seats have Reutter full reclining backrests and ingenious retractable head rests which fold down flush with the backrest when not required. Instruments are grouped under a deep leather-covered cowl in front of the driver. There are parking lamps on the roof and fog lamps in the front air intake.

The engine is the six-cylinder unit derived originally from the 328 B.M.W. but is enlarged to 2,216 c.c. (68.69 x 99.64 m.m.) to obtain greater flexibility. On a compression ratio of 8.5 to 1 it gives 105 b.h.p. at 4,700 r.p.m. with maximum torque of 129 lb. ft. at 3,000 r.p.m. Transmission is through a four speed gearbox controlled by a short central lever. 2nd, 3rd and 4th speeds are synchronised and 1st has a free wheel. Road speed at 1,000 engine r.p.m. in top is 18.8 m.p.h. rising to 24.2 m.p.h. in overdrive.

The chassis is of sheet metal with box section reinforcements and front suspension is by wishbones and track control arms with a transverse leaf spring. At the rear is a rigid axle with longitudinal

torsion bars and the axle is now located laterally by a central Watt linkage. Both piston and telescopic dampers are used. Dunlop disc brakes on all four wheels have automatic adjusters and vacuum servo assistance.

Price in England, £2,995 plus Purchase Tax of £1,498½

### TECHNICAL DETAILS

Engine: 6 cyl ohv. pushrod 68.69 x 99.64 m.m. (2.7 x 3.92 in.) 2,216 c.c. (135 cu.in.) Compression ratio 8.5 to 1. Three solex down-draught carburettors. Coil ignition 105 b.h.p. at 4,700 r.p.m. Max torque 129 lb.ft at 3,000 r.p.m. Piston speed at max power 3,070 ft. min.

Transmission: Borg and Beck single dry plate clutch. Four speed gearbox with synchromesh 2nd, 3rd, 4th and freewheel 1st. Central lever. Laycock overdrive. Open propeller shaft. Hypoid axle. Overall ratios 15.42, 7.79, 5.52, 4.27 to 1 Overdrive 3.32 to 1 Reverse 12.3 to 1.

Chassis: Independent front suspension by wishbones and transverse leaf spring. Rigid rear axle with torsion bars and transverse Watt linkage. Telescopic and piston type dampers. Dunlop disc brakes with automatic adjusters and vacuum servo. Discs 11½ in dia. single pads. 2½ in. dia. Disc area 130 sq. in per disc.

Rack and Pinion steering: Bolt on pierced disc wheels 600-16 tyres.

Dimensions: Wheelbase 9 ft. 6 in. Track front 4 ft. 5 in. rear 4 ft. 8 in. Length 16 ft. 4 in. Width 5 ft. 8 in. Length 16 ft. 4 in. Width 5 ft. 8 in. Height 5 ft. Ground clearance 6½ in Turning circle 37 ft. 6 in. Kerb weight 3,010 lb.

Performance Road speed at 1,000 r.p.m. in top 18.8 m.p.h. In overdrive 24.2 m.p.h.

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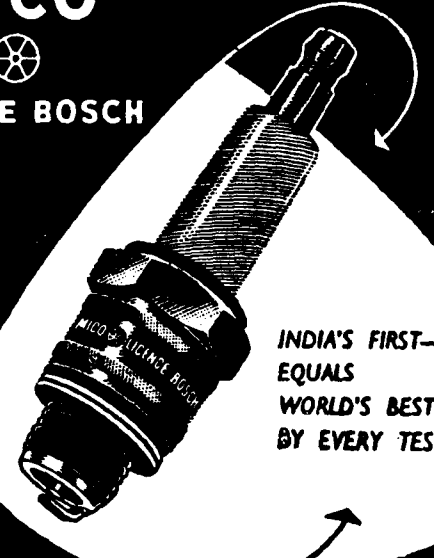
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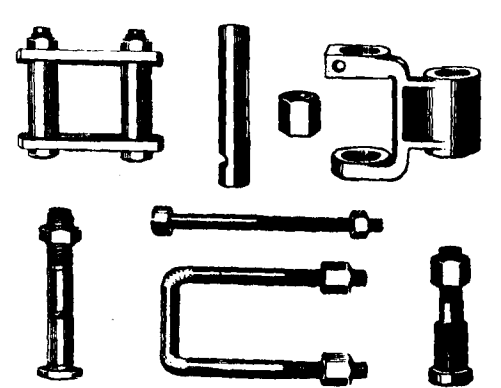
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## NEW OPEL KAPITAN

Redesigned version of Popular model from General Motors German Subsidiary:

Opel are now producing a redesigned version of the Kapitän, the biggest car produced by the General Motors German subsidiary. As usual these days it is longer, wider, lower and more powerful than its predecessor. Since the war more than 260,000 Kapitans have been built and over 60 per cent of them exported. The new model is already being delivered overseas. Length is only increased by a little over an inch but height has been cut by 23½ inches. An increase in wheelbase has allowed the seats to be dropped 3½ inches lower in the car and driving vision has been maintained by a new falling bonnet line 2½ inches lower than before. Size of the propeller shaft tunnel has been kept within acceptable limits by tilting the power unit and using a two-piece propeller shaft with rubber-insulated centre bearing. Better utilisation of interior width has given an extra 2 inches on width of front and rear seat cushions and the spring cases have been redesigned. Seats have foam rubber overlays and a safety roll over the top of the front seats protects the faces of the rear seat passengers.

Suspension is completely orthodox but the front coil springs now have a progressive action and non-parallel axes for the upper and lower wishbones as employed on General Motors cars in the U.S.A. since 1955 effectively counteract nose diving when braking sharply. An anti-roll bar has also been added to the rear half elliptic springs and these modifications coupled with the longer wheelbase and lower centre of gravity should appreciably improve the handling. The steering column now has a flexible joint to prevent transmission of road shock and vibration. Ball joints on the ends of the wishbones act as steering pivots.

Brakes have two leading shoes at the front and friction lining area is slightly increased. Pedal leverage has been modified to reduce the pedal pressure required. Wheel size remains unchanged at 13 inches but tyre section has been

increased to 6.70 inches. Despite this the spare wheel is neatly recessed inside the rear wing contour at the side of the trunk.

The power unit is basically the same 2,473 c.c. short stroke 6-cylinder pushrod unit as before but compression ratio has been increased from 7.1 to 7.5 to 1 raising gross power from 82 to 96 b.h.p. SAE at 4,000 r.p.m. Figures quoted for installed power are now 80 b.h.p. at 4,100 r.p.m. against 75 b.h.p. at 3,900 r.p.m. A torque of at least 127 lb. ft. is available all the way from 1400 to 2,400 r.p.m. making this largely a top gear car. The gearbox with steering column lever and synchromesh for all three speeds is unchanged but Borg Warner overdrive is now an optional extra. With this fitted the axle ratio is 4.22 : 1 instead of 3.9. Maximum speed is said to be 88 m.p.h. with a fuel consumption of 24-26 miles/imp. gal. improving to 29 m.p.g. with overdrive tank capacity has been increased to 12 gallons and the filler is now on the rear panel.

The Kapitän is a boldly styled job with obvious American influence and is exceptionally well equipped. There is a choice of cord or plastic upholstery in eight colours with a selection of 27 exterior colour schemes. A cleanly designed new instrument panel includes strip-type speedometer with a trip recorder. There are parking lamps, a



The New Berkeley

light inside the big trunk, mirrors on the sun visors and a steering lock. All doors carry arm rests and there is a centre arm rest at the rear.

The luxury version at a higher price has reclining front seats with fully adjustable backrests, reversing lamps, fog lamps, lights for glove box and engine, cigarette lighter, screen washer, swivelling ventilating panels in rear as well as in front doors, anti dazzle mirror, pockets in front doors, parcel nets on backs of front seats and a red warning light in the edge of the driver's door. Weight of the new models is increased by about 132 lb. but the extra power should cope with this. Price of the standard model is up by about £76.

## TECHNICAL DETAILS

Engine : 6 cyl ohv. pushrod 80 × 82 m.m. 2,473 c.c. Compression 7.5 to 1 96 b.h.p. SAE at 4,000 r.p.m. Max torque 135.5 lb.ft. gross at 1500-2600 r.p.m.

Transmission : Single plate dry clutch with General Motors diaphragm spring 3-Speed fully synchronised gearbox with steering column shift. Hypoid rear axle. Overall ratios 11.17, 6.37, 3.9 to 1 Reverse 11.87 to 1. Borg Warner overdrive optional. Ratio 0.7 to 1 with axle of 4.22 to 1.

November 1958

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All this  
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Suspension and steering: Progressive rate coil springs with wishbones, on anti-dive pivots at front. Half ellipitics at rear. Telescopic dampers and anti roll bars front and rear. Recirculating ball steering.

Brakes: Lockheed—Ate hydraulic with two leading shoes at front. Total friction lining area 129 sq.in.

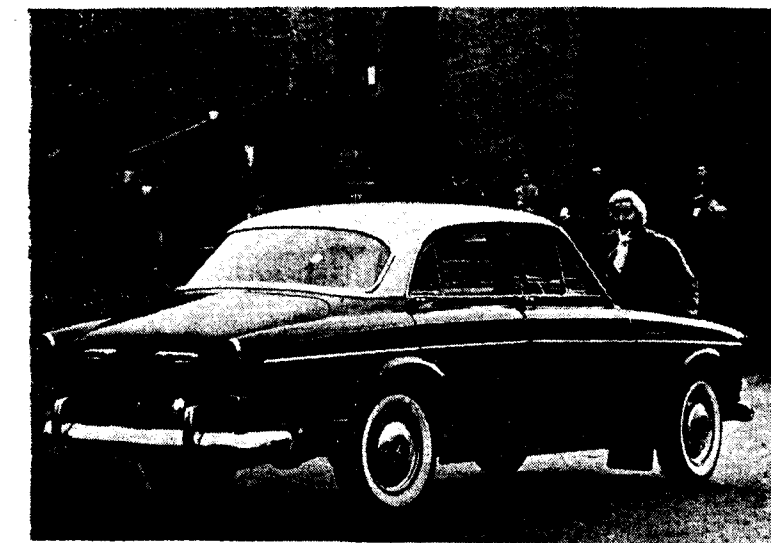
Dimensions: Wheelbase 11.25 in. Track front 51.5 in. Track rear 51.45 in. Length 187.5 in. Width 70.25 in. Height 59 in. Ground clearance 7.3 in. Kerb weight 2900 lb. Electrical system 6 volt 77 AH. Fuel tank 12 Imp. gal. Tyres 6.70-13. Gearing 18.45 m.p.h at 1,000 r.p.m. in top gear.

### TWIN CAMSHAFT MGA WITH DISC BRAKES

1600 c.c. (97 cu.in.)

0 to 100 m.p.h. in half a minute!

The MGA takes a dramatic step up in performance and moves into a new capacity class with the introduction of a 1600 c.c. (97 cu.in.) twin camshaft engine and Dunlop disc brakes on all four wheels as optional alternative to the standard pushrod engine and drum brakes. This turns it into a fast and powerful contender in the 1600 c.c. class in international Gran Turismo events. Works test drivers with the new engine have recorded average accelerations of 0-100 m.p.h. in 30.4 seconds. 0-110 takes about 37 seconds so the car is obviously accelerating quite briskly at 100 m.p.h. Even more significant than the power from the new engine is its extended range of useful revolutions. Peak power of 108 b.h.p. or more is delivered at 5,600 r.p.m. but the engine is already giving 97 b.h.p. at 5,000 r.p.m. and is still giving 100 at 7,000. So when you take second gear at 5,000 r.p.m. things really begin to happen! Because of this extended rev range there is no change in the axle ratio and the benefits have therefore been distributed in both acceleration and maximum speed. Maximum torque from the new engine is at healthy 105 lb. ft. at 4,500 r.p.m. equivalent to 163 lb. sq. in B.M.E.P.



FIRST SWEDISH CAR EVER MARKETING IN BRITAIN. A new-comer to the roads of Britain, the VOLVO 122 S can be seen on Stand No. 115 at the Motor Show and combines outstanding performance with first-class handling properties

The engine started as an adaptation of the existing pushrod unit for the last T.T. race but became very different as development proceeded. The chain drive to the camshaft is contained in an alloy casing at the front. A pinion on the crankshaft drive a half-time wheel on a stub shaft which also carries a skew gear to drive the ignition distributor. From there chains takes the drive to the overhead camshafts. The new power unit is slightly longer than the pushrod engine and to save space the radiator header tank has been moved back and mounted on the engine alongside the exhaust cam box. It is connected to a small casting housing the thermostat with three-way connections to cylinder head, radiator block and water pump by-pass. Pump, fan and generator are belt driven. Two S.U. carburettors are mounted at a slight angle to the horizontal and on the opposite side four separate exhaust ports feed into twin manifolds which group together the first, 4th and 2nd and 3rd cylinders. Compression ratio of the new engine is 9.9 to 1. Works engineers report it will run on premium grade fuel but is happier on 100 octant.

Dunlop disc brakes are a new type using segments of friction material instead of the usual circular pads, and the wheels are

perforated discs with central lock nut.

Through the years of rationalisation and vastly increased production at Abingdon, a small group of those who worked under the late founder Cecil Kimber and led by John Thornley, the present managing director, have never given up hope of bringing back to MG some of the highly individual character which it had 20 years ago. They have at last persuaded top B.M.C. management to go along with this policy to some extent and the result is a dramatic transformation of the M.G.A. at a very reasonable price. In England, the twin camshaft engine, disc brakes and road speed tyres will add about £180 to the basic price of the standard model i.e., an increase of about 27 per cent. The complete car is expected to sell in the U.S.A. for the price in the region of \$ 3,000.

### OVERHEAD CAMSHAFT ENGINE

4-cyl 75.4 x 88.9 m.m. (2.97 x 3 1/2 in.). 1588 c.c. (96.9 cu.in.) Twin overhead camshafts. Chain driven. Twin S.U. carburettors. Compression ratio 9.9 to 1. 108-110 b.h.p. at 5,600 r.p.m. Max torque 105 lb.ft. (14.55 m.k.g.) on 4,500 r.p.m. Max B.M.E.P. 163 lb./sq. in. (11.46 kg/cm2) at 4,500 r.p.m.

November 1958

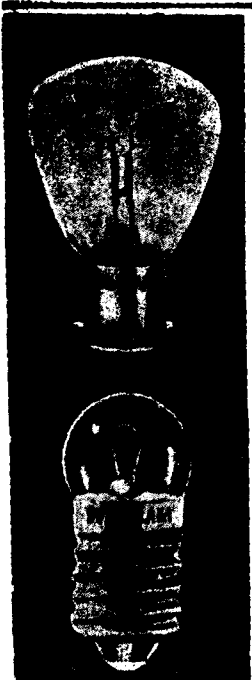
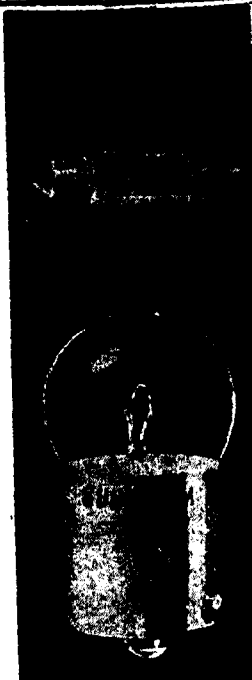
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MOTORINDIA

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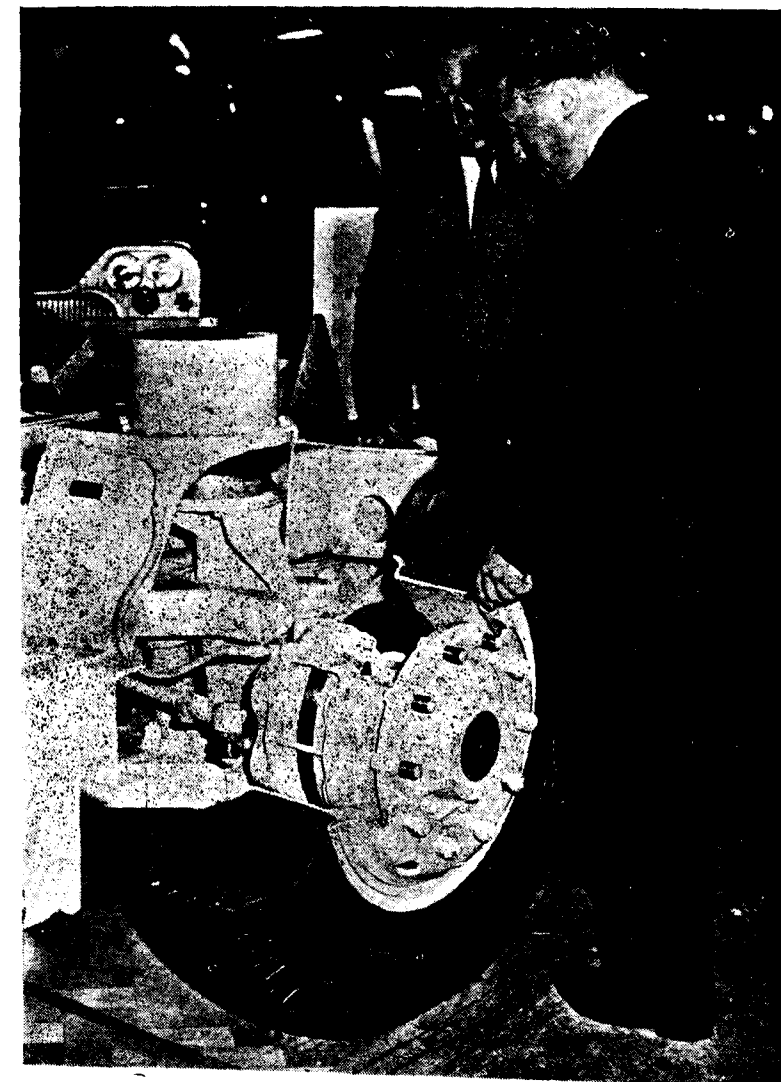
## Commercial Motor Show London 1958

Large contracts for Britain's commercial vehicles were placed on the opening day of the 19th International Commercial Motor Transport Exhibition held recently at Earls Court, London. One British firm alone took one million pounds' worth of orders for exports in the first twenty-four hours.

Besides the established and tried favourites of the transport world, much new and in some cases revolutionary equipment was on show. There was a trolley bus chassis built to carry 105 passengers in two decks, and probably the largest in the world. There was a new thermostatically controlled engine fan with a magnetic particle coupling. There was a prototype single deck coach chassis with independent front suspension, air suspension all round, disc brakes on all wheels and a 6-speed automatic gearbox. Besides these new vehicles, an amber-coloured tyre made from a new synthetic rubber-like material, claimed to have a strength approaching that of steel and to be resistant to oil and grease, and a new range of rubber suspension units for trailers, were on show.

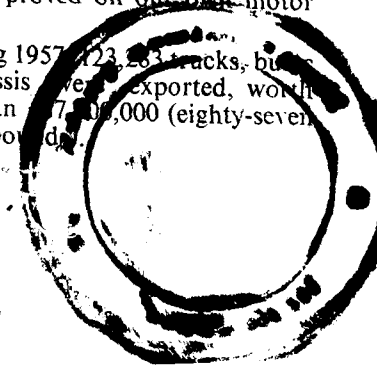
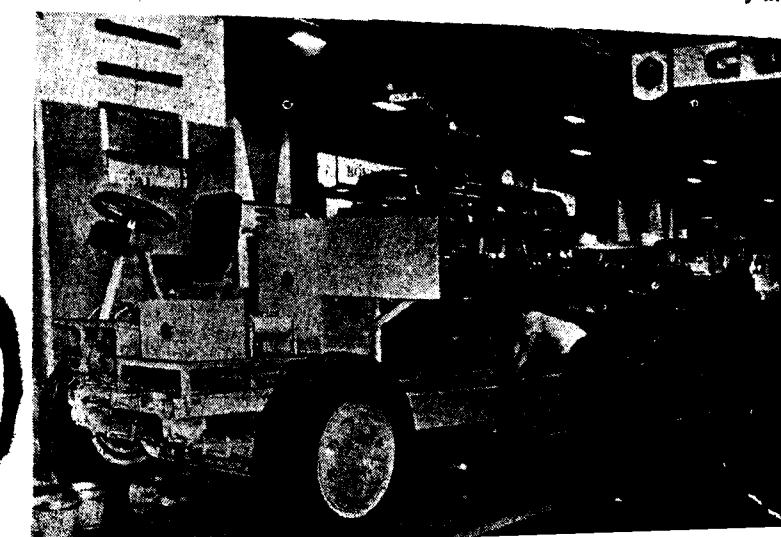
The Show itself was opened by Britain's Minister of Transport and Civil Aviation, Mr. Harold Watkinson, who said that the British Government's programme of major road construction was going ahead on schedule. "As I see it," he said, "one of my more important tasks is to give you greater room to breathe. As the first fruits of this programme we now have under construction 195 miles of motor roads and trunk roads, and my Department is finalizing schemes for 850 miles more." The Minister went on to say that before the next Commercial Motor Show, five new road schemes should be under way. He also mentioned the possibility of a "double-decker" road in the South of England, and said that Britain's commercial vehicle industry could thus look forward to greater exports of vehicles built for, and proved on our own motor roads.

During 1957, 22,833 trucks, buses and chassis were exported, worth more than £7,000,000 (eighty-seven million pounds).



Features of this new Guy single deck long-wheelbase coach chassis shown here are the suspension and braking systems. Unusual in this type of machine, the Guy is fitted with independent front suspension and both front and rear are equipped with self-levelling, constant periodicity air diaphragm units.

Claimed to be the largest double deck trolleybus chassis in the world, capable of carrying 105 passengers is this giant by Sunbeam. Power assisted equipment is a feature of the vehicle. Both the steering and the brakes power assisted, and the doors closed by air.



## JENSON ENTER LIGHT COMMERCIAL VEHICLE MARKET

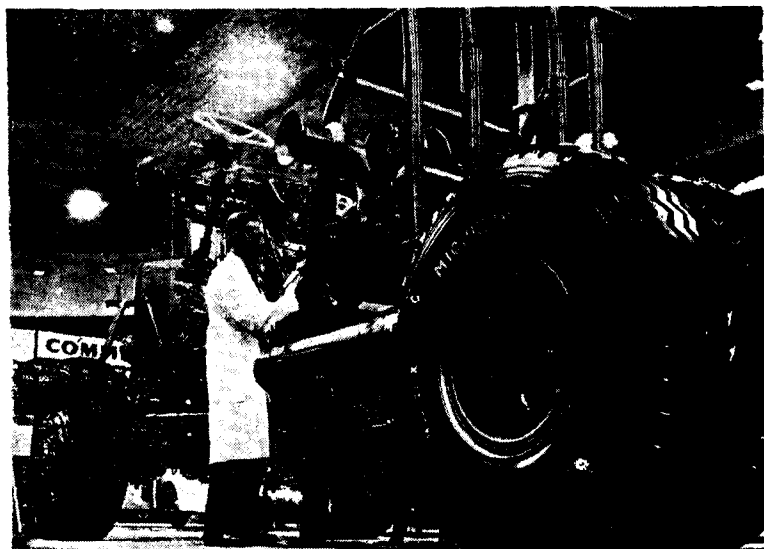
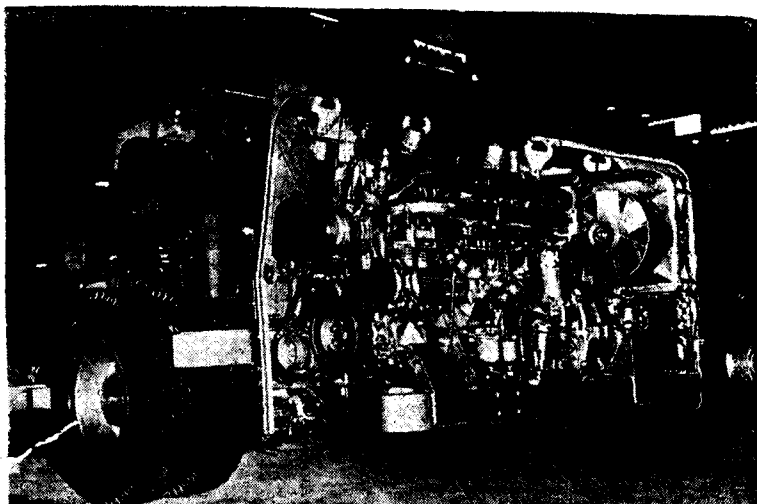
Jensen Motors Ltd. of West Bromwich are entering the light commercial vehicle market by making the German Tempo front-wheel-drive vehicles under licence in England. These vehicles are already equipped with the BMC 1½-litre four-cylinder engine, which will also be used in the Jensen version.

The models to be built are the new hydraulically operated elevator truck, a 13/14 seater bus, a six-seater crew cabin pick-up, a hydraulically operated tower vehicle and a low-loading platform truck.

The elevator truck has a wide rear track and a cargo section which can be lowered to floor level for easy loading. It is then raised again to the normal position by hydraulic rams. The floor level can be adjusted to intermediate heights to permit loading from platforms of various elevations.

The normal chassis models have a tubular backbone frame, with all-independent suspension, by transverse leaf springs and wish-bones with ball-jointed kingpins at front and by swing axles with twin coil springs at the rear. Brakes are by Girling with drums of 11 × 2½ in giving a total lining area of 190 sq.in. The four-speed gearbox in unit with the final drive is a ZF design with synchromesh for all four forward speeds. Tyres are 6.50—16 8-ply on bolt-on steel disc wheels.

Orders worth nearly £2,000,000 were placed by the end of the first day for this new rear engine bus, the Leyland Atlantean, at the Earls Court Show. Powered by the huge 125 b.h.p. diesel engine shown clearly in this picture, the vehicle incorporates automatic chassis lubrication, a semi-automatic electric change gearbox, and air brakes on all wheels.



Designed for operations in the desert, as when towing oilfield equipment, this vast tractor made by Scanmell weighs, with its semi-trailer, 55 tons, and is powered by a 230 b.h.p. diesel engine.

## MERCEDES FOR 1959

Fuel Injection for 220, New 190 Diesel, Improvements to 300, hard top for 300 SL.

An addition to the Mercedes range for 1959 is a fuel injection version of the 220S sedan, which will be known as the 220SE. Outwardly it looks the same as the car with carburettors but the engine has higher torque throughout the speed range and higher maximum power. The object is to increase acceleration rather than speed and it is claimed there is also a slight improvement in fuel consumption. A new type of injection pump is used with two plungers which provide an intermittent spray of fuel into the inlet ports. The engine also has a different camshaft. The injection

pump has twin cums for each plunger and runs at half engine speed. Each plunger feels a distribution block from which pipes lead to the inlet ports of three cylinders.

This therefore makes three different injection systems now in use on Mercedes-Benz petrol engines. It is simpler, and presumably cheaper and easier to maintain than the six-plunger injection pumps used on Mercedes 300 SL sports car engines which supply a metered quantity of fuel direct to the combustion chambers or the similar pump, which effects timed injection into the manifolds on the 300 touring car.

Control system is a simple and unusual one. There is a direct link from the accelerator pedal to the governor lever on the injection pump and to the throttle which is in the main air intake pipe. There is also a centrifugal governor running at half engine speed. A system of cams varies the output of the pump according to both accelerator pedal position and engine speed, varying the amount of fuel which is injected by the two plungers into the inlet ports. Fuel is delivered at a pressure of 215 lb. per sq. inch. Mercedes-Benz claim that this system gives instant response to the accelerator without the need for an extra accelerator mixture device on the pump. When the driver lifts his foot and closes the throttle the governor cuts off the fuel completely giving an odourless exhaust free of unburned fuel when slowing down or on long descents.

This also promotes fuel economy. The governor automatically restores the fuel supply if engine revolutions drop below 1,500 r.p.m. so as to ensure jerk-free show running and even idling. There are several auxiliary controls in the system. A cold-start solenoid adjust the control rod to give a rich mixture for starting and automatically cuts out when engine temperature reaches 35°C (95°F). A thermostat in the water system adjusts both injection pump and throttle to give fast idle during warming up. Another thermostat inside the air filter reduces the quantity of fuel injected to maintain the correct air-fuel ratio, as air density decreases with rising temperature. There is also an altitude capsule on the pump to reduce the fuel injected as air density decreases at high altitudes. Gross power output is 130 b.h.p. at 5,000 r.p.m. against 120 b.h.p. at 5,200 r.p.m. for the same engine with carburettors. Maximum gross torque is now 146 lb. ft. at 3,800 r.p.m. against 137 lb. ft. at 3,600 r.p.m. The engine is adjusted to use super grade fuel of 93-94 octane rating and overall fuel consumption is stated to be about 1 m.p.g. better. Fuel injection cars weigh about 50 lb. more than the carburettor models.

Mercedes have unrivalled experience with diesel cars (they have built nearly 100,000 of the 180D engines.) They are now extending the range with a new car the 190D which will have a diesel engine of 1,897 c.c. with overhead camshaft (the 180D of 1,767 c.c. has pushrod operated valves.) The new engine has greater power and torque than the 180-D, maximum gross power being 55 b.h.p. against 46 and it has greater speed range with maximum r.p.m. of 4,000 so that the car will reach 52 m.p.h. in 3rd gear. It has livelier acceleration than the 180D and can cruise safely at its maximum speed of 75 m.p.h. It is generally the same in appearance as the 190D with petrol engine except for the 190D badge and the switch for the starter glow plug beside the steering column. Ventilating panes, an efficient heater and defrosting system with twin blowers, padded visors, armrests on all four doors, headlamp flasher and parking lamps are included in the standard equip-

ment. As usual a rubber mounted sub-frame carries, engine, gearbox, front suspension and steering, the gearbox having baulk ring synchromes for all four speeds. Many engine parts are interchangeable with those of the 190 petrol engine, simplifying service and spare parts supplies. Like all Daimler-Benz diesels the engine used a precombustion chamber with glow plugs for cold starting. Injection is by conventional Bosch pump and cooling is by pump, fan and thermostat.

The 190D is said to accelerate from 0-62 m.p.h. in 32 seconds. Maximum speeds on the gears are 1st 19, 2nd 33, 3rd 52 and top 74 m.p.h. Kerb weight of the complete car is 2,690 lb.

The Mercedes-Benz 300, the largest of the Daimler-Benz passenger cars which is already supplied with automatic transmission, will

be available for 1959 with power assisted steering and a full air conditioning system controlling both air temperature and humidity. This car already has a fuel injection engine and is capable of over 100 m.p.h. The remaining new item for 1959 is a detachable hard top for the 300 SL convertible announced a short time ago.

**Mercedes-Benz 220 SE.** Engine 6-cyl. ohc. 80 × 72.8 mm. 2195 c.c. (133.9 cu.in.) Compression ratio 8.7 to 1 Bosch fuel injection into inlet ports by twin plunger pump-130 b.h.p. (SAE) at 5,000 r.p.m. Max torque 146 lb. ft. at 3,800 r.p.m. Full-flow oil filter. Oil-water heat exchanger. Electric fuel pump at rear of car.)

**Mercedes-Benz 190 D.** Engine 4-cyl. ohc. 85 × 83.6 mm. 1897 c.c. (115.76 cu.in.) Compression ratio 21 to 1. Bosch injection into pre-combustion chamber. Glow-plugs for cold starting 55 b.h.p. (SAE) at 4,000 r.p.m. Max torque 83 lb. ft. at 2,200 r.p.m. Full-flow oil filter.

The world's largest regular production tyres, 3,355-pound giant manufactured by Firestone are more than nine feet tall, and are used to transport complete pumping stations over the Saudi Arabian sands



## THE TYPHOON

Another Build-it-Yourself sports car

The 60 per cent purchase tax on cars in England is leading to a growing build-it-yourself movement especially among young enthusiasts who build their own sports cars. Latest effort to meet their needs is the Typhoon, developed by two young engineers. Bill Woodhouse and Anthony Bullen using low cost Ford Mechanical parts. Chassis frame is of 3 in. diameter tubes with sub-frame of smaller diameter. Independent front suspension is achieved in the familiar way by cutting the Ford Popular axle in two, pivoting the two halves at the centre and using the normal radius arms in conjunction with Armstrong coil spring and telescopic damper. The Ford 1172 c.c. side valve engine, 3-speed gearbox, torque tube, drive shaft, rear axle, wheels and brakes must be supplied by the person building the car. The chassis frame passes under the axle at the rear and is located laterally by a Panhard rod, suspension again being by coil springs and telescopic dampers. The body consists of eleven mouldings in resin-bonded fibreglass including floor and front and rear bulkheads. There are two versions, a 2-seater on an 87 in. wheelbase and an occasional 4-seater with two tiny rear seats suitable for children on a 97 in. wheelbase. The designers hope to begin production shortly.

Chassis frame with pedals, attachment brackets, suspension units, Panhard rod and remote control for the gearbox including the adaptation of front axle costs £70. Set of body mouldings costs £130. Engine, gearbox, transmission, wheels, brakes, electrical equipment can be obtained cheaply by breaking up a second hand car but it must be admitted that they are rather expensive at the prices the car manufacturers charge for new spare parts. The retail price of the necessary Ford parts in England is about £200.

A short road trial showed that the car has a lively performance even with the engine in standard trim and it is stable on corners with little roll and the Ford Popular mechanical brakes should deal adequately with a car weighing about 1400 lb. The suspension is not very supple (it could hardly be with a chassis which passes under the axle at the rear) but even so on the 4-seater version

## THE STORY OF SELF STARTER

BY MEHERWAN J. PATEL

For a Motorist, the name Self Starter needs no introduction, because the name itself is self explanatory. It is a very important electrical unit in an automobile used for starting the engine conveniently without physical efforts on the part of the driver.

The first Self Starter was introduced on a Cadillac experimental car in 1911.

Before that the driver had to crank the engine by means of a cranking handle to draw a charge of mixture into cylinders, and create an ignition spark before it will operate on its own power. This was not only inconvenient, but also a good deal of effort was required and that is why in those days among womanfolk a few brave and hardy ones alone had the dare to drive a car. To start the modern high compression engine with the cranking handle is a more risky and hard job. So the modern cars are not provided with cranking handle arrangement, because if the engine is in a slightly more advanced position, it will back-fire, with the chances of breaking hand bones due to the fast reverse movement of the cranking handle.

The Electrical Self Starter is an important milestone in automotive history and with its introduction for simple and easy starting Self Starter opened up an entirely new market to manufacturers of motor cars with the result that the manufacture and sales of automobiles increased by leaps and bounds. Along with the introduction of the Self Starter came the development of better batteries and now the starting of an automobile has become so simple in operation that even a teen age girl today can do it care free and with confidence.

The Self Starter is merely an electric motor working on a 6 Volts or 12 Volts battery, operated by a switch known as STARTER SWITCH. The Starter Switch was in the early stages of the mechanical type, but in modern cars, the electrical starter switch known as "SOLENOID SWITCHES" are

fully loaded, it was easy to strike the exhaust system on the ground on a rough road and the car certainly needed more ground clearance than had been provided on the prototype.

employed to eliminate even the little effort required for pulling the mechanical cable to operate the switch. To operate the Solenoid Switch, only a finger push effort on Starter Button is required.

**CAUTION: Before Pressing the Starter Button for Starting the Car make sure that the Car is in Neutral Gear to avoid accident and injuries**

The Starting circuit consists of the battery, starting motor switch, starter button, starting motor, starting cables and the car frame. The battery supplies the power to starting motors to crank the engine and the switch controls the operation. Thus it will be seen that the starter motor converts the electric energy from the battery into mechanical energy, which cranks the engine with the help of pinion and fly-wheel ring gear.

However, dirt, dust, water and frequent starting may cause rapid wear and tear making an overhaul necessary. Therefore it will pay in the long run for a motorist to get the Starting Motor overhauled at a reliable and well-equipped Service Station to avoid additional trouble and heavy expenses involved in many partial jobs as replacement of bushes or changing the brushes, etc.

### Some Useful Hints on Self Starter :

1. Do not start Engine when car is in gear.
2. Do not start Engine when starter mounting is loose.
3. Do not start Engine when pinion slips on ring gear.
4. Do not press starter button when engine is running.

### General Causes for Starter Failure :

1. Discharged battery or defective battery.
2. Battery terminals corroded.
3. Battery cable loose on solenoid switch.
4. Battery terminals loose.
5. Thin battery cable or battery cable not soldered properly to the terminal.
6. Starting switch contacts burnt.
7. Starter itself defective.
8. Morning starting trouble cause:

One cell in the battery not in good condition. After running for some time, the cell picks up charge enabling the starter to work without difficulty.

## India-Built Vehicles

### Meet Country's Needs

With the rapid development of national industries the need for adequate, efficient transport has become a major problem and a challenge.

That Swadeshi initiative, ingenuity and technical ability are successfully coping with the situation is proved by the steadily growing fleets of buses, charabancs, "private carriers", etc., engaged in carrying passengers and commodities up and down our vast network of roadways.

Within the last ten years or so—that is, since Independence—the Indian bus body building industry has made tremendous progress. Raw materials, components, accessories—all these are Swadeshi today.

For example, the activities of a national enterprise, like M/s. Hyderabad Allwyn Metal Works Limited, comprise the manufacture of single-deckers, double-deckers, chara-

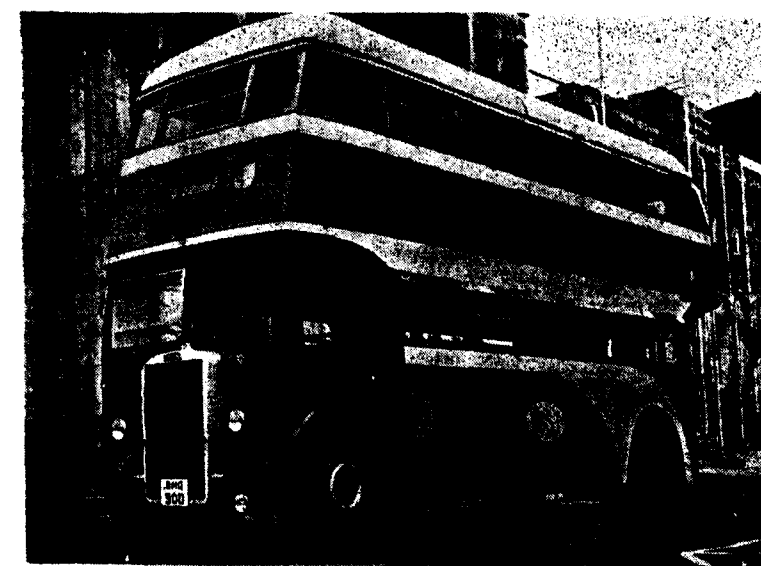
bancs, lorries, public service vehicles of every type, bus windows, bus seat frames, rear-view mirrors, drivers' seats, windscreens, seat-frames, indicators, wipe-fittings, roof lamps, electric bells and bell pushes.

In high modern quality and efficient performance these products line up with the world's best, as evidenced at the "Concoours d' Elegance" of 1957, where an Allwyn—built luxury coach, belonging to the B.E.S. & T. Undertaking, won first prize in the coach section, scoring over its foreign competitor.

Among national bus-body builders the achievements of M/s. Hyderabad Allwyn Metal Works Limited cannot be overlooked. As a pioneer and leader in the manufacture of all-metal bus bodies—founded only in 1946, and working in technical collaboration with M/s. Park Royal Vehicles Ltd., London—they fill orders of frontrank operators, such as the B.E.S. & T. Undertaking, the Hyderabad State Transport Department, Delhi Transport, West Bengal Transport, Government Transport of Madras, etc.

In styling comfort, safety and stamina our Swadeshi products pass the most rigid tests with flying colours. Their manoeuvrability, even in the worst road conditions, is outstanding, as is demonstrated by their successful 28 tilt tests.

The future for India's bus-building industry is certainly bright. With fully qualified and equipped concerns, like M/s. Hyderabad Allwyn Metal Works Limited placing their resources and technical skill at our disposal, the day will soon dawn when India's road traffic and vehicles will equal, if not outgo, America's in volume and "round-the-clock" mileage.



# ANDHRA BUS NATIONALISATION ORDER QUASHED

A Constitution Bench of the Supreme Court, by a majority judgment has held invalid the Andhra State Government's scheme for nationalisation of bus transport and ordered that it be quashed.

The court, accordingly allowed a writ petition by Gullapalli Nageswara Rao and other private bus transport operators of Krishna district, challenging the validity of the scheme, and ordered the Andhra State Road Transport Corporation not to take over any route in which the petitioners were engaged the transport business.

The Court held that the State Government had not made a proper enquiry consistent with the principles of natural justice before approving the scheme.

The Court also made it clear that this judgment would not preclude the State Government from making the necessary enquiry in regard to the objections filed by the petitioners in accordance with law.

It was contended on behalf of the petitioners that the scheme was *ultra vires* of the Constitution as it authorised the State Government to acquire the undertakings of citizens without providing for compensation for the entire undertaking against the provisions of Article 31, which provided that no law shall be made for the transfer of ownership or right to possession of any property to the State or to a Corporation without fixing the amount of compensation. It was also argued that the State Government had not held a proper enquiry and considered the objections of the private transport operators before approving the scheme.

Mr. Justice Subba Rao, who delivered the majority judgment—three to two—said that it was no doubt true that in the context of the scheme of nationalisation the petitioner might not be able to make use of their assets and other routes or dispose them of at a great advantage to themselves, but it could not be said that by cancelling the permits, what was left with

them was only the "husk." In fact, the entire assets of the business were left with them and the State Transport Undertaking had not taken them over.

His Lordship said, "We hold that Chapter IV-A of the Act (the Motor Vehicles Act providing for the State Transport Undertaking) does not provide for the transfer of ownership or the right to possession of any property to the State or to a Corporation, owned or controlled by the State under Article 31 of the Constitution, unless there is such a transfer, the law shall be deemed not to provide for compulsory acquisition or requisition of property and, therefore, in such a case, no compensation need be provided for under Article 31 (2) of the Constitution."

The Road Transport Department of the Andhra Pradesh Government, His Lordship added, was a State Transport Undertaking under the Central Act, and, therefore, it was within its legal competence to initiate the schemes.

His Lordship further said that it was one of the fundamental principles of judicial procedure that the person or persons who were entrusted with the duty of hearing a case judicially should be those who had no personal bias in the matter. It was also a matter of fundamental importance that a person interested in one party or the other should not, even formally, take part in the proceedings though in fact he did not influence the mind of the person who finally decided the case. This was on the principle that justice should not only be done, but should manifestly and undoubtedly be seen to be done. The hearing given by the Secretary, Transport Department, to the objections of the private transport operators, certainly offended the said principle of natural

## Operators Claim Permit Restoration

justice, and the proceeding and the hearing given in violation of that principle were bad.

Following the Supreme Court's decision invalidating the scheme of nationalisation of road transport by the Andhra Pradesh Government in Krishna district, the chief bus operators, whose permits have been made ineffective from March 31, this year, claimed restoration of their permits in a petition to the Government at Hyderabad. The petition also urged the Government to restrain the vehicles of the Road Transport Corporation from plying on the Vijayawada-Masulipatam route with immediate effect. Mr. N. Ramesam, Deputy Secretary, Home Department who received the petition, told the operators that the Government were awaiting a copy of the judgment after which orders would be issued.

It may be recalled that the permits of the petitioners were made ineffective by the Regional Transport Officer, Krishna District, from March 31, this year under the scheme of nationalisation of road transport by the Government to facilitate the buses of the State Transport Corporation to run on that route. The displaced bus operators of the district filed a writ petition to the Supreme Court in July last challenging the validity of the scheme and to restrain the State buses from operating on that route.

The parking problem in big cities in India is gradually becoming complicated. The problem, however, has not yet reached that stage as to cause serious concern when compared with important European and American cities. The conditions prevalent in Indian Cities present no insurmountable difficulties. And this is in spite of the fact that the roads are used not merely by mechanical vehicles but also by animal-drawn and hand-drawn carts and pedestrians. Besides the traffic and road sense is also comparatively poor.

Now, what is the explanation for this what appears to be a paradoxical position? The answer is quite simple. Admittedly the road system in Indian Cities needs to be modernised and the traffic behaviour of the road users improved. In spite of these drawbacks the parking problems unlike in the West is not acute at present. This is because the car population is considerably less than in European and American cities which is bound to remain so fast a long time to come, until the indigenous automobile industry is in a position to embark upon mass production. It has been estimated that the vehicle density per mile of both metalled and unmetalled roads in India is 1 for mechanised vehicles and 0.56 for animal-drawn vehicles. In Great Britain we are informed the per mile density is 25 and even in relatively small countries like Malaya and Ceylon it is 13 and 8 respectively.

It is obvious that so long as the volume of traffic on the roads continues to be comparatively low there is no possibility of the problem getting out of hand and presenting those baffling features which are experienced in countries where there is heavy motor vehicle traffic. There should, of course, be no room for complacency as there is every likelihood of the parking problem assuming alarming dimensions when once the vehicle population goes up and its per mile density increases. The interval in the meantime affords of golden opportunity to plan and experiment with measures which will help to solve the problem as and when it develops and begins to get out of hand.

The parking problem, if it is at all present in any measure, is in

## Road Traffic and Parking of Private Vehicles in the Centre of Towns

cities like Bombay, Calcutta and Madras, particularly in Bombay where the traffic density is higher than in the other cities. In fact the concentration of business houses and offices in certain localities had led to a concentration of vehicles in such places during business hours resulting in traffic congestion on certain roads which is receiving the attention of the controlling authorities. So far as Bombay is concerned this concentration is felt in the mile-square area of the Fort, where it was estimated as many as 12,511 vehicles park during the hours between 8 a.m. and 7 p.m. The number of parking stalls available being only 2,649, the turnover of vehicles per stall was 4.7. Since this estimate was made there has been an increase in the number of vehicles and it is calculated that at present the vehicles per available parking space would be 6 in the Fort area. Confronted with these difficulties the City's Traffic Advisory Committee have suggested the utilisation of open spaces for the parking of vehicles. As this will not completely eradicate the difficulty the Western India Automobile Association has suggested the re-framing of Municipal building rules so that all new buildings have parking space provided.

At present wherever the road width is adequate and traffic can be absorbed in single lanes tail-on parking on one side of the road and if possible also horizontal kerb-side parking on the opposite side are allowed. Bonnet-on parking is allowed when the road is broad and the pavement is narrow. In order to ensure quick clearance of cars from shopping areas, the duration of parking time is limited to half-an-hour. As the busy part of Bombay is in the South of the City there is a big stream of traffic flowing southwards in the mornings and northwards in the evenings. The main routes being Queen's Road, Nethaji Subash Road, Hughes Road, Horn Road, Pedder Road, Hornby Vellard, etc., a peak-hour unilateral system of parking is used on these roads.

In certain busy localities mostly

in the Centre of Bombay a date unilateral system of parking is followed so that inconveniences are not always one-sided. The sanctioning of places of amusement in certain areas without considering the projected parking requirements has resulted in inadequate parking facilities near some cinema houses. But this is however now rectified for when deciding a place of amusement parking space within the confines of its compound is required at the ratio of 4 to 100 of the auditorium capacity. Similarly petrol pump sites are scrutinized in their blue-print stage to consider the parking and the other traffic aspects.

The W.I.A.A. and other organisations for years past have been advocating that the Municipality should provide parking grounds and, if necessary, a small charge might be made for the facility. Such parking grounds should be compulsorily used by motorists particularly by chauffeur-driven vehicles. It has also been suggested that businessmen should be encouraged to construct buildings with plenty of space for parking vehicles belonging to those having offices in such buildings. In order to eliminate parking for long hours by commercial motor vehicles, the W.I.A.A. has recommended the removal of godowns and warehouses from busy centres.

As in Bombay, the parking problem in Madras can be said to be somewhat a problem only in the congested business centre known as George Town, where the roads are narrow. These roads have been made one-way so that parking is allowed in all places in the city except at bus stops, road junctions and intersections of busy dual ways. Central parking is followed in all areas where the roads are broad enough to allow two-way traffic on the sides. A few lay-byes are under construction to allow buses to pick up and set down passengers and other vehicles going out of order to be parked till repairs are over, leaving the highways without obstruction to the regular flow of traffic. Cars are allowed to be parked at roundabouts which are sufficiently large. One way of solv-

## REPORT OF THE ASIAN ZONE SECRETARIAT OF THE ALLIANCE INTERNATIONALE

The outlook for tourism continued to be encouraging mainly due to the steady improvement in the political stability and economics of most of the Asian countries. Tourist promotion activities were very brisk in Japan, Philippines, India, Ceylon and Turkey and mainly directed to attract foreign tourists.

An important feature of tourism in Asia is that the bulk of the foreign tourists come from Europe and the Americas unlike in Europe where tourists from neighbouring countries form the major portion. This phenomenon is probably due to the poor living standards of the people of the region in general and more particularly to the fact that international tourism in Asia even between neighbouring countries is still confined exclusively to the few rich people as against the large increase in the middle class tourists witnessed in European countries.

The increase in internal tourism is noteworthy in Japan, Philippines, India and Ceylon where the middle classes have taken to travel for pleasure and sightseeing, taking advantage of the concession given by governments in railway fares, etc.

### Touring documentation

Compilation of touring documentation on the Asian countries continued to be one of the important activities of the Secretariat

ing the difficulty is for corporations in big cities and private bodies in smaller towns to acquire vacant lands and old buildings and provide parking space.

Calcutta is one of the most important cities in India but the vehicle population there is less than in Bombay. Here also where the business houses are concentrated the pressure on parking space is high. Careful planning of the future growth of cities, public parking places, the compulsory provision of parking spaces in private buildings, restriction on duration of parking in shopping centres, etc., will go a long way to ease parking difficulties.

during the year. The Touring Information Files on Singapore and Malaya, Iran and Japan, which had been circulated to all AIT Clubs, were well received. Similar files on Burma, Pakistan and Philippines have been completed and will very soon be issued to the clubs. The Secretariat kept in touch with the tourist organisations in the various Asian countries and also the latest developments in the sphere of tourism.

### Afghanistan

The Government of Afghanistan is very much interested in encouraging and promoting the tourist trade but is greatly handicapped due to inadequate facilities. Communication in Afghanistan and with it is seriously hampered due to its peculiar physical features, making the introduction of Railways or navigable waterways nearly impossible. As a result the Government has realised the importance of travel by air and is endeavouring to spread a network of civil airports throughout the country, with up-to-date facilities for foreign visitors. Till now Kabul had served as the base for many international airlines with which Afghanistan is linked but being way out of the straight international route, the government is rapidly developing the Kandahar Airport as the country's international air base.

### China

The only source of information is the China International Tourist Service, which is a State enterprise. From the reports received it is seen that this organisation is fast expanding its activities. It runs hotels and restaurants, makes transport arrangements for tourists, provides trained guide-cum-interpreters and acts as a sort of tourist agency in close co-operation with the government and its diplomatic offices abroad. It has branches and sub-offices at all important towns and tourist centres. Some beginning has also been made in respect of touring documentation. Recently the Government have offered a

## DE TOURISME FOR 1957

50% reduction in rail and steam boat fares within China for *bona fide* tourists and travellers on business-cum-tourist visits, if their visits exceed 10 days. No information is however available on road travel within China or from the neighbouring countries in China.

### Japan

Reports from Japan indicate a tremendous increase in tourist promotion activities, the Government, the tourist and the transport agencies functioning in close co-operation with one another. The number of tourists visiting the country in 1957 was 135,000 compared to 113,500 in 1956 and 102,500 in 1955. Tourists from the U.S.A. exceeded those from any other country. Entry formalities have been greatly simplified by replacing the Foreign Exchange Record Book by a simpler form and introducing oral declaration of baggage for air-borne travellers. Visas have been abolished for visitors from Germany, France, Italy, Greece, the Netherlands, Belgium, Tunisia, Denmark, Sweden, Switzerland, Luxembourg, Norway and Dominican Republic, if their stay does not exceed 3 months. Plans are under way to link the Honshu Island with the Shikoku and Kokkaido Islands by railway.

### India

The increasing importance attached by the Government of India to the development of tourism is evidenced by the recent setting up of a separate Directorate of Tourism. The Government is also considering a plan to assist the various State Governments in India to establish Tourist Bureaus at various centres. Other notable developments include the opening of the Bannilal Tunnel which makes Kashmir accessible by road to travellers even during the winter, the starting of a Statistical Section by the Government to study tourist traffic trends and preferences to aid tourist planning, simplification and relaxation of entry formalities, etc.

In 1957 the Government of India set up a "Hotel Standards and Rate Structure Committee" to advise them on the standardisation and gradation of hotels in India and formulation of a suitable rate structure. The Secretariat put up a memorandum to this Committee suggesting the adoption of the "Star System" in classifying hotels so as to facilitate tourists to select hotels of their choice, the formulation of a rational rate structure, the introduction of comprehensive legislation to ensure proper maintenance of the standards of the hotels, the provision of long term loans to them at reasonable rates of interest and the starting of youth hostels.

The number of tourists visiting the country shot up to over 80,000 from 68,880 in 1956.

### Philippines

The Board of Travel and Tourist Industry of the Philippine Government in co-operation with the Philippine Tourist and Travel Association is engaged in mapping out plans for the development of attractive facilities and conveniences in the Manila Bay, Corregidor and Bataan, further development of Tagatay Ridge Resort, Baguio, the summer capital of the Philippines, Hundred Islands Resort, the world-famous Ifugao rice terraces and many other tourist spots in the country. The Government have taken powers to suspend payment of fees for visas, to exempt food, drinks, cigars and cigarettes consumed by tourists in the country from taxes, to allow foreign tourists to export without any export licence within 60 days of their departure free of taxes any quantity of locally purchased souvenirs, gifts, etc., upto the value of 1,000 Pesos or 500 U.S. Dollars.

### Far Eastern Highways

The Secretariat took on hand the collection of information on the Far Eastern Highways from India to Burma, Malaya, Thailand, Cambodia, Laos, Vietnam, etc. There was very encouraging response from the Governments, the AIT Clubs and other organisations interested in travel.

As far as the road travel from India to Burma is concerned there are two old routes—the North

Western route from Tamu (Manipur, India) to Mandalay via Kalewa, Pyinsama, Pyingaing, Ye-U, Shwebo, Sagaing and Amarapura and the old Stilwell Road from Ledo (Assam, India) to Tanai, Myitkyina, Bhamo, Lashio, Maymyo and Mandalay. Although both the routes are in a very bad state, reduced to mere tracks in certain sections, the former is shorter and comparatively easier of the two. Many of the bridges have not yet been restored and the roads are very difficult during the rains. In recent years quite a few travellers have accomplished this journey.

There are two possible routes for travel from Burma to Thailand—one through the Shan States via Thazi, Loilem, Kengtung, and Chiengrai in Northern Thailand and the other through Moulmein and Tak in East Thailand. The former road is easily motorable and safer than the latter. Motorable roads exist also for travel from Bangkok to Phnom-Penh (Cambodia) and Saigon (South Vietnam).

On the road from Bangkok to Malaya a section of 175 kilometres from Ranong to Takuapa has not yet been opened for traffic although permission to travel can be obtained from the authorities concerned. Large stretches of this road are very bad, rough and uneven.

### National Highways

The Zonal Secretariat has been in constant touch with the various State Governments of India regarding the national highways of the country, which, according to reports received, are being maintained in good state of repairs. Considerable progress has been made in building the West Coast Road linking Bombay and Cochin and it is to be completed by the end of the Second Five-Year Plan. Out of the 13 major bridges on this road 4 have been completed, 3 are in progress and 6 are yet to be taken up for construction.

Representations were made to the State Governments of Bombay, Mysore and Kerala as also to the Central Government to provide facilities for tourists by way of Travellers' Bungalows and Rest Houses, petrol stations and repair shops along this road.

### United Nations Convention

The Secretariat continued to press the Governments of the Asian Countries which have not adhered to the United Nations Convention on Road Transport (1949) and the Convention on Customs Facilities for Touring (1954), to do so at an early date in view of their usefulness to international travel and tourism. During the year among the Asian Nations only Ceylon adhered to the Road Transport Convention. The Customs Convention and the additional Protocol relating to the importation of Tourist Publicity Documents and Material were adopted by Israel.

### Recognition of Touring Documents issued by the A.A. of East Pakistan

The A.A. of East Pakistan, Dacca brought to the notice of the Secretariat the difficulty experienced by travellers from East Pakistan to India due to the non-recognition of their documents by the Indian Customs Authorities. On taking up the matter with the Indian Customs it was learnt that the difficulty had arisen as the Government were not aware of the admission of the A.A. of East Pakistan into the network of the A.I.T.'s Clubs. Copies of the latest and complete list of the A.I.T. Clubs whose documents were guaranteed by the Western India Automobile Association were sent to the Sea and Land Customs Outposts all over India so that such difficulties might not recur.

### Tourist Enquiries

The Secretariat handled a number of enquiries relating to travel in Asia and Europe. An interesting enquiry related to the road route from Madras (India) to Mecca, the famous Muslim pilgrim centre in Saudi Arabia. The information secured by the Secretariat revealed the possibility of two alternate routes, one from Basra to Riyadh and Mecca via Kuwait and the other from Amman to Medina and Mecca, both of which are motorable although not well surfaced.

There were quite a few enquiries for information on the Indo-Burma-Malaya route.

## U.S. AUTOMOBILE REPAIRMEN WIN CRAFTSMANSHIP STATUS

Washington: The humble automobile repairman—the man who keeps America's millions of cars and trucks flowing smoothly over the highways—has finally won recognition as a skilled mechanic. In a test case brought by the International Association of Machinists, the U.S. National Labor Relations Board has set its stamp of approval on auto mechanics as craftsman entitled to have their own bargaining units.

Previously, the board in establishing suitable units for collective bargaining purposes, under the provisions of the Taft-Hartley Act, had refused craft status to the auto mechanics. Instead, it had lumped them together with less skilled employees such as parts changers, car washers and other garage personnel. In many instances, according to IAM President Al Hayes, "this has been equivalent to denying the mechanics all bargaining rights."

Although the test case involved a single group of mechanics at a California branch of the International

Harvester Company, who were seeking IAM representation, union spokesmen predicted that the decision will help unorganized mechanics in the entire auto repair industry win improved working conditions.

The IAM represents some 2,270 auto mechanics at 112 branches of International Harvester. Before they achieve full journeyman rating, they undergo rigorous training under a joint apprenticeship program sponsored by the union and the company.

In approving the union petition, which was supported by the company, that the auto repairmen be accorded craft status, the board evidently gave great weight to this training program. Its statement, concurred in by four of the five members, said:

"We agree with the contention of the parties that the present-day automotive engine is a highly complex and complicated machine, and that it requires increasing know-how and more skill to adjust and maintain this machine."

"To this end and because of the shortage of mechanics particularly since World War II, the employer instituted in 1951 a detailed apprenticeship program. This program requires the apprentice to devote 8,000 hours, the equivalent of four years in learning the trade, of which 7,400 hours must be spent in the shop and the remainder in related class-room instruction.

The apprentice must learn to use numerous kinds of tools, including hand tools, machine tools, measuring devices, wrenches, jacks, wheel removing tools, valve grinding equipment, electronic and hydraulic equipment, electrical equipment, diagnostic equipment, etc.

"He must learn to work at close tolerances. The program is aimed at giving the apprentice a rounded experience in every phase of motor truck service and to understand every part of the engine, steering gears, fuel systems, brake systems, axles etc."

The board concluded, "on the basis of the uncontradicted record in this case," that the mechanics "are practitioners of the same craft and that they are primarily engaged in the performance of tasks requiring the use of craft skills."

These two apprentices (left), employed in an automobile service station, are learning about axle construction from IAM Journeyman Machinist Donald Budwick, repair manager



Classroom study is an important part of the apprentice's training. These apprentices are getting instruction in the basic principles of automatic transmission at a vocational school. The instructor (rear, left) is journeyman mechanic



MOTORINDIA

November 1958

## The Madras Motor Parts Dealers' Association

The Madras Motor Parts Dealers' Association records with pleasure the enlistment of the following new members.

1. M/s. Khanna Auto Corporation, 18, General Patters Road, Madras-2.
2. M/s. National Automobiles, 15, State Bank Street, Mount Road, Madras-2.

### [DELETIONS]

"In as much as the following members have not paid their subscription we are reluctantly compelled to remove their names from the rolls of the Association," says a circular by the Secretary:

1. Messrs. Arasan & Co., Madras-2.
2. Messrs. Bajaj Bros., Madras-1.
3. Messrs. Bashyam Reddy, Cuddalore.
4. Messrs. Bharat Trading Co., Madurai.
5. Messrs. Chari Trading Co., Madras-2.
6. Messrs. Hindustan Auto Stores, Chittoor.
7. Messrs. Jaswant Vora & Co., Madras-2.
8. Messrs. Radhakrishna Automobiles, Madras-2.
9. Messrs. Motor Sales Co., Madras-2.
10. Messrs. Y. Venkanna Chowdry, Madras-17.

### Members' List

It is proposed to compile and print our members list in a book form, which will be circulated widely. Members will be allotted sufficient pages for their advertisements at nominal charges. Some members have not furnished their full address, telegraphic Code, telephone number, central sales tax registration number etc. All are requested to send full particulars to the Secretary.

November 1958

To

All Members

### ANNUAL GENERAL MEETING

Notice is hereby given that the 15th Annual General Meeting of the Members of the Association will be held on Saturday the 29th November, at 3.p.m. at the Association premises. All are requested to attend the meeting

Any member who wishes to bring any special resolution must notify the undersigned in writing on or before the 14th November 1958.

### Agenda

1. Presentation of the annual reports and audited accounts.
2. Election of new office-bearers for ensuing year.
3. Any other subject with the permission of the Chair.

By Order of the Managing Committee

### IMPORT POLICY OCTOBER 1958 TO MARCH 1959

We give below a summary of the changes effected and points from the Import Policy relating to Motor Parts and Allied items for the October 1958/March 1959 period as announced by the Government on the 1st November. For further details and clarifications, if any, you may please refer to us:

1. *Application forms:* New application forms can be had from the Association.

2. *Income-tax verification:* Importers are advised to see that they hold a valid IVC Number.

3. *Application fees:* There is no change in the application fees.

4. *Last date for submission of application:*

Established Importers — 1st December 1958.

Actual Users—31st December 1958.

5. *Basic Period:* Basic period for establishment of quota for Motor Vehicle Parts, List III items, Garage tools etc., remains unchanged. However, for Fuel Injection equipment falling under Serial No. 30 (f) of Part II the basic period has been extended to 1956-57. So also for Ball Bearings and Taper Boiler Bearings falling under 19 (1) and (3) of Part II. Application for establishment or re-fixation of quotas should be made so as to reach the authorities on or before 15th November.

6. *Licence Validity:* Nine months as before. Small licences up to Rs. 2,500 will be valid for 12 months.

### Points from the Policy Statement

Ball Bearings: Part II—

19 (1) (i)—Quota reduced from 7½ to 2½%.

19 (1) (ii)—40%—No change.

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MOTORINDIA

35

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## Import Policy Analysed

19 (1) (iii)—Quota reduced from 7½ to 2½%.

19 (1) (iv)—No change.

**Roller Bearings:** Part II—19 (2) (i)—No change. Quota remains at 50%.

**Taper Roller Bearings:** 19 (3) (i). Quota percentage 50% and 50% Soft, parts thereof 60% Genl. & 60% Soft—No change.

**Diesel Engines:** Part II 30 (e). No licence will be granted for Import of Diesel Engines of Road Vehicle type. But licences for Diesel Engine parts can be obtained on the basis of 2½% of half of the best years' Import of Diesel Engines—No change.

**Fuel Injections:** Part II 30 (f). Basic year extended to 1956-57, quota remains at 50%.

**Compressors with prime movers:** Part II S. No. 33. Quota reduced to 5% Gen. and 5% Soft.

**Compressors without prime movers:** Part II, S. No. 33 (b). Quota has been reduced from 20% to 15% Gen. and Soft.

**Auto Bulbs, all sorts:** Part II, 38-A (e) (i)—No licence.

**Sealed Beams:** Part II, S. No. 38-A (e) (ii). Quota remains at 30%. However, licences will be valid only for Import of such Sealed Beam units wherein the illuminating component, whether filament or bulb, is not detachable.

**Wires:** Part II, S. No. 48-B. Quota remains at 20%. For 45 (d) quota is increased to 20% from 15%. Small value licences will be doubled as before.

**Cork Manufacturers:** Part IV, S. No. 154. Quota remains at 12½% but licences will be valid only for Import of insulation boards and cork stoppers.

**Miscellaneous Hardware:** Part IV, 275 (a). Quota percentage remains at 5%.

**Garage Tools:** Part IV, 275 (b). Quota licences for Garage Tools is 25% Soft and 25% Gen. Besides, 1% of the face value of Motor Vehicle parts licences can be utilised for import of Garage Tools. However, Quota licences will be issued subject to the condition that at least 25% of the value should be

utilised for the starred items of Appendix XXV.

### Points from Appendix XXVI of the Current Red Book

Quota percentage for Motor Vehicle Parts falling under Serial No. 293, 295 and 297 of Part IV remains at 25% Gen. and 25% Soft.

**List I:** This list contains items which are totally banned for import and in the current period some more additions to the list have been made, like: Sunvisors, Shackles, Shackle Pin, U Bolts and Centre Bolts, Clips and Pressure Plates, Malleable Iron brackets and shackles as well as Cast Iron Shackles and brackets, Muffler and tail pipes and extension thereof.

**List II:** These items are subject to 3% now as against 4% before. Hub caps have been added to this list and certain items transferred to List I as mentioned above.

**List III:** Quota percentages for the restricted items:

**Brake Linings:** Quota 15% Gen. and 15% Soft—No change in policy.

**Clutch Facings:** Quota 20% Gen. and 20% Soft—No change in policy.

**Electric Horns:** Quota 50% Gen. 50% Soft. No change.

**Filter/Cleaner Assg.:** Quota 50% and 50%.

**Gaskets:** Reduced to 40% from 50%, both Gen. and Soft.

**Fuel Injection Equipment:** 50% Gen. and 50% Soft. Not more than 50% of the licence should be utilised for Nozzles and not more than 10% for Elements and delivery valves. Actual User applications considered on Ad hoc basis.

**Radiator Assy:** Reduced from 100% to 75%. Provision has now been made to include Radiator cores also for calculation of quotas.

**Piston Assy.:** Quota 100% Soft. and 100% Gen.—Limitation of 33.1/3% for Aluminium Piston Assys. of below 6" diameter and other restrictions as per Annexure A to Appendix XXVI remain unchanged.

**Piston Rings:** Quota 50% Soft and 50% Gen. Previous restric-



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In addition to popular Lines viz., HIMCO BATTERIES & ELEC. ACCESSORIES, KRALINATOR FILTER CARTRIDGES, WAXPOL PRODUCTS, LOCKHEED Brake Parts, BORG & BECK Clutch parts, Tools & Accessories, a wide range of parts for PERKINS Diesel Engine, FORDSON Tractor, BEDFORD Trucks and Vans, other G. M. Vehicles, FIAT, DODGE-FARGO are always carried in stock.

tions continue. Besides, there is now no provision for Ad hoc applications for Chromium plated rings.

**Shock Absorbers:** 100% Gen. and 125% Soft—No change.

**Spark Plugs:** 5% Soft and 5% Gen.—No change.

**Thin-walled bearings:** 100% Gen. and 125% Soft—No change.

**Valves:** Quota reduced to 80% Gen. and 80% Soft.

**Brake Fluid:** Part IV, S. No. 335. Banned as before.

**Actual User Licences:** Actual User applications from State Transport Authorities and other Fleet owners owning a fleet of 25 vehicles and more will be considered and licences issued on the basis of either 100% or half of their best year's Import during any one year 1954-55, 1955-56, and 1956-57 or Rs. 150 per petrol driven vehicle and Rs. 200 per Diesel driven vehicle, whichever is more. A.U. applications should be made to the licensing authorities at the Ports.

V. NARAYANASWAMI,  
Honorary Secretary

### Dealers News:

#### Ashok Automobiles

Yet another automobile spare parts shop has been opened in the heart of General Patters Road. It is the ASHOK AUTOMOBILES. (Prop.: M. O. Sumermall), who have opened their new shop on Deepavali Day at 44, General Patters Road.

Ashok Automobiles are dealers in auto parts particularly Perkins and Benz spares.

#### G.M. Automobiles

M/s. G.M. AUTOMOBILES, who have been till now functioning, at 15, State Bank Street, have shifted to a more spacious and central office at 41, General Patters Road.

Readers may be aware that M. s. G.M. Automobiles are authorised dealers for Don-Flex products and Laulco automobile wires and cables.

#### Kapoor Agencies Auto

KAPOOR AUTO AGENCIES (Prop.: Chaman Singh Kapoor) of 14, General Patters Road, have opened an additional showroom at 41, General Patters Road, where there is plenty of space to stock more of customers' requirements.

M/s. Kapoor Auto Agencies are dealers in general auto parts and accessories.

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71-73 Apollo St., Phone: 254564  
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For spares of Crawler Tractors, Earth Moving Machinery & also for Bearings & Oil Seals.

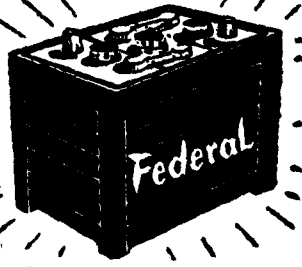
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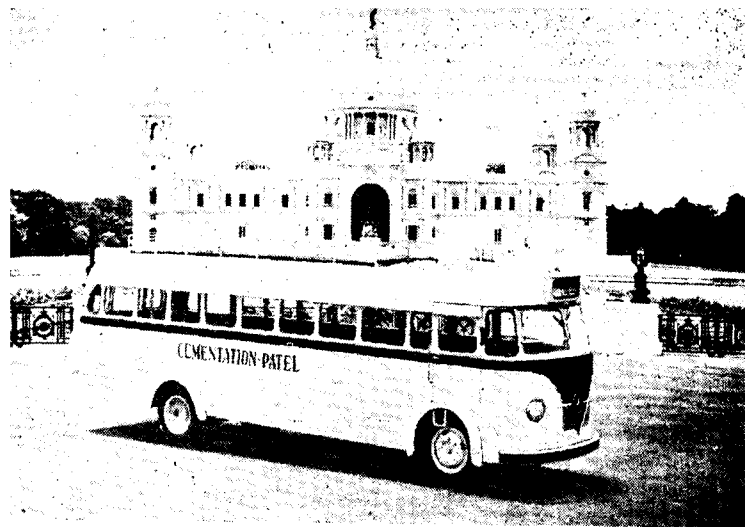
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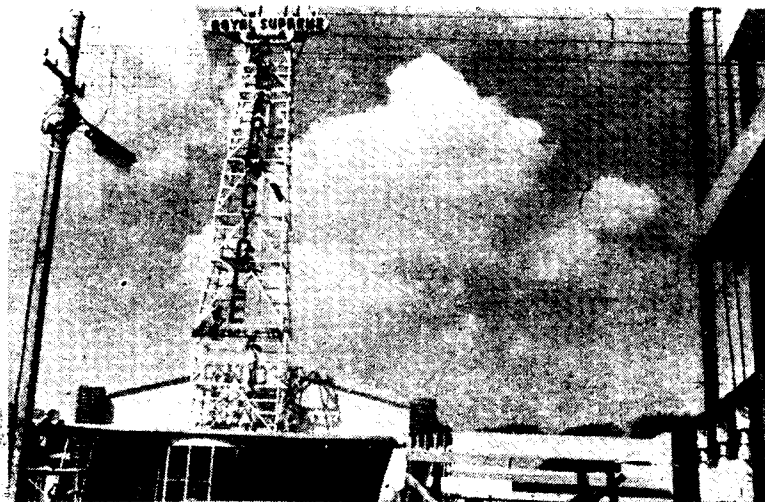
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Tata Mercedes Benz IP 312/48 35-seater bus recently bought by M/s Cementation Patel for use at the Durgapur steel project

## NEWS IN PICTURES

Indian manufactured cycles were displayed neatly by various manufacturers in their respective stalls at the India 1958 Exhibition. Picture shows the front design of M/s Atlas Cycle Manufacturing Co.



The stall of Royal Supreme Cycles attracted visitors from a distance, thanks to the tall Gopuram like structure built by the manufacturers

T. I. Cycles of India had a neat little stall to exhibit not only their products, but also those of their sister concern M/s Tube Products of India Ltd.



### IATA—The World's Scheduled Airlines

IATA is the world association of scheduled international airlines. Its 85 members, operating under the flags of more than 50 Governments, carry approximately 90 per cent of all scheduled international air traffic in passengers, cargo and mail. (A list of members is attached).

They include the smallest and the largest airlines, from the great, world-girdling systems to the operators of short-distance helicopter services.

A voluntary and non-political association of carriers, IATA is the means whereby they link their individual routes into a single, integrated public service network—with standard tickets, waybills and other documents, with co-ordinated procedures, and with the same high worldwide standards of operation and care for passengers and cargo.

IATA is the airlines' bridge over the many differences between national law, language, systems of measurement and currencies which would otherwise hamper and impede speedy and efficient international transport and enterprise.

IATA is also an international pool of the best knowledge and experience of all the airlines for the benefit of any one. It is also the channel by which this knowledge is made available to Governments and other international organizations.

IATA also administers the Traffic Conferences at which the airlines work out the worldwide pattern of international fares and rates on behalf of, and subject to the approval of Governments. (These Conferences meet separately from the General Meeting: their session this year is at Cannes, France, beginning September 23.)

In brief, IATA is the sum total of the joint activities of the airlines. What they do in IATA affects the whole of the world air transport system and the untold millions of people who use it, or whose lives are touched and moulded by its operations.

## FOURTEENTH ANNUAL GENERAL MEETING OF THE INTERNATIONAL AIR TRANSPORT ASSOCIATION

### A World Parliament

IATA's General Meeting is the annual world parliament of the heads of the airlines—a democratic assembly in which each member, regardless of size, has a single vote. It is the basic source of authority in the organization, determining policies, electing officers and committees, enacting budgets, etc.

The New Delhi meeting held recently gave the airlines a complete review of IATA activity during the past year and its plans for 1959, of the broad lines of policy for the various standing committees, the views they wish to put before other international organizations, and so on.

Moreover, the proceedings gave the press and the public a unique global picture of what is going on in air transport in the exciting and challenging dawn of the jet age.

### First time in Asia

Like the airlines, IATA's General Meetings go everywhere. But this was the first session to be held in India and in Asia.

The last General Meeting was held at Madrid; and previous meeting places have been Cairo, Rio de Janeiro, San Francisco, London, Montreal, Paris, Geneva, The Hague, Brussels, New York and Edinburgh.

This annual change in venue exemplifies the way in which IATA's members have made the globe one world in fact—by providing an integrated network of fast and economical air communications, spanning all the oceans and both poles, serving all peoples and making them close neighbours.

While this is the first General Meeting of IATA in Asia, other important IATA groups have been held at various points from Beirut to Tokyo during the last 13 years. The IATA Technical Committee and its Facilitation Advisory Group have met at New Delhi.

Indian air transport companies have been represented in IATA since it began in 1945; and both Air-India International and Indian Airlines Corporation are successors to founder members of the Association.

Mr. Tata, the new President, has been a member of the IATA Executive Committee since 1952; and there are All members of many IATA Committees and Working groups. Mr. N. J. Pavri is Chairman of the IATA Financial Committee; Mr. A. C. Gazdar sits on the Technical Committee and Dr. P. J. Varghese on the Medical Committee; Mr. A. F. Dubash is first vice-chairman of IATA Traffic Conference No. 3; and Miss G. N. Cowasjee, on the Legal Committee, is the only woman member of a IATA Standing Committee.

### The men who run the Airlines

Approximately 250 delegates and observers from the IATA airlines, from other international organizations and Indian Government agencies dealing with civil aviation, transport and tourism took part in the Meeting.

### A Showcase for India

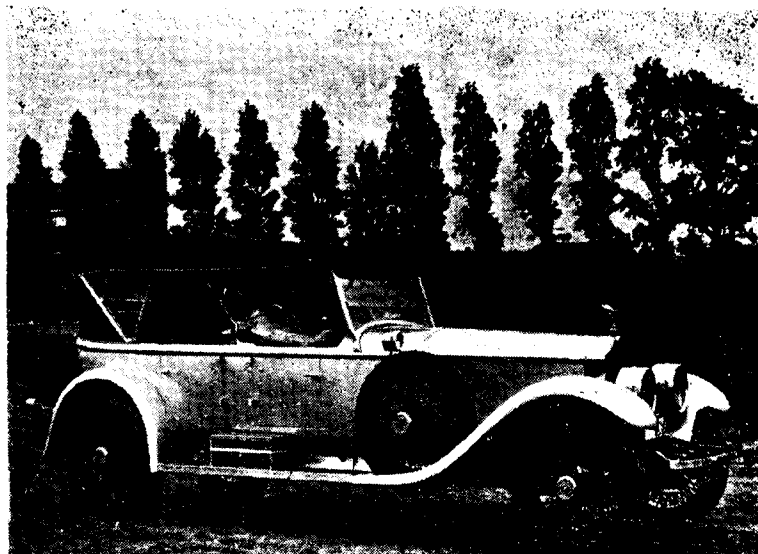
The official hosts to the New Delhi General Meeting are the two Indian flag airlines, Air India International and Indian Airlines Corporation.

The programme of the Meeting had been arranged to give the visiting airline heads and their wives an opportunity to become familiar with what India has to offer to world travel and tourism.

**IATA MEMBERSHIP  
AS AT 30TH JUNE, 1958**

**Active Members (77)**

Aer Lingus Teoranta (Dublin)  
Aerlinne Eireann (Dublin)  
Aerolineas Argentinas (Buenos Aires)  
Aeronaves de Mexico S.A. (Mexico City)  
Aero O/Y (Helsinki)  
Aerovias Nacionales de Colombia, (AVIANCA) (Bogota)  
Air Algerie (Algiers)  
Air Ceylon Limited (Colombo)  
Air France (Paris)  
Air India International (Bombay)  
Air Liban (Beirut)  
Air Vietnam (Saigon)  
Airwork Limited (London)  
Alitalia-Linee Aeree Italiane (Rome)  
American Airlines Inc. (New York)  
Austrian Airlines (Vienna)  
Aviacion y Comercio S.A. (AVIACO) (Madrid)  
Braniff International Airways (Dallas)  
British European Airways  
British Overseas Airways Corporation (London)  
Canadian Pacific Air Lines (Vancouver)  
Central African Airways Corporation (Salisbury, Southern Rhodesia)  
Ceskoslovenske Aerolinie N.P. (Prague)  
Civil Air Transport Co. Ltd. (Taipei)  
Compania Cubana de Aviacion (Havana)  
Compagnie de Transports Aeriens Intercontinentaux (TAI) (Paris)  
Cyprus Airways Limited (Nicosia)  
Delta Air Lines Inc. (Atlanta)  
Deutsche Lufthansa (Cologne)  
Divisao de Exploracao dos Transportes Aereos "DETA" (Lourenco Marques)  
Divisao de Exploracao dos Transportes Aereos "DTA" (Luanda)  
Eagle Airways of Britain (London)  
East African Airways Corp. (Nairobi)  
Eastern Air Lines Inc. (New York)  
El Al Israel Airlines (Tel Aviv)  
Empresa de Viacao Aerea Rio Grandense (VARIG) (Porto Alegre)  
Flugfelaag Islands H.F. (ICELANDAIR) (Reykjavik)  
Garuda Indonesian Airways N.V. (Jakarta)  
Guest Aerovias Mexico S.A. (Mexico City)  
Hunting-Clan Air Transport Ltd. (London)  
IBERIA, Lineas Aereas Espanolas (Madrid)  
Indian Airlines Corporation (New Delhi)  
Iranian Airways (Teheran)  
Iraqi Airways (Baghdad)  
Japan Air Lines Co. Ltd. (Tokyo)  
Jugoslovenski Aerotransport (JAT) (Belgrade)  
KLM Royal Dutch Airlines (The Hague)  
Linea Aerea Nacional (Santiago, Chile)  
Linea Aeropostal Venezolana (Caracas)  
Malayan Airways Ltd. (Singapore)  
Middle East Airlines Co. S.A. (Beirut)  
Misrair S.A.E. (Cairo)  
National Airlines Inc. (Miami)  
Northwest Airlines Inc. (St. Paul)  
Olympic Airways S.A. (Athens)  
Pakistan International Airlines Corp. (Karachi)  
Panair do Brasil S.A. (Rio de Janeiro)  
Pan American-Grace Airways Inc. (New York)  
Pan American World Airways Inc. (New York)



Mr. Jock Frost with his 1922 Silver Ghost Rolls-Royce has never been used!

**36 YEARS OLD AND UNUSED!**

**Silver Ghost Rolls-Royce in Brand New Condition sails for U.S.A.**

Mr. Jack A. Frost of Washington, Michigan, U.S.A. has just sailed for the United States with a gleaming 1922 Silver Ghost Rolls-Royce which has never been used. And the car carries the manufacturer's full three years' guarantee!

Philippine Air Lines Inc. (Manila)  
Polish Airlines (LOT) (Warsaw)  
Qantas Empire Airways Ltd. (Sydney)  
Scandinavian Airlines System (Stockholm)  
Seaboard and Western Airlines (New York)  
Servicios Aereos Cruzeiro de Sul S.A. (Rio de Janeiro)  
Skyways Limited (London)  
SABENA, (Brussels)  
South African Airways (Johannesburg)  
Swissair Transport Co. Ltd. (Zurich)  
Tasman Empire Airways Ltd. (Auckland)  
Trans Canada Air Lines (Montreal)  
Transportes Aereos Portugueses (TAP) (Lisbon)  
Trans World Airlines Inc. (New York)  
Turk Hava Yollari (Ankara)  
Union Aeromarine de Transport (UAT) (Paris)  
United Air Lines (Chicago)  
West African Airways Corp. (Lagos).

**Associate Members (8)**

Australian National Airways (Melbourne)  
Chicago Helicopter Airways Inc. (Chicago)  
Flying Tiger Line Inc. (Burbank)  
New York Airways Inc. (New York)  
New Zealand National Airways Corporation (Wellington)  
Quebecair Inc. (Rimouski)  
Trans Australia Airlines (Melbourne)  
Trans Caribbean Airways (New York)

The chassis was delivered 36 years ago to a lady living on an island near Poole, Dorset. But between the time when she placed her order and when the chassis was delivered, her chauffeur took another job. She therefore decided not to have a body fitted (the customer chose his own body and made his own arrangements with the coachbuilder in those days) so she had the chassis jacked up on bricks and left it in her garage. When she died in 1956, the chassis was put up for sale and was bought by Mr. Frost, who then commissioned a London coachbuilder T. F. Ford and Son Ltd. of Shepherds Bush to find a body for it. After much searching they found an old Rolls-Royce with open Brewster body built in U.S.A. at Springfield Massachusetts in the early 1920's when Rolls-Royce had a factory in the United States. The car had spent several years in Egypt and was brought to England where the body was completely stripped, rebuilt as new and fitted to Mr. Frost's chassis. Correct headlights were found in the U.S.A. but the rear lights had to be specially made by hand. The car is finished in metallic silver with black upholstery.

Rolls-Royce inspected the car when it was finished and as the chassis was completely as new, they have issued their normal three-year guarantee to cover it.

BURBANK, Calif., : Lockheed Aircraft Corporation have announced that the new 7-mile-a-minute Electra transport today received its Civil Aeronautics Administration "ticket of approval" certifying it ready to begin airlines service.

A 10-month flight program culminated at 3½ years. U.S. 50,000,000 development project to prepare a prop-jet Electra for world-wide operation. Fifteen world airlines, including Cathay Pacific Airways, have already announced orders for 161 of the new transports.

Of all the new turbine-powered transports due soon to revolutionise public air transportation, the Electra is the first four-engine airliner of American design and construction to be certified by the CAA.

The Electra climaxed its certification program by flying up to 19 hours and 21 minutes a day from July 31 to August 15, successfully passing all "function and reliability" tests in a 150 hour marathon in the sky.

The CAA certification program followed specific new requirements established by the Governmental agency to cover airworthiness of jet-powered airplanes.

Measuring 99 feet from wingtip to wingtip and 104½ feet from nose to tail, the new airplane can carry from 66 to 99 passengers on flights ranging from 200 to 2,500 miles.

Fastest jet-and-propeller airplane ever built for civil use, the Allison-engine Electra earned CAA approval to full five weeks ahead of a schedule laid down two years ago, according to Burt, C. Monesmith, Lockheed, vice-president and California Division general manager.

"It took hard work to beat the schedule—but it also took a good airplane and good power plants," Monesmith pointed out.

Heralded as a jet-age airliner capable of serving three-fourths of the world's airports, the Electra bettered it guarantees for landing distance by 14 per cent, eclipsed distance takeoff requirements by 21 per cent.

"This means the Electra can fly to cities where approximately 95 per cent of the world's air traffic originates," Monesmith said.

"It will fit almost every airport : from large metropolitan terminals

**WORLD'S LARGEST AND FASTEST PROP-JET AIRLINER  
OBTAINS "TICKET OF APPROVAL"**

**NEW LOCKHEED ELECTRA FOR CATHAY  
PACIFIC AIRWAYS IN 1959**

to one-runway, feeder-line facilities. It will be seen more places, fly wider varieties of routes and carry more passengers where they want to go than any other jet-age airliner."

Besides higher speed, Monesmith said, main jet-age improvements which passengers will find in the Electra are the quiet, vibration-free cabin; spaciousness in the 10-foot, 8-in-wide interiors; quick take-offs and stops; gate-to-gate time savings; brief on routes stops; "climatized" air-conditioning comfort and luxury styling befitting the all-new era of jet flight.

The high-performance prop-jet is designed to reduce today's inter-city air schedules by 25 per cent. The Electra has exceeded its guaranteed cruise speed of 405 m.p.h. Top speed "straight-and-level" is 450 m.p.h.

With its four quick-power Allison engines (3,750 h.p.), the Electra at a typical takeoff weight of 107,000 pounds requires but a 4,145 foot airport to meet all the stringent CAA requirements—including clearance of a prescribed 35-foot obstacle at the end of the runway, with allowance for complete loss of the critical engine at the critical moment—for full approved safety.

Tests have been completed to permit later certification at a gross takeoff weight of 116,000 pound—

a 3,000-pound bonus over original design specifications; and maximum landing weight was certified at 95,650 pounds.

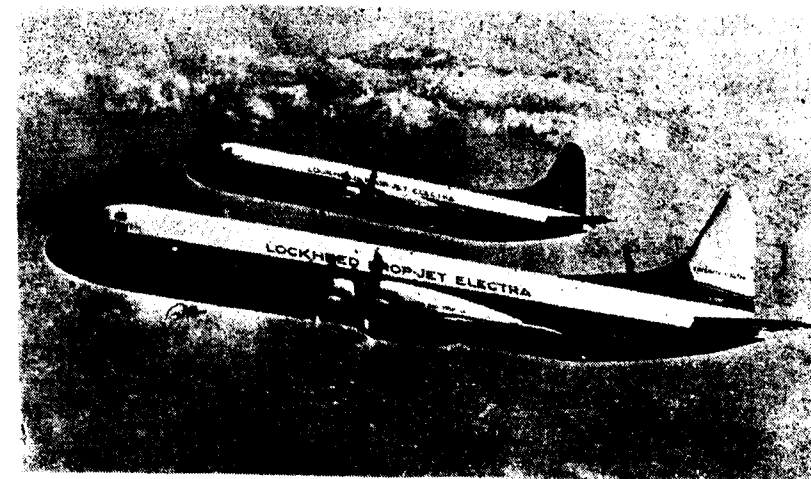
Stall speed at a takeoff weight of 113,000 pounds is 107.5 knots; and at 95,650 pound gross landing weight the airplane's stall speed is 94.5 knots—marked improvement over today's best luxury airliners.

A total of 655 flights by four different prop-jet Electras carried out the CAA test program, covering virtually every possible facet of flight safety period.

Allison also aided by equipping a conventional air plane with the new prop-jets and running a 1,000 hour test known as "Operation Hour Class," as well as performing a vast number of engine stand tests.

Apart from Cathay Pacific Airways in Hong-Kong, other airlines to order Electras over the world are: Aeronaves de Mexico, American Airlines, Ansett-ANA of Australia, Braniff Airways, Sastern Air Lines, Garuda Indonesian Airways, KIM Royal Dutch Airlines, National Air Lines, PSA—Pacific Southwest Airlines, Qantas Empire Airways of Australia, Tasman Empire Airways, Ltd. (TEAL) of New Zealand, Trans-Australian Airlines and Western Air Lines—and orders not yet announced.

The new Seven-mile-a-minute Lockheed Electras which will soon be flying on many international air routes, and can carry from 66 to 99 passengers on flights ranging from 200 to 2500 miles



# TRACK DOWN THAT OIL LEAK

BY

(OUR ENGINEERING EDITOR)

(Using Oil?—then check these possible causes before blaming the piston rings)

Next time your car starts to chew up oil, don't jump to the conclusion that the engine needs new rings.

Your oil loss may be due to one of several other faults—most of which will cost far less to fix up than a full re-ring job.

One common cause of oil loss is external leakage. Such leaks usually seem minute—but remember this :

If a drop of oil falls from a car every 300 feet, the loss will add up to approximately one quart every 800 miles.

Faulty gaskets, metal-to-metal surfaces which aren't oil-tight, or ill-fitting joints on oil pipes can cause oil leaks in any car.

In correct crankcase pressure is another possible cause of oil loss. The up-and-down motion of the pistons tends to suck and expel air, and sometimes oil, through the crankcase ventilation system. High crankcase pressure can be caused by faulty piston rings, which allow blow-by of the combustion pressure into the sump, with the result that oil is expelled through the breather vent.

Pressure can also build up if the breather vent is blocked or restricted; the oil is then forced out at the front or rear main bearings, along the distributor driveshaft, or past the fuel-pump cross shaft or vent.

Oddly enough, lack of pressure can cause oil leaks, too. Subnormal pressure is liable to develop in some cars that have crankcase ventilator tubes extending to the bottom of the sump. If these tubes are incorrectly installed or the splash pan is bent or left out of the assembly, the surging of the oil can produce a vacuum in the tubes which tends to draw out oil vapor.

## Warm the engine first

When checking on excess oil consumption, the first thing to do is start the engine and bring it up to normal operating temperature. Then, with the engine still running look for external leaks at all oil lines and filter connections, around the valve cover, front and rear main-bearing seals, and at crankcase drain and oil-pan gaskets.

Rear main-bearing leaks are not always easy to isolate because of the natural tendency of the oil to flow towards that point. In addition, these leaks are sometimes due to excess crankshaft end play or may occur only under loaded conditions. The expansion plug at the back end of the camshaft is another point to check when a rear-bearing leak is suspected.

When checking under the car it's best to use a hoist rather than a jack; otherwise the leaking oil will tend to flow towards the rear of the engine and you will find it very hard to locate the leak.

Oil-soluble dyes are available which can be added to the oil to help find the sources of leaks. When dyes are used, the engine or suspected areas should be wiped clean and the engine restarted and run for a couple of minutes at about 800 r.p.m.

## Burning oil ?

The other prime cause of poor oil economy is oil entering and being burnt in the combustion chambers. While this is often caused by worn or improperly seated rings, oil can also be burnt when the rings are in first-class order. Worn intake valve stems or guides, or a porous or ruptured vacuum booster-pump diaphragm, are typical conditions that can cause oil to be sucked into the combustion chambers.

Dense blue smoke coming from the exhaust after running the engine up to 40 m.p.h. coasting down to idle then accelerating again, is the best (or worst) indication that oil

is being burnt in the combustion chambers.

But don't mark it down straight away as a ring job. Check the valve guides and stems and make sure that an excessive amount of oil is not lying around the valve guides on overhead-valve engines. In this case, look for a clogged drain return hole or wrongly installed rocker-arm outlet tubes.

The booster-pump can allow oil to enter the intake manifold. To check this, first tighten the diaphragm screws and connect a vacuum gauge to the inlet or windscreen-wiper side of the pump. Then detach the tube leading to the intake manifold and plug the intake manifold. Next take the fitting out of the outlet side of the pump and start the engine. When the gauge registers maximum vacuum, tightly plug the outlet side of the pump and stop the engine. The gauge should hold the vacuum; if it drops noticeably, the diaphragm should be replaced.

The condition of the rings can be determined by a compression gauge. If the reading is low, add about a tablespoon of oil through the plug hole. If the reading rises temporarily, the rings are at fault.

If conditions indicate that the cylinder head should be removed, idle the engine for about 10 minutes first. If an abnormal amount of oil is being drawn in through the intake valve guides, it will show up in the intake manifold, the valve ports or on the underside of the valves when the head comes off.

Oil on top of the piston and on the underside of the intake valves indicates a worn guide or stem. If there is oil on the pistons and the undersides of the valves are dry, faulty rings are indicated. However, a spark plug with too low a heat value may occasionally burn up what might be a normal supply of oil.

New cars are sometimes troubled with high oil consumption. This is usually due to improperly seated rings or improper or too gentle a break-in period. Cars that are

babied at 25-30 m.p.h. may show signs of excessive oil consumption for several thousand miles; but occasional bursts of speed upto 60 or 65 m.p.h. for big cars, 45-50 for small ones, after the engine has been brought to operating temperature, have been known to seat the rings and restore oil economy.

There are many other causes of high oil consumption, some of them being use of oil of improper viscosity; excessively worn, distorted or wrong-type pistons; tapered, scored or misaligned cylinders; warped block; out-of-round crankshaft; worn, chipped, scored main or big-end bearings; worn, loose or wrong-type piston pins.

If your car is hard on oil, take a look at the check chart accompanying this article. You might save yourself the cost of an unnecessary re-ring job.

## Check list for oil hogs

**Seals and gaskets :** Check for leaks at crankshaft front and rear, timing cover, valve cover plate, drain plug, oil pan, crankshaft rear plug.

**Oil-check :** For dilution, high pressure, high level or improper viscosity.

**Oil lines :** Check for leaks.

**Breather and vents :** Check for clogging.

**Vacuum booster pump :** Check for defective or porous diaphragm.

**Compression :** Check for variation in different cylinders.

**Rings :** Check for wear, warping, twisting, tightness in grooves improper seating, out-of-roundness, clogged oil drain-holes or slots, improper size, unequal wall pressure, leak of tension, insufficient clearance at gap.

**Pistons :** Check for excess wear, too much clearance, collapsed skirts, distortion, out-of-round head, worn ring grooves, flared or too wide, insufficient or small drain-holes.

**Cylinder bores :** Check for wear, wavy, tapered, scored, bellied conditions, alignment of bore, block warpage or lack of alignment with crank case, rough finish, ledge at top and bottom of ring travel.

**Crankshaft :** Check for excessive scoring or out-of-round main or crankpin journals or a bent crankshaft.

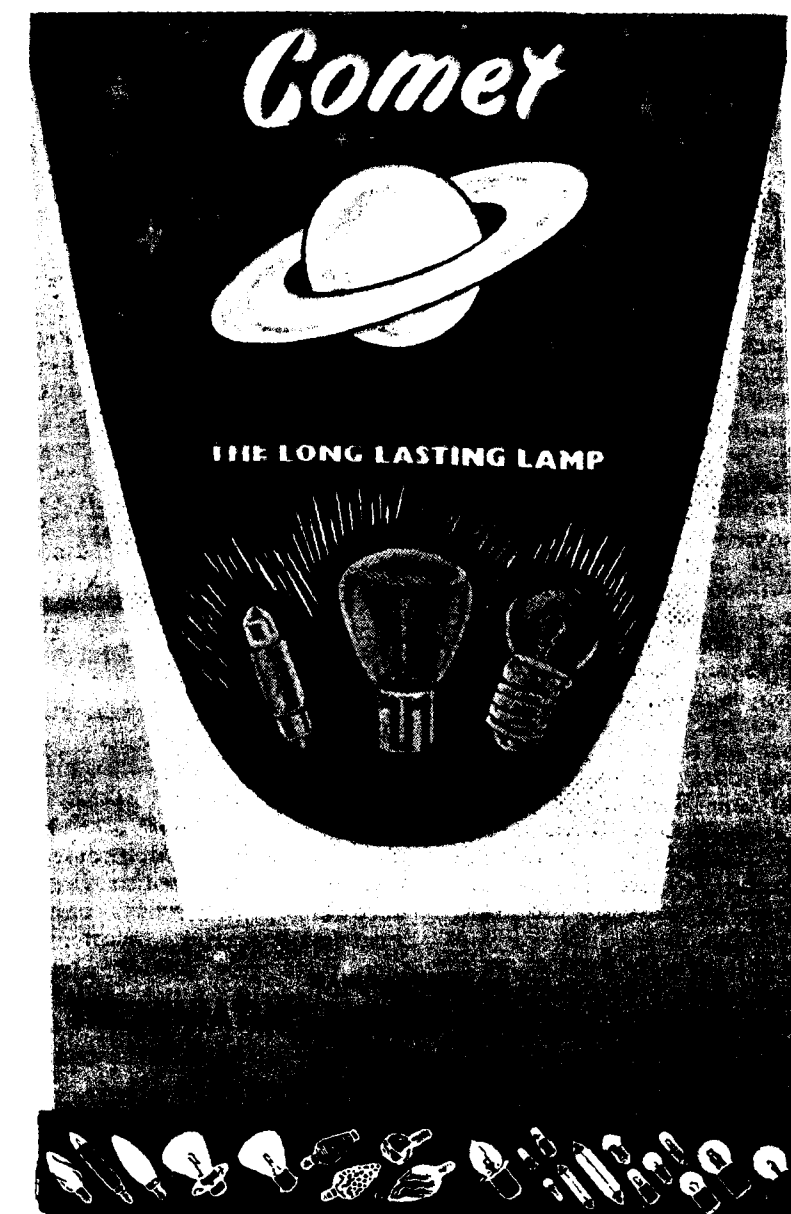
**Valves :** Check for improper seating or evidence of stickiness, burning, carbon gum on stems, wear

or broken springs, worn guides or stems, excessive oil at guides, improper timing.

**Main bearings :** Check for excessive wear, scores or burns, out-of-roundness, excessive radial or end clearance, chipping.

**Rod bearings :** Check for normal and elliptical wear, looseness, scores, burns or cracks.

**Connecting rods :** Check for wear loose or wrong type pin.



MOTORINDIA

Though oil demand continues to rise, production of crude oil in the free world in January-June 1958, at nearly 372 million metric tons, was some 10 million tons or 2.5 per cent lower than in the corresponding period a year ago, but 4 million tons higher than in January-June 1956. These total figures, however, mask the contrasting experience in the U.S.A. and the rest of the free world in respect of both production and consumption. They also reflect a substantial reduction in stocks in the U.S.A. which, during the six months, fell by over 10 million tons, whereas they had been increased by about 7½ million tons during July-December 1957. The decline in crude production in the free world has been matched by a continued rapid advance in the U.S.S.R., so that total world production, at about 433 million tons in January-June this year, though slightly lower than in the corresponding period of 1957, was 18 million tons higher than in the same period in 1956.

The 10 million tons net decline in the free world's production in January-June 1958, compared with January-June 1957, is made up of a decrease of 36 million tons in the output of the Western Hemisphere, only partly compensated by an increase of 26 million tons in the Eastern Hemisphere. There was, in particular, a drop of 27 million tons in the U.S.A., of nearly 8 million tons in Venezuela, and of 1.8 million tons in Canada, while most of the advance in the Eastern Hemisphere (24 million tons) was in the Middle East. In making these comparisons between regions, it must be remembered that early last year production was cut back in the Middle East, because of the Suez difficulties, and boosted in the U.S.A., Canada, Venezuela and elsewhere. Another important factor is, of course, that the present recession has so far been felt most strongly in North America, while the demand for petroleum products continues to rise in Western Europe and other areas supplied mainly from the Middle East. The share of the Middle East in the free world's production, which was approximately 24 per cent before the Suez crisis, declined to about 20 per cent in January-June 1957, but rose to 26 per cent in July-December 1957

## UPS AND DOWNS IN CRUDE PRODUCTION

*For the first time since January-June 1949, there has been a small decline in the half-annual crude oil production of the free world, to less than 372 million metric tons in January-June 1958 against over 381 million tons in January-June 1957. There was a drop of 27 million tons in the U.S.A., partly reflecting a substantial reduction in stocks, and of nearly 8 million tons in Venezuela, but production in the Middle East was 24 million tons higher than a year earlier, and 13 million tons higher than in the first half of 1956. If there are no major political disturbances, a good increase in production during the second half of this year may be expected. In the U.S.S.R. crude oil production continues to expand.*

and to a high of nearly 28 per cent in the first six months of this year.

In the U.S.A., production was significantly restricted in the first six months of this year, mainly by means of the reduced allowables in Texas and elsewhere in the light of the sluggish internal demand and the high accumulated stocks. From a record figure of 7,710,000 barrels daily (equivalent to about 380 million tons a year), reached during the Suez crisis in March 1957, U.S. production fell to between 6.6 and 6.7 million b/d in the late months of 1957 and the early months of 1958, and then to between 6 and 6.1 million b/d during March, April and May. However, it recovered to about 6.2 million b/d in June and with oil inventories not reduced, and with the hope of a gradual improvement in the general economic situation, there may well be a higher rate of output in the second half of this year. The share of the U.S.A. in the free world's crude oil production was at a low of 42 per cent in January-June this year, compared with 48 per cent in the same period of last year, and with over 50 per cent in 1954 and earlier years.

Canadian production suffered its first set-back after ten years of spectacular growth, going down from a record of 526,000 b/d in January-June 1957 to about 550,000 b/d in January-June 1958. The growth of Canada's own consumption has slowed down, but the foremost factor responsible for the recent decline has been the big drop in Albertan crude oil shipments to the U.S. West Coast. But while Alberton production fell from about 416,000 b/d in January-June 1957 to an estimated 310,000 b/d in January-June 1958, there was simultaneously a continued increase in Saskatchewan, from 90,000 to rather more than 120,000 b/d, while the share of the smaller producing provinces remained unchanged at about 20,000 b/d.

Like the U.S.A., Venezuela played a leading part in filling the gap in supplies resulting from the Suez crisis, and production there approached a record level of 3 million b/d in mid-1957. It was gradually reduced in subsequent months, and since December 1957 has been virtually stable at about 2.5 million b/d, or slightly more than the production level immediately before the

Suez crisis. The decline was due, first to the resumption of normal shipments from the Middle East, and later to the effect of the U.S. recession and of the new import restrictions imposed in the U.S.A. At the same time, important new discoveries have been made, thus enhancing the potential of the country which is already by far the world's largest oil exporter.

In Mexico, production is slowly climbing while in Brazil it has jumped from 530,000 tons in 1956 to 1,320,000 tons in 1957, and is steadily moving towards the target of 2.4 million tons set for 1958.

\* \* \*

While, in total, production in the Middle East has been continuously expanding over the past twelve months, there have been significant differences between the individual countries. Kuwait's position as the leading producer of the Middle East has been consolidated, its output having risen almost continuously since the resumption of shipments through the Suez Canal, reaching a current annual rate of about 70 million tons. Saudi Arabian production has been affected by the restrictions on U.S. imports and output which reached a record rate equivalent to about 60 million tons annually in July 1957 is now running at somewhat less than 50 million tons annually. The Suez crisis brought no serious set-back to production in Persia as the oil is mainly marketed east of Suez and production, now at a record of over 40 million tons a year, is steadily expanding.

Production from Northern Iraq was reduced during the Suez crisis to a fraction of its normal volume as a result of the cutting of the pipelines to the Mediterranean which have a capacity of 25 million tons a year. Though the pipeline connection was re-established in March 1957, not until the end of June this year was full capacity restored. In January-June 1958 less than 11 million tons were produced from these fields. The loss has been partly made good by higher production in Southern Iraq which totalled over 5 million tons in January-June. The I.P.C. has plans for raising the country's exporting capacity.

## WORLD : ESTIMATED CRUDE OIL PRODUCTION

(Thousand Metric Tons)

|                         |                       |                       |                       |                       | Jan.-June<br>1958 :   |                       |
|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                         |                       |                       |                       |                       | % Change from         |                       |
|                         | Jan.-<br>June<br>1956 | Jan.-<br>June<br>1957 | July-<br>Dec.<br>1957 | Jan.-<br>June<br>1958 | Jan.-<br>June<br>1956 | Jan.-<br>June<br>1957 |
| <b>North America</b>    |                       |                       |                       |                       |                       |                       |
| U.S.A. :                |                       |                       |                       |                       |                       |                       |
| California ...          | 23,717                | 22,730                | 23,060                | 21,300                |                       |                       |
| U.S.A. :                |                       |                       |                       |                       |                       |                       |
| Other States ...        | 152,011               | 160,160               | 147,095               | 134,200               |                       |                       |
|                         | 175,728               | 182,890               | 170,155               | 155,500               | - 11.5                | - 14.9                |
| Canada ...              | 10,549                | 12,799                | 11,682                | 11,000                | + 4.3                 | - 14.0                |
|                         | 186,277               | 195,689               | 181,837               | 166,500               | - 10.6                | - 14.9                |
| <b>Latin America</b>    |                       |                       |                       |                       |                       |                       |
| <b>Caribbean Area</b>   |                       |                       |                       |                       |                       |                       |
| Venezuela ...           | 61,650                | 74,094                | 71,221                | 66,200                |                       |                       |
| Colombia ...            | 3,064                 | 3,203                 | 3,276                 | 3,250                 |                       |                       |
| Trinidad ...            | 1,968                 | 2,365                 | 2,540                 | 2,600                 |                       |                       |
| —                       | 66,682                | 79,662                | 77,037                | 72,050                | + 8.1                 | - 9.6                 |
| <b>Other Countries</b>  |                       |                       |                       |                       |                       |                       |
| Mexico ...              | 6,246                 | 6,127                 | 6,364                 | 6,400                 |                       |                       |
| Argentina ...           | 2,162                 | 2,222                 | 2,320                 | 2,400                 |                       |                       |
| Peru ...                | 1,186                 | 1,246                 | 1,250                 | 1,250                 |                       |                       |
| Brazil ...              | 160                   | 536                   | 785                   | 1,000                 |                       |                       |
| Chile ...               | 212                   | 262                   | 303                   | 300                   |                       |                       |
| Bolivia ...             | 202                   | 227                   | 238                   | 240                   |                       |                       |
| Ecuador ...             | 232                   | 200                   | 200                   | 200                   |                       |                       |
| Cuba ...                | 35                    | 35                    | 35                    | 35                    |                       |                       |
|                         | 10,435                | 10,855                | 11,495                | 11,825                | + 13.3                | + 8.9                 |
| <b>Middle East</b>      |                       |                       |                       |                       |                       |                       |
| Kuwait ...              | 28,842                | 25,639                | 31,647                | 33,858                |                       |                       |
| Saudi Arabia ...        | 25,661                | 21,600                | 27,402                | 24,310                |                       |                       |
| Persia ...              | 12,425                | 16,830                | 18,670                | 19,750                |                       |                       |
| Iraq ...                | 17,085                | 8,217                 | 13,687                | 16,180                |                       |                       |
| Qatar ...               | 3,013                 | 2,999                 | 3,649                 | 4,011                 |                       |                       |
| Kuwait Neutral Zone ... | 750                   | 1,205                 | 2,123                 | 1,800                 |                       |                       |
| Egypt ...               | 968                   | 999                   | 1,363                 | 1,700                 |                       |                       |
| Bahrain ...             | 748                   | 743                   | 854                   | 900                   |                       |                       |
| Turkey ...              | 142                   | 136                   | 163                   | 150                   |                       |                       |
| Israel ...              | 10                    | 30                    | 40                    | 40                    |                       |                       |
|                         | 89,644                | 78,398                | 99,598                | 102,699               | + 14.6                | + 31.0                |

November 1958

MOTORINDIA

45

Qatar's production now exceeded a rate of 8 million tons annually, having been doubled in the past five years. In the Kuwait/Saudi Arabia Neutral Zone, the production capacity has been raised to about 5 million tons annually but current output is lower in view of the prevailing marketing difficulties. Egypt's production is at a new record thanks to the development of the new Sinai oilfields at Belayim and Abu Rudeis, while in Syria—the other province of the new United Arab Republic—oil has been found in the extreme north-east but regular production is not yet established. Production in Bahrain, virtually stationary for many years at 1.5 million tons annually, has now been raised to about 2 million tons annually, following a revaluation of the field's potentialities.

In the Far East, the growth of Indonesia's production, mainly through the expanding output from Caltex's Minas field in Sumatra, was recently checked by temporary dislocations in both Central Sumatra and Kalimantan (Borneo) resulting from the civil war, but regular production has been restored. British Borneo's production has shown little change during the past two years while that in Western New Guinea is now at a reduced level. With the new fields in India (Assam) an eventual production of nearly 3 million tons a year is foreseen when transport and refining facilities become available.

In Western Europe advance continues in Western Germany, Netherlands, Italy and Yugoslavia but there is a continuing decline in the established Austrian fields. Current production in Metropolitan France is somewhat below the record achieved during the Suez crisis. Virtually the whole Italian production is from Sicily whose two fields, Ragusa and Gela, are each considered capable of reaching eventually an annual output of about 2 million tons.

Excluding Egypt, African areas produced about 670,000 tons in the first six months of this year, with the prospect of a much higher output in future. Production began in Portuguese Angola in 1956, in French Gabon in 1957, and early

| Far East                 |     |         |         |         |         |        |        |
|--------------------------|-----|---------|---------|---------|---------|--------|--------|
| Indonesia                | ... | 6,192   | 7,156   | 8,200   | 8,000   |        |        |
| British Borneo           | ... | 2,720   | 2,772   | 2,788   | 2,800   |        |        |
| India                    | ... | 194     | 205     | 225     | 225     |        |        |
| Burma                    | ... | 102     | 189     | 209     | 200     |        |        |
| Japan                    | ... | 157     | 153     | 168     | 170     |        |        |
| Pakistan                 | ... | 145     | 146     | 160     | 160     |        |        |
| Western New Guinea       | ... | 185     | 180     | 150     | 140     |        |        |
|                          |     | 9,695   | 10,901  | 11,900  | 11,695  | + 20.7 | + 8.3  |
| W. Europe                |     |         |         |         |         |        |        |
| Germany                  | ... | 1,687   | 1,893   | 2,067   | 2,122   |        |        |
| Austria                  | ... | 1,727   | 1,624   | 1,562   | 1,444   |        |        |
| Netherlands              | ... | 510     | 696     | 827     | 850     |        |        |
| Italy                    | ... | 218     | 552     | 709     | 700     |        |        |
| France                   | ... | 577     | 724     | 691     | 679     |        |        |
| Yugoslavia               | ... | 134     | 192     | 204     | 240     |        |        |
| U.K.                     | ... | 33      | 41      | 40      | 41      |        |        |
|                          |     | 4,886   | 5,722   | 6,100   | 6,076   | + 24.2 | + 6.3  |
| Africa (excl. Egypt)     |     |         |         |         |         |        |        |
| Gabon                    | ... | ...     | 58      | 115     | 205     |        |        |
| Sahara                   | ... | ...     | ...     | ...     | 167     |        |        |
| Nigeria                  | ... | ...     | ...     | ...     | 150     |        |        |
| Angola                   | ... | ...     | 40      | 110     | 110     |        |        |
| Morocco                  | ... | 53      | 38      | 37      | 38      |        |        |
| Algeria                  | ... | 21      | 9       | 4       | 1       |        |        |
|                          |     | 74      | 145     | 266     | 671     | +807.0 | +353.0 |
| FREE WORLD               |     |         |         |         |         |        |        |
| Western Hemisphere       | ... | 263,304 | 286,206 | 270,369 | 250,375 | — 5.0  | + 12.5 |
| Eastern Hemisphere       | ... | 104,299 | 95,066  | 117,864 | 121,141 | + 16.2 | + 27.5 |
|                          |     | 367,693 | 381,272 | 388,233 | 371,516 | — 1.0  | — 2.5  |
| Eastern Europe and China |     |         |         |         |         |        |        |
| U.S.S.R.                 | ... | 40,000  | 46,200  | 52,080  | 54,000  |        |        |
| Rumania                  | ... | 5,400   | 5,550   | 5,638   | 5,700   |        |        |
| Hungary                  | ... | 800     | 334     | 340     | 390     |        |        |
| Albania                  | ... | 135     | 220     | 270     | 290     |        |        |
| Bulgaria                 | ... | 110     | 140     | 145     | 150     |        |        |
| Poland                   | ... | 90      | 90      | 91      | 90      |        |        |
| Czechoslovakia           | ... | 70      | 70      | 70      | 70      |        |        |
| China                    | ... | 550     | 720     | 740     | 770     |        |        |
|                          |     | 47,155  | 53,324  | 59,374  | 61,460  | + 30.4 | + 15.2 |
| World total              | ... | 414,848 | 434,596 | 447,607 | 432,976 | + 4.4  | + 0.4  |

\* Including oil from shale or coal

in 1958 in Nigeria and in the Sahara where an output of 12 million tons is foreseen in 1961 when the pipeline to the coast is constructed.

The continued steep increases in output in the U.S.S.R. are in line with the long-term plans announced last autumn by Mr. Khrushchev, for a rise in output from about 98 million tons in 1957 to between 350 and 400 million tons by 1972, mainly—but by no means exclusively—through the further development of the rich reserves of the Ural-Volga basin. Rumania's production appears at present to be virtually stationary, but Hungary and Albania are expanding theirs, each with the aim of reaching a level of the order of 2 million tons by 1962. Hungary's plans are based partly on the hope of restoring and expanding production at Nagy-lengyel and partly on the potentialities of a new reserve discovered in the Great Hungarian Plain, while Albania's goal has been proclaimed after the reported discovery of an extension of the Patos oilfields in Central Albania. In Eastern Germany, it is expected that small-scale production will start at Fallstein in the foothills of the Harz mountains in the course of this year.

China originally set a production goal of 5-6 million tons of natural crude and synthetic oil for the year 1962—the last year of its second five-year plan—but, partly because of the recent discovery in Central Szechwan, it is now expected that this figure will be greatly surpassed. In 1958, China hopes to produce 8,700,000 tons of natural crude and 680,000 tons of oil from shale and coal.

Production in the free world has in recent years risen at annual rates of over 6 per cent cumulative, and in the whole post-war era, there was only one previous occasion when any half-yearly period showed a decline, namely, in the recession months of January-June 1949 when the free world produced some 213 million tons of crude, or 16 million tons less than in July-December 1949. The drop in the first half of 1949 was, however, followed by a marked recovery in the succeeding six months though the total annual production of 1949 remained somewhat below that of the preceding year. Present indications are that

## Predominance of Road Transport in U.S.

The continuing rapid growth of freight transport by road in the United States is underlined by statistics presented in the latest edition of *Motor Truck Facts*, just issued by the U.S. Automobile Manufacturers Association. In the post-war period, the ton-mileage of long-distance ("inter-city") freight transport has more than tripled rising from 82 billion ton-miles in 1946 to an estimated 262 billion ton-miles last year. A bigger tonnage of freight is hauled each year by road transport than by any other means, the totals in respect of 1954—the latest available detailed data—being 1,650 billion short tons, or nearly half, transported by road, as compared with 1,228 billion by railways, 654 billion by inland waterways, and 379 billion by pipelines. The proportion hauled by road has by now certainly increased. Road freight transport, together with motor buses and taxis, accounts altogether for the employment of some 7.2 million people, including 6,440,000 truck drivers and other employees of trucking concerns.

Registrations of trucks and buses in the United States have increased from 6.1 million at the beginning of 1947 to 10.9 million—comprising 10.6 million trucks and 255,000 buses—at the beginning of 1957, according to the new publication. Registrations in the rest of the world are meanwhile estimated to have almost tripled, rising from 4.8 million to 12.5 million, resulting in a reduction in the share of the United States from 56.2 per cent in 1947 to 46.5 per cent last year. An interesting aspect of the statistics is the estimate that U.S. farmers now own 2.9 million trucks, 4.3 million passenger cars and 4.6 million tractors, in these respects—if no major political crisis interferes with oil production or transport—history may well repeat itself during 1958.

the internal combustion engine, therefore now greatly outnumbering the 3½ million horses and mules till kept on U.S. farms, and providing, of course, many times more energy. While this is not an unfamiliar picture, the change just since 1945 is striking. In that year, farmers are estimated to have owned 1.5 million trucks—half the present number—4.1 million passenger cars, and 2.3 million tractors—also half the present figure—but almost 12 million horses and mules.

The new survey reveals the growing, though still proportionately small, role of diesel trucks and buses in the United States. Since 1953, diesel trucks registered have increased from 76,164 to 103,469 in 1956, while diesel buses registered increased from 27,677 to 32,209, this latter figure, however, also including some buses powered by L.P.G.—municipally-owned propane-fuelled buses number 2,500, according to other sources. Statistics of sales of diesel-engined trucks by U.S. manufacturers covering a longer period, show that in both 1956 and 1957 total sales on the U.S. market were about 21,000, as compared with about 2,000 in 1946. Sales of diesel-engined buses on the home market were 2,694 in 1957, as compared with a similar figure of 2,263 in 1946. These sales of diesel-engined trucks and buses represent, however, only a small proportion of total truck and bus sales on the U.S. market, which in 1957 were respectively 852,541 and 22,914. The small proportion of diesel vehicles in the United States is partly due to the lower level of fuel costs compared with many other countries, which greatly diminishes the advantages to be gained from the fuel economy afforded by diesel vehicles. The higher capital cost of diesel vehicles is therefore less easy to justify.

# MODELS AND THEIR Prices

## CARS

|                                                                                             | Rs. nP.   |
|---------------------------------------------------------------------------------------------|-----------|
| Plymouth Cars, (Sundaram Motors Private Ltd.) Ex-Premier Automobiles Factory, Kurla         | 20,270 00 |
| Plymouth Suburban (Sundaram Motors, Ltd.)                                                   | 22,646 00 |
| Hindustan Ambassador 1957 (Southern Automotive Corporation Private Ltd.) ex-plant Uttarpara | 11,161 00 |
| Dodge kingsway sedan (Rane (Madras), Ltd.)                                                  | 20,371 00 |
| Dodge Suburban (Rane (Madras), Ltd.) ex-Bombay                                              | 22,899 00 |
| Vanguard Phase III (Union Co. (Motors) Ltd.)                                                | 14,700 00 |
| Standard Super Ten Saloon (Union Co. (Motors) Private Ltd.) on the road                     | 10,022 12 |
| Standard Estate Car (Union Co. (Motors) Private Ltd.) on the road                           | 14,889 12 |
| Studebaker 'Parkview' Station Wagon 1956 model (Reliance Motors Ltd.) ex-plant Calcutta     | 20,280 00 |
| Studebaker 1956 Commander (V.S.T. Motors Private Ltd.) Including S.T. & Delivery Charges    | 22,239 86 |
| Studebaker 1956 President Classic (V.S.T. Motors Private Ltd.)                              | 24,499 78 |
| The Fiat 1100 The Elegant (Sundaram Motors Private Ltd.) Ex-Factory                         | 9,755 00  |
| Willys C.J. 3B Universal Jeep ex-plant Bombay                                               | 12,160 00 |
| Willys Model Station Wagon ex-plant Bombay                                                  | 18,150 00 |
| Jeep 1 ton truck                                                                            | 13,046 00 |

## MOTOR CYCLES

|                                                            |          |
|------------------------------------------------------------|----------|
| Royal Enfield (The Madras Motors (Private) Ltd.)—          |          |
| “150 Ensign” (any dealer point in India)                   | 1,995 00 |
| “350 Bullet” with spring frame (any dealer point in India) | 3,559 00 |
| Royal Enfield three wheeler chassis                        | 4,654 00 |

## SCOOTERS

Lambretta, manufactured by Automobile Products of India Ltd. Distributors, South India Automotive Corporation Private Ltd., Madras

(At Visakhapatnam—Western Automobiles Ltd.) Prices are ex-Factory, Bhandup, Bombay.

## VANS

Standard Delivery Van. (Union Co. (Motors) Private Ltd.) on the road

Hindustan Traveller, price on the road (Reliance Motor Co.

14,700 00

TRUCKS & COMMERCIAL CHASSIS

Sundaram Motors (P) Ltd.

Leyland Comet “203” WB

Passenger Diesel Chassis including S.T. & dely. charges

36,000 00

Leyland ECPO 2/2R-176

WB full forward control

Passenger Chassis S.T. & dely. charges

35,500 00

Leyland ECOS 2/1R-163

WB goods chassis including S.T. & dely. charges

34,700 00

Leyland ECOS 2/2R-118

full forward Tipper chassis including S.T. & dely. charges

34,500 00

(V.S.T. Motors Private Ltd.)

Tata-Mercedes-Benz. Diesel Truck and Bus Chassis

L 312/42 165” W.B. 5-Ton Truck Chassis ex-Works, Jamshedpur

26,820 00

LP 312/42 165” W.B. Full Forward Control Truck Bus Chassis ex-Works, Jamshedpur

27,780 00

LP 312-48 190” W.B. Full Forward Control Bus Chassis ex-Works, Jamshedpur

28,570 00

L 312/36 142” W.B. 5-Ton Truck Chassis ex-Works, Jamshedpur

26,475 00

LK 312/36 142” W.B. 5-Ton Truck Chassis ex-Works, Jamshedpur

30,125 00

Fargo (at Sundaram Motors Private Ltd.) Dodge (at Rane (Madras) Ltd.) Prices duty paid ex-factory Premier Automobiles Ltd., Kurla, Bombay.

C3D6-116” (4) 7.00×16—6

11,615 00

C4D6-126” (4) 7.00×16—6

12,662 00

C3PW6-126” (4) 9.00×16—10

17,974 00

C4H6-153” (6) 34×7—1

16,391 00

C4G6-153” (6) 32×6—10

16,062 00

Rs. nP.

|             |                |           |
|-------------|----------------|-----------|
| C4H6-153”   | (6) 34×7—10    | 17,710 00 |
| C4H6-153”   | (6) 34×7—12    | 17,979 00 |
| C4H6-193”   | (6) 34×7—10    | 18,116 00 |
| C4H6-193”   | (6) 34×7—12    | 18,385 00 |
| C4H6-193”   | (6) 34×7—10    | 18,479 00 |
| C4H6-193”   | (6) 34×7—12    | 18,748 00 |
| K6D200-116” | (4) 7.00×16—6  | 12,896 00 |
| K6D200-116” | (4) 7.00×16—8  | 12,961 00 |
| K6D300-126” | (4) 7.00×16—6  | 12,900 00 |
| K6D300-126” | (4) 7.00×16—8  | 12,965 00 |
| K6W300-126” | (4) 9.00×16—10 | 18,950 00 |
| K6D400-129” | (6) 34×7—10    | 16,372 00 |
| K6D400-153” | (6) 32×6—10    | 16,186 00 |
| K6D400-153” | (6) 34×7—10    | 16,531 00 |
| K6D400-171” | (6) 34×7—10    | 17,008 00 |
| K6D500-129” | (6) 34×7—10    | 18,092 00 |
| K6D500-129” | (6) 34×7—12    | 18,388 00 |
| K6D500-153” | (6) 34×7—10    | 18,331 00 |
| K6D500-153” | (6) 34×7—12    | 18,628 00 |
| K6D500-171” | (6) 34×7—10    | 18,606 00 |
| K6D500-171” | (6) 34×7—12    | 18,904 00 |

## PICKUP

|             |               |           |
|-------------|---------------|-----------|
| C3D6-116”   | (4) 7.00×16—6 | 15,012 00 |
| C4D6-126”   | (4) 7.00×16—6 | 16,058 00 |
| K6D200-116” | (4) 7.00×16—6 | 16,293 00 |
| K6D200-116” | (4) 7.00×16—8 | 16,358 00 |

## DIESEL CONVERSION

|             |             |           |
|-------------|-------------|-----------|
| C4H6-153”   | (6) 34×7—10 | 22,668 00 |
| C4H6-153”   | (6) 34×7—12 | 22,937 00 |
| C4H6-171”   | (6) 34×7—10 | 22,903 00 |
| C4H6-171”   | (6) 34×7—12 | 23,172 00 |
| K6D500-153” | (6) 34×7—10 | 20,997 00 |
| K6D400-171” | (6) 34×7—10 | 21,303 00 |
| K6D500-153” | (6) 34×7—12 | 22,930 00 |
| K6D500-153” | (6) 34×7—10 | 22,632 00 |
| K6D500-171” | (6) 34×7—12 | 23,414 00 |
| K6D500-171” | (6) 34×7—10 | 23,116 00 |

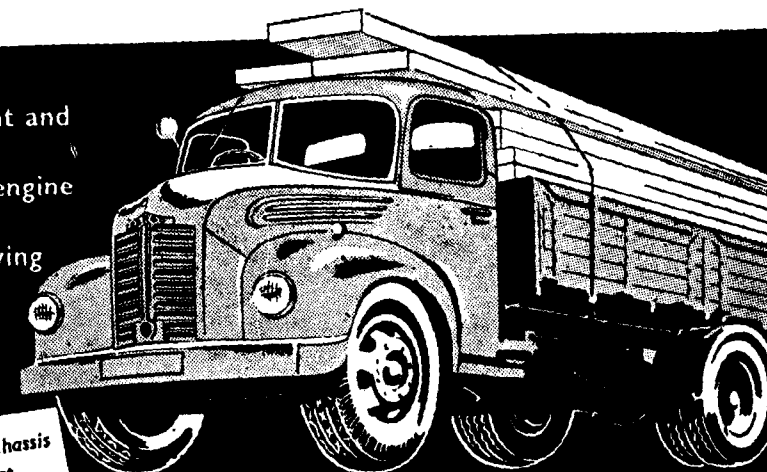
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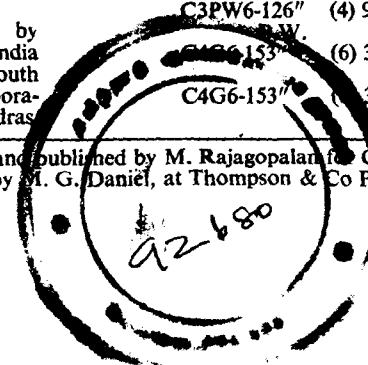


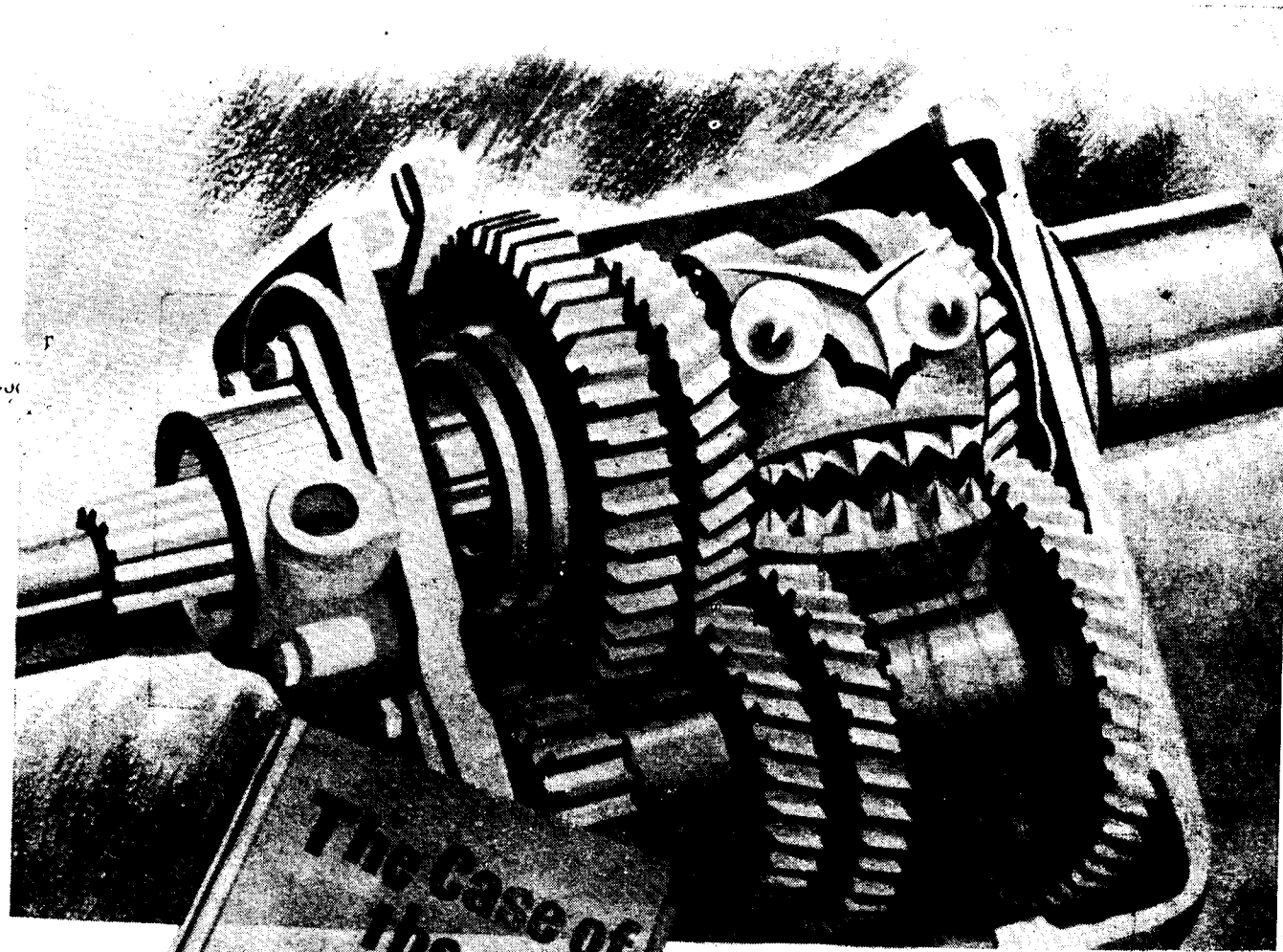
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