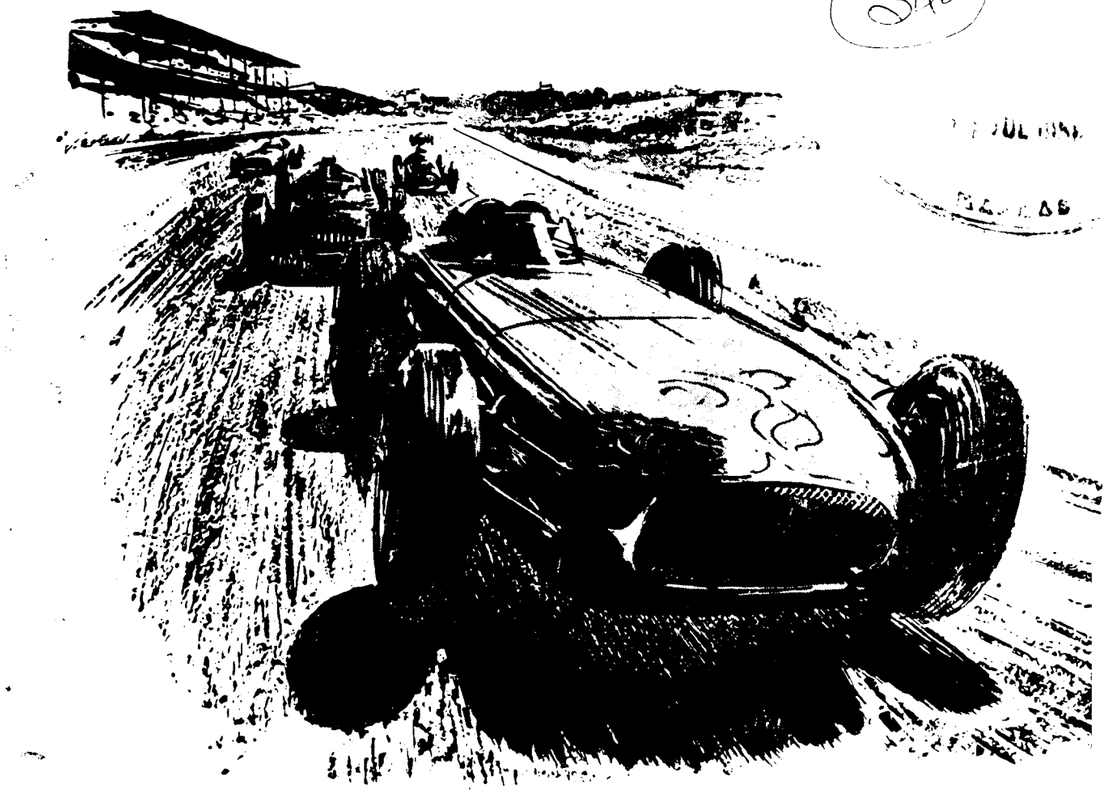
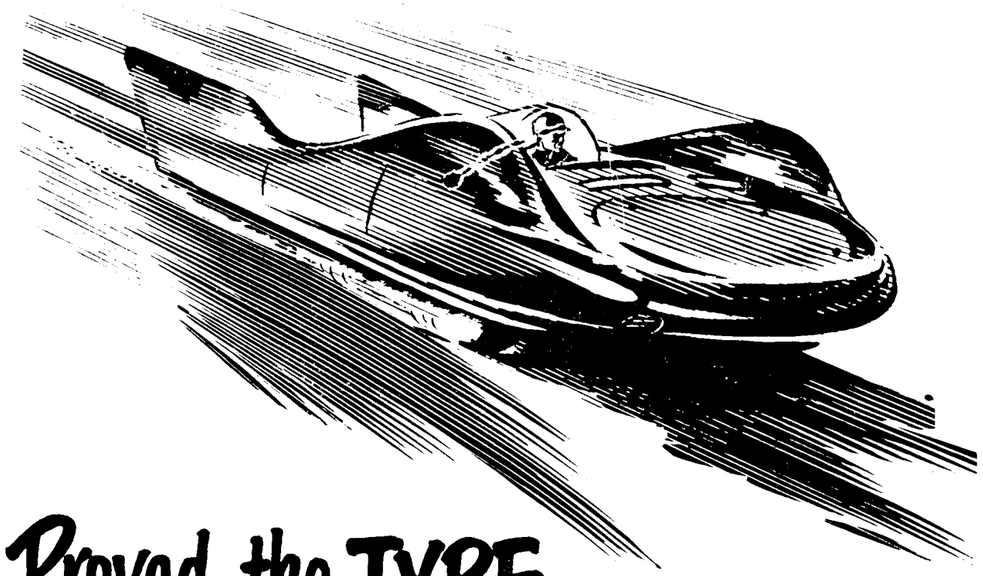
MOTORINDIA

VOLUME 2 JULY 1958 NUMBER 12



Record breaking 266 miles per hour



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Screaming across the salt flats at Bonneville, a new American two-way flying-start mile record was set up at over 266 miles per hour. This is yet another motoring speed record achieved on Firestone tyres. The same manufacturing skill that built these tyres, with the endurance and safety for high speed racing, ensures the extra safety and dependability you require in the Firestone tyres for *your* car.

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THE TYRE WITH BUILT-IN PEACE OF MIND

ORIGINAL

GOETZE

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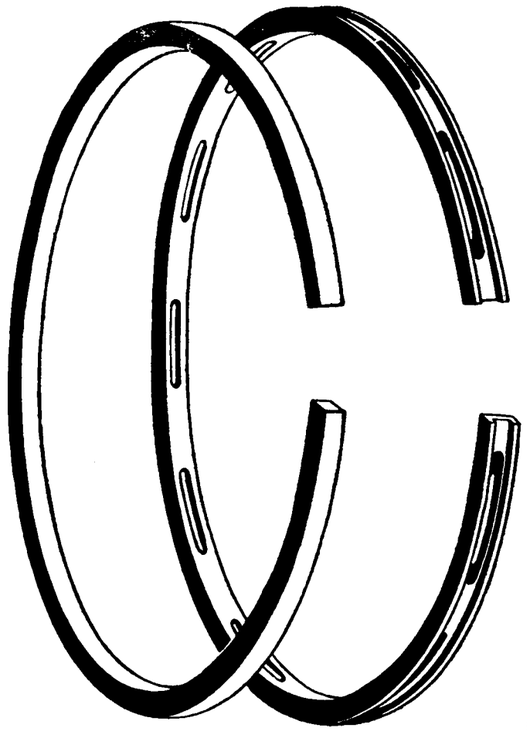
Engineered to outperform and outlast all other rings!



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MOTORINDIA

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editorial

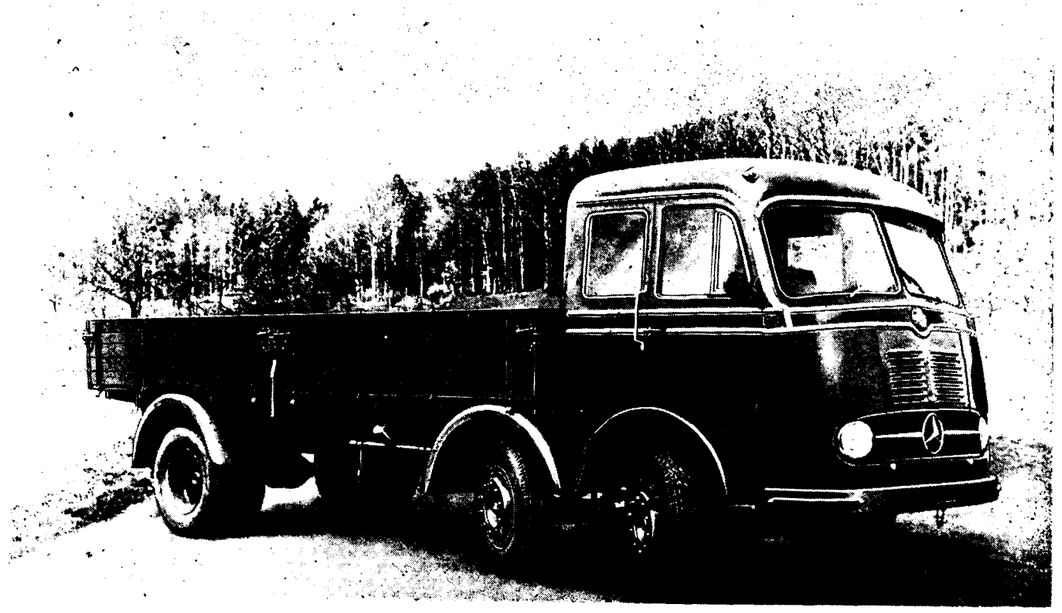
RESEARCH AND CAR PRICES

The cover page of our June Issue was an illustration of Master Craftsmen fashioning a life-size model of a motor car from the designer's drawings. This, it is claimed, enables all concerned in making a new car, to study its appearance in detail before it is produced. Now that manufacture of motor cars has started in part in this country as well, readers may perhaps feel gratified to see such a photograph. But the photograph relates to research and development that is constantly being pushed through in a country several thousands of miles away from here. In fact, there can be no comparison with the assembly or part manufacture of motor cars in our country as it is today and what is revealed in the illustration which applies to one of the most advanced nations in the matter of automobile and engineering production, viz., the United Kingdom. Even such manufacturers of automobiles in England and United States still take lot of pride in their achievement and satisfaction at every progress made in an already perfected system of manufacture.

Compared to this, what do we see here? Quite a number of firms have been given permission to manufacture motor cars and automobile trucks in this country. The prices of these have been going up from time to time, sometimes with the consent of the Government itself! There is no incling of even a desire for research on the part of these manufacturers, research that can improve quality and reduce cost.

In a recent chat with Pressmen, a visiting Britisher connected with the British and to some extent, the Indian Automobile Manufacturing Industry remarked that as the Indian content of automobiles increased from year to year, as we fondly hope, under the protection afforded to this Industry, the prices to the consumer of Indian assembled-manufactured cars or trucks will proportionately increase. This, we should admit, is perhaps a most distressing forecast of things to come for both the motorist and the private operator. Already, buying a new car is becoming more difficult than even getting admission to schools and colleges. The small number of vehicles that are being sold through distributors in various parts of this country do not necessarily go direct to those who need them most. Instances are not wanting when cars are sold not in ones and twos, but in almost by the dozen to one individual.

At a time when the industry is not able to meet the entire demand for automobiles, it is absolutely essential that the Government should have some check or atleast some system of distribution established by which the reasonable requirements of vehicles can be met. Unless this is done, it is feared that the cost of near new second-hand cars will be much greater than the cost of new cars themselves, if it is not already so.



The Mercedes-Benz LP 333 which has just been announced

British-type 3-Axle Truck by Mercedes-Benz

From Gordon Wilkins

Restrictive legislation on weight and other aspects of truck design in Germany has already produced an upheaval in the German Commercial Vehicle Industry and new designs are now being evolved to meet the changed conditions. Daimler-Benz have just announced a Mercedes-Benz three-axle truck, the LP 333 of a type common in England but hitherto unknown in Germany. It has four steered wheels at the front and a single driving axle with twin wheels at the rear. This permits theoretically correct steering geometry and was regarded as preferable to the alternative of twin rear axles with their tendency to torsional loading of drive shafts and increased tyre wear on corners.

Springing throughout is semi-elliptic and steering is by ZF-Hydro-Gemmer servo unit. There are a pneumatic exhaust brake and/pneumatic servo brakes with servo, cylinders on the back plates/for each wheel. Power unit is a six-in-line diesel engine of 659.5 cu. in. displacement giving 220 b.h.p. gross at 2,200 r.p.m. and 535 lb. ft. torque at 1,300 r.p.m. Transmission is through single plate clutch and six-speed fully synchronised gearbox with pneumatic power shift.

The truck is designed for long distance transport and has a maximum speed of 57.5 m.p.h. Chassis with driver's cab weighs 13,105 lb. With cab, platform and driver, the weight is 14,990 lb. permitting a payload of 20,280 lb. within the new German all-up weight limit of 35,275 lb. (16,000 kg.). For export, to countries where this does not apply, a 10 ton rear axle can be supplied, allowing a gross weight of 18 tons. Provision is also made for towing a 16 ton trailer. Favourable load distribution has permitted use of relatively small tyres 9.00-20 and the price per set of nine is claimed to be lower than that of a 7-tyre set for a comparable two-axle truck. As usual on Continental long distance trucks, cabs are available with a bunk in which one member of the crew can sleep.

Benz Production Programme for Australia

Dr. Fritz Konecke, President of Daimler-Benz A.G., Stuttgart, Germany and Mr. A. F. Crosby, Chairman of The Standard Motor Products Ltd., Melbourne, Australia, announced today that an agreement has been concluded whereby a new company will be formed in Australia to develop the Australian market for Mercedes-Benz trucks, cars and engines.

This company, Mercedes-Benz, (Australia) Pty. Ltd., will be capitalized by Daimler-Benz A.G. and The Standard Motor Products Ltd. The company will progressively manufacture and market the Mercedes-Benz range of vehicles, especially the heavy truck range, in Australia and will explore with the German company, export opportunities to the South West Pacific area.

THE REDEX CAR CLUB

From E. A. NADIRSHAH, O.B.E., J.P., B.A., B.E., B.SC. (ENG.), M.INST., C.E., M.I.E. (INDIA), F.I.S.E. (LOND.)

Dear Members,

I am certain that we all will feel happy to use MOTORINDIA, as our Approved Organ and to appreciate the opportunity given to us by its Editor, Mr. M. Rajagopalan, who too is a member of our Club.

Please let the benefit of your knowledge and experience, be shared by other members of the Club, through your contributions in these columns.

Send in your suggestions, accounts of your touring, uses of various devices fitted on your car or any topic of interest to motorists, for publication.

Looking forward to your interesting contributions, I am

Cordially yours,
P. F. LALLY
Hon. Secretary.

Members PLEASE

1. Take advantage of the Free Initial Test and Tune-up.
2. Renew your Membership in time.
3. Introduce New Members.
4. Inform the Club of any change in your address or Car number.

Membership RENEWALS

The Annual Membership of the following members should be renewed in October 1958 so as to receive the November 1958 copy of *Motorindia*: Member No. and name respectively :—245, Mr. K. M. Asina; 246, M/s. Upper India Trading Co. (P) Ltd.; 248, M/s. K.L. Anand & Sons ; 249 Mr. H.J. Major ; 250, Mr. M. Rajagopalan ; 417, Mr. B.B. Chinoy; 418, Mr. N.F. Mehta, 419; Mr. B. P. Sethna ; 420, Mr. P. F. Mehta ; 421, Mr. J. A. Baxi ; 422, Mr. H. Cursondas ; 423, Mr. N. B. Javeri ; 424, Mr. S. M. Murjundar and 425 Dr. H. J. Narinder.

It is with great pleasure and with a feeling of happiness that I take this opportunity of addressing all the Redex Car Club members, through the columns of *Motorindia* which will be from this issue, I am glad to say, our Approved Organ.

On an occasion like this it would not be out of place to give a brief sketch of the formation and working of the club during the last 3 years.

Early in 1955 I was approached by Mr. P. F. Lally the conceiver of the Club who most graphically put before me all his ideas and the aims and objects of the proposed Redex Car Club in a manner which was most convincing and appropriate to our motto 'Service and Unity.'

The main reason for this enthusiasm of Mr. P. F. Lally was to make me accept the office of President in the Club's *Ad Hoc* Committee to which naturally I, as a motor driver for the last 40 years and a keen motorist, agreed to as the principal aim of the Club was "Better and Safer Motoring in all its Aspects."

In these days of abnormally high cost of cars and its expensive maintenance, I feel that more 'Car-care' knowledge is essential for all owners. It is not enough to own and drive a car but one should also have an elementary idea of its working and minor repairs and adjustments. Our Club gives full opportunity to all who will spare a little time on such a fruitful hobby. We have film shows, talks, circulars and now the columns of *Motorindia*, for the achievement of our aims and objects. There is also the free initial test and tune-up service of your cars, in our scheme to get a carefree running of your car. I shall be failing in my duty if I do not mention the selfless willing and untiring services lent by Mr. P. F. Lally, our Hon. Secretary, to spare every day some hours of his precious time in giving this service to the Club. I am sure those owners who have taken advantage of these services have come to know a lot about car-care and upkeep under very pleasant surroundings. The cars are checked thoroughly and completely thus contributing to road and public safety. I am proud to state that so far no other motoring organisation in India is giving such excellent services.

During the first three years we have held Car Sports, India's First 12 Hours Endurance Trial, the 1st Auto-Technic and Accessory Exhibitions in the country, and have made a Record Car Run from Bombay to Madras to test India's own car (Hindustan) intensively and extensively so that we open the field for others to carry out similar activities. In all our activities and in our Exhibitions we invite other Associations such as the W.I.A.A., the Safety First Association, etc. Due to the public spirited work for motorists carried out by our ener-

getic Hon. Secretary, he has always been able to get the co-operation from all motoring organisations and workshops so that the members get the advantage of service from a number of workshops and at times at concessional rates.

Let us all make the best use of these columns by contributing interesting and instructive articles arising from our experience for the common good of all.

In concluding I sincerely thank Mr. M. Rajagopalan, the Editor of *motorindia* for giving the liberal use of this Magazine and also our Hon. Secretary Mr. Lally in his unceasing efforts for the successful running of the Redex Car Club. I have every hope that the active membership of the Club which stands over 500 will rise by rapid strides due to the publicity through *motorindia*, but I appeal to all members to follow the concrete example of Mr. Lally who has introduced members not by scores but in hundreds by taking the ungrudging trouble of explaining the aims and objects of the Redex Car Club to all whom he has a chance to meet.

Will I be asking too much of each member to introduce one or two members every year, as all these activities and free services to members cannot be carried out without adequate funds at our disposal—More members, more funds, yet more services and more economical carefree and safer driving. It is not our idea to accumulate funds but to spend them towards our laudable objects.

JOIN TODAY

Advantages to Members of The Redex Car Club (Subs: Ordinary Rs. 12 per annum. Life Rs. 100. Entrance Rs. 5)

(1) Free Initial Engine Testing and Tuning by REDEX Instruments.
(2) Subsequent Testing and Tuning at concession rate.
(3) Free Supply of REDEX Literature and Bulletins and Club Window Emblem.
(4) Free Use of Auto Library.
(5) Free Car Care Guidance.
(6) Free Training in Engine-Tune-Up.
(7) Free Film Shows.
(8) Free Copy monthly of MOTOR INDIA.
(9) Hotel Rebate in the U.K., Europe and India.
(10) Concessional Entry Fees for Car Sports and Trials.
(11) Concessional Lubrication Service at certain Stations.
(12) Concessional Price for Auto Accessories.
(13) Concessional Rates for Auto Magazines and Books.
(14) Breakdown Towing Service.

For better and safer Motoring join The Redex Car Club. Details from MOTORINDIA 5/141, Mount Road, Madras-6.

FANGIO

RACING'S WARY DAREDEVIL

Under the above caption appears a very instructive and interesting article in the June issue of The Reader's Digest, which should be read not only by Motor Racing Fans, but all motorists and especially by " Road Hags."

Fangio has the greatest number of " Wins " in International Motor Racing and takes part in Races he considers safe and then too in the fastest, strongest and safest cars. " Cars should be treated like women gently " says Fangio. " The first basis of reaching the finish is not to press too hard, not to squeeze all, that can be squeezed out of your machine."

He keeps both his mind and body alert yet without undue exertion to himself. It is said, " His feet do a jig on the brake and clutch. He shifts gears about once in every five seconds—about 2,300 *times in a normal race."*

The mechanics of Mercedes-Benz, were surprised at Fangio's Car SHOWING NO WEAR ON GEAR-BOX AND ENGINE when it was dismantled after racing.

Do read the whole article and practice it.

WELCOME TO NEW MEMBERS

(*From* 1*st April to* 30*th June* 1958)

The Redex Car Club extends a warm welcome to the following new members who have joined it and thanks those who introduced them :

M. R. Nevatia.
Miss B. M. Roovala.
Dr. R. K. Shah.
Mr. E. F. Dhondy.
Mr. R. R. Acharia.
M/s G. S. Ratra & Co.
Dr. S. K. Sanghani.
Mr. P. S. Mody.
Mr. M. K. Fyzee.
Mr. N. B. Daver.
Mr. C. D. Damani.
Mr. G. M. Bhuta.
M/s Bombay Cycle and Motor Agency Ltd.
M/s Zenith Automobile and Electrical Works.
Mr. U. T. Dadia.
Dr. B. Vakil.
Mr. F. D. Nanavaty.
Mr. K. K. Nambiar.
Mr. D. M. Parekh.
Mr. R. K. Bharat Singh
Mr. F. R. Poonawala.
Mr. A. R. Jagannathan.
Mr. K. Rajagoplan.
Mr. B. J. Boyce.
Mr. F. R. Pochkhanawala.
Lt.-Com. P. R. Kerawala.
Mr. B. M. Patel.
Mr. S. K. Panthaki.
Mr. M. P. Khambata.
Mr. M. B. Asha.
Mr. F. C. Kohli.
Mr. J. J. J. Cursetji.
Capt. Y. V. Mahajan.
Mr. M. R. P. Kabali.
Mr. N. S. Gupta.
Mr. J. B. Gwalani.
Com. S. J. Lalkaka.
Mr. S. K. Sethna.
Mr. B. A. Bachooali.
Dr. H. C. Mody.
Mr. P. M. Mathrani.
Mr. F. D. Rego.
Mr. D. S. Bedi.

Smooth Running

A Prominent Surgeon of Bombay writes :

21, Queen's Road,
Bombay-4.
5-5-1958.

Re. : Redex Car Club.

My dear Mr. Pheroze Lally,

I am herewith sending you my cheque for Rs. 12 being the Annual fee of the above Club.

I hereby take the opportunity of sincerely thanking you for inducing me to use Redex. I indeed find glorious difference. The engine efficiency, smooth running of the car, and the easy acceleration, etc. speak for themselves.

Those who have not yet taken to Redex, I only say *use* it and *then* tell me what you *find out*. I have induced so many doctor friends and others who have already placed Lubrocharger in their cars and have found benefit in various ways. I am sure this " Redex " should go very far among car users.

Sincerely yours,
(Dr.) Cawas Captain.

WATER INJECTION

IS BENEFICIAL TO CAR ENGINE

LA PAEEF

Injection of water, through the inlet manifold is certainly beneficial to a car engine as it gives better performance and clears away a good amount of carbon, but its use is at the moment doubted and less known in India, due to the paucity of publicity on the subject.

The device known as the H2 O Bomb, for water injection is now gaining ground fast in England. The Redex Car Club, displayed one of such at its 1st Auto Technic Exhibition and with the help of its Hon. Secretary some enthusiasts have fitted on their cars, with results perhaps known only to themselves or to just a few.

Let us compare all results, and exchange observations for the benefit of all, through this magazine and I request Mr. P. F. Lally to let us know as much about it as he can in the next issue. Perhaps some other reader who has experience of Water Injection will also enlighten us of its usage.

Rhymes While You Ride

BY

A. HOLDEN

The current state of roadways
Should probably raise few laughs—
If motorists found it safer,
To drive in comfort on footpaths.

" Though I'm only a pedestrian,
" I've got my rights," he said.
Well, let's hope, old feller,
It's " rights ", not " rites " instead.

" Back seat drivers are no worry,"
He said. " They admit defeat.
" They always sit in front with me.
For my car has no back seat."

" And do you know each other ?"
Asked the lawyer with keen intent.
" Certainly !" the driver replied.
" We met BY ACCIDENT !"

Up the hill the old car inched its way
Painfully and slowly ahead a line of ten,
The driver recalled his horoscope—
" You'll be one day—a leader of men."

" Certainly I can make it !
That trains quite slow !"
His car is in the junkyard.
That's where smashed cars go.

" I'm going for a spin," he said.
And stepped upon the gas.
At 70 he hit a lamp post—
Made several spins, alas.

" Do not smoke here if
Filling a petrol tank !"
After the big explosion
His friends his memory drank.

Reckless driving is a danger
You know it is so wrong.
If you don't watch yourself—
You won't be wreck-less long.

Traffic lights are helpful,
Respect them as they wink.
Don't drive through, neither anticipate,
But stop, do look—and think !

Her driving was atrocious
She swerved and hit a tram.
One bystander said : " Lady you
Would be better if you drove—a pram !"

" Why call that vehicle a bomb ?'
They asked, as aboard he sprang.
" Just because you see," he said.
" It starts off with a bang."

A wise man knows his motor
Respects the RULES OF THE ROAD
So don't be a thoughtless driver
Who thinks he RULES THE ROAD.

To avoid that " run-down " feeling
When driving in your car.
Try not running others down—
That way you'll all go far.

One good turn in driving
Really deserves another.
Signs and intentions beforehand,
Make things easier, brother !

The man who speeds on a highway
Can cause enough confusions.
But he could be simply
Driving himself to conclusions.

A lot depends on signals,
As you will probably guess.
Thus, when you're out driving.....
Make yours a " signal " success.

Pedestrians ! Take warning !
Always cross the street,
In the lanes provided,
Not where you place your feet.

The notice said, " One Way,"
As the wrong way down he sped
When plied for explanations,
" I am going ONE WAY !" he said.

" A DEAD END. TAKE WARNING !"
The sign meant what it said :
Arriving at one end—WHOLE,
And not arriving—DEAD.

" I'll overtake that fellow
Before he rounds the bend !"
You can find him in hospital—
He's slowly on the mend."

BIG STRIDES BY LIQUID GAS

The marketing of L.P.G. has become one of the fastest growing branches of the oil and natural gas industries. Free-world sales of butane and propane have more than doubled since 1950 *and today extend to nearly* 70 *countries. Of the current total, approaching* 17 *million tons a year,* 85 *per cent is sold in the U.S.A., where liquid gas is produced most cheaply and used for the widest variety of purposes as a domestic, industrial, and motor fuel, as well as a chemical raw material. Elsewhere it is in greatest demand as "bottled gas" for household and farm use, mostly in rural areas beyond the reach of gas and electricity mains.*

Of more than 700 million tons a year of petroleum products currently consumed in the free world, over 16½ million tons enter the market in the form of liquefied petroleum gases, commonly known as L.P.G. or liquid gas. This term denotes the peculiar characteristic of certain hydrocarbons of being readily convertible from a gaseous into a liquid state, and vice versa ; this results from their low boiling points, which at atmospheric pressure lie at or below the freezing point of water. At normal temperatures and pressures they are gaseous, but for purposes of storage and transportation they can easily be turned liquid by injection into pressurized containers. It is as "bottled gas" in this liquid form that the largest part of L.P.G. supplies reaches the consumers, mostly for use as domestic fuel.

Liquid gases chiefly comprise the hydrocarbons butane, propane and mixtures of both, produced in oil refining in the distillation and cracking stages, and in natural gas processing during the separation of natural gasoline. The extraction of the liquefiable constituents of natural gas is not to be confused with a process for the complete liquefaction of natural gas, or methane, by deep-freezing, of which much has been heard of late in connection with current plans for bulk-shipping liquefied natural gas by special tankers from Venezuela or the Middle East to Europe.

The marketing of liquid gas has assumed commercial significance only since World War II. Twenty years ago, saleable quantities of L.P.G. did not exceed about half a million tons per annum ; they were almost wholly derived from natural gas sources in the United States and mostly used in their vicinity. By the mid-1940s U.S. production of liquid gas approached 3 million tons a year. But it was only with the vast post-war expansion of both natural gas and oil refining operations throughout the world that the L.P.G. trade got truly into its stride outside the North American continent. It has become the fastest growing branch of business in the oil and natural gas industries' multifarious activities. Already it extends over nearly 70 countries. Although the United States still accounts for about 85 per cent of the total, the rapid progress of L.P.G. elsewhere can be gauged from the accompanying table.

The remarkably fast growth and spread of the liquid gas market bears witness to the widening appreciation of L.P.G.'s great merits both as a fuel and chemical base material. With calorific values in the gaseous state of 2,700 to 3,400 B.Th.U. per cu. ft. liquid gases have about 2½ to 3½ times the heat content of natural gas, and 5 to 7 times that of manufactured coal gas. A butane cylinder of nearly 30 lbs. liquid content, as normally used in Europe, yields about 200 cu.ft. of gas with a gross calorific value of over 600,000 B.Th.U.; this is sufficient to provide an average household with a month's supply for cooking. L.P.G. thus represents a highly concentrated form of thermal energy. While it can be packaged in pressurized form in any amount and so be dispatched over any distance like ordinary liquid fuels, it is utilized in gaseous form though the same basic appliances as natural gas and manufactured town gas, except for requiring special burners.

Even in the industrially most advanced countries, there are today still tens of millions of rural homesteads not yet connected to gas or electricity mains, and in the less developed regions of the world the situation is, of course, much worse in this respect. It is now greatly relieved by the growing availability of L.P.G., which readily fulfils all the domestic functions of piped gas—from cooking and lighting to water-and space-heating, air-conditioning and refrigeration. Its easy transportability makes it an ideal all-purpose fuel for caravan dwellers. However, liquid gas is much more than a mere stop-gap or substitute. Being a very clean fuel of high heat content, as well as of high octane value, its utility today extends far beyond those household uses to a great variety of agricultural and industrial applications.

In the United States, nearly 8 million tons a year of L.P.G.—*i.e.*, over half the total marketed output of some 14 million tons—is now absorbed in non-domestic fields. On the land, liquid gas serves such diverse purposes as flame-weeding, crop dehydration, milk pasteurization, heating incubators, driving irrigation pumps and other equipment. In workshops and factories it is increasingly employed for oxygen cutting, non-ferrous welding, and annealing, as well as for heating industrial furnaces for which the high purity of the liquid-gas flame is of particular advantage. Some 200 million gallons a year are used by U.S. gas utilities. In chemical manufacture L.P.G. plays an essential part as raw material in the production of plastics, synthetic rubbers, and other substances ; this sector alone currently takes up 30 per cent of total marketed supplies of liquid-gas in the U.S.A. Substantial quantities are also consumed in the oil refineries' own operations, *e.g.*, in polymerization processes and for gasoline blending, solvent dewaxing, etc.

A specially notable development in the U.S.A. is the brisk advance of liquid gas as a motor fuel in agriculture and road transport. With an octane rating of about 100, L.P.G. can be used in high-compression engines ; it burns more cleanly than gasoline, but it calls for pressurized tanks and for various modifications to the carburetter and the fuel feed system. In the last year alone, U.S. consumption of liquid gas for internal combustion engines went up by nearly 8 per cent to about 835 million American gallons, equivalent to 12 per cent of total sales of L.P.G. Of the current U.S. fleet of some 87,000 municipally owned buses about 2,500 are propane-fuelled ; of the country's 4¾ million farm tractors, close on 370,000 or 8 per cent, run on liquid gas. Over 40 per cent of current U.S. production of L.P.G. carburetters (excluding farm tractors) is for lift trucks and industrial tractors—the fastest expanding segment of the L.P.G. motor fuel market in the United States.

The prodigious size and diversity of the liquid gas business in the U.S.A. inevitably dwarfs the 2½ million tons a year of L.P.G. at present sold throughout the rest of the free world in nearly six dozen countries. European demand accounts for approximately two-thirds of this amount, sales in Canada, Central and South America together for about a quarter, while most of the remainder is marketed in the Far East and in parts of Africa. In any comparisons between the L.P.G. scene in the U.S.A. and elsewhere regard must, of course, be taken of the earlier start of the liquid-gas business in the United States and of the much more favourable conditions under which it could be built up. No other consuming country can produce liquid gas so cheaply and in such abundance as the U.S.A., whose unparalleled wealth of indigenous sources of natural gas provides three quarters of her total output of L.P.G., the remainder being derived from catalytic processing of petroleum in the refineries. In Canada about half the production is based on natural gas. In European countries, however, it rests predominently or wholly on refining operations, as significant supplies of natural gas are available only in parts of southern France, northern Italy and in the Netherlands-German border region. These latter countries are well in the lead both as suppliers and consumers of liquid gas.

Yet it is the big post-war expansion of petroleum refining in the West European countries that has primarily contributed to the spectacular overall growth of their L.P.G. supply from under 300,000 tons in 1950 to over 1½ million tons last year. There can be little doubt that their consumption of liquid gas will go on increasing for some considerable time, though probably at somewhat more modest rates. Liquid gas is not an easy seller, for it is a fairly expensive fuel everywhere outside North America. Not only is L.P.G. more costly to produce in oil refining than in natural gas processing, but freight handling, distribution and other charges are bound to be high where the volume of liquid-gas trade is still comparatively small.

Furthermore, the pattern of the liquid gas business in Europe and elsewhere differs markedly from that in the United States, in that a much higher proportion of marketed supplies is taken up by domestic consumers in small consignments, dispatched in returnable pressurized cylinders from the refineries and depots straight into the users' homes. This extensive and continuous container traffic naturally adds to the complexities and, hence, to the costs of the sales organization. Oil companies largely avail themselves of wholesalers and local retail outlets through the services of ironmongers and similar businesses, acting as sales agents and as advisers to their clientele in setting up their installations.

Industrial usage of L.P.G. outside the United States is mostly confined to chemicals production, while as a motor fuel liquid gas has so far been adopted only on a small scale in very few countries, *e.g.*, in the Netherlands, Belgium and Western Germany. In this connection, it is worth noting that in the Federal Republic, L.P.G. use as motor fuel, which in 1955 accounted for 45 per cent of total inland consumption of liquid gas, declined to 35 per cent a year later, the amount of L.P.G. burned in internal combustion engines then equalled about 1½ per cent of the country's consumption of gasoline and diesel fuels.

With household usage, thus, being generally by far the most important element of the L.P.G. market, the price factor is bound to have a specially strong bearing on the pace of its growth. In the U.S.A. liquid gas, though dearer than natural gas, is usually cheaper on a calorific basis than coal or electricity in many parts of the country. In refinery areas it is on the whole also cheaper than kerosine and untaxed gasoline—notwithstanding the considerable regional differences and seasonal fluctuations in L.P.G. prices, which *e.g.* for propane ex tank car currently range from about 5 to 10 cents per U.S. gallon (2.1 to 4.2 pence per kilogram).

The sharply contrasting picture of liquid gas prices elsewhere is revealed in the accompanying Table II. While in all the countries listed L.P.G. is sold for very much more than in the United States, in most of them it is nevertheless cheaper in terms of comparative heat value than electricity, and in some it compares favourably also with town gas. It is, however, invariably more expensive than kerosine, except in

TABLE I

CONSUMPTION OF LIQUID GAS*

in selected countries

(Thousand tons)

	1950	1953	1957
U.S.A.	7,150	10,100	14,100
Canada	60	250	330
France †... ...	115	260	550
Italy	35	175	475
Westren Germany	35	120	195
Belgium/Luxembourg ...	20	70	130
Netherlands ...	20	55	115
U.K.	35	55	80
Scandinavia ...	15	55	100
Other European countries ...	5	10	30
Brazil	(*a*)	(*a*)	180
Argentina ...	(*a*)	42	65
Colombia ...	5	10	25
Venezuela ...	3	10	30
Other Western Hemisphere Countries ...	(*a*)	15	60
Middle and Far Eastern Countries ...	(*a*)	15	75
African Countries	(*a*)	30	60

* Approximate figures, based partly on official statistics and partly on estimates from private sources.

† In most countries listed below, totals exclude L.P.G. use in chemical production and town gas manufacture.

(*a*) Not available.

France, where kerosene bears relatively high taxes. Since kerosine is the most direct competitor of L.P.G. for domestic uses in areas not connected to gas or electricity mains, one would expect that its price advantage over liquid gas would easily tip the scales in its favour wherever consumers have a free choice between the two fuels. Yet experience shows that cost considerations are often outweighed by the compensating attractions of the greater convenience and versatility in use which L.P.G. offers. For instance, in the Netherlands where kerosene is still extensively used for cooking, not only in the country but also in towns, the trend is towards its progressive displacement by liquid gas. Particularly striking is the rapid advance of L.P.G. in Belgium, where it is comparable in cost with town gas, but very much cheaper than electricity.

A dominant feature of the economics of the liquid gas trade is its seasonal character, due to the preponderance of winter demand for heating and other house-hold purposes. To lessen its impact, the American L.P.G. industry has long been catering for more summer customers, especially in agriculture. For the same reason it has been seeking wider outlets in such fields as road transport and industrial manufacture, which offer a high potential of liquid gas consumption all the year round. Developments in the U.S. have, of course, been favoured not only by the amplitude of liquid gas supplies from indigenous sources but also by the country's virtually unlimited capacity for absorbing them.

This extension and diversification of the liquid gas business in the United States has, however, greatly complicated the whole marketing organization, as it necessitated the creation of specialized facilities for bulk transportation and distribution. For maintaining an adequate balance between supply and demand, the U.S. liquid gas industry depends on large facilities for the pressure-storage of L.P.G., which is most economically effected in under-ground caverns, such as washed-out salt domes or depleted oil and gas wells. Since the early 1950s, hundreds of large subterranean reservoirs have been adapted for this purpose.

TABLE II

RETAIL PRICES OF L.P.G. AND ALTERNATIVE ENERGY SOURCES

in selected countries

L.P.G. per kg. in U.K. Pence Equivalent		L.P.G. per kg.	Town Gas	Kerosene	Electricity
		in equivalents of 1 kg. L.P.G. Average prices in respective national currencies			
20.3	U.K. (Pence)	20.3	14.4	9.9	18.9
17.4	France (Francs)	85.3	82.57	91.08	239.71
26.0	Italy (Lire)	190.0	136.0	182.4	306.0
17.6	Belgium (Francs)	10.3	12.34	7.12	44.09
14.9	Netherlands (Guilders)	0.7	6.2	0.36	1.95
29.5	Switzerland (Sw. Francs)	1.5	1.0	0.9	0.8
12.4	Denmark (Kronen)	1.0	1.5	0.7	1.3 to 4.5
34.4	Sudan (Piastres)	14.0	—	3.6	21.3
26.0	Tunisia (Francs)	127.6	123.22	52.01	188.96-413.16
26.1	Algeria (Francs)	128.0	106.66	66.99	171.14
18.1	Venezuela (Bolivars)	0.7	—	0.2	1.5

Their current capacity totals some 1,400 million gallons (nearly 3 million tons), equivalent to about a fifth of the volume of annual L.P.G. sales; a further 400 million gallons capacity is under construction or planned. Transportation facilities, include about 23,000 pressurized tank cars and several pipelines, while close on 3,500 L.G.P. filling stations are at the service of road vehicle users in the United States.

Everywhere else in the world, the marketing of liquid gas can be done on very much simpler lines. In no single country, with the exception of France, have sales of L.P.G. as yet reached the half-million-ton mark and in a good many they amount to no more than a few hundred or thousand tons a year. Yet the disposal of output surpluses during seasonal troughs in demand is a problem of equal importance in all L.P.G. producing countries. Indeed, it is especially pressing for those having a rapidly growing potential for making liquid gas, but no wide enough domestic market for it to justify the setting up of expensive storage and distribution equipment.

In order to utilize available capacity for L.P.G. production, steps were taken in various countries already in the early stages to extend the range of business beyond meeting local demands. As liquid gas is transportable in packaged form, there are no technical obstacles to shipping it over any distances even across the seas. Though the export trade in L.P.G. is still small in volume, not least on account of cost factors, it has in the course of the past few years brought liquid gas to scores of countries with no producing facilities of their own.

Apart from an expanding intra-European trade, bulk shipments of L.P.G.—which are a post-war development—are made regularly from European sources to various parts of Africa and the Middle East, and from the U.S. and the Carribbean to several South American countries. While some ocean cargoes are carried in batches of loose cylinders, most are shipped in specialized vessels permanently fitted with pressurized storage containers. About two dozen L.P.G. tankers (mostly converted dry-cargo ships) are now in service, but the largest do not exceed 2,500 gross tons, and their gas-carrying capacity is only around 1,000 tons. Bigger ships are, however, in prospect. A large tanker is at present under construction in the U.S.A. to haul L.P.G. from Venezuela to the East Coast. Recent reports suggest that American Italian and German shipping and shipbuilding interests are considering the development of new-type refrigerated L.P.G. carriers, intended for large bulk shipments of liquid gases from Western or Middle Eastern sources to Europe. The young liquid-gas industry appears to look to the future with a confidence that seems well justified by its record of achievement in the past. (*Copyright*)

RADIATORS TOO NEED SERVICING

(*By Mr N. K. Chakraborty.*)

I have already hinted in my previous article (published in our April issue) that under the existing road and climatic conditions in this country a tubular type of Core secured with continuous copper fins construction will give better and longer service than a Honey Comb Core which is very delicate and weak in construction. Of course, it is agreed that so far as the cooling effect of a particular type of Radiator Core is concerned, a Honey Comb Core is supposed to give better and more efficient performance than a tubular Core under identical given conditions; mainly because of the facts that (i) this type of Cores are entirely made out of copper which according to its inherent metallic property possesses the maximum heat Radiation capacity than any other metal and (ii) this type of Cores have got more outer surface to come in contact with fresh air flow. But taking wear and tear into consideration, a tubular core definitely gives as much as three times longer service than a Honey Comb Core under the same given conditions. The variation in the performance being negligable, a Tubular Core is found to be much more economical. There is another type of Radiator Cores which also consist of rows of flat tubes with crumpled fins arrangement in between the tubes. They are called T-C Cores or Tube and Cell type of Cores which are the recent year development of M/s. Maccord Radiator Corporation, U.S.A., and about which Mr. L. L. Hunt, the Chief Engineer of M/s. Maccord Radiator Corporation, is so proud to claim the same to be the best type of Radiator Cores producing the maximum cooling effect. But unfortunately in this case also as the tubes are not fully secured with continuous fins, the whole construction has proved to be too weak to withstand the rough road conditions of our country. Hence the same can also be classified as one of the Honey Comb Type. Besides, there are Tubular Cores, the tubes of which are found to be secured with fins made out of brass or iron foil. As per the inherent metallic qualifications there will be less heat dissipation in these types of Cores. That is why vehicles like Austin, Standard, Hillman of recent years which are equipped with iron finned Radiator Cores are found to be with trouble of overheating especially in the hot season. One important point in a copper finned tubular Core is that the allocation of fins ranges from 6 to 12 Nos. per inch of Core space. The more number of fins per inch will ensure the more amount of heat radiation. With all these above points in view, it can very well be regarded that a tubular type of Core with copper fins construction is the type to suit the climate and road conditions of our Country.

It is quite unfortunate that very little care is taken about the Radiator when compared with the other accessories of a Vehicle, except a few Vehicle Operators who run their fleet on proper scientific basis. It is very common with most vehicle owners and fleet operators that they do not even think of servicing the Radiator let alone replacing, until it starts leaking badly which is not likely to be controlled outwardly by patches with soap, tar or even cement. Much less importance is attributed to a clogged Radiator for likely cause of overheating of the engine than other possibilities when the Head Gasket is found leaky, valves burnt, piston and rings distorted or the Cylinder head cracked. We have yet to understand that all the above tricks are quite likely to result in due to a partially clogged Radiator not having any outward sign of leakage anywhere in the Core. *It is why the vehicle manufacturers recommend seasonal servicing of Radiators,* i.e., *cleaning both inward and outward surface of the Core with which both water and air come in contact respectively, once in six months.* As a matter of fact it is well recommended for Radiators of Vehicles like Trucks, Buses, Tractors and Taxis which are in constant operation. As regards Radiators of smaller vehicles as Cars, Vans, etc., which are lightly or sparingly used servicing should be done at least once in a year and that too perferably at the outset of summer season when a partially chocked water circulation may be the cause of overheating thus creating possibilities of damaging other parts connected to it.

However, this a generalised specification of time limit for thorough servicing of Radiators when the other items related to the cooling system are in proper working condition. Any deterioration in the system due to improper functioning of any of the relative parts may even call for earlier attention to the Radiator Assembly.

PETROL PRICE REDUCTION
W.I.A.A's. PRESIDENT'S PLEA

"While the future of road development appears to be bright, the tax burden on motor transport continues to be as heavy as ever. Some months ago, the Government held a Conference at Mussoorie when it was accepted that the ceiling on motor vehicle taxation should be at 75% of the Madras level of taxation. Many months have passed by since but even now no one is in a position to say when the recommendations will be implemented. The delay probably is due to reluctance on the part of the States to fall in with the general policy accepted by the Union Government but it is time all concerned realised that the healthy growth and development of motor transport depends largely on a uniform system of taxation and rules applicable to motor vehicles, otherwise the hands of the clock of progress will be held back." so said Shri V. C. Setalvad, presiding over the 38th Annual General Meeting of the Western India Automobile Association. He also referred to the want of reciprocity as between the different States and suggested that tax paid in any one State should be valid throughtout the country for the period it has been paid.

Referring to the recent agreement between Government and the Oil Companies involving a reduction in the prices of petroleum products by 10% he expressed disappointment that the accruing benefits involving Rs. 10 crores were not to be passed on to the consumer. He said that with the advent of the refineries and the proximity of the oil wells, there was little justification for maintaining the existing high level of prices. In view of the very strong public feeling in the matter, he pleaded that it would be a good gesture on the part of both Government and the Oil Companies to give some relief to the consumer and, at the same time, refer the oil prices to the Tariff Commission for investigation and recommendations'.

Dealing with road accidents in Bombay, Shri Setalvad appreciated the efforts of the authorities to bring them down and stated that a break-up of the accident figures indicated that a majority was due to buses, lorries and taxis. With a view to improving the standard of driving of these drivers, he said there was necessity for them to be periodically examined and tested, also the mechanical condition of the vehicles they handled. He pointed out that steps such as the one's he advocated would contribute to better driving and lesser accidents.

As regards roads, Mr. Setalvad said that the reorganization of States had created special problems of connecting one part with another. Similarly, there was also the larger problem of meeting the transport needs of areas where industries had sprung-up. He stated that the Nagpur Plan of road development formulated 15 years ago was now almost implemented but the target set in the light of subsequent changes had fallen short of the requirements. His predecessor, he said, had advocated another Conference of Chief Engineers of States to reassess the country's road requirements in the light of prevailing conditions. The Indian Roads Congress had taken up the suggestion and set-up a Committee of Senior Engineers to formulate a revised All-India Road Development Plan which would be adequate for a period of 20 years from the Third Plan. That was expected to raise the total road mileage from 3.7 lakhs to 6.5 lakhs.

W.I.A.A's. New President Shri P. R. Bhatt Elected

Shri P. R. Bhatt, the Senior Vice-President, was elected President of the W.I.A.A. at the first meeting of its new Committee held immediately after the Association's Annual General Meeting. Shri Khatau G. Dayal and Shri Babubhai M. Chinai, M.P., were elected Vice-Presidents.

A former President of the W.I.A.A. Shri Bhatt has served on the Central Railway Advisory Board for a number of years as also on the Traffic Advisory Committee. He has been representing the Western India Automobile Association on the Board of Communications since a number of years. He was nominated by the Government of Bombay to be a member of the Advisory Committee when Petrol Rationing was in force.

Shri Bhatt has associated himself with the Children's Aid Society continuously since 1936. The present position of the Society is due, in no small measure, to the devoted attention he has paid to its progress since over 23 years. He was a member of the Special Committee on After-Care Programmes, Hon. Treasurer of the Indian Conference of Social Work.

Earlier, Shri Indrakant C. Patel, Shri P. K. Master, Shri Himatlal V. Gandhi, Shri L. S. Dabholkar and Shri Gordhandas Jadhavji were elected to the Committee.

The Union Minister for Industries, Sri Manubhai Shah, een at the Automobile Products of India Factory at Bhandup. Mr. P. Matthen (right) is explaining the plans to the Minister and Mr. M. A. Chidambaram, Chairman of the Company is seen watching to the left

A. A. S. I. MADRAS RALLY

Plans are well under way for the first A.A.S.I. Motor Rally over a very interesting route of 117 miles to be held on Sunday, the 10th August, 1958. Starting at the A.A.S.I. Office in Madras the Rally will pass through St. Thomas's, Mount — Poonamallee—Tiruvellore —Uttukottai — Satyavedu—Tada—Gummudipundi, and return to the A.A.S.I. Office. This route affords delightful scenery and passes through many interesting villages.

This Competition does not in any way infringe the provisions of the Motor Vehicles Act and does not require special insurance. It is mainly a test of driving skill in keeping within prescribed average speeds over specified sections of the route. There will be four declared check points where the time of arrival of the Competitors will be recorded and marks deducted for early or late arrival. There will also be secret check points and marks gained or lost at these will be counted in case of ties. Motor Cars, Scooters, Motor Cycle combinations and three Wheelers may be entered by members of the A.A.S.I., The Madras Motor Sports Club, The Bangalore Motor Sports Club, The Coimbatore Auto Sports Club, the Enfield Club and the Lambretta Club. The classification and rules make it possible for any of these vehicles to win the Trophy irrespective of age, type and power. There is a special classification for Veteran Vehicles registered before 1st January 1936 and special prizes for the winning Woman Car driver and Motor Cycle or Scooter rider.

A rolling cup will be awarded to the out-right winner of the Rally as well as cups for winners in all classifications. A number of attractive prizes in kind have been generously donated by various automotive and allied firms—*e.g.*, Car Battery. There are as many as 14 useful prizes to be won.

The closing date for entries is 5 p.m. on Tuesday the 15th July 1958.

Classification and entry fees are as follows :—

	Rs.
Group A—	
Veteran Vehicles (Registered before 1st January 1936)	Free
Group B—	
Scooters, Motor Cycles, Motor Cycle combinations and three wheelers upto 150 c.c. Motor cars upto 1,500 c.c. ...	3
Group C—	
Scooters, Motor Cycle combinations or three wheelers above 150 c.c. Motor Cars above 1,500 c.c.	5

Those wishing to participate should apply to the Secretary, A.A.S.I., Madras-6, with the requisite fee for full details and entry forms.

This Rally is designed to offer about 4 hours of very pleasant driving to keen motorists. Being the first of its kind organised by the A.A.S.I. it is not meant to be tough. However, a good deal of concentration and judgment of time and distances will be required to get through to the Trophy.

Entries are limited to 100 only.

MADRAS MOTOR PARTS DEALERS' ASSOCIATION

The Secretary, The Madras Motor Parts Dealers' Association writes :

A trade Notice No. 47/58, dated 31-5-58 received by us from the Jt. Chief Controller of Imports and Exports, Bombay on the above subject, is reproduced hereunder for information of Members of the Association.

RADIATOR ASSEMBLY

" Attention of the Trade is invited to the Import Policy for Radiator assembly item 9 of List III of Appendix XXVI to the Red Book for the current half year.

Radiator assembly has been included in List III of Appendix XXVI for the first item during the current half year. It is clarified that the quota for this item should be established on the basis of imports of complete Radiator Assembly only. However, quotas once established on this basis can be utilised for Imports of parts of Radiator assembly *viz.*, Radiator core, tank, anker plates, cap, drain plug, shorud and thermosts. Licences issued for motor vehicle parts (S. Nos. 293, 295 and 297/IV) cannot be utilised for Imports of parts of Radiator Assembly.'

BALL BEARINGS

" We have obtained a clarification, on the above subject, of the Custom authorities through the Jt. Chief Controller of Imports, Bombay, under his letter No. 3/B-77/1-58/CDN-1, dated 29/30-5-58 as under :

"Ball bearings not specified in Appendix XIV to the Import Policy Book and adaptable on Motor Vehicle either according to Ball Bearing manufacturers' catalogues or according to the catalogues of Motor Vehicles, irrespective to their adaptability to other machines, also can be imported upto 1 p.c. of the face value of the licences for Motor Vehicles parts, S. Nos. 293-95-97/IV.

Such Ball bearings need not be adaptable exclusively on Motor Vehicles, but ball bearings of general purpose and also adaptable on any motor vehicle can be imported as explained above.

Ball bearings not adaptable on any motor vehicle cannot be imported against Motor Vehicles Parts Licences.

NEW MEMBERS

The following firms have been enlisted as Members of Madras Motor Parts Dealers Association.

Messrs. Deens Garage, 4 Harris Road, Pudupet, Madras-2 and Messrs. T. A. Moize & Co., Manufacturers Representatives, 53 Bhajeepala Lane, Rajkotwala Buildings, Bombay-3.

OBITUARY

We regret to report the death of Srimathi Bagyalakshmi Ammal, mother of Sri K. V. Padmanabha Chettiar, Partner of Bangalore Automobiles, Salem, at her residence in Salem on the 25th June. Srimathi Bagyalakshmi Ammal was a woman of pious disposition and was known for her charitable outlook.

* * *

Motor Vehicles and Allied Merchants' Association

In a representation to the Secretary, Ministry of Commerce and Industry, Government of India, New Delhi, the Motor Vehicles and Allied Merchants Association says :

Till the end of the year 1956, the imports were allowed upto cent. per-cent ; and during the first half of 1957, a cut of 40% was imposed. During July to September 1957, no licences were issued at all. For the 2 half-years " October 1957 to March 1958 " and " April 1958 to September 1958," the quota has been cut down to a bare 25% of the best year's imports. The last cut has been the ' unkindest ' ; there is real dearth of most of the auto-parts indispensable for goods transport. The operators are now finding it extremely difficult to obtain their full requirements of many of the fast moving parts. Hence this representation for sympathetic consideration, and immediate and generous orders.

The rapid expansion of road motor transport started towards the end of 1955 ; the sizable increase in the production and sale of trucks and buses would prove that valuwise, the consumption of parts for trucks now being porgressively manufactured in our country has doubled compared to the petrol trucks in common use in the years immediately following the war. The prices of the parts and components of Mercedes Benz, Fargo, Dodge and Leyland, are very much higher at factory level than those of the Chevrolet or Ford with the petrol engine ; that accounts for the increase in the import cost.

There have been the following three-pronged increase in our import requirements :

(i) The number of vehicles on the road has greatly increased.

(ii) Most of them are diesel, carry heavier loads ; and operate on longer routes, with the liberalisation under the Motor Vehicles Act of 1956.

(iii) The increase in daily mileage, and the heavier loads hauled, necessitate more of diesel-vehicle parts which are definitely more expensive at factory-level. It is beyond controversy that road transport is an essential service serving all national development activities, and agriculture and industry in particular. It is admitted that there is yet only ' progressive ' manufacture of trucks in our country, and also that our entire requirements canNOT be produced in India for some years to come. It is therefore imperative that the vehicles now on the road, and those sure to be on the road more and more, should be kept, on roadworthy and fit, to serve their great purpose.

We therefore request that the cut to 25% of the best year's imports, may immediately be replaced by a less severe cut, of 40% as in the first half of 1957. If however that is considered a strain on our foreign exchange, at least 50% of the best year's imports may be permitted.

GOVERNMENT REPLY

In reply to the above, the Chief Controller of Imports and Exports has stated that the suggestions will be considered at the time of formulating policy for the next year.

* * *

PRODUCT NEWS

Champion Plugs to be manufactured in Mexico.

The Champion Spark Plug Company, Toledo, Ohio has announced the formation of a Mexican subsidiary to manufacture and distribute Champion Spark Plugs in Mexico. In this new organization, Champion will be associated with Mexican interests.

Known as Bujias Champion de Mexico, S.A., it will have its plant in Industrial Vallejo, a new industrial Section of Mexico City, and will be equipped with machinery, tooling and inspection devices from the parent company. All Bujias Champion de Mexico supervisory personnel are being trained at the Champion Spark Plug Company headquarters in Toledo. Toledo will also furnish complete engineering and technical services on a continuing basis. 'With our engineering and training programme established at the main plant,' states R. A. Stranahan, Jr., Champion Spark Plug Company President, 'the quality of the product manufactured by our Mexican subsidiary is assured of being equal to the high standards set forth by the parent company.'

Bujias Champion de Mexico, S.A. capitalized at an amount in excess of four million pesos, will serve automobile manufacturers in Mexico, as well as distributors of replacement parts. Mr. Stranahan also points out that this new enterprise, which will be in full production this year, represents a major contribution to the Mexican industrialization programme, with particular benefit to the automobile industry.

Rootes Production Record

Rootes production during recent weeks has been continually in excess of 3,000 units a week—an all time record.

More than 50 per cent of all vehicles produced have been exported. The greatest successes have been in the North American dollar markets where exports have increased by 90 per cent.

During the first four months of the year output of Humber, Hillman, Sunbeam and Singer cars has been 71 per cent higher than during the same period of 1957.

ENGINE TESTER

A new electronic instrument for rapidly and accurately carrying out a wide variety of tests to check car engine performance is being manufactured and exported by a British firm. Available in a variety of mountings, it can be supplied with a number of subsidiary instruments for individual testing. In its basic form it measures only 15 in. × 22 in. × 8 in. and weighs 38 lb.

In 10 min, and with the use of two cable connexions to the engine, one man can carry out seven sequence tests with the instrument. *Within one hour a complete check-up and tune-up of the engine can be undertaken, including the setting of the contact points, cleaning and setting plugs, cleaning and adjusting ignition timing, and adjusting the carburettor.* The new machine, which is operated by the car battery, is already in use in many garages in Britain, and the firm is now increasing its oversea sales.

BUILT 3 MILLIONTH FORDS BODY!

Briggs Motor Bodies, Ford Dagenham's Body Division have just celebrated the production of their 3,000,000th Ford body, a left-hand drive Anglia de luxe.

The car has now been exported to Sweden to take part in a large-scale Sales and Advertising Campaign.

It was in September 1931 that the first Ford body, a van, was built at Dagenham. The million mark was reached with the manufacture of a Prefect body 17 years later in October 1948.

The volume of production grew by such leaps and bounds that in just over a third of that time body number 2,000,000 was built in November, 1954. The lapse of time between the second and third million bodies was 3 years 5 months. At present production rates the four millionth should be turned out within the first quarter of 1960.

Los Angeles Harbor'. Miss Auto Imports of 1958, Charlene Koos, handles the pneumatic drill at ground-breaking ceremonies of the Pacific Auto Terminals facilities, Los Angeles Harbor. The 17-acre area will be improved to permit simultaneous docking of two ships and provide paved space for 3,000 imported automobiles.

NEW ROOTES "CARGO-LIFT" CARRIES MORE, LIFTS HIGHER

A larger, higher "cargo lift" truck—designed to cut down precious time in loading and unloading aircraft—has been added to the Rootes Group commercial vehicle range.

The truck is based on a Commer 5-ton forward control wheelbase and its body can be raised platform style 13 feet in the air—high enough to meet the loading bay of any aircraft in the world.

Powered by either an underfloor O.H.V. six cylinder 4,750 c.c. petrol engine or the well-proven Rootes diesel power unit, the Commer supplements the already-successful Karrier Gamecock 3-4 ton "Cargo Lifter."

The smaller Gamecock, the body of which can rise nearly 11 feet is in use at airports in many parts of the world. Now the Commer, with its larger body, greater capacity and higher lift, is already being used by three major airlines at London Airport and all report that it has reduced commissary equipment handling time by 50 per cent. B.O.A.C. have now ordered five of the vehicles.

A touch on a lever inside the cab operates the Access lifting device. Strong "scissor" cross members, activated by two power hydraulic rams, lift the body—carrying any load up to 5 tons—steadily to the height required.

The vehicle is available either with a fixed cantilever loading bridge permanently secured above the driver's cabin, or with a Rootes Group patent folding bridge which tucks away behind the cab when the body is lowered.

An auxillary folding side loading bridge can be fitted to either side of the main bridge to give access to the head of the passenger ladder. And a power-operated tailboard lift is also available for loading heavy items up to 2.240 lbs. (1,016 kg.).

A rubber bumper is fitted to the front of the bridge and a warning is operated inside the cab if this touches the fuselage.

The new load-lift Commer gives airlines the advantages of labour and time-saving direct loading from store to truck and truck to aircraft, full load protection from rain, snow and sun (any type of truck or van body can be fitted), and cuts to a minimum the risk of damaging the aircraft.

PLATING HOLDEN CARS

Two automatic metal plating machines to handle the extra volume of plated parts required for the production of Holden vehicles, have been recently installed by General Motors-Holden's Limited, at its Woodville plant in South Australia, at a cost of £A500,000.

The new plant, which mainly comprises a copper machine and a combined nickel-chrome machine, is installed in a new modern steel building. To enable these machines to be installed side by side at a convenient height, a large pit—8 feet deep × 150 feet long and 85 feet wide, was excavated inside the building extension.

The base of the machines is approximately 4 ft. 6 in. below normal floor level, and directly below all critical tanks, are lined catchment tanks to prevent loss of the solutions and sewer contamination.

Pumps, filters, heat exchangers and fans are housed in the pit between the two machines, and a floor drainage system connects with a specially provided sewer outlet.

Nickel and chrome plating operations are now combined in the larger of the two machines which is 136'.6" × 11' × 17'5".

India's first export of automobile batteries seen at the Princess Dock, Bombay

India Exports Automobile Batteries

The first exports of Indian-made automobile batteries left Bombay recently by the s.s. *Phoenix*.

This was a shipment of heavy-duty batteries for buses and trucks and was despatched by Messrs. Standard Batteries Limited—India's largest national battery manufacturers—and represents India's entry into the competition for the battery markets of South-East Asia.

India's battery industry has every reason to be proud, considering the fact that, until recently, India had to import all the batteries she needed. Imports of batteries used to cost the country over one crore of rupees in vital foreign exchange. That this position has been reversed within the short space of ten years is due to the efforts of companies like Standard Batteries Limited.

Quality of World Standard

Standard Batteries have also played a great part in the rapid development of the Indian battery industry; by securing expert technical collaboration and important battery patents, Standard Batteries Limited have been able to raise the quality of Indian batteries to amongst the world's finest.

INDIAN BATTERY TECHNICIANS

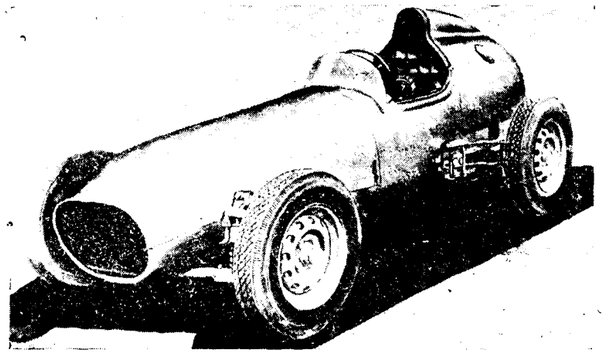
Receive Training Abroad

With the rapid rise of India's battery industry to world quality standards, a need has developed for highly trained personnel for the highly specialised operations of this industry.

India's largest national battery manufacturing company, Standard Batteries Limited, have recently sent technicians for advanced training to Sweden, with their technical consultants Messrs. A. B. Tudor, one of the world's foremost battery manufacturers.

The first technician to go to Sweden under Standard Batteries' foreign training scheme was Shri N. U. Prabhu, 37, who has eighteen years of experience in storage battery manufacture. Shri Prabhu spent 6 months working in Messrs. A. B. Tudor's factory at Nol, Sweden, and has just returned to Standard Batteries' Factory in Bombay as Technical Co-ordinator.

The second trainee, who left for Sweden on 4th May, is a 26-year-old chemical engineer, Shri S. S. Wagle, B.SC. (HONS.), M.SC. (TECH.). He too will spend about 6 months with Messrs. A. B. Tudor, before coming back to take charge of a highly advanced section of Standard Batteries' modern plant.



SOVIETS TO ENTER INTERNATIONAL CAR RACING. It was announced recently that the Russian Central automobile and Motorcycle Club had joined the International Automobile Federation and would soon participate in international events. Photo shows a medium size Russian racing car of the 1,000 c.c. class.

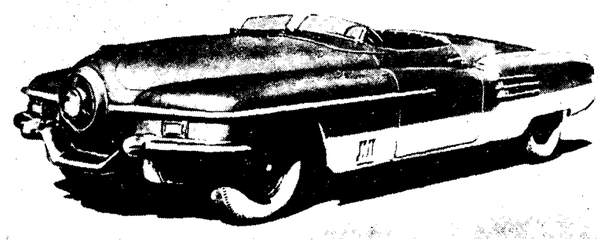
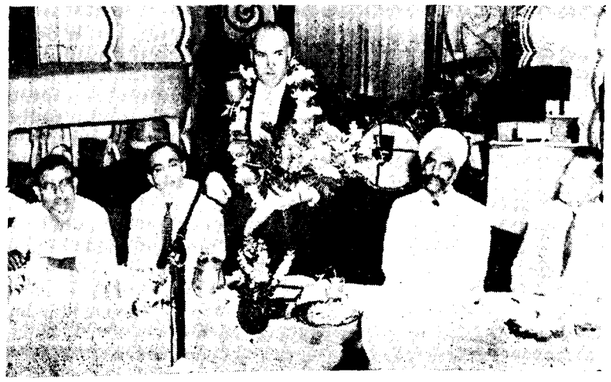


Photo above shows a heavy Russian racing car of futuristic design.

Photo taken in connection with the Annual Meeting of the Calcutta Motor Dealers Association, shows from left to right—Messrs. P. K. Basu, Secretary of the Association; A. L. Daing, President of the Association; John Royers, Director, Joseph Sankey & Sons, Ltd; Sant Singh Salivey, Senior Partner, New Indo Trading Co.; Hattori, Manager, Dasichi Bussam Kaisha Ltd.



Goggomobil Abandons Front Wheel Drive

A severe winter of test running with the front wheel drive prototype T-600 Goggomobil which was revealed at the Frankfurt show in 1957 has led to a sharp revision of ideas. After a big mileage battling with rain, ice and snow in the Bavarian and Austrian alps, the designers have abandoned front wheel drive; when the car goes into production in July it will still have the flat twin air-cooled engine hung ahead of the front wheels, but the drive will be taken via. four-speed all-synchromesh gear-box to the rear wheels. They came to the conclusion that rear wheel drive gives the safest handling on slippers and unmade roads or tracks and on steep gradients, but they retain the front engine on grounds of course stability and luggage room.

Appearance and road holding will be improved by increasing wheel size from 10 to 12 m. with 4.8—12 tyres.

To reduce production costs power output of the 600 c.c. (36 cu.in.) engine has been cut from 25 to 20 b.h.p. but owners who want more performance a 700 c.c. (43 cu.in.) engine will be offered, giving 28 b.h.p. Prices in Germany will be £367 ($ 1,310) for the 600 and £379 ($ 1,350) for the 700.

The rear engined two-stroke Goggomobils of 300 and 400 c.c. will continue in production. At present over 40 cars a day, representing more than 20 per cent of production are exported.

A Slick Sports Car

A Spanish firm, the Fabrica Automobilistica Espanola de Automobiles de Turismo SEAT, which builds cars under licence from Fiat, will supply parts and motors for the production of Fiat Sport 750s which will be undertaken by a new factory being built at Saragoza. The slick sports cars will be turned out at the rate of 1,500 yearly.

Of Interest To Tourists

Attracting Foriegn Tourists

A series of at least five festivals will be organised at New Delhi in the coming winter season so as to provide a wide variety of entertainment. This, it is claimed, is with a view to attracting foreign tourists. The plan is being worked out by the Director-General of Tourism, Government of India. Folders and brochures publicising the festivals are being got ready and will be distributed widely in various countries.

It is learnt that in response to popular tourist requests, at festivals like Dasara, Deepavali, Republic Day, Holi, etc., separate enclosures for at least a thousand foreign tourists will be provided at the festival site so that the visitors can see the pageantry that is peculiar to this country.

Mr. S. K. Patil, Minister for Transport and Communications, who is taking a very keen interest in this matter presumably with a view to increasing foreign exchange earnings of this country through tourists sources, has been having conferences with various departmental heads.

It is also understood that proposals will include having Indian nights in clubs and hotels once a week at least where Indian type of entertainment will be provided instead of imitative ball dances and caberets.

There is no doubt that an emphasis on Indian surroundings and the display of Indian culture with a view to attracting tourists will have far reaching results.

In this connection, it may be pointed out that many European countries whose problems of foreign exchange are no less important than India's, are today able to manage their financial affairs most satisfactorily due mainly to the foreign exchange earn through tourism and travel. Most of the major clubs in India are likely to help the Government in attracting foreign tourists.

Over 80,000 tourists visited India last year and it is expected that the number will increase considerably this year.

Tourist Body for Mysore

The Mysore Government has constituted a Tourist Traffic Advisory Committee with the Deputy Home Minister, Mr. Basavalingappa as Chairman. The Committee is expected to discuss vital matters relating to development of tourist traffic in this State. Mr. D. R. Ramiah, Principal Information Officer, has been appointed Secretary to the Committee.

Tourist bureaux are expected to open shortly in 7 or 8 centres in Mysore State, thanks to the interest taken by the Government of India in the matter of increasing tourist traffic. Mysore is a place for tourists to visit and admire and the efforts taken by the Mysore Government are expected to attract more and more tourist to this State.

* * *

New Health Resort

A scheme to develop Horsely Hill in Chittoor District as a health resort is to be studied shortly by a team of engineers. A plan for the development of the Hill as a tourist resort is being worked by the Town Planning Department of Andhra State.

* * *

TOURIST RUSH RESULTS IN NEW GUEST HOME

A tourist guest house is to be built at a cost of 2½ lakhs by the Punjab Government at Pathankot. This has been necessitated by the growing rush of tourists to Kashmir and the Kulu valley and other areas from here. Transport companies in the Punjab are doing their best by providing new and luxury buses for the visiting tourist.

* * *

NATIONAL HIGHWAYS IN INDIA

The mileage of National Highways in various States after reorganization is as follows : Andhra 1,395 ; Assam 796 ; Bihar 1,113 ; Bombay 2,170 ; Madhya Pradesh 1,399 ; Madras 1,043 ; Orissa 851 ; Punjab 769 ; Uttar Pradesh 1,395 ; West Bengal 782 ; Jammu and Kashmir 328 ; Mysore 607 ; Rajasthan 470 : Kerala 248 ; Delhi 44 ; Himachal Pradesh 222 ; Manipur 98 ; Sikkim 39 ; Total 13,769.

* * *

Delhi Transport Survey

The Central Board Research Insititute, which conducted a survey recently regarding the transport requirements of Delhi citizens, has submitted its report to the Delhi Administration.

The survey was conducted in March following a taxi strike as a protest against issuing more permits for taxis. The survey aims at an impartial assessment of hire transport needs of the people. The recommendations made in the report, it is stated, are not binding on the Administration.

It has been suggested in the report that there is a great demand for cheaper types of transport, like two-seater scooters. The number of such scooters may be increased at the rate of 200 a year till the public requirements are fully met. Scooter-stands should be provided in residential colonies of the lower income group people as also in commercial areas.

Another recommendation is that either the taxi fare be reduced to six annas per mile flat rate or more permits for two-seater scooters be issued. It will not be possible to completely eliminate the two-seater scooters which the public want so badly. It has also been suggested that every effort should be made to gradually replace four-seater motor-cycle rickshaw by two-seater scooters.

In certain areas of the city like Naya Bazar, Sadar Bazar and Nai Sarak, which are overcrowded and congested, it has been suggested that plying of taxis should be discouraged and the use of two-seater scooters be encouraged. It will be to the benefit of both taxi-owners and the two-seater scooter operators. In overcrowded areas, taxi operators do not earn enough on mileage basis whereas two-seater scooters, being smaller in size, can squeeze its way through and also not cause much congestion. According to the report, "it is the people that have to be moved and not the vehicles."

AIR NEWS

FLIGHT TO THE MOON

BY

PROF. V. SHARONOV

Today when as a result of the construction of artificial earth satellites the problem of flying in airless outer space has passed from the realm of fancy and theory to the stage of technical development and practical flights, a flight toward and to the Moon has become a reality.

Passenger flights to the Moon and back are a thing of the future. The immediate problem is to send to the Moon a man-made cosmic body, which, like the two first Sputniks, will not return. This, for example, might be an artificial satellite which after leaving the earth will fly around the Moon.

It may seem that even this problem is very far from the practical possibilities we have today, for Sputnik III moved away from the earth not more than 1,880 kilometres while the distance to the Moon is 384,000 kilometres.

While the difference in the distance appears to be enormous, the thing is that it is not distance which plays the chief role but the speed which the space rocket could develop.

As we know, to rotate around the earth in a circle an artificial satellite must have a speed of eight kilometres a second. Since to reach the Moon a similar satellite would have to have a speed of approximately 10 kilometres a second, the difference is not so great. True, to step up the speed by two kilometres a second is a far from simple task.

Flying at a speed of 10 kilometres a second satellite will move in an ellipse. It will gradually move farther and farther away from the earth and after passing the most distant point of its orbit it will again return to the earth, thus making one revolution after another. At the proper location of the orbit in space the artificial satellite will in several cases meet the Moon—the earth's natural satellite—and skirt around it, as has been suggested by K. E. Tsiolkovsky, the father of theoretical cosmo-nautics.

What will this mean ? If we assume that on the satellite will be a TV set capable of transmitting to the earth pictures of the surrounding space, that makes it possible to solve one of the most difficult problems faced by science, namely, to study the other side of the Moon.

Today it is of course difficult to say for certain which way practical study of the Moon will develop in the next five or ten years. But one thing is certain : after a period of studying the Moon the time of subjugating it will come. Man will build guided ships on which he himself will be able to reach the Moon and land on the surface of that heavenly body, the nearest to us. And after reaching the Moon he will set up there first temporary Scienctific stations supplied with air and food from the earth, later regularly functioning observatories and institutes, and finally industrial enterprises to extract and process the Moon's natural resources.

ON POSSIBILITY OF SPACE TRAVEL

MOSCOW. The experience in launching the first artificial earth satellites testifies to the possibility of space travel in spite of the presence of meteor hazards in cosmic space, declared Soviet scientist Professor Fedynsky.

Doctor of Physical and Mathematical Sciences Fedynsky this evening addressed an audience at the Central Lecture Hall of the U.S.S.R. Society for the Dissemination of Political and Scientific Knowledge. The meeting was held to mark the launching of Sputnik III. Professor Fedynsky said that the information received on the meteor matter in cosmic space will allow to plan a rational design of cosmic ships which may be covered by special armour. The Professor said that at present scientists were carefully studying the cosmic environment in which man will be able to travel to other worlds in the near future.

Fedynsky said that the Third Soviet Sputnik for the first time realised the registration of the collision of micro-meteorites with the aid of the so-called Piezoelements.

Other prominent Soviet scientists also addressed the meeting.

"GATEWAY TO EUROPE" AIRPORT NEARLY COMPLETE

Major construction works at the new Gatwick airport—described as the modern gateway between Britain and Europe—are virtually complete, and the final touches are now being put to the terminal apron, runway, and taxi-tracks. The air-port, which lies about 30 miles south of London and is to be opened by the Queen on June 9, is undergoing a £7,000,000 "face-lift" to meet the demands of modern aviation. It will be the main bad-weather alternative for diversions from London Airport, from which it will take over services to the Channel Islands and a number of Continental aerodromes and scope with the summer overspill traffic.

This airport of the future, equipped with all the latest air-traffic-control aids, has involved a diversion of the main Brighton road and streams to make way for the 7,000 feet runway, made of special concrete tinted dark grey to make the markings more conspicuous to pilots when landing. A report issued by the Ministry of Transport and Civil Aviation describes work on the new £1,000,000 terminal building as very encouraging. The size of the airport has doubled to 650 acres since Gatwick closed for development work two years ago. Further development is planned for Gatwick which will be the first in the world to contain road, rail, and air transport in one unit.

CIVIL AVIATION

Mr. S. K. Patil Hopeful

A note of optimism about the future of Civil Aviation in India was struck recently in Parliament by the Minister for Transport and Communications, Mr. S. K. Patil, who claimed that during the last 5 years of nationalised Civil Aviation, they had rendered a magnificent account of themselves.

During the discussion on the

Annual Reports of the Indian Airlines Corporation and the Air India International, one of the members of Parliament, Mrs. Chakravarthy, expressed the hope that the Government would soon bring into existence a cheaper Janata Air Service, particularly on routes where no Railways operated. Many members complimented the Air India International on their successful operation and expressed pride at the state of affairs. A number of members gave suggestions for improving the services, increasing its efficiency, and for reducing travel costs.

GENERATING INTERNATIONAL TRAVEL T.W.A's. SIGNIFICANT ROLE

Trans World Airlines' unique role as a leading airline includes producing tourism-generating influences in America. Generating international travel is a full time job for most of their offices.

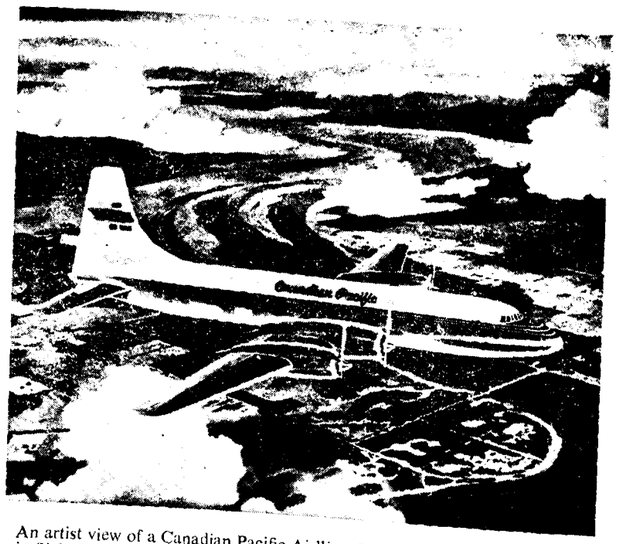
They spend more than two million dollars annually publicising India and other international tourist attractions, encouraging Americans to travel abroad.

According to Jules C. Gindraux, TWA's District Sales Chief in India, a greater volume of American tourists is expected to fly around the world this year than ever before, with the introduction of the Economy Service across the Atlantic, April 1, 1958.

Aircraft-Towing Tractor

A new aircraft-towing tractor has been designed by a British firm from an earlier model used by the Royal Air Force, Commonwealth and NATO air forces, and civil airlines in all parts of the world.

The new tractor is fitted with twin rear wheels and a more powerful 40 bhp Diesel engine, with a six-forward and two-reverse-speed gearbox giving road speeds from 2.3 to 22 mph, at rated engine speeds. The tractor is 11 ft long, and has a ground clearance of 9½ in. Power-assisted steering, available as extra equipment with the earlier model, is standard on the new version, which is designed to handle aircraft weighing up to 150,000 lb. under average international airport conditions.



An artist view of a Canadian Pacific Airlline Jet-prop Bristol Britania 312 in flight. Six of these are to commence service on August 1st between Honkong and Vancouver.

BOEING STUDY FORECASTS GREAT FUTURE GROWTH FOR INTERNATIONAL AIR CARGO

Renton, Wash.—International air cargo movements to and from the United States in 1965 will be equivalent to moving 328,110 tons between Bombay and New York City, according to a forecast made by an American air transportation expert.

In a 177-page study carried out for Boeing Airplane Company Transport Division, manufacturer of the Boeing 707 jet airliners, Stanley E. Brewer, transportation consultant and Professor of Transportation at the University of Washington, forecast that international air cargo moved to and from the United States in 1965 will be more than ten times the amount moved in 1956. Growth rate of U.S. international air cargo for the period 1961 through 1965 will be between 27 and 32 per cent per year, Professor Brewer forecast. He based his forecast on total potential, past growth, economic trends,contemplated developments in the availability of aircraft, cost of operatiing new airplanes recently acquired by international opreators and other factors.

The Brewer study states that the air cargo potential is greater in the U.S. international market than in the U.S. domestic market because of the longer distances to cover and the slower speed of competing forms of transportation.

Boeing Airplane Comapny sponsored the study as a service to world aviation.

BOEING 707

Boeing 707 jet airlines took one more step toward airline service on world air routes with the beginning of tests by the United States government agency in charge of certifying aircraft for passenger carrying.

The first three Boeing 707 jet Stratoliners that have been produced will be used in the intensive certification program which is expected to be completed in late summer, the Boeing Airplane Company Transport Division said. Boeing 707 Intercontinentals and other variations of the 600-miles-per-hour (965-kilometers-per-hour) Boeing jet airliners will also be presented for certification as they are completed, the company said.

Boeing 707 Intercontinental jet airliners have been ordered by Air India International for delivery in 1960.

CANADIAN PACIFIC TO START NEW PASSENGER SERVICE IN AUGUST

Calcutta : Canadian Pacific Airlines will launch on August 1 the fastest Hong Kong—Vancouver Trans-Pacific regular passenger service with the latest model jet-prop Bristol Britannia 312's, it was announced in Calcutta by Frank B. Holland, CPAL General Sales Manager.

" CPAL 's Britannia service will have only one stop in Tokyo. Flying time between Hong Kong and Vancouver." he said, " will be 17 hours."

The Giant Britannias, added Holland, would fly from Hong Kong to Tokyo in just over five hours and from Tokyo to Vancouver in 12¼ hours providing the only non-stop Trans-Pacific Service and slashing hours from the present schedule flight time.

Holland said the British-built, Britannia is powered by jet-prop engines far quieter than the piston-driven motors of most airliners.

He added that even at its top speed of 400-mile-an-hour, there will be virtually no vibration.

The plane has a range of well over 5,000 miles which enables it to negotiate with ease the 4,825 miles distance between Tokyo and Vancouver in one hop.

The CPAL official said, " The plane can carry as many as 100 passengers, but CPAL, for a start, will scale this down to approximately 89—67 tourist and 22 first class passengers."

" According to the Airline's present plans," added Holland, " passengers flying from Hong Kong to Vancouver can make the trip in bed. Ten Pullman type berths will be available to first class passengers. And it is a certainty that they will get a good night's sleep for the money."

The Britannia is CPAL's answer to pre jet-age competition on the world's airways. In Calcutta Canadian Pacific Airlines are represented by Gladstone Lyall & Co., as General Sales Agents, and all I.A.T.A Travel Agents, through whom connecting air travel arrangements to Hong Kong or Tokyo may be made.

Rolls Royce delivers 2,000th Turbo-Prop Engine

The 2,000th Rolls-Royce Dart turbo-prop engine has been delivered for Viscounts, which are in service with 30 airlines and five other operators in Europe, Asia, Africa, Australia, and North, Central, and South America. Since the first Viscount entered service five years ago (on April 18, 1953), Dart engines have flown more than 4,000,000 revenue-hours.

Vertical-Take-Off Plane

Forward flight trials of Britain's first vertical-take-off-and-landing aircraft—the Short " SC-1 "—have now been successfully completed, it has been announced in London. Hovering trials in a special gantry are due to start soon, to be followed by " free " vertical take-off and, later, by vertical take-off and conversion to forward flight.

American tourists of the luxury class, especially welcome at European spas and resorts because of their heavy expenditure of dollars and their prolonged vacations, are flying across the Atlantic in greater numbers than ever before this spring.

AUTOMOTIVE SERVICE INDUSTRIES SHOW

TO BE HELD IN CHICAGO IN FEBRUARY

The 1959 International Automotive Service Industries Show, will be held at Navy Pier, Chicago, Ill, U.S.A., from February 18 to 21 (inclusive), under the auspices of the Motor & Equipment Manufacturers Association, the National Standard Parts Association, and the Motor and Equipment Wholesalers Association.

Invitations to the 1959 show will be more liberalized—including representatives from virtually all long established and recognised distribution channels, automotive wholesalers, executives of vehicle and engine manufacturers, Government officials, overseas distributors, car factory service managers, etc. The last national ASI Show was held in 1954. There were over 300 attenders from 60 foreign countries, in addition to domestic attenders. It is anticipated that approximately 500 overseas distributors will attend the 1959 IASIS from about 75 foreign nations.

The latest developments of the automotive maintenance industry can be seen at the show. Here one can meet at one central location the industry's foremost Export Managers.

ROOTES CUP FOR RALLY DRIVERS

A Special trophy is being awarded by Rootes Motors Inc. New York to encourage more Hillman and Sunbeam owners to compete in national rallies in the United States this year.

The Rootes trophy will be awarded to the consistently highest placed owner driver and/or navigator of a Rootes product—and with it goes an invitation to visit the Group's factories in Britain and tour Europe in 1959.

A rally information bureau is also being set-up at the Company's Park Avenue headquarters in New York, to give entrants free assistance in preparing their cars and advice on routes, clothing, equipment, etc. Rootes have also promised support in every way practicable for the series of rallies being organized by the Sports Car Club of America.

A spokesman of Rootes Motors, Inc., explained : " We believe that the forthcoming national United States rallies provide an opportunity to win still greater recognition of the merits of British family cars. The notion that it needs a high powered sports car to win an American rally is already fast disappearing."

ZEPHYR WINS INTERNATIONAL RACE

In an exciting First International Production Touring Car Race, whose field included Classes from 1,000 to over 3,000 c.c., a Zephyr Mark II driven by D. J. Uren was fourth to flash past the finishing post, preceded in the overall classifications only by three 3.4 litre Jaguars driven by Mike Hawthorne, Tom Sopwith and RonFlockarth. Uren's Zephyr was an outstanding first in its class of 2 to 3 litre cars. Second in this class was an Austin A-105 followed by a works entered Zephyr with Automatic Transmission driven by D. G. Scott.

The Trucking Industry in the U.S.

A heavy duty motor truck moving lumber from Oregon forests to the Pacific Coast

Through the ages man has sought new means to promote the economical movement of commodities. First he moved them on his back, then on the back of his animals and at a still later stage on carts drawn by animals and by mechanical devices.

His observation of the rapid development of the automobile for pleasure purposes turned his thoughts to the advisability of adapting this new creation to his business needs. First came the automobile, then the bus for larger groups of passengers, and then the motor truck for various commercial purposes.

The mechanism of a truck is similar in principle to that of an automobile, the exceptions being that the component parts are designed heavier to enable them to perform economically the heavier type of service that they will be called upon to meet. Passenger automobiles, if converted into commercial vehicles, to operate economically should immediately be fitted with an oversize water pump, fan, clutch, tyres, and a lower final gear ratio. The pay load that may safely be carried upon such a unit should depend upon the tyre-carrying capacity.

In the United States, the trucks have in recent years been progressively carrying an increasing slice of the nations cargo from place to place. In 1939, these commercial vehicles had done 43,931 million ton miles, whereas in 1956 they covered 230,000 m.t.m. and in the same period they had more than doubled their share of the total cargo : from 8.34 per cent to 17.3 per cent.

The major rivals to the trucking service are the railroads. However, the motor carriers have been increasingly exploiting some relative advantages to their benefit. The advantages of truck transportation from a service standpoint are to be found mainly in the speed, the completeness and the flexibility of the service rendered. The area in which the truck has most effectively supplanted rail traffic is that which can be serviced one or more times during the day and overnight deliveries have also been popular with customers.

In the case of some shippers an even greater advantage of truck transportation is the completed service it renders. Only one transportation agency needs to be dealt with for given shipments and pick-up and delivery service is usually provided. There is also more flexibiliy about truck than rail service in moving emergency and irregular shipments, especially of agricultural products.

Secondary factors favouring truck transporation are the more personal contacts between shipper and truck representatives than previal between shipper and railroad, the less formal procedure, and, in some cases, the possibility of combining selling with transportation functions.

Motor carriers range from light vehicles of 1½ ton capacity to heavy duty units weighing when loaded, up to 30 tons. Between the light and heavy weight limits are found many types of chassis and styles of bodies, built to meet a wide variety of business, highway and terrain conditions. Three main considerations, of adaptability to the work, reliability and comparative economy, guide the manufacture of these motor trucks.

Diverse types of trucks are manufactured to suit the transportation needs of various commodities and also for accommodating the many special devices that are employed as auxiliaries in various industries, such as pumps, hose reels, fire-fighting apparatus, oil-field drilling equipment, earth-moving equipment and apparatus for tractor and for trailer applications.

Motor trucks and allied equipment contribute to rapid completion of many specialized operations at a reasonable cost. Most communities in America employ motor-equipment for snow removal, or for fire-fighting apparatus, for garbage and ash handling, etc., while public utilities employ such equipment to perform operations to supply gas, electricity, or telephone services.

The home owner seldom visualizes the widespread use of the motor truck in relation to his well-being. It transports the materials that his home is constructed of, the fuel that keeps it heated, the commodities that enable him to exist—milk, vegetables, meats, etc.,—and which are handled with a flexibility and swifness of service that contribute to a family's health and comfort.

The American trucking industry has grown to such dimensions that in 1955, it has been estimated, about a million new vehicles were registered, with Chevrolet, Ford and International trucks leading the sales list.

Of Interest to Operators

Srinagar : A division bench of the Jammu and Kashmir High Court, consisting of the Chief Justice, Mr. Jankinath Wazir, and Mr. Justice Murtaza Fazal Ali, has accepted a writ petition filed by Mr. Ganga Singh and others, challenging the rule under which the Mechanics and Transport Workers' Co-operative Society, Ltd., of Jammu was required to register itself under the Partnership Act for the purpose of issue of licence to run a motor transport service in the State.

It was contended on behalf of petitioners that respondents—the State Government, the Transport Minister, the State Registering Authority and the Traffic Superintendent had no right or authority to deny to the society a licence or public carrier permits "as such denial is a clear infringement of the fundamental rights of petitioners as citizens of India to carry on trade or business of their choice."

Judge's View

Their Lordships held that Rule 4-47 of the State Motor Vehicle Rules was *ultra vires* as offending Article 14 of the Constitution of India.

Their Lordships observed that the Citizenship Act excluded altogether a company or an association and, therefore, the benefits of Article 19 (1) of the Indian Constitution were not available to a corporation.

They further held that Rule 4-47 of the Motor Vehicle Rules did not proceed "on any national basis of classification," and that a "corporation had been arbitrarily singled out for discriminatory treatment."

Any rules which were made for excluding corporate societies or corporate bodies could not be considered to be reasonable under Section 14 of the Constitution of Jammu and Kashmir which laid down that the "State shall foster and protect the co-operative sector where means of production are co-operatively owned by individuals or groups of individuals."

'Mandamus' Writ

Their Lordships directed that a *writ of mandamus* be issued against respondents restraining them from enforcing the provisions of the rule against petitioners.

In regard to the question of permits for plying vehicles, their Lordships observed : "No one is entitled to a permit as of right, even if he satisfied all the prescribed conditions. Grant of a permit is entirely within the discretion of the transport authorities and depends on several circumstances which have to be taken into consideration."

The High Court, however, issued a direction that the petition for permits should be disposed of by the concerned authority "as expeditiously as convenient and without any undue delay."

Motor Vehicle Rule Ultra Vires
Kashmir High Court Ruling

New Andhra M. V. Rule

The Andhra Government have amended traffic rules, substituting the following for sub-rule 3 :

"(3) Any person who drives a goods vehicle :—

(*a*) in the municipal limits shall slow down the vehicle to a speed of not more than 5 miles when he is within a distance of 50 yards from a motor vehicle coming in the opposite direction and shall not exceed that speed till he completely passes it ; and

(*b*) in the non-municipal limits :

(i) shall slow down the vehicle to a speed of not more than five miles when he is within a distance of 50 yards from a goods vehicle coming in the opposite direction and shall not exceed that speed till he completely passes it ;

(ii) shall stop the vehicle when he is within a distance of 50 yards from a motor vehicle other than a goods vehicle coming in the opposite direction and shall not resume motion till he completely passes it."

Separate M.V. Department in Kerala

The Kerala Government have constituted a Motor Vehicle Department under a Transport Commissioner with effect from last month.

A Press Note issued in this connection says :

Simultaneously with the formation of the Motor Vehicles Department on June 1, 1958, the traffic and taxation branch of the Police Department will be abolished. All permanent posts in the Department, however, have been ordered to be treated as posts kept in abeyance, in order that Permanent Officers of the Department, who will be posted to Motor Vehicles Department may have lien on their respective permanent posts.

Five Traffic Sub-Inspectors (non-Technical), three Motor Vehicles Traffic Sub-Inspectors, three Traffic Sergeants, 54 upper grade Head Constables, 89 lower grade Head Constables, four Head Constables, five Upper Division Police Constables and 13 Lower Division Police Constables now under traffic and taxation branch will be absorbed in the Police Department.

GIVE LORRIES PRIORITY, SAYS POLICE CHIEF

Commercial-vehicle drivers wanting to load or unload outside shops should have priority over parking motorists, according to the chief constable of Ipswich Mr. Janes Crawford. Speaking to members of the Eastern Area of the Traders' Road Transport Association, last week, he said : "The right thing to do is to provide for the shopkeeper to get his goods and leave the shopper to make his own arrangements for getting to the shop.

"The first essential is to get the goods into the shop. Where necessary, an order has to be made banning parking and allowing the commercial vehicle to get through with goods."

End Curbs on Inter-State Transport

The Managing Committee of the All-India Motor Unions Congress, to which State Motor Unions are affiliated, has urged the Government to remove restrictions on the movement of inter-state Transport.

Urgent action by the Centre was needed on this matter in consultation with the States, the Committee said.

It also urged that the Government should speed up the working of the Inter-State Transport Commission which was set up sometime ago.

TAXI METER DEALERS TO NOTE

A proposal for the compulsory fitment of meters to auto-rickshaws has been approved by the Madras Government in the following Order :

It has been brought to the notice of the Government that the following difficulties are experienced in regard to the hiring of auto-rickshaws :

Milometers fitted to auto-rickshaws are very small and more often they are covered with so much dust that the passengers travelling in auto-rickshaws are not able to note down the meter readings ;

Drivers tamper with meters ;

Drivers demand lump-sum payment of fare, instead of fare according to meter readings ;

Drivers refuse to take in passengers for short distances under the plea that the vehicle has been engaged and there is no device to enable the passenger to know whether it is actually engaged or not ; and

Meters fitted to auto-rickshaws do not show the number of furlongs travelled and this enables the driver to collect charges over and above the rates to which he is legally entitled.

The matter has been examined in detail in consultation with the Transport Commissioner, the Commissioner of Police, and the Madras Auto-Rickshaw Owners' Association. The Secretary Regional Transport Authority, Madras has proposed compulsory fitment of meters to all auto-rickshaws in Madras City so as to eliminate the difficulties enumerated above. The Government approve the above proposal.

An amendment to the Madras Motor Vehicles Rules, 1940 has been issued.

ROAD TRANSPORT REORGANISATION COMMITTEE

(By a Correspondent)

The Government of India have appointed an *ad hoc* Road Transport Reorganisation Committee under the presidency of Sri M. R. Masani with nine members—two from Lok Sabha, one from Rajya Sabha, two from State Assembly (Rajasthan and Uttar Pradesh), two from public sector of road transport (Bombay and Uttar Pradesh) and two from private sector (Madras and Delhi). Representation is weighty and just. In addition to the Secretary from the Department of Transport, there is the Secretary of the IRTDA, which has served roads and road transport with consistent zeal over the decades.

" Minoo Masani ", as the Chairman is endearingly called, is an efficient organizer and a reputed author. With him at the head, it is reasonable to hope for a very excellent report within the stipulated period of six months, if not earlier.

Sri S. K. Patil, the Minister for Transport and Communication, is hardworking patriot with drive to achieve results. This combination of the Chairman and the Minister presages well for the implementation of the just and practical recommendations of the Committee..

The terms of reference of the Committee are only three :—,

1. Survey of existing machinery.
2. A model administrative set up for the six purposes mentioned.
3. Any other recommendation germane to the subject matter of enquiry.

The existing machinery in the present fourteen States of India is not homogenous. It is difficult to assess the working of the different Transport Authorities at the District and State levels because of the absence of complete statistics of and on motor vehicles. In the first item of terms of reference, the Committee is charged with exploring means of co-ordination between the different forms of transport. This word " co-ordination " is used to the marrow and has lost all the significance which it might have had 28 years ago, of the depression ! Today co-ordination is merely by regulation of fares and freights. In India it can be safely said that there is no competition from road to railway, as fare and freight structure of rail is far greater than even the taxation on a motor vehicle. Act IV of 1939 in Section 43 (1) (*b*) specifies the powers of a State Government to " co-ordinate road and rail transport." At the time the Act was written, there was wasteful competition between road and rail. But today, the picture is different ; co-ordination can only only be by elimiation of waste or under utilization of national assets in capital equipment of road or rail.

Emphasis on expansion of road transport to rual areas for developing village economy deserves special mention. It is only when road and rail serve as feeders to each other, can there be an ideal form of co-ordination in the interests of the nation.

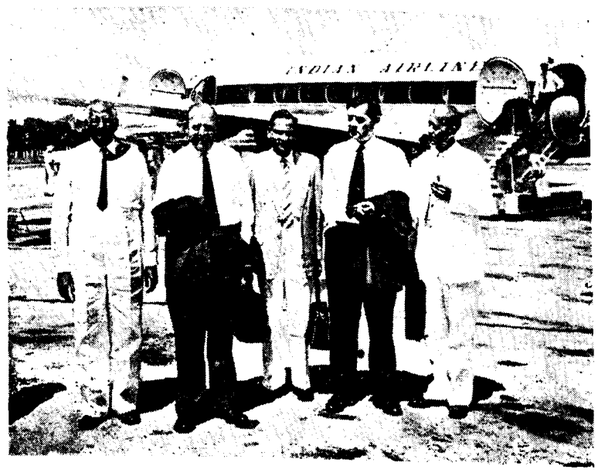
Regarding " model administrative set up," at present the regional transport authority covers an area almost equal to a revenue District in each State. Over the Regional Authorities, there is the State Transport Authority, to have an integrated view of road transport requirements of a State. Demarcating a transport region on lines of the revenue District is a tough task. The 14 States of India have 309 Districts. These Districts vary in area from 873 square miles of Kanyakumari (Madras State) to 14,492 square miles of Baster (Madhya Pradesh). On a rough calculation of 300 Districts per 412,000 vehicles in India, each District Authority has to deal, roughly with 1,400 vehicles. But the average in area or vehicle fails in practical application. In addition there is the existence of small operators owning not more than five vehicles each. Act 100 of 1956 emphasises the necessity for viable units—perhaps on the lines of the Import Trade Control, which recognises 25 vehicles. And so, in any model administrative set up, there should not merely be demarcation of the area but also an assessment of motor vehicle population in that area.

Madras deals, by an efficient administrative set up, with a motor vehicle population of 42,000. Even here it is not possible to have complete statistics of year, make, model, fuel of vehicles on the road. It is so because each Regional Authority is either meagerly staffed or scantily equipped perhaps. It is essential that the authority should be well informed and be liberally staffed. Knowledge and staff are a prerequisite for planning the fullest use of available road facilities and transport vehicles as said in item 2 (*e*) of the terms of reference. That use can be judged only if the returns, statistics and other information as called for in Sections 48 (3) (xxii) and 56 (2) (iv) (for stage carriage and public carrier), are regular and honest. In the forms to be prescribed under Section 68 (2) (*c*), it is not enough if there is a return of the forms, but there should be a check and appraisal of the data in forms. An enlargement of Regional Authorities is determined by the revenue from motor vehicles. So far as Madras State is concerned, motor vehicle taxation and fees yield nearly five crores of rupees, while the cost of collection is not over three per cent of the revenue. A similar analysis may be made available to the Committee from other States, but the data is bound to be defective, because of the disintegration or integration of a few Districts consequent on the States Reorganization. It is a sad fact that even when Districts are integrated in a State, they are considered foreign to the State and vehicles operating to or from that District are taxed once over at least. This is very patent in the case of Telenganna in Andhra State. It is only on a rough and ready basis of average of a District area and motor vehicles therein. an efficient administrative set up for planned use of road transport facilities can be drawn up. Reorganization can be done with an emphasis on the economics of cost, and national interests.

Inter-State Transport Commission, is a monlith structure, which does not lend itself easily to quick decisions. The functions of this commission are narrated in Section 63-A, B, C of the Motor Vehicles Act. For quick disposal of permit applications, ISTC should be decentralised into Zonal Councils. There is the necessity to provide for appeals from the decisions of the Zonal Council. Any attempt to centralise ISTC at Delhi or any other place will defeat the purpose of an organised and planned Inter-State Road Transport development.

It is to be hoped Masani Committee of able parliamentarians and practical road transport operators under the guidance of Mr. Masani and the decision of Sri S. K. Patil will usher in an era of prosperity to road transport industry in service to the Plans of the country.

Photo taken on the occasion of the recent arrival at Meenambakkam Aerodrome of Mr. A. S. Dick, Managing Director, Standard Motor Co., Coventry and Chairman Standard Products of India Ltd., shows Mr. Dick with Mr. Whitfield, General Sales Director of Standard Motor Co. Mr. K. Gopalakrishna, Deputy Chairman of S.M.P. and Mr. K. V. Srinivasan, Director are seen first and third from left respectively



Mr. S. S. Wagle, third from left, of Standard Batteries was the second trainee to be sent by the Company for higher technical training at Sweden.

COACH BUILDING IN KERALA ?

According to Mr. T. A. Majid, Public Works Minister of Kerala, metre gauge railway coaches can be built economically at the Government Public Works Workshop at Trivandrum.

The scheme would not involve much of foreign exchange as the workshop has already been equipped with good machinery suitable for the purpose.

Mr. Majid, it is understood, has already told the Union Deputy Railway Minister, Mr. S. V. Ramaswami about this when the latter visited Trivandrum.

The Government of Kerala have also made representations to the Central Government on this subject and it is understood that a technical team is likely to visit Trivandrum shortly to study the possibility.

WOLSELEY WINS MALAYAN MOBILGAS RUN

A Wolseley 6/90 won the Malayan Mobilgas Economy Run held April 6–5 with a figure of 43.649 miles/Imp. gal. (84.028 ton m.p.g.). A Borgward coupe was second with 51.517 m.p.g. (/5.09 ton m.p.g.) and a Rovre 60 was third with 41.80 m.p.g. (74.08 ton m.p.g.). A Wolseley 6/90 also won this year's Australian Mobilgas event.

Mr. Narendra Kumar Sanghi, Director, W.I.S.M. (P) Ltd., Jodhpur, India Motors Private Ltd., Ajmer and Partner, Sanghi Brothers, Jodhpur etc., left recently on an eight week Continental Tour. He represented India in the Annual Conference of World Chamber of Commerce held at Brussels.

THE GLOBE-TROTTING THWAITES

Australia's globe-trotting Thwaites family—author Fred, his wife Jessica and their 14-year old son Roger—have left Vancouver in a Hillman Estate Car on the second leg of a marathon overland drive around the world.

When they finally reach their home again in Sydney they will have logged a total road distance of about 30,000 miles. The family did the first leg of the trip three years ago when they drove 12,000 miles from London to Sydney via Turkey, the Middle East, India and Ceylon in a Hillman Husky.

Now, with Vancouver on Canada's West Coast as the starting point, they plan to complete their circle of the globe. Their new red-and-grey Hillman Estate Car is scheduled to take them through 22 countries in North and Central America and Europe. Then after a holiday in the Balearic Isles, they will travel home through Africa.

For Fred Thwaites, ex-racing driver, best-selling novelist and author of 25 books, it will be a business-with-pleasure trip. He plans to gather material for a sequel to "Husky Be My Guide"—which described the family's first overland drive—and talk with film companies and publishers.

For Jessica Thwaites, it will mean giving Roger his lessons en route each day, dealing with correspondence, keeping the log and taking notes on her red portable typewriter—as well as "house keeping" for the family. And Roger? According to his parents he collects "almost everything as souvenirs and drinks pints of water a day."

Into the Estate Car are packed a few replacement parts, casks of water, tinned food and fruit juice, sleeping bags, medical kit—and one suitcase each to accommodate clothes for all climates. This, admits Mrs. Thwaites, who is a former fashion-model, is her biggest problem.

"I am clothes conscious and I have frequently gone away for a weekend with more clothes than I am taking on this trip" she says. "Consequently I am travelling with an extraordinary collection—including a Russion Kolinsky fur stole, and a bright green taffeta parasol—which can hardly be classed as useful but cheers me up enormously when it is possible to dress up."

There is one absentee from the family on this leg of the trip-their eldest son Garry, who is preparing to travel the world on his own account as a student at the School of Navigation at Southampton. They will all meet when the family reach England towards the end of June.

Mrs. Thwaites adds a final footnote about the trip, "I have already thirsted in the Jordan-Syrian desert, felt the blast furnace heat of Persia and had my bones almost pulverised by the terrible corrugation of the Yugoslav, Greek and Turkish road—but I would not change places with my more settled sisters."

A. MIDGET BUS

(At a Plant of Low-Powered Cars)

One can see the Soviet low-powered car "Moskvich" on the thoroughfares of Helsinki and the streets of Kabul, in Peking and Krakow, in the towns and villages of Norway and distant Argentina. But, of course, the cities and villages of our country have the greatest number of these agile and handy cars. "Moskvich" cars are very popular and are readily bought by many. Knowing this, automobile-construction workers try to improve their model in every way, perfect its units and parts, and make it smarter and more comfortable to travel in. The little car has its own radio, heater, defroster and a convenient steering device.

But the new "Moskvich," which will soon be put in serial production, will look even smarter and will be more comfortable and reliable in operation. Besides a considerably improved outer look, it will be fitted with a new engine, almost 15 h.p. mightier than the old one. It will have a reinforced rear axle and a steering device much easier to control.

Soon the new cars will be on sale.

Another interesting new car is a low-powered bus which is also being prepared for serial production. It is only 13 centimetres longer than "Moskvich" and has a length of 4,185 millimetres.

Quite a tiny machine.

Yet, the bus will be able to carry ten passengers, and will be equipped with a 47 h.p. engine that will give it a speed of up to 90 km/hr.

At present a replica of the midget bus is being constructed in the plant's experimental shop. It is almost completed now and soon the first experimental model will appear.

The plant's designers are also evolving a comfortable and economical model of a baby car. It is assumed that it will have a two-cylinder air-cooled engine. The car's approximate speed will be 70–80 km./hr. Its two-door body will accommodate three passengers and one driver.

Low-powered and baby cars are becoming ever more popular. That is why a great number of Soviet designers, engineers and workers of the automobile industry are engaged in producing new models.

An assembled truck on a Conveyor at the Minsk Automobile Works of the U.S.S.R.

DIESEL NEWS

Perkins diesel engines are to be manufactured under licence in Spain by Perkins Hispania, S.A. a newly-formed company, at its up-to-date, four-day factory at Carretera de Aragon on the outskirts of Madrid.

The manufacturing contract has been approved subject to certain provisions, by the Ministry of Industry, Madrid. Production is expected to start in the immediate future.

The Perkins P6 diesel engine will be manufactured first, but it is planned eventually to produce other engines in the Perkins range, including the R6.

PLYMOUTHS WITH PERKINS ENGINES IN U.S.

One of the American "Big Four" truck manufacturers is now offering two Peterborough-made diesel engines as alternative equipment in the United States and overseas.

This spectacular success for British industry is revealed in an announcement by the Chrysler Corporation of America that the six-cylinder Perkins P6 and R6 Mark 2 diesel engines are available for the latest U.S. built Dodge, DeSoto and Fargo trucks.

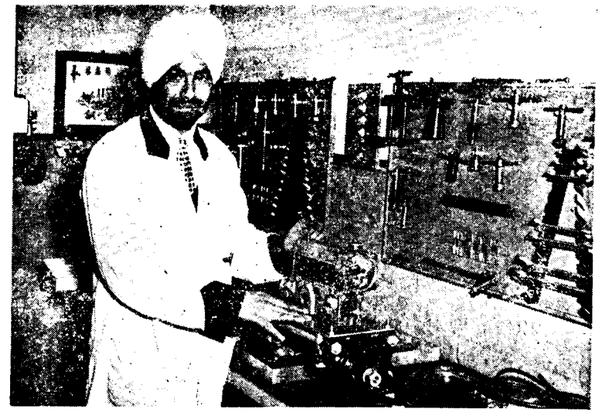
They are being offered as alternative power units for the D400, D500 and D600 range. The P6 is rated at 83 b.h.p. at 2,400 r.p.m. and the R6 at 104 b..hp. at 2,500 r.p.m.

Sales literature issued by the Chrysler Corporation for its American Dodge trucks states: "Economy of operation is an outstanding reason for choosing diesel power.

F. Perkins Ltd., has been supplying engines for British Dodge and Fargo trucks since 1938, and the Chrysler Corporation also offers the Perkins four-cylinder P4 (c) car-type diesel engine as optional first equipment in the American Plymouth car.

PERKINS ENGINES ARE ORIGINAL EQUIPMENT FOR 200 WORLD MANUFACTURERS

The large number of British and overseas manufacturers fitting Perkins diesel engines is illustrated by the wide variety of equipment with Peterborough-made power units displayed at recent exhibitions in Italy, Austria, Switzerland and Holland.



Hardev Singh Griwal of Thanganyika seen at the Perkins School in England. He is one of the numerous foreigners being given special training by F. Perkins Ltd.

For example, 48 Perkins diesel engines were on view at the Verona Fair. At Vienna Spring Fair there were 15 Perkins engines on 12 stands, at Geneva Show, Promot A.G. F. Perkins' distributors in Switzerland, were exhibiting L4 marine, P6 vehicle, Four 99 (TA) and P3 (TA) diesel engines. A total of 29 Perkins engines were displayed on 13 stands at Utrechet Fair.

There are over 450 applications for Perkins engines and more than 200 manufacturers fit Perkins diesel engines as first equipment in vehicles, boats, tractors and industrial equipment.

200,000 MILES AND STILL GOING FINE—THE STORY OF A P6 ENGINE

A Perkins engined truck—A Commer with a P6 diesel engine—has clocked over 200,000 miles over rugged country in four years, delivering the goods from place to place.

"I am still amazed at the P6's performance. Every 14 days, I deliver mail, stores and other goods over 600 miles of what can be described as bush tracks. Apart from mail and stores, I have carted 3,000 tons of copper ore for distances ranging from 50 to 150 miles from the railhead," says Mr. Ken McPherson, the driver-operator.

JOURNALISTS DRIVE PERKINS-ENGINED VAUXHALL WYVERN

A Vauxhall Wyvern fitted with the new Perkins 1.6 litre Four 99 diesel engine described in detail in our May issue was demonstrated to a group of Swiss Journalists visiting the Motor Industry Research Association at Lindley, near Nuneaton.

The journalists drove around the high speed track, where the latest products of Britain's motor industry are tested, in the Perkins-engined car and were impressed by the all-round performance of the new diesel engine, which develops 43 b.h.p at 4,000 r.p.m. Fitted with the Four 99, the Wyvern does more than 50 m.p.g. at an average speed of 35 m.p.h.

THE PERKINS COMMONWEALTH

Thousands of people saw Commonwealth students assembling a Perkins diesel engine in a motor showroom window in a busy street as part of Peterborough Commonwealth Festival.

During the festival, 12 Perkins students from Gambia, Rhodesia, India, Pakistan and British Somaliland worked in relays.

The colourful display organised by F. Perkins Ltd., included photographs of the company's engines operating in a wide variety of equipment in different parts of the Commonwealth.

Satakratu Dutt of Calcutta is seen above at the Perkins Trade and Service Schools.

THE PERKINS MOBILE SCHOOL

A Perkins mobile school has just completed an 11,000 kilometre tour of Belgium, Germany, Austria, Italy, Switzerland and Holland, giving on-the-spot instruction to more than 2,000 people.

Equipped with engines fitted in special cradles so that they can be easily unloaded for demonstration, the school consists of a special bodied Dodge three tonner powered by a Perkins P4 diesel engine.

Perkins mobile schools have given instruction to more than 150,000 people in Europe, Canada, Australia, Africa and Latin America.

A new company, F. Perkins Kundendienst G.m.b.h. has been formed by F. Perkins Ltd., at Hanauerstrasse 43, Aschaffenburg, Germany, to ensure first-rate after-sales service for thousands of Perkins diesel engines operating the Germany.

The company, which will be in full operation before harvesting starts, will be solely concerned with service. Sales activities will continue to be directed from Peterborough.

The new German company will provide a central store for spare parts and will be supported by a system of Perkins Signholders throughout the Federal German Republic on the lines of those in Britain. At present, Perkins spares are held by a number of consignment stock holders in Germany, who will now have an opportunity of becoming Perkins Signholders.

The network of Signholders will be completed as soon as possible. Each Signholder will hold local stocks of Perkins spares and will have adequate repair and maintenance facilities.

R. G. Saraiya visits Perkins Factory

Mr. R. G. Saraiya, Chairman of Bombay State Road Transport Coporation, saw high-speed diesel engines being manufactured during a visit to the Peterborough factory of F. Perkins Ltd., the British diesel engine manufacturers.

Bombay State Road Transport Corporation are the largest operators of Perkins P-6 diesel engines in the world except British Railways. It owns more than 2.500 passenger and over 600 goods vehicles fitted with Peterborough-made diesel engines.

Mr. Saraiya visited the Perkins factory recently after being an International Chamber of Commerce delegate to the diplomatic conference on international commercial arbitration in New York.

He was welcomed by Mr. Frank Perkins, Chairman and Joint Managing Director. and Mr. T. H. R. Perkins, Director and Sales Division General Manager. Also present were Mr. A. J. Lund, Director and General Manager of Simpson & Co., Ltd., Madras, who manufacture Perkins engines under licence in India, and Mr. P. Reid, Managing Director of Wallace Cartwright & Co., Ltd., of London.

Mr. Lund is at present in Britain on business and leave.

Mr. Saraiya showed great interest in various machining processes and spent some time on the assembly lines and in the test shop. He was impressed by the flow line production methods used in the factory.

Bombay State Road Transport Corporation's fleet has grown from 36 vehicles in 1948 to its present total of 4,000. They carry about half a million people a day and cover 70,000,000 miles a year, equal to more than 2.000 times round the world.

Corporation vehicles with Perkins engines include Commers, Dodges, Seddons, Studebakers, Fords and Chevrolets.

Mr. R. G. Sariya, Chairman of the Bombay State Road Transport Corporation is seen on the assembly lines of F. Perkins Ltd's Eastfield Factory at Peterborough

Diesel Vauxhall at Poland Fair

A Vauxhall Velox fitted with the sensational new British Perkins 1.6 litre diesel egnine is going to Poland for the Pozman International Fair.

Three of F. Perkins Ltd's officials on duty at the exhibition will use it for the 2,000 mile round trip to Pozman and back, and the car will also be available for demonstration purposes while it is in Poland.

During an official R.A.C. test on a 218 mile route in Britiain, a Velox with a Perkins 1.6 litre "Four 99" diesel engine averaged 56'6 m.p.g. at an average speed of 34'8 m.p.h. A top speed of well over 80 m.p.h. has been obtained with some cars fitted with the new engine, which has received world-wide publicity since it was launched on April 25.

British and foreign car and commercial vehicle manufacturers are keenly interested in this lively newcomer to the motoring field, which brings the advantages of diesel engine economy and big mileage without major overhaul to the small vehicle owner.

LATE NEWS

THE REDEX CAR CLUB

The Third Annual General Meeting of the REDEX CAR CLUB was held on the 16th July, 1958.

Six members were elected to the Managing Committee in place of those who retired.

The office-bearers and members of Managing Committee for the current year are as under :

Mr. E.A. Nadirshah, *President* ; Mrs. M.N Wadia, *Vice-President ;* Mr. P.K. Master, *Vice-President ;* Mr. R.K. Sundaram, *Hon. Treasurer;* Mr. P.F. Lally, *Hon. Secretary.*

Members : Mr G. Mascarenhas, Mr. F. Mascarenhas, Mr. M.D. Lali, Mr. R.D. Aria, Mr D.S. Cumbatta, Mr. P.H. Nariman, Mr. B.V. Bhatia, Mr. S.B. Mama, Lt Com. D.B. Vachha, Mr. S.H. Captain.

CARS	Rs. nP.
Plymouth Cars (Sundaram Motors Private Ltd.) Ex-Premier Automobiles Factory, Kurla ...	20,270 00
Plymouth Suburban (Sundaram Motors, Ltd.) ...	22,646 00
Hindustan Ambassador 1957 (Southern Automative Corporation Private Ltd.) ex-plant Uttarpara ...	11,161 00
Dodge kingsway sedan (Rane (Madras), Ltd.) ...	20,371 00
Dodge Suburban (Rane (Madras), Ltd.) ex-Bombay ...	22,899 00
Vanguard Phase III (Union Co. (Motors) Ltd.) ...	14,700 00
Standard Super Ten Saloon (Union Co. (Motors) Private Ltd.) on the road ...	10,022 12
Standard Estate Car (Union Co. (Motors) Private Ltd.) on the road ...	14,889 12
Studebaker 'Parkview' Station Wagon 1956 model (Reliance Motors Ltd.) ex-plant Calcutta ...	20,280 00
Studebaker 1956 Commander (V.S.T. Motors Private Ltd.) Including S.T. & Delivery Charges ...	22,239 86
Studebaker 1956 President Classic (V.S.T. Motors Private Ltd.) ...	24,499 78
The Fiat 1100 The Elegant (Sundaram Motors Private Ltd.) Ex-Factory ...	9,755 00
Willys C.J. 3B Universal Jeep ex-plant Bombay ...	12,160 00
Willys Model Station Wagon ex-plant Bombay ...	18,150 00
Jeep 1 ton truck ...	13,046 00
MOTOR CYCLES	
Royal Enfield (The Madras Motors (Private) Ltd.)—	
"150 Ensign" (any dealer point in India) ...	1,890 00
"350 Bullet" with spring frame (any dealer point in India) ...	3,430 00
499 c.c. Model 'j2' ...	3,500 00
"500 Bullet" with spring frame ...	3,950 00
"500 Twin" with spring frame and with Magdyno or coil ignition ...	4,450 00
"700 Super Meteor" with spring frame and with Magdyno or coil ignition ...	4,650 00
SCOOTERS	
Lambretta, manufactured by Automobile Products of India Ltd. Distributors, South India Automative Corporation Private Ltd., Madras. (At Visakhapatnam—Western Automobiles Ltd.) Prices are ex-Factory, Bhandup, Bombay.	
48 c.c. Scootterete ...	827 00
150 c.c. 'LD' Model Deluxe Scooter ...	1,795 00
VANS	
Standard Delivery Van. (Union Co. (Motors) Private Ltd.) on the road ...	10,628 56
Hindustan Traveller, price on the road (Reliance Motor) Co.	14,700 00
TRUCKS & COMMERCIAL CHASSIS	
Sundaram Motors (P) Ltd.	
Leyland Comet "203" WB Passenger Diesel Chassis including S.T. & dely. charges ...	36,000 00
Leyland ECPO 2/2R-176 WB full forward control Passenger Chassis S.T. & dely. charges ...	35,500 00
Leyland ECOS 2/1R-163 WB goods chassis including S.T. & dely. charges...	34,700 00
Leyland ECOS 2/2R-118 full forward Tipper chassis including S.T. & dely. charges ...	34,500 00
(V.S.T. Motors Private Ltd.)	
Tata-Mercedez-Benz. Diesel Truck and Bus Chassis L 312/42 165" W.B. 5-Ton Truck Chassis ex-Works, Jamshedpur ...	26,820 00
LP 312/42 165" W.B. Full Forward Control Truck Bus Chassis ex-Works, Jamshedpur ...	27,780 00
LP 312-48 190" W.B. Full Forward Control Bus Chassis ex-Works, Jamshedpur ...	28,570 00
L 312/36 142" W.B. 5-Ton Truck Chassis ex-Works, Jamshedpur ...	26,475 00
LK 312/36 142" W.B. 5-Ton Truck Chassis ex-Works, Jamshedpur ...	30,125 00
Fargo (at Sundaram Motors Private Ltd.) Dodge (at Rane (Madras) Ltd). Prices duty paid ex-factory Premier Automobiles Ltd., Kurla, Bombay.	
C3D6-116" (4) 7.00×16—6 Ply ...	11,615 00
C4D6-126" (4) 7.00×16—6 Ply ...	12,662 00
C3PW6-126" P.W. (4) 9.00×16—10 Ply ...	17,974 00
C4G6-153" (6) 34×7—10 Ply ...	16,391 00
C4G6-153" (6) 32×6—10 Ply ...	16,062 00
C4H6-153" (6) 34×7—10 Ply ...	17,710 00
C4H6-153" (6) 34×7—12 Ply ...	17,979 00
C4H6-193" F.F. (6) 34×7—10 Ply ...	18,116 00
C4H6-193" F.F. (6) 34×7—12 Ply ...	18,385 00
C4H6-193" W.S. (6) 34×7—10 Ply ...	18,479 00
C4H6-193" W.S. (6) 34×7—12 Ply ...	18,748 00
K6D200-116" (4) 7.00×16—6 Ply ...	12,896 00
K6D200-116" (4) 7.00×16—8 Ply ...	12,961 00
K6D300-126" (4) 7.00×16—6 Ply ...	12,900 00
K6D300-126" (4) 7.00×16—8 Ply ...	12,965 00
K6W300-126" P.W. (4) 9.00×16—10 Ply ...	18,950 00
K6D400-129" (6) 34×7—10 Ply ...	16,372 00
K6D400-153" (6) 32×6—10 Ply ...	16,186 00
K6D400-153" (6) 34×7—10 Ply ...	16,531 00
K6D400-171" (6) 34×7—10 Ply ...	17,008 00
K6D500-129" (6) 34×7—10 Ply ...	18,092 00
K6D500-129" (6) 34×7—12 Ply ...	18,388 00
K6D500-153" (6) 34×7—10 Ply ...	18,331 00
K6D500-153" (6) 34×7—12 Ply ...	18,628 00
K6D500-171" (6) 34×7—10 Ply ...	18,606 00
K6D500-171" (6) 34×7—12 Ply ...	18,904 00
PICKUP	
C3D6-116" (4) 7.00×16—6 Ply ...	15,012 00
C4D6-126" (4) 7.00×16—6 Ply ...	16,058 00
K6D200-116" (4) 7.00×16—6 Ply ...	16,293 00
K6D200-116" (4) 7.00×16—8 Ply ...	16,358 00
DIESEL CONVERSION	
C4H6-153" w.b. (6) 34×7—10 Ply ...	22,668 00
C4H6-153" w.b. (6) 34×7—12 Ply ...	22,937 00
C4H6-171" w.b. (6) 34×7—10 Ply ...	22,903 00
C4H6-171" w.b. (6) 34×7—12 Ply ...	23,172 00
K6D500-153" w.b. (6) 34×7—10 Ply ...	20,997 00
K6D400-171" w.b (6) 34×7—10 Ply ...	21,303 00
K6D500-153" w.b. (6) 34×7—12 Ply ...	22,930 00
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MOTORINDIA

VOLUME 3 AUGUST 1958 NUMBER 1

The American buyers of these cars took delivery of them at the London Airport. The makers chartered an airliner and flew their customers to Britain where they picked up their cars and took part in a European Rally.

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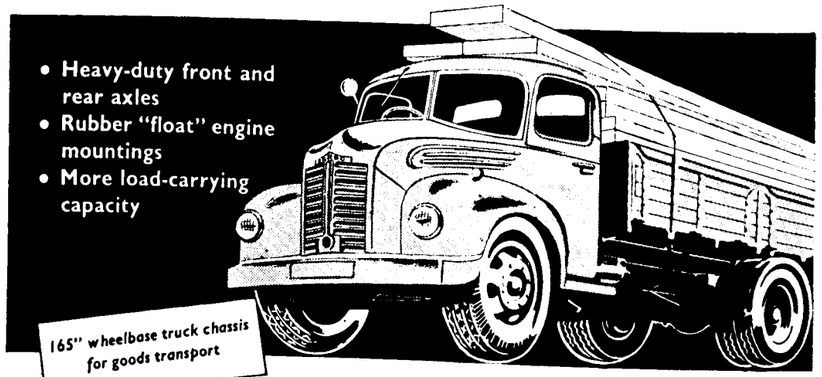

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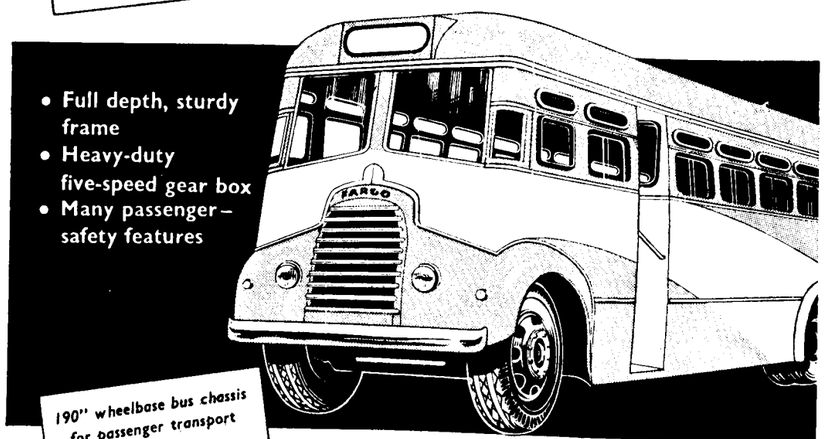

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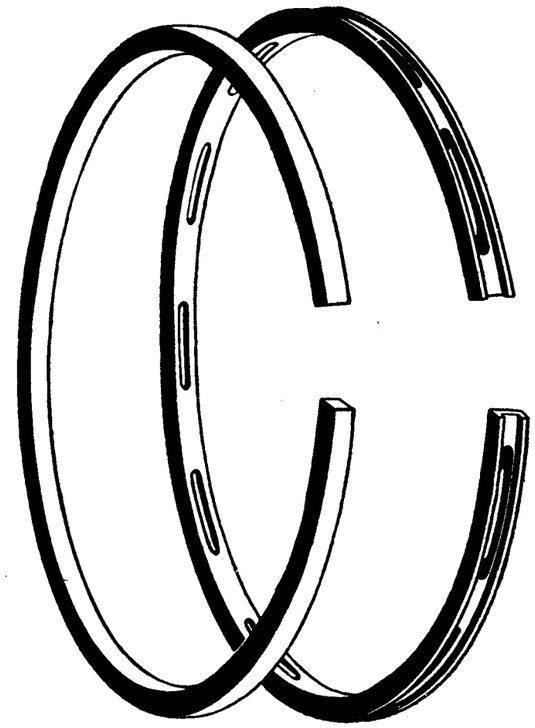

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APPROVED ORGAN OF

THE MADRAS MOTOR PARTS DEALERS' ASSOCIATION
THE MYSORE AUTOMOBILE PARTS & ALLIED MERCHANTS' ASSOCIATION THE REDEX CAR CLUB

editorial

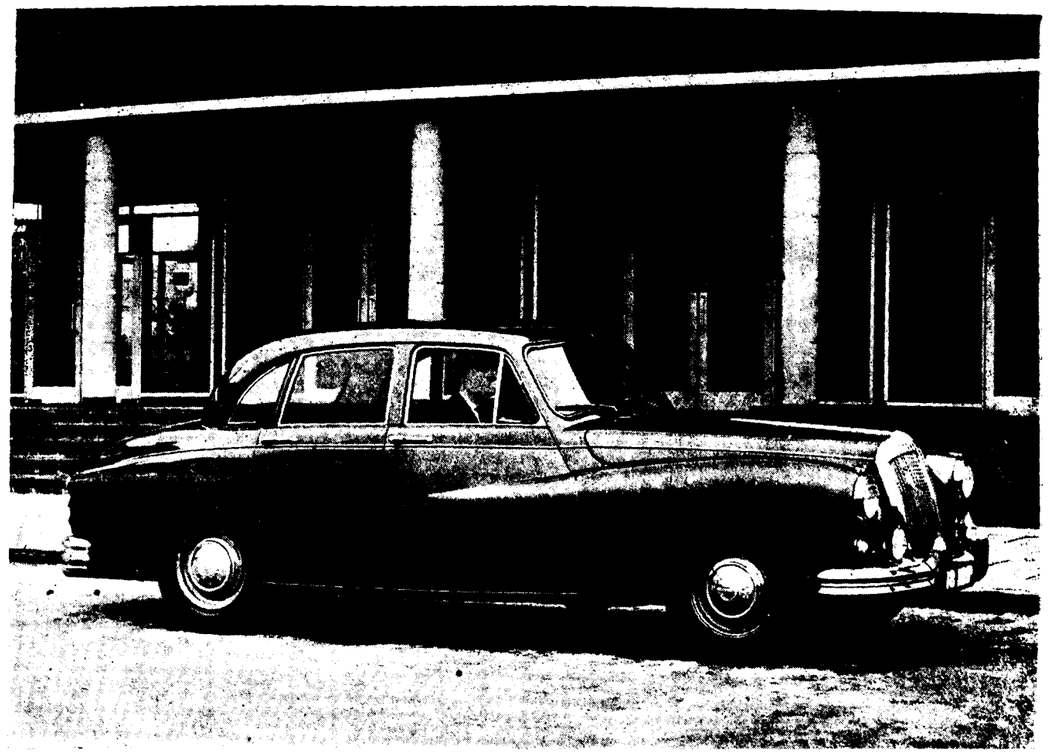
CUSTOMER GOODWILL

Perhaps the treatment that the intending genuine car buyers in India are used to nowadays, will make it impossible, at first, to believe the description of the photograph appearing on our cover page. But yet what is shown therein is no fiction nor a dream.

Car manufacturers of other countries have a very different type of salesmanship inculcated in them as a result of a long range policy of building up goodwill through sales promotion and export promotion. This has now reached a stage where the British manufacturers of automobiles in an attempt not only to attract but to *please* the buyers of such cars have gone to the extent of chartering special planes to bring the car buyer from across the Atlantic so that they may get straight into their respective cars on arrival at British airports.

Compared to this, what do we see around here in this country ? Despite very heavy protection to the indigenous industry and favoured treatment particularly to the handful of manufacturers who have been picked up for the purpose, the Indian customer today is perhaps the most neglected in the world. The need for the automobile is so great and the task of geting it is so much greater still, that the genuine purchaser of the vehicle is driven to extremes to get a car. It is indeed a very sad situation that has arisen whereby though no dealer charges anything extra in exploiting a seller's market, the buyer inevitably finds it impossible to get an automobile at the announced prices and that direct from the dealers. Perhaps an enquiry into the sale of cars during the last year or two will reveal that a majority of them have been sold in the first instance to somebody who has ceased to be the owner of the vehicle no sooner than he has bought it. It is this possibility of a resale that has resulted in fleecing the Indian car customer today.

It is, therefore, gratifying to note the Minister for Industries telling the Lok Sabha recently that the Government were going to have sample checking to ensure that the registration of cars takes place in the name of the person whose name had been entered in the list. This consideration has to be made on a very urgent basis, particularly in view of the short supplies of vehicles. It is also high time that Indian manufacturers make their dealers think of a little more considerate and human treatment for such of those buyers of cars who may queue up before them ready to buy vehicles. Customer goodwill is the bedrock of all reputed business houses and without it, the future of the automobile industry in this country cannot be built on efficient and sound business lines. Customer goodwill cannot be underestimated particularly in an young industry like the automobile, with good prospects for export



Daimler Majestic 100 mph. Six seats, automatic transmission Disc brakes. New model developed from One-O-Four with re-styled body giving more interior width. Borg Warner automatic transmission. Dunlop disc brakes.

DAIMLER MAJESTIC ANNOUNCED

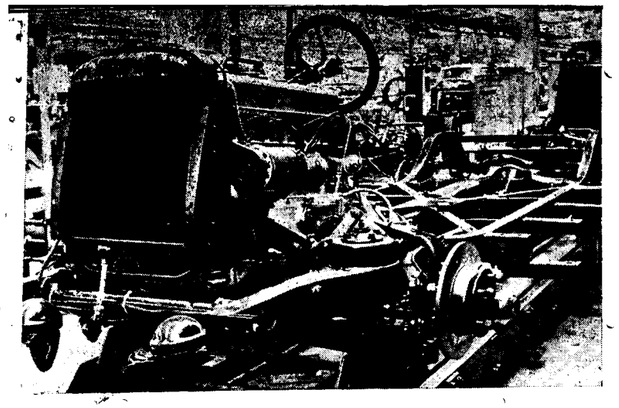
SIX SEATS, 100 M.P.H. AUTOMATIC TRANSMISSION, DISC BRAKES

(By Our London Correspondent)

The Daimler Majestic just announced is a 100 m.p.h. luxury car with automatic transmission and disc brakes. It is developed from the One-O-Four with re-styled body, larger engine, Borg Warner transmission and Dunlop disc brakes. By re-tooling doors, centre pillars and rear wings, the body has been converted into a full six-seater of more modern appearance and re-arrangement of toolkit stowage has given slightly more luggage space. For a very luxurious fast car with the prestige of the Daimler name the price is not high (£1,662 in England to £2,495 with Purchase Tax) and a large part of the production between now and the Fall has been ordered in advance by Daimler distributors.

The engine is a six-in-line pushrod unit. An increase in bore from 3.25 to 3.4 in. (from 82.55 to 86.36 m.m.) has raised engine swept volume to 3.794 cc., and maximum power is now 147 b.h.p. at 4,400 r.p.m., with maximum torque of 209 lb. ft. at 2,800 r.p.m. This should give a maximum speed of over 100 m.p.h. The Borg Warner automatic transmission is now standardised and this has permitted a reduction in the hump in the front floor; on the previous model the hump had to allow clearance for the fluid coupling used with the optional Wilson planetary gearbox which had a larger diameter. The Majestic is in fact the first British car to be designed with automatic transmission as standard equipment. No alternative is offered. A control on the instrument panel allows the intermediate gear to be held, which can be very useful to prevent unwanted changes into top in heavy traffic, on winding roads or when descending steep hills. Transmission is through a two-piece propeller shaft with centre bearing to hypoid rear axle. Centralised chassis lubrication is no longer used, but maintenance is simplified by the adoption of rubber bushes for the rear spring shackles. Front suspension is the Andre-Girling system as before. This uses a short radius arm and a large wishbone on each side with coil springs, telescopic dampers and an anti-roll bar. Dunlop disc brakes with circular pads are fitted to all four wheels and are assisted by a Lockheed vacuum servo.

The all steel coachwork is being made by Carbodies Ltd., now a Daimler subsidiary, and an initial output of about 20 a week is expected. It is finished in traditional custom style with leather upholstery for the two bench type seats and figured walnut instrument panel. The rear seat is 62 in. (157.5 c.m.) wide. Standard equipment includes adjustable steering wheel, windscreen washers operated by the wiper switch, cigarette lighter, a



Daimler Majestic 3·8 litre chassis on production line at Coventry with Dunlop disc brakes. Car has Andre Girling coil spring front suspension

fuel reserve tap controlled from the instrument panel and two roof lamps operated by the four doors. The spare wheel is carried in a separate compartment below the luggage trunk and a full toolkit in rubber-lined case is carried in the trunk inside the outline of the left rear wing. Instruments are speedometer with trip and total distance recorders, fuel guage, radiator thermometer and clock. Fog and spot lamps are standard.

Daimler are continuing to build small quantities of the One-O-Four with fluid coupling and Wilson gearbox, and also the DK 400 4-½ litre 7 passenger limousine, which has a composite body, with steel panels on wood and metal frame. The International Hertz Corporation which now controls Daimler Hire has just bought 12 for service in London and has shipped one to New York. Now that American cars are lower built than many European small cars, there may be quite a demand in the American hire trade for something which boldly puts convenience before fashion; is easy to enter and gives head clearance for the tycoonf's top hat or the ceremonial head dress.

Daimler is also supplying armoured scout cars to NATO forces. These are basically the same as those built during the war, but have the Rolls-Royce six-cylinder engine instead of the Daimler unit originally used. Daimler are also among the largest builders of chassis for double decker buses. mainly with diesel engines such as the Gardner.

Among future projects it is known that a new car with 2½ litre V8 engine has been under study and Mr. Edward Turner, who is now Daimler's managing director, has recently expressed a private view that such an engine, with pushrod valve operation could be made to produce 165 b.h.p. reliably in a production version but the new board of directors which took over two years ago is certainly not likely to perpetuate the Daimler habit of losing money on car production. To produce quality cars profitably in large numbers would require re-equipment of the engine works, new production lines and conveyor installations besides the cost of press tools, jigs and fixtures. Through its ownership of Carbodies which is able to produce steel bodies in quantity, Daimler is better equipped to survive than most of its rivals outside the Big Five, but it seems probable that the board will have to spend a good many millions of pounds on re-equipment if the company is to expand its range of products and achieve a big increase in output. This should present no insuperable problem as the B.S.A. Group, which owns Daimler has very large resources.

Daimler Majestic Technical Details

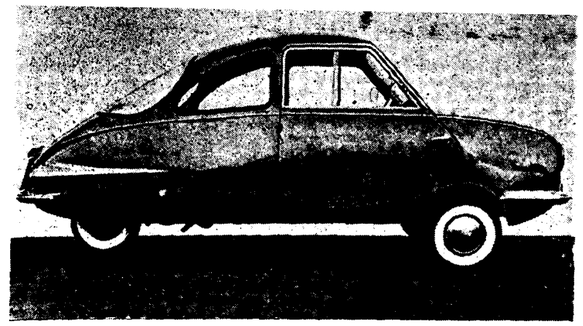
Engine :—6 cyl. ohv. pushrod operated 3.4 × 4.25 in. (86.36 × 107.95 m.m.) 231 cu. in. (3.9794 c.c.) Compression ratio 7.5 to 1. Two horizontal SU carburetters. 147 b.h.p. at 4,400 r.p.m. 209 lb.ft. (29 mkg.) at 2,800 r.p.m.

Transmission : Borg Warner with fluid torque converter, planetary gearbox and lock up cluth. Two-piece open propeller shaft. Hypoid final drive. Gearbox ratios low 2.308 to 1 Intermediate 1.435 to 1. Reverse 2.009 to 1. Torque converter between 1 to 1 and 2 to 1. Axle ratio 3.92 to 1.

Suspension and Steering :—Front suspension by radius arm, wishbone, coil spring, telescopic damper and anti-roll bar. Rear half elliptics with telescopic dampers. Burman re-circulating ball steering gear.

Dimensions :—Wheelbase 114 in. (289.6 c.m.), Track front 56 in. (142.25 c.m.). Track rear 57 in. (144.8 c.m.). Length 196 in. (497.8 c.m.). Width 73¼ in. (186 c.m.). Height 62¼ in. (159.4 c.m.). Turning circle 42 ft. (12.8 m.). Ground clearance unladen 7 in. (17.8 c.m.). Dry weight 3.870 lb. (1,760 kg.). Tyres 6.50—16 on bolt-on disc wheels Electrical system 12 volt. Fuel tank 18 Imp. gal. 22 U.S. gal. 81 litres.

Daimler Majestic on production line. There is one short transverses upper arm and a lower assembly consisting of a long transverses arm and another long one parallel with chassis side member



Nobel 200. British-built version of German Fuldamobil

GERMAN MINIATURE TO BE MADE IN ENGLAND

York Noble Industries Ltd., of Pank Lane, London W.I. have made arrangements for production in England of the German Foldamobil three-wheeler economy car. It will be called the NOBEL 200 and offered as a coupe with body of resin bonded glass fibre or as a multi-purpose light truck with folding convas top which can be used for goods transport or for camping. On this version the front seats fold flat to form a bed and the car will be available in kit form for assembly by the buyer or by local agents in export markets. It is reported that orders have been received from the West Indies and South America for some to be used as taxis.

The tubular chassis vertical guides for the front wheels which are suspended on coil springs. The single rear wheel is carried on a swinging arm, also with a coil spring. The goods and comping version has twin rear wheels. The engine, which will be imported from Germany, is a Fichtel and Sachs air-cooled two-stroke of 191 c.c. giving 10 b.h.p. Transmission is through four-speed gearbox with electrically controlled reverse obtained by reversing the direction of engine rotation and final drive is by enclosed chain. Brakes are mechanically operated. The coupe weighs about 660 lb. dry and the open model about 550 lb. Maximum speed is said to be 50 m.p.h. and fuel consumption 80-100 miles/Imp. gal.

Abarth Activities. 500 c.c. *single seater for long distance records. New lightweight Alfa Giulietta chassis*

Carlo Abarth, having moved production of his special exhaust systems to a new factory on the outskirts of Turin has turned over the original works entirely to the modifications of engines for the Fiat 500 and 600 and the production of experimental cars. Four dynamometers are now installed to test the enlarged 750 version of the Fiat 600 engine which he produces at the rate of two a day, and his modified Fiat 500 units which emerge at the rate of three a day. The 500 engine runs up to 6,000 r.p.m. and produces 24 b.h.p. (against the 13 of the standard unit, and 21 of the Fiat 500 Sport.) He used a modified cylinder head, higher compression and larger valves.

In collaboration with Alfa Romeo engineers, Abarth has also built a light-weight experimental chassis for the Giulietta, using a tubular space frame, with standard suspension and steering and a new 5-speed gearbox. A series of modified Giulietta engines is being produced for competition retaining the normal 74 m.m. bore and using a 58 m.m stroke to give 1,000 c.c. and a 63 m.m. stroke for 1,100 c.c. By increase of both bore and stroke it will also be increased to 1,600 c.c. still retaining the same cylinder block. Special crankshafts, connecting rods, and pistons will permit speeds up to 8,000 r.p.m.

Abarth has already built a special lightweight chassis for the Alfa Romeo 1900 Super Sprint which did not go into production but this time the close collaboration between the two companies suggests that a series sufficient to secure homologation in the Gran Turismo category might be made if Alfa Romeo are satisfied with the results.

Finally, there is a new lightweight tubular single-seater chassis with Fiat 500 engine at the rear which will be fitted with streamlined body and used for class record attempts over long distances later this year. Suspension, steering and transmission are Fiat 500 ; wheels and tyres are Fiat 600. No front brakes are fitted.

Unfortunately the Alfa-Abarth single-seater with 1,100 c.c. Giulietta engine and Pinin Farina body was wrecked recently in a crash during tests before a long-distance record attempt in which Toni Sailer, world ski champion, was to have taken part.

EUROPE'S INTERNATIONAL FUEL ECONOMY RUN

(*By our European Correspondent*)

Results of the Continental Mobilgas Economy Run suggest that the smallest engine is not always the most economical. In this 5-day event run over a 1,696-mile course through six countries from Brussels to Biarritz, a Peugeot 203 with 1,290 cc. engine won its class with a consumption of 44 mpg. (Imperial) but a Peugeot 403 of 1,468 cc. won the next class with 43.3 mpg. and they were both beaten by a Citroen ID 19 of 1.911 cc. which won the 2-litre class with a consumption of 47.6 mpg. The only British competitor, George Heaps of Cardiff, won the over-2 litre class by averaging 35 mpg. on his Standard Sportsman. As usual the outright winner was decided by a formula which takes into account the fuel consumption and the weight of the car and victory went to a Dyna Panhard driven by F. Habrard of France which averaged 61.9 mpg.

The route led through Belgium, Holland, Luxembourg, Switzerland Italy and France. Competitors had to contend with torrential rain in the mountains of the Vosges and Jura and their highest ascent was on the Grand St. Bernard pass rising to 8,100 ft. Some competitors found the average speed, of around 30 m.p.h. became boring for five days. Entries were restricted to standard touring cars unmodified but the regulations permitted accessories which did not alter the driving or functioning of the vehicle. The way in which this regulation was interpreted by officials of the Automobile Club Basco-Bearnais who organised the event caused some criticism. One Dutch competitor had to take off his oil gauge and substitute a warning lamp because his car as built in France had no oil gauge although in his country it did. Some were forced to remove fog lamps and George Heaps, British competitor (winner of this year's British Economy run) had to remove his Halda Speed Pilot which left him with no means of recording Kilometres. His speedometer recorded distances in miles, but all competition distances were in kilometers. These problems arise

Ashok Leylands Gift of Engine to Bangalore Institute

The need for close co-ordination and collaboration between scientific research and industry was underscored on August 9, on the occasion of the presentation of a Leyland Automotive Diesel Engine to the Indian Institute of Science by Messrs. Ashok Leyland of Madras, by Mr. B. D. Jatti, Chief Minister who presided over the function.

Mr. R. Ratnam, Director, Sundaram Motors Private Ltd., said the occasion had a special significance in that it had brought together science, industry, road transport operator and the consumer. Mr. Ratnam also recalled the pioneering service of Leyland Motors since 1896 and said that with the Steam Motor Company in 1896, Leyland Motors progressed and won many an award for their products. These awards were a tribute to the reliability and public acceptance of Leyland products. In 1931, Leyland manufactured the automotive diesel engine. The change to diesel operation was not easy, as commercial vehicle operators were unwilling to change from petrol. Mr. Ratnam referred to the lead from the Scottish motor traction group which ordered 250 Leyland oil engines in 1933. From then on, the progress was rapid as it had been proved on a truly Scottish appraisal of the economics of diesel operation.

Mr. Ratnam explained that the secret of Leyland business was its efforts to win and keep a "good name." That foundation was well and truly laid. Their counterpart in India, Ashok Leyland Ltd., Madras was a fine example of Indo-British collaboration in the industrial advancement of India.

Mr. Ratnam stated that the house of T.V.S. was keenly interested in this co-operation as it was not only the purveyor of road transport requirements of South India but was also itself an operator from 1912. Referring to the late T. V. Sundaram Iyengar as a pioneer in bus service, Mr. Ratnam pointed out that in those days it required as much courage to board a bus as it was to start road transport business. It was the public goodwill and their acceptance that had upheld their organisation. In a small way, "we may claim that we have kept step with the progress in automobile design, industry and maintenance. We have placed ourselves at the service of the travelling public and at the service of the nation."

Prof. M. R. K. Rao, Department of Internal Combustion Engineering, explaining the working of the department said the Leyland machine, a gift made to the department had come in handy in their research work.

Mr. A. E. L. Collins, Managing Director, Messrs. Ashok Leyland Ltd., presenting the engine to the Institute, hoped that the presentation might become a symbol of the very close association between industry and technical education which was essential for the prosperity of the country and the people. He also hoped that the Institute, which had done so much already to pioneer scientific development, would be one of the first establishments to train *men competent to design and build* internal combustion engines, which would be entirely Indian in concept and ideally suited for the conditions of operation in India.

Accepting the gift, Dr. S. Bhagavantam, Director of the Indian Institute of Science humorously remarked that the easiest duty in the world was to accept a gift. Speaking of research *vis-a-vis* industry, Dr. Bhagavantam said the results might not be tangible or easy to describe. They would be somewhat remote and not immediate. To convince the *bona fides* of those employed in scientific research, which were to a certain extent abstract, closer liaison with the industry was essential. In fact that was one of the objectives of the Institute, he added. Dr. Bhagavantam hoped for "many happy returns" of such gifts to the Institute.

Mr. B. D. Jatti, Chief Minister thanked Mr. Collins for the magnificent gesture. He was confident that the "Indian Institute of Science, which is the recipient of the automotive Diesel engine, will not only continue its useful work of scientific research in general, but will also concentrate on how best to aid the Government in its efforts to bring up the Transport Industry to a level at least to that prevailing in the great and industrially-advanced countries of the West.

Mr. R. Ratnam proposed a vote of thanks.

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chiefly because the event is supported by private entries. The European industry does not yet support it. In the U.S.A. things are different as the event is recognised by manufacturers. The organisers select new cars from stock for the competitors and they are run in under supervision so there is less room for disputes over eligibility.

Fifty-two competitors started from Brussels but 4 were eliminated the first day after missing a control and Heaps had to go back 12 miles to find it, driving at up to 90 m.p.h. to keep within the time limits.

Continental Mobilgas economy run. Mr. and Mrs. George Heaps averaged 35 mpg to win class in their Standard Sportsman.

NON-SKID BRAKING SYSTEM

DUNLOP DEVICE ENSURES MAXIMUM BRAKING EFFICIENCY WITHOUT LOCKING WHEELS

From Gordon Wilkins

After playing a leading part in developing the disc brake, Dunlop are now at work on another major contribution to safe motoring, a device to prevent skidding. Powerful brakes, whether with disc or drums are a great aid to safety but in braking hard on a slippery surface, it is easy to lock the wheels and if the driver is not skilful, with quick reactions, the car can easily start a slide and get out of control. Skilled drivers try to avoid the dangers by thinking ahead and by using less braking effort on slippery roads. The Dunlop device allows the maximum braking effort to be used which the road surface and the tyres will stand, but prevents the wheels locking and starting a skid. It is based on a device called the Maxaret which Dunlop have been making for aircraft since 1952. They have made tens of thousands of sets and the device is also made under licence in the United States. On heavy aircraft landing at around 100 mph the pilot can easily ruin tyres worth hundreds of pounds if he locks the wheels by braking too hard and the Maxaret was designed to prevent this. The device now under development for automobiles works on exactly the same principle.

One control device is fitted to each wheel of the car. It incorporates a small flywheel driven by the road wheel through a coil spring clutch which can deal with all normal acceleration or braking. If a wheel locks the flywheel tends to continue running and opens a valve which releases the hydraulic pressure and so reduces the braking effort until the wheel grips again. The device is so sensitive that it works several times a second much more quickly and more accurately than the most skilled driver pumping on the brake pedal and it keeps the braking effort at the maximum available wheel adhesion will permit.

The flywheel is driven by gears via a hollow shaft and the coil spring clutch. The flywheel is in the form of a thick cylinder. Between it and the drive shaft is a cam sleeve containing two V slots which engage with the head of a T piece projecting from the hollow drive shaft. During violent deceleration when the road wheel begins to lock, the flywheel tends to continue running and can move the cam sleeve 30° in relation to the drive shaft. The V grooves then carry the T piece forward and it compresses a coil spring inside the drive shaft, opening a poppet valve at the end, which allows fluid to escape back to the reservoir and releases the brake pressure. As soon as the road wheel revolves again the drive shaft moves back into phase with the flywheel, the cam sleeve is centralised, the valve is closed and fluid pressure to the brake is restored.

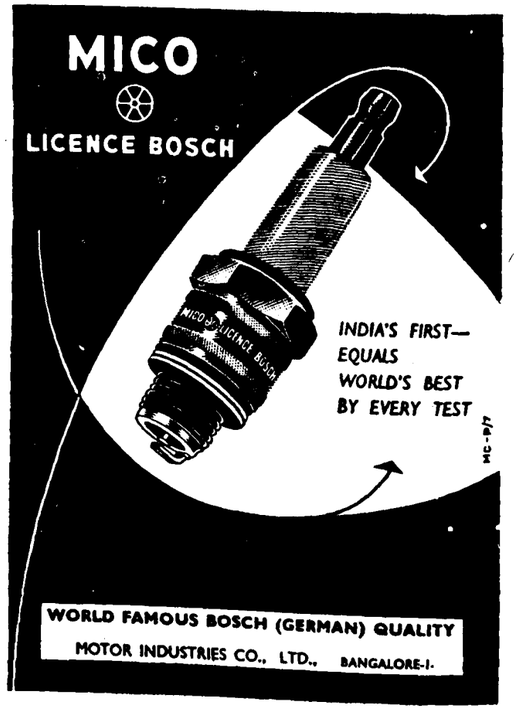
This sounds complicated but it all resolves itself into a simple automatic action which takes place almost instantaneously. But what happens if a wheel bounces suddenly during braking on a rough road ? The wheel can lock instantly and might stop the flywheel rotating despite the reduction in brake fluid pressure. Once the flywheel stops rotating the anti-skid device goes out of action. This is the reason for the spring clutch between drive shaft and flywheel. It allows the flywheel to continue spinning for several seconds if necessary after the wheel locks and so ensures that the fluid pressure is released and the wheel will begin to revolve again as soon as it touches the ground.

The device was recently demonstrated on a Mark VII Jaguar on a flooded aerodrome runway. Braking hard at 70 m.p.h. (110 k.m.h.) without the device in action simply threw the car into a violent tail slide but with the Maxaret operating the car stopped safely in a straight line. An expert driver finds some difficulty in braking hard enough to make the device work on a really slippery surface because experience tells him to release the pressure before the wheels lock. Mr. W. M. Heynes, Engineering Director of Jaguar said to me " I find it difficult to make the device operate on slippery surfaces because I do not use the brakes hard enough to come near to locking the wheels." For this reason the Maxaret will enable a driver with average ability to stop quicker than the experts because he will have less inhibitions about using more braking effort and he can use it safely. Most good drivers release the brakes as soon as they feel the slightest tendency to slide, even before the wheels are really locking and they never attempt to brake while cornering on a slippery surface. With the anti-skid device in action it was shown that the brakes of the Jaguar can be applied while the car is cornering on a flooded road and the car will hold its course without sliding.

Tests have shown that with smooth tyres on a wet surface the stopping distance can be reduced by over 20 per cent and even with good tyres on a damp non-skid surface the stopping distance is cut by 10 per cent. Tests have also been carried out from high speeds on dry roads in ideal conditions with a skilful driver holding the brakes to the maximum effort short of locking the wheels. Stopping distances were recorded by firing an explosive charge at the road, while electrical instruments recorded the revolutions of the wheels and the pressure fluctuations in the braking system. Even here it was found that the anti-skid device reduced the stopping distance by 6 per cent from 68 m.p.h. (109 k.m.h.) bringing the stopping distance down from 248 to 232 feet (75.6m. to 70.8 m.).

The Dunlop device therefore takes away one of the chief terrors for the novice and cuts the stopping distance in good and bad conditions below those that can be achieved by the most skilful driver working without it.

The device works in a small cylinder attached to the brake and will add about 2 lb. (less than 1 kg.) to the unsprung weight. The flywheel is driven by spur gears or bevel gears from a toothed ring attached to the brake drum or



disc. All the development has been done on disc brakes and Dunlop have worked out schemes for building the device neatly into the brake caliper as shown in one of the sketches. On the Mark VII Jaguar, used for the first experiments the flywheel is driven at 4,57 times the speed of the road wheel giving it a speed of 5,500 r.p.m. when the car is doing 100 m.p.h.

There is one other small component called the modulator which is fitted into the pipe line between pedal and brake. This consists of a small spring-loaded piston which allows a sufficient flow of fluid to apply the brake but limits flow from then on so the fluid which is allowed to leak away by the anti-skid device is not immediately made good by the central supply.

As the device works by releasing brake fluid and returning it to a central reservoir it can only be used with a servo braking system in which fluid is circulated under pressure from a pump. On the experimental Jaguar the pump is driven by the engine and fluid is supplied under pressure from an accumulator. This is not a serious disadvantage in view of other pending developments. The DS 19 Citroen has already shown how a central hydraulic system can be used to operate self-levelling suspension, to provide power assistance for brakes, steering, the gearshift and an automatic clutch. It can also be used to work auxiliary services such as seat slides and window lifts.

No information is yet available on the probable price of the non-skid device, but it is such an important step forward in driving safety that many motorists would be prepared to pay a substantial premium for it. It should also have important applications on public transport and goods carrying vehicles. Braking is always a problem where there are very great possible variations in load. On some buses braking power is deliberately restricted to prevent the possibility of injuring passengers through crash braking with the vehicle lightly loaded. The anti-skid device would automatically adjust the braking at each wheel to the weight carried by the wheel besides dealing with any differences in the state of the tyres and their grip on the road.

LICENCING OF GOODS VEHICLES AGENTS

MADRAS GOVERNMENT SCHEME

Madras.—The Madras Government proposes to introduce a new Rule 260-A to the Madras Motor Vehicles Rules, 1940, providing for the licensing of goods vehicles agents in the State.

It may be recalled that representations were made at the recent conferences of the Madras State Lorry Owners Association and elsewhere about the evils of the present system where touts and agents sprang up and disappeared in some cases with no security or guarantee to the general public in the matter of goods transport.

The new rules provide for the licensing of persons engaged directly or indirectly in the business of collecting, forwarding, and distributing goods for or on behalf of any public carrier as a collecting agent or forwarding agent as the case may be.

Forwarding agent will mean a person licensed to do the business of collecting, forwarding and distributing goods for or on behalf of any public carrier and

Collecting agent wili mean a person licensed to do the service only of collecting goods for transport or on behalf of any public carrier.

Under the rule no person shall engage himself as an agent unless he held a valid licence in form A.G.L. issued by the Secretary of the Regional Transport Authority of the region.

Licenses will be granted only to persons of not less than 25 years of age, able to read and write legibly in English or one of the languages of the district, or shall have had experience in the management of goods transport service for a period of not less than 3 years prior to the date of application ; shall have adequate knowledge of provisions of the M. V. Act and rules thereunder relating to his work and duties of the agent.

Applications for agent's license shall be in prescribed form A.G.L.A. to the Secretary, Regional Transport Authority and shall be accompanied by a treasury receipt for Rs. 50 only. The R.T.A. will also have to satisfy himself about the general conditions and resources of the applicant etc.

Conditions of agent's license and other detailed rules etc., are published by the Government and objections and suggestions have been called for.

HIGH COURT JUDGMENTS OF INTEREST TO THE OPERATOR

Madras.—In response to requests from a number of readers for full details of court judgments relating to the problems of operators, we give below the full text of two of recent judgments in the Madras High Court.

In a petition for the *writ of certiorari* and to quash an order of the Deputy Commissioner of Police, Traffic, Madras filed by P. A. A. Mohammed Hussain, His Lordship Mr. Justice Balakrishna Iyer passed the following order :—

This Writ Petition coming on for hearing upon perusing the petition and the affidavit filed in support thereof the order of the High Court dated 13-3-58 and made herein and the counter affidavit filed herein and the records in Ref. No. 352/Tax/58 dated 8-3-58 on the file of the Deputy Commissioner of Police Traffic and Licensing, Madras, and comprised in the return to this writ made by the High Court and upon hearing the arguments of Mr. K. K. Venugopal, Advocate for the petitioner and of the Additional Government Pleader on behalf of the State the Court made the following order :

The petitioner was the owner of a lorry MDF 301 which had a public carrier permit. Sometimes in September 1957 the petitioner informed the Deputy Commissioner of Police that this lorry was under repair and off the road. On 7-11-1957 the Deputy Commissioner wrote to the petitioner enquiring when MDF 301 would again be in use. The peti-

tioner promised to put the vehicle back by the last week of December. Subsequently he found that it was not possible to repair the lorry and so he purchased MDH 2110. The tax due on the latter vehicle for the quarter ended 31-3-1958 was duly paid. The police appear to have received reports that MDF 301 which was supposed to be undergoing repairs and in respect of which the tax due for the quarters ended 13-9-57 and 31-12-1957 had not been paid, had been actually plying on 24-8-1957 and on 16-10-1957. If this information was correct tax would have been payable on the vehicle for the last two quarters of the year 1957. But no tax for either of these quarters was paid. On 28-2-1958 MDH 2110 was stopped by two constables in Mylapore and taken to the office of the Deputy Commissioner. The police seized the vehicle in order to realise the tax, which they have held was due in respect of MDF. 301 and on 8-3-1958 the Deputy Commissioner of Police wrote to the petitioner to that effect. The present petition has been filed for the issue of an appropriate writ to quash the order of the Deputy Commissioner detaining the vehicle in these circumstances.

The petitioner denies that any arrears of tax are due in respect of MDF. 301. On behalf of the police it is stated that the tax is actually due. Into this controversy I cannot these proceedings go. On the footing however that the tax is actually due the question arises whether the seizure of MDH. 2110 was lawful. Section 7 of the Madras Motor Vehicles Taxation Act provides that if the tax due in respect of any motor vehicle is not paid, the registered owner, the person in possession or control of it shall be punishable with fine which may extend to fifty rupees and that the amount of the tax due shall be recovered as if it were a fine. This section obviously contemplates a prosecution before a Magistrate and does not empower a police officer to seize the vehicle. Then there is Section 9 which provides that any tax due under the Act may be recovered in the same manner as if it were an arrear of land revenue. That section also permits the motor vehicle in respect of which the tax is due or its accessories to be distrained and sold. But that can be done only in the manner provided by the Revenue Records Act. Rule 160-C of the rules framed under the Madras Motor Vehicles Act provides—:

> "It shall be a condition of every permit that the vehicle specified in it shall not be used on any public road unless the tax due in respect of such vehicle or vehicles has been paid in accordance with the provisions of the Madras Motor Vehicles Taxation Act, 1931 and the notifications issued thereunder."

Now if this rule is contravened, Section 60 of the Act would go into operation and that would enable the transport authority to cancel or suspend the permit. But it would not empower the transport authority to seize the vehicle. Finally we have got Section 129 (*a*) which runs as follows :—

> "Any police officer authorised in this behalf of the person authorised in this behalf by the Provincial Government may if he has reason to believe that a motor vehicle has been or is being used in contravention of the provisions of Section 22 or without the permit required by Sub-Section (1) of Section 42 or in contravention of any condition of such permit relating to the route on which or the area in which or the purpose for which the vehicle may be used, seize and detain the vehicle, and for this purpose take or cause to be taken any steps he may consider proper for the temporary safe custody of the vehicle."

The present is not a case where there has been a contravention either of Section 22 or 42. The only other circumstances which would enable the police officer to act under 129 (*a*) is this. The vehicle may have been used in contravention of a condition in the permit regarding the route on which or the area in which or the purpose for which the vehicle may be used. That is to say, if a permit enables a vehicle to operate between say, Madras and Vellore, but it is found to be plying between Madras and Cuddalore, or if the permit enables it to operate in the district of Chingleput but it is found to operate in the district of South Arcot, then the vehicle may be seized. Again if the permit enables the vehicle to be used only for a definite purpose but is found to be used for a different purpose then too the vehicle can be seized.

These are all the provisions that have a hearing on the question before me and none of them justified the seizure of the lorry of the petitioner. The petition is therefore allowed and an order will issue directing that the vehicle be returned to the petitioner unless this has already been done.

There will be no orders as to costs.

WRIT PETITION FAILS

The Hon'ble Justice Mr. Rajagopala Ayyangar at the Madras High Court disposed of recently a petition for the issue of a *writ of certiorari* filed by C. Jayaraman against the State Transport Appellate Tribunal, Madras and M. Natesa Pillai (respondents).

His Lordship said in his order dismissing the petition without costs :

This Writ Petition coming on for hearing upon perusing the petition and the affidavit filed in support thereof the order of the High Court dated 19-9-56 and made herein, and the counter filed herein and the order dated 16-8-56 and the records in R. No. 18973-A2-56 on the file of the State Transport Appellate Tribunal, Madras, the first respondent herein and compromised in the return of the said first respondent herein to the writ made by the High Court and upon hearing the arguments of Mr. N. G. Krishna Ayyengar advocates for the petitioner and the Additional Government Pleader on behalf of the 1st respondent and of Mr. K. Tirumalai advocate for the second respondent —the court made the following order :—

The Order sought to be quashed is that of the State Transport Appellate Tribunal, Madras, which set aside the grant of a permit to the petitioner and directed its grant to the 2nd respondent here who was the appellant before it. The grounds have been urged in support of the petition :

(1) That the R.T.A. had taken into account the fact that the petitioner had purchased a later model of vehicle than the 2nd appellant and that the State Transport Appellate Tribunal, Madras, erred in disagreeing with this view.

(2) The S.T.A.T. had positively held that experience gained under an illegal permit could not be taken as a ground of preference, and

(3) That the petitioner was a L.M.E. and that this preference was perversely set aside by the S.T.A.T.

I am unable to agree in any of these contentions. The ownership of a later model is no ground of preference under the statute or rules and even otherwise if a vehicle is found inefficient it might be replaced by a fresh one. The S.T.A.T. cannot be said to be in error in rejecting this as a ground of preference. Nor is there any point about the 2nd ground since it was not a ground on which the R.T.A. acted. The observations of the S.T.A.T. evidently arose out of argument before it and even if this is rejected enough reasons are given by the S.T.A.T. to sustain its order. The relative preference are discussed in the penultimate para of the order and I don't see any error in this.

The licentiate in Engineering cannot by itself determine preference.

The order of the Tribunal is not vitiated by error justifying interference.

The petition is dismissed.

RATIONALISATION OF INDUSTRY NEEDED

Says P. L. KUMAR

The high costs of fuel, the high incidence of taxation on vehicles and even higher cost of motor vehicles themselves hampered a proper development of the Road transport industry, according to Mr. P. L. Kumar, Director of Amalgamations Ltd.

Speaking at the inaugural function of the Automobile Engineering Students Association of the Ramakrishna Mission Technical Institute at Mylapore, Mr. Kumar drew the attention of the Government to these factors and to rectify them so that the progress of the Industry could take place on a much faster rate. He also urged that the Government should consider the possibility of providing capital for the operators at very reasonable rate of interest through Finance Corporations in the same manner as they did for Industries.

Referring to the present situation in the matter of automobile manufacture where India was unable to produce automobiles at prices on part with those of her counterparts in other countries, Mr. Kumar felt that Government should consider the question of rationalisation to enable better utilisation of machine tools capacity in automobile factories so that the incidence of depreciation of vehicles may be reduced. He also stressed the need for the development of ancillary industries side by side so as to help the healthy growth of the automobile industry itself.

* * *

VEHICLE FITNESS CRITERION CRITICISED

At a meeting of the Trichy Branch of the Madras State Lorry Owners' Association held on the 15th August under the Presidentship of Mr. C. Govindaswamy Chettiar, Vice-President, a resolution was passed requesting all members to subscribed to MOTORINDIA and authorising the Secretary to do the needful in the matter. The meeting also decided to open a lorry booking centre after applying for and securing an agency licence on behalf of the Association.

The meeting strongly condemned the existing practice in Tiruchi by which 1942-43 model lorries are automatically given the last Fitness Certificate which is evidently governed by having the year of model as criterion instead of having the condition of the vehicle. It was urged that the condition of the vehicle should also be taken into consideratoin so that vehicles which are in excellent condition may be allowed to ply further even though they may be 1942-43 models. The meeting authorised the Secretary to make appropriate representations to the Government with regard to licensing of lorry booking agents.

* * *

EXPORT PROMOTION

New Delhi : The Indian Government has decided to allow rebate on customs and central excise duty paid on raw materials used in the manufacture of certain items including Sparking Plugs and Bicycles. This is done with a view to encouraging exports of these items. Draft rules have been published detailing the procedure and Collectors at various places have been advised to help exporters in their problems.

M. V. ACT ADMINISTRATION

SEPARATE MINISTRY SUGGESTED

New Delhi : The setting up of a separate Ministry in each State with a view to evolving a common pattern for administering the amended Motor Vehicles Act of 1956 has been suggested by automobile interests.

In a memorandum to the Road Transport Reorganisation Committee, Mr. L. P. Misra has said that such a Ministry should, besides looking after the administration of the amended Act, deal with improvement of roads and development of road transport and also study traffic requirements and devise ways and means for meeting them.

To meet these objectives, the memorandum has recommended the appointment of (*a*) a Transport Commissioner to administer the Act, (*b*) an officer of the rank of a Chief Engineer to supervise construction of new roads and maintenance and improvement of old roads according to the demands of traffic in the State, (*c*) a research and development section to study the requirements of road traffic in all parts of the State and to make constructive proposals to the Ministry for the construction of new roads and improvement of old ones and (*d*) an autonomous corporation for the control and administration of nationalised motor transport in each State.

According to the memorandum, the Corporation should run as a business concern and be subject to rules, regulations, taxation, rights and responsibilities similar to those imposed on individual public carriers or private transport corporations

in the states. It should be under the Minister who will provide the finance, lay down the policy and let the day-to-day administration carried on by the Board of Directors appointed by the Government.

The memorandum notes with disappointment that nationalization of the road transport services in some States has prevented motor transport from taking over the growing demands of the economic, agricultural and industrial development of the territories in their jurisdiction.

Another point emphasized in the memorandum is that, if the target, of the annual lift had been properly estimated at the time of the working out of the second Plan, the amendment of the Motor Vehicles Act enacted in 1956 would have been on a different basis. At present the amended Act itself is acting as a break on normal development of road traffic to deal with the lift resulting from the Plan. It is said that, although very substantial remedies have been given in the amended Act, its administration in the States and the inadequacy of powers given to the Inter-State Commission are working against the Union Government's efforts to develop road transport to the requirements of the second Plan.

AMENDMENT TO M. V. ACT

According to the Draft Amendments to the Madras Motor Vehicles Rule 1940 published recently in the Fort St. George Gazette, important changes are sought to be made in the Motor Vehicles Rules.

The Amendments *inter alia* say that the vehicle shall not be used on any public road unless the tax due in respect of the vehicle has been paid in accordance with the provisions of the Madras Motor Vehicles Taxation Act, 1931, and the notification issued thereunder. There shall not be present in the vehicle, even when it is stationery, goods of any class or description the conveyance of which contravenes any law or any rule, by-law, order or notification made thereunder prohibiting or regulating the import, export or transport of such goods or mica for which royalty has not been paid.

In regard to public carrier vehicles, it has been laid down that the vehicle should be so maintained as to be available for the service for which the permit was granted, for the entire period of currency of the permit and that the permit is liable to be suspended or cancelled, after due notice to the permit-holder, if the vehicle has not been used for the purpose for which the permit was granted, for a continuous period of 15 days or more, during the period for which the permit authorises the use of the vehicle on the road, unless the Transport Authority is satisfied that the holder was prevented by sufficient cause from resuming the service or the holder had obtained the previous permission of the Transport Authority to suspend the service for a specific period.

TYRE MANUFACTURE

Four schemes for the manufacture of 8,59,200 automobile tyres per year, which have received the approval of the Government of India, are now under implementation.

It is expected that out of this additional production capacity, by the end of the Second Plan period, actual capacity of 5,59,200 tyres will materialize. The remaining capacity for 3,00,000 tyres is expected to be achieved from 1961 onwards. The present installed capacity for the manufacture of automobile tyres is 10,50,000 per year.

Of the four schemes under implementation, two are for expansion of the existing two units at Shahganj and Bombay. The expansion of the two factories between them will bring in an additional production of 2,74,800 tyres per year.

The other two schemes envisage the setting up of new undertakings, one at Madras and the other at Bombay, the total annual capacity being 5,94,400 tyres. Before the end of the second Plan only one phase of the Bombay factory's production will be completed, its complete capacity being reached from 1961 onwards.

In addition, two other schemes, which have received the approval of the Government, when implemented will raise the total production capacity for automobile tyres by 4,20,000. It is, however, understood that steps taken so far on the implementation of these schemes would not justify the hope that they would add substantially to the prodution capacity before the end of the second Plan.

The estimated domestic requirements of automobile tyres by 1960–61 are about 18,00,000 per year. It is also envisaged that if sufficient internal capacity is created exports of the order of 1,50,000 tyres per year could be undertaken. This would require a total annual capacity of about 23,00,000 automobile tyres. The total capacity already licensed, including the capacity of the two schemes whose implementation has not progressed, will come to about 20,00,000 tyres.

All the four expansion and new schemes are, it is understood, being executed with some form of foreign collaboration, not involving any immediate expenditure of foreign exchange.

MOTORING WITH THE NOTED

By A. HOLDEN

In times gone by, men of letters, culture and learning, often gave forth great expressions and statements of moment, which, if applied nowadays to motoring, in a general sense, it would seem that some of these personalities " knew what was coming " in the form of motorised transportation.

How might these quotations relate to particular instances of motoring ? Take for, example, the position with a *Driving Lesson :* Emile Coue might have been contemplating just that when she wrote : " Every day, in every way, I am getting better and better."

Running Repairs : " Labour conquers everything."—*Virgil.*

Hitch-hiker : " I was a stranger, and ye took me in."—*Matthew XXV.*

Parking Penalty : " Ask me no questions, and I'll tell you no fibs."—*Goldsmith.*

Out of Petrol : " Walk while ye have the light, lest darkness come upon you."—*Milton.*

Back Seat Drivers : " I am not arguing with you—I am telling you."—*Whistler.*

A New Car : " It was a dream of perfect bliss, too beautiful to last,"—*T. H. Bayly.*

Car Salesman : " A man who knows the price of everything, and the value of nothing."—*Oscar Wilde.*

Speed Ticket : " It is more blessed to give than to receive."—*Acts XX.*

Taxi Service : " Not snow, nor heat, nor gloom of night stays these couriers from the swift completion of their appointed rounds."—*Herodotus.*

Bus Queue : " They also serve who only stand and wait."—*Milton.*

Traffic Officer : " His hand will be against every man and every man's against his."—*Genesis XVI.*

Accident : " Man's inhumanity to man, makes countless thousands mourn."—*Burns.*

Vehicle Overhaul : " When it is a question of money, everybody is of the same religion."—*Voltaire.*

Car Minders : " All those men have their price."—*Walpole.*

The Toolbox : " A place for everything, and everything in its place."—*Samuel Smiles.*

Overtaking Motorist : " Do unto the other feller the way he'd like to do unto you, an' do it fust."—*E. N. Westcott.*

Traffic Lights : " There's none so blind as they won't see."—*Swift.*

Right of Way : " Hail to the Chief, who in triumph advances."—*Scott.*

Speedcar Driver : " They shall not pass."—*Petain.*

A Flat Tyre : " Let us then be up and doing, with a heart for any fate ; still achieving, still pursuing, learn to labour and to wait."—*Longfellow.*

An Unattended Car : " A short absence is safest."—*Ovid.*

New Ducoing : " By appreciation we make excellence in others of our own property."—*Voltaire.*

Broken Down : " Seek, and ye shall find ; knock and it shall be opened unto you."—*Matthew VII.*

Old, Used Car : " One is easily fooled by that which one loves."—*Moliere.*

Road Under Repairs : " Either do not attempt at all, or go through with it."—*Ovid.*

Chauffeur : " For many are called, but few are chosen."—*Mathew XXII.*

Car Horn : " That blast of January would blow you through and through."—*Shakespeare.*

Lost the Way : " Ye immortal gods ! Where in the world are we ? "—*Cicero.*

Toll Collectors : " Their ambus here relentless ruffians play. And here the fell attorney prowls for prey."—*Samuel Johnson*

Driving Without Licence : " There is a time of speaking and a time for being still."—*W. Caxton.*

A Hit-Run Driver : " Action is transitory—a step, a blow ; the motion of a muscle, this way or that."—*Wordsworth.*

Disatisfied with Repairs : " Give us the tools and we will finish the job."—*Winston Churchill.*

Road Patrol Service : " A man that hath friends must shew himself friendly, and there is a friend that sticketh closer than a brother."—*Proverbs XVIII.*

Insurance Claims : " Never in the field of human conflict was so much owed by so many to so few."—*Churchill.*

Traffic Appeal : " At every word a reputation dies."—*A. Pope.*

Parking Restrictions : " The intelligent man finds almost everything ridiculous, the sensible man hardly anything."—*Goethe.*

Road Courtesy : " Conscience has no more to do with gallantry than it has with politics."—*Sheridan.*

Inexperienced Driver : " Thus woe succeeds woe, as wave a wave."—*R.Herrick.*

Woman Driver: " Charm strikes the sight, but merit wins the soul."—*Alexander Pope.*

Discarded Vehicle : " How dull it is to pause, to make and end To rust unburnished, not to shrine in use."—*Alfred Tennyson.*

Speeding Motorist : " A fool must now and then be right by chance."—*William Cowper.*

Run Off the Road : " Errors, like straws, upon the surface flow ; He who would search for pearls must dive below."—*John Dryden.*

Excessive Speed : " The moving finger writes, and, having writ moves on."—*Edward Fitzgerald.*

Pedestrian : " The man who acts is always devoid of conscience except the man who pauses to reflect."—*Goethe.*

PERSONS

Sri R. S. Baisiwala photographed at the Willingdon Airport on entering the plane for the continent.

Mr. N. U. Prabhu of Standard Batteries Ltd., Bombay who has recently returned after 6 months' advanced training in battery technology in Sweden.

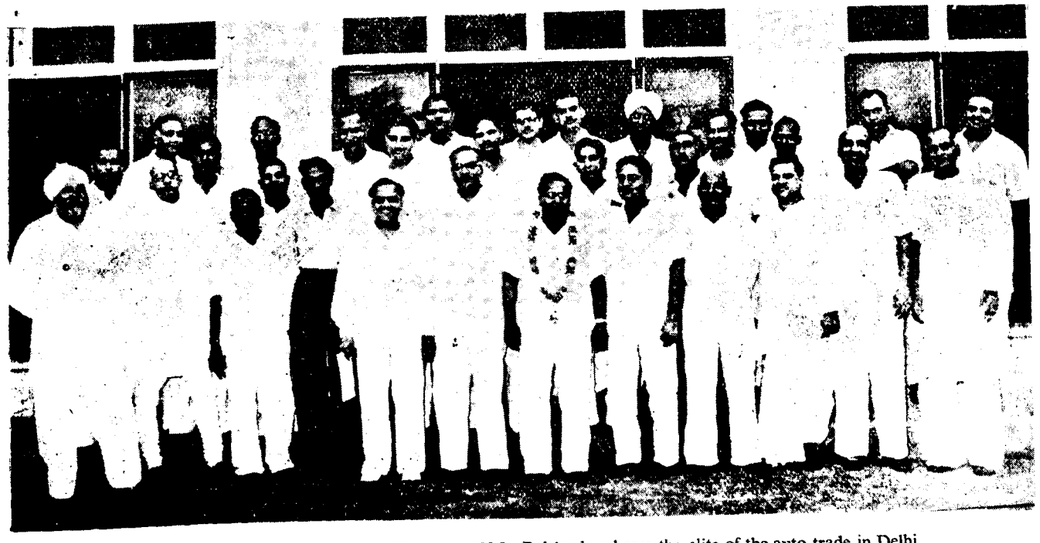
and

EVENTS

Seven U. P. Roadways officials have just returned from a 24-week study-cum-training course at the Daimler Benz Factory in West Germany. The programme was sponsored by Telco. Photo shows, S. S. Singh, R. K. Gupta, G. S. Tandon, D. N. Roy, U. C. Sharma, D. S. Manikshaw and B. Doss.

Photo taken at the airport at the time of departure of Telco Sales Manager, Mr. N. Annaswami on a 3-months' business visit to West Germany, to Continent and U.K.

Mr. Annaswamy being garlanded by a little girl before emplaning



Photograph taken on the eve of the departure of Mr. Baisiwala, shows the elite of the auto trade in Delhi

Mr. R. S. Baisiwala replying to felicitations at a party in his honour

Mr. Baisiwala taking the blessings from Mr. K. L. Jain of International Agencies, below.

Staff members of Orient General Agencies gave a dinner at Wengers to Mr. Baisiwala, seen speaking

Mr. Baisiwala feted By Delhi Auto TRADE

Sri Onkar Dutt of M/s Swastik Motors threw a party in honour of Mr. Baisiwala's tour to the Continent. Picture shows some of the leading guests including the chairman of the Delhi Auto Traders Association, Mr. Trilok Singh, extreme left.

Mr. P. C. Aspinall of Chloride and Exide was entertained lavishly at Calcutta and New Delhi in the course of his recent Indian tour. Photo above shows Mr. Aspinall at Delhi along with Mr. Davinder Singh, Mrs. Aspinall, Mrs. S. C. Basu, Mrs. Davinder Singh, Captain Bhavani Singh of Jaipur and Mrs. Jagdish Chander.

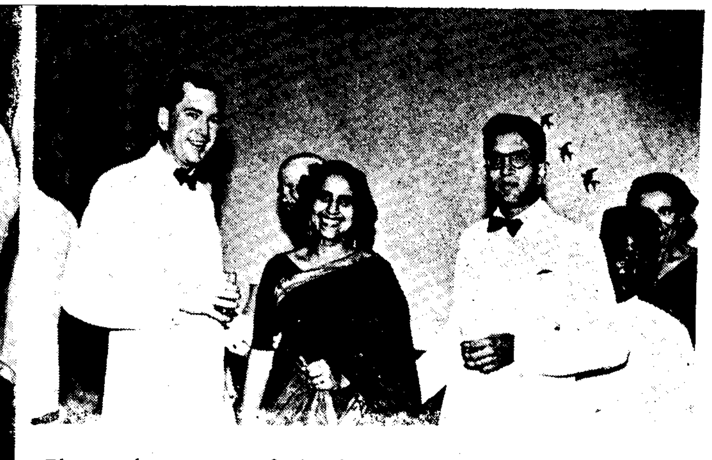


Photo taken at one of the Calcutta receptions shows left to right, Mr. Aspinall, Mrs. Malkani and Mr. Malkani

Exide Manager

Mr. P. C. Aspinall Feted at Delhi and Calcutta

New Delhi :—Mr. P. C. Aspinall, Export Manager Chloride Batteries Ltd., London, who is now on a tour of India and the Far East, was entertained at a party held at the Gymkhana Club recently by Mr. S. C. Basu, Chloride and Exide's Resident Representative in New Delhi and Mrs. Basu.

Mr. Aspinall's visit to Delhi was more than routine, since apart from establishing personal contact with Exide customers, he was devoting much of his time to discussions with Government Officials on questions of far reaching importance *e.g.*, Exide's plans for expansion, export promotion and improved servicing to clients.

Personal discussions with important Officials connected with Road Transport, Railways, Telephones and Power Supplies have been, according to Mr. Aspinall, the most fruitful outcome of his visit to Delhi.

The Exide factory near Calcutta, with more than 800 employees is one of the best equipped factories of its kind in Asia and is currently supplying well over a third of India's total requirements of storage batteries,

Mr. Aspinall's visit to India at this juncture when India is passing through an acute foreign exchange crisis, acquires significance because of the plans to further expand and develop the Exide organisation in India.

Mr. and Mrs. Aspinall were received and introduced to the guests by Mr. and Mrs. Basu. Prominent among those present were, Brigadier B. D. Kapur, Chief Controller, Defencer Dev. and Research, and Mrs. Kapur ; Mr. H. C. Sarin, Joint Secretary, Defence, and Mrs. Sarin ; Air Commodore R. Dutt, Air Officer I/C, Planning and Policy, and Mrs. Dutt ; Mr. M. J. Desai, Secretary, Commonwealth Relations ; Mr. A. N. Mehta, Deputy Secretary, External Affairs, and Mrs. Mehta ; Mr. Karnall Singh, Member, Railway Board, and Mrs. Karnall Singh ; Mr. H. M. Chatterjee, Joint Director, Railway Board, and Mrs. Chatterjee ; Mr. I. L. Dass, Director, The G.E.C. of India Ltd., and Mrs. Dass ; Mr. E. C. Fox, General Manager for India, The English Electric Co. Ltd.; Mr. B. W. Amos, Asstt. General Manager, The English Elec. Co. Ltd.; Mr. M. Sardana, James Findlay Ltd., and Mrs. Sardana ; Mr. S. Mann, British Tinkins Ltd., and Mrs. Mann ; Raizada J. Chander, and Mrs. Chander ; Mr. A. Rai, The G.E.C. Co. of India Ltd., and Mrs. Rai ; Mr. Mahendra Pal Singh, Rallis Bros. Ltd.; Mr. K. V. K. Sundaram, Chief Election Commissioner, and Mrs. Sundaram ; Mr. Ingram, Naval Adviser, U. K. H. Commission, and Mrs. Ingram ; Group Capt., Sen Gupta, Director of Reserves, I.A.F., and Mrs. Sen Gupta ; Mr. Kumaramangalam, Dy. Secretary, Ministry of W.H.S.; Maj. Gen. P. Narain, Controller General Defence Production, and Mrs. Narain ; Capt. M. K. Bawani Singh of Jaipur, Dy. Commdt. President's Body Guard ; Mr. Dhillon, U. S. Embassy, and Mrs. Dhillon ; Mr Davinder Singh, Manager, Black Wood Hodge (India) Ltd., and Mrs. Davinder Singh ; Mr. Lack, Managing Director, Black Wood Hodge (India) Ltd.; Mr. Naqshband.

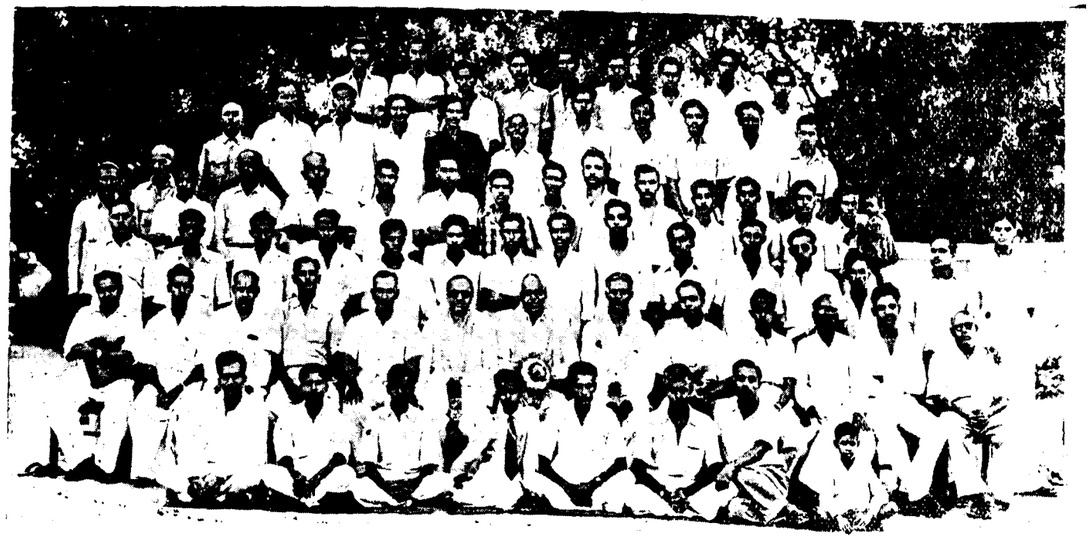
UNION MANUFACTURING CO.

NEW FACTORY INAUGURATED

Bombay.—A number of automobile parts hitherto being imported into the country will soon be manufactured at Andheri, the industrial suburb of Bombay where a new factory by the name Union Manufacturing Co. has recently been inaugurated.

Started by the enterprising partners of the Union Trading Co., Messrs. Kesar Singh Kohli and Sohan Singh Kohli, the factory promises to make quite a number of small and useful parts for the automobile. A number of machines have already been erected and these include a centreless grinder, automatic threading machines, nut-making machines and lathes, milling machine and a tempering furnace.

It is hoped that the vast experience of the partners who have widely travelled in the Middle and Far East in recent years will play a dominant role in not only the manufacture of these new parts but also help in organising an export drive of the new products to neighbouring countries, thus helping the national economy.



The Sashtiabdapoorthy of Sri N. Ramachandra Iyer of M/s Bharat Motors was celebrated in a grand manner at Madras recently. The occasion was availed of by the staff members of the firm to give a fitting reception and party in honour of Mr. Iyer. The group photo above shows Mr. Iyer with Messrs. V. Kunjitapadam, Luv, Rao, Krishnamoorthy and others

Sashtiabdapoorty of Sri N. Ramachandra Iyer

CELEBRATIONS IN MADRAS

Madras.—The Sashtiabdapoorty of Sri N. Ramachandra Iyer, the doyen of the Motor Parts Trade in Bombay and Madras was celebrated with all attendant religious and social ceremonies on July 11 last at his residence 19, Daivasigamani Mudaliar Road, Royapettah. The cream of the automobile fraternity of the place readily responded to the invitation of his younger brothers N. Malayappan and N. Krishnamurthy of Messrs. United Overseas Service Private Ltd., and Bharat Motors and stayed for an enjoyable roof garden dinner.

AT GREAMES ROAD

The Staff of Messrs. Bharat Motors, Madras, celebrated the 61st birthday of their Managing Director, Sri N. Ramachandra Iyer, at their Greames Road Workshops on August 1st.

Sri D. S. Ranganatha Rao, Chief Accountant, welcomed the chief guest and other distinguished visitors and proposed Mr. V. Kunjitapadam, General Manager, to the Chair.

The function started with a prayer song by Mr. H. K. Mani and was followed by an address in Tamil by Mr. R. S. Ratnam.

Mr. V. Krishnamurthy, Works Manager, garlanded Mr. Iyer and presented him a Silver plate on behalf of the staff to commemorate Mr. Iyer's 61st birthday and as a token of the staffs' sincere regard, affection and love for him.

Mr. Kunjitapadam in his presidential address traced Mr. Iyer's close and intimate association with Automobile Trade for the last Four Decades and how from humble beginnings Mr. Iyer steadily worked his way up and was able to establish on his own, the present Messrs. United Overseas Service Private Ltd., Bombay, and how Mr. Iyer also started Bharat Motors in Madras in 1946, to handle the sole franchise for BEDFORDS and OLDSMOBILES taking advantage of an opportunity at the right time. He also pointed out the fruitful efforts of Mr. Iyer in setting up the Alandur Factory of Messrs. Himco Batteries (Madras) Private Ltd., and how Mr. Iyer has also contributed a share to the success of Messrs. Auto Lamps Ltd., Delhi, both of which are so well known to the motoring trade and the public.

Mr. Ramachandra Iyer, while replying to the address, was visibly moved by the overwhelming regard and affection displayed by the staff towards him. He confirmed his firm faith in "hard honest and systematic work never goes unrewarded" and expressed that he would be the happiest man to see that every member of the staff put forth his best possible efforts and achieved substantial progress along with the firm. Mr. Iyer concluded his speech appreciatively mentioning that whatever progress and success have been achieved by Bharat Motors are wholly due to the untiring, efficient and sincere planning and work of their General Manager, Mr. V. Kunjitapadam and the unstinted and energetic co-operation of the hands of the various departments and the staff.

Mr. T. S. L. Rao Regional Manager, Madras, United Provinces Commercial Corporation, Calcutta, and Mr. Luv, Manager, Himco Batteries (Madras) Private Ltd., Madras, were good enough to associate themselves in the celebrations not only by their presence but also by identifying themselves with the staff of Bharat Motors, in wishing Mr. Ramachandra Iyer many more happy returns of his birthday.

Mr. S. T. Rajan, in proposing a vote of thanks to the chief guest

STAFF GREETINGS TO BHARAT MOTORS BOSS

Workers at the Bharat Motors Workshop presenting an address to Mr. Ramachandra Iyer

Mr. Ramachandra Iyer replying to fecilitations at the party at Greames Road

Mr. Krishnamoorthy, Manager of Bharat Motors Workshop presenting to Mr. Ramachandra Iyer

and to all those present, pointed out how Mr. Ramachandra Iyer was not a victim to any habit, leave alone evil habits, and how while being scrupulously religious, has been an untiring and industrious visionary with great tolerance towards all around him and how Mr. Iyer's career was proof of the fact that "Faith in God and Honest hard work always lead to success and prosperity."

The meeting terminated with light refreshments and a group photograph.

MADRAS DEALERS CELEBRATE INDEPENDENCE DAY

Madras: The Bharat Buildings quadrangle was almost packed to capacity on the morning of Independence Day when dealer members of the Madras Motor Parts Dealers' Association assembled to celebrate Independence Day in the usual manner.

In the absence of the President Mr. Kunjitapadam, the national flag was unfurled by Mr. P. Chandriah, Vice President of the Association.

After light refreshments, Mr. Chandriah recalled the progress of the nation during eleven years since the attainment of independence by peaceful means. He referred to the peculiar problems facing the country, the dealers and the Government in the present struggle to improve the living conditions of the masses and expressed the hope that auto parts dealers would contribute their share in the building up of the nation.

Mr. Inder Sain proposed a vote of thanks.

AT HARRIS ROAD

Madras: Independence Day was celebrated, among others by Messrs. A. Basha, radiator specialists of Harris Road. Light refreshments were served to a large number of workers and others who were present. The premises was gaily decorated.

The Automobile Agencies

"The Automobile Agencies," a new firm of Manufacturers' Sales Representatives, was opened at the new buildings at No. 15, State Bank Street, Madras on August 20.

The firm has been a co-operative effort of people already in the automobile business, *viz*, Messrs. Pioneer (Madras) Private Ltd., Singson & Co. (India), D. V. Grover & Auto Sales Co. Their popularity was revealed by the very large and representative gathering of automobile and allied interests who were present on the occasion.

The guests were received by Mr. Jaidev, Mr. Manohar Singh, Mr. Grover and others. After tea and refreshments, Mr. Vsudevan of M/s. Overseas Manufacturers Sales Co., in a short speech felicitated the organisers of the function on their starting The Automobile Agencies. The new firm had already made a very good beginning in that they are the Sole Distributors for Payen Talbros Products in this area and the speaker was glad to note that the new firm has already contacted and were about to finalise a number of other automobile manufactures as well. Wishing the new firm every success, Mr. Vasudevan, specially complimented them on the spirit of co-operation that was revealed in its organisation and foundation.

Mr. Sachdev, on behalf of the Management of M/s. Automobile Agencies, thanked the guests for attending the function in such large numbers and Mr. Vasudevan for the very kind words said about the new firm.

A RECONDITIONED ENGINE CAN BE BETTER THAN NEW!

(By an Australian correspondent)

Recently, with the co-operation of Repco Ltd., I carried out the most interesting and instructive series of road tests I have ever made.

They were designed to find out the real answer to those questions that harassed car owners are always asking : How well do those expensive engine overhauls pay ? Is re-ringing worth while as a cure for heavy oil consumption and gas blow-by ? Is a rebored engine even approximately as good a performer as a new one ?

My partner in these tests was Charlie Dean, well-known as the designer and builder of the Mayback racer ; he is an engineer with Repco. Our plan was to submit two popular small English cars to road tests after reconditioning ; then to compare our results with those published in magazines of top standing, whose views are accepted generally as a good criterion of what these cars should do when new.

Care was taken to conform as closely as possible with the new car test conditions, so far as they are known, and as an electric speedometer was not available we made all speed tests by timing over a measured mile.

The car speedometers were checked for distance recording and for speed by timing at all speeds relevant to acceleration tests. The errors found approximated very closely with those reported by the English testers, which indicates that our methods agreed closely in accuracy with theirs.

A Re-ring job

First car tested was an Austin A40 which had done 25,000 miles and had been fitted with new rings. These were the standard Repco set for this type of job—the Super X set.

The report on the engine showed that cylinder wear was 004 in., mainly taper, and the pistons had been knurl-sized to suit, thus eliminating piston rook due to excessive skirt clearance. Bearing clearance was .0025 in., and this was not considered to call for any renewals.

Apart from the rings, the only replacements had been four new inlet valve guides and the timing chain—the latter mainly in the interests of silence. The engine, which had been given about 500 miles' running-in, was quiet. There was no sign of smoking, and I was told that oil consumption, which had been about 800 m.p.g. before the overhaul, was now estimated at about 5000 m.p.g.

In this test we took the car as supplied, and the only tuning that was done was a little experimenting with the ignition timing, in the light of speed and acceleration tests.

As the basis on which to work, we took the new-car test of this model published in *The Autocar of London*. The two sets of figures are shown in the table, and the only significant test condition which was different was the distance covered ; we covered 76 miles, compared with 285.

Two checks of fuel consumption were made, the first about halfway, after the main fuel-consuming tests of speed and acceleration had been completed, the second at the finish, the latter part of the run having been the usual cruising over flat roads, with a couple of confirmatory acceleration tests, and the return journey through the suburbs.

The first of these readings showed consumption to have been 30.4 m.p.g. and the second 33.2 m.p.g. giving an all-over average of 31.8 m.p.g., which is what we quoted as our final figures.

In *The Autocar* test, fuel consumption was given as 23–33 m.p.g. which we took to mean the difference between "hard-driven" and "cruising" results, so we average these also, giving the 28.5 m.p.g. shown in the comparative table.

The conclusion to be drawn from this test is that a large measure of both performance and economy can be restored by re-ringing, provided the amount and type of wear is suitable.

	New	Re-ringed
Accel. through gears—	*Sec.*	*Sec.*
0–30	6.9	8.2
0–50	19.8	22.6
0–60	36.6	36.6
Top gear— 30–50	16.5	17
Standing mile ...	24.3	25.4
Speeds on gears—	m.p.h.	m.p.h.
Top ... Mean.	66	65
Best.	71	69
Third ... Best.	48	48
Second ... Best	30	31
	m.p.g.	m.p.g.
Fuel consumption ...	28.5	31.8
Fuel	British Standard	
Weather	Light wind.	

Every case must, however, be decided on its merits. Let us suppose the engine generally is in poor condition, with bearings worn and crankshaft needing regrinding, while cylinder wear is near the limit where re-ringing can be expected to be successful and give substantial extra service. In such a case the amount of labour charges for dismantling might be such that a complete overhaul would be a better proposition for the owner.

The full treatment

Our second test was on a Morris Minor with side-valve engine, which had been "given the works" by Repco with a full engine overhaul. This test was particularly interesting in view of the facts it disclosed—it actually consisted of two complete road tests which differed surprisingly in their results.

The car was in good general condition and had obviously had reasonable care from its woman owner. Its engine condition was stated to have been such that it had been a borderline case for re-ringing, but it was decided to give it a full reconditioning.

The cylinders were rebored to the usual .020 in. oversize and fitted with four-ring replacement pistons with Repco De Luxe ring set (chromeplated top ring). The crankshaft was reground, also the camshaft bearings to restore full oil pressure, and bearings were line-reamed to offset distortion possibly caused by cylinderblock, stress relief having continued after manufacture.

New exhaust valves were fitted, with a full complement of new valve guides and springs. Compression ratio was unchanged. Plugs and h.t. wires were renewed.

Only departure from standard design was the four-ring pistons instead of three-ring, and I was told that this is the standard Repco reconditioning practice with these engines, because it is considered to give longer life. The cylinder block treatment was reboring, finished by honing to "controlled roughness" standard to ensure oil retention.

Now comes the really interesting part of the story. It packs a lot of information for people who have their engines reconditioned and for those who look after the job.

The car was first tested as a mere assembly job ; then as the fully-tuned one an owner should get. We wanted to find out just how important was the tuning which should be given the car after assembly.

The horrible fact emerged, on our first test, that the car just didn't perform anything like as well as we'd hoped. It ran nicely—was unusually quite and well balanced, in fact. But it just didn't seem to have its heart in the business, and performance figures were just a little inferior to the new-car test we were working against.

We agreed that it should be doing better, and decided to see what some more tuning-in would accomplish. The running-in had been rather short—a little over 500 miles—but the engine seemed free enough to give practically its full performance—and, of course, to be perfectly safe from damage with the amount of high stressing it would receive.

A further 300 miles' running-in made no perceptible difference, so it was decided to embark on some investigation of other factors that might have cropped up in the car's past life. Here is what was found.

*A test of the distributor head showed that the centrifugal advance mechanism was working unsatisfactorily, failing to advance at higher speeds. This was overhauled and new governor springs were fitted.

A manometer check was then made of the exhaust manifold pressure and this revealed that there was backpressure of about 2½ lb. This was due to a rich deposit of carbon in the silencer, undoubtedly a legacy from the car's oil-pumping period before its overhaul. So a new silencer and tailpipe, of standard (Burgess type) replacement make, were installed.

A carburettor check then showed that the jet needle (S.U. carburettor) had at some time been replaced by an economy needle, designed to weaken the part-throttle mixture. A standard needle was fitted.

WE THEN DID OUR SECOND ROAD TEST. AND, MAN, DID WE SPATTER THE ROAD WITH BROKEN RECORDS ? OUR FIGURES WERE SO MUCH BETTER THAT WE DIDN'T BELIEVE THEM AT FIRST, AND WERE RELIEVED TO FIND THAT SPEEDOMETER CORRECTIONS AGREED WITH THE ENGLISH ONES NEAR ENOUGH TO INDICATE OUR OBSERVATIONS WERE RIGHT. THEN WE CHECKED UP WITH OTHER ENGLISH ROAD TESTS AND FOUND, WE'D BEATEN THEM ALL IN PRACTICALLY EVERY ASPECT, NOT ONLY OF SPEED AND ACCELERATION, BUT OF FUEL ECONOMY AS WELL.

We'd provided something quite beyond what we were out to prove, which was that a properly reconditioned car is as good as new. We'd shown that it can be a lot better. But we'd also shown that, no matter how good the machine work of the specialist firm may be, the end result depends to a great extent on the motor engineer with whom the job originates.

It is he who does the reassembly and the subsequent tuning, and this kind of tuning must include rectification of such faults as are likely to originate during the pre-overhaul period. *This, of course, seems obvious enough, but I wonder how many expensive jobs have turned out comparative failures just because of a dirty silencer or a defective distributor head* ?

Some of our original figures compared reasonably with new-car figures and the general result would have been good enough to get by with a not-too-critical owner, especially as they might be assumed to be strikingly better than those of pre-overhaul performance.

Here are the results of this very increasing demonstration ; the new-car figures are averaged out from a number of new-car tests on this model which appeared some years ago in *The Autocar* and *The Motor*.

New Test 1, Test 2

Accel. through gears—	sec.	sec.	sec.
0.30	10.15	9.85	7.9
0.50	36.8	39.3	23.4
Top gear			
30.50	32.7	...	22.5
Standing ¼m.	27.3	28.7	25.9
Max. speed (mean)—	m.p.h.	m.p.h.	m.p.h.
Top gear	60.4	56	62.5
3rd gear	47.75	46	50.0
Fuel consumption—	m.p.g.	m.p.g.	m.p.g.
Overall	39.8	...	38.4
Normal	34.0	34.0	44.9
Hard-driven ...		33.4	32.0

New-car figures averaged from four English tests. Our test 1 over 41 miles, all hard-driven. Test 2 over 72 miles in separate normal and hard-driven stages. Fuel, Standard 79 Octane. English tests on pool.

It is not altogether easy to find an explanation of why a reconditioned engine can be, and quite often is, even better than new in performance ; my theory is that a number of small details contribute. In the first place, the whole of the transmission must be perfectly free, so losses here will be at minimum.

The other possible advantage may lie in the fact that stresses in the block casting still existing when it was first machined have been long since completely relieved by thousands of heatings and coolings, and the soothing hand of time. This means that bore alignment may be better than new, while any possible misalignment of the bearing tunnels will have been nullified by the line reaming of the new bearings.

Finally, reconditioning is a more leisurely process than manufacture both as regards production and assembly, and tolerances may be held closer.

THE REDEX CAR CLUB

WELCOME TO NEW MENMERS

The Redex Car Club extends a warm welcome to the following new members and thanks all those who introduced them :

Mr. C. F. Shroff
Y. P. Pandit
Mr. J. H. Randelia
M/s. Ahoora Blocks (P) Ltd.
M/s. Modern Universal Garage
M/s. Headway Printers
Dr. K. H. Shah
Dr. B. D. Patwardhan
Mr. H. Rustomji
Mr. J. G. Jumani
Mr. S. M. Lall
Mr. G. Hira
M/s. S. H. Alimohamed
Mr. M. Abdulla
Mr. W. De Souza
Mr. I. O. Mitha
Mr. G. P. Tolani
Mr. P. A. Umrigar

Renewals Please

The following Members are requested to pay in their Annual Membership subscriptions during September 1958 to ensure receiving their *Motorindia* copies for October 1958.

Brigadier M. M. Badsha—Dr. D. E. Bandukwala—Mr. B. R. Mahadevia—Mr. V. J. Wadia—Mr. A. D'Souza—M/s. Sind Highclass colour Mart—Mr. M. Urs—Mr. B. M. Mehta—Mr. L. H. Bhateja—Dr. S. N. Dravid—M/s. Valia Bros. —Mr. P. K. Velu—Mr. U. C. Gandhi—Mr. H. C. Lokhandwalla —Mr. A. W. Rane—Mr. V. N. Lakur—Lt.-Com. H. S. Dutt—Mr. S. K. Khan, M/s. Backbay Garage—Mr. K. D. Moss—Capt. H. R. Clandius—Dr. F. N. Daji—Mr. J. N. Adaggra M/s. S. F. Engineer—Mr. S. E. Heerjibehedin—Mr. J. H. Cama—Mr. H. S. Pursram—Mr. V. D. Kapadia—Mr. V. Purshotam —Mr. R. A. Patel—Mr. P. K. Daruwalla—Mr. M. N. Gandhi—Mr. D. M. Unwala—Mr. A. V. Choksi.

Free Motoring Guide to India

The Redex Car Club Membership needs to be increased with the help of each Member, by introducing more New Members. Till December 1958 *a Free Copy of "Handy Guide to Motoring in India" 2nd Revised Edition, by Mr. P. F. Lally will be given to any Member introducing* 3 *New Members within a month.*

Correction

In the July issue the list of Membership Renewals was for August 1958 and not October as printed therein.

BON VOYAGE AND ALL SUCCESS

MR. P. K. MASTER—OUR VICE-PRESIDENT

Mr. P. K. Master, our Vice-President has left for Zurich on 16th instant and our best wishes are with him for ever.

Messrs. Jeena & Co., the well-known firm of Travel Agents started by the late Mr. Jehangir Katgara, a man of vision and initiative in 1900, will be opening their first Overseas Branch at Zurich, Switzer land. This is done with a primary object to create livelier interest among Westerners about India and promote tourism which is becoming a major "industry" in almost every country in the world.

In charge of this Overseas Branch will be Pesi K. Master of Bombay who gives up his present position as Manager of the Caledonian Insurance Co., Bombay. In his 39 years of life he has packed a lot of experience in various fields. Having travelled extensively in India and abroad he feels that the only way to do away with the "cold war" is to do away with all the artificial barriers. That Utopia of "International Citizenship" which he has conjured up may one day cease to be a dream and become a reality.

In 1950, Mr. Master toured the United Kingdom, the Continent and the Middle East and he then realised that travel was no longer a problem if it was scientifically and systematically planned and organised. To him travelling is a pleasure. In 1957 he visited San Francisco to attend the Lions International Convention—he is Past President of the Lions Club of East Bombay—he took the opportunity of including Hongkong, Japan, Honolulu, Canada, the United Kingdom and the Continent, in his itinerary.

He is associated with the W.I.A.A., the Premier Automobile Association in India, as a member of its Managing Committee ever since 1952. He is a member of the Central Council of the National Sports Club of India. As the Hon. Secretary of the Music Society of Bombay he successfully organised the first Open-air concert of music with Strauss Festival Concert later to be followed by the Tschaikovsky Festival. He is the Vice-Chairman of the REDEX CAR CLUB, for the last 3 years. Apart from these he is connected with other social and welfare activities.

TECHNICAL INFORMATION

The following technical information it is hoped will be read and remembered with interest by motorists in general & Redex enthusiasts in particular.

(1) *Calculating Speed Over measured Distance :*

3,600 × distance in Miles
time for distance in Seconds.

(2) *Engine Capacity—*

Square the cylinder in mm., multiply by 7,854 and again multiply the result by stroke and number of cylinders.

(3) *R.A.C., H.P., Rating—*

Cylinder Bore 2 × number of cycles. 1,613.

(4) *R.P.M. at given Speed—*

336 × Speed × Gear ratio
Wheel diameter in inches.

(5) *Approximating Gear Ratio—*

Engage gear, mark tyre and ground at point of contact. Move car by starting handle and count number of engine turns until tyre mark contacts ground again.

Effect of altitude on horse power

Altitude		Percentage on normal power
Sea level	...	100
1,000 feet	...	96.5
2,000 feet	...	93.0
3,000 feet	...	89.5
4,000 feet	...	86.0
5,000 feet	...	83.0
6,000 feet	...	80.0
7,000 feet	...	77.5

Braking Distances

(Brakes in good order on Dry Level Surface)

Speed m.p.h.	Average time Lag, Feet covered	Distance in Feet after Brakes applied	Overall Stopping Distance Feet
10 ...	10	5	15
20 ...	20	20	40
30 ...	30	45	75
40 ...	40	80	120
50 ...	50	125	175

Miles into Kilometers

Miles		Kilometers
1	=	1.6097
2	=	3.21
3	=	4.82
4	=	6.43
5	=	8.04
6	=	9.65
7	=	11.26
8	=	12.87
9	=	14.48
10	=	16.09
20	=	32.18
30	=	48.27
40	=	64.37
50	=	80.64
100	=	160.93
200	=	321.86
300	=	482.79
400	=	643.72
500	=	804.65
1000	=	1,609.30

Gradiant Percentage

5%	=	1 in 20
6%	=	1 in 16.6
7%	=	1 in 14.3
8%	=	1 in 12.5
9%	=	1 in 11.1
10%	=	1 in 10
11%	=	1 in 9.1
12%	=	1 in 8.3
13%	=	1 in 7.7
14%	=	1 in 7.1
15%	=	1 in 6.6
16%	=	1 in 6.2
17%	=	1 in 5.8
18%	=	1 in 5.5
19%	=	1 in 5.3
20%	=	1 in 5.0
21%	=	1 in 4.7
22%	=	1 in 4.5
23%	=	1 in 4.3
24%	=	1 in 4.1
25%	=	1 in 4.0
26%	=	1 in 3.9
27%	=	1 in 3.7
28%	=	1 in 3.6
29%	=	1 in 3.5
30%	=	1 in 3.4
31%	=	1 in 3.3
32%	=	1 in 3.2

FREE INITIAL ENGINE TEST AND TUNE-UP

BY

P. F. LALLY

Every member of The Redex Car Club is entitled to a Free Initial Engine Testing and Tuning, with Redex compression gauge and Engine Tester. It is a unique Free service carried out in the presence of a member, which gives him a good opportunity to know the Engine condition as revealed by these two precision instruments.

COMPRESSION TEST

Compression of each cylinder is checked and recorded as the car comes in. This test reveals the condition of pistons, rings, values and cylinder head gasket. Many owners are surprised at the disparity of the compression displayed by the readings on the compression gauge. The difference between the highest and lowest readings of compression, for a good engine, should not be of more than ten pounds per square inch. The lesser the range of difference between the readings, the better the engine condition and performance, of the car. For practical experience and tests, it is found that in a normally healthy engine the compression is increased and more levelled on running the car on NEAT REDEX instead of the usual lubricating oil in the engine sump, for about 50 miles. This can be verified on rechecking the compression. In case the rechecking shows a drop in the compression, it points out to leaking values or wear in the piston rings or cylinder bore. Should a drop in compression be observed pour some lubricating oil through the plug holes on the piston top and after some time check the compression while the oil is there. If this "wet" test shows increased compression, it means that the piston rings or the cylinder has an undesired wear and the engine needs repairs, but if despite the "Wet" test, the compression is lower than the very first checking, it means leaking engine valves, which need skimming or replacement.

Engine Tester

To test the engine with the Engine Tester, which is a vacuum gauge, is literally to feel the pulse, of the car

engine. If no direct vacuum device exists on the inlet manifold of an engine, drilling has to be done and a suction nipple fitted on the inlet manifold, without any damage or danger to the engine. The direct suction tubing of a suction windscreen wiper can be used for the Engine Tester Readings. This instrument helps you to know the general condition of your engine. With it the spark plugs, valves, back pressure the carburettor butterfly, etc., are tested and the vacuum Reading Recorded.

In the Free Tuning of your Car, the Engine Tester is of great help in setting the Distributor and carburettor with precision, according to the real need and condition of each engine. The higher the reading achieved, with a steady needle of the Engine Tester, the better is the performance and economy obtained on any engine. The testing and Tuning is done in your presence, when you get a chance to mark the difference before and after the use of Redex as shown by the instruments.

Compression, An Index to Engine condition

The Engine should be warmed up to normal working temperature before a compression test is taken. All plugs should be removed, with the throttle fully open. Insert the cone of the compression gauge in one plug hole at a time. Let the self-starter turn the engine and stop when the gauge needle has reached its highest reading, mark the first jump of the gauge needle and the subsequent movements in getting to the final figure. If the piston rings are not worn out and the valves not leaking, the initial jump of the needle must be about 70 lbs. per sq. inch or more, smaller spurts indicate weak rings. Observe the compression of each cylinder. If the disparity between the highest and the lowest readings, is within 5 lbs. the engine can give smoothness in running and satisfactory performance, with proper tuning. It is not how high the compression reading is but how uniform are all the figures which should not show a greater difference than 10 lbs. for a good engine.

The marked difference of high and low readings between the cylinders is a sign of leaky gasket, piston rings or valves. If the low and high readings are between two adjacent cylinders it indicates a leaking cylinder head gasket. A cylinder recording about 10 lbs. (or more) less than the highest figure, indicates valve leakage or weak or stuck piston rings. As previously mentioned a "Wet" test will solve the problem whether the trouble is with leaky valves or piston rings.

The compression of an engine will depend on its compression ratio as well as the lubricating oil used, which has its good or adverse effects on the piston rings and cylinder wear. Lubricating oil must be capable of reducing sludging and keeping piston grooves free from any deposits, so that the rings are fully able to expand by the gases getting sufficiently in the piston ring grooves and exerting the requisite pressure on the rings to build up proper compression. Besides this is the film of oil in the cylinder should adhere to the walls and make the piston rings build-up a gas tight condition to achieve high compression. The regular use of Redex in the lubricating oil of the engine helps to keep the piston rings free to expand and reduces the formulation of gun and sludge—often the factors for weak compression. To avoid sticky valves use Redex in the fuel always.

The following table shows the average compression values :—

Compression Ratio	Compression in lbs. per sq. inch		
	poor	Fair	Good
4.5 to 1	20–50	50–55	55–85
5 to 1	30–55	55–65	65–95
6.5 to 1	40–67	67–75	75–105
7.0 to 1	52–81	81–90	90–115
7.5 to 1	65–90	95–105	125–145

In case the compression, as compared to the compression ratio of the engine reads very high it indicates carbon deposits in excess of what a good engine should form. Abnormally high compression generates high temperature in the engine which causes rapid engine wear, poor fuel economy and high oil consumption induced by oxidation due to excessive heat.

SAFE DRIVING— THE EASY WAY

BY

LA PEEAFF

The main factor of Safe Driving anywhere is a blend of two human qualities—*Courtesy* and *Caution*. If you want to be respected in getting your right of way, road courtesy please do unto others as they would do unto you but do you do it first ? Remember the rights of drivers both in front and rear of you. Observe all the Road signs and guide your way to Safe Destination by guiding others with proper Driving signals. Anticipate the move of others, both drivers and pedestrians, so as to avoid dangerous situations before you are caught in them. The well known test driver. Tom Mccahill has the following suggestions for Safety First for drivers :—

*Slow down when in doubt.

*Never overtake another car on a curve or hill.

*Stop every hour to rest eyes, nerves and muscles.

*Pull up to the Kerb when you stop.

*Keep your eye glasses and windscreen clean.

*Go down steep hills in low gears. "Never" free-wheel.

*Switch off engine while refuelling.

*If you smell exhaust *fumes*, head for nearest service station-keep windows open.

*In case of fire, turn off ignition and lights. Unload passengers.

*Don't take any chances with worn tyres. Replace them a little early rather than too late.

WATER INJECTION

BY

P. F. LALLY

In the July issue of *Motorindia* an article under the above heading by La Peeaff was published. Pursuant to his request, I give certain required information on the subject.

Water injection in the Internal combustion Engine is not a new idea but recently it has been put into practice on a commercial basis.

The device is known as H2O Bomb, which as the article rightly pointed out was displayed by me in our Auto-Technic Exhibition in 1957.

The injection of water in the car engine through the inlet manifold, acts doubly as a coolant and a cleaner of carbon. The H2O Bomb is a device with a spring loaded diaphragm spindle which opens and shuts off according to the depression or vacuum caused in the manifold at varying speeds. In idling the vacuum is high and the spring loaded diaphragm cuts off the vacuum which pulls the water from a jar through the Bomb into the manifold. But on accelaration when the inlet vacuum drops to about 7 inches which is the predetermined point at which the H2O Bomb begins to operate and injects sprays of water in the firing zone. No water is thus permitted at low speed unless furious use of the accelerator is made causing depression of about 7 inches.

The engine runs cooler and permits certain adjustments both for power and economy to be made. The fuel water ratio varies from 16 to 1, 12 to 1, or even 10 to 4 in running condition according to the car. Pinking or pre-ignition is reduced, thus permitting to get the distributor to further advantage.

Our data of practical results is very poor at the moment, some have reported of car engines runing cooler on the ghats, lesser pinking and at times smoother engine. Recently a Member using the H2O Bomb on a new Ambassador, reported very clean, carbon free engine when the cylinder head was removed for "showing." My personal experience has been of reduced pinking on steep gradients, and power boosting to some extent. On other tests it was found that much of the carbon deposit in an engine can be reduced by water injection even within a run of 30 to 40 miles, after sufficiently warming the engine.

It is found that with a 15 : 85 water and alcohol mixture the power boosting is remarkable. I have made various devices to inject water in an engine through the Redex Lubrocharger or even direct, depending on the ability of the owner to use the same.

It is the height of fallacy to believe that water injection can induce oxidation in the engine. No doubt direct deposition of water in the cylinder or piston top has bad effects both on engine metal and lubricating oil but not by rational water injection. To safeguard the whole issue use Redex through the Lubrocharger and give a couple of shots every night when the car is garaged. In the *Auto Car* issues of 10 June and 5 August 1955 read the articles "Neat—or with Water ?" and "Water injection in practice." I shall be too glad to help those who are interested in it.

THREE NEW FERRARI MODELS

Ferrari's plans for 1959 production models include a new light roadster on the 250 G.T. chassis, a new coupe body by Pinin Farina for the same model and a completely redesigned 410 Superamerica. The roadster, called the California, has a light two-seater body built by Scaglietti in Modena. It has very sleek lines, with folding top and wind-up windows in the doors. It weighs about 2,420 lb. dry (1,100 kg.) and should do from 126 to 157 m.p.h. according to axle ratio at 7,000 r.p.m. in top gear with 6.00—16 tyres. There is a choice of five axle ratios between 7/32 (4.57 to 1) and 9/33 (3.66 to 1). The gearbox has synchromesh for all forward speeds.

The engine is the standard 60° V-12 of 2,953 c.c. (73 × 58.8 m.m.) with 8.5 to 1 compression ratio giving 240 b.h.p. at 7,000 r.p.m. It has three twin-choke downdraught Weber carburetters and in its latest form has a single magneto instead of the previous two which fed six plugs each. For this model a special chassis is used with extra bracing to the side members to ensure adequate rigidity with an open body. Scaglietti's body has a light folding top, winding windows in the doors and two separate bucket seats.

The new Pinin Farina coupe on the normal G.T. 250 chassis has a notched back and generally more angular lines than the existing type. The front end treatment is entirely new, with semi-recessed headlamps and a low hood line. Screen pillars are exceptionally slim and the rear is particularly elegant, with trunk slightly recessed between the rear fenders.

Farina's body structure is now so closely integrated with the chassis that it virtually becomes a sort of unit construction. Rear suspension is softer than before but there are auxiliary spring leaves with rubber cushions at each side. They resist body roll and increase the spring rate when the car is fully loaded but do not tend to lift the inner wheel on a corner as an anti-roll bar would. Modification of the chassis and revised positioning of spare wheel and fuel tank have left space for two small seats for children and a luggage trunk of useful size.

The 410 Superamerica, one of the fastest cars ever offered for sale has been redesigned with new chassis, more torque, stronger transmission and bigger brakes. This should be seen for the first time at Paris. Ferrari's intention is to establish this as one of the world's great high-powered luxury cars and the leading Italian coach-builders are planning special new body styles for it. Maximum power of the V-12 4962 c.c. engine (88 × 68 m.m.) is unchanged ; it gives 400 b.h.p. at 6,200 r.p.m. but maximum torque is increased by 10 per cent to 340 lb.ft. (47 mkg.) and comes in at 4,700 r.p.m. instead of 5,000. It has six double-choke downdraught Weber carburetters fed by an electric and a mechanical fuel pump from a 100 lit. 22 Imp. gal. tank, and buyers have a choice of eight axle ratios between 7/34 (4,857 to 1) and 9/30 (3.33 to 1).

The brakes are hydraulic with a Baldwin booster, consisting of a double-diameter piston in the fluid line. Front drums are 15.75 in. (40 cm.) diameter and those at the rear 14.2 in. (36 cm.) with a total lining area of 310 sq.in. (2.000 cm.2) which represents an increase of 30 per cent over that of the previous model. Tyres are 6.50—16 on wire wheels. Wheelbase is 102.3 in. (260 cm.) with front track of 57.28 in. (145.5 c.m.) and rear track of 57.01 in. (145 cm.). Overall length will be about 185 in. (470 cm.) with light convertible coachwork the complete car is expected to weigh 2,640 lb. (1200 kg.) and maximum speed will be anything up to 165 m.p.h. (265 kmh.) according to the axle ratio employed with a fuel consumption of 11/13 miles/Imp. gal. (22—24 lit/100 km.).

Most Crowded Roads In The World

BY MR. GEOFFREY ROOTES

I feel I should make it clear at the outset that I make no claim to be in anyway an expert on roads. I take, I hope, a reasonably intelligent interest in the subject in view of its obvious importance to the Motor Industry, and have some experience of roads in other parts of the world as well as this country. On the other hand I should hate to sail under false colours as being in anyway an expert.

I suppose that the State of Britsish roads has now become rather a joke, ranking with mothers-in-law and Chelsea Football Club as perennial script fodder for second rate music hall comedians.

But to British manufacturers—particularly those in the motor industry—our roads are no joke. They are a tragic and expensive monument to neglect.

This question of road development does not merely involve accident figures and the frayed tempers of week-end motorists. It also concerns the late delivery of overseas goods, higher freight charges, lost export orders and tourists who vow never to come to Britain again.

The problem is controversial, but the facts are clear cut. Britain has spent less on road construction and maintenance in recent years, both per vehicle and as a share of the gross national product, than almost any other European country.

As long ago as 1947 total motor taxation (including fuel tax) was £106. million, or 3.2 per cent of the national revenue. At this time £65 million, or just over 60 per cent of the amount raised by taxation was spent on the roads of this country.

By 1956 the revenue from all forms of motor taxation had soared to £480 million, or nearly 10 per cent of the national revenue, while expenditure on new roads, major improvements and maintenance totalled only £110 million. That is less than 25 % of the amount raised by taxation.

While our neighbours and business competitors like Germany, Sweden, France, Belgium and Switzerland spent approximately £70 to £80 a year per vehicle for this purpose, the United Kingdom has spent less than £28 per vehicle per year since 1950.

The British motorist—the patient, long suffering hounded British motorist—last year paid out nearly £500 million for the rather dubious privilege of driving on the most crowded roads in the world.

It is quite true that the prospect is a little brighter now. This year we are spending a little over £40,000,000, on building new roads and on making improvements to existing roads as distinct from normal maintenance. This compares with a total of £39,000,000, spent in the 5 years 1952—56.

The Ministry of Transport has pledged an expenditure of £280 million within the next four years on his scheme for laying a modern motorway network throughout the country.

This is certainly better than the bad old days when it seemed that road development was confined to tearing up Piccadilly or the narrowest parts of the A.5 once a year in rush hour.

As you will have seen, work has begun on the motorway scheme and you will see tomorrow how cities like Coventry are taking the lead in tackling the problem of urban congestion.

But no one can say that the work going on, while good in itself, is sufficient to meet the needs of the traffic of today and tomororw.

To show how far we have to go, consider the amazing fact that it would take only 15 minutes to drive at 44 m.p.h. over all the new trunk roads built between 1950 and 1956.

Compare this with the records of other European countries, many of whom suffered more in the war than Britain.

The Dutch, for instance, have built 400 miles of motorways and have a country one seventh our size, where land is even more valuable than it is in Britain. The West Germans are adding to their 1,200 mile network of motorways at the rate of more than 100 miles a year. Even impoverished France plans to build nearly 1,000 miles of motorways and Italy expects to exceed that figure by a further 100 miles.

The number of vehicles on our roads is increasing at a frightening pace—frightening, that is, when one thinks of the roads they have to travel on. In 1946 there were three million vehicles in Britain. In 1956 there were nearly seven million.

Yet while other nations cut sweeping highways from city to city, we tinker with ring roads. Small countries like Belgium build high-speed fly-overs ; we carefully drop another roundabout into a traffic stream.

We are an industrial nation depending for our prosperity upon the manufactured goods we produce and export. Our industries must be able to transport their products speedily to port and consumer.

Without adequate roads we are fighting our formidable competitors overseas virtually with one hand tied behind our back. We urgently need a reassessment of our economic priorities. We cannot afford to shelve road development once again.

This nation and its industries needs a really comprehensive network of fast, straight, multi-lane trunk roads between our towns, and fly-overs, underpasses and cloverleafs at congestion points in the cities.

If the money cannot be found for this, then I believe that we should accept toll roads on the American principle. The extra financial burden on the road user would be more than repaid by the advantages of swifter travel.

Roads such as the 400-mile, non-step, top speed Pennsylvania turnpike may be expensive to construct initially, but traffic jams are just as expensive. London's traffic congestion is estimated to cost the city something like £ 200 million a year. And our bill for road accidents last year was £ 169 million.

One final fact, it illustrates the appalling economic effects of congestion on our roads. The Government sponsored Road Research Laboratory has calculated that a fall of one mile per hour in the speed of traffic costs the Nation £ 90,000,00 per annum. I think this gives some idea of the appalling cost of the traffic jams and congestion which we see every day of our lives.

As one of the world's leading manufacturing and exporting Nations, we simply cannot afford to neglect our roads. Arterial thrombosis can kill Nations as well as people.

Mysore Tyre and Battery Dealers' Conference

Bangalore :—Common problems confronting such of those auto parts dealers whose lines of business include tyres and batteries were discussed to advantage at a special conference of dealers held under the auspices of the Mysore Automobile Parts and Allied Merchants' Association at the Madras Woodlands Hotel special pandal recently. Mr. G. K. Iyengar, President of the Association presided, and a large number of dealers attended.

At the outset the President welcomed those present for having responded to the invitation of the association. The meeting had for its consideration the following : Stressing importance on the limitation of minimum profits under price control ; feasibility of increasing percentage of profits on all tyres ; scope for widening price control to other territories in Mysore State, particularly Mysore and whether the net prices of tyres and tubes to consumers fixed at the last Dealers' conference was applicable between dealers also, when sales take place.

Initiating the discussion on the subjects Mr. Iyengar said :—

I have very great pleasure in welcoming you all on behalf of the Association to this conference and thank you all for having made it convenient to attend this function which, I dare say, is going to be pleasant. I also welcome Mr. M. Rajagopalan, Editor of *Motorindia* Magazine, our approved organ, who has come down all the way from Madras specially for this occasion.

You are all aware that we have had two Dealers' Conferences on 3rd December 1957 and 28th December 1957 and we came to the conclusion that we should adopt a price structure wherein the dealers in Tyres and Batteries would not lose but make some profit on the sale of these commodities to the consumers.

The price structure arrived at was confined to Bangalore only and it is very heartening to see that there has been full co-operation in achieving the objective and the price fixation has worked smoothly during the last few months after the adoption of the price structure.

All of a sudden, as a result of market conditions, while the demand continues unabated, there has been a short supply of tyres, particularly Truck tyres, giving advantage to the traders. We do not know whether this position would continue for long, and as we hear, the position might go back to normal shortly.

The object of holding this Conference is to review the price structure fixed up at the last conference and to receive new suggestions to be discussed at this Conference. It is also proposed in this Conference that we should extend the price structure that has been working satisfactorily in Bangalore to other parts of the State where there are dealers in Tyres and Batteries for their benefit also.

We had invited suggestions from dealers in Tyres and Batteries for consideration at this Conference and we have received some suggestions which will be put forth at this meeting.

The discussions in this Conference will, I hope, be of a very friendly nature and I hope also that we will be able to arrive at a uniform decision after due discussions and that this Conference will be a success that it deserves.

In the discussion that ensued, Mr. F. D. Ahmed of Messrs. Stanluc Services referred to the unhealthy competition that prevailed and appealed for healthy trade conditions being brought about. Mr. Ahmed added that fixing or prices by the association recently had helped achievement of certain results and the price fixation had given confidence to the buyers. He stressed the need for the small trader to exist and hoped that what the Association did would help him exist.

Messrs. Nanjappa, Paramasiv of Tumkur, Abnash Singh, Patel and others joined the discussion and suggested a fair policy of distribution by the tyre companies. Some members wanted the minimum profit to be increased from 2 to 4 percent. Some others felt that with the prospects of the Mysore Sales Tax being brought in line with Madras State tax, and with the steps being taken by tyre companies to increase production to overcome shortage, the increase of minimum profits may not only be not necessary but will also drive away business to the neighbouring States. They pleased caution and some more discussion with more business men from other parts of the State before any decision on minimum profits

The Safety Board of the Caltex Oil Refinery, Visakhapatnam is proudly viewed by some employees as the refinery completed 1,000,000 man hours of work without a lost time accident on July 22, 1958

increase could be taken. This was accepted and it was decided to get the views of dealers in other parts of the State as well, shortly.

Winding up the discussion Mr. P. V. Venkatasubba Rao, Secretary said :

While thanking you all for giving me an opportunity to speak on this occasion, not as Secretary of the Association but in my individual capacity, I wish to stress a few points to the esteemed members and non-members present here for their consideration.

Before going further, I should recall to your memory the day when we started this Association in the year 1955 and particularly when I was asked to preside at the first meeting on which occasion I gave out a few ideas of my own such as standardisation of prices and other standards that we have to set up in business so that we could all live together and let live our comrades in business under a good fellowship.

A situation arose when dealers found it very difficult to exist due to keen competition a few months ago and particularly competition in Tyres and Batteries. It pinched every trader, big or small, and the bigger trader was more hit than the smaller ones as he would not get adequate returns for his big cash investments. At this juncture, two Dealers' Conferences were held by the Association under the Presidentship of Mr. F. D. Ahmed to enable us to get over the situation. After many discussions we arrived at certain conclusions, thanks to the members and non-members present here, which have brought about a wholesome effect in our trade. I must express my deepest sense of gratitude to all those who joined together to arrive at a decision whereby we are able to get marginal profits.

Now things have changed and due to short supplies we are able to sell tyres and batteries at the maximum prices. We need not, however, be elated by this since this position may not exist for long. It is at this juncture that we have to win the confidence of the consumers not only now but for all time to come. It is only then that we would have achieved a standard. It is true that by coming together and having friendly discussions we did achieve certain results.

Driver Shekh Jumman receiving from Mr. B. P. Kale Partner of M/s Jaika Motors, Nagpur, a certificate of merit issued by the Telco Director in charge, in appreciation of having driven a Tata Benz vehicle for over 150,000 miles without involving the vehicle in any accident or repairs

We must try to live together, respect each other's business feelings and arrive at standards which alone would pay in the long run.

I request you all to kindly view the above points and not only come to a unanimous decision but keep it up for the betterment of the trade in general. Once we achieve this, it is my earnest desire to request you to bring up standardisation of holidays and working hours now prevailing in Bombay for which the Bombay Motor Merchants' Association is mainly responsible and is controlling the trade with a view to benefit the business community.

The meeting decided to form a conciliation board of three members to hear and settle inter-dealer disputes, if any should arise.

The members were then entertained to lunch.

The Editor of Motorindia, Mr. M. Rajagopalan, in conclusion thanked the Association and its members for having decided to make Motorindia as their approved organ and appealed to members and other dealers not to rest content with that decision but to utilise the columns of Motorindia to the fullest extent for the exchange of information with dealers in other parts of the country. He also referred to the growing number of feeder industries in the automobile field that are springing up in various areas particularly Delhi, Jullunder and other places and hoped that the increase in indigenous manufacture will gradually help relieve the problem now facing most of the parts dealers today.

Independence Day was celebrated on a grand scale by M/s. A. Basha, Radiator Specialists, Madras. There was a party also. Picture above shows the National Flag being unfurled at the entrance to the factory.

The Submarine Tanker

In at least three countries, the possibilities of submarine tankers are at present being studied. Mitsubishi Heavy Industries in Japan revealed early last year that their shipbuilding experts were working on a design study for a 30,000-ton atom-powered submarine oil tanker. In the United States, the Federal Maritime Board recently announced that it was initiating investigations into the feasibility of building underwater tankers. With three atomic submarines already brought into service by the U.S. Navy, and 16 more planned, it would be surprising indeed if the country's marine engineers were not seeking to apply their unique design and operational experience in this field to examine the potentialities of nuclear underwater craft for commercial purposes. In Britain, the Mitchell Engineering Group has been conducting since last summer a series of model tests in conjunction with Saunders-Roe Ltd., at the latter company's hydrodynamic research laboratory on the Isle of Wight, with the object of establishing the principal technical and economic preconditions for designing submarine cargo carriers for commercial use. Some of the results of these preliminary investigations have recently been disclosed. Though leaving a good many pertinent questions still unanswered, they nonetheless open up fascinating perspectives.

The outstanding attraction of taking a merchant ship beneath the waves of the oceans lies in the possibility of making it cruise very much faster on a given engine power than a surface ship of comparable carrying capacity—with the all-important proviso that the vessel is atom-powered. This speed advantage of nuclear under-water craft is the very opposite to the performance of a conventionally powered submarine, which can travel only at a much slower pace when submerged than when surfaced : for the latter depends for under-water propulsion solely in its electric batteries and motors which are far less powerful than the diesel engines which drive it when it is on the surface. The need for switching over from the diesels to batteries arises, of course, from the fact that all heat engines require a continuous supply of fresh air for the combustion of their fuel. On submersion, the diesels must therefore be stopped and their functions transferred to the batteries, whose appreciably smaller power results in reducing a submarine's speed from 15-20 knots at surface cruising to less than 10 knots under water. Another factor bearing adversely upon the under-water speed of a military submarine is its shape. Hydrodynamically this is far from ideal, since it is primarily determined by the operational necessities of adequately accommodating the vessel's armament and crew. Finally, the under-water endurance of a conventional submarine is limited by the necessity of the periodical recharging of its batteries by the diesel engines. For this purpose, the vessel must be brought either to the water surface, or to levels reasonably close below it for drawing air and discharge the diesel exhaust above the water through a "schnorkel" device.

* * *

Atomic propulsion of a submarine ensures both high and sustained power at under-water cruising for months on end. A nuclear reactor needs either air for generating energy, nor does it require refuelling for a year or two. So it can operate continuously with equal efficiency on the water's surface and below it for any required length of time. The U.S. Navy's first atomic submarine, the 3,000-ton *Nautilus*, covered on its initial nuclear fuel charge a total of some 62,000 miles, well over half of it fully submerged. The latest craft of this kind so far brought into operation, the U.S. submarine *Skate*, recently completed a 3,000-mile transatlantic trip, submerged all the way, in under 175 hours, averaging nearly 18 knots. The U.S. Navy's projected twin-screw atomic submarine *Triton* of about 5,500 tons displacement is designed for under-water speeds of up to 30 knots. While this about equals the top speeds of the largest of to-day's passenger liners, it surpasses the current 17½-knot maximum of the fastest supertankers by some 70 per cent.

For a submarine oil carrier, however, even a speed of 30 knots or so is apparently regarded as a fairly modest objective. Mitchell's and Saunders-Roe's marine engineers seem to be thinking rather in terms upwards of 50 knots. The reason why an under-water tanker could be made to cruise so much faster than a naval submarine is that it could be tailored much more closely to hydrodynamic rules, whereas in a naval craft these must be largely subordinated to the vessel's overriding function as an instrument of warfare. A submarine tanker could be truly streamlined, since its sole task is to serve as a giant self-propelled oil container. Its shape will somewhat resemble that of a torpedo, except that it would be finely tapered at both ends. Its travel in deep-sea waters would possibly be at depths of two or three hundred feet beneath the ocean surface where the vessel, secure from storms and waves, could cruise along with a minimum of resistance—just as the modern turbo-airliner flies high above the weather to escape the turbulent air streams near the earth's surface.

* * *

The findings of recent tow-tank studies at Saunders-Roe's laboratories, set out in the Mitchell group's magazine *Impulse*, indicate that there is no single optimum shape for all conditions. The most suitable form for any given under-water craft depends on the total depth of water available, as well as on the depth of the vessel's immersion, and the vessel's size, propeller efficiency and operational speed. For instance, above a speed of 58 knots in 300 feet of water the resistance falls off even below the values obtained in deeper water. Although the skin friction between hull and water is greater for a fully submerged than for a surface vessel, its hydrodynamic resistance per ton of displacement decreases as the size of the under-water craft increases.

All this obviously favours the concept of ultra-fast submarine oil carriers of supertanker dimensions, thus accentuating the general economies of scale in tanker building and operation.

Not the least important advantage of a submarine tanker is that it can be of appreciably lighter construction than a surface vessel of comparable carrying capacity. In a surface tanker of 80,000 tons, the hull alone absorbs nearly 20,000 tons of steel, and in a 30,000 tonner about 8,000 tons. Japanese estimates suggest that in submarine tankers the steel requirements for the hulls would be reduced by about 20 per cent. This saving in structural materials is due not only to the very much simpler shape of the streamlined body, but also to the absence of the mechanical stresses to which surface vessels are exposed by the heavy buffeting by gales and waves. Furthermore, the external water pressure bearing on the submarine's hull would be largely counter-balanced by the internal pressure of its oil cargo filling almost the whole of its shell, except for the spaces taken up by the power plant and the crew quarters.

Being atom-powered, a submarine tanker will, of course, require no bunker fuel tanks, which in a normal oil carrier may take up as much as 15 per cent of its total tonnage. Both for safety reasons and in view of the expectable difficulties of recruiting suitable civilian crews for prolonged under-water duties, it will undoubtedly be found desirable to run commercial submarines with a minimum of technical personnel. This will call for making the most of automatic devices for navigating the vessels and to control the operation of their nuclear power plants and auxiliaries. How soon and to what extent these objectives can be realized will decisively depend on the kind of atomic propulsion contemplated. On this most crucial point the planners have disclosed very little as yet. Though Mitchell's chairman recently intimated that his company had patented a new method of atomic ship's propulsion dispensing with the use of turbines, he offered no further clue to the basic features of this innovation ; he merely stated that it involved no new type of reactor, but only a new means of using atom power for turning ships' propellers.

* * *

So far, practical experience with full-scale nuclear power reactors is confined to two main types : the American pressurized water reactor and Britain's graphite-moderated gas-cooled Calder reactor. The former will probably power most of the U.S. Navy's atomic submarines, and it has also been chosen for the country's first experimental nuclear power station at Shippingport and for its first experimental nuclear surface ship, the projected 12,000—ton cargo-passenger liner *Savannah*. As this type involves the use of enriched uranium fuel, which is much more expensive than natural uranium, its operating costs are at present substantially above those of conventional power units ; it still seems an open question whether more advanced designs will prove fully competitive in purely commercial applications. The U.K.'s Calder reactor burning natural uranium fuel is already producing electricity at costs not very much higher than those of coal—or oil-fired stations ; it appears to offer the prospect of fairly rapid reductions in both capital and operating costs with further development. Though a good deal bulkier and heavier than the pressurized water reactor, the Calder reactor is regarded as affording considerable scope for modifications so as to make it also potentially suitable for use in large surface ships. This, however, does not imply that it would meet satisfactorily the very different requirements of nuclear under-water craft.

* * *

As already pointed out, the most compelling merit of a submarine tanker would lie in its unrivalled speed performance, due to its greatly reduced hydrodynamic resistance compared with that of a surface ship. Yet for developing speeds upwards of 50 knots it would still need several hundred thousand horsepower. Outputs of that order are well within the capacity of nuclear reactors, and they are indeed desirable in so far as the unit costs of atomic energy fall sharply with increased reactor output. (The most economical future atom stations may be those producing something like 500,000 kW., the equivalent of 670,000 h.p., from a single reactor). But it will clearly be a formidable job for the designers to squeeze such high-power reactors with their heavy anti-radiation shielding and the associated heat transmission and propulsion systems into the confined spaces of a highly streamlined submarine tanker.

Retail Selling Prices of Ordinary Grade Motor Gasoline on April 15th 1958 (*a*)

	Per Litre		Actual or equivalent in Pence per Imperial Gallon
London ...	...	...	50½
Paris ...	F. Frs. 92.30	...	83½
Brussels ...	B. Frs. 6.28	...	49
The Hague.	Fls. 0.451	...	46¼
Hamburg.	D.M. 0.62	...	57½
Rome ...	Lire 142	...	90
Zurich ...	S. Frs. 0.49	...	43½
Stockholm	S. Kr. 0.71	...	53½
Copenhagen.	D. Kr. 0.91	...	51¼
Madrid ...	Pts. 6.00	...	55½(*b*)
Lisbon ...	Esc. 4.50	...	61¼
Algiers	F. Frs. 46.30	...	42
Cape Town	...	...	34
Wellington	...	...	38
Rio de Janeiro.	Cruz. 5.98	...	20½(*c*)
Per Imperial Gallon			
Bombay ...	Rs. 2.95	...	53¼
Karachi ...	Rs. 2.13.0	...	50¾
Singapore.	$1.74	...	48¾
Melbourne	3*s* 8½*d.* (Aust).		35½
Toronto ...	$0.439	...	38½
Per U.S. Gallon			
New York	$0.316	...	32½
San Francisco.	$0.299	...	30¾

(*a*) According to latest information available ;

(*b*) At the official free market rate of Pts. 117.60 ; £ ;

(*c*) at the free market rate of Cruz. 318.50 ; £; the official rate is Cruz. 51.408; £ (Buying) and Cruz 52.696 ; £ (Selling).

In addition to the crucial problems surrounding the nuclear propulsion plant, there will be a host of others of equally bewildering novelty. Entirely new techniques may have to be evolved for controlling the ballasting and the buoyancy of such giant oil carriers during submersion and ascent ; for navigating them through the depths of the oceans ; for manoeuvring their huge bulks through the shallower coastal waters and approach channels to the land terminals, and, not least, for loading and discharging their cargoes. As the draught at very few ocean terminals is sufficient to permit the entry of such monster submarines under water, the vessels would either have to surface, or to load and unload out at sea while staying submerged. In the latter case, which seems to be regarded as the preferable procedure, special exist devices would have to be developed for changing crews.

The working out of economically acceptable solutions to this multitude of new problems will take many more years of special research and experimenting. It will also call for very substantial funds to sustain these efforts. Nonetheless, one may expect an increasing amount of thought to be given to the potentialities of atomic submarine tankers, with an eye not only on their commercial but also on the obvious strategic implications.

Fuel For The World's Ships

[This is a study of the organization and growth of the bunker oil trade in the post-war period. Though it is at present affected by the recession in the shipping industry, its sales have gone up by two-thirds in ten years. The main reasons are the growth of world trade, the change-over from coal to oil-firing, and the increase in average speeds. Progress will, doubtless be resumed, though possibly at a slower pace, when the present recession is past.]

The trade in bunker oils forms a considerably more important branch of the oil business than is sometimes supposed. With a turnover today of the order of 65 million tons a year (excluding naval requirements), this service accounts for more than one-tenth of the total oil consumption of the free world, and for about one-fifth of its consumption of black oils alone. Sales to shipping have gone up by about two-thirds since the war and are expected, when the present recession is over, to continue their advance, though probably at a slower pace.

Shipping companies have for many years taken for granted the reliability of the bunkering service along the main trading routes, just as motorists in western countries expect to find gasoline available wherever they go. But much central and local organization is needed to ensure the smooth working of the business. The oil companies who provide an international bunkering service must make a substantial additional capital investment at bunkering points in the provision of large stocks of oil and the tanks to contain them, boiler houses, pipelines, pumps (able to deliver perhaps 1,500 tons an hour) and other ancillary equipment, possibly including coastal lighters and barges. Altogether there are well over 250 ports at which ocean-going ships can obtain bunker oils. Many of the largest are at or near refineries—*e.g.*, Curacao, Aruba, Aden and London. Other stations such as Las Palmas and Dakar must be kept supplied from refineries further afield. At these two ports extensive bunker deliveries are made owing to their advantageous location on major trade routes and their geographical proximity to the Caribbean.

Like the rest of the oil business, the bunker trade is keenly competitive and all the familiar international names—Shell, B.P., Esso, Caltex and Mobil—are encountered in this branch. The bunker trade generally is conducted on an annual contract basis, though not necessarily with the same oil company an all ports at which the shipowner requires supplies. Payments are usually made by the shipping concern's head office to the oil supplier's head office. A large proportion of the world's bunker trade outside North America is done in sterling.

The prices charged vary in the light of current market conditions, the main indices being the posted prices in the U.S. Gulf/Caribbean and Middle East markets and the level of tanker freight rates. How the current prices for the two principal bunker oils differ as between some of the main sterling-prices ports is shown in the table :

BUNKER OIL SPOT PRICES,
APRIL 1958

(Shillings and Pence per Long Ton)

	Marine Fuel Oil	Marine Diesel Oil
U.K./Western Europe.	167. 6	235. 0
Las Palmas	155. 6	222. 6
Durban	172. 0	250. 0
Aden	148. 6	226. 6
Singapore	152. 0	234. 0
Fremantle	182. 6	259. 6

Since the end of 1945 the price of marine fuel oil has risen by two-thirds, from about 100s. to 671s. 6d. a ton, at West European ports, while that of marine diesel oils has roughly doubled, from about 120s. to 235s. a ton. The difference reflects the disproportionate increase in demand for distillate fuels for heating purposes as well as for automotive, railway and other uses.

Since 1947, bunker fuel oil sales in the free world have risen by 60 per cent, to just over 57 million tons in 1956, the latest year for which comprehensive figures are available those of gas/diesel oils have advanced by 110 per cent to nearly 15 million tons. The annual figures are given in the table :

ESTIMATED FREE WORLD BUNKER SALES

(Million Metric Tons)

	Gas/Diesel Oil	Fuel Oil	Total
1947 ...	7	36	43
1948 ...	8	36	44
1949 ...	9	38	47
1950 ...	10	41	51
1951 ...	11	46	57
1952 ...	12	47	59
1953 ...	12	48	60
1954 ...	12	49	61
1955 ...	13	53	66
1956 ...	15	57	72

It is not possible to give a detailed geographical analysis of these figures. However, it may be roughly estimated that about 30 per cent of total free world bunker oil deliveries in 1956 were effected in the U.S.A. which, of course, has a high degree of dependence on coastwise shipping. The countries of north-west Europe, including the U.K., accounted for a further 16 per cent, and the Caribbean and the Middle East for about 12 per cent each. The next most important zones, with about 7 per cent of the world trade each, were the Mediterranean, and E. and S. Asia, including Indonesia and Japan.

The growth of bunker oil sales in the post-war period is the result of a complex of factors which do not all work in the same direction. One of the basic influences is obviously the expansion of world trade. According to United Nations statistics, the total tonnage of goods entering into international sea-borne trade rose from 490 million metric tons in 1937 (the pre-war peak) to 550 million in 1950 and to 920 million in 1956 ; and the 1957 figure, when available, may not be far short of 1,000 million tons. The trade in dry cargoes increased by 63 per cent between 1950 and 1956, and that in mineral oil by 78 per cent, as the following table shows.

GOODS LOADED IN EXTERNAL TRADE

(Million Metric Tons)

	Ocean Shipping: Tankers	Ocean Shipping: Dry Cargo	Great Lakes	World Total*	1950 = 100
1929 ...	65	390	16	470	85
1937 ...	105	375	14	490	89
1950 ...	225	300	26	550	100
1951 ...	255	360	28	640	116
1952 ...	285	350	28	660	120
1953 ...	295	365	27	690	125
1954 ...	320	400	22	740	135
1955 ...	360	450	28	840	153
1956 ...	400	490	32	920	167

Source : United Nations.

* Rounded figures.

However, the tonnage of goods traded is not the only determinant of the demand for shipping tonnage and therefore for bunker fuels. Account must also be taken of the average length of haul, and of the fact that ships may not be fully loaded. A study made by the United Nations in 1956 showed that the average length of haul had risen for tankers from 2,680 nautical miles in 1937 to 3,050 miles in 1954 (*i.e.*, *by* 14 per cent), and for dry cargo from 3,230 to 3,330 miles (3 per cent). As far as the tonnage of shipping required is concerned, the effect of this modest increase in the average length of haul must have been more than offset by the rise in the average speed of both tankers and dry cargo vessels—reinforced in some cases perhaps by speedier turn-rounds due to better handling equipment, improved organization, etc. At all events, the increase in world shipping tonnage since 1950 (30 per cent) has been much less than the growth of world trade over the same period (67 per cent). And a similar disparity is evident if the latest figures are compared with those for pre-war.

* * *

The growth of bunker oil sales (41 per cent since 1950) has outstripped the expansion of world shipping because more and more shipowners prefer oil to coal. The reasons are well known : ease and speed of handling ; saving of weight and of bunker space ; economy of stokers ; cleanliness ; and improved efficiency in use. But the switch from coal to oil is a process which obviously cannot continue indefinitely ; indeed, it is already approaching its natural limit. The proportion of the world's merchant shipping using oil—no more than 3 per cent in 1914—rose to 55 per cent in 1939, 77½ per cent in 1948 (largely because almost all the war-built American tonnage was oil fuelled) and to no less than 92 per cent today. In tonnage terms, the world's oil burning vessels now aggregate 102 million gross tons, against 62 million in 1948 and 37 million in 1939. Today, coal bunkers are used virtually only by old or small vessels.

* * *

Within the oil-burning category, however, the fuel requirement will differ very considerably according to the method of propulsion. A turbine vessel will consume roughly two-thirds more oil than a motor ship of similar size and speed. And since the tonnage of motor ships has, for well-known reasons, gone up by 138 per cent since the war, whereas that of oil-burning steam ships had advanced by no more than 35 per cent, it is evident that the growth of total bunker oil requirements has been influenced by this factor. As the table shows, motor ships now account for about two-fifths of the world's oil-burning tonnage, as against little more than one-quarter immediately after the war. There appears to be considerable scope for further advance along the same lines, even though there are definite limits to the economic size of the diesel-driven vessel.

WORLD SHIPPING TONNAGE

(*Million Gross Tons*)

Years	Coal Fired	Oil Fired: Steam	Oil Fired: Motor	Oil Fired: Total	Total all ships	Of which Tankers	Percentage: Coal Fired	Percentage: Oil Fired
1914	43.9	1.3	0.2	1.5	45.4	1.5	96.6	3.4
1939	31.0	20.6	16.9	37.5	68.5	11.6	45.3	54.7
1948	18.1	45.0	17.2	62.2	80.3	15.6	22.5	77.5
1949	17.4	45.8	19.4	65.2	82.6	16.1	21.1	78.9
1950	16.2	47.3	21.0	68.3	84.6	17.2	19.2	80.8
1951	14.7	49.2	23.4	72.6	87.2	18.5	16.8	83.2
1952	13.6	50.5	26.2	76.6	90.2	20.0	15.0	85.0
1953	12.1	52.1	29.1	81.2	93.4	22.0	13.0	87.0
1954	11.1	54.4	31.9	86.3	97.4	24.6	11.4	88.6
1955	9.8	56.2	34.5	90.7	100.6	26.5	9.8	90.2
1956	9.1	58.4	37.7	96.1	105.2	28.2	8.6	91.4
1957	8.5	60.8	41.0	101.7	110.2	29.9	7.8	92.2

Source : Lloyd's Register of Shipping.

Figures include vessels in the U.S. reserve fleet—nearly 14 million gross tons at end of 1957.

A few examples of the fuel consumption of typical oil-consuming vessels may be of interest here. Taking diesel-driven tankers by way of example, the oil requirement will vary from about 13 tons a day for a small 12,000-ton d.w. ship averaging 12 knots to 48 tons a day for a 32,000-tonner doing 15 knots. For turbine-driven vessels the consumption will vary from 45 tons a day for an 18,000-tonner with a speed of 15 knots to 80 tons a day for a 33,000-tonner of the same speed. Thus, for a round trip from the Persian Gulf to London or Rotterdam and back, the fuel consumption of a motor tanker of 18,000-tons d.w. will be about 1,000 tons, compared with about 1,660 tons for a similar-sized steamship ; and for tankers in the 32,000-ton class the corresponding figures are roughly 1,800 and 3,000 tons.

The owner of a motor vessel thus has a substantial saving in fuel costs to set against his higher capital and maintenance charges. The saving is greater if the motor vessel consumes fuel oil in its diesel engines : although the vessel must then be equipped with heating coils in its fuel tanks and with a double centrifuge purifying system, fuel oil is substantially cheaper than diesel oil. It is not surprising, therefore, that more and more motor ships are being equipped to use fuel oil. For example, one oil company whose total bunker deliveries to motor ships were over 50 per cent higher in 1956 than in 1950 has stated that the increase was mainly in fuel oil used in diesel engines.

If the relatively more rapid growth in diesel-engined vessels reduces the consumption of bunker oil, the call for higher speeds has the opposite effect. For, the engine power requirement varies, roughly as the cube of the speed. Thus, to double the speed requires eight times the engine power, and therefore eight times the fuel consumption per day—or four times as much for a given distance. There has, in fact, been a marked tendency for owners to call for higher speeds, which reduce the capital charges per ton of cargo carried. And this tendency must have had a significant effect on the demand for bunker fuels in recent years.

The growth of bunker oil sales has, of course, been retarded by the recession in the shipping industry which began in mid-1957, though no recent statistics are available. It is possible, however, to exaggerate the extent of that recession. (Apart from the 14 million gross tons in the U.S. reserve fleet, about 5 to 6 million gross tons of shipping are now laid up in the world's ports—say, 6 per cent of the active tonnage. But this is equivalent to no more than one year's net addition to the merchant fleets). To some extent, of course, the effect is cumulative : a slackening of world trade and of shipping movements means a lower consumption of bunker fuels ; unless this is offset by increased consumption in some other sector, it will reduce the demand for tankers and so react further on the consumption of bunker fuels. On the other hand, ships' liner services are generally maintained, even though the tonnage of cargo they carry falls off.

The slackening of bunker oil sales is doubtless a temporary phenomenon. As the process of industrialization is extended to more and more countries, the commerce of the world will benefit ; for the industrialized countries are now responsible for about two-thirds of world-trade. On the other hand, the change-over from coal-to oil-firing has long passed its peak. For the sufficient reason that there are comparatively few coal-burning ships left to replace, the bunker oil trade cannot now hope to make important gains from large-scale conversions, though it will continue to benefit from the expansion of world trade..

Viscount's Record-Breaking Career

THE INDIAN AIRLINES HAVE INTRODUCED

AN AIRCRAFT OF PEDIGREE

(By Derek Harvey, Britain's first pilot to test jet aircraft.)

Since the Vickers Viscounts entered general service early in 1953, they have been breaking records for passenger attraction, economy, speed and profit all over the world. They have flown almost a million airline hours—and experience has no substitute.

But their history of record breaking dates back even further—to July 1948 when the original prototype Viscount 630, the world's first turboprop airliner, took off on its maiden flight from the Vickers airfield at Wisley in the English County of Surrey carrying 32 passengers at a cruising speed of 275 m.p.h. It was a smaller, lighter and less powerful edition of present-day Viscounts, but it gave passengers a foretaste of a new standard of travel when in 1950 it was used by British European Airways Corporation between London and Paris to operate the first-ever scheduled service by a turbine-powered aircraft.

Individual Style for Every Airline

The first production machine, of which more than 200 are now in service, was the Series 700. The latest variants of this series, powered by four Rolls-Royce Dart Propeller Turbines, of 1,740 h.p. each, cruise at 325 miles p.h. with 40 to 53 passengers, depending on the particular accommodation layout, which varies according to the requirements of each airline. In fact, there is no such thing as a standard Viscount ; every airline has its own individual version, custom-built for it right down to the layout of the pilots' instrument panel and the colour of the carpets.

The Viscount 700 was the first British airliner ever to break into the fiercely contested American domestic market in a big way. According to officially published figures it is currently the cheapest modern airliner, in terms of operating cost, in regular operation in the whole North American continent ; such has been its success that there are actually more Viscounts operating in the United States of America and Canada than in the whole of Europe itself.

Later Versions

For high-density operations on inter-city flights there is the Series 800 with a longer fuselage, using the same engines as its smaller sister, but seating up to 70 passengers. An easily recognisable feature is the use of rectangular doors in place of the oval shape used on the V-700 ; the main opening measures no less than 5 feet high by 4 feet wide, to simplify the loading of bulky freight. Deliveries of this type are now in progress to airlines such as the Indian Airlines, B.F.A. and K.L.M., Royal Dutch Airlines, the latter "Buying British" for the first time in their history.

Still further development has led to the latest addition to the Viscount family, the Series 810/840 or Super-Viscount, which is externally similar to the V. 800 but has a strengthened structure for operation at greater weight and higher speeds. The first of the 365 m.p.h., V. 810s will come into service with Continental Airlines of Denver, Colorado, in the mid-summer of 1958, followed by deliveries to South Africa, Germany, Pakistan and Brazil. Installation of the more powerful Dart turbines which will become available in 1959, will convert the V.810s to V.840s, raising their cruising speed to over 400 m.p.h.

Repeat Orders

Meanwhile, as the order book nears the 400 mark, production of the Series 700 continues, for out of the first 18 Viscount operators, 12 have already placed repeat orders—striking proof of this plane's economy. Clearly, airlines do not re-order an aircraft unless they are very satisfied with its engineering and economic performance, under the hard slogging conditions of competitive service.

The Viscount story is a classic one of continued development. The practical "know-how" gained from this, and from the daily routine of Viscounts in Europe, Australia, the Middle East, the United States, Canada, the Far East and South America, has made the Viscount by far the most "experienced" aircraft of its class in the world.

INDIA AND THEIR Prices

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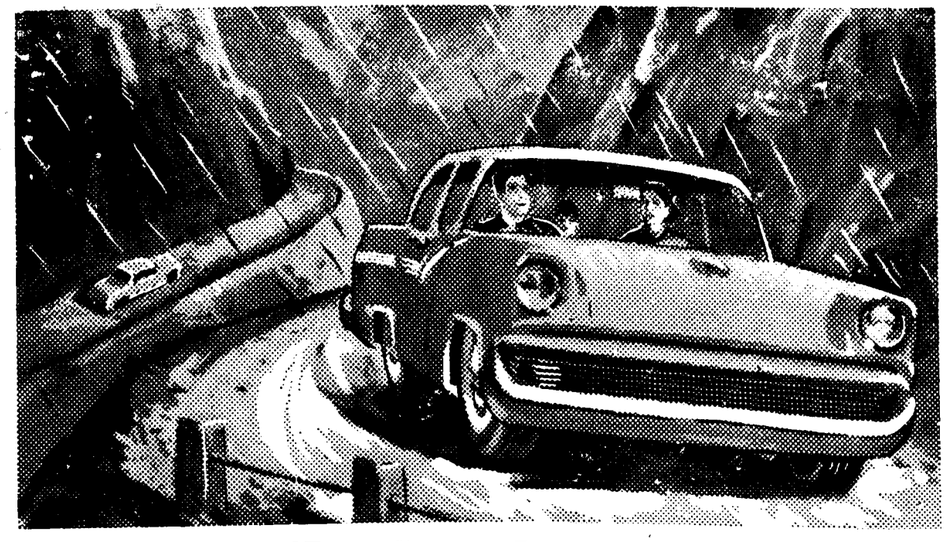

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TUBELESS OR WITH TUBE

THE TYRE WITH BUILT-IN PEACE OF MIND

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