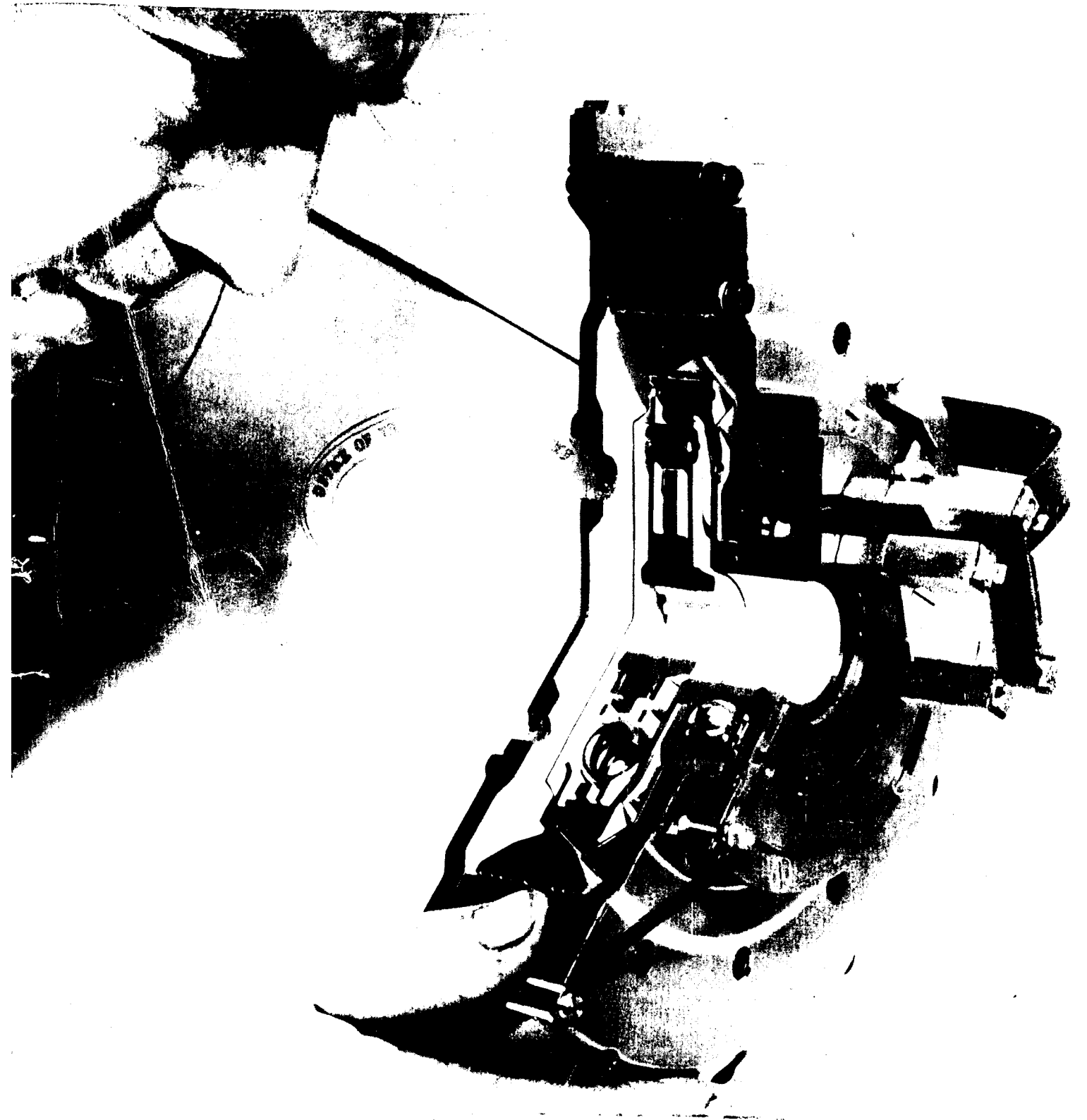


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MOTORINDIA



JOURNAL OF THE AUTOMOBILE INDUSTRY AND TRADES

VOLUME I
NUMBER 5
DECEMBER 1956

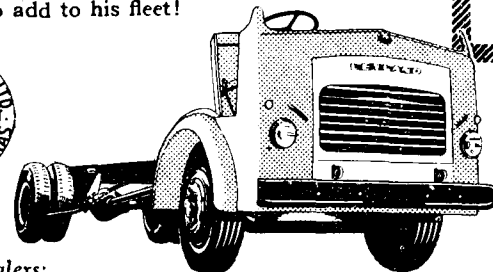
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Edited and Published by M. Rajagopalan at 141, Mount Road, Madras-6. Printed by S. Viswanathan at the Central Art Press, 11, McNichol Road, Chetput, Madras-31.

MOTORINDIA

Vol. 1

December 1956

No. 5

Editor : M. RAJAGOPALAN

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EDITOR

MOTORINDIA

141, MOUNT ROAD
MADRAS-6

editorial

WHY NOT A "TRAFFIC BULGE" ?

'An Arcade in the Round Tana' is being planned by the Corporation of Madras and it is expected that work in respect of the same may start soon. Many reports of this proposal have appeared in the press, and officials and Ministers have inspected the spot. From these, it is now known that the arcade will try to relieve congestion in the locality which now buzzes with all kinds of vehicles and pedestrians particularly in the evening hours. Any effort to relieve the present situation, therefore, will be welcomed by all those who desire an orderly and even disciplined movement of men and vehicles in the city.

But one has to ask whether the arcade will be a permanent solution to the traffic jams in the area, or whether it will at least solve the problem for a certain number of years to come. While the arcade idea is no doubt good, and may contribute to some extent in helping pedestrians, the authorities would do well to think of a long range plan. As things go, Mount Road area is expanding rapidly and at Round Tana where there is little scope left for horizontal expansion, the peak hour traffic now presents a serious problem. But this is bound to grow worse in the immediate future. The need therefore now is to plan for a permanent solution, or do something which will solve the problem at least for the next 20 or 30 years.

The best plan, to this end, in our view would be to explore the possibility of splitting the two-way traffic between the Durga and main entrance of the old Government House on Mount Road. The present Mount Road in this stretch can take in the North-South vehicular traffic, and a broad road which can be planned with the existing roads and lanes as the nucleus from the Durga, alongside the Canal to join Mount Road opposite the Government House gate, can easily cope up with the vehicular traffic Northwards. This will mean that one-way traffic will have to be enforced on this busy area, and we have no doubt that such a solution will make the traffic flow smoothly. This will also help the springing up of new business houses and the like on the suggested road link on the Western side making it possible for shops and business houses to spread around the same central area. The cost of such a scheme should not be much considering the fact that there are already quite a number of roads and lanes on the proposed route which will have to be merely linked up and widened to suit the purpose. To investigate and start such a scheme now will be much better than to lose control of the reins and attempt to catch hold of the tail of the traffic problem in the area.

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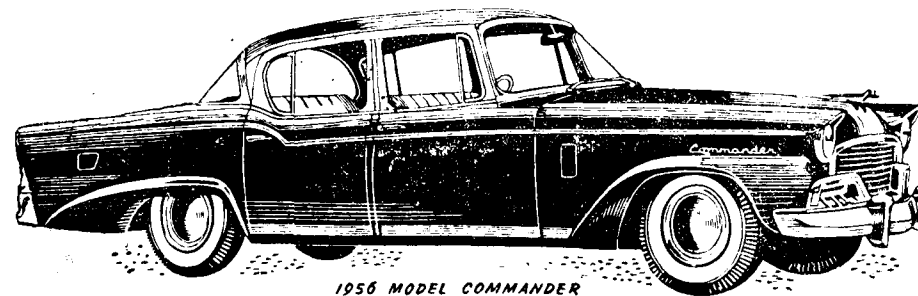
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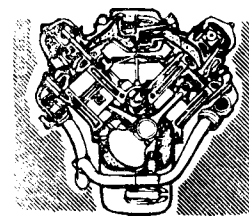
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2	NASH AMBASSADOR 6	58.56	25.19
3	OLDSMOBILE 88 V-8	56.87	22.55
4	STUDEBAKER PRESIDENT V-8	55.20	25.29
5	BUICK ROADMASTER V-8	53.76	19.78
6	DODGE CUSTOM ROYAL V-8	52.23	22.33
7	PONTIAC CHIEFTAIN V-8	51.93	21.61
8	MERCURY MONTEREY V-8	51.92	21.59
9	PACKARD PATRICIAN V-8	51.63	18.75
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12	CHRYSLER NEW YORKER V-8	50.11	19.02
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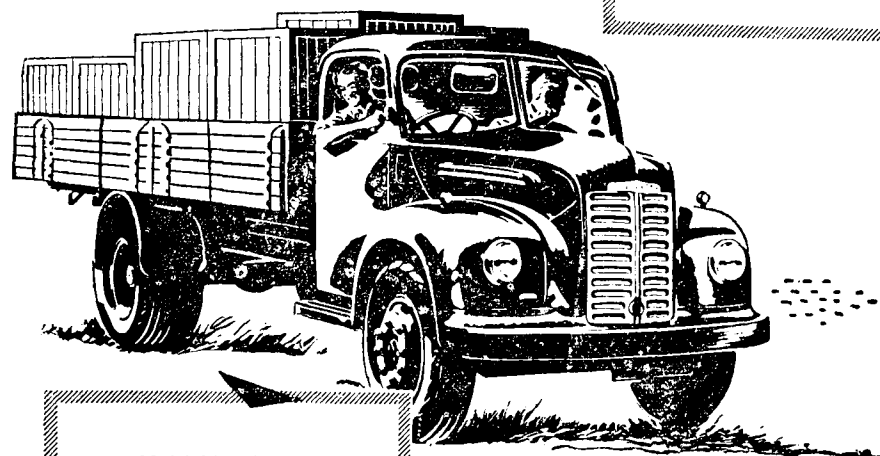
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"In spite of regulations and restrictions, motor freighting made considerable advances, a particular feature being increase of long hauls between capital cities."

Says Margaret Lawrence continuing the discussion of road transport in Australia in the article below :

Road and Rail Competition

Australia's railways, which are a very important part of the country's land transport system, are almost entirely State-owned, and represent a net capital investment of Rs. 5,10,41,00,000. They perform an essential function as carriers of the bulky primary products, such as wool and wheat. These industries, the mainstay of the country's export trade, have to add freight charges to their prices in world markets. So that a balanced economy may be maintained in the railways, and to protect their heavy capital investment, the State governments control, and to a certain extent restrict road and air competition.

SINCE 1930, WHEN ROAD SERVICES FIRST BEGAN TO OFFER SERIOUS COMPETITION TO THE RAILWAYS, EACH OF THE SIX STATE GOVERNMENTS HAS PASSED LEGISLATION REGULATING ROAD TRANSPORT. THE DEGREE AND NATURE OF CONTROL DIFFERS IN EACH STATE, THE GUIDING FACTOR BEING HOW ADEQUATELY THE RAIL SYSTEM CAN HANDLE THE TRAFFIC OFFERING. RESTRICTIONS ARE MAINLY ON LONG HAULS, THE MAINSTAY OF RAIL FREIGHT TRAFFIC.

Control is perhaps most stringent in New South Wales, where the policy is to prohibit the long distance transport of freights which can be handled satisfactorily by rail. Road transport of certain commodities is prohibited, wherever it competes with the railways. In the case of other commodities, road transport is permitted only on pay-

ment of heavy Licences and permit fees, which are graded at a rate not exceeding three pence per ton per mile, based on the aggregate of the unladen weights and carrying capacity of the vehicles. Vehicles carrying perishable primary products are exempt.

The Queensland system is broadly similar. Here the licence fee may be a percentage of the gross revenue, or may be calculated at a rate not exceeding three pence per ton per mile.

In Victoria licences are issued either "as of right" or at the discretion of the regulating authority. "As of right" licences, costing a nominal fee, are issued to carriers using vehicles of less than four tons capacity, operating within a radius of 25 miles of Melbourne or the principal country centres, or within a radius of 20 miles from other centres.

"As of right" licences are issued to firms carrying their own goods in their own vehicles. They are issued to primary producers for the carriage of produce from farm to market, and to carriers of certain perishable commodities and petroleum products anywhere within the State. Discretionary licences are issued where rail services are considered inadequate, at a fee not exceeding Rs. 160 per trip.

In South Australia unrestricted operations are permitted in large sections of the State where there is little competition with the railways. Traffic is limited on other "controlled routes," and licensed operators are required to pay a tax ranging from 2½ to 10 percent on gross earnings, according to the degree of competition with the railways.

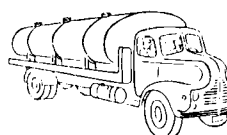
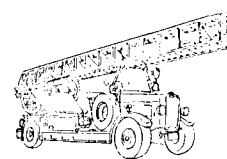
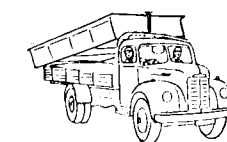
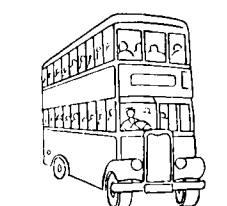
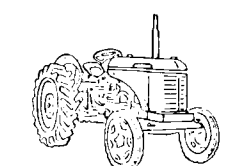
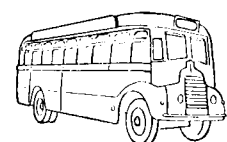
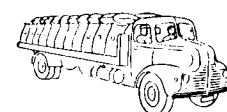
Western Australia, with less railway mileage in relation to area than the other States, allows free

operations within a radius of 35 miles of the capital city, Perth, and the principal country centres. Other operations are licensed at the authority's discretion. In underdeveloped parts of the State and areas where the railways cannot handle all the traffic, many road services have been subsidised.

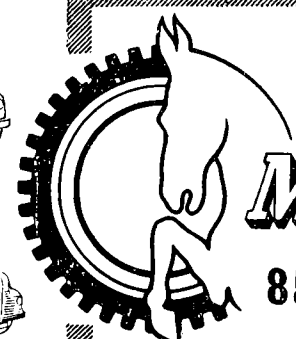
For regulatory purposes, Tasmania is divided into a number of traffic areas. Vehicles are licensed to operate within certain areas only, "out of area" licences being granted only where the rail services are inadequate. Primary products, except wool, are exempt from the licensing provisions.

In spite of these regulations and restrictions, motor freighting made considerable advances during and shortly after World War II, the particular feature being the increase of long hauls between the capital cities of the Eastern States. This was partly because the railways, hampered by shortages of coal, labour and materials, were unable to cope with all the traffic offering. Variations in rail gauges in the different States were another obstacle to speedy inter-state transport of goods by rail.

Since then the railways, no longer hampered by shortages, have rehabilitated and modernised their systems. Introduction of diesel freight locomotives has greatly speeded up long distance runs. An example of measures taken to counter the greater flexibility of road transport was the introduction of steel containers, three to a railway freight car each with a capacity of 5½ tons. These containers can be loaded at the despatch centre by the consignor, locked and sealed, transported inter-state by rail, then unloaded at delivery point by the consignee. About 250 of these containers are now in regular use.



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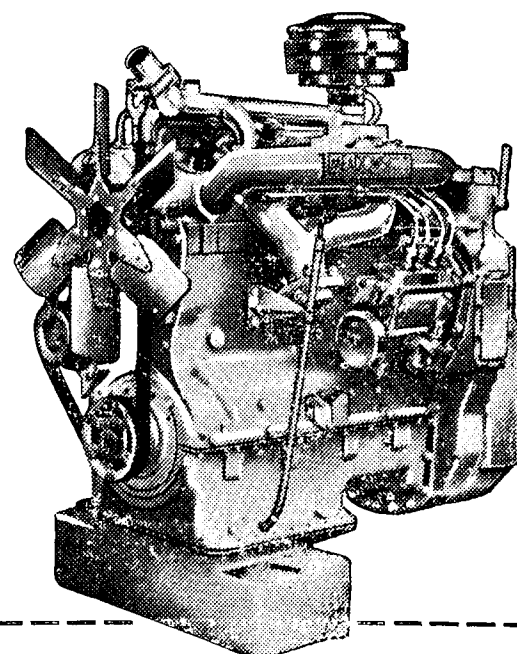
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Towards greater co-ordination of transport

BY K. B. MATHUR,
Member, Transportation,
Railway Board.

Shri Mathur, in this Article, makes a series of constructive suggestions on how the Road Services can supplement the effort of the Railway in the important task of "delivering the Nation's goods" during the Second Plan Period. Giving the break-up of the allocation of Rs. 1,125 crores made to the Railways during the Second Plan Period, Shri Mathur explains how the "uncovered" gap in transport capacity can be made good.

What should be the respective role of the various means of transport in India and what should be their relative priorities for development during the Second Plan Period? This is a question frequently posed, but it has so far not received a clear-cut answer.

It is my desire in this article to examine the question of transport co-ordination in the light of the country's needs specifically during the Second Five Year Plan period.

For an objective appraisal of this problem, it is inescapably necessary to take into account the nature and volume of the goods traffic which is likely to develop during the Plan period and the areas between which it will move.

Transport of Coal, Steel, Cement, Food

The major portion of the additional traffic will relate to coal and steel, which will move in bulk from centres of production to all parts of the country. Rail transport is undeniably cheaper and better suited than any other form of transport for the movement of goods in bulk. It has, therefore, been assumed that a major portion of this traffic, amounting to about 38 million tons, will move by rail.

This does not take into account nearly five million tons of coal which



"Was all this necessary? I thought you were doing rather well on dry ground."

will be consumed partly locally and partly carried by road over short distances or by river. About a million tons or so may be carried over the Durgapur canal. As even in this case coal has to be carried by rail from the pithead to the canal jetties, the relief to the railways is greatly nullified, because much of the "wagon-time" is wasted in terminal services. ROAD TRANSPORT WOULD OBVIOUSLY BE A BETTER SUBSTITUTE FOR THIS TRAFFIC, BUT IT IS QUESTIONABLE WHETHER IT WOULD PAY ROAD OPERATORS TO CARRY IT.

The case of coastal shipping is similar. Where the ultimate destination of coal carried by sea lies in the interior of the country, the railways hardly receive any relief. They have to carry coal first from the pithead to the Calcutta port and then again from the terminal port to the destination in the interior. Also, it has to be realised that terminal delays to wagons are much greater at the ports than elsewhere.

Another material factor is that sea freight for coal is roughly twice the railway freight, and road charges are likely to be even higher.

Considering all these factors, it is difficult to visualise how any appreciable relief to the railways can result from the movement of coal or steel by any other means of transport.

Next in importance after coal and steel is cement and foodgrains traffic.

The additional cement production originally estimated was five million tons, but this has subsequently been revised to about eight million tons. Food production is now estimated to increase by about 30 per cent or by 19 million tons, out of which at least one-third or 6 million tons will require transport.

Besides these commodities, there will be numerous other developments. The latest indications are that the target for piecegoods will be revised. The export drive is also being intensified. Some adjustment for "repeat" movement is also necessary, as it is common experience that goods, after being carried to the stockist or wholesaler move to the retailer, and again to the ultimate consumer.

Total Additional Traffic

Incidentally, these considerations point to a substantial increase in the original target of 60.8 million tons of additional transport, which may now well increase to 75 to 80 million tons by the end of the Plan period.

As against this, on present calculations, the Railway Plan provides for an additional movement of only 47 million tons. These calculations take into account an approximate improvement of 10 to 15 per cent in operational efficiency, and also allow for a likely increase of 10 to 20 per cent in the average load of traffic—

(Continued on page 39)

December 1956

3

MOTORINDIA

11

Steady Increase of German Cars for India: Spectacular Sales in South Asia

It may have taken some time for the German automobile industry to foster the markets of southern Asia, but as from 1954 and particularly since the beginning of this year, sales have been spectacular. And although this could be due in part to the promotion and marketing technique of manufacturers, design and performance will have been the real explanation.

Under the present arrangements, India, Pakistan and Indonesia do not permit the import of finished vehicles but require them to be assembled on the spot. The ultimate objective is to establish domestic production. The erection of assembly plants in South Asia was not achieved without difficulties. But this was only to be expected, since large numbers of local workers had to be trained from scratch and manufacture in Germany had to be adapted to suit transport and foreign assembly requirements.

That this type of assembly can be done successfully is illustrated by the Daimler-Benz plant in India and

By E. W. Sporkhorst

that of the Bremen firm of Borgward in Indonesia. In both countries it has meant a steady increase in the sales of German cars. An adequate and continuous absorbing capacity is, naturally, a prime requisite of economic overseas assembly, together with cheap and easily available after-sales service and fixed-price maintenance, to establish a good dealer-to-customer relationship.

Whereas future possibilities in India and Indonesia, based on current experience, would appear to be satisfactory, market conditions in Pakistan have so far not induced German manufacturers to establish assembly plants there. And for this reason a recession—one hopes only a temporary one—has been noted in sales to that country.

Exports of German cars, omnibuses and lorries to Burma, Ceylon, Malaya and Thailand have steadily mounted during the past few years. This too betokens a great amount

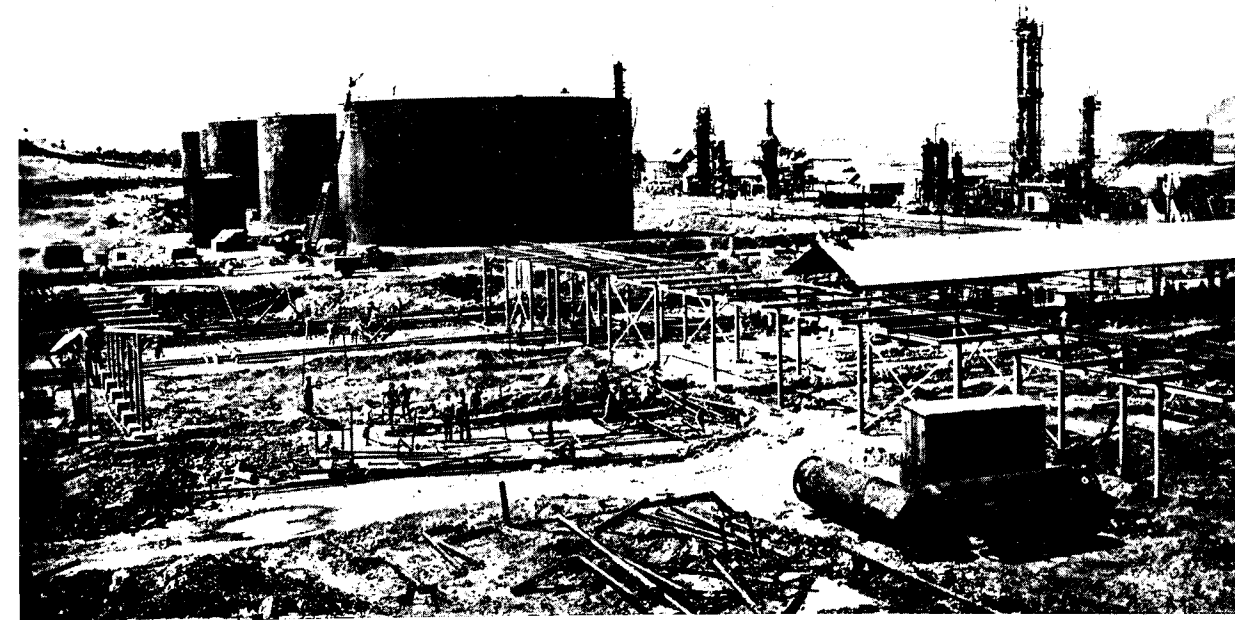
of solid, well-conducted trading and manufacture for export. A feature of the after-sales services provided by manufacturers is easy maintenance and a ready availability of spares. The efforts so far made will no doubt help to bolster deliveries to these countries.

The widely varied production programmes of German automobile manufacturers offer a broad choice to the overseas buyer. They include everything from the low-priced, dependable small car to the luxury limousine capable of satisfying the most fastidious demands.

Among the commercial vehicles there is everything from three-wheel runabouts to the heaviest types of Diesel-powered trucks. Interesting newcomers include advance-design combination models, station wagons, delivery vans and minibuses. All kinds of public utility vehicles, such as road cleaning, fire-fighting and refuse collecting trucks have always figured among the outstanding products of German heavy vehicle production. The immense successes during recent years are the best proof that German designers are on the right track.

It goes without saying that an efficient after-sales service, with local supplies of spares, is at the disposal of foreign users; this greatly facilitates the task of local distributors. Efforts of the spare parts and accessories industry have contributed to no small degree to the present successful arrangements. And, in spite of import restrictions, results have been satisfactory. There is an increasing interest for manufacture under licence in countries like India and Indonesia.

Users anticipating the purchase of German vehicles are assured that they will get the same dependable, economic performance in future which has established the reputation of German production in the past.



A view of the Caltex Oil Refinery under construction at Vishakapatnam.

Masses of foreign equipment and Indian workmen transform Vishakapatnam

Progress at Visakhapatnam

As construction is nearing completion at Vishakapatnam, the Caltex Oil Refinery is gradually taking shape. Several hundred acres have now been cleared of trees and earth and the preparation of the site itself has been almost a major job resulting in the construction of miles of roads, drainage ditches, stonewalls etc. The extent of the Refinery site and the proposed construction is so vast that even for operational purposes pucca posts are to be built in more than twenty places. In fact, some of these posts are so strong and durable that they are likely to be used as administrative offices at a later stage.

But the emphasis has now shifted to the construction of the actual refinery buildings. A large storehouse, which will provide protected storage for the many delicate parts which form an oil refinery, is now more than half complete.

Also at an advanced stage of completion are the storage tanks

varying in height from 40 to 48 feet. These are built with pre-formed sections of plate steel eight feet wide, the largest of which weighs four tons. When complete, over 6,000 tons of steel will have been used in the construction of these tanks.

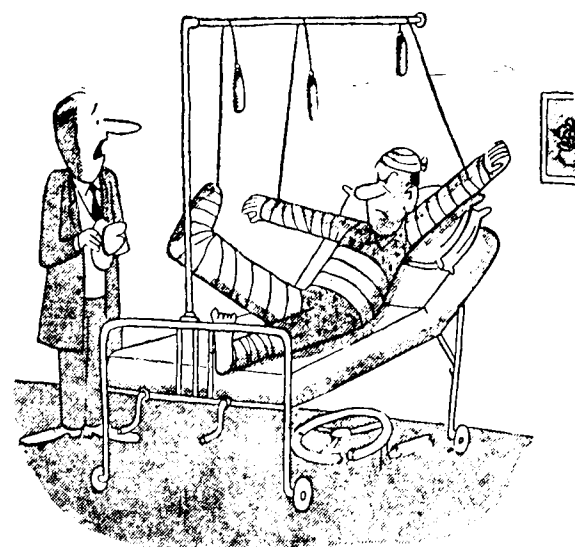
The horizontal welding has been done with the aid of automatic welding machines specifically designed for large steel tanks while the vertical welding was done by hand. Nothing is left to chance and welded joints are subjected to inspection by X-rays in order to test the quality of each weld. For the final test, the tanks are filled with water which has a density greater than crude oil.

Inevitably a development project as large as the Caltex Oil Refinery has to contend with many unforeseen factors which challenge engineering and administrative skill. A construction problem was posed when it was found that the moist, clay loam soil where the crude oil storage tanks are to be located would not give a stable foundation

for a heavy load.

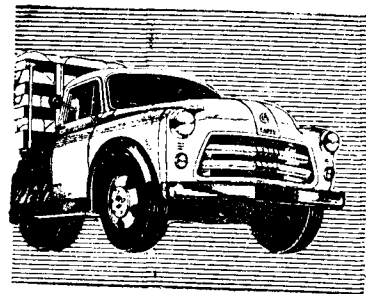
This problem, however, was overcome by drilling 125 holes with a 16" diameter 15 feet deep equally spaced under each tank. The holes were then filled with dry sand and the top at ground level layered with sand and gravel several feet thick. Each tank is 160 feet in diameter and will contain six million Imperial gallons of crude oil which, when filled, will exert a full load of 24,000 tons. This weight will squeeze the water out of the soil and up through the sand piles to be drained off through the sand and gravel tank pad. As a result the soil, after loading, will become firm and support the heavy tank without tilting.

In addition, nearing completion are the many foundations required for the process units. A 50 foot high concrete batch plant had to be built to produce the large quantities of concrete required. The batch plant has large hoppers for the cement, sand and aggregate. From these hoppers controlled quantities of material are dropped into a



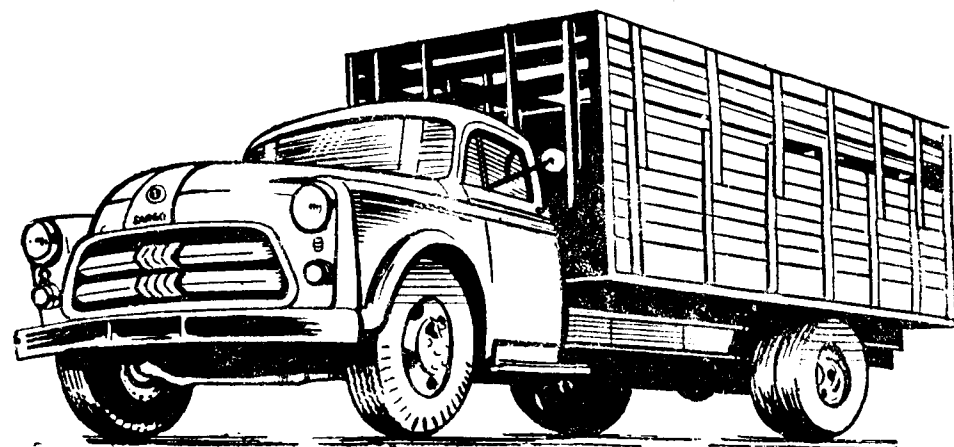
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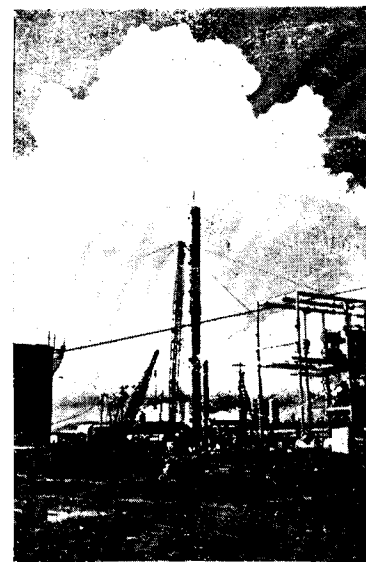
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A view of the fluid cat-cracker unit with the de-ethanizer in the centre.

large mixer and after mixing the concrete is dropped into specially fitted dump trucks for delivery around the site.

This large batch plant not only mixes concrete faster but provides for much closer control over the quality of the concrete, an essential factor where heavy loadings and durability are concerned.

Masses of equipment still continue to arrive at the refinery site. The maximum use is made of the Caltex "pool" of equipment. About 50 pieces of heavy construction equipment have been transferred to Visakhapatnam from other Caltex construction projects in various parts of the world.

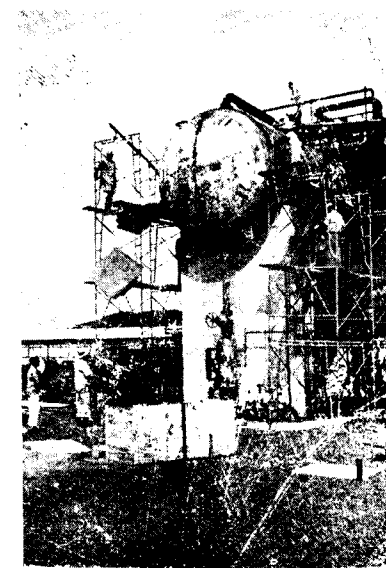
Such equipment includes large cranes, special trucks, air compressors, welding machines and grading equipment. This in turn will be passed on to another Caltex installation in some other part of the world as and when needed. Such a procedure saves on capital costs and ensures maximum economy.

In addition, many other items of equipment have been purchased in India or rented from contractors. The largest piece of equipment on the site is a guy derrick about 190 feet high with a lifting capacity of 100 tons. This will be used for the construction of the Fluid Catalytic Cracking Unit, the largest processing unit in the refinery.

Efficient working methods have also had to be evolved. This has resulted in the blending of local traditional skill and western mechanization. Indian methods are used wherever they make for greater efficiency and these dovetail into the use of modern tools whenever it becomes imperative to use them. An increasing number of labourers are now using tools with which they were unfamiliar a few months ago. Working constantly with air powered tools, cement finishing tools and other specialized equipment they are now becoming a body of well trained and skilled workmen.

Local conditions have had to be studied from another point of view too and the conventional operational methods modified accordingly. For instance, in America galvanized wire-mesh fencing is used but this corrodes in a moist atmosphere. In Visakhapatnam Caltex built stone walls at practically the same cost which are stronger, will last longer and will require less maintenance. Similarly, the American method for temporary housing and office accommodation would have been a prefabricated wooden framework with hard board or plywood sheeting. But this would have been too expensive for Indian conditions. Instead, Caltex used rubble stone walls with asbestos sheeting and cement flooring. This was found cheaper and better for heat and monsoon conditions and to be a perfect protection against termites.

Contractors and sub-contractors are playing their part in the construction of the Caltex Oil Refinery by contributing their various skills



Work on the propane drum of the Decarb Unit at Caltex Refinery.

and specialised knowledge. The Lummus Company, for instance, have the main contract for the designing and building of the major portion of the refinery while the contract for the storage tanks has been given to the Chicago Bridge Ltd. The balance of the work is being handled by sub-contractors in the State of Andhra who are constructing roads, walls, buildings and handling grading work. Half of the labour crew, approximately 2,000 persons, are working for these sub-contractors.

Work is proceeding full speed ahead and everyone is giving of his best to complete the installation on time which will open a new chapter in the economic development of India's east coast.

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Cap won't stick

Caps on tubes of glue, rubber compound, gasket cement, etc., have a nasty habit of sticking so that it's often necessary to break the cap or the tube to get at the contents. This can be easily prevented by smearing a little grease inside the cap when it is taken off the first time. After that you will never have trouble removing the cap.

Fan belt squeaks

Worn pulleys and other defects often cause a fan belt to squeak, and the noise is sometimes hard to stop. When all other methods have failed, try squirting a little hydraulic brake fluid on the fan belt. This is a long-lasting and effective squeak stopper.

Find that lock

Garage door-locks whether of the mortice or the padlock type, are often hard to find at night. They will be far more noticeable against

a dark door if you paint them white or silver. Of course, if your garage doors are painted a light colour, you will have to reverse the procedure, or else paint in a black background for the white or silver lock.

Stop bolt corrosion

Holding-down bolts on batteries should always have a drop or two of oil applied when the car is getting its regular service. This will help prevent corrosion, and you will have no difficulty in removing the battery when you want to replace it, or leave it at the garage to be recharged.

Portable vice

A solid portable vice can easily be rigged up by using an old truck wheel (or any other heavy wheel). Bolt the vice to the wheel, using the existing stud holes. The base will be firm enough to allow the vice to be freely used, yet the unit can be carried around, and is ideal for on-the-spot jobs.

Mat stays put

To protect the carpet near the driver's feet, it is wise to place a rubber mat near the foot controls. Often it is not desirable to cover the entire floor, as this detracts from the appearance; on the other hand, a

small rubber mat tends to slip away from its position. To overcome this trouble, glue a sheet of ordinary hard black rubber to a thin sheet of sponge rubber. The sponge rubber will grip the carpet and keep the mat in place, while the hard rubber will stand plenty of wear. This type of mat also acts as an extra 'shock absorber' for the driver's feet.

Hub clip repair

The clips which hold the hub caps in place are usually pretty frail and may break off at awkward moments. A speedy repair can be made without taking the wheel off by first knocking the head off the old rivet, which held the clip, then punching the rivet out and installing a new clip, fastening it with a self-threading screw of appropriate size. If you can't buy a new clip, a strong piece of spring metal will do.

Boil brake linings

Leaking brake fluid can spoil the efficiency of your brakes if it reaches the linings. To get the fluid out of linings which have been so affected, boil them for ten minutes in water to which ordinary baking soda has been added.



By P. F. Lally

The most vitally important factor from the point of SAFE DRIVING in a Car, is its Brake System, which should be kept most efficient and immediately attended to when there is any doubt or sign of its inefficiency. It is a safe policy to test the Brakes of a car no sooner it is driven. Should the Brake Pedal sink down to the floor board when you apply the brakes or should the car pull to sides before coming to a stop or the brakes chatter, or make any noise, it is a signal of some defect which should receive prompt attention.

Below are mentioned the causes of defects to be encountered in the Brake system.

Causes of Brake Pedal going to Floor

1. Worn out Brake Liners. 2. Brake Shoes need adjustment. 3. Leak in the Hydraulic System—through Master Cylinder, Brake Hose or

Wheel Cylinders. 4. Insufficient Brake Fluid in Supply Tank. 5. Air in Hydraulic System. 6. Brake Pedal incorrectly set.

Causes of Springy Brake Pedal

1. Air in Hydraulic System. 2. Brake Shoes not correctly adjusted.

Causes of Excessive Pedal Pressure

1. Incorrectly adjusted Brake Shoes. 2. Wrong type of Brake Liners. 3. Twisted or damaged Brake Shoes. 4. Brake Liners Oil soaked.

Causes of Hard Brake Pedal

1. Incorrect adjustment. 2. Wrong type of Liners. 3. Twisted or damaged Brake Shoes. 4. Brake Liners making partial contact with Brake Drums.

Causes of Brake Chatter

1. Worn out Spring Shackles. 2. Loose Spring U-Bolts. 3. Worn out Universal Joints.

Causes of Noisy or Squeaking Brakes

1. Thin Brake Drums. 2. Rough turned Brake Drums. 3. Rivets Contacting Drums. 4. Brake Liners worn out or thin. 5. Weak Hold Down Brake Springs. 6. Brake Shoes striking sides of Drums. 7. Weak

Shoe Return Spring. 8. Incorrect Shoe adjustment. 9. Dust in Drums. 10. Twisted or damaged Brake Shoes. 11. Wheel Bearings too loose.

Causes of one Brake Dragging

1. Weak Shoe Return Spring. 2. Weak Anchor Spring. 3. Clogged Hydraulic Line. 4. Too little Shoe clearance. 5. Defective Wheel Cylinder Piston Cups. 6. Loose Wheel Bearings.

If all the Brakes Drag, the cause may be Insufficient Play in the Brake Pedal, Broken Return Spring or Mineral Oil mixed with the Brake Fluid.

Causes of Brake Pulling Car to One Side

1. Incorrectly adjusted Brakes. 2. Inequal Tyre-pressure. 3. Clogged Hydraulic System. 4. Oil or grease on Brake Liners. 5. Incorrect Liners. 6. Loose Backing Plate.

Causes of Brake Grabbing

1. Grease or Oil soaked Liners. 2. Brake Backing Plates Loose. 3. Incorrectly adjusted Brake Shoes. 4. Incorrect Brake Liners. 5. Loose Radius Rods.

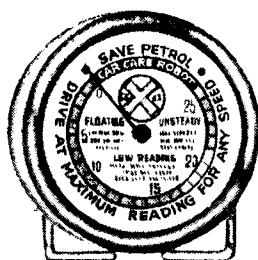
Next month 'Defects of Clutch'

THE REDeX CONVERSION SYSTEM

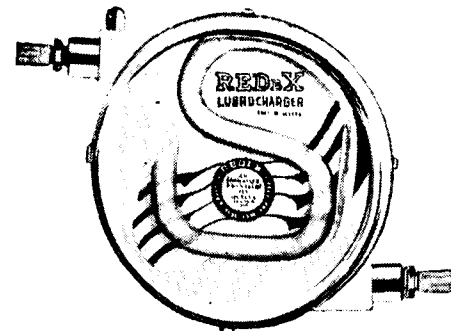
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REDeX Additive chemically improves all fuels and lubricating oils in any internal combustion engine, viz., cars, buses, lorries, diesel engines, tractors, compressors, etc. An extreme pressure ingredient strengthens oil film, reduces wear and releases extra power. Sludge, Carbon and Gumming are inhibited by an anti-oxidant and cleared by a detergent. Viscosity at high working temperatures is improved by a non-gumming fluid wax. Stabilisers prevent formation of corrosive acids.



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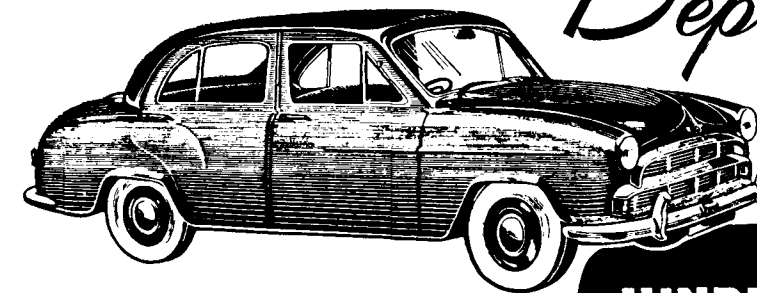


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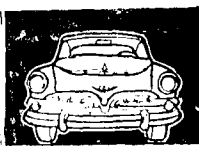
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SA-7-SA

ABOUT YOUR



By Robot

If you have a small or medium sized car and when you have driven it for ten or fifteen thousand miles, at times, you find that the engine loses some of its power. You notice that the car does not climb a particular hill or a gradient as easily as it used to do some time before. Also you may find your car engine 'pinking' while accelerating. When you ask your garage-man he will probably tell you that the engine requires decarbonising. As the word implies, some carbon deposits are to be removed from the engine.

If you burn anything, you know, you have some residue left in the form of carbon or ash. So, when you use your car you burn petrol in the combustion chamber of the engine to produce power to move the car. This burning is effected by an electric spark fired by the sparkplugs when the petrol and air are thoroughly mixed and compressed inside the cylinder. The burnt mixture of petrol and air is called the Exhaust Gases and it is expelled out of the combustion chamber through the exhaust valves and exhaust manifold. These exhaust gases consist of 80% nitrogen; 13% carbon dioxide and the rest consists of moisture. A large portion of the carbon, the residue left after the combustion, is blown out through the exhaust; still a small quantity sticks to the combustion chamber and in course of time the accumulation reaches to that extent that a decarbonising becomes necessary.

Perhaps it may not be possible to eliminate the accumulation of carbon deposits in the combustion chamber and so you cannot escape the necessity of having a decarbonising; but it is quite possible to minimise the carbon formation and thus retard the period of decarbonisation. Normally a decarbonising job may cost about Rs. 75 and in such cases, you always come across something or other to be replaced and so on. So any retardation of the decarbonising period should result in good amount of saving in the

cost of maintenance. This can be achieved by using what is called an Upper Cylinder Lubricant marketed by the major oil companies. Generally half an ounce of this U.C.L. is added to each gallon of petrol. When the car is new or when the engine has just been overhauled, it would be advisable to use double the dose for the first 1000 miles. The use of the U.C.L. enables to loosen the carbon deposits in the combustion chamber so that they may be easily blown out with the exhaust gases. It also provides a sort of lubrication to the valves, which otherwise function almost dry. Due to the peculiar characteristics of petrol the valves get gummed up in due course and do not function properly. This will also be overcome by the use of U.C.L.

One such very effective U.C.L. I have come across is known as Redex. I have personally observed that using this in the usual way has retarded the decarbonising period upto and over 50,000 miles, while normally the same car without this U.C.L. would have required three or four decarbonisations within the same mileage. The cost of the

U.C.L. thus used would be far lesser than the costs of decarbonising which the motorists would have had to do otherwise. In addition to the saving in costs of maintenance as above, the engine generally remains in a far better condition than similar cars used without this U.C.L. And that is why I have given these facts for the benefit of those discriminating motorists who would like to have their car engines in top condition.

FOR DIESEL VEHICLES

While on the subject, I would like to add a few words in the interest of owners of vehicles fitted with Diesel Engines. The use of this Redex U.C.L. results in remarkable benefit. The one big trouble with diesel engines is that the injector nozzles often get choked due to gumming caused by the diesel oil, causing dribbling of fuel and black exhaust smoke denoting wastage of fuel. This is where Redex comes to the aid of the diesel engine owners and they will be surprised to find the injectors absolutely clean and free from any trouble by adding this to the diesel oil, just in the same proportion as to petrol.

Have you bought a new Car recently? Then, make use of the Defect Card

In June 1955, the Government of India instructed the manufacturers of automobiles in India to see that their dealers and sub-dealers prominently displayed and properly maintained complaint books in their service stations. The idea behind this move was to enable owners of vehicles to enter in such books any complaints they had to make about the working of their vehicles. Steps taken by the dealers and sub-dealers to remedy such complaints were also to be noted in the books.

Secondly, Government suggested to the manufacturers that, whenever a vehicle was sold by the dealers or sub-dealers, a blank vehicle defects report card should be supplied free of charge to the purchaser. If the buyer noticed any defects in the running of the vehicles, he would enter the defects in the card and send it to the Development Wing of the Ministry of Heavy Industries for further action.

It is understood that the manu-

facturers have issued instructions to their dealers and sub-dealers on the above lines. Nevertheless, they have been reminded once again about the usefulness of these measures.

Greater use by the public of these facilities would, in the opinion of Government, enable the manufacturers, on the one hand, to steadily improve the quality of the products and the buyers, on the otherhand, to have quick method of having any serious defects rectified.

Correct address, Please

MADRAS
The Deputy Commissioner of Police, Traffic and Licensing informs motorists that registration certificates and driving licenses should always contain correct and current addresses, as otherwise such documents do not reach the owners when posted after entries are made by his department.

Youth Auto Club

In the 16 years of its existence The Youth Auto Club of Moscow has taught many young people to drive motorcycles and automobiles. It is most popular among schoolboys, and its popularity is growing steadily.

The club admits pupils of the 8, 9 and 10th grades of secondary school. In order to qualify for a driver's licence students have to study hard and undergo painstaking training in the circles of the club.

As a rule the members learn to drive and handle the 'Moskvich', but many extend these studies to the 'Pobeda.'

There is a circle of young designers at the club, and the boys do not waste any time there. They have built an air-sledge and assembled a baby car which has successfully passed all the tests.

Stunt driving competitions are held at the club twice a year; the best young drivers are admitted to these contests.

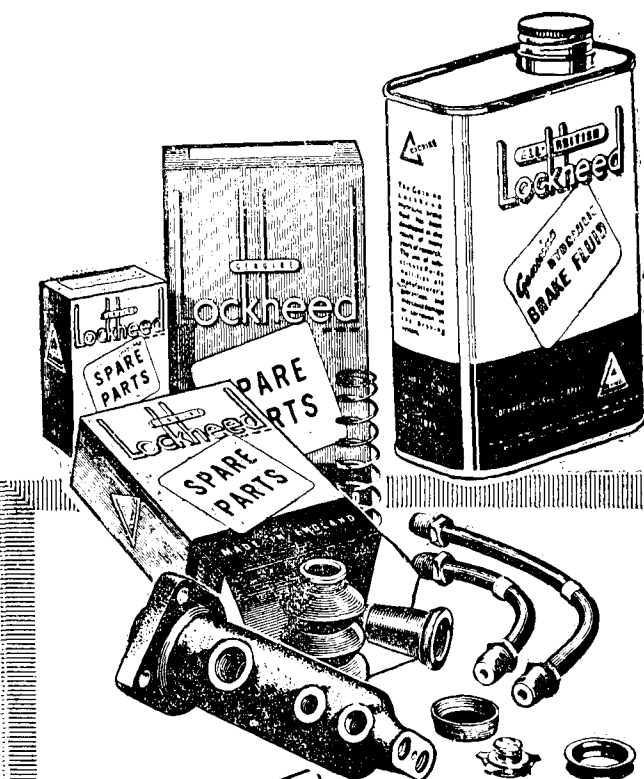
Summer means many interesting trips for the club members. How thrilling it is to motor along the roads which run past rustling forests and endless fields. These trips help to broaden their knowledge of geography, of the flora and fauna of their country, its towns and villages, architectural memorials and museums.

The young drivers acquire greater skill and experience; during the trips they can test their ability to handle the car and make minor repairs *en route*.

The automobiles of this club have covered many miles on the roads of various Soviet republics. In fact, they add up to tens of thousands of miles.

A short while ago members of the club undertook a long trip to Western Kazakhstan. Their way led through Kazan, the city where Lenin lived; they stopped at Gorky to see the big auto plant in that city, and at Zhiguli, the new town on the Volga. They brought back snapshots of tents, bonfires and interesting meetings on the roads. They even photographed the car when it got stuck on clay surface. They laugh when they recall the incident today, although at that time it was by no means a happy 'adventure'.

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PSAP-66

Use of colour on cars on the increase

PASTEL SHADES MORE POPULAR

LONDON

A new pattern of development in car colouring was evident at the 1956 International Motor Show held in London. Of the 291 cars on show, 121 were painted in two colours—a greater number than at any previous Show. The arrangements of these colours on the car bodies varied widely.

The practice of having one colour for the top and another for the lower portions of the coachwork, or having the midriff picked out in the second colour, is giving way to the application of the two colours in unorthodox but pleasing and, in some cases, startling combinations. Colour is, in fact, being increasingly used as an integral part of the design of motor car coachwork.

This use of colour on cars is a new departure in Great Britain. While the number of two-tones increased, there was no evidence of three colours being used on any one car.

This was the principal news from the latest of the annual investigations carried out by the Paint Division of Imperial Chemical Industries Ltd., who are the largest suppliers of paint finishes to the British motor industry. (The survey was confined to models on the stands of exhibitors. Although the colours used on cars at the Show do not necessarily reflect present-day public preference they may well be a guide to fashion trends in car colours of the future.)

In the majority of models, departure from orthodox two-colour schemes was confined to sweeping

" "



A closeup of the Rover Gas Turbine mounted on the rear of the "Car of the Future."

the second colour over the front and back of the wings. Other models showed a far more daring combination, using the second colour in small areas only. In a few instances, the second colour extended partly over the doors, so that each separate door was in two colours. One very spectacular model was almost completely finished in one colour, beige, the second colour, which was ivory, being confined only to the fluting of the rear fins. Other unusual schemes had bold masses of second colour.

ON THE DECLINE

The survey showed that fewer cars than ever were this year painted black. Only 4 per cent of the models at the Show were black, as against 8 per cent last year and 11 per cent in 1954.

BLACK IS NOT A FAVOURITE

PASTEL SHADES

Pastel shades were more popular than ever this year, not so much as straight colours but used as one or both in two-tone combinations. Almost all the 121 two-tone schemes included at least one pastel colour. Half comprised one pastel and one full colour and most of the remainder were all pastel. A point of particular note in this connection is that the pastel shades were brighter and cleaner than hitherto and included many more light and medium greys than was the case last year.

FULL COLOUR

In the full colours, there was a considerable increase in reds and maroons (49 per cent as against 31 per cent last year). Dashes of cherry red here and there at the Show made a spectacular display. There was also an increase in blues (27 per cent as against 19 per cent.) at the expense of greens and deep greys.

METALLIC FINISHES

Metallic finishes almost retained their position (10 per cent as against 11 per cent last year) through their increased use on cars other than British. Greys were most favoured amongst the metallics. Of the 291 cars on show 12 were black (4 per cent as against 8 per cent last year) and 279 were in colour (96 per cent as against 92 per cent last year).

An analysis showed that black has not been regarded as a full colour.

MOTORINDIA

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ON

TRANSPORT

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TOURISM

place to another, mostly for pleasure and sightseeing. Then there is an ever-increasing population of businessmen and travellers who combine pleasure with profit by relaxing at centres they visit and by arranging trips to nearest spots worth-seeing.

No visitor to Madras, whether he be a visiting statesman, politician, traveller or other, can call his visit to the city complete without a visit to some of the interesting places around here. The temples of South India offer subject for an enchanting study to the foreign visitor, and Madras city itself is proud of its temples, particularly in Mylapore. The sea shore in Madras is noted for its splendour achieved through its straightness and length, and the architecture of buildings on the foreshore lend beauty to the place. But the most important of all places of interest around Madras city is Mahabalipuram, and we give below a description of the place by Mr. J. M. Lobo Prabhu, I.C.S., a distinguished official of the Madras Government.

Visitors to Madras can have their fill of sightseeing in Chingleput district, which surrounds the City. If the time available is limited only to four hours, the best trip is Mahabalipuram, which is 33 miles, by Lattice Bridge road from Gandhinagar Colony of Madras. The road passes mostly through flat country, broken here and there by water spreads and casuarina plantations. Occasionally on rising ground may be seen the 'megalithic tombs' made of rock boulders in which before the Vedic period, the rich left their dead. The only interesting village on the way is Tiruporur, which has a temple on the hill led up by a hundred steps, commanding the prospect of the country for miles, and of the sea and the Buckingham Canal, which runs like a thread by the coast. Mahabalipuram rises like a cascade of rocks as soon as the Buckingham Canal is crossed by the bridge on it. This town of Seven Pagodas is the oldest storehouse of art and history in the country. The relics are the survivals of the Pallava culture, in its principal seaport town, from which took place, in the early centuries, the Indian emigration to South-East Asia (now Siam, Cambodia, Malaya and Indonesia). Of the ancient town, there are no traces, but the work in rock, which has survived, gives some idea of the stature of the people.

Rathas

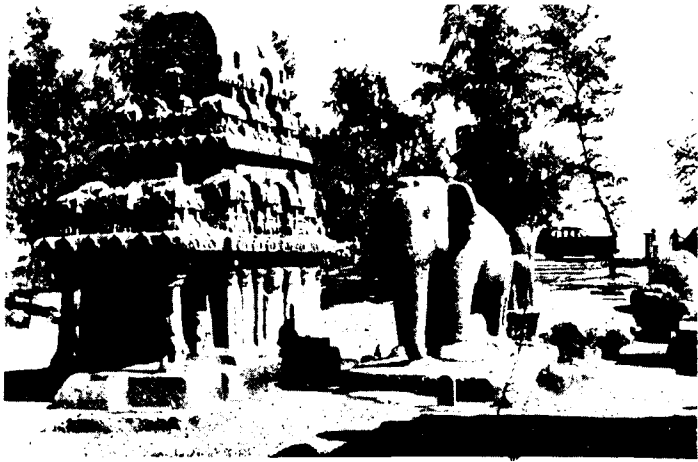
The visitor generally begins with the monoliths, five temples, called locally rathas carved out of the same rock standing like a family, which perhaps accounts for their being named after the five Pandava brothers. The highest and largest, carved from the top end of the rock, is the Dharmaraja ratha, which is in five tiers of finely wrought sculpture. The walls of the ground tier carry eight panels of which one, the combination of Siva and Parvathi in the same figure, exhibits perfect balancing of the masculine features and weapons with graceful female anatomical details and decorations. In the next tier, which can be reached by a ladder, the legends of Siva, Vishnu and Krishna are portrayed in beautiful and warm settings including the delightful figure of a woman with a flower basket, which it is difficult not to touch. In the second monolith, the

December 1956

6

MOTORINDIA

21



One of the Pandav Rathas (Chariots) at Mahabalipuram near Madras, dating back to the early Hindu Period of Indian History. This is hewn out of a single solid rock and contains sculpturally depicted scenes from the Epics of the Hindus such as the Mahabharata and Ramayana. Seen in the picture is a monolithic figure of an elephant in life-size.

Bhima ratha, the roof of which is shaped like the hood of a cart, the plastic wealth is less. The third, a replica, makes one linger in thoughts of lyric quality. The fourth chariot, probably the most elegant, contains a representation of Durga resting on the severed heads of a demon buffalo. The panels of this ratha represent the most sensuous achievement of the whole group. Shiva, Vishnu and the Pallava rulers, who architected these monoliths are seen in their most human attitudes. The fifth is close to a monolithic elephant of great dimensions, which it resembles.

After the monoliths, the caves scattered in and around the hill on which the lighthouse stands, contain temples of various gods. The Varaha cave representing Vishnu in the boar incarnation gently raising Lakshmi, as earth from the ocean, has a deep as well as sensuous suggestion. The Mahishasura cave standing nearest to the lighthouse shows on one side the goddess, eight-armed, riding a lion after killing the buffalo-headed demon, and on the other Vishnu on the coils of a five-headed serpent lying in the beautiful sleep of 'Ananthasayanam'. The second Varaha cave which has been obscured by a modern facade contains the most delicate sculpture of all, to be seen unfortunately by such light as the pujari of the temple waves. In addition to Varaha there is an utterly sensuous carving of Lakshmi, as she is bathed by two elephants, while her handmaids stand by. There are also two reliefs of the rulers with their two wives carved so finely that every line is alive and warm.

The third group is of scenes sculptured on large upright rock faces the outstanding ones being Krishna in a pastoral scene lifting mount Govardhan, while maids, delicately carved, look at him with affection, and Arjuna doing penance with multitudes of men, gods and animals in the same attitude sculptured over an area exceeding a thousand square feet. Nothing equal to the beauty of the Krishna picture or the wealth and realism of the Arjuna scene can be found anywhere on rock. The expression of the cow licking its calf when it is being milked in the Krishna sculpture and of the cat, which ignores mice as it is doing penance in the Arjuna sculpture, give some clue to the meticulous

perfection of the artists' imagination and skill. Every one of the hundreds of faces sculptured has its own expression.

The Shore Temple

In the fourth group are temples, the most important being the shore Temple, which is similar to the Pallava temple in Kancheepuram, and believed to be the last of the Seven Pagodas; the other six being under the sea, now to be seen as heaps of rock when the tide retreats. The temple makes a wonderful silhouette against the sea, its rocky masses piling up against the waves and the clouds. To the Pallavas leaving their shores for new lands, the temple probably held the last message from their home.

Mahabalipuram, in the two square miles on which it stands, is another world. The sculpture which survives is not only evidence of the skill and patience of the Pallavas, but of their sensuous and varied thought. Each of the sculptured figures has individuality of form and expression. The lines of the female figures are more exciting than anything even in modern sculpture. The stories rendered cover the greater part of the Vedas. If men did so much for their gods, what they did for themselves can be guessed, though nothing now remains of it. After Mahabalipuram one does not wish to see more.

RUSSIA

introduces privileges for the TOURIST

Moscow

Recently Soviet tourists visited most of the West-European countries. They saw the sights in France, England, Austria, Finland, Sweden, Norway and all of the European People's Democracy, as well as China and Korea. A group of Soviet tourists is now travelling through Mexico.

Certain privileges have been introduced to encourage foreign tourists to travel in the USSR. Thus, the foreign travellers are granted a free trip between any two cities on their itineraries (for example, while in Leningrad the tourists may take a free trip to Moscow) a 50-75 per cent discount on railway fares while travelling from the USSR state border to the first point of destination and on return from the last point to the border; each foreign tourist is given 25 rubles a day for personal expenses.

The number of foreign tourists coming to the USSR is expected to increase several-fold in the nearest future.

Indian tourists in Moscow

Moscow

The first group of Indian tourists arrived here recently on board a regular plane from Kabul. They are scheduled to see the sights and historical monuments of Moscow and go to Leningrad. They will return to Moscow and go to Tashkent and from there will leave for home.

Two more groups of Indian tourists are expected here shortly.

Much travelled housewife

WASHINGTON

The housewife now is America's leading overseas traveller. The U.S. Passport Office reported that housewives received 27.5 percent of all passports issued or renewed in the first nine months of this year. This was by far the largest group. Students were second with 9.4 percent and clerk-secretaries third with 5.6 percent. Women travellers also outnumbered men, getting 56.3 percent of the passports.

Across the Himalayas in

6 hours

NEW DELHI

The IAF 'Meghdoot' Ilyushin aircraft had successfully established an India-Tibet air link during a proving flight recently.

A new Trans-Himalayan route was selected for its return journey from the Tangshuang airfield beyond Lhasa in Tibet overflying Gyantse and Bagdogra. The homeward flight to Palam was completed without a stop *en route* in less than six hours.

Giving his impressions of the India-Tibet proving flight across the Himalayas, the leader, Group Captain Ranjon Dutt, in an interview said: "The first major point of interest was the Yamdrok lake at a height of 16,000 feet above sea level.

After having flown for two hours, the IAF airmen saw the Gya Chu which joins the Brahmaputra, and the town of Lhasa. The most noticeable landmark was the Dalai Lama's Potala Palace which stood out as a massive and magnificent structure of masonry from the surrounding town. All mountains were covered in snow but the countryside itself was very dry and wind-swept."

They hardly noticed a single tree and the only thing that seemed to grow in that rocky wilderness was a coarse kind of grass on which lived the hardy Yak which is the backbone of Tibetan economy.

Passenger amenities on

Soviet Railways

The longest train runs in the world are found in the Soviet Union. It is more than 9,000 kilometres from Moscow to Vladivostok and the trip takes nine days. And it takes four or five days to cross the country from North to South. Railwaymen try to ease the burden of the long trip, to make the trip interesting.

To give an idea of how passengers are served in the Soviet Union we give our readers the story of a recent trip.

The train left Vladivostok for Moscow in the evening. Like all through-trains it was made up of comfortable all-steel coaches. Silk curtains and plush blinds are hung on all windows in the compartments and corridors, and snow-white large napkins cover all small tables. Besides the usual ceiling and table lamps there are adjustable night lamps at the heads of the berths. Soft runners lie on the floor, and mirrors are fitted into the doors. Fresh air is forced into the coaches by artificial ventilation.

As soon as the berths were made up and passengers were ready to go to sleep, the announcer's voice came over the loudspeaker:

"Citizen passengers! Your train has a crew of trainmen, who will be found in compartment 1, coach 5."

There is a dining car and tea, biscuits and rusk could be obtained from trainmen. On sale also are drugs, soap, toothpaste, and so on. Passengers can get free of charge sets of chess, checkers, dominoes or books to read, including children's books. Then began the relaying of broadcasts to the compartments.

The trainmaster was instrumental in arranging a chess tournament for passengers. Once, at the suggestion of music lovers it was decided to organize an amateur concert over the train radio, and the concert proved a great success.

Thus several days passed. Then one day, suddenly the voice of the trainmaster came over the loudspeakers:

"Citizens! There is a very sick little girl in Coach 5. She has a high temperature, and she needs medical attention at once. It'll be an hour before we get to the next station where a doctor could see her. If there are any doctors on the train, I would ask them to come to coach 5."

Immediately three doctors and a professor appeared in coach 5, and the little girl received the needed help.

Of late, radio and telegraph are being used more than ever before to improve services to passengers.

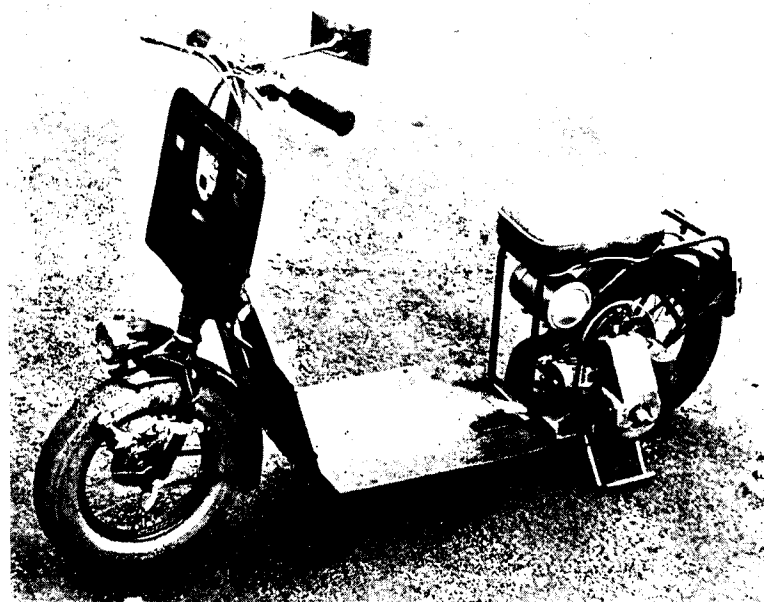
Many through-trains have special service sections where passengers may have clothing mended, suits or overcoats pressed, shoes shined, and even have a suitcase, bag or umbrella fixed.

If your destination is a port town, from where you plan to continue your journey by boat, you may buy your steamer ticket in your own coach from the travelling ticket agent on the train. Similarly one travelling by steamer who wishes to continue by train from a certain place, can buy his railway ticket from the travelling agent on the ship.



Mummy has a Vespa and the daughter the new small scooter—only the big one is much more complicated.

With a Motorscooter to School!



With a motorscooter to school : speed 20 m.p.h.
¾ pint of petrol for 100 miles !

Motor Scooter for Children !

A new motor scooter for children has been introduced in Germany, quite handy for children to go to school, this little scooter weighing just 6 pounds, has a speed of 20 m.p.h. and gives 100 miles for just ¾ pint of petrol.

The children scooters has no parking problems, and can be easily carried by the child.

In one family the Mummy has a Vespa and the daughter has the new children motorscooter. While the latter is quite simple to operate or carry, the former has more complications in comparison.

The happiest child in Europe today is Edda, the little daughter of the inventor who has got the first scooter.

This is only the beginning, says the inventor, Mr. Georges Mack from Stuttgart, Germany. He is now busy drawing plans for a new scooter for adults which will have no gears and no clutch. The price will be only £40 compared to present rates beginning from £100. (Copyright—Lens).



This is only the beginning, says inventor George Mack of Stuttgart, drawing plans for new Scooter for adults, with no gear and clutch. Expected price £40.

'The Elegant' introduced in many centres

Improved Version of the Fiat 1100

MADRAS

An improved version of the Fiat 1100, called *The Elegant*, was introduced to the press and public during the last week of November at various centres in India. Suitable demonstrations were held in all the centres and the press was given demonstration rides.

At a well-got-up function at the Governor's pavilion of the Cricket Club of India at Bombay a representative gathering of pressmen gathered to hear interesting details of the new model from the firm's Sales manager. Mr. S. S. Gupte, Publicity Officer of Messrs Premier Automobiles and Mr. Makijani of Messrs Bombay Cycle & Motor Agency Ltd., local distributors, welcomed the guests and explained the salient features of the car.

At Madras, pressmen were invited to a preview at the premises of Sundaram Motors Ltd., when Mr. T.S. Santhanam, Managing Director of the firm, said that details of registration of cars this year showed that the Fiat was the first choice of motorists ; in fact they had a waiting list of buyers. Mr. Santhanam referred to the fund of experience that the Fiat firm made available to Premier Automobiles in the progressive assembly and manufacture of the car in India.

Mr. R. Ratnam, director of Sundaram Motors, said that the *Elegant* had a number of new features with no additional cost. Answering questions Mr. Ratnam said the Indian content of parts in the *Elegant* had increased compared to the previous Fiat 1100.

At Madurai, there was a similar demonstration and preview at which Mr. T.S. Rajam, Managing Director of T.V.S. & Sons, said that since its introduction in 1954 the Fiat had achieved unprecedented popularity all over the country. The Fiat also achieved successes in two reliability trials in Western India and smashed

all previous records in its 20 hrs. 7 minutes Calcutta-Delhi run over 895 miles.

The car was demonstrated by Mr. V. Bashyam, sales manager.

Salient Features

The following is the manufacturer's description of salient points in the new *Elegant* :

"*The Elegant*" brings to you many new improvements never before included in a car of this size.

The graceful body lines of the 1100 have proved their appeal and are therefore retained. But the impressive list of its new improvements makes it a new car inside as well as outside.

The grille is redesigned to add elegance to beauty. It is made of bright stainless metal with an inset fog-light.

The newly designed parking lights accentuate the width of the Car.

Additional flashing trafficators, are fitted above the new side mouldings on front wings.

Wind deflectors for the rear doors as well as on the front doors.



Elegance looks at "the Elegant's" fog light.

Front doors too have arm-rests as on the rear ones.

Easily operated new windscreen sprayer cleans the large windscreen.

Instrument panel has many new features. The linear scale speedometer is more convenient to read at a glance. New glove box with a lid is conveniently located on the left side.

Safety rubber mouldings protect against impact on sudden braking.

Rear seat folds down flush with the floor giving plenty of luggage space extending from the rear of front seat to the rear end of the Car.

Additional space is provided for light articles in the document carrier fitted to the back of front seat.

Spare wheel is housed under the luggage boot floor, giving ample space for luggage.

The boot lid is of self disengaging type.

Increased Horsepower from 36 to 40 HP improves the performance of the car. Compression ratio is increased from 6.7 : 1 to 7 : 1. Inlet and exhaust manifolds are improved.

Greater flexibility is achieved through improved springing system.

TECHNICAL DATA

Engine : 4-cylinder. Capacity : 1089 c.c. Bore 68 mm. Stroke 75 mm. Compression ratio : 7 : 1. Maximum h.p. 40 at 4400 r.p.m. Cast-iron cylinder block. Aluminium cylinder head with valve seat inserts. Three-bearing counter-balanced crankshaft. Overhead valves. Water-heated inlet manifold. Downdraught carburettor with starter, air intake with felt filter and silencer. Fuel supplied by mechanical pump. Forced lubrication with gear pump ; by-pass oil filter. Cooling water circulated by centrifugal pump and thermostat control. Battery ignition. Electric starter. Engine, clutch and gear-box assemblies mounted on spring and rubber blocks.

Clutch : Dry, single plate on flexible hub.

Gear Box : Four speeds and reverse. Constant meshing in second and third gears. Ring synchronisers on second, third and top speeds. Aluminium gear box. Gear lever situated under steering wheel.

Transmission Shaft : Tubular, with joints at the ends.

Rear Axle : Of stamped sheet steel, with hypoid bevel crown and pinion: ratio 10/43. Assembly supported by cast-iron bracket.

Front Suspension : By swinging arms coil springs and hydraulic telescopic double-acting shock-absorbers and stabiliser bar.

Rear Suspension : By leafsprings with hydraulic, telescopic, double-acting shock-absorbers and stabiliser bar. Additional resilient buffers acting directly on the springs.

Steering : By worm and roller, with independent, symmetrical track rods to both wheels, with centre section operated by the steering wheel.

Hydraulic Brakes : on all four wheels, parking brake on the transmission, operated by lever near front seat.

Petrol Tank : At rear, under body floor ; capacity 38 litres (8½ Imp. gall).

Disc Wheels : With 3½ J rims, and 5-00-14 tyres. Spare wheel under luggage boot floor.

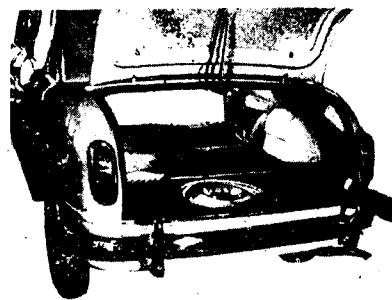


Back of "the Elegant's" front seat provides seat for magazines.

Integral Construction : Wheelbase 2.34 m. (7' 8"). Front track 1.23 m. (4' 0"). Rear 1.21 m. (3' 11½").

Electrical Equipment : 12-volt, 180 Watt dynamo, with 40 amp. battery. Three-light headlamps. Rear, parking, direction-indicator and stop lights, prismatic reflectors. Front direction-indicator and stop lights, prismatic reflectors.

Front direction indicator lights. Number-plate light. Two colour flashing light direction indicators. Centrally fitted antifog lamp. Interior lights. Electric horn. Parking lights, headlights and dimmer operated from under steering wheel. Flashing light indicators operated from steering wheel with automatic cut-out when steering wheel returns



The step-knee has a special flat under the luggage boot.

to straight-ahead position. Parking lamp also illuminates engine compartment. Light on driving mirror switched on by opening driver's door. Ignition and direction indicators operated by key. Main switch for driving lights. Twin electric windscreen wipers with automatic parking of blades. Combined speedometer and mileage indicator.

Spray-type windscreen washer pump operated by press-button.

The above details relate to the Fiat 1100 which is now being progressively manufactured by Premier Automobiles in conjunction with the Italian Fiat Company for some years. But Fiats, in Italy, have a number of models for different uses, and it is quite likely some of these models may, in the not too distant future, be manufactured, also progressively in India.

Judging from the International Motor Show of Turin early this



Back seat folds to become additional luggage space.

year when 450 exhibitors from 13 countries displayed 64 of their latest models—and Fiats displayed all their basic models in two distinct groups which included novelties—Fiats have made a remarkable progress in the manufacture of automobiles, almost in keeping with the Italian tradition of winning most of the fast car racing events in the world. For the benefit of our readers, we give below details of the various models of Fiats :

The 600 convertible

The 600 represents an unprecedented success for the Italian auto-

mobile industry. This great success of the modern, small utility FIAT grows and extends with the completion of the 600 range : after the four-seater saloon and the six-seater "multipla" (all service) dual purpose car, comes now the 600 convertible, which is the four-seater model with a sunshine roof.

As was the case with the 500, the convenience and pleasure of being able to travel in the open 600 forms a great attraction in fine weather, even in winter. In fine weather the 600 convertible can be opened to let in air and sunshine, affording coolness and full visibility from all the four seats and increasing the enjoyment of the landscape. The roof is easily opened and closed from inside the car, thanks to its modern and practical design. When closed the roof is perfectly rainproof.

The finish and trimmings of the 600 convertible have been improved and white wall tyres are standard equipment.

The 600 taxicab

A novelty is the 600 "multipla" with a taxicab body. The "600 Taxi" is a real "big little taxi", not only because its initial cost and operating expenses are low (minimum fuel consumption, minimum maintenance charges), but because it is sufficiently roomy for four passengers (besides the driver) and luggage. This economy and utility value is advantageous not only to the taxi fleet owner, but also to the public, which will thus have at its disposal a quick, nimble vehicle that can dart swiftly through city traffic.

The demonstration models

In the middle of the 600-1100 section of the FIAT comes the "multipla". The "multipla" incorporates convertibility of interior arrangements from a six-seater to a car with ample loading space for goods and articles, the rear seats folding down to form the loading platform and rising up again to once more form a six-seater car.

The power unit of the 600 as well as the front suspension of the "multipla" are noteworthy.

The new 1400 and the new 1900

These two FIAT models of European class were shown for the first time at the Turin Show in their new editions : 1400-B and 1900-B, which are improved and more powerful versions of the original models. Both the mechanical parts and the bodies have been improved, to the advantage of overall performance.

The engines are more powerful : that of the 1400, which was 50 h.p., has been stepped up to 58 h.p. ; that of the 1900 from 70 to 80 h.p. Consequently, the top speeds have also risen (respectively, 84 to 90 m.p.h.) ; and acceleration is more brisk.

The design of the gearbox, suspensions, steering, brakes and starting motor, etc., has been improved in detail and there is a larger assortment of useful accessories.

The inside and outside finish of the 1400-B and of the 1900-B bodies show progress in fine appearance and styling. The luggage boot is roomier. A notable detail is the variety and harmony of the colours in the duo-tone body finish.

As is known, the 1900 differs from the 1400 inasmuch as it has a hydraulic coupling (fluid drive) which reduces to a minimum the need to use the clutch and gearbox and makes driving easier and very pleasant. The fitting of the hydraulic coupling to the 1900 was one of the first applications made in Europe to a stock production model.

The 1900-B was also exhibited in the "Full-Light" version, a very fine body of marked distinction.

The 1400-B was in two versions : with petrol engine and diesel powered. The diesel engine has been made more powerful, 43 instead of 40 h.p. Speed is 62 m.p.h. and the engine is quieter running than it was before.

In their new editions the 1400 and the 1900 will enjoy still greater success in Italy and abroad, where they have an excellent reputation.

Commercial Vehicles

At the Turin Show FIAT'S stands of commercial vehicles derived from touring models and of lorries and buses were no less imposing than the car stand. With an average

daily production of more than 1,000 motor-cars a day—which is one of the highest output figures in the whole of Europe—FIAT'S production of commercial vehicles is also increasing and considerable technical progress has been achieved in reducing the running costs of goods and passenger vehicles. This means increased utility as well as greater reliability and comfort.

In the group of derived cars, the 1100-1 (industrial) was shown in various versions : with cab only, as a van, light lorry and station wagon. The good qualities of the model 1100 confer also on the versions, for commercial and industrial use, advantages of great practical convenience.

In the diesel engine lorry section the FIAT range is one of the richest. From the one-and-a-half-ton capacity of the 615/N (lorry and van) upto the bigger load capacities of the 639, the 642, the 671 and the powerful 682. These larger trucks have more powerful engines, mechanical improvements and re-designed, more comfortable and better equipped cabs. The 639 is a four-wheel drive model. The 682 is also available as a tractor for semi-trailers.

In the motor bus and motor coach sections FIAT showed just as rich a range of load capacities and bodies : models 642 and 682 have been improved ; the 306/2 is a magnificent vehicle which was shown in the "grand tourisme" version. For town transportation the medium 404 and the larger 411 bus and the 2411 trolleybus are shown.

Fiat liquid gas engine

On the commercial vehicle stand FIAT showed a particular novelty : a liquid gas engine. It is a 6-cylinder, 200 h.p. engine with a total cylinder capacity of 10,676 c.c. and a compression ratio of about 8 to 1. It is particularly useful for powering lorries, buses and tractors.

As is known, liquid gas is a mixture of hydrocarbons (propane and butane) which are by-products of petroleum distilling. It is an economical, almost odourless, anti-detonating fuel which gives very high power, superior, cylinder volumes being equal, to that of diesel oil. Besides the advantages of high power it has also that of quieter running

than diesel engines ; a considerable advantage in urban vehicles which have to work in ever thickening city traffic. The use of liquid gas in motor vehicles therefore represents a practical convenience likely to promote the development of motorisation. The development of this application will depend, from the standpoint of fuel economy, on the subsidized price of liquid gas as compared with that of diesel oil.

Of course, the engine must be adapted to the new fuel by fitting a special device. FIAT has attacked this problem and solved it with this liquid gas engine, which is a technically and practically interesting novelty.

Great Triumph of the Fiats

FIAT cars have acquired the habit of making victorious runs from one end of Africa to the other, crossing the Sahara. In 1951-52 Butti and Racca, in a "Campagnola" made the run from Algiers to Cape Town and back, setting up on the return journey, a record of 9,320 miles covered in 11 days, 4 hours and 54 minutes. In 1953 Martignoni, Robbezzana and Mazzuchelli won the Algiers Cape Town Rally in a FIAT "1900".

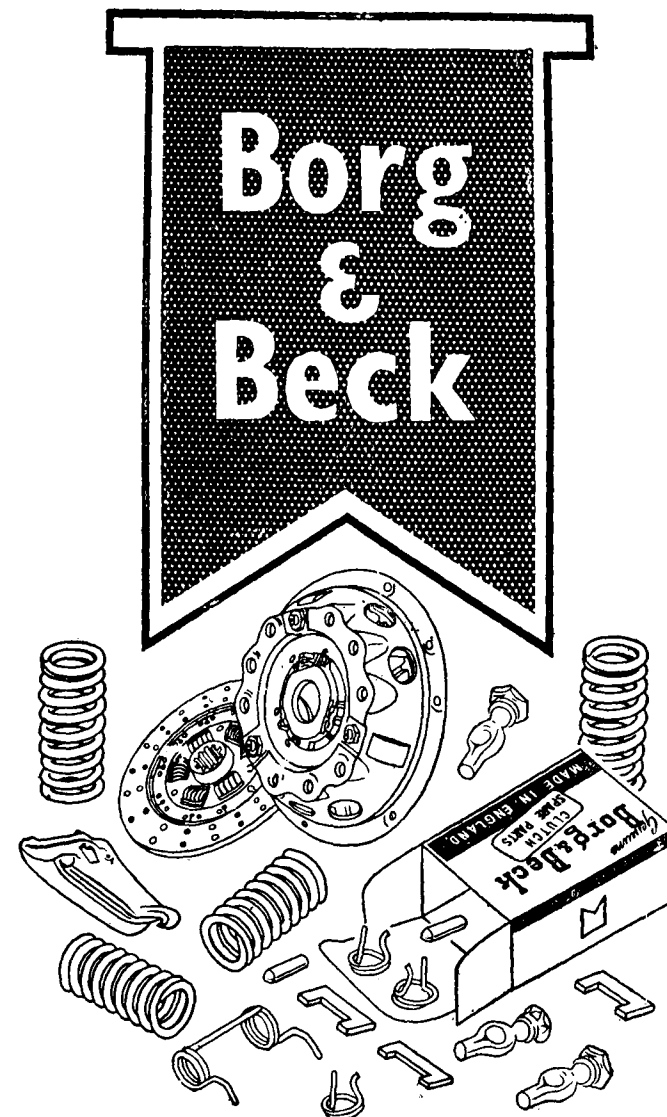
Now Martignoni has caught the African "fever" again and has scored a new triumph—with the Swiss Schwar as his relief driver—in a "1100 TV" in this strenuous Rally. He tied for the absolute first place with a Ford Custom driven by the Canadian Holdeman. The "1100 TV" has a cylinder capacity of 1,089 c.c., while the Ford Custom is of 4,500 c.c.

Six cars started from Cape Town. Only two, the "1100 TV" and the Ford Custom, won through to Algiers.

Martignoni left Cape Town on January 11th last, arrived at Algiers on February 25th, having covered 8,700 miles in 37 stages. From the muddy veld of South Africa and Rhodesia, Martignoni's "1100 TV" scaled the Tanganyika mountains (8,000 ft.), and then followed the gruelling Sahara stages.

The car behaved magnificently, but Bruno Martignoni was down a stone and a half in weight.

Now freely available !



CLUTCH SPARE PARTS

Manufacturing Concessionaires in India :
**AUTOMOBILE PRODUCTS
OF INDIA LTD.**
BHANDUP, BOMBAY 40.

PSAP-67

MOTORINDIA

December 1956

Himco chief in Madras

Mr. K. R. Anand, Chairman of Himco (India) Private Ltd., who had recently been on a world tour, was in Madras on a business-cum-organisational visit.

During this trip Mr. Anand made arrangements for reorganisation of his factory which has just gone into production at Guindy, on the lines of modern factories he recently visited in Italy, Germany, England, America and Japan.

Mr. Anand told *Motorindia* that modern manufacturing technique, production methods and quality control will result in the production of better Himco products.

Taking advantage of the visit of Mr. Anand, Mr. Inder Sain of Upper India Trading Company threw a dinner party in his honour when prominent members of the spare parts trade responded.

The photographs on this page were taken on the occasion of the dinner given by Mr. Inder Sain in honour of Sri K. R. Anand, Chairman of Himcos during the latter's visit to Madras. The photo on top right shows the host and the chief guest with Mr. L. L. Narayanan, President of the Motor Vehicles and Allied Merchants' Association and Mr. V. Kunjilapadam, President of the Madras Motor Parts Dealers Association.



December 1956

Social & Personal



The dinner photos show among others Mr. Vasudevan, Mr. Mohan-krishnan, Sardar Manohar Singh, Mr. V. A. Shenoy, Mr. Inder Sain, Mr. Grover, Mr. Kalyanpur, Mr. Gian Singh and Mr. Chandok.

MOTORINDIA

29



Photo taken at the Press Conference of Mr. L. W. Robson, Chairman of Henry Meadows Ltd., shows R. to L. : Mr. P. Mathen, Director, API Ltd., Mr. Robson, Mr. M. A. Chidambaram, Chairman, API Ltd., and Mr. C. V. Ekambara Sastri.

Meadows engines to be manufactured here

MADRAS

Messrs Automobile Products of India Ltd., of which Mr. M. A. Chidambaram is the chairman, proposes to progressively manufacture Meadows diesel engines at their factory at Bandup, Bombay. In 1957 they are expected to assemble the engines with 75 per cent of parts imported and 25 per cent of Indian-manufactured parts; in 1958 the ratio will be reversed to include 75 per cent of Indian manufactured content in the engines; and in 1959 the entire engine will be Indian manufactured.

This was revealed in Madras by Mr. L. W. Robson, Chairman of the Associated British Engineering Company Ltd., and Henry Meadows Ltd., to pressmen who gathered at Hotel Connemara at the invitation of the Chairman of Automobile Products of India Ltd.

Mr. Robson, who is one of the top industrialists of the United Kingdom, is also a prominent political figure in Britain, having been leader of the Liberal Party in that country. He is now on a visit to India, and at Madras he was the guest of Mr. M. A. Chidambaram.

Mr. Robson disclosed that every year at least 3,000 Meadows diesel engines will be available for the

Indian Market through M/S. Automobile Products, who were now in the process of building up a plant for production purposes.

He added that the object of his visit to India was to study the possibility of arranging for indigenous manufacture of Meadows automotive engines. It was his view that the standard of living of people in a nation could be judged from the average electrical or mechanical horsepower of engines in the country.

The guests were welcomed to the function by Mr. P. Mathen, Managing Director of Automobile Products of India and Mr. C. V. Ekambara Sastri, of Sastri's Advertising.

Mr. D. G. Stokes in India

MADRAS

Mr. D.G. Stokes, the much-travelled general sales and service manager of Leyland Motors Ltd., has arrived on an extended tour of India.

The focal point of the tour will be Madras, where Ashok-Leyland Ltd., is undertaking the progressive manufacture of Leyland Diesel trucks, one of the best-selling export lines in the wide range of Leyland vehicles.

In his additional capacity of director and general sales and service manager of Albion Motors Ltd., and Scammell Lorries Ltd., Mr. Stokes will now be able to offer the widest range of vehicles of any commercial vehicle manufacturer in the world.

Manufacture of road-rollers

BOMBAY

"Tractamount" road-rollers will soon be manufactured in India by Kamani Engineering Corporation Ltd., under licence and in collaboration with E. V. Twose Ltd., of Tiverton, England.

This was announced at a press conference in Bombay by Mr. E. R. Tope, Chief Designer and Works Manager of the British firm, who is the original inventor of the new roller.

Another landmark of this project is the introduction of "sheepfoot Rolls" which will be interchangeable with all standard rear flat rolls on the heavier models, Mr. J. S. Pherwani, Kamani's Works Manager, announced at the conference. "Tractamount" is unique in that it can be converted into the first self-propelled Sheepfoot Roller in India.

He added that the rollers were already in great demand not only in India but also in other Asian countries.

Mr. Tope disclosed that the roller was originally invented to roll a cricket pitch, and said that "Tractamount" was proving popular in almost every country in the world and that his company was unable to meet the demand.

Major D. T. Brown, Technical Consultant and Liaison officer of the British firm, said, that considering that internal communications were retarding India's progress, "Tractamount" should be considered a national asset and it would save a lot of foreign exchange.

Trailer factory for Madras

MADRAS

A factory has just been started in Madras by Messrs Mahindra and Mahindra Ltd. for the manufacture of Jeep and tractor trailers. This factory is expected to produce at least 200 trailers annually, according to present schedule.

The starting of this factory is to meet the additional demands for such trailers in this area. Mahindras have already their main factory at Poona where such trailers are being manufactured for sometime now.

Liberalise permits and reduce taxes

International Road Federation Official's Advice to India

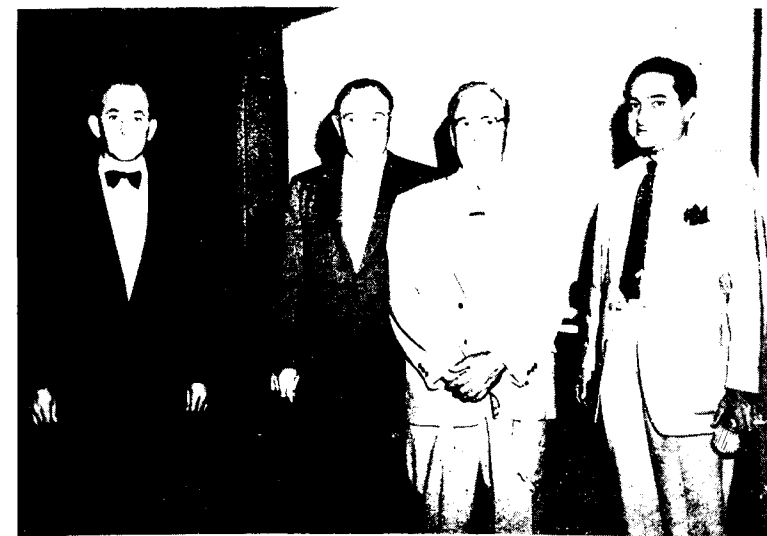
MADRAS

The need for making the optimum use of roads in the country by liberalising the issue of permits and reducing the taxes, was stressed by Mr. W. G. Kennedy, Secretary of the International Road Federation Limited, London when he spoke to Pressmen on his arrival in Madras in the course of a study tour of Indian road development conditions.

Mr. Kennedy who was received by Mr. M. V. Venkataraman, Chairman of the Indian Institute of Road Transport, Madras and others, emphasised that in any scheme of planning transport should have its proper place, as the demand for transport increased along with development in other spheres and increased production. Proper, timely steps in this regard was absolutely necessary to avoid transport bottlenecks.

His association felt that restrictions on road transport were not conducive to economic operation, and they were anxious that the cost of transport operation be reduced. The Government would do well to consult engineers and increase the number of permits for vehicles to a reasonable extent.

The International Federation has 50 member-countries and operated through headquarters at London, Paris and Washington. One of the points engaging their attention in the international organisation was the lack of technical knowledge in the roads field and some countries suffered from lack of personnel. The Association felt that it could help by giving training facilities, particularly special post-graduate training for qualified engineers. To that end, the Durham University had started a one-year course in highway engineering and traffic survey, with a view to spreading the latest scientific advance on the subject.



Mr. F. E. J. Edwards, Managing Director, Muller & Phipps (India) Private Ltd., Mr. E. R. Broderick, Vice-President, Muller & Phipps (Asia) Ltd., Mr. H. C. Sauer, Timken Roller Bearing Co., U.S.A., and Mr. Ayas S. Peerbhoy, J. Walter Thompson Co. (Eastern) Private Ltd.

Timkins Boss in India : Mr. Howard C. Sauer

BOMBAY

One of those many foreigners who are extremely confident that India is fast becoming one of the world's largest industrial countries, is Mr. Howard C. Sauer, General Manager of the Export division of Timken Roller Bearing Company. In fact this belief has prompted Mr. Sauer, who was here in India only in 1955, to make his present visit to this country.

Mr. Sauer who joined the Company in 1923 as a salesman and rose to this position, told Indian pressmen who assembled to meet him at the Princess Room of the Taj Mahal Hotel in Bombay at the invitation of Messrs Voltas that Timkins were now selling bearings in all parts of the world except behind the Iron Curtain. He is now accompanied by Mrs. Sauer for whom this is the first visit to India.

Guests at the reception were received by Mr. Talyarkhan of Voltas and Mr. Ayas Peerbhoy of Walter Thompsons.

Asked about the possibility of manufacture of Timken bearings in India in the near future, Mr. Sauer said that the chances were slim. It was because that notwithstanding

the popularity of the bearings, the demand did not justify the possibility. The fact was, once fixed, timken bearings gave almost lifetime service, and there was no need nor demand for replacement.

Private Sector has new scope - Says U.S. Researcher

MADRAS

Mr. Harry Robinson, a research economist who has been touring India under the auspices of the Stanford Research Institute of California and the Ford Foundation, and who has visited many other countries in the East recently, has expressed the view that private enterprise has been given a new opportunity to justify its existence in socialistic India and its future will depend upon its good behaviour during the immediate years ahead.

Mr. Robinson however thought that the possibility of increased foreign private investments would have materially enhanced had the 1956 Industrial Policy Resolution of the Government been more specific in defining the nationalisation policy in more general terms as well as in terms of specific interest to the foreign investor.

He expected negotiations to begin soon between India and the ICA to establish an investment guarantee programme.



Mr. C. L. Nayar, Mr. Chalapathy Rao and Mr. S. R. Sethupathi at the opening of the Service Station.

Modern filling service station on Mount Road

MADRAS A modern filling-cum-service station with Burmah Shell 'E' series buildings, the first of its kind in the city, with servicing facilities has been opened next to the Automobile Association of South India buildings on Mount Road.

The petrol and high speed diesel pumps were declared open by the Hon. Sri Shanmugha Rajeswara Setupathi, Minister for Public Works, Madras in the presence of a select gathering of motor owners and others. The pumps are operated by Messrs Southern Agencies who are already Burmah-Shell dealers.

Among the opinions expressed by the visitors on the occasion were the following :

Sri Shanmugha Rajeswar : "It is built on modern lines with certain amount of amenities which one does not find anywhere else."

Mr. N. R. Ramsay, Branch Manager, Burmah-Shell offered his good wishes for the future prosperity of the enterprise, and Mr. J. T. Holland, Sales Manager, Burmah-Shell said that "the station has had a most auspicious start".



A view of the service station on the day of the opening.

Tata-Mercedes-Benz after Sales Service Training of Dealers' Personnel

The Automobile Division of Telco has been taking great pains to organise efficient after-sales-service to ensure that Tata-Mercedes-Benz vehicles give to their owners the long and trouble-free service they are capable of. The most important part in the service set-up is played by the dealers and therefore, much attention is devoted to training the dealers' personnel in the proper maintenance, servicing and repairs of Tata-Mercedes-Benz vehicles. State Transport bodies and large fleet-owners have their own Workshops and service organisations, and the personnel of these also is similarly trained.

The first training class for such "students" was held early in January 1955, barely two months after the first vehicle came off Telco's assembly line. Since then up to date nearly 250 persons have been given the necessary training: about 100 sent up by the dealers, 75 by the State Transport Organisations, and another about 75 by large customers.

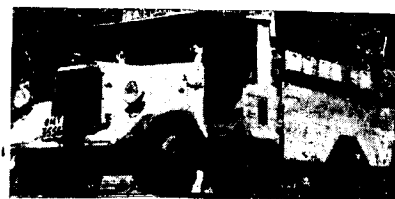
About 20 training courses are

held in a year. Each course begins with acquainting the trainees with the process of manufacture of Tata-Mercedes-Benz vehicles and with the



working of the different shops of the plant. This is followed by practical training in the use of special tools and equipment and in the dismantling and re-assembling of the different major and minor assemblies (engine, gear box, differential, brakes, etc.). Great attention is paid to ensure that in this process the trainees use the special tools correctly and fit the parts properly with the correct tolerances. On the theoretical side the principles underlying the working of the different parts are explained to the trainees with the help of cut-away models, charts and books.

The personnel thus equipped see to it that the customers get complete satisfaction in the operation of their Tata-Mercedes-Benz vehicles.



"7,50,000 miles and only one rebore" is the creditable performance of this 1935 model Mercedes-Benz truck, which is claimed to have given regular service, by the owner, without any major breakdown.

Mile-a-minute endurance test for B.M.C. cars

Twenty-five thousand miles at an average speed in excess of a mile a minute on German Autobahnen—that was the achievement of a team of B.M.C. test drivers who were given the task of establishing in a practical manner the 'endurance factors' of the mechanical improvements included in the Corporation's 1957 models.

Briefly, the engine size of the Austin A30's and Morris Minors has been increased from 803 to 950 c.c. while in most of the popular models compression ratios have been raised to a standard of 8.3 to 1 to give additional 'power in the driver's pocket' from the point of view of more lively acceleration through the gears, and as a result of a more thermally efficient engine, greater economy in petrol consumption throughout the same speed range.

The cars tested were Austin A30's and Morris Minors and an Austin A50 and Morris Oxford, all mechanically prototypes of the models to be announced, although the bodies were the same as those in use today.

The target set was to attempt to average 60 m.p.h. for 20,000 miles, but when this had been achieved, the vehicles were running so smoothly that the crews volunteered to continue for a further 5,000 miles.

The Autobahnen selected were those from Stuttgart to Munich—a return distance of 260 miles, which was frequently covered by all cars in only four hours and ten minutes—and the shorter Stuttgart to Heilbronn run.

To make the project feasible in the short time available, each car travelled a distance of between 600 and 800 miles each day, starting at 5-30 a.m., a minimum of two shifts a day, six days a week being averaged, which towards the end was, in some cases, stepped up to three shifts.

The task was essentially a vehicle proving operation, but was gruelling alike for both cars and drivers, because as everyone knows who has travelled on them, the autobahnen by no means possess surfaces as smooth as billiard tables, and their traffic load is tremendous.

Records in excess of the 60 m.p.h. average were only logged during the actual time spent on the autobahnen, and on each shift the driver had a mere ten minute break for re-fuelling and a cup of tea.



The Minors and Austins in the mile-a-minute endurance test

Some idea of the physical strain imposed upon the team can be gauged from the fact that on the early morning shift the mist was sometimes so thick that full headlights had to be turned on, while rain at times was so torrential that it was like driving continuously through a water splash. As a contrast, afternoon temperatures sometimes reached the eighties, and it was impossible to bear placing a hand on the metal parts of the car.

ROCK STEADY AT 85 M.P.H.

Describing the autobahn tests a special correspondent writes : "It is almost incredible that these new B.M.C. power units could stand up to the stresses and strains of such concentrated motoring, yet when I accompanied the cars one afternoon when they were approaching their 20,000 mile target, I rode in a Morris Oxford behind the Minors and Austins, and our speedometer needle flickered on the 85 m.p.h. mark for mile after mile as the winding ribbon of the German autobahn slipped behind us. Our car was so rock-steady that a cameraman was able to photograph the ceaseless stream of foreign cars as we overtook them.

"Occasionally, the bigger b.h.p. cars overtook us, but usually we overtook them long before the end of the autobahn was reached.

"When I changed over to an A30, the smoothness of travel was unbelievable even when the needle hovered around 85 m.p.h.

"In this particular case, a cameraman had been operating from an aeroplane. When he had finished and as he waved and turned to fly back to Stuttgart Airport, we broke away from the convoy. Fantastic

though it may seem, we arrived there, parked the car, and were in the offices of the plane-hire firm to greet him after he had landed."

The test for all vehicles was carried out on a well-known premium grade fuel and petrol consumption averaged 36-40 m.p.g. for the 950 c.c. type, and 25-28 m.p.g. for the 1489 c.c. engine.

Discussing the achievement with a B.M.C. research engineer, I was told:

"With the increase in b.h.p. envisaged for most B.M.C. models for 1957, it was obvious that we had to be quite certain that the big end bearings would stand up to the terrific stress imposed by the Continental type of autobahn motoring, and we decided to try to test lead indium bearings to destruction or thereabouts, which under the arduous conditions imposed could reasonably have been expected to take place around the 20,000 mile mark.

"The opportunity was also taken to test the new full flow filter, and install instruments to record water and engine oil temperatures, inlet and outlet pressures from the filter as well as taking electrically recorded axle and under bonnet temperatures.

"We feel that the test is a convincing proof of the high endurance factor which can in future be accepted as normal in the 950 c.c. and 1489 c.c. type B.M.C. engines, because the tests carried out in a few weeks is representative of at least three-four years really hard driving by the average fast driver."

Finally, on the question of service, only normal routine service and maintenance was given to the vehicles each Sunday morning, the remainder of the day being the 'day off' per week given to the team.

THE OPPORTUNITY PAGE

The Controller of Stores, BEST House, Fort, Bombay-1, will receive sealed tenders for (1) the supply of a small car; the supply of Station Wagon or Estate car; and constructing cab and load body on Tata Mercedes Benz five ton Diesel Truck carriers.

The City Engineer, Bombay Municipal Corporation, has invited separate tenders for the supply of (1) manual loading casspool lorries; (2) refuse vehicles for suburbs.

The Controller of Stores and Purchases, Bombay Airport, has invited sealed tenders for the supply of (a) 1½ ton Mobile Hydraulic Crane with Jib movement in Horizontal and Vertical position-1; (b) Master type tools required for removing and fitting tyres of Heavy vehicles I; (c) 7-ton, all-purpose Hydraulic Jack with foot paddle action-2; (d) 5-ton Hydraulic Press; (e) Multi-range voltmeter for automobile electrical systems-1.

Tenders have been invited by the Controller of Stores, BEST House, Fort, Bombay-1, for supply of (1) 40 single decker and (2) 60 double decker; heavy duty Diesel Bus chassis.

The Controller of Stores, BEST House, Fort, Bombay-1, has invited sealed tenders for the resoling of tyres.

Sealed tenders for the supply of (1) Single Pole, Metal Clad, Cut-outs, semi enclosed Fuse, 15 Amps, 440 volts, and (2) Aluminium Alloy Chequered plates, will be received by the Controller of Stores, BEST House, Fort, Bombay-1.

The Principal, Rajasthan College of Agriculture, Udaipur, has invited

sealed tenders for the supply of (1) Tractor implements, (2) Galvanised Iron and Black pipes and (3) Workshop equipment (Vicars, etc.)

The Purchase officer, Road Transport Department, Government of Andhra Pradesh, has invited sealed tenders for annual contracts for retreading of tyres from shoulder to shoulder of the following sizes:

(i) 900×20; (ii) 1100×20; (iii) 825×20; (iv) 750×20; (v) 650×20; and (vi) 700×20.

The Controller of Stores, State Transport, Ghodbunder Road, Bombay 23, has invited tenders for the supply of steel tubular seat frames.

The Director of Transport, Government of Rajasthan, Jaipur, has invited sealed tenders for the supply of portable wheel weighers and Dummy ramps to weigh all types of motor vehicles.

Sealed tenders for the supply of (i) Engine oil for omnibuses, (ii) Traction lamps, (iii) latex foam seat cushions, (iv) Lacquer paints and (v) Carbon Brushes, have been invited by the Controller of Stores, BEST House, Bombay-1.

The Administrator, Thana Borough Municipality, has invited sealed tenders for the supply of two Diesel tractors of 20-30 H.P. and eight 4-wheel trailers of 5-6 tons capacity.

The Chief Engineer, Bombay Port Trust, Ballard Road, Fort, Bombay, has invited sealed tenders for supply and delivery of 18 2-ton Diesel Elevating platform trucks, at the Mobile Crane Garage, Alexandra Dock.

Sealed tenders have been called

for by the Controller of Stores, BEST House, Fort, Bombay-2, for the supply of (i) Aluminium sheets and beadings, (ii) heavy duty bus batteries and (iii) cloth for destination and route indicator.

The President, Navsari Borough Municipality, has invited sealed tenders for the supply of (i) about 25 h.p. tractors working on Diesel oil-3; (ii) Night Soil Tankers of 500 gallons capacity each-3; (iii) refuse trailers of 3 ton capacity of tilting arrangements, mounted on four wheels-3.

Sealed tenders for the supply of (i) Portable Air Compressor and (ii) wire stitching machine have been invited by the Controller of Stores, BEST House, Fort, Bombay.

The Controller of Stores, BEST House, Bombay, has invited sealed tenders for the supply of (i) Double turn bulb horns complete, (ii) wind-screen wiper and (iii) teakwood squares, Burma and Siam.

The Controller of Stores, BEST House, Fort, Bombay, has invited sealed tenders for the supply of (i) synthetic resin enamel black; (ii) sett stones; (iii) cable V.I.R.; (iv) Sheet Metal straightening machine.

The Transport Superintendent, Municipal Workshop, Foras Road, Bombay, will receive tenders for the supply of four air compressors for inflating tyres.

The Works Manager, Central Workshops, Dapodi, Poona-3, sells by auction 19 Chevrolet, 12 Dodge, 7 Fiat, 2 Morris Commercial old buses; 2 Canadian Ford trucks and 2 Pickup vans, 3 Station-wagons of various makes and one Studebaker truck.

The Director-General of Transportation, Government of West Bengal, 5 Nilgunj Road, Belghoria, 24-parganas, has invited offers for the sale of a large quantity of unused and brand new spare-parts of Studebaker 17-16 and 2R-16 model vehicles.

Surcharge on Freight

Customs Concession

NEW DELHI

In regard to levy of surcharge on freight in respect of consignments from U.K. and continental countries, the Ministry of Commerce and Consumer industries in the Import Trade Control department in a public notice states:

"It has been reported that a surcharge of 15 per cent has been levied on freight in respect of consignments shipped from U.K. and other Continental countries owing to Suez Canal crisis as the shipments are being diverted via Cape of Good Hope. There is also a reported increase in the insurance charges.

"It has been represented that several consignments against the orders placed on the foreign suppliers would be ready packed awaiting despatch and shipment, and it will not be possible to change the packing to keep the value of the goods within the c.i.f. value of the licences issued.

"It has, therefore, been decided that in the case of shipments effected from the 1st of November 1956 upto the middle of December, 1956 any excess over the c.i.f. value of the licence caused due to increase in freight and insurance charges would be condoned by the Customs Authorities. The licensees will not be required to produce the licence to the licensing authorities for amendment of the value. The Customs authorities will allow clearance against the licences on production of documentary evidence to show that freight and insurance charges at the enhanced rates have accounted for the increase. Cases may also arise in which the shipments affected during the month of October were diverted via Cape of Good Hope causing increase in freight charges. In such cases also the excesses over the c.i.f. value to the extent of increased freight charges will be condoned."

COMPANY NEWS

Enfield (India) Ltd.

Consent of the Central Government has been obtained by the Enfield (India) Ltd., Madras, for the issue of Rs. 5 lakhs in both ordinary and preference shares. The main objects of the Company are the manufacture and sale of Royal Enfield Motor Cycles, components, ancillary parts and accessories and of allied products such as three wheeler cycle chassis.

The conditions for local manufacture and sale are favourable since the Defence Department alone, among others, has a large and recurring expenditure for motor cycles. The Madras Motors Private Ltd. have been distributors since 1946 for these motorcycles and have already developed adequate facilities for motor cycles marketing, servicing and supply of spares.

All the shares had a strong appeal not only in Madras but also in the up-country centres.

Ashok Leyland

An extraordinary general meeting of the Company was held on November 5 to consider the issue of 11,00,000 shares of Rs. 5 each at par, payable in cash. With this issue the subscribed capital will be raised to Rs. 1,29,56,000 in 25,91,380 shares of Rs. 5 each.

In terms of the agreement of December 5 last, the British firm should hold 40 p.c. of the shares and the Indian shares will be 15,54,816. Since Leyland Motors at present hold 4,40,000 shares 59,65,444 shares will be reserved for and offered to the British Company, and 5,03,456 for subscription to all Indian shareholders. The shares now offered are not entitled to participate in any dividend that may be declared for 1956.

Estrela Batteries

The working of the Company has improved, according to Mr.S.M. Chothia, who presided over the 17th ordinary meeting recently. Efforts have been made to improve the quality of their products by obtaining

technical help from abroad. One of the directors, Mr. Choonilal Girdharlal, accompanied by the General Manager, Mr. H. N. Doshi, recently visited England and U.S. in this connection and the final agreement will be reached soon on technical collaboration.

The National Screw and Wire Products Ltd.

The National Screw and Wire Products Ltd. has earned a net profit of only Rs. 3.75 lakhs in 1955 against nearly Rs. 6 lakhs. It is, however, noteworthy that the sales of the firm have increased to Rs. 84 lakhs. A sum of Rs.2 lakhs has been set apart for incometax. The Directors have proposed a dividend of Rs. 1-8-0 per share free of tax.

Clutch Release Bearings

CALCUTTA

The Central Board of Revenue in their letter No.25 (315)-Cus III/56 state that "clutch release bearings are correctly assessable to duty under item 72(35) Indian Customs Tariff if the bore is 2 ins. or under, and under item 72(38) ibid if the bore is over 2 ins."

Necessary instructions, it is said, in this behalf have already been issued to the Customs authorities.

Rs. 22 lakh Workshop at Hubli

MADRAS

A regional workshop of the Bombay State Transport Corporation is to be constructed at Hubli, and the foundation-stone for this has been recently laid by the Governor of Mysore H. H. Sri Jayachamarajendra Wadiyar. When fully developed, the workshop was expected to cover an area of 20 acres and to cost about Rs. 22 lakhs, fully equipped and provided with technical personnel capable of handling any kind of reconditioning that might be necessary.

MOTORINDIA NEWS SECTION

(BY OUR SPECIAL CORRESPONDENTS)

Greatest Bicycle and Motorcycle Exhibition

FRANKFURT

The 3rd International Bicycle and Motorcycle Exhibition from October 21st to 28th has by far surpassed the previous exhibitions organized in 1951 and 1953, both in respect to its size and its technical and commercial importance for the bicycle and motorcycle industries. About 450 exhibitors, including 50 from foreign countries, have shown their products in 12 halls, two pavillions and open-air exhibition area, which together comprised a total exhibition space of almost 40,000 square metres. The keen interest displayed by West German and foreign industrialists in this Show is fully justified in view of the growing demand for bicycles and motorcycles which has been noted in both trade and consumer circles. The number of visitors has therefore surpassed that of the exhibitions held in 1951 and 1953.

A total of 26 motorcycle manufacturers, all known throughout the world, have appealed to the attention of the buyers by showing the 'classic' models of motorcycles. The keen interest displayed by buyers from all over the world is best illustrated by the fact that about one-third of the exhibitors in the motorcycle section were from abroad. Models from Austria, Great Britain, Czechoslovakia and Italy have been exhibited.

The strongest Group

Cyclemotors (Mopeds) were displayed by 36 manufacturers. These were the strongest group of exhibitors among the vehicle manufacturing firms. A total of 30 West German firms has competed with exhibitors from Austria, the Netherlands and several other countries. Fourteen of these firms produce the engines in their own factories, while 22 other firms manufacture only the frames and purchase the engines elsewhere. Eighteen firms have exhibited motor-scooters. The models, shown by the different firms, though roughly the same in basic design, vary considerably in details to suit

the taste of individual customers.

Parts and Accessories

An extensive variety of parts and accessories has been shown by 225 exhibitors from West Germany and other countries. Manufacturers of engine and gear parts have formed the strongest group of exhibitors within the section, which has not failed to attract particular interest.

From Camping Tents Photograph

Camping equipment and sports goods have been exhibited on a floor space of about 1,000 square metres any and every item needed for camping tours. Clothing particularly suited for camping and motoring has also been shown together with a wide assortment of sports goods and equipment.

India-Europe Bus Service

NEW DELHI

The possibility of a tourist bus service between India and the European countries in the not distant future is revealed by Mr. Kundan Lal, leader of the All India Motor Unions Congress delegation which

recently returned to India after a 16,500 mile trip in a Leyland bus.

The delegation visited many countries including Russia.

Saturation !

LONDON

The Jaugar Car Company have recently announced their withdrawal from racing for a year, to get breathing space for the firm's technical and research branch after five years of phenomenal success in racing.



S. S. NAIR, Automobile Engineer, Municipal Water Works, Sholapur, married KATHOLLIL PRASANNA-KUMARI, daughter of K. Kunjunni Menon at Punnayurkulam on Nov. 19 last.



ARIEL—"Square-Four"—the only 1,000 c.c. machine being made in Britain has good looks and performance.

Jabalpore Transport

JABALPUR

The Madhya Pradesh Government has constituted a nine-man Regional Transport Authority with its headquarters at Jabalpur to discharge its functions in the districts of Jabalpur, Sagar, Mandla, Balaghat, Chhindwara, Betul, Khandwa, Hoshangabad, Narsimhapur, Seoni, and Damoh.

Mr. N. H. Majumdar, former Chairman of the Regional Transport Authority, Nagpur, Amraoti and Raipur, and the Regional Transport officer, Jabalpur have been appointed Chairman and Secretary respectively of the new Authority.

Bonus for Roadways men

GWALIOR

The Government has sanctioned the payment of bonus to the workers of the State-owned Roadways for 1953, 1954 and 1955. The workers will get a month's basic pay for the first two years and two months' pay for the third year.

Army men to be trained

BOMBAY

Caltex (India) Ltd., have introduced a comprehensive course to train Indian Army officers in the method of handling petroleum products.

In the first instance, 10 Army officers are attending the course which will last eight weeks. The course is conducted by a specialist, Mr. R. Arnold, District Superintendent of operations.

Trainees are being taught complex techniques relating to the supply and operational aspects of the petroleum industry. They are receiving instructions in exploration, production, research, refining and marketing. The course includes lectures and practical exercises at Caltex installations supported by technical films and illustrated features.

Traffic police in Bombay

The Traffic Department of the Greater Bombay Police will shortly be expanded to twice the present size to cope with the growing needs of Bombay. According to a proposal, 24 more sub-inspectors, two inspectors, two deputy inspectors and 200 subordinate ranks will be needed in addition to a superintendent.

Simpson group co-op praised

BANGALORE

Mr. Kadidal Manjappa, the Chief Minister of Mysore, paid a tribute to the working of the Simpson Group Companies and their Co-operative Society, while inaugurating the first anniversary celebration of the society, recently here.

The Chief Minister said that such societies helped the poor from the clutches of the money-lender.

Mr. R. Venkataraman, M.P., who presided was glad that his suggestion for the starting of such a society had been implemented by the firm in such a short time. He hoped that the activities of the society would soon expand and will benefit all employees. He hoped that the Government would also come forward to help such societies.

Bhavanagar oil Refinery

RAJKOT

A-11 member expert committee has been appointed by the Union Government to go into the question of setting up a Rs. 20-crore oil refinery at Bhavnagar. Two foreign firms—the Iranian Oil Company and a French Company—will finance it to the extent of a third of the cost.

The committee is headed by Mr. S. S. Vasist, former member of the Railway Board, and will decide on the location after taking into account the relative merits.

The sponsors of the scheme have suggested that they would even be prepared to have the refinery established in the public sector with a majority of shares vesting in the Government.

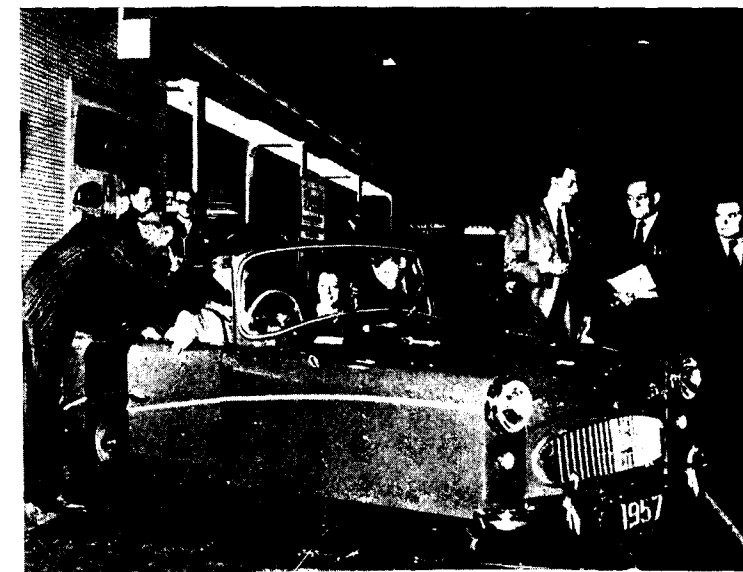
More Leylands for Ahmedabad

AHMEDABAD

A further fleet of Lancashire-built Diesel buses has just been delivered to serve the growing population of Ahmedabad. The new buses are Leyland Comets, similar to more than 120 of this type already in service with the city's municipal fleet.

At the same time, Leyland Comet trucks used by the Bombay milk transport service have been given special insulation to prevent the curdling of milk en route from the dairy to the consumer.

The Comets, which are the largest vehicles in use by the Bombay milk transport service, can carry some 400 crates of bottled milk, each crate weighing between 40 and 45 lb. The Comet milk trucks carry the bulk of the supply from the dairy to the depots at Mahim.



One of world's most economical cars—the "Bond Minicar" which gives car comfort at motorcycle cost—85 m.p.g. and 50 m.p.h. India contemplates imports under a progressive development arrangement.

S. T. Irregularities

BOMBAY

The biggest State-owned bus fleet organisation is not without its dark patches. The total number of defalcations in the Bombay State Road Transport Corporation during the past five years is 13,589 and the amount involved was Rs. 1,34,602, Mr. Babubhai Patel, the Deputy Minister for Public Works, told the old State Legislative Assembly, the other day.

The Minister stated that 53 persons had been prosecuted in 40 cases of defalcation, who include some class II officers. Two had been dismissed for "unauthorised disposal of timber wood".

A committee report placed on the table of the House said that the total difference between ground balance and book balance was Rs. 21.48 lakhs. This large difference is stated to be due to several reasons such as incorrect fixing of issue rate, incorrect valuation of closing balance of stores, pilferages and other shortages due to breakages, breaking bulk, absorption of moisture, etc. The committee has urged that factors leading to such large differences should be eliminated to avoid further losses.

The committee also pointed out that the Accountant-General had mentioned that the amount to be recovered from various supplies on account of excess payments based on higher conversion rates was about Rs. 11 lakhs. It has also uttered a warning that, unless suitable steps were taken early to effect recoveries of overpayment and strict scrutiny of relevant data, the finances of the corporation will be in jeopardy.

Expansion of Motor Vehicle Industry

MADRAS

The production of motor vehicles in India is steadily on the rise. In 1953, the figure was 13,920 units which jumped to 14,460 in 1954. The first nine months of last year registered a further increase when the output amounted to 16,816 units, and 1956 should exceed 20,000.

To assist the mechanization of the

country, further expansion plans are in hand. The Tata-Benz link-up is a typical example of the growing awareness of the need for mechanical transport.

Steps are being taken to convert purely assembly works into complete manufacturing units and an increasingly larger number of motor vehicle parts will be made within the country by factories envisaged in the Second Five Year Plan.

It is also intended to diversify the field of manufacture. Tractor production will be stepped up as well as an increased output in light aircraft.

The object is to attain as high a degree of self-sufficiency as possible. Production centres will be dispersed all over the country to benefit and supply all regions.

The agricultural State of Andhra on India's East Coast will soon witness the completion of an Oil Refinery at Visakhapatnam. This will mark a major step in the Andhra's long-term industrialisation policy.

(An article on the progress at Visakhapatnam appears elsewhere in this issue.)

Oil Industry Expansion

NEW YORK

The U.S. oil industry will spend more than £5,000 million on expansion and improvement this year in an effort to keep pace with the demand for more and better petroleum products.

In telling of expenditures by the oil industry this year, Dr. Robert E. Wilson, chairman of the Standard Oil Company of Indiana, also forecast that expenditures in 1957 will at least match this year's record-breaking outlay.

He said that since World War II, the oil industry has spent £38,000 million on domestic expansion alone.

He said that last year, the American oil industry produced nearly 2,500 million barrels of crude oil, more than was produced by the industry during its first 50 years of operation.

While claiming that imports of oil are currently hurting domestic

A bolt from the blue

BOMBAY

The motoring public and the automobile trade were rudely shaken by the Finance Minister's surprise proposal to levy an excise duty of Rs. 3,000 on each big car manufactured in the country. A leading industrialist told our special representative that it is one more measure which unwittingly seeks to uproot the infant automobile manufacturing industry.

In these days of fast locomotion the motor car itself is not a luxury but a necessity. Again the distinction between a big car and a small one is invidious when one views the automobile as a moving mechanism intended for such time conscious persons like businessmen, lawyers, doctors, executives etc. In these days of crippling taxation and heavy running costs who but the needy can maintain cars? he asked. He, therefore, was inclined to take the view that the very basis of classifying cars as items of luxury is unrealistic.

He also questioned the statement of Mr. Krishnamachari that the levy will affect only the very rich, and said that it is common knowledge that a person who uses the car several times a day and over all sorts of roads prefers a higher horse power car to a small one.

Similarly the enhancement of the import duty on motor cycles and scooters chilled the hearts of many traders, importers and consumers alike. A leading importer wondered whether it was time he changed his line of business, while a trader remarked: "How can I coax the already hard-hit middle class into buying his heavenly possession of a motor cycle or scooter. The fate of the middle class buyer is intertwined with ours. Surely the latest import is going to do harm to many of our fraternity. To be taxed to the utmost is one thing, and to be taxed out of existence is another."

producers, the executive said that the question of imports will become academic in the next five to 10 years because of the growing demand in the eastern and western hemispheres.

Railway Board Member on Road Transport

(Continued from page 11)

an inevitable sequel to extensive development.

A concerted endeavour is being made to achieve even greater improvement in operational efficiency, but it is difficult to assess the measure of success that will attend this effort.

Where Road Services Can Help

It goes without saying that the development of other means of transport must be proceeded with. But while doing so, certain limitations have to be borne in mind in so far as the Second Five Year Plan is concerned.

A primary consideration is that the railways must not become a burden to the general exchequer. Consequently, the railways should not be deprived of a fair share of high-rated traffic, for otherwise the rail freight for industrial raw products may have to be enhanced substantially. Also, the country cannot afford the duplication of transport services.

It follows logically that road services should be developed as ancillary to the railways and should work in co-ordination with them.

Within this framework, there is vast scope for the road services. For instance, if the general goods traffic by rail increases by 30 to 35 million tons, road hauliers will be required to cater to the correspondingly increased terminal services. The bullock-cart has been our mainstay as a feeder service, but with emphasis on increased agricultural output more and more bullocks will be withdrawn from the road to the field, leaving the road services to fill the gap. Then, again, with the vast constructional activity going on in the country, large quantities of goods will have to be carried by road. The volume of this traffic must steadily grow. There will also be several areas which are not touched by rail or where rail transport may be deficient, and all these will fall in the natural sphere of road services.

THERE IS, IN THESE DIRECTIONS, RICH SCOPE FOR THE

DEVELOPMENT OF ROAD TRANSPORT, AS A SERVICE SUPPLEMENTING THE EFFORT OF THE RAILWAYS.

In the larger interests of the country, this development must be well regulated. For instance, on sections where there is already a heavy movement of empty wagons e.g. from the ports, in the opposite direction, or on trunk routes, towards the coalfields, development of road transport would amount to unnecessary duplication. A strong machinery is needed, in my opinion, to ensure that road services are pressed into service only where they are really needed.

Help in Passenger Transportation

The second Five Year Plan makes provision for only 15 per cent additional passenger traffic during the five-year period. No provision has been made for the removal of overcrowding. The extent of overcrowding varies on different sections, but on an average it is 16 per cent on B.G. and 30 per cent on M.G. Some trains, however, in both cases, are overcrowded to the extent of 50 to 100 per cent.

With an anticipated 5 per cent per annum increase in national income, the prospects of large-scale employment and the consequent inevitable drift of population from the rural to the urban areas, an increase of 3 to 4 per cent per annum in passenger traffic is inevitable. The provision made in the Plan, therefore, hardly touches the fringe of the problem; moreover, no margin is left for tackling the problem of overcrowding.

IT IS CLEAR, THEREFORE, THAT PASSENGER TRANSPORTATION IS A FIELD IN WHICH ROAD SERVICES CAN PLAY A MORE IMPORTANT ROLE THAN THEY ARE DOING AT PRESENT.

Limited Road Vehicle Production

Those who may be thinking in terms of road services as substitutes for the railways for the purpose of covering the

unprovided for gap in the transport capacity during the Plan period, may pause to consider as to what the country's capacity for the manufacture of road vehicles is.

The annual target production laid down by the last year of the second Plan is 45,000 vehicles. Rehabilitation requirements alone are likely to be of the order of 20,000 to 25,000 vehicles. These should obviously receive priority. The balance of the additional capacity production must, therefore, condition the quantum of increased traffic which road transport can cater to, for obviously the country can ill-afford to budget for, substantial additional foreign currency for the import of road vehicles from abroad.

Role of Coastal Shipping

In regard to coastal shipping, the exact nature and volume of traffic which can be conveniently and economically carried by sea will be better known only when the Rail-Sea Co-ordination Committee's report is out. It is clear, however, that its development is essential from the national point of view.

The pace of development, however, is governed by the availability of ships and the foreign exchange that can be allotted for their purchase. It would appear from a recent Press Note that it has been decided to acquire 24 ships during the Plan period. Some of these will presumably be diverted to international routes, which are more paying and where they are more in demand. Substantial relief to the railways from shipping, therefore, seems problematical during the second Plan period.

Distribution of Railway Funds

It has sometimes been argued that even the reduced allocation of Rs. 1,125 crores to the railways is on the side of excess. This point deserves to be examined with some care.

The following details give an idea of how the allocation of Rs. 1,125 crores is proposed to be utilised: Rolling Stock 380 Crores, Workshops plant & machinery 65, Track renewals 100, Bridge works 33, (Rehabilitation 18, Ganga Bridge 9, New bridges 6), Line capacity works

RAILWAY BOARD . . .

including expansion of goods sheds 186, Signalling and safety works 25, Electrification 80, New constructions 66, Staff welfare and staff quarters 50, Stores depots 7, Training schools 3, Railway Users' amenities 15, Other projects including Vizagapatam Port 15, Railways' share in road transport undertakings 10, Stores suspense 50, Extra for imported steel 40—making a Total of 1,125 Crores.

I will try to give a broad analysis of the main items of expenditure to show how much of it is purely for rehabilitation purposes, and how much for real development.

Analysis of Plan Expenditure

The provision of Rs. 380 crores for rolling stock includes Rs. 197 crores for rehabilitation and Rs. 183 crores for additional requirements. Obviously, if the railways are to continue to maintain their existing services, the replacement of unserviceable rolling stock cannot be avoided. Even the provision of Rs. 183 crores for additional requirements includes Rs. 43 crores needed for additional passenger traffic, leaving only Rs. 140 crores for goods traffic.

Nor can track renewal and bridge rehabilitation, which are estimated to cost Rs. 118 crores, be put off.

The expenditure under workshops, plant and machinery is part of a co-ordinated plan to ensure self-sufficiency of stores for which so far we have been dependent upon imports and also to provide an adequate capacity for repair of the additional rolling stock that will be acquired. Railway workshops are so designed that, should the need arise, they can be pressed into service for any national emergency. They are also a training ground for technicians. They are, thus, not only an essential ancillary to the modernisation of the railways but also a national asset with vast potentialities.

The Ganga Bridge is already under construction. The new bridges provided in the Second Plan include a bridge across the Brahmaputra between Pandu and Amingaon, another bridge over the Jamuna between Ghaziabad and Delhi, and doubling of the bridge between Hajipur and Sonapur.

These are works of considerable strategic importance, apart from their importance to the railways.

The provision of Rs. 25 crores for signalling and safety works includes Rs. 5 crores purely for safety works, and about Rs. 6 to Rs. 7 crores for rehabilitation, leaving about Rs. 13 crores for the signalling of new lines and yards and for modernisation which is necessary to help in improving sectional capacity.

A major item is electrification, for which Rs. 80 crores have been allotted. This includes Rs. 35 crores for the electrification of the Calcutta suburban services which have reached the saturation point with steam traction. It is wellknown that the suburban services in this area are seriously overcrowded during peak hours in spite of a fairly well-developed bus service. The volume of traffic continues to grow and it cannot be catered to without electrification, which will also help to ease congestion in Calcutta and develop its distant suburbs.

The balance of Rs. 45 crores is required to extend electrification on the Eastern Railway beyond the suburban area to Gomoh, where an intensive train service and the availability of electric power from the Damodar Valley Corporation are conducive to greater efficiency and economy in transport.

Also included for electrification is the Igatpuri-Bhusawal section which has reached saturation with steam traction. It is extremely important that this link to the Bombay area should have an adequate capacity to cater to its growing needs.

The whole question of electrification is at present under review in the light of the report recently submitted by the French Railway Mission.

Of the new lines provided for in the Plan, it is interesting to note that those required in connection with coal and steel alone will cost Rs. 61 crores, leaving the small balance of Rs. 5 crores for other lines.

Items 9 to 16 in the aforesaid statement hardly need any explanation as their necessity is self-evident.

What Analysis shows

The above analysis of the provision of Rs. 1,125 crores for the railways has been attempted to separate expenditure on rehabilitation from

that on development. Under the latter head we have additional rolling stock for passenger and goods traffic costing Rs. 183 crores, line capacity works including expansion of goods sheds costing Rs. 186 crores, and signalling improvements costing about Rs. 4 crores.

Among the line capacity works included in the Plan are doublings, development of yards and sidings etc., required purely for dealing with coal and steel traffic, the cost of which is Rs. 33 crores. Other important doubling works included in the Plan cost Rs. 70 crores. I think there can be no divergence of opinion as to the necessity of these works, intended to serve both short and long term objectives.

These developments have been planned on trunk routes which for all times will constitute our main arteries of transport. They need strength and vitality to withstand the growing pressure of industrialisation. It would be bad strategy, too, if we did not have some flexibility of sectional capacity on these routes which could be harnessed in emergencies.

After meeting these costs an amount of Rs. 67 crores is left over for marshalling yards, crossing stations and loops and other improvements which for a vast country with 35,000 route miles of railways can hardly be considered an excessive investment. The existing facilities on our railways were not designed to cope with the large increase in traffic which will materialise under the impact of extensive industrialisation; and it stands to reason that any remodelling of yards etc. which is now planned must be on a fairly long-term basis, as frequent tinkering is not conducive either to efficiency or to economic working.

Cost of carrying million tons

An allied question is the approximate cost of facilities required for the movement of an additional million tons of goods by rail. Since the main impact of industrialisation will be experienced on the broad gauge system, I will confine my remarks to this system only.

The average load carried in a B.G. wagon in 1954-55 was 15.8 tons. To carry a million tons of goods per annum, therefore, 176 wagons should be loaded daily. On the basis of a wagon turn-round of 9.5 days, the number of wagons required to move

a million tons works out to 176×9.5 or 1,672; allowing for a 5 per cent margin for damages and repairs, the total requirements of wagons work out to 1,756. The average cost of a wagon being about Rs. 14,000, the cost of 1,756 wagons will be Rs. 2,45,84,000.

Approximately three trains are required to clear 176 wagons daily. Since the average load of traffic on the Indian railways is 300 miles, the train miles per day will be 900 each way, or 1,800 both ways. Since an engine does 100 miles per day, the number of engines required to move a million tons is 18. Allowing for a 15 per cent margin for damages and repairs, the total requirement will be approximately 21 engines. The cost of an engine being Rs. 5.4 lakhs, the total cost of 21 engines works out to Rs. 1,13,40,000. Also, 21 brake vans will be required at a cost of Rs. 16,000 each, their total cost being Rs. 3,36,000.

Thus the total cost of rolling stock required to move a million tons is :

(a) Wagons	Rs. 2,45,84,000
(b) Engines	Rs. 1,13,40,000
(c) Brake vans	Rs. 3,36,000

Total ... Rs. 3,62,60,000

To this may be added a sum of about Rs. 40 lakhs for minor facilities. The trunk routes and sections where these facilities are made available will in consequence acquire greater flexibility with the result that they will be able to handle some more traffic with this capital outlay. Thus the total amount required for moving a million tons comes to about Rs. 4 crores.

The comparative cost of carrying a million tons by road is about Rs. 11 crores. This is based on operating costs as worked out by the Transport Study Group appointed some time ago by the Central Government. The cost of an equipped six-ton diesel truck, as confirmed by the Tatas, has been assumed as Rs. 35,000.

How to Cover the Gap ?

The uncovered gap in the transport capacity during the Second Plan period would appear to be of the order of 30 million tons. The problem is : How is this gap to be covered ? We cannot obviously leave this matter to chance. Since the main impact of additional traffic will come when the new steel works

go into full production, there is yet time to plan.

The Railways may be able to cover this yawning gap with additional funds to the extent of Rs. 150 crores, which would also cover the cost of the strengthening of line capacity, some of which will be helpful even during the Third Five Year Plan. This, however, would not include the cost of any of the new lines which have been excluded from the Plan as a result of the cut in the allocation to the Railways.

The advantage of the Railways is that they are already in stride and have their plans ready.

CAN THE SAME THING BE SAID ABOUT THE ROAD SERVICES ? HERE, THERE ARE MANY "IFS" AND "BUTS" AND VAGUE ASSUMPTIONS. THERE IS OBVIOUSLY NO TIME NOW TO MAKE NEW PLANS ON HYPOTHETICAL ASSUMPTIONS. PRACTICAL CONSIDERATIONS REQUIRE THAT WE BUILD OUR PLANS ON WELL TESTED FOUNDATIONS AND ON PROVED DATA.

IF DEVELOPMENT OF GOODS TRANSPORT BY ROAD WERE QUITE AS SIMPLE AS SOME WOULD LIKE TO SUGGEST, THE PRIVATE SECTOR WITH ALL ITS RESOURCEFULNESS AND INITIATIVE WOULD ERE LONG HAVE CASHED IN ON THE SITUATION. THE FACT THAT THEY HAVE HELD THEIR HAND SHOULD POINT TO A MORAL.

In actual experience, well-established business houses, including the oil companies, find road haulage beyond certain limits unattractive and look to the Railways for carrying their goods.

The Railways cater to all traffic, some of which, like coal and steel, they carry at "sacrifice" prices. Road transport cannot cater only to the high-rated cream of the traffic. If, like the Railways, in areas where the railways are underdeveloped, the road services were to carry low-rated traffic with high-rated traffic, mixing the lucrative with the less lucrative, they can certainly serve an important national purpose.

(Courtesy : Indian Railways Magazine)



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