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Motor India

1962 - January

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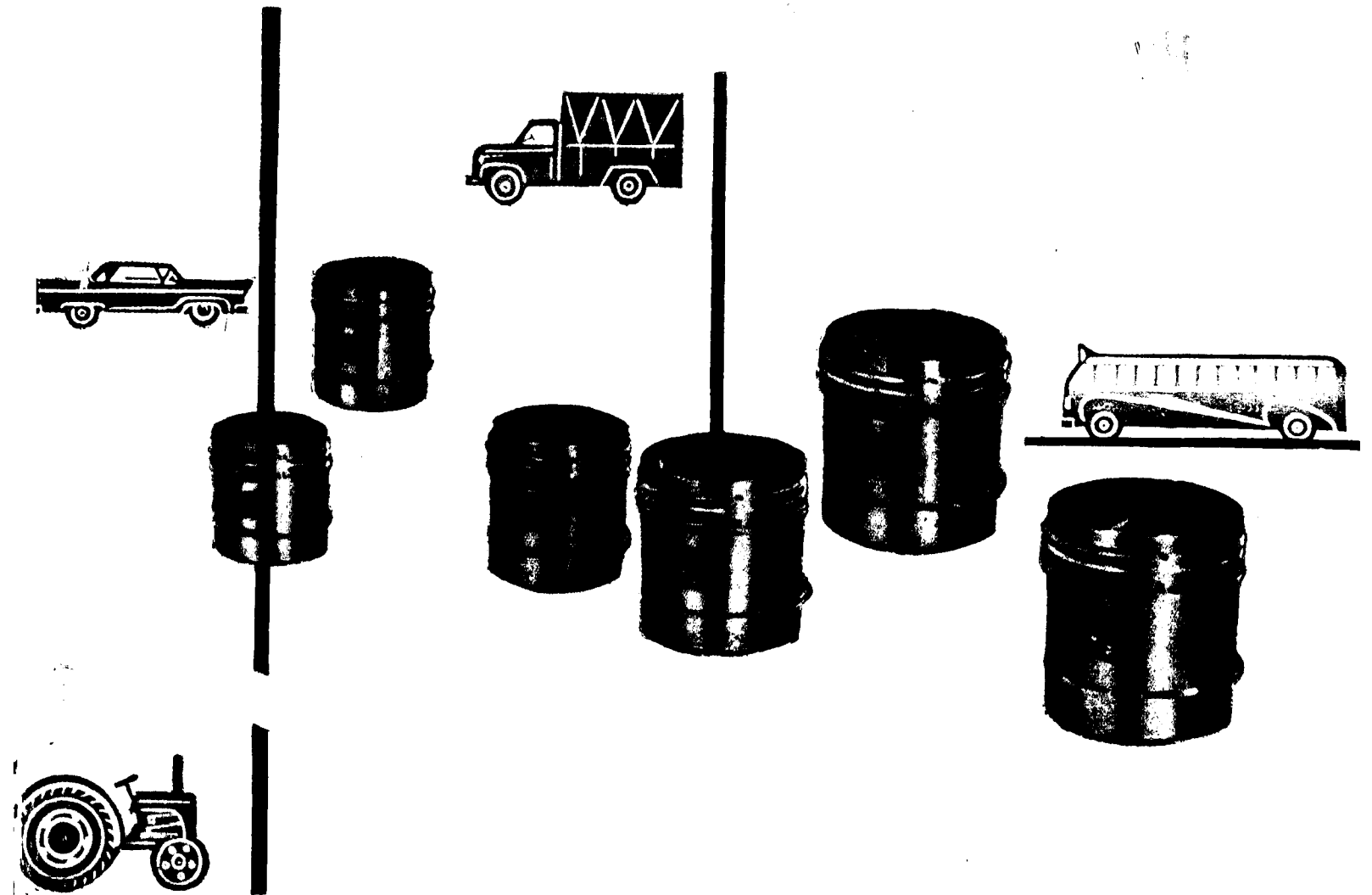


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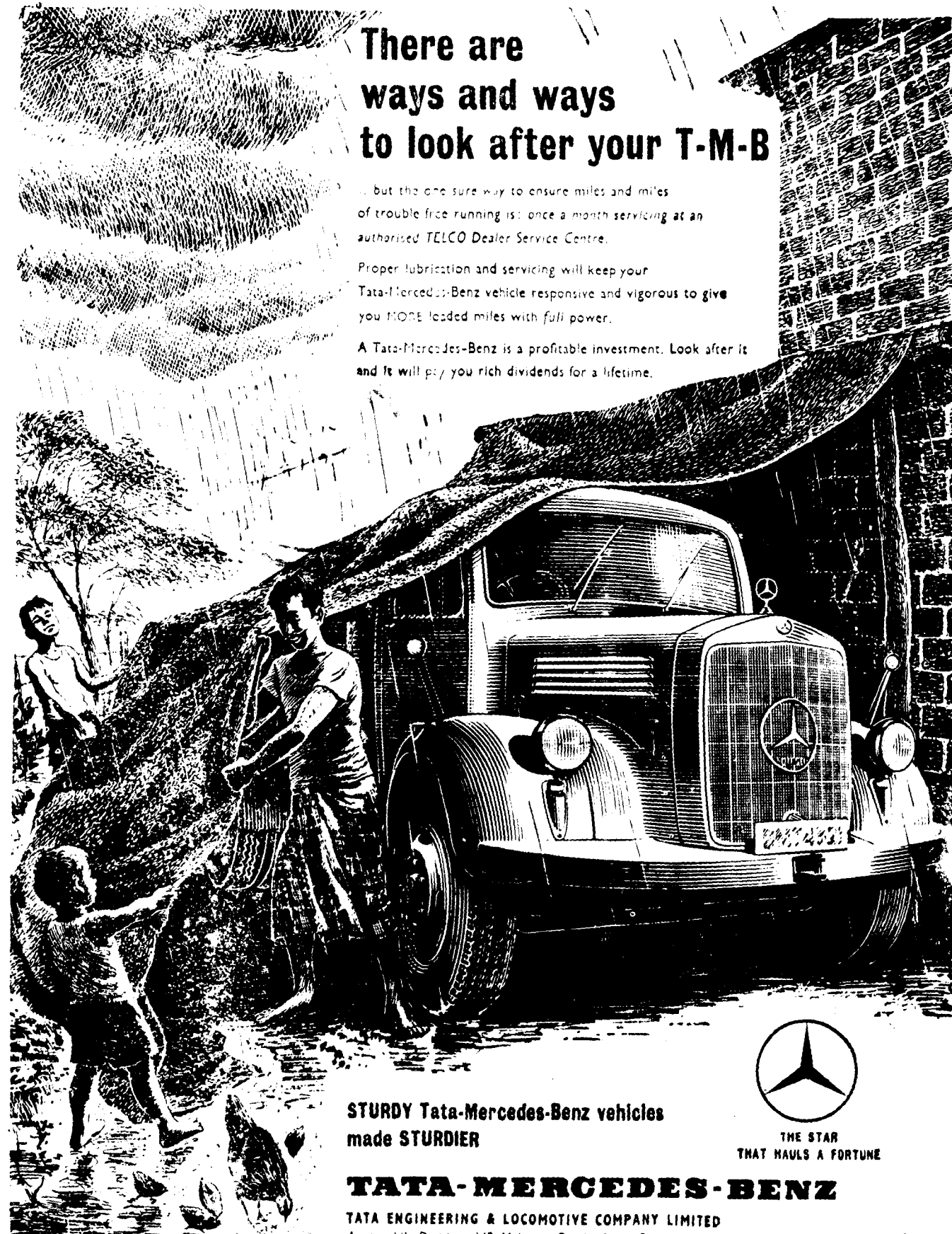


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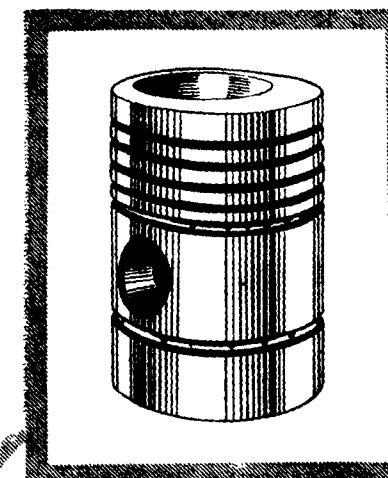
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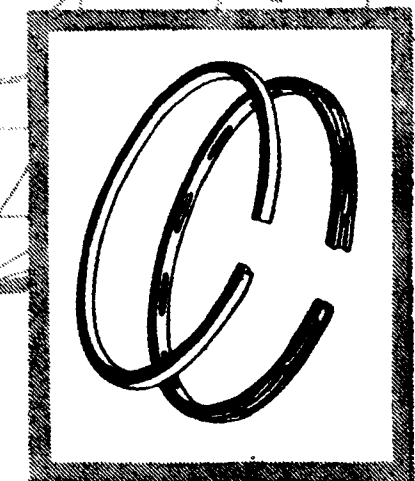
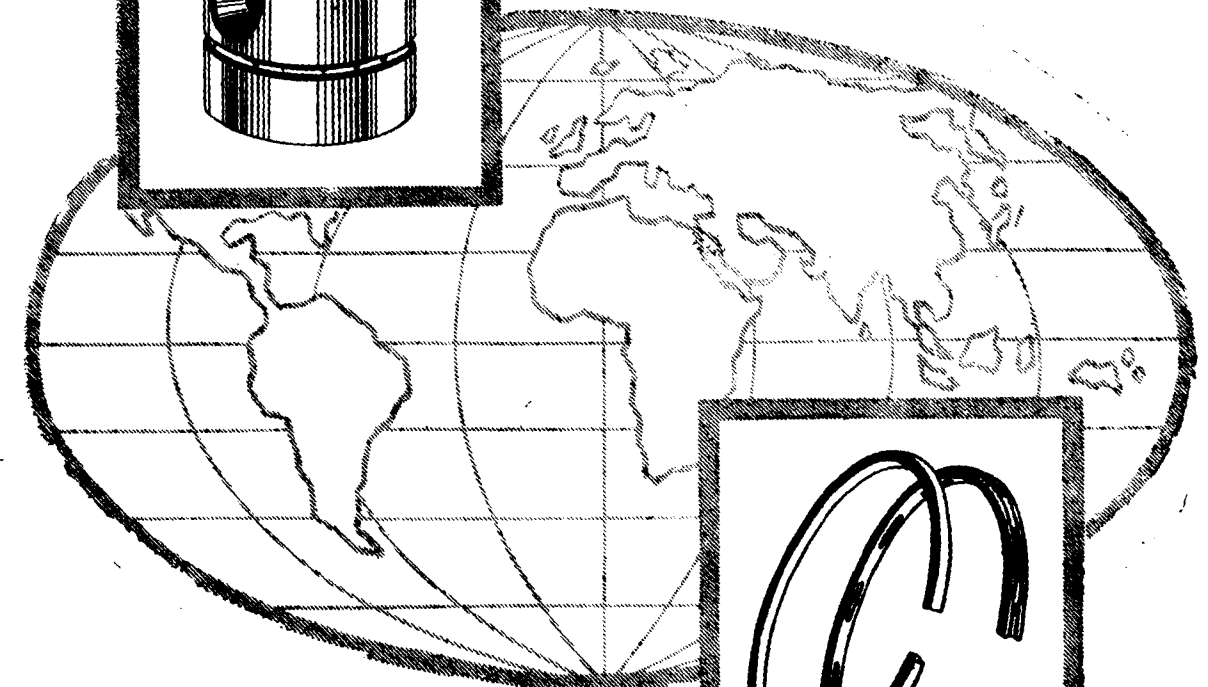
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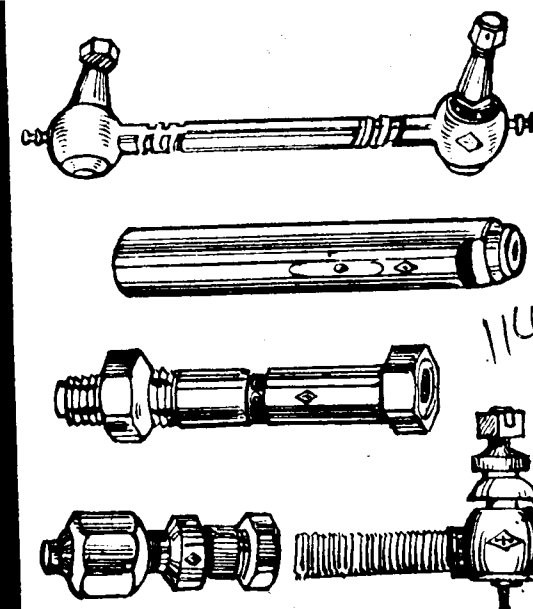
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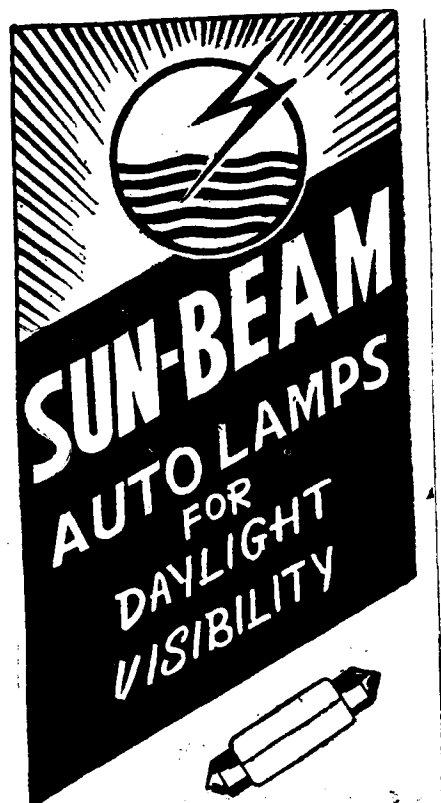
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MOTORINDIA

Fortnightly

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editorial

MOTOR SPORT PROMOTES AUTO PROGRESS

There is in Motor Sport a great deal more than the mere thrill of speed and the satisfaction of winning sometimes. It is a comparatively young sport, but it is enormously varied in its forms, from Grand Prix racing in Formula 1 cars, to "mud slinging" in Austin Ten engined specials; from motor races on the old Sholavaram runway, to twenty-four hours continuous racing at Le Mans. Between Phil Hill and the wild Jenatzy, there lies more than half a century of motor sport, of design and engine progress, of ever-growing speed.

The racing sports car of today is the sports model of tomorrow, which in turn may influence the standard saloon of the day after tomorrow, and each is enlivened by the dream designs of some great Grand Prix builder. Whatever the car—standard saloon, standard sports, modified, or even factory proto-type—it bears the mark of the genius and technical skill of racing men, designers and mechanics, and the test experience of drivers.

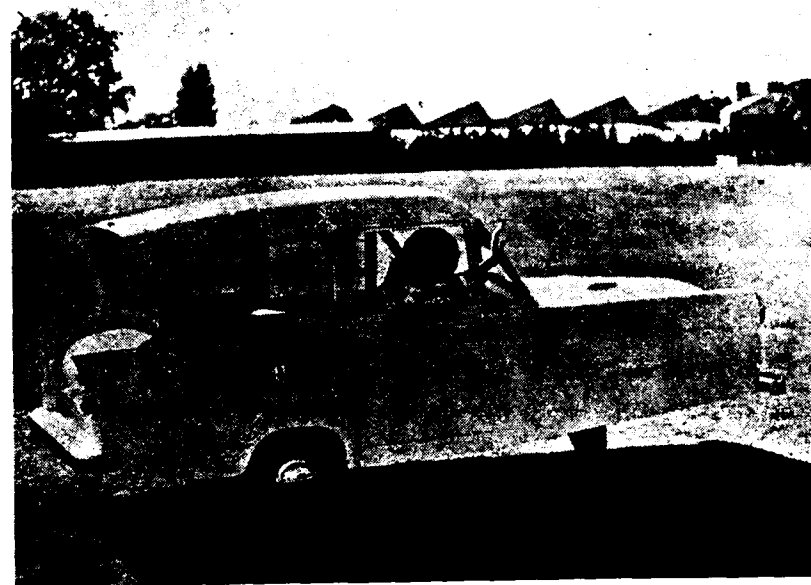
Above all things, motor racing is a sport with a purpose, which is SPEED with SAFETY. The performance of the family car of today, its brakes, its road holding, its reliability—all these have been proved and improved as a result of competitive motoring experience.

It is exactly this brand of perfection—with speed, which is the aim of sports car builders today. The modern sports car is not the dangerous animal our motor racing predecessors drove. Though vastly more sensitive, it has not removed the danger from motor racing. But the crashes and accidents of today are less and less due to mechanical faults, to failure of brakes, steering and so forth. We have of late, learned the value of disc brakes, and of a thousand similar pieces of progress in the history of motoring out on the race track, and motor sport continues to perfect more innovations that will play an important part in the future of motoring.

In India, there is no lack of popular enthusiasm for motor sports, even though sports racing cars and sports models are not produced in the country. Zealous racing motorists, through their Automobile Associations, have been holding motor rallies, ghat climbs, reliability trials and other events in Bombay, Calcutta, Delhi and Madras for some years, and it is hoped that their ideas for lightness, power and speed will be utilised, as far as practicable, by our automobile manufacturers to produce better and more reliable cars for the country.

21st January 1962
2

From Gordon Wilkins



The Sports Car: historical golden jubilee celebrations

There has probably never been such an international gathering of leading engineers and other personalities connected with the development of the automobile as that which assembled in Bristol recently for a television programme presented by Television West and Wales to mark the 50th anniversary of the sports car. Among those present were Aurelio Lampredi who drove a 250 G. T. Ferrari and the new 1962 2300 S Fiat coupe with Ghia body, which was making its first appearance in England. Rudolf Uhlenhaut of Mercedes Benz drove a 300 SL coupe; W. M. Heynes was at the wheel of an Jaguar E-Type; Peter Ware, Technical Director of the Rootes Group drove a Sunbeam Alpine; Georges Roesch, veteran Talbot designer, was at the wheel of one of the famous 105 Talbots for which he was responsible; Percy Kidner, a former director of Vauxhall, who drove in the R.A.C 2,000 mile trial as long ago as 1908 and is now over 33, appeared in a 30/98 Vauxhall of 1920; Archie Frazer-Nash (who collaborated with H. G. Godfrey to produce the G. N. in 1911 and went on to build sports cars bearing his own name from 1924 onwards) appeared driving

a Frazer Nash again for the first time in 20 years. Sidney Allard drove a V. 8. Allard of 1946, Donald Healey an Austin Healey Sprite, Sid Enever an M. G. A., George White, Managing Director of Bristol Cars, a Le Mans Bristol, Harry Webster, Chief Engineer of Standard Triumph a T. R. 5., John Wyer, Technical Director of Aston Martin a D. B. 4., Peter Kirwan-Taylor brought a Lotus Elite for which he did the body design, and Baron Henschke von Hanstein, racing manager of Porsche, flew in specially from the United States to drive a Porsche 2600. Bearded veteran of racing and journalism, Sammy Davis drove a 3-litre Bentley like the one in which he won the 1927 Le Mans race and also a 328 BMW of the type in which he once completed 100 miles in an hour at Brooklands. W. C. Bentley was not quite well enough to appear but he recorded a message for the programme. About 17,000 spectators gathered to watch the parade of cars.

The Swiss have penetrated into the top levels of automobile design as they have so many other technical skills. There was a 1912 Züst

NEW STYLE BRITISH THREE WHEEL CAR

This New Line 250G Bond Minicar, which was introduced recently provides economical transport at low cost. By virtue of its three wheel design, the Bond is extremely manoeuvrable, and can be parked easily in a space little larger than the car itself. The four seater body is of aluminium and glass fibre to eliminate deterioration due to rust.

designed by a Swiss of that name and the beautiful 1912 Alfonso type Hispano Suiza designed by the great Marc Birkigt which now belongs to Lord Montagu. The third Swiss designer, Georges Roesch appeared in person, driving one of the Talbot 105 3-litre team cars which gained so many victories during the period 1931-35. When asked why the British built Talbots were the quietest cars on the race tracks of their period, Roesch replied, "Because they were properly designed", and insisted that although they went so fast they were never intended to be more than high speed touring cars.

The parade was led by Laurence Pomeroy driving the Prince Henry Vauxhall designed by his father the late Laurence H. Pomeroy. This was the first British catalogued production sports car offered in 1911. Next to it came a 1912 Austro-Daimler of the type designed by Dr. Ferdinand Porsche who won the 1910 Prince Henry Trial on one.

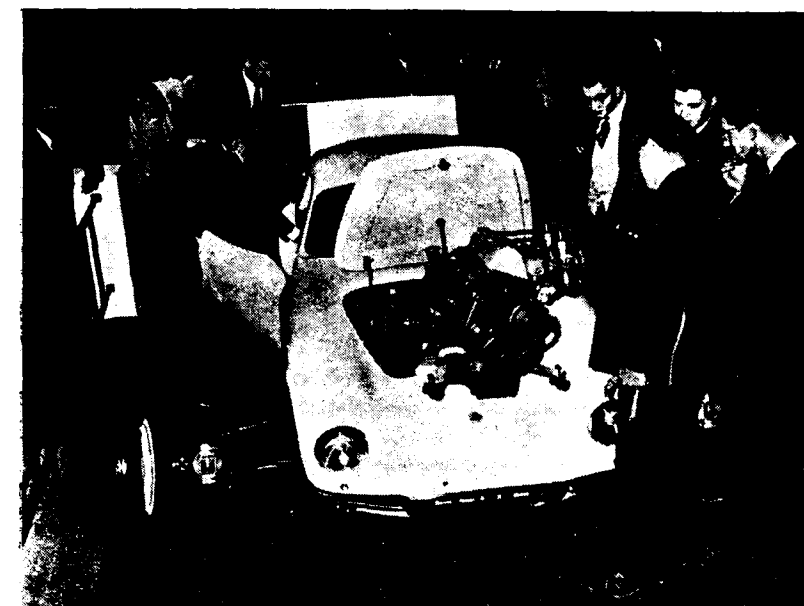
Other famous cars which appeared were a 1924 Aston Martin, 1937 3-litre Sunbeam, 1928 front wheel drive Alvis, various Bugattis and

Mercedes, 1912 Alfonso Hispano-Suiza, 1960 Porsche, a supercharged 1750 Alfa Romeo and a 1931 4½ litre Invicta, the first British car sold with a guarantee of 100 m.p.h.

Lampredi revealed that, as chief designer at Ferrari from 1946 to 1955, he designed 36 engines which were actually built, apart from innumerable projects and 27 complete types of sports and racing car. To show how the experience gained in racing and sports cars benefits the touring car, he cited the engine on the Fiat 1300-1500 saloon on which he has been working. It produces as much power for its size as the Grand Prix engines of ten or twelve years ago.

Rudolf Uhlenhaut of Mercedes, insisted that the main purpose in driving a sports car is to have fun, but he did add that manufacturers who build sports cars make rapid technical progress because they are built in small numbers and the designer can risk using advanced ideas which he might not dare to incorporate in a touring car designed

"DO-IT-YOURSELF" SPORTS CAR

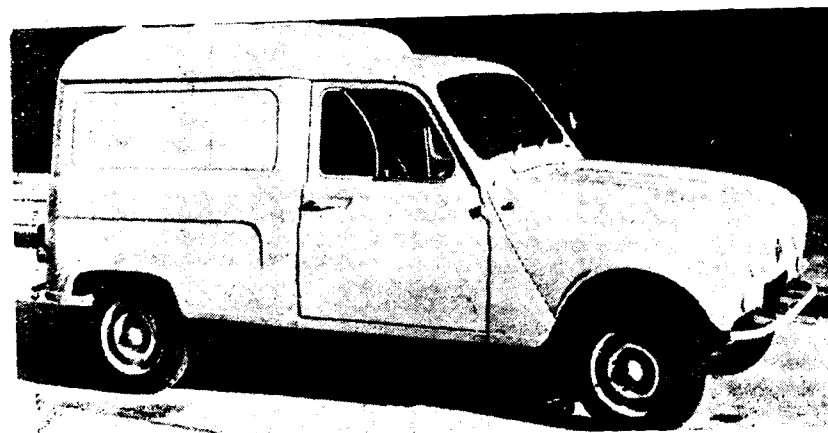


Of interest for sports car enthusiasts is the Lotus "Elite" Grand Touring Car. The Elite is available in kit form, at present, for the British market only, in addition to the ready-assembled version. The manufacturers claim that the kit can be assembled in twenty-four hours with the aid of a few hand tools.



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NEW R4 VAN FROM RENAULT



The new Renault Fourgon can carry a 6-cwt payload in a 66 cu. ft. body, with a kerb weight of only 12½ cwt. Ground clearance of nearly 8' and long-travel independent suspension all round, give it GO-ANYWHERE qualities whilst maintenance reducing features, (no greasing, sealed cooling system), fuel economy and bolted body construction contribute to very low running costs. A unique feature of this new van is the hinged rear roof panel, which allows very large articles up to 3 ft 9 ins high to be loaded easily. With the door closed and the hinged top fixed open or removed, lengthy objects such as ladders can rest on the top of the door and project from the rear of the body. It has all the R4 features, sealed cooling system, no chassis greasing, detachable body panels, all-independent suspension.

for mass production. Harry Webster, Chief Engineer of Standard Triumph, confirmed that the demands of sports car customers stimulate design progress for ordinary touring cars. Bill Heynes, Jaguar's Technical Director, emphasised that the modern sport car is a highly civilised machine capable of fast acceleration and a very high maximum speed but just as easy to drive in town as an ordinary low powered saloon. Sidney Allard was more pessimistic about the future, arguing that the need to give the sports car adequate acceleration also brings maximum speeds which cannot be

used safely at least on overcrowded British roads, but Donald Healey pointed out that high speed is not essential.

Thousands of people obtain a lot of amusement and driving pleasure from small sports cars which have a maximum speed of no more than 85 m.p.h. The discussion was punctuated by some amusing interruptions from Alec Issigonis, creator of the Miniminor who insisted that he did not know what constituted a sports car and argued that modern designers are simply tending to produce a fast, comfortable and controllable touring car.

LARGEST

SPORTS CAR ASSEMBLY LINE

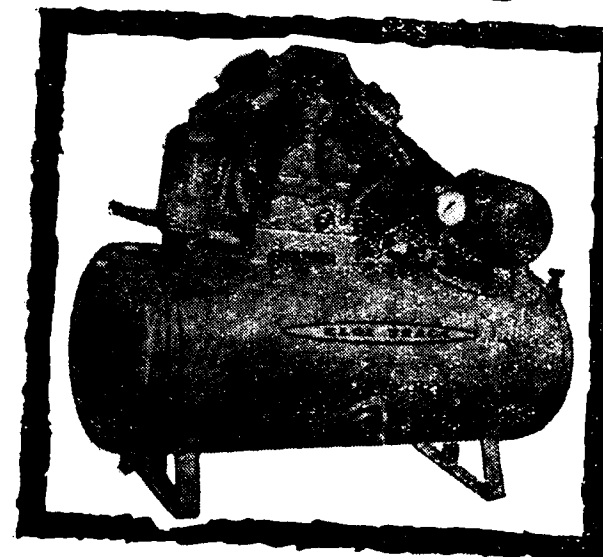
Recently the entire production of the new dollar earning Triumph TR 4 Sports Car has been transferred to the longest sports car assembly line in the world, which is housed in Standard-Triumph's revolutionary new assembly plant at Coventry.

This line is over 200 yards in length, and has stations for 46 units. This latest move is rapidly boosting sports car output towards the target figure of 500 units per week, in an all-out effort to fulfil orders received from throughout the world and notably the \$7,000,000 dollar order received from Standard-Triumph Motor Co. Inc. in New York.

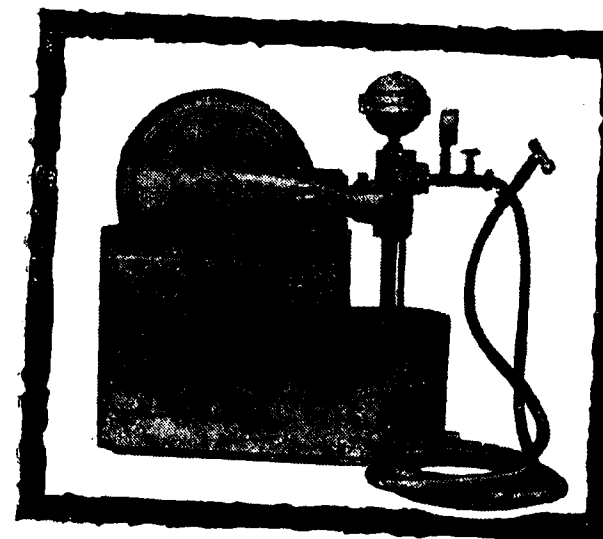
On the "TR4 Furlong" the assembly methods employed, are similar to those used for the Triumph Herald, with every stage planned to give maximum efficiency and constant emphasis on the highest degree of quality control. Each unit has a "pitch" of 18 feet giving fitters plenty of space to perform operations under the most favorable working conditions. At the end of the line each car covers three to four miles of simulated road conditions in a special roller test booth, where checks are made on the engine, transmission, brakes (with individual measurement for each wheel), speedometer and steering.

Latest car registration figures from the U. S. A. show that Triumph is maintaining its position as top-selling British marque, and with the TR4 gradually becoming available, the company is confident of consolidating this position.

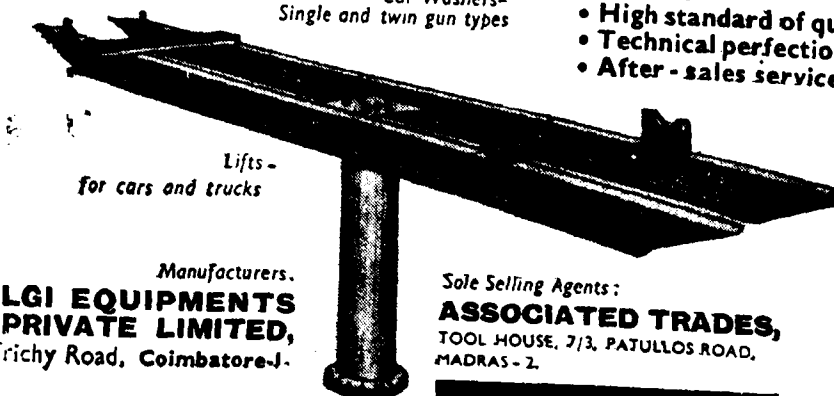
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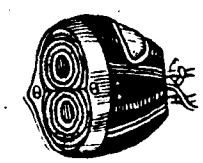
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by Jule H. Koch

Diagnose car troubles before they become SERIOUS. Recognize the symptoms of developing faults and future failures before they become DANGEROUS. Understand needed repairs and service.

Hard Starting Is Costly

Your car is what you have to worry about; give it more thought and think less about flying saucers or a trip to the moon. The car's engine, in good condition, should start on the first turn of the starter, which means not more than a few seconds. When the engine is cold, the automatic choke will enrich the mixture, carburetor will properly atomize it for explosion, pistons will suck the mixture into the firing chamber when the starting motor turns the crankshaft, then a good fat spark at the spark plugs will explode the mixture and the engine is started. If any unit in the entire sequence of operations is out of order, worn or not functioning, the starting operation will be difficult. Excluding a few rare and obscure conditions, causes of hard starting are listed in the following paragraphs. Symptoms are explained and tests suggested where possible.

Dead Battery

Nothing happens when starter button is pressed. The motor will not turn over. No sound is heard. Try horn and lights. If they burn, press starter button and see if lights go out. If so, the battery is dead. Have you had it tested or recharged lately?

Weak Battery

Motor turns over slowly. Not enough current in battery to deliver sufficient power to starting motor and voltage to ignition system for spark during the cranking operation. Turn on lights and press starter button. If lights grow dim noticeably, the battery is too weak for starting. It should be charged and serviced. If engine starts readily

when pushed by another car or rolling down grade, it is a sure sign of a weak current supply. In extremely cold weather a battery may seem weak, but it is a known fact that efficiency of batteries is greatly reduced in extremely cold temperatures.

Heavy Oil

In cold weather the consistency of oil plays an important part in engine starting especially when the car is parked in a cold garage or stands in the open. The added friction of cold, heavy oil puts an additional strain on the starting system. When temperatures are below freezing, a quick check on oil condition can be made by looking at the oil gauge stick before engine is started. Oil should drip from stick regardless of low temperature. When too thick it should be replaced with the proper grade of lubricant. This applies to the transmission and differential, as well as the engine.

Automatic Choke Not Functioning

Engine will turn over under power of starting motor but will not fire because mixture is too lean for cold engine. An occasional explosion will be heard because of build-up of mixture but engine will die almost immediately. Remove air cleaner to see if butterfly is nearly closed; it should be for a cold start. Hold butterfly in closed position and have someone press starter button for makeshift start. Have choke overhauled, adjusted or serviced.

Worn Engine Parts

If the engine has had long service it will not have sufficient compression

to make an explosive mixture. Pressure will leak past the pistons, rings and valves, and starting will always be difficult, even with good battery and good ignition system and carburetor. Engine will turn over satisfactorily and seem to take hold firing one or more cylinders but will not keep running. In a quiet place, the pressure may be heard escaping past piston rings after engine has stopped. No remedy except motor rebuild or overhaul.

Leaking Valves

May be caused by tappets adjusted too tight, gum formation on valve stems causing sticking, or hard carbon on valve seats causing burning and pitting. When valve seats become burned or pitted, leakage results in one or more cylinders. Have compression test done. If test shows more than 10 pound variation between cylinders, a valve reconditioning job must be done to restore compression to normal. If valve burning condition has not progressed too far, a treatment of tune-up oil may help temporarily by dissolving sticky gum.

Flooded Engine

Expression for too much raw or liquid gasoline in cylinders. Smell of gas is easily detectable around car in this condition. Wait a few moments and try again. Investigate cause of flooding—may be clogged air cleaner or air stoppage to carburetor caused by improper choke action. Be sure ignition switch is turned on.

No Fuel to Carburetor

Pump may not deliver enough pressure to lift fuel to carburetor.

Worn pump linkage, cracked diaphragm or frayed flexible gas line allow air to be drawn into system, causing lack of fuel to carburetor; to check, remove air cleaner. Throat of carburetor should show signs of gas vapour when accelerator is depressed. If dry, check gas line for fuel delivery. If engine starts then stops within 30 seconds and will not start the fuel in carburetor bowl is used up but pump failed to deliver additional fuel. Replace or repair pump.

No Spark or Poor Spark

May be caused by worn or burned spark plug electrodes, coated breaker points in distributor, deteriorated wiring, or bad condenser. Disconnect one or more spark plug wires from plug and hold terminal end within one-quarter inch from engine head to see if spark jumps; if not, there is no ignition spark to fire mixture. If faint spark can be seen when terminal is held almost touching head or ground, the spark is too weak to fire mixture.

Fouled Spark Plugs

Not usual in all cylinders at one time, so engine should start and run on cylinders that are clean. In cases of fouled plugs it is sometimes possible to see wet condition around the plug where it screws into engine. This is oil; oil is getting into the combustion chamber because of broken piston rings. Remove plugs and clean. Investigate cause of fouling plugs. Improper

heat range, crankcase oil level carried over full and running engine, under too low water temperature caused by faulty thermostats, also contribute to plug fouling.

Worn Out Spark Plugs

If gap between plug electrodes is too wide, spark cannot jump the distance. This usually develops gradually and will be practically the same in all cylinders. Disconnect plug wires; hold one-quarter inch from head; try for good fat spark. If good, put in plugs and examine points; if burned and pitted, replace new plugs properly gapped.

Dampness

Many engines start easily in dry weather but are hard to start in damp or humid atmosphere. Condensation forms (after engine cools off) in distributor cap, on coil insulator and high tension wires. Ignition voltage runs up to 15,000 volts; requires perfect insulation to prevent current leakage. Proof of high tension leakage can often be seen if engine is started in dark garage. When presence of dampness is suspected, wipe or blow off the plug insulators, wire and inside of distributor cap until all units are dry. Replace all cracked or rotted insulation at earliest opportunity to prevent recurrence of trouble.

Engine Needs Tune-up

Modern engines require critically

accurate adjustments to deliver top performance. If starting trouble develops gradually and you cannot diagnose ailment, consult a service man. He has equipment and the know-how to adjust these various units and keep them in proper relation to each other. This operation is known as "engine tune up" and is merely a system of checking and adjusting all units to original specifications—valves, carburetor, distributor, spark plugs, timing, thermostats, etc. When the job is properly done any engine will start within a few revolutions of starter regardless of weather or temperature.

Hard Starting After Engine is Hot

Engine turns over but will not fire. Excessive heat may cause vapour lock in fuel system. Allow engine to cool normally for 10 or 15 minutes. High resistance at terminals in low tension electrical circuit may be the cause. Have voltage tests on ignition system, clean and tighten primary wire connections; inspect manifold system for possible air leaks.

The foregoing symptoms and troubles cover 95 per cent of hard starting cases. No attempt has been made to cover such rare and unusual conditions as bent starter motor shaft, worn starter bushings, defective switches and broken fly-wheel teeth—all beyond the average car owner's diagnosis and treatment... Finally have the car's battery tested today.

(courtesy of the "Automotive Digest")

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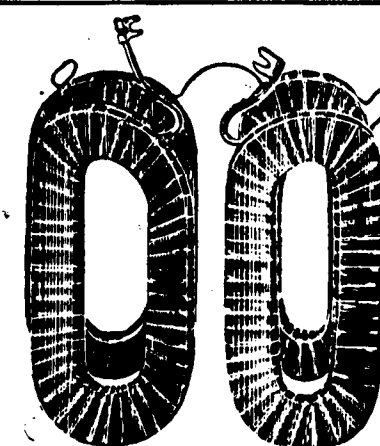
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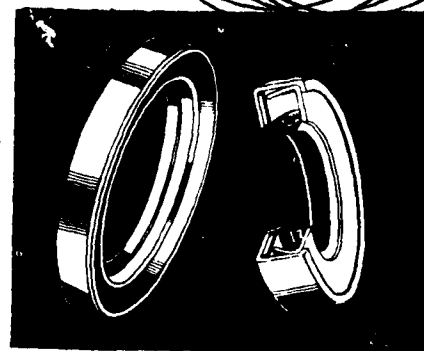
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Pioneer Oil Seals are made in various types and sizes for cars, trucks, scooters and off-the-road equipment. They are used as original equipment in the manufacture of Enfield Motorcycles, Perkins and Meadows Diesel Engines, Ferguson Tractors and C.A.V. equipment.



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With an outlay of Rs. 388 crores on roads and road transport by the State under the first two plans, the capacity of the road transport industry has been more than doubled in the past ten years. It is estimated that 10,600 million ton miles of goods traffic were moved by road in 1960-61 against only 3,358 million ton miles in 1950-51, a three-fold increase. Passenger traffic doubled in terms of passenger mileage from 14.374 million miles to 30,000 million miles. The general conclusion reached by the Planning Commission may be noted here:

"The demand for transport has risen at a substantially faster rate than the increase in national income or the growth of production in any major sector of the economy over the last (ten-year) period... India's experience over the last decade is in line with the

been set under the Third Plan, broken down into 30,000 passenger cars, 60,000 trucks and buses, and 10,000 jeeps and station wagons.

The demand for tyres and tubes has gone up in step with the increase in road traffic. 1,350,000 automobile tyres were produced in 1960-61, as against 900,000 in 1955-56, an increase of 50% in five years. Even with this increased production, supply fell short of demand, leading to the import of 42,455 tyres of the approximate value of Rs. 1.18 crores in 1960. Judging from the fact that 30,000 tyres of the value of Rs. 70,00,000 were imported in the first half of 1961, the trend of imports is obviously upwards.

Five Tyre Factories

There are today five factories in the automobile tyre field. The

THE INDIAN TYRE INDUSTRY

experience of several industrially advanced countries in their early stages of growth and these trends may well be expected to continue in the period of the next few years."

Tyres for 100,000 vehicles

The number of goods vehicles has almost doubled in a period of ten years—from about 73,000 in 1948-49 to 160,000 in 1960-61. A rise of 85% in the number of passenger vehicles was recorded over the same period from 27,275 to about 50,000. Production of automobiles has, despite foreign exchange difficulties, made considerable headway. From 16,500 automobiles produced in 1950-51, the number has gone up to 53,500 in 1960-61. A target of 100,000 vehicles has

other four are located in Calcutta, Bombay (two), and Ambattur, near Madras. The total licensed capacity of these five plants is about 1.8 million automobile tyres.

The Third Plan envisages more than doubling the capacity for automobile tyres—from 1.61 million at the end of the Second Plan to 3.7 million in 1965-66. This increase in capacity is to be achieved by setting up new plants and expansion of existing ones. New units are already in construction, one each in Madras and Calcutta, one near Allahabad and two in Kerala.

Raw Materials

Rubber, the principal raw material for the manufacture of tyres, is in short supply, as the output of the plantations in Kerala is only about 26,000 tons against a demand of 57,000 tons in 1960-61.

The short fall is met by imports of both natural and synthetic rubber. 6,560 tons of synthetic and 22,949 tons of natural rubber were imported in 1960 involving a foreign exchange expenditure of Rs. 8.6 crores.

In the first eight months of 1961, 8,000 tons of synthetic and 20,000 tons of natural rubber were imported at a cost of Rs. 8.2 crores to meet the increased demand of the rubber manufacturing industry.

Efforts are under way to increase the output from plantations in South India, the Third Plan target being 45,000 tons per annum by 1965. This will still leave a considerable gap between the estimated demand of 100,000 tons by the end of the Third Plan, and the anticipated level of supply. The deficit is to be met partially by a synthetic rubber plant, now under construction at Bareilly in Uttar Pradesh with an initial capacity of 20,000 tons per annum, to be raised subsequently to 30,000 tons. This unit is expected to come into production in 1962. Another unit to manufacture 20,000 tons of a different type of synthetic rubber has been licensed in Assam.

Carbon Black

Carbon black, an important ingredient added to rubber to give it added strength and resistance to heat, is at present not produced in India. One plant is being set up at Durgapur and another has been licensed in Assam with a total capacity of about 24,000 tons. Manufacture of other rubber chemicals is also being taken up by a plant in Calcutta, and further capacity is proposed to be licensed. Rayon cord for tyres is to be produced by two units in Bombay, both being expected to come into production in 1962. The overall picture of raw materials thus reveals considerable dependence at the present time on foreign imports but this should be quickly remedied when all the units under construction or proposed to be constructed, are completed. The extent of the deficit in supplies warrants a close watch by appropriate official agencies on the progress of these projects.



LEFT: Instrument used in American Association of State Highway Officials' Road Test, measures and records roughness of pavements in the wheel paths of the vehicles. RIGHT: Asphalt concrete, dumped from hot mix truck, for resurfacing bus stop on George Washington Bridge.

By PYKE JOHNSON
Chairman,
Highway Research Board, U. S. A.

better american ROADS through highway RESEARCH

"The Highways of Tomorrow Are Being Designed in the Laboratories of Today"

About 40 years ago a group of highway leaders met to talk about the most pressing problems facing them—as engineers and administrators devoted to the task of designing and constructing highways. They were confronted by a paucity of scientific knowledge in almost all aspects of their work. They needed to know much more about materials, traffic control, roadway design, and financing.

All of these problems were particularly challenging in 1921, because the American nation was then poised on the threshold of the automotive age. There were nine million automobile owners in 1921 in America and every one of them was raising his voice in irritation against roads which were washboard-rutted in dry weather and a sea of mud in wet weather. To say that highway engineers were under considerable pressure to improve their product is to put it mildly.

This was the climate in which the Advisory Board on Highway Research was organized as a division of the National Academy of Sciences—National Research Council. Later it was to become known as the Highway Research Board.

In the 40 years since then, the highway engineering profession has demonstrated its ability to work

out solutions to the highway problems posed in 1920 and many others not even remotely imagined by the founding fathers of the HRB. Thanks to highway research—persistent and imaginative—the American motorist enjoys a system of highways which is economical and efficient, and which has no peer in any other country.

The first activity of the new Board in 1920 was to take a census of all the road research projects then under way. It found that 132 different organizations were already conducting 479 distinct research tasks. They covered a wide range of subjects and clearly indicated how wide the horizons of highway transportation were extending. Speaking on this subject at the second meeting of the Board, Thomas H. MacDonald then chief of the U. S. Bureau of Public Roads, declared:

"The opportunities are unlimited. There is not a single phase in which there is not the necessity for major research."

What were some of the highway frontiers in 1920?

1. In 1920, Professor T. R. Agg of Iowa State College was running tests with Packard touring cars to determine the cost of acceleration, braking and clutching in relation to

various road grades. The objective: to determine if the cost of reducing steep grades was justified by a significant reduction in the cost of vehicle operation.

2. In 1920, the Bureau of Public Roads was trying to determine what caused a gravel road to deteriorate into a series of bone-shaking corrugations—31 inches from crest to crest and 1½ inches deep—under traffic loads of 400-500 cars a day.

3. In 1930, the Eno Foundation in Connecticut was studying the feasibility of a number of traffic control devices to protect pedestrians. They tested bumpers, traffic signs, semaphore signals, lights and crow's nests. The researchers bemoaned the fact that neither motorists nor pedestrians, had any knowledge of what the other was going to do at an intersection.

Mostly, the highway engineers were concerned with physical problems in 1920. But even 40 years ago, a few far-sighted individuals were exploring the possible future of highway transportation and recognizing that highway research must not be restricted to improvement of the roadbed or traffic conditions, but also must embrace financing and administration.

"After all," said Thomas H. MacDonald, "the real objective of

highway research is the most economical...and the most efficient highway transportation service possible, for the use of the public as a whole."

Research to Reduce Construction Costs

This philosophy has governed highway research ever since. The last 40 years have seen a great many of the problems of 1920 substantially solved. The researchers did discover what the cost of steep grades was to the average motorist. They have largely eliminated the washboard road, through the development of cheap stabilization materials and new pavements.

The much-lampooned battle between the motorist and the pedestrian is too much of a problem of human nature to solve in 40 years, but the traffic engineers have developed a great variety of systems to resolve their conflicting interests at intersections. However, some of the matters which bothered engineers at the first Highway Research Board meeting will be on the agenda when the Board celebrates its 40th anniversary this month.

And there will be a host of new ones. Not very long ago, the Board surveyed the major highway research needs of the United States, just as was done in 1920. This latest comprehensive study revealed

that 1,018 highway experiments were under way, and concluded that efforts during the next five years should be concentrated in 19 broad areas. These include:

1. Intensive investigation of accidents.
2. Comprehensive study of passenger transportation in metropolitan areas.
3. Snow and ice removal problems.
4. Improvement of techniques for forecasting traffic.
5. Evaluation of freeway lighting.
6. Development of a driving simulator and a traffic fellow simulator.
7. Development of electronic control of vehicles.

In an accelerated drive to find answers to such problems, the Highway Research Board recommended the expenditure of \$34 million more than State, Federal and private organizations currently are spending in research.

Meanwhile, the Board continues to serve as a clearing house for information and provides a platform for the airing of new developments. Eighty-two technical committees, with memberships totalling 1,514, keep abreast of every research effort. A permanent HRS staff of experts in various branches of high-

way engineering, construction and administration gives technical and administrative assistance to these committees.

Through a co-operative two-way "correlation service," the Board is alerted to inauguration of new research projects and this information, in turn, it disseminates to its member organizations. Major findings each year are reported at the Board's annual meeting.

This month more than 2,600 men involved in highway development attended the week-long conclave to hear over 200 formal papers and dozens of informal reports in committee sessions. Then, during the course of the following 12 months, the Board's editorial staff will put these findings into publication form—a tremendous publishing job.

Through all of this activity, the frontiers of highway knowledge are steadily advanced. The behind-the-scenes drive for new techniques, new materials, and new ideas is creating some exciting new prospects for motoring in the future. The highways of tomorrow are being designed in the laboratories of today.

They will be better highways—safer, faster, easier to drive upon, more durable, more economical to operate over. This was the objective that motivated the highway engineer 40 years ago. It still prevails in 1962.

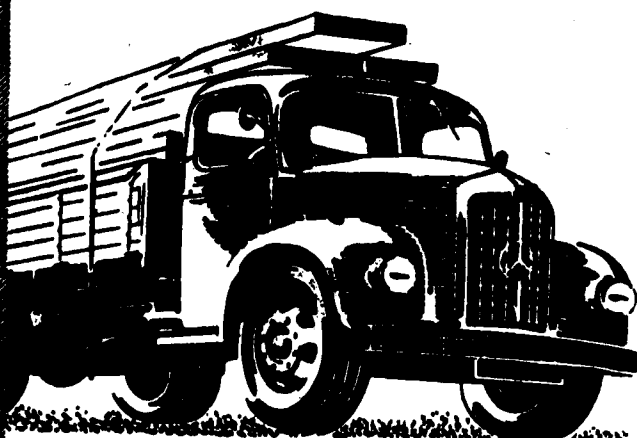
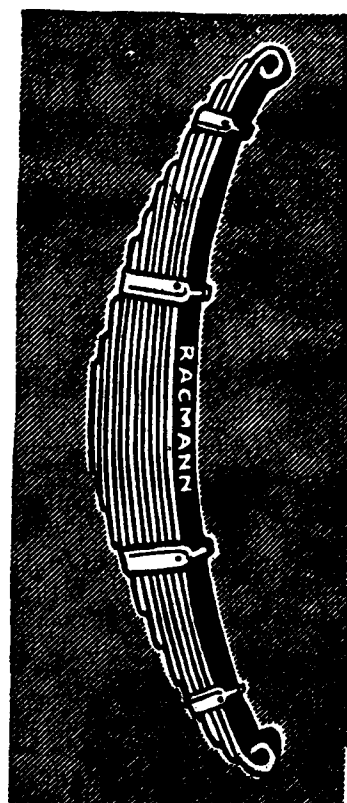
(courtesy of the "American Motorist")



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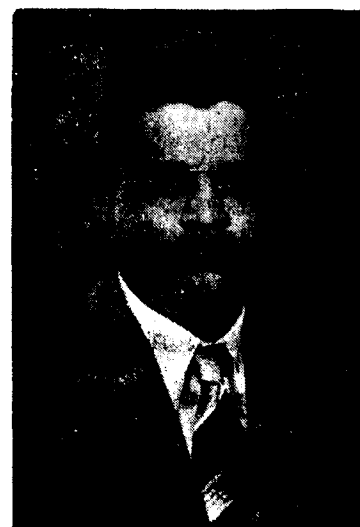
GLOBE-RK 4



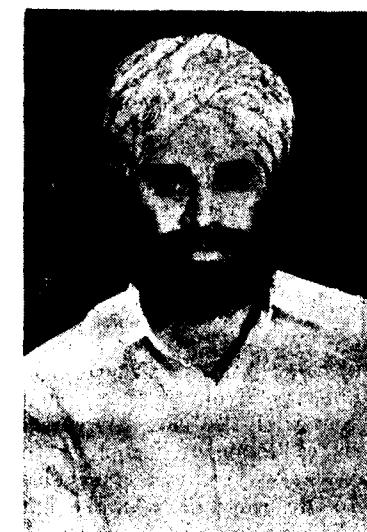
SRI K. R. BAGHAVAN,
who polled the highest number of votes
in the election to the Committee.



SRI SATYA DEV,
Joint Hon. Secretary for the
ensuing year.



MR. P. CHANDRIAH,
re-elected member of the Managing
Committee.



SARDAR SUNDER SINGH,
nominated to the Committee.



MR. K. VASUDEVAN,
nominated to the Managing Committee.



MR. M. V. CHAUHAN,
re-elected to the Managing Committee.



MR. D. V. D'MONTE,
re-elected member of the Managing
Committee.



MR. S. NATARAJAN,
re-elected to the Managing Committee.

**M.M.P.D.A.
new
committee
members**

21st January 1962

5

MOTORINDIA

17

B'neath the Bonnet By Motorist

Why The Difference

Most of us have noticed that the car will climb the hill better at some times than others, even though the load is the same, there is no change in gas and the car runs at the same speed on the approach. Various factors can, of course, come into the picture, but the usual reason for the difference in performance is the variation in air temperature. Moisture in the air has something to do with the difference, but the main reason the engine will perform better at night is because cooler air is being fed to the carbureter.

Getting The Point

The appearance of breaker points is a useful guide to what's happening in the engine. That bluish scale on points, for example is a good sign of excessive voltage. Burned points usually are an indication of high resistance in the condenser circuit. Points that become blackened with oil, get that way because oil is forced up around a worn distributor shaft from the crankcase where blocked breathers cause excessive pressure.

This For Aluminium

Where the car has aluminium trim the proper method for cleaning it is to use water or water with a mild soap or neutral detergent

added. No polish is required. Actually the same treatment goes for chrome trim unless there is evidence of dulling, in which event use chromium polish and then wax lightly. In fact, the light waxing treatment is approved for any kind of trim.

All Over Again

It is always unfortunate when a mechanically-minded car owner does a valve job on the engine of his car and then discovers that results are far from satisfactory. Such was the experience of a motorist who learned the hard way that he had failed to take into account wear on the valve tappets as well. Because of this wear the valves had a tendency to tilt the valve guides they operated. That was the same as their not seating tightly.

Puzzling Leakage

Water in the oil always is cause for concern, even if it is merely due to condensation from too many short, cold runs with the car. Any time there is evidence of water in the crankcase always check the coolant level in the radiator to make sure it is not dropping. Leakage around the cylinder head gasket is the most likely point of trouble, but a new gasket may not in itself be the answer. Often it is found that the head of the block is warped so that

a tight fit between the two can't be obtained. One of the common causes of leakage is failure to draw down the head bolts in the sequence which the manufacturer establishes for each make and model. Less common, but always a cause to consider, is a cracked exhaust valve seat.

Just Because It Is New

One thing we need to watch out for is jumping to the conclusion that because we have installed a particular brand of plug, coil or breaker points, that we have found miracle product. Often the old parts we replace are in such bad condition that almost anything in the way of new equipment would make a vast improvement. Actually the worse an engine runs the more anything in the way of new equipment will give it new life.

Looking Around

Thanks to the discerning eye of the mechanic who was installing one of the tail pipes on my car I was led to discover that the left rear spring was broken. Three leaves had cracked clean through, although the master leaf was still holding up nobly and there was no noticeable rear end sag. Nor did the car ride abnormally. With the car on a lift, and then allowed to settle down a little on a high metal horse so as to lift the frame and body away from the rear axle and wheels, the break in the spring leaves was easily seen. Keep it in mind next time you have a tail pipe replaced. By the way, it's time for AA Members to have their cars fully checked.

Behind Hard Starting

When there is binding in the automatic choke mechanism the natural assumption is that there is some corrosion on the leverage or that the choke valve itself may bind. This may be far from the facts of the case. One company found that the trouble is due to a sticking unloader piston for the choke. This piston is vacuum-operated and is not powerful enough to overcome the resistance. Remedy, after removing the air cleaner, is to squirt carbureter cleaner solvent through the link of the piston opening. Work the choke back and forth to make sure the gummy deposits are able to get full benefit of the solvent.

BOMBAY NEWSLETTER

Good news for those coming to Bombay from the South by road is that those sections of the Poona-Bombay Highway which had deteriorated very badly following the last monsoon have now been re-surfaced.

The Madras "Standard Herald" evokes admiring glances from Bombayites. Writing a review about the new "Standard" in Bombay's Society journal "The On-Looker", E.D.N.P. the well known motoring journalist says "at the moment most of the Standard Herald owners are 'running in' the car; so they cannot say how she will shape up in the years to come. They can, however, rest assured as to its reliability, and sturdiness, because the Standard Herald made quite a reputation at the last 'Le Mans'".

The Community Safety Committee of the Rotary Club of Bombay under the chairmanship of Mr. Jehangir J. K. Patell, Secretary of W. I. A. A. has planned to organise very shortly a programme of educating the city youth on "Safety" with particular stress on "Safety on Roads".

The World Touring and Automobile Association which has its head-quarters in London, has informed the Western India Automobile Association that the Government of the Federal Republic of Germany has deposited the instrument of ratification of the following conventions.

Temporary Import of Road Vehicles in West Germany and Norway

1. Customs convention on the Temporary Importation, for private use, of Aircraft and Pleasure Boats.

2. Customs convention on the Temporary Importation of Commercial Road Vehicles.

These conventions will come into force for the Federal Republic of Germany on 21st January 1962.

Also, the Government of Norway has deposited the instrument of accession to the following agreements:

Customs convention on the Temporary Importation of Private Road Vehicles;

Convention regarding customs facilities for touring;

Additional protocol to the convention concerning customs facilities for touring, relating to the importation of Tourist Documents and Material.

The WIAA Reliability Trial for 1962 is proposed to be held in March or April 1962 and the route, according to present plans, will probably begin at Ahmedabad in Gujarat State and after passing through Abu,

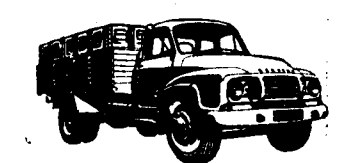
Jaipur (Rajasthan) and other places, will perhaps terminate at Ahmedabad or Baroda. All persons interested in this purposeful sport are invited by the W.I.A.A. to join. The Secretary, WIAA (P.O. Box 211, Bombay 1) will be glad to furnish further details, if contacted.

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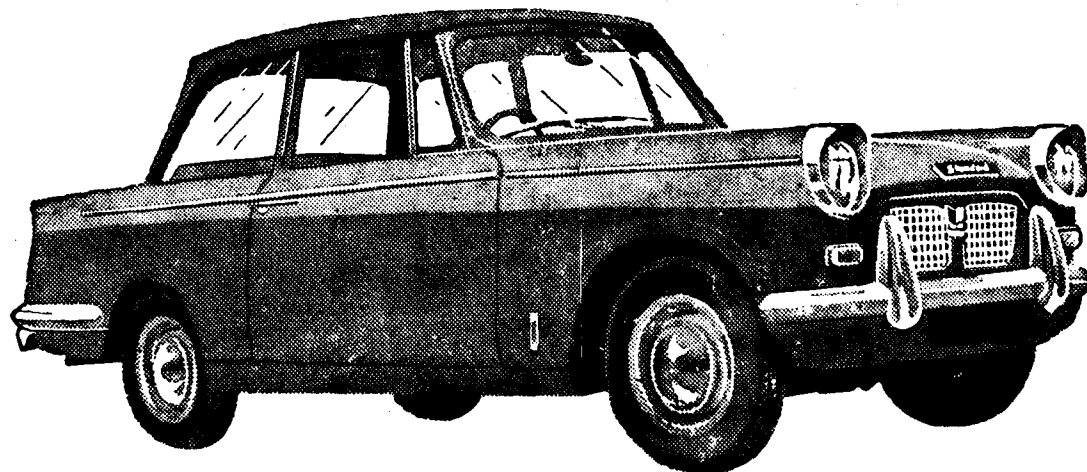
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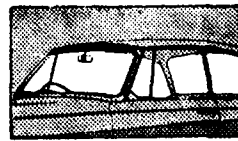
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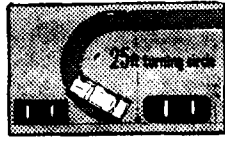
A thoroughly practical car
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any conditions.



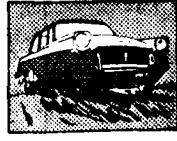
The Standard Herald has everything at hand to make driving a real pleasure. It's so easy to handle.



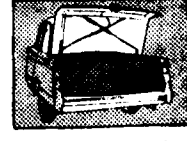
Extremely slim front and rear pillars. High wide curved windscreen. Large windows give greater visibility - 93%.



Turns in an incredibly small turning circle of only 25 feet. Park with pride, in practically the own length of the Standard Herald.



Independent suspension on each wheel.



Clear 13 cubic feet of boot space uncluttered by the spare wheel.

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Lovely Hawaiian girls greet incoming visitors.

JET TOUR TO A PACIFIC PARADISE

Of all the dreams of man, that of visiting the idyllic tropical islands of the Pacific is one that, in actual experience, comes closest to expectations.....balmy nights, sunny bright days, sweeping, clean beaches beneath emerald forests, with the intensely blue ocean beyond, woven together with friendly people of gentle customs.

Designed primarily to introduce the first-time visitor to the Fiftieth American State, the tour includes plenty of leisure time to bathe at Waikiki, and sample the delightful shops and markets, parks and residential districts of Honolulu, and to meet the hospitable citizenry, but also the tourist will be taken on an island-hopping expedition that will touch down on three of the State's eight inhabited islands.

Spectacular and incredibly beautiful things to be seen have been selected for the tour. On the Big Island, Hawaii itself, the members of the tour will stand near one of the world's most active—and most well-behaved—volcanoes, Mauna Loa, and later dine at Volcano House on the rim of another, now dormant,

before plunging down a mile to where the Pacific washes the famous Black Sands of Punaluu, in the Hawaii National Park. This Park and the Hawaiian Islands were formed by volcanoes. Kilauea's summit has collapsed to form—as the visitor finds out—a caldera paved with recent lava flows. Molten lava sometimes gushes from cracks in Mauna Loa, which towers six miles above the bottom of the Pacific Ocean.

Beauty is everywhere in these islands. There are flowers of all hues at all seasons; the ever changing sky and the great sea are a breathtaking backdrop to everything, from the terrible, steep, volcanic mountains that form the backbone of the island chain, to the glowing fern forests on the mountain flanks, and the startlingly colourful coral forests on the ocean floor.

The social high point of this jet tour will be a genuine Iuan, a Hawaiian feast of roast pig, bread-fruit fish and poi, while citizens of the United States' newest State entertain with Tahitian, Samoan

and Hawaiian native dances and songs.

For Hawaii is an island of music, colour and warmth, expressed both in the natural settings and the lively interest and unaffected friendship of the people. There is no doubt that this is one of the finest and friendliest spots on the face of the green Earth to visit. This is your invitation to visit, with the speed and comfort of jet travel, the hibiscus land...Hawaii.

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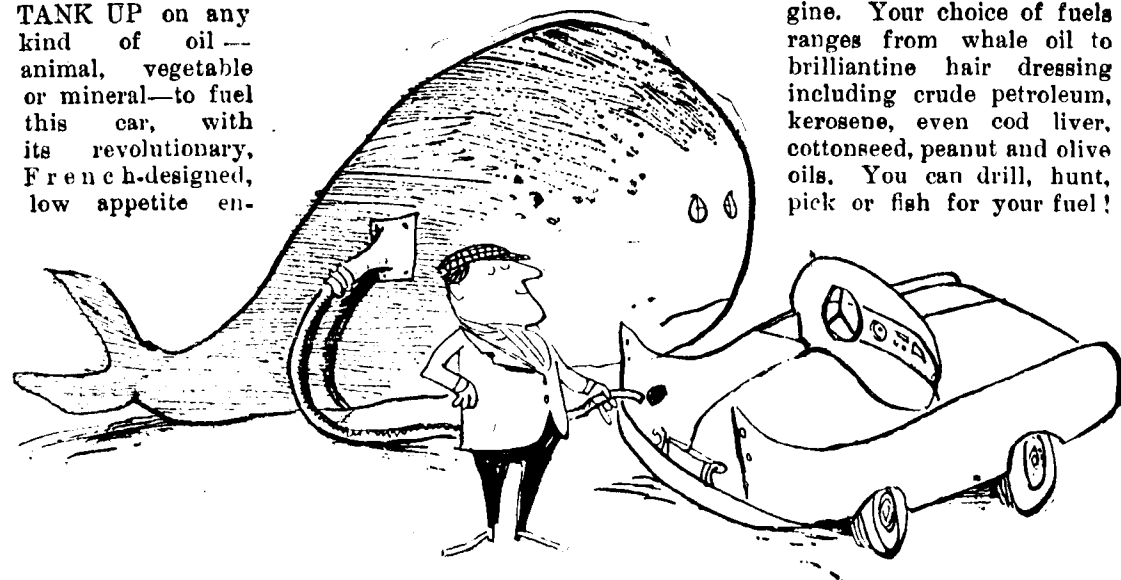
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MADRAS 2

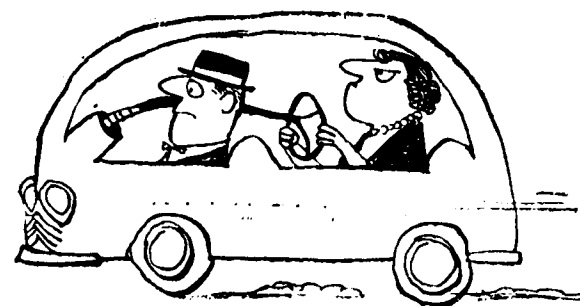


A DC-8 Jet Mainliner used for Hawaiian Tours.

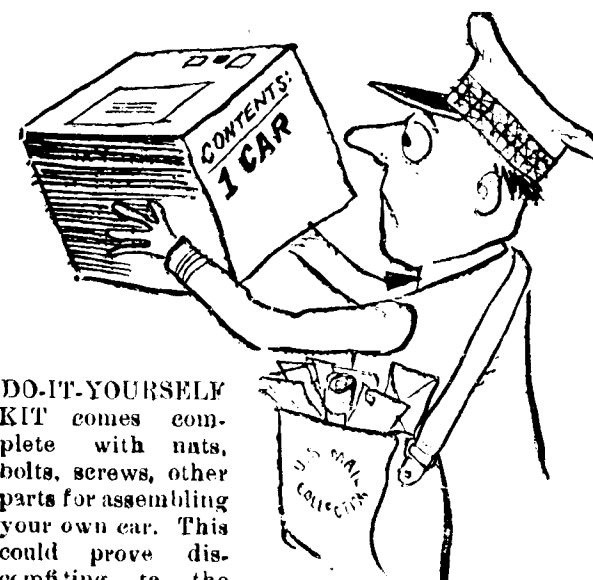
TANK UP on any kind of oil—animal, vegetable or mineral—to fuel this car, with its revolutionary, French-designed, low appetite en-



gine. Your choice of fuels ranges from whale oil to brilliantine hair dressing including crude petroleum, kerosene, even cod liver, cottonseed, peanut and olive oils. You can drill, hunt, pick or fish for your fuel!



BACK-SEAT DRIVER really will be in the driver's seat in this projected model. Single control lever, operated from the back of the car, will permit steering-braking, accelerating, with back-seat driver having actual as well as oral command of the car. To go faster, stick is pushed forward; to slow down, it's pulled back.



DO-IT-YOURSELF KIT comes complete with nuts, bolts, screws, other parts for assembling your own car. This could prove dis-

comfiting to the untutored home handyman who manages to hook up the widgets with the wrong smidgets because he was following page 14 instead of 4 in the instructions. Then there's the chap who on building a complete car in his basement workshop finds he can't mudge it through the door.



Crazy Cars: You May

If you figure the rocket boys at Cape Canaveral and in Sputnik Siberia are writing the last word in transportation, we suggest you take another look tomorrow—or the day after—along your local highway.

It's just possible you'll see a car without wheels go whizzing by, or one flying past without wings. Could be there's a fellow rolling past on motorized skates, or one flashing by on a jet scooter. And don't be upset by the fellow watching TV instead of busying himself at the steering wheel. And if you don't see any motor vehicle as odd as those, it might

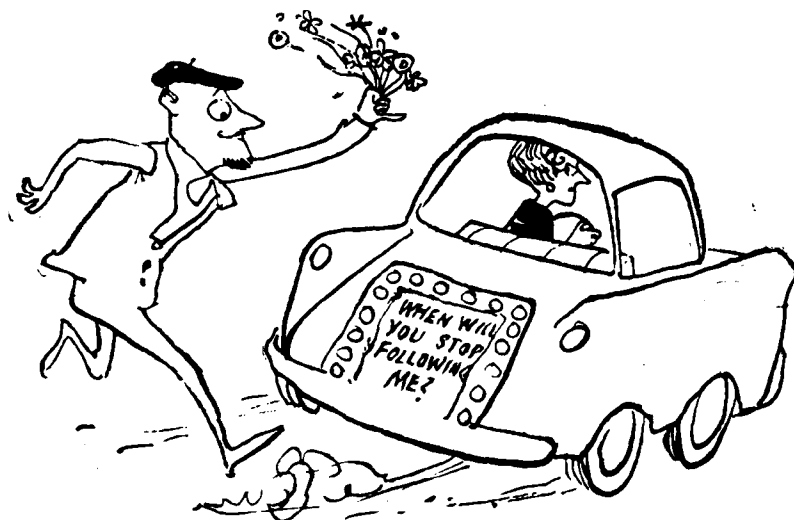
Be Driving One!

just be because you're driving around in one which is almost as odd yourself.

The ideas for getting from one place to another, as depicted here, have all been seriously proposed by inventors in various places throughout the world. This report is based on actual press releases, newspaper accounts and similar sources. Some of the ideas are already on the market; others may not be as far away as you think. Oh, and one more word of caution: don't laugh too hard; remember there was once a time when people scoffed at the horseless carriage, too.

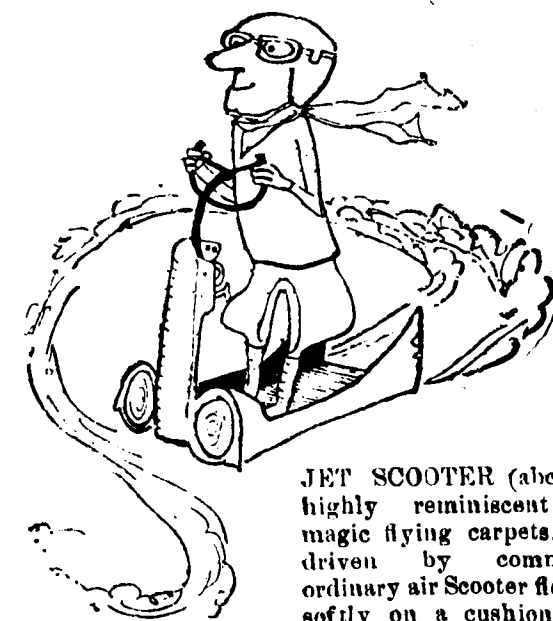
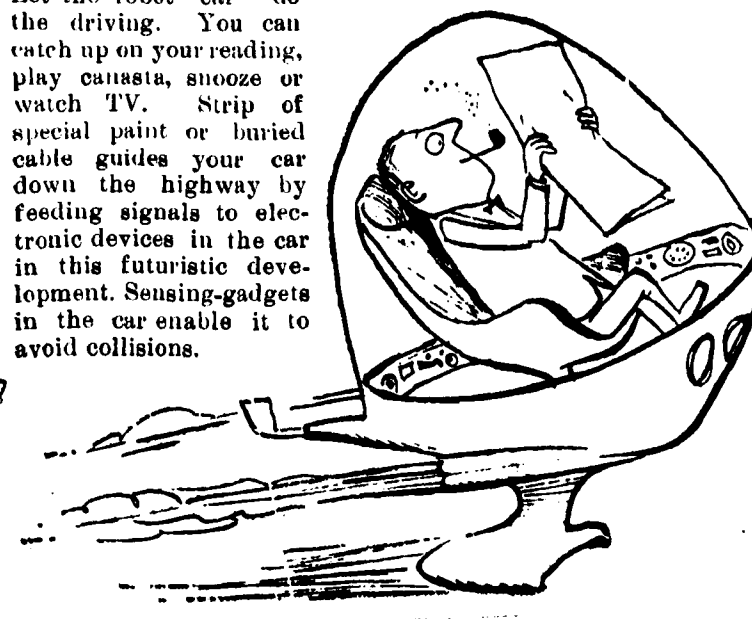
By Courtesy of "American Motorist"

Powerskates promise answer to flat tires, car washes, traffic jams, hubcap thieves, other problems of owning a car nowadays. Right: To travel, fix small gasoline engine to your back, carry a combined throttle, motor shutoff, clutch control in one hand, and away you go.



ENGARDE! A French auto is touted as "the woman's dream car." It features a rear-bumper sign flashing any of these: "Pass I am in no hurry"; "When will you stop following me?" or "You skunk!" Car also has miniature bar, white telephone, a built-in dressing table, and as the piece de resistance: a gilded cage containing two doves.

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JET SCOOTER (above) highly reminiscent of magic flying carpets, is driven by common ordinary air Scooter floats softly on a cushion of jet-fed air, which takes

place of wheels. Early model has no moving parts, hovers just above ground. It's described by its developer as the prototype for big wingless, flying cars of the future, pushed by jet air at 500-mile-per-hour speeds.

Doubled Haulage By Road Transport To Ease Coal Bottleneck

At long last, the Union Government has decided to solve the transport difficulties that have plagued the coal industry for quite some time by stepping up the movement of coal by road.

The Union Ministry of Transport and Communications is taking measures to ensure the movement of at least SIX MILLION TONS of coal annually by road during the Third Plan period, in addition to the movement from coal dumps to consumers. At the moment, nearly 2.6 million tons of coal are moved each year by road.

In the first instance, coal will be carried by road to North Bihar and Uttar Pradesh. In the next stage, coal will be carried to distant places in N. India, Delhi and the Punjab.

The first step the Government proposes to take is to bring down the cost of operation by road to an ECONOMIC LEVEL. Consumers are averse to the transport of coal by road because haulage of coal in

trucks is more expensive than rail transport. For this purpose, heavier vehicles and track-trailer combinations and articulated vehicles will be permitted on as many roads as possible. The State Governments have been requested to improve the SURFACE and CONDITION of roads in the coal mining areas to facilitate the use of heavier transport vehicles.

Liberalisation of the licensing policy in regard to public carriers and other concessions which may be offered as inducements to operators undertaking the transport of coal by road are also under consideration by the government.

The question of coal transport by road has assumed added importance with the proposed channelling of coal despatches through dumps to be run by the State Governments. Already a few coal dumps have been set up in some states, while the matter is under correspondence with other states.

The belated decision of the government to step up the movement of coal by road is welcomed. It should have been taken much earlier, for it was apparent to all that TRANSPORT was the bottleneck in this vital industry. For some reason, not readily discernible, transport of coal by road to the consumer was not favoured. It is heartening to learn that common-sense has prevailed over prejudice, and that SIX MILLION TONS of coal will be moved by road annually during the Third Plan. This does not include the carriage of coal from the dumps to consumers.

In working out a coordinated plan for the movement of coal by road and rail, the government would be wise to limit carriage by rail to points where the double-line working ends, so as to facilitate the speedy turn-about of wagons. If dumps are located at these points, trucks can take over the transport thence to the consumers.

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COMPANY NEWS



Dunlop India's New Managing Director

Mr. M. L. Bexon succeeds Mr. John Luckham as the Managing Director of Dunlop India. Only 38 years old, Mr. Bexon is perhaps one of Dunlop's youngest Managing Directors.

Born in 1923, Mr. Bexon was educated at Derstone College and St. John's, Oxford, where he secured the M.A. (Hons) Degree in Modern History.



Mr. M. L. Bexon, M.C.,
Dunlop India's Managing Director.

Mr. Bexon served as a Captain in the Army Tank Corps from 1941 to 1946, in the Middle East Theatre and later in Italy. He was awarded the Military Cross for conspicuous gallantry in action. He also served in the Territorial Army, Armoured Corps, after the war.

Mr. Bexon joined the Overseas Division of Dunlop as a trainee in 1948, and served the company with distinction in the U.K., Denmark and in the Middle East. In April 1960, he succeeded Mr. E. H. Morris, as General Sales Manager, of the Dunlop Rubber Company

(India) Limited and was appointed as the Sales Director of the company at its Annual General Meeting in Calcutta on 27th April 1961.

Standard Batteries

The Chairman of Standard Batteries Ltd., Mr. R. D. Char, struck an optimistic note about the outlook for the company. He told shareholders recently that the working of the company during the current year was quite encouraging. The company received substantial orders from the Railways and it has taken effective steps to meet the increasing demand for its products. Production showed a rising trend, and the company sold the largest number of automobile batteries in 1960-61.

Exports

Export of batteries to the neighbouring countries is meeting with stiff competition from the East, while the Union Government has announced that actual users' licences will be cut by 20 per cent, if they do not export their manufactured goods. If the company is compelled to purchase virgin lead locally, a basic raw material for the manufacture of batteries as a result of the cut in imports, their batteries will cost more, and the higher prices will seriously affect export possibilities.

Firestone in Japan

Messrs. Firestone Tyre & Rubber Co. of Akron, Ohio, U.S.A. will produce tyres in Japan in collaboration with the Ohtsu Rubber Industry Ltd., Osaka. This is reported to be the fourth tyre manufacturing undertaking by Firestone in the eastern hemisphere, the other establishments being in BOMBAY, Manila and at Christchurch, New Zealand.

Automobile Products of India Ltd.

In spite of an increased annual turnover computed at Rs. 438.93 lakhs which yielded a gross profit of Rs. 23.83 A.P.I. was not able to declare a dividend for its ordinary shareholders for the year ended July 31, 1961, as the company could not reduce its accumulated losses.

Scooter Production

The company imported machinery worth Rs. 25 lakhs for the manufacture of engine components of Lambretta scooters—nearly Rs. 22.5 lakhs worth of machinery on deferred payment basis and the balance under capital participation

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by Innocenti S.C., Milan, Italy. The machinery was received only towards the end of the year under review and production commenced only in December 1961. The company's agreement with the Italian collaborator has been amended, resulting in a substantial reduction in the royalties payable.

Brake Linings

The company also imported machinery valued at Rs. 3 lakhs approximately for the manufacture of heavy duty brake blocks for heavy commercial vehicles. This is expected to increase the production and sale of the company's Firestone brake linings. The plant was commissioned recently, and production commenced during the current year. Firestone have also agreed to reduce the royalty payable on the manufacture of brake linings.

Clutches

The licence granted by Automotive Products Ltd., U.K. for the manufacture of Borg & Beck

PRESTOLITE OF INDIA LTD.



A COMPANY IS BORN as Indar Singh of New Delhi, India, centre, signs documents creating Prestolite of India, Ltd. Watching the signing, right, is J. J. Bohmrich, Vice President, International Operations, the Electric Autolite Company, who said Prestolite automotive electrical parts will be made by the new corporation in India.

clutches and Lockheed brake equipment has been extended for further period of five years.

Meadows Engine

A.P.I. has terminated, by mutual consent, the licence granted by Henry Meadows Ltd., England, for the manufacture of Meadows Diesel engines, and turned it over to the Premier Automobiles Ltd. for a consideration of Rs. 24 lakhs. The special purpose machinery, jigs and

fixtures which had been installed for the manufacture of the Meadows Diesel engines have been transferred to PAL at book value and consideration obtained.

Northern India Motor Owners' Insurance Co. Ltd.

The Northern India Motor Owners' Insurance Company Limited, Delhi, is to issue an additional

capital of Rs. 2.25 lakhs divided into equity shares of Rs. 100 each. The shares will be issued at par and will be offered to the existing shareholders of the company. The proceeds will be utilised for the company's expansion programme for starting fire insurance.

Premier Tyres Limited

The factory of the Premier Tyres Ltd., at Kalamassery, Kerala, is expected to go into production by the middle of February 1962. The rated capacity of 3 lakh tyres and 3 lakh tubes a year is likely to be reached within four months of the commissioning of the plant. The company may be permitted to double the capacity of its factory very soon. It has already obtained the permission of the government to undertake the manufacture of industrial V-belts, and conveyor belts. This scheme will involve a capital outlay of about Rs. 30 lakhs. The company hopes to commence the manufacture of these items in September 1962.

Agrind Fabricators 301st Road Roller

Union Ind-com Minister K. C. Reddy launched recently the 301st road roller manufactured by the Agrind Fabricators Factory at Calcutta, run under the managing agency of the United Provinces Commercial Corporation. This is the first road roller the factory has manufactured with the NINETY PERCENT indigenously produced components.

Asbestos Magnesia and Friction Materials Ltd.

The £ 44 million Turner and Newall concern, one of the international leaders in asbestos mining and manufacturing is to further "Indianise" its chief Indian interests, Asbestos Magnesia and Friction Materials Ltd., and Asbestos Cement Ltd., subject to the approval of the Union Government. This is the background of the recent visit to India of the Turner, Newall chairman, Mr. R.G. Soothill, who will also explore the possibilities of securing increased participation of Indian capital particularly in Asbestos Magnesia and Friction

Materials Ltd., which has already led the way in Indianisation of employment. The Asbestos Magnesia and Friction Materials firm was started on a small scale in 1949, but has expanded rapidly since 1956 in its new plant at Ghatkopar, near Bombay.

Employment in this 175,000 square feet plant is substantially from Indian skilled personnel and workers—only seven out of more than 600 being European. The prospects for Indian investment in the Indian operations of Turner and Newall are good—a substantial minority of the shares of Asbestos Cement Ltd. are already held by Indian investors.

Turner Newall is a medium sized group judged by world standards, with strong international links, which has been holding its own against adverse Western economic conditions over the past year or two. It has strong prospects of expansion, especially in a developing country like India, where there is a good demand for its asbestos products.

As the motor industry in India grows, the demand for brake and other friction materials will increase and the prospect for both the group and Indian investors seems good. The group's share yield of around 4.2 per cent is deemed to be healthy.

Hindustan Motors to Manufacture Tractors

The Hindustan Motors is reported to have applied to the Union Government for an industrial licence for the manufacture of track type tractors, wheel type tractors and motor graders. The company has planned production of these machines in collaboration with the reputed American firm, Caterpillar Tractors. The Hindustan Motors already holds a licence to manufacture spare parts for Caterpillar Tractors and other earth moving machinery in collaboration with this American firm. For the new expansion, the company will have to import machinery to the value of Rs. 5 crores nearly. The Development Loan Fund and the Export-Import Bank of the U.S.A. are likely to finance the foreign

exchange component of the company's capital requirements for plant and machinery.

D.C.M. Rayon Tyre Cord & PVC Plants

The subscription list for the Rs. 2.50 crores debenture issue of the Delhi Cloth and General Mills Co. Ltd., opened last week. The debentures are being issued to meet a part of the capital requirements of the company for its PVC and Rayon tyre cord plants, which are to be established at Kotah, in Rajasthan. The PVC plant will have an annual capacity of 8 million pounds. The total capital outlay on the two projects is reckoned at Rs. 11 crores approximately. The balance of the capital requirements will be met by the issue of equity and preference capital, deferred payment arrangements and loans from financial institutions and banks. The company has applied for a loan from the DLF to finance the cost of plant and machinery to be imported from the United States and payments to be made to the American collaborators and suppliers of machinery.

Khandelwal Udyog to Make Steel Bridges

Khandelwal Udyog recently announced their collaboration with the builders of the Eiffel Tower, Les Etablissements Eiffel, to manufacture Steel bridges and other steel structures. The Eiffel Organisation was founded in 1867 by Gustave Eiffel, the builder of the Eiffel Tower. Eiffels have been associated with important Steel Construction Projects all over the world ranging from the framework of the Statue of Liberty in New York to the Gigantic French Pavilion at the Brussels Universal Exhibition in 1958.

They have also made their mark in Steel Bridges and have developed the Patented "Eiffel Standard Bridge" several hundreds of which span rivers on all continents. Khandelwal Udyog through this collaboration with Eiffels will get the benefit of the entire know-how and experience of Eiffel in the steel construction and structural field.

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STATE-RUN BUSES

Better Utilisation Recommended

Measures for better utilisation of vehicles maintained by State Road Transport Undertakings have been suggested by the Industrial and Mining Team of the Committee on Plan Projects.

The team studied some State Road Transport Undertakings and found that while some of them derived income from their buses, others lost on them. The studies revealed that the profits, to a great extent, depended on the percentage of the fleet that was put on the road which, in turn, depended upon the efficiency of the vehicle maintenance practices and efficacy of the procedures for stocking spare parts.

Norms

The team has suggested that a minimum rate for fleet utilisation should be laid down to serve as a standard for judging the efficiency of workshops and stores organisations. At present, there is no such norm and the percentages of buses ON THE ROAD TO THE TOTAL FLEET VARY FROM 85 PER CENT TO 62 PER CENT FROM STATE TO STATE.

Buses of One Make

It has also been recommended that one make of vehicles should be kept in one region, and, where practicable, the undertaking as a whole should maintain vehicles of only one make. MULTIPLICITY

OF MAKES RESULTS IN SHORTAGE OF SPARE PARTS AND AFFECTS QUALITY OF REPAIR AND MAINTENANCE WORK. Vehicles of odd makes, says the team, should be run only as long as it is economical to do so and thereafter written off.

No Paint

The team has advised against painting the entire exterior of aluminium panelled bodies and has suggested that only the front should be painted. Till recently, mild steel sheets were used for bus body panels and these required coating with paint to protect them from rust and to give them an attractive appearance. But now-a-days all bus bodies are made out of aluminium sheets which do not corrode under normal conditions and also look pleasing. The team has estimated that on a fleet of about 1,000 buses, an annual saving of about Rs. 75,000 to Rs. 1 lakh can be effected by stopping the painting of the exterior excepting the front.

Regrooving worn tyres

The team has also recommended that when the tyre-treading becomes

smooth, tyre should be regrooved before retreading. This will give about 25 per cent extra mileage at little cost and also help utilise the tyre to its full life. This practice is widely followed even in foreign countries and there is all the more reason to adopt it in India where there is shortage of rubber and truck tyres.

Spare Parts

The team has also analysed the practices about stocking the spare parts. It suggests, among other measures, preparation of a list of such items which, though very small in number, are in such use and therefore tie up most of the capital meant for inventories. Protective stocks of such items should be held low by keeping a constant watch on their schedule of deliveries and they should be purchased in economic lots.

LATE MR. TIRLOK SINGH

Calcutta Dealers Express Condolence

The members of the Calcutta Motor Dealers Association met at the offices of the Association at P6 Mission Row Extension, Calcutta on Wednesday the 27th December, 1961 at 2-30 p.m. to condole the death of Dr. Tirlok Singh, Ex-President, Delhi Motor Traders' Association, Delhi, and Managing Partner, Messrs. Autopius India.

Sri P. K. Basu, the President of the Association, presided over the meeting.

Sri S. K. Banerjee (Ex-President, Delhi Motor Traders' Association 1947/50 & 1953/55) spoke feelingly about the excellent qualities of the late Dr. Tirlok Singh, stating that he was greatly shocked to hear the news of his sudden demise.

The members stood in silence for two minutes as a mark of tribute to the departed.



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AROUND THE COURTS

Sales Tax on Vehicles

The question whether delivery of vehicles inside the state to an outside buyer, who employed his own drivers to drive the vehicles from the factory of the company, constituted an inter-State sale or an intra-State sale under the Madras General Sales Tax Act, came up for decision before a Division Bench of the Madras High court recently.

The petitioner was the Ashok Leyland Ltd., Eumore, Madras. The Deputy Commercial Tax Officer, Madras, for the assessment year 1951-52, by an order issued in May 1953, determined the net turnover of the company as Rs. 33,88,802 and fixed the amount. The Commercial Tax Officer under proceedings started *suo moto* called upon the company to produce the accounts for verification of the correctness of the assessment made by the assessing authorities. He also issued notice subsequently proposing to revise the assessment originally made by the Deputy Commercial Tax Officer by including a sum of Rs. 48,02,387, representing the value of vehicles and spare parts sold by the company. But the assessee claimed that the latter sum of over Rs. 48 lakhs represented the value of vehicles which were delivered to other States. Some of the vehicles were driven to other States by drivers employed by the company and under its own trade-number plates and a good number of vehicles were driven by drivers employed by buyers outside the State.

The Commercial Tax Officer excluded a sum of over Rs. 13 lakhs representing the sale value of the vehicles which were driven out of Madras State with the assessee's trade number-plates. He, however, held that a sum of Rs. 34,16,706 was liable to tax as it represented the sale value of vehicles sold inside the State.

The assessee-petitioner preferred an appeal to the Sales Tax Appellate Tribunal without success. Hence the present tax revision

petition. It was urged on behalf of the assessee that though the delivery of the vehicles was effected within Madras State, their delivery was for their immediate transportation out of the State and since the vehicles were sold outside the State it came within the meaning of Art. 286 (2) of the Constitution, granting exemption from the levy of sales tax.

Their Lordships observed that since the sales were completed and delivery was effected within Madras State, they were liable to sales tax under the Madras Act. Their Lordships were of the opinion that the sales turnover of over Rs. 34 lakhs was properly included in the taxable turnover of the assessee by the taxing authorities and dismissed the petition.

2. KALYAN SINGH Vs STATE OF U.P. (C.A. No. 325 of 61). December 11, 1961 (Sinha

C. J., Subba Rao, Shah Dayal and Kudholkar JJ.)

Motor Vehicles Act 1939 : Scope of Section 68 A.

The State Transport Undertaking providing road transport service which is carried on by the State or any other Corporation or Authority mentioned in S. 68 A. Though the functions of the different bodies are clearly demarcated in the case of an undertaking run by the Corporations, there is overlapping in the case of an undertaking run by a State Govt. This may lead to an anomalous position, but in practice it can be avoided if the State Government creates a Department, to be in charge of the undertaking and hears the objections and approves or modifies the scheme in a manner without violating the principles of natural justice. If the State Government, running an

AMENDMENT OF MADRAS MOTOR VEHICLES RULES

Stage carriages plying on ghat roads

In exercise of the powers conferred, the Governor of Madras hereby makes the following amendments to the Madras Motor Vehicles Rules.

I. in rule 328, in sub-rule (b) after the words "transport vehicle", the words "other than a vehicle plying or intended to ply on a ghat road as defined in the Madras Traffic Rules, 1938" shall be inserted;

II. in rule 329, after clause (ii), the following clause shall be added, namely :

"(iii) in the case of a vehicle plying on a ghat road as defined in Madras Traffic Rules, 1938, EIGHT METRES irrespective of the number of axles in the vehicle :

Provided that this restriction shall not apply to a vehicle plying on such road on the date on which this clause comes into force."

III. in rule 360, after the second proviso, the following proviso shall be inserted, namely :

"Provided also that the restriction under the first proviso shall not apply to a stage carriage plying on a route lying partly on a ghat road, if the distance covered does not exceed sixteen kilometres."

undertaking forms an opinion, it can legitimately be said that the statutory authority, that is the State Transport Undertaking, has formed the opinion. The orders passed by the Regional Transport Authority under S 68 (7) (2) (a) and (b) were purely consequential on the scheme and if the scheme is not open to challenge, orders consequential thereon will not be open to challenge. The said orders passed by R. T. A. is not quasi-judicial but administrative.

3. NILKANTH PRASAD Vs STATE OF BIHAR. (C. A. No. 534 to 539 of 61.) Dec. 1, 61, (Gajendragadkar and Hidayatullah JJ.)

Motor Vehicles Act, 1939—Scope of S. 64A

The duty of the R. T. A. was merely mechanical, and that it was required to take note of routes which had been notified to adopt its order so as to be in conformity of the notified scheme. The R. T. A. not having done its duty under the law, the Appeal Board was entitled, when the record was before it, to revise the order of R. T. A., even if the appeal was incompetent in view of the vast powers of revision under S. 64A.

Meaning of Route.

The court referred to *K. V. Motor Transport Co.'s Case 1946 A.C. 338* and observed: "The distinction made by the Privy Council is right; but it was made with reference to the words used in the ordinances there under consideration. The question is whether a similar distinction can be made in the context of M. V. Act. In *Kondla Rao's Case A. I. R. 1961 S. C. 82* this court in dealing with the scheme of the Act, declined to make any such distinction "route" and "area". In any event, under S. 68(C) it provided that a scheme may notify a route or an area or a portion of a route or a portion of an area and the exclusion of the private operator from the whole route or the whole area or a part of the route or a part of that area, as the case may be, either complete or partial; under S. 68F (2) (c) (iii) the R. T. A. may

VEHICLES IN MADRAS CITY

There were approximately 25,000 to 30,000 motor vehicles running in the city of Madras up to the end of June 1961 as against 17,460 in the corresponding period of the previous year.

There were 1,283 taxis and 255 auto rickshaws plying for hire. The number of hand-pulled rickshaws and cycle rickshaws were 3,717 and 1,664 respectively.

Four hundred and ninety four julkas and 272 single bullock carts were registered during this period.

There were 1,00,000 cycles and 10,000 hand carts in the city.

The total number of accidents for the first half of this year was 1,769 as against 2,142 last year. The number of fatal accidents was 22 as against 27 in 1960.

modify the term of any existing permits so as to "curtail the area or route covered by the permit, in so far as such permit relates to the notified area or notified route". This means that even in those cases when the notified route and the route applied for runner a common sector, the curtailment by virtue of the notified scheme would be by excluding that portion of the route or in other words, the "road" common to both. The distinction between "route" as national line and "road" as the physical tract disappears in the working of Chap. IVA because you cannot curtail the route without curtailing a portion of the road and the ruling of the court to which we have referred would also show that even if the route was different, the area at least would be the same. The ruling of J. C. cannot be made applicable to M. V. Act particularly Chap. IVA, when the intention, is to exclude private operators completely from running over certain sectors or routes vested in the S.T.U. The appellants were rightly held

to be disentitled to run over those portions of their routes that were notified as part of the scheme. These portions cannot be said to be different routes, but must be regarded as portions of the routes of the private operators from which the private operator should be excluded under S 68F (2) (c) (iii) of the Act.

4. C. P. C. MOTOR SERVICE Vs. STATE OF MYSORE. (C.A.No. 180 of 61) Dec.1,61. (Gajendragadkar and Hidayatullah JJ.)

Notified Scheme need not indicate fares and timings

It is too much to expect fares and timings to be indicated in the scheme, because each route requires elaborate enquiry for fixing the fares as well as the timing of the service. Under S 68C the State Transport Undertaking may take over the whole route or part of the route and if the scheme operates partially, some transshipment would obviously be necessary; but co-ordination would still exist because when the state omnibus comes to a halt, the private omnibus would take the passengers set down. In the M.V. Act, the words used are route or area and it has been held by this court that these words would mean the same thing. *KONDLA RAO'S CASE A 1961 S.C. 82 FOLLOWED.*



Mr. A. R. Venkataraman, Sales Manager, Messrs Simpson & Company Ltd. who has just returned after a short but successful business trip to the United Arab Republic.

LEYLAND NEWS

Kerala Orders 100 Leylands

An order has been placed by Kerala State Transport for 100 Ashok Leyland Comet bus chassis valued at over Rs. 38,00,000. These will join a fleet of over 240 Comet buses operated by the State Transport after the construction of 42-45 seater bodies at their Central Workshop in Trivandrum.

Almost the entire passenger transport system in the State has been nationalised and all important cities and towns are linked by a network of roads which are used by over 2,50,000 passengers daily. A number of Comets are also used by the State Transport for long-distance operation and for inter-state passenger transport.

Railways Choose Comets

The first contract from the Southern Railways for large capacity heavy-duty vehicles has been placed with Ashok Leyland Ltd. The Controller of Stores, Southern Railways, has placed the order for two ALC01/1 176" wheelbase haulage chassis of 12 tons gross rating. The chassis will be driven by road to Bezvada where they will be delivered to the Executive Engineer to carry materials to speed up the work in connection with the construction of a new bridge across River Krishna.

Double Decker for Delhi

A new double deck bus, the first of its kind to be introduced in New Delhi with a carrying capacity of 72 seated passengers has been commissioned for service in the capital city. A product of combined British and Indian manufacture, the bus is the 27 ft. 6 in. long Titan OPD 2/9 model with a light-weight aluminium body built by the Hyderabad Allwyn Metal Works Ltd.

The new bus is intended to provide relief for Delhi's peak hour transport problems which are continually increasing. The bus is powered by the Leyland 0-600 vertical diesel engine and incorporates the two-pedal control which

has achieved popularity in India and which is fitted to the large fleet of Leyland Royal Tiger Worldmaster single deck buses already in service with the Delhi Transport Undertaking.

Leyland Club

A delightful dance performance was given by the well-known danseuse, Kumari Padmini Priadarsini at the Children's Theatre under the auspices of the Ashok Leyland Social and Athletic Club Arts Branch. In appreciation of her performance, a plaque with the figure of Nataraja mounted on it was presented to her by Mr. R. R. Jones who presided over the occasion.

In Dam Construction

One of the biggest operators of Ashok Leyland Comet trucks, the Nagarjunasagar Dam authorities, have placed another large order, the second one this year, for 70 Comet ALC01/1 176" wheelbase goods chassis. The vehicles, after being equipped with platform type bodies, will join a fleet of over 130 Comets which are rendering excellent service in spite of the very severe conditions of operation. These will be in addition to the many Comets which are helping private haulage contractors to transport materials needed on the site.

From Andamans

The second order this year, this time from the Port Blair Municipality, has been received by Ashok Leyland Ltd. The model ordered is again a Comet ALC01/3 tipper chassis of a wheelbase of 9 ft. 10 in. and powered by the 0-350 diesel engine. The machine, after inspection by the representatives of the Municipality at Madras, will be shipped to Port Blair.

Orders from Main Dealers

The large number of construction works in the country and the growing output of raw materials and finished products in many industrial establishments, have resulted in an increasing demand

for Ashok Leyland Comet heavy-duty tipper and goods chassis. Orders from a number of main dealers registered by the company for these Comet models for the quarter ending December 1961 total over 320 vehicles which account for nearly 77 per cent of the contracts placed, the balance being taken up by Comet bus chassis. The value of the orders so far received amounts to over Rs. 160 lakhs.

Comets for Rajasthan

A contract has been placed by the Rajasthan Underground Water Board, Jodhpur, with Ashok Leyland Ltd. for the delivery of eight All-Wheel drive heavy-duty truck chassis. The model ordered is the Comet ALC01/2 which is one inch longer than the corresponding 163" wheelbase 4 x 2 type.

The four-wheel drive conversion is made up of a specially designed front axle which embodies a Comet differential unit with the same 6.167 to 1 ratio as the single speed rear axle. Standard transmission is modified to incorporate a two-speed auxiliary gear-box which has a high ratio of 1 to 1 and a low ratio of 2.105 to 1. The vehicles will be fitted with the Ashok Leyland 6-cylinder 0-350 diesel engine, 5 forward-speed constant mesh gear-box, telescopic heavy-duty shock absorbers at the front and 9-00 x 20 12 ply tyres.

In Himachal Pradesh

With a view to meeting the growing traffic demand in Himachal Pradesh consequent upon the extension of roads, growing population, trade and industry and increased volume of developmental activities, the Himachal Pradesh Transport Department has started on a vast development plan.

This plan includes the purchase of new buses and trucks. Ashok Leyland are privileged to receive the first order for Comet bus chassis from the Himachal Pradesh Government. This order calls for the supply of 8 Comet 163" wheelbase passenger chassis.



(Continued from last issue)

Tiruvanaikoil

Tiruvanaikoil, famous for its ancient temple lies two miles north of Tiruchi town. This great temple dedicated to Siva is notable for its architectural adornment.

This place is also known as Jambukeswaram. This name is derived from "Jambu" the sanskrit word for the "naval" tree and is applied to the God of the temple, because the image is placed under a Jambu tree which is much venerated and is said to be many hundred years old.

The temple is of great sanctity since it contains the "appu" (water) lingam which is one of the five elemental lingams, held sacred throughout South India. The lingam is always surrounded by water which comes out from all sides from a perennial spring. According to tradition, it is said Akilandeswari made a lingam with water and worshipped here. It is called Amurdha Lingam.

Thiruvanaikoil is a corruption of its ancient name Tiru-anai-ka (The sacred Elephant grove). It is stated that this place was a grove in ancient times where elephants were wandering. It is said in Periya Puranam that the sanctum sanctorum and the first enclosure were built by Chola King named Ko-Senkaunan.

21st January 1962

9

Paradise for Tourists



Nataraja in stone
(Gangai Kondacholapuram)

In the daily performance of puja "Go" (cow) worship and annabhishekam are notable here. Another special feature in this temple is that the midday puja (Uchi kalam) is performed by the priest in female attire, symbolic of the Devi worshipping the Lord.

In this temple Lord Siva faces west and Akilandeswari faces east. This is understood as Upadesa Kshetram or Gnana Kshetram i.e. Uma acquiring knowledge from Siva. His Holiness Adi Sankaracharya is said to have engaged in penance for some time and the temple of Prasaana Vinayagar facing the sanctum is reputed to have been established by him.

The five Prakarams (enclosures) are said to correspond to the five sacred letters of holy "Panchakshra Mantra."

There is a shrine in one of the prakarams dedicated to Thirumurthi—Brahma, Vishnu and Siva. They are worshipped in the aspect of three lingams.

The pillars of the front hall have some curious sculptures like Ekapadamurthi, Siva standing with one leg in the centre, with Siva and Vishnu emerging from his hip on the sides, so as to illustrate that the creator, preserver and destroyer are but one in essence.

During the ten years' struggle for

the possession of Trichinopoly between the English and the French in the eighteenth century, both the temples of Tiruvanaikoil and Srirangam were turned into fortresses, the Vishnu temple was occupied by Captain Gurgin for two days in July 1751, during his retreat to Trichinopoly. The French established themselves in Tiruvanaikoil temple. After the surrender of the French in 1752 near Tiruchi, the island was made over to the Mysore troops. During the second siege of Trichinopoly (1753-54), Srirangam was the head-quarters of French troops who held it till 1758.

Samayapuram

Five miles away from Tiruvanaikoil nestles another famous shrine, that of the Goddess Mariamman at Samayapuram, which according to inscriptions was the metropolis of the Hoysala Dynasty in the thirteenth century. It is said that

this Amman was originally adored by the great Vijayanagar Emperors and when the Empire had declined, the sacred idol was brought and installed at this place by the Nayak rulers of Madurai.

This place was of importance during the fighting around Tiruchi because it guarded the route to the north and to Pondicherry, the French stronghold.

Siruvachoor

The village Goddess, Madurai Kaliyamman, has a great reputation. She is especially potent in driving out devils, bestowing children, and curing illness, including lunacy. In the neighboring hill is a torrent said rarely to run dry, a bath in which is supposed to possess great efficacy in curing diseases.

Tiruverumbur

The shrine of Erumbavur is on a small hill, which rises on a gentle slope from amidst a fringe of palms. This shrine is of puranic and historic interest. At the foot of the hill is the first prakara of the shrine and two more prakarams are on the top of the hill within the shrine itself.

The Amman shrine faces south. Soundaranayaki and Madhuvana Iswari are two of the many names by which the goddess is known. This temple was occupied by the military forces during the wars with the French.

It is curious to note that Tiruvanaikovil, where the elephant, the largest of animals, and Erumbavaram, where the ant, the smallest of the living creatures, are said to have worshipped the Iswara in those places, should be situated so near to each other.

Tiruverumbur is now the chosen site to erect the heavy boiler factory. It is also famous as a place from which the voice of Tamilnad reaches the ends of the earth for there near to the hill is the transmitter of the All India Radio Station at Tiruchi.

Gangaikonda Cholapuram

This place in Udayarpalayam taluk was for over hundred years

GANGAI KONDA CHOLAPURAM



Gangaikonda Cholapuram Temple

the capital of the Chola Kingdom, having been preferred to Tanjore by Rajendra Chola (1011-14). The name simply means the city of the Chola, who conquered the Ganges. The title "Gangaikonda Chola" was assumed by King Rajendra Chola to commemorate his northern conquests.

Though now an insignificant village, it contains several traces of

its departed greatness. Its great saivait temple is deservedly famous. Its plan and design are similar to those of the magnificent temples at Tanjore, though it is not as large. It possesses the same unusual feature of a lofty stone pyramidal tower over the shrine, and it gives the same impression of having been created in accordance with a single stately plan instead of having like so many Dravidian temples grown up haphazard and piece meal, without regard to the due proportion of its component parts. As in Tanjore, the tower is topped by a vast block of stone which is said to have been placed in position by means of an inclined plane laid from the village of Paravani situated some miles to the westward.

As in Tanjore too, a huge monolithic bull guards the shrine. This temple contains sculptures of architectural beauty.

Nothing is known of the destruction of this once great city. There is a legend which says that the Ganges once flowed into the temple well, in order to oblige Banasura, who ruled this place and had not the leisure to go the Ganges for his bath.

In Jayankonda Cholapuram there



The Lion Well



Nandhi and the main entrance

are two Jain or Buddhist images. One is larger and better sculptured. When rain is scarce two girls of the village come and weep before them and this is supposed to bring rain.

In Udayarpalayam there is a palace which is an interesting example of South Indian secular architecture of the eighteenth century.

Tiruvellarai

On the route from Tiruchi to Thuraiyur lies Tiruvellarai about 12 miles away enroute. The temple here is built on a rock and the village is at the foot of it. The cave here is a fine specimen of early Pallava style. The entrance to Prakara is by two doors known as Uttarayana and Dakshinayana. One of these only is kept open during its respective Ayana when the other remains closed. The Perumal who is on a reclining position is a large figure.

There is a rock cut Siva temple known as Vada Jambunatha.

Kodumbalur

It is a tiny hamlet near Viralimalai on the Tiruchi-Melur trunk road. The most beautiful shrine is Muvarkoil, so called because of the three main shrines. Though these temples belong to the early Chola period, they reveal Pallava features and relationship to the monolithic Rathas of Mahabalipuram.

Near Muvarkoil there is a Pallava temple called Aivarkoil, so called because of its peculiar composite plan of Vimana, accommodating five linga shrines—one central and four at the corners with common mandapas. As Kodumbalur is very near Tiruchi, art lovers can easily

go and see these majestic Chola monuments.

Tiruppalarthurai

It is well known for its sacred bathing ghat on the Cauvery which stands just above the bifurcation of the river. On the eighteenth day of Purattasi, the sun beams fall upon the lingam in the Siva temple here.

Turaiyur

In between the Kollimalai ranges there is the Turaiyur valley which contains a ravine. At the head of this ravine stands the famous Siva temple called Arappaleswaran Koil which is regarded with reverence not only by the tribesmen of the hills but also by the Hindus of the plains. The temple car is a fine one but it stands uncared for outside the temple and is said, to have been used only once. The natives declare that it ought not to be used without offering a human sacrifice. But at present, due to the law, they have had to do without it.

The hill on which the temple stands is the Kollimalai proper. It is also called Madhuvanam (Honey forest) of the Monkey King, Sugriva.

Turaiyur is known in the surrounding taluks for its festival of Kali held every five years.

There is a temple on a small rock in Uyyakkondan Tirumalai. This fortified temple was occupied in turn by the French and the English during the second siege of Tiruchinappalli in 1753-54.

Ariyalur

This place is a great trading centre. Its market is supposed to be one of the largest in Southern India. It contains a handsome Vishnu temple in which the ten avatars of Vishnu are sculptured with skill.

Lalgudi

The name is said to mean "red place" and to have been given to the town by the Mohamedans owing to the red colour of the Gopuram of its

Siva temple. There is also another name for this place Tiruttavathurai or "the place of holy contemplation". History says that it contained a mud fort and was garrisoned in 1752 by the French.

Karur and Nerur

Karur and Aravakkurichi and Nerur possess some historical importance. The name Karur is supposed to mean embryo "village", and is due to the fact that Brahma began his work of creation at this place. It was apparently a place of some importance as far back as the early centuries of the Christian era for silver denarii (coins) of the emperors of Augustus, Tiberias and Claudius were found near it in 1806.

It is a place of some sanctity being one of the seven sacred sthalams of Siva temples of the Kongunadu. The deity here is called Pasupathiswara. The temple contains the tomb of a saint named Karurar. Another saint connected with Karur is Mukta Sahib. There is a famous Mariaman temple in Karur.

Nerur which is six miles east, north-east of Karur contains two old temples dedicated to Siva and Vishnu. This place was called Agnipuri as Siva in the form of a Swayambulingam was worshipped by Agni. The Siva temple contains the Samathi of the great



Huge sculpture of Lord Siva

sage Sadasiva Brahman. This sage is supposed to have lived 200 years ago and to have travelled as far as Turkey in Europe.

There is a well sculptured temple dedicated to Subramanya on a small hill in Pugalur close to the Cauvery. In Vennamalai there is another shrine on a hill dedicated to Subramanya.

Kulitalai

The suburb of Kadambar Koil (one mile west of Kulitalai) is celebrated for its Siva temple. The holiness of this deity is such that a well known local saying declares that he who worships Kadambar in the morning, Sokkar at the Ratnagiri hill at noon and the God of Tiruvengimalai in the evening is sure of salvation. The sage Agasthya is supposed to have visited Kadambar Koil, Ratnagiri and Tiruvengimalai. Manapparai and Maringapuri are two places of some importance near this place.

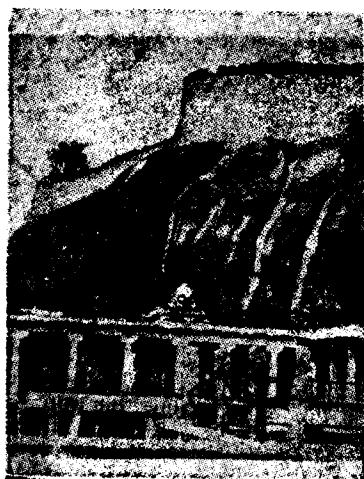
Ratnagiri is five miles from Kulitalai. The temple is on the top of a rock. Thunder is said to come and worship the God once every twelve years. At the foot of the hill there is a shrine dedicated to Vaira Permmal. He is said to have been a man of the weaving caste from Conjeevaram, who cut off his own head here in fulfilment of a vow, and was deified accordingly. His image has no head.

In Musiri taluk are situated Tiruvengimalai and Gunaseelam, two important Vaishnavite places of worship. At Tirunaryanapuram 9 miles from Musiri, there is a famous Vishnu temple. This place is known as Adi Arangam. It is held as a miniature Srirangam.

Pudukkottai

Pudukkottai was one of the Princely states and it was merged with Madras in 1949. The name means new fort, but it has long been known as Tondaiman's country.

The story of the origin of Pudukkottai in Nelson's "Madura country" contains the name of Pallava Raya Tondaiman. But it is said that "Tondaiman" is never



Rock cut Temple at Tirumayam

used as a title of the Pallava Rayas in the local inscriptions. Relations between the Madras Government and the Pudukkottai State commenced during the Carnatic wars of the 18th century. There is a famous Siva temple and the temple of Bhuvaneshwari Peetam is also a very popular place of pilgrimage.

The suburb of Tiruvappur was the scene of a battle between the rulers of Pudukkottai and Ramnad in 1726. The suburb of Tirukokarnam contains an ancient Siva temple of Gokarneswara and his consort,



The Fort, Tirumayam

Brahadamba. The local coin of the then Pudukkottai State the "amman kasu" or coin of the goddess is called after Her and bears Her image.

Viralimalai

Viralimalai, twenty eight miles north west of Pudukkottai, is known throughout a large part of Tiruchi district for its Subramania temple on a hill.

Tirumayam

Twelve miles south of Pudukkottai lies Tirumayam, where there is a picturesque ruined fort. where tradition says that the dumb poligar of Panchalakurichi in Tirunelveli, the famous Umaiyan (brother of Kattabomman) was imprisoned, before being surrendered by the Tondaiman to the British. Some curious old chain armour, found at this place, is sometimes said to have belonged to this man. The fort was taken by the Ruler of Ramnad about 1730 but was almost directly recovered by the Tondaiman.

The remains of an embankment about four miles in circumference stand in the Sengarai forest near this place, which is popularly

believed to have been the abode of the Giantess Tataka, who was killed by Rama.

The name of the god in the Vishnu temple is Sathyamurthi, and that of the god in the Siva temple is Sathyagniswara. Both these temples are rock cut ones and lie side by side. The hill is called Sathyagiri. The Tamil equivalent of truth is "Mey" and the god that represents it is known as Meyyappan and the place is known after this name Tirumeyyam.

Kudumiyarmalai

It contains a large temple dedicated to Siva and a small rock cut temple probably of Jain origin. Narthamalai contains rock cut temples with Buddhist or Jain images sculptured on the rock.

Sittannavasal

Sittannavasal, the famous Pallava art shrine, containing the earliest fresco so far known in South India, is situated about 12 miles from Pudukkottai. It can be reached either by bus or car.

The rock cut shrine here is not a work of architecture nor is it imposing in size. This temple is believed to have been excavated by Mahendravarman I in the seventh Century, while he was yet a Jain. On the northern and southern walls of arthamandapa are two large niches, each with an image of a Jain saint. But what makes Sittannavasal famous as a celebrated art shrine, is to be found on the ceilings and walls and on the four sides of the pillars. What is visible today—patches of paintings—is but a fraction of the wonderful frescoes, the earliest of their kind in Tamilnad. The little that remains bears evidence of a vast canvas dating back to the 7th century. The



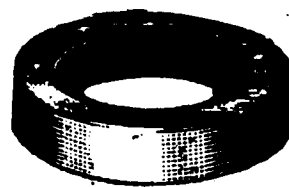
Representation of a lotus tank on the central portion of the ceiling of the verandah (the arthamandapa) in the Sittannavasal temple.

(By Courtesy of the Department of Archaeology, Southern Circle)

painting on the inner ceiling shows a pond with flowers, leaves, bulls, and elephants. They are shown with perfect simplicity, charm and naturalness.

The two figures of dancers with their broad lips, slender waists and

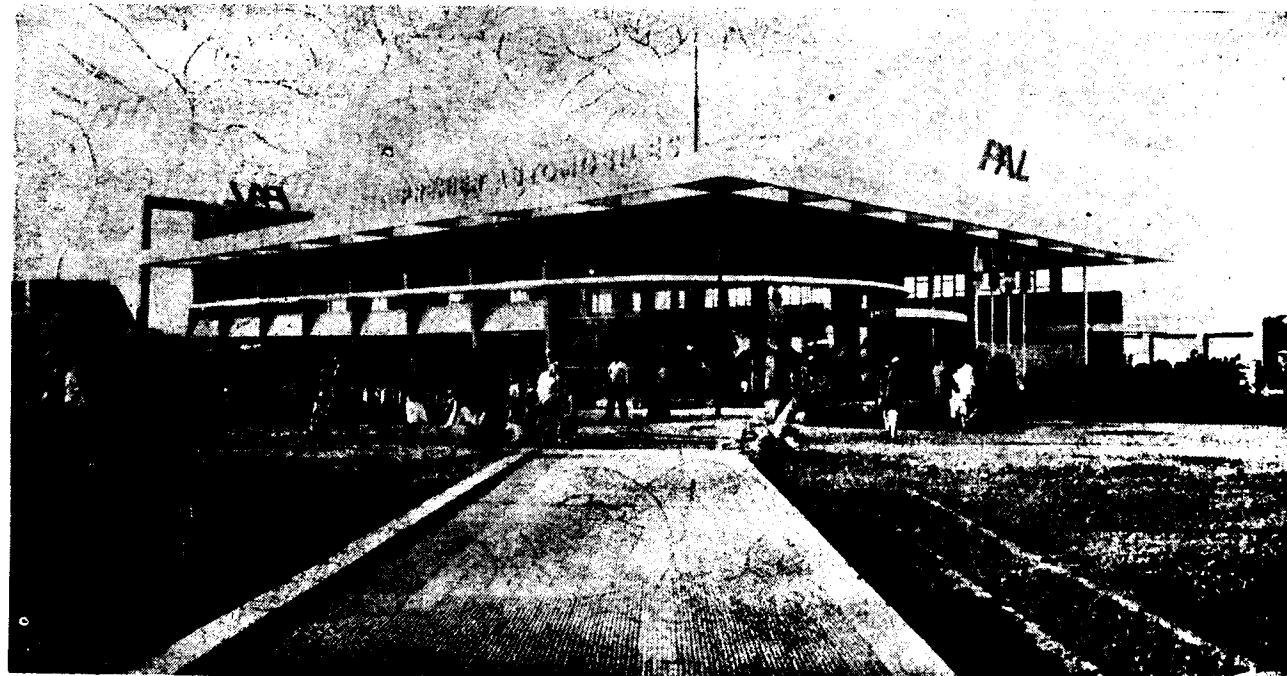
elaborate ornaments recall the beauty of apsaras of mythology. Their poses and expression suggest rhythm and dynamic movement. Halfway down among the cliffs lies what is known as Ezhadi pattam, a natural cavern. It used to be the resort of the Jain saints.



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PREMIER AUTOMOBILES' delectable display



The impressive Premier Automobiles stall at the Indian Industries Fair attracted many visitors.

One of the stalls which attracted a continuous stream of visitors to the Indian Industries Fair, New Delhi, was the imposing stall put up by the Premier Automobiles Limited of Bombay.

The visitors were initially drawn in by the tilted Fiat Car balanced on two wheels on a high pedestal. The amazed visitors wondered how the car could be balanced on two wheels at an angle of 45 degrees.



What kept this Fiat car balanced on two wheels at an angle of 45 degrees?

Among the hundreds of Indian and foreign stalls, the Premier Automobiles, perhaps had the biggest open hall, without any pillars obstructing the view. The architectural designing of the entire pavilion externally and internally was remarkable for its simplicity and grandeur.

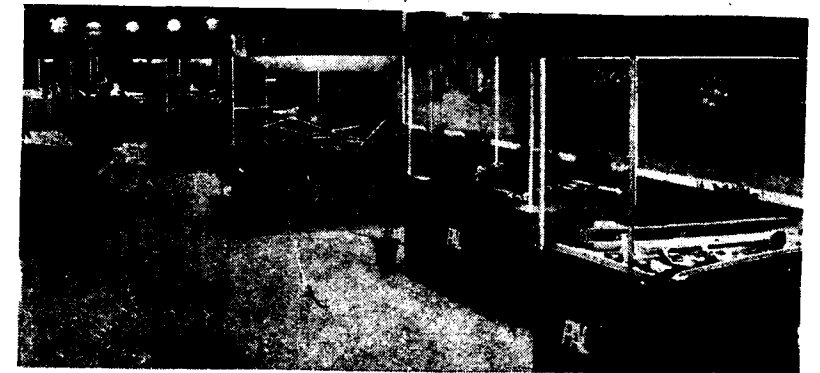
Five colourful trucks with attractive bodies built on their Dodge and Fargo chassis and a Dodge DeLuxe Luxury bus added glamour to the entire pavilion.

In another section, components of cars and trucks were displayed to catch the eye and gave visitors a vivid idea of the progress made by the company. Almost all components which could be manufactured by an automobile manufacturer, except the bodies, are now being made by the Premier Automobiles in Bombay.

Photographic panels illustrated the different jobs, done by the

at the INDIAN INDUSTRIES FAIR

Premier-built trucks, the service facilities, welfare activities and the rigorous tests carried out at the plant during various stages of manufacture. Even the casual visitor was impressed by the panel showing the talent displayed by Premier-men in designing machines and executing difficult jobs. A large photograph showed the company's new 300-acre site, where a huge factory will be coming up shortly.



Automotive components produced by Premier Automobiles exhibited at their stall.

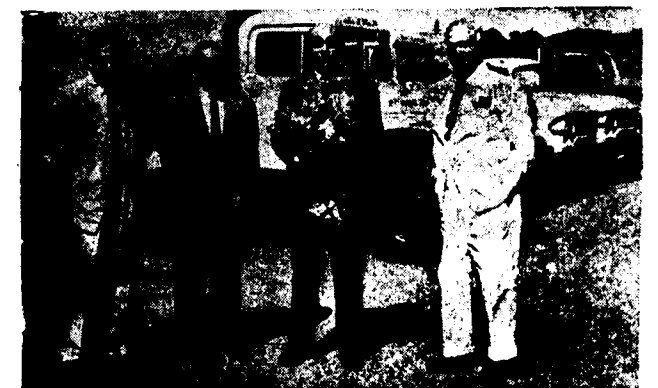
The company has planned an ambitious expansion programme which will increase the indigenous content of its products and treble the production capacity. This programme is planned with the assistance of the United States Development Loan of Rs. 3.43 crores which the company has recently received.

Also on display were AIRTEMP room air-conditioners which the Premier Automobiles are manufacturing. Those interested in the mechanism of car and truck engines found the working of sectionized engines interesting and instructive.



Premier's Dodge and Fargo vehicles for comfort and utility.

General Manager V. M. Meswani (below) shows Mr. Martinelli, Italian Minister for Commerce, how Premier manufacturing processes produce more and earn more, during the latter's recent visit to the factory.



Shri Jigme Dorji, Prime Minister of Bhutan recently visited the Premier Automobiles factory at Bombay. Photo shows from left: Shri P. R. Bakshi, Trade Adviser to the Government of Bhutan, Shri C. R. Kamat, Premier's Sales Manager, Shri Jigme Dorji, and Shri V. M. Meswani, General Manager of Premier Automobiles.



TYRESOLES OVERSEAS, MANAGING DIRECTOR VISITS BOMBAY FACTORY

Photograph taken on the occasion of the visit to Tyresole Factory of Mr. Williams, Managing Director, Tyresoles Overseas, London. Standing from left to right are: Mr. M. B. Leggett, standing near the electric vulcanizing mould which has recently been installed at the Tyresoles Bombay Factory. Other persons looking on are Mr. D. J. Mistri, General Manager, Mr. Williams, Managing Director, Tyresoles Overseas, London, and Mr. G. Ramani, Bombay District Manager.

Mr. Alwar Chetty Leaves for the U.K.

Mr. C. N. Alwar Chetti, Joint Managing Director of Southern Forgings Private Limited, Industrial Estate, Guindy, recently left on a business promotion tour of Germany, U.K. and the Continent. On the eve of his departure a reception was held at New Woodlands.



Some of the guests at the dinner at New Woodlands.



A large number of friends and admirers of Mr. Chetti at the reception.



Mr. Chetti being given a hearty send-off at the Meenambakkam airport.

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AUTOMOTIVE news HIGHLIGHTS

By Walter H. Diamond

United States:

Automobile manufacturers in the U. S. have already displayed their 1962 vehicles to the public. For the coming year they have produced a bewildering array of 400 different models—an increase of 75 over the number made in 1961. Most important new entry is the "middle-size" or "family-size" car which is bigger and more expensive than the compact but smaller and less costly than the standard. Ford's four-cylinder subcompact, slated to be a competitor of Volkswagen, is not expected to make its debut until spring at the earliest. Smallest U. S. car is the compact, which was inspired by the success of European models. The luxury compact, such as the Corvair Monza and Falcon Futura, with bucket-seats and sports car decorative touches, is expected to continue on its crest of popularity. Compacts will account for at least 40% of output.

Intermediate and Standard Cars

Next on the size-price ladder comes the "middle-size" car. There is Ford's Fairlane and Mercury, a Chevrolet, a Rambler, and a Studebaker-Packard Lark in this category. In addition, all Plymouths and some Dodges are trimmed down to this size. After the so-called "intermediates" come the standard cars, then the group to which the regular Pontiac and Buick belong followed by the large luxury models, such as Cadillac, Lincoln, and the Chrysler Imperial. Expensive sports cars add another classification to the confusing situation. In a class by itself, and quite extraordinary, is Dodge's twenty-six foot "motor home" that sleeps eight people and sells for about \$7,500. This price includes a water system and septic tank but not air-

conditioning or an ice box. Classified as a passenger car, Dodge's home-away-from-home can go eighty miles an hour, has automatic transmission, and is said to give ten miles to a gallon of gas. It complies with both highway regulations and residential building codes.

Ford, G.M. & Chrysler Models

European cars have exerted a powerful influence in other ways besides size, price and economy of operation. The 1962 U. S. crop will be much less sensational in both styling and colour.

(1) Ford is bringing out the Fairlane, which fits in between the compact Falcon and the larger Ford Galaxie. It will have the interior dimensions of a '59 Ford and the exterior dimensions of the '49 Ford and will probably be priced starting at about \$2,100 or \$200 more than the Falcon. Ford will also offer a Mercury in the same size category called the Meteor.

(2) Encouraged by the success of Pontiac's four-cylinder Tempest, General Motors will install a four-cylinder motor in its new intermediate Chevrolet, to be called the Nova. Pontiac is using the name "Grand Prix" for a sporty bucket-seat series.

(3) The only Plymouth to be offered will be an "intermediate." Chrysler Corporation's Valiant, Lancer, and a new Dodge, the Polara 500, will be offered in sports-type models.

Foreign Cars

During the first half of 1961 registrations of foreign cars amounted to 189,000, a 30% drop from the corresponding period of last year. It looks as though the 1961

total will be 375,000, a far cry from the record of 611,000 chalked up in 1959 before the advent of the compacts. Actually, the figures are not quite as bad as they look at first glance since U. S. companies have discouraged importation of their own overseas models. Foreign manufacturers are strengthening their dealer set-up as some dealers have been pushing U. S. models at the expense of foreign makes they also handle. Top foreign seller of course, is the Volkswagen which has 45% of the foreign car market in the U. S., has achieved a rise of 12,000 over the first half of 1960. In the second place is Renault; its Renault's registrations, at 20,000 were down 18,000 from January through June 1960. Fiat, in third place, suffered a 50% loss. Saab and Volvo have almost held on to their share of the market. Mercedes-Benz is off slightly, while the number of Rolls-Royce sold dropped from 229 to 166.

Several more automotive parts manufacturers, including the Dana Corp., Eaton Manufacturing, Timken and SKF, are starting or increasing production abroad. These overseas activities are of benefit both to the parts manufacturers and also to automotive producers, who are obliged to boost local content. Companies which make carbon black for tyres are also expanding their overseas operations and starting new ones.

Australia

Economy is showing a sharp recovery from a recent dip. Balance of payments deficit has been reversed as export surpluses were registered in the last two months. Outstanding feature of the turn-about in the economic situation is that Australia accomplished the trick without resorting to controls. In fact, the Commonwealth even cancelled the \$100 million standby

credit of the International Monetary Fund.

India

Battery shipments make up a sizable part of the Indian export gain for 1961. Substantial sales increases are noted in 1961 to Pakistan, Egypt, Iran, Iraq, Nigeria, Singapore, Bahrain and Holland. Russia is trying to help the Indonesians improve their export program by granting 12 year, 2½% loans to industry with export facilities. Another part of their drive consists of credits to build atomic-power stations in India.

Indonesia

The Department of Basic Industry and Mining is now providing foreign exchange for Indonesian businessmen with adequate rupiah financing for installation of four automobile spare-parts plants and four storage battery factories.

Japan

During the first six months of last year automotive output, at 117,000 cars, was 30% higher than for the corresponding period of the previous year. Total vehicle output was up 80%. The Nissan Motor Company is constructing a new factory which will have a monthly capacity of 10,000 cars. Another factory, this one with a capacity of 20,000 automobiles a month, is being built by the Isogo Motor Company, a less well-known firm. Meanwhile, Japan is coming closer to its dream of a low-priced car. A light, four-wheeled automobile-and-truck combination, which will sell for only \$1,000, is supposed to be introduced by the Honda Motor Company (Tokyo).

Taiwan (Formosa)

A free trade zone is under consideration in Hengchun. Taiwan's southern-most city. Inflation continues to plague Taiwan and the economy seems to have turned for the worse after temporary improvement. Delays have lengthened on the few collection items processed. But practically all shipments remain on a letter of credit basis. Economy could turn upward this

year as Taiwan undoubtedly will benefit from stepped-up defence spending by the U. S.

Iraq

Trade experts are recommending that all shipments from the U. S. be put on letter of credit basis. Although nearly all exports already are, the few sent for collection are being held up for payment. Iraq now plans to nationalize the Iraq Petroleum Company. But U. S. oil executives maintain that the Iraqis would have a "tough time" marketing the 1 million barrels produced daily.

Israel

The Autocars Co., producer of Sabra sports cars, hopes to start exporting a Fiberglass sedan to the U. S. soon. It intends to assemble this type of car in Mexico and may make a similar deal for Uruguay. Meanwhile, Kaiser-Ilin Enterprises is working aggressively on a popular-priced car.

France

A new small car geared to the export market has been introduced by Renault. It will sell for \$1,000 in France. Meanwhile a combined passenger-and-car service which began between Roulogne and Lyon has been expanded to other popular vacation routes. Motorists relax in sleeper accommodations while their cars are simultaneously carried on double-decker freight trains.

West Germany

During the first seven months of 1961 West German automotive production was 7.2% higher than for the same period of last year, reaching a total of 1.25 million units. Provided that exports continue to take 50% of production, the automotive industry hopes to attain output of 2.5 million cars annually. During the first quarter of this year registration either kept pace or advanced over other cars in established foreign markets except for Denmark and Sweden. Germany now has 3.4% of the French market 3.6% of the Italian and 4% of the

U. S. The first four-year plan for development of the Autobahn is being completed on schedule, with 390 miles expected to be finished by the end of this year. By spring of next year there should be an unbroken highway link between Hamburg and Basel on the Swiss border. At the same time, higher wages and raw material costs in West Germany are expected to lead to higher auto prices for the public. Smaller producers will be forced to drop out of the automotive market.

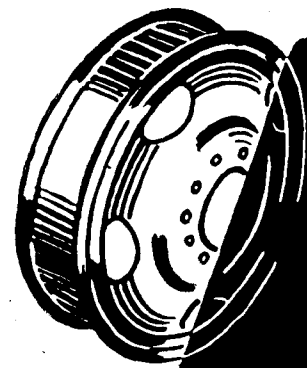
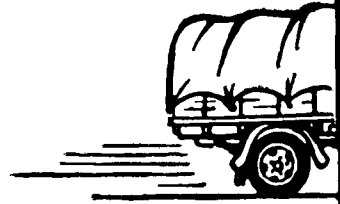
Daimler-Benz expects to invest \$50 million in capital expansion this year and again next year. There will be less emphasis on six-cylinder cars and more on four-cylinder. A new four-cylinder model and a new luxury model costing almost \$10,000 will make their debuts soon. Expansion of production facilities has cut the waiting time for some Mercedes cars from two years to one year. Meanwhile, Ford has encountered difficulties with its scheme to manufacture the Cardinal, a Volkswagen-sized car, in Germany. Chances are parts will be made both in Ford's German plants and in Detroit. Rumours persist that the Cardinal will make its debut next year.

Italy

A new Italian-French Company may be formed to manufacture French Panhard cars with Italian chassis in northern Italy. Talks have mentioned a production goal of 3,000 for 1963 rising to 20,000 in 1966. The city of Trento, where the factory would be located, would underwrite 2.5 million dollars of the investment.

Jeeps will be assembled and manufactured in Sicily by S. P. A. Willys Mediterranean, which is building a factory in Catania that is scheduled to be completed a year from now. Meanwhile, Black & Decker Manufacturing Co. has acquired a Milan manufacturer of portable electric tools, Star Utensil Electrici S. p. a. At the same time Symington-Wayne, a U. S. company, and an Italian firm, Ansaldo San Giorgio, have entered into a joint venture to manufacture service station equipment near Genoa.

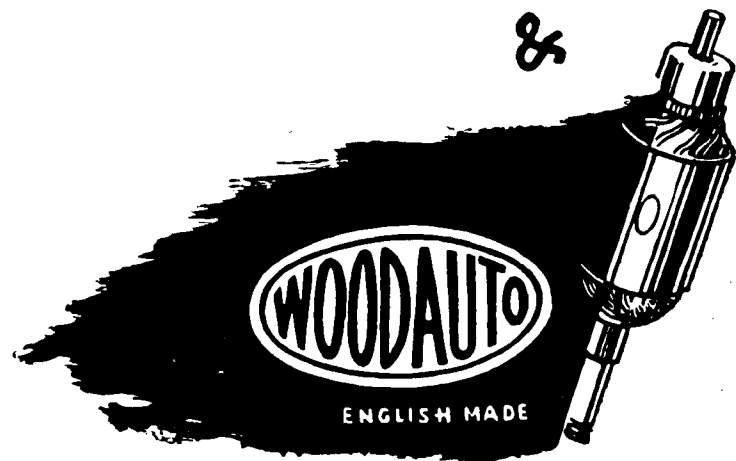
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