

Rough roads, smooth roads.... dry roads, wet roads.... all try- ing to wear out your tyres!

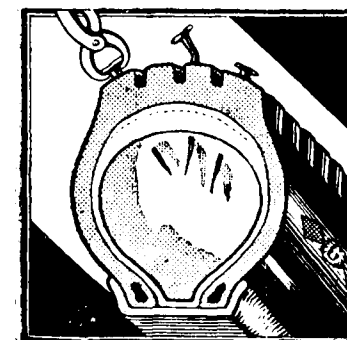
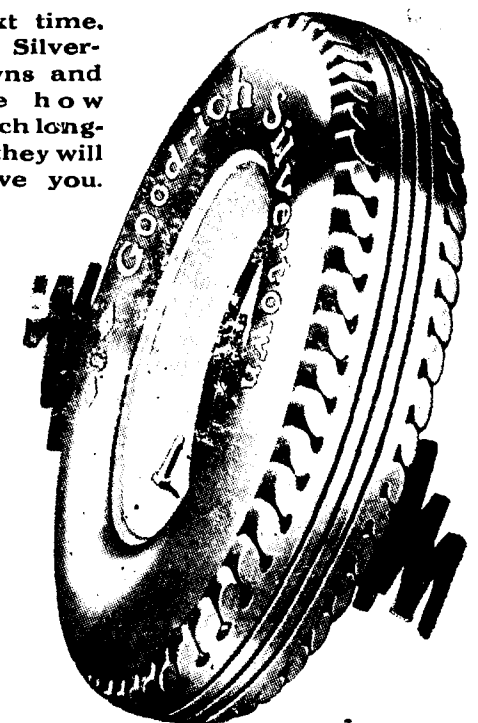


Over difficult country—rough roads, loose surface—Goodrich Silvertowns are the tyres that last! Car owners in localities where the going is bad have proved that Goodrich Silvertowns are more reliable, safer, too.

HOW do YOUR tyres stand up to their job? Are they giving you a fair return for the money you paid for them?

Goodrich Silvertowns are made to last. Long life is built into every thread... pure rubber is reinforced till it is more resilient than steel. Even the design of the tread makes for long life—see how the Goodrich engineers have placed the heaviest rubber alongside the edge of the tyre, just where the load bears down—how the grooves in the centre prevent spreading and give elasticity.

Next time, fit Silvertowns and see how much longer they will serve you.



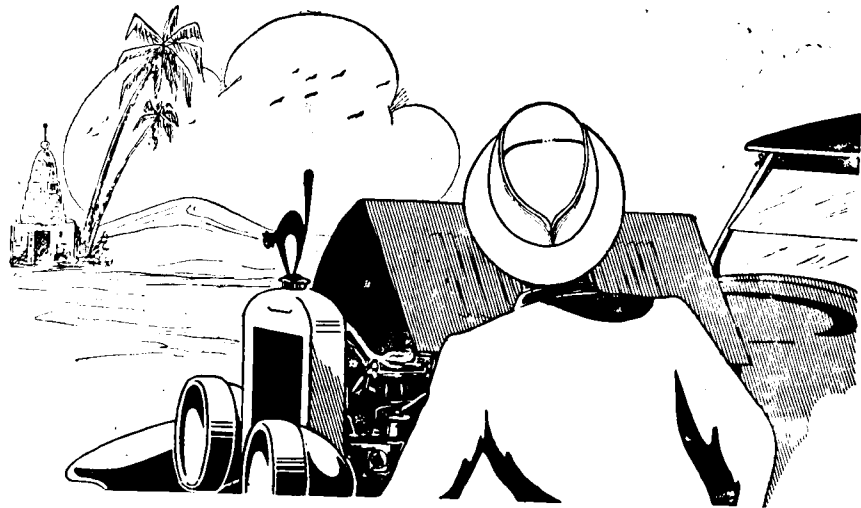
The Goodrich Air Container

Supplanting the old fashioned inner tube, the Goodrich Air Container is made from highly compressed rubber. If a nail, tack, screw etc. pierce it the tyre does not deflate, and even after the nail is removed you can still drive on. No danger of slow leaks!

Goodrich... Silvertowns



Made in U.S.A.



Engine Trouble?



OBTAINABLE
EVERYWHERE
AT THE SAME
PRICE AS
ORDINARY
MOTOR OILS.

WAKEFIELD
CASTROL
MOTOR OIL

C. C. WAKEFIELD & CO., LIMITED,
BOMBAY, CALCUTTA, KARACHI, DELHI, MADRAS, RANGOON, ETC.

Faulty lubrication often leaves the unwary motorist stranded on the road miles from the nearest garage. With CASTROL, however, you need not fear a break-down of this nature. A good engine deserves CASTROL, a poor one needs it.

Improved performance, eager, effortless speed which eats up the miles: no over-heating, no engine failure—you will notice all this when you change to CASTROL. You expect the best from your engine, your engine expects the best from you.

303

THE
SOUTH INDIA
Motor Owner

A MONTHLY JOURNAL DEVOTED
TO THE INTERESTS OF THE SOUTH
INDIA MOTOR VEHICLE OWNER.

Official Organ of the Automobile Association of Southern India

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EDITORIAL

Character and the Car.

IF we are to believe implicitly every written word of the writers of advertisements, cars and cameras, cabbages and carpets have a certain indefinable something which, conditional upon their being of specified make, raises them above the common level of such things. Day by day, week in and week out, peering at us from every hoarding, thrust remorselessly into the vitals of our story magazines and peeping at us from the sport or financial pages there is some advertisement or other urging us to consider the claims of So-and-So's product—'This and That of Character.'

All of us admire character in our fellow men, we learn to appreciate its presence in a dog or a horse, in art or artistry, but few of us have ever paused to consider the desirability of character in a car much as the writers of advertising have tried to educate us to an appreciation of its advantages when embodied in the vehicles we drive. In fact, it would seem that character in a car is not particularly wanted by the average car owner, as witness the majority of vehicles in daily use. Or is it that character goes unrecognised?

A subtle something, which is so elusive as to defy definition, seems to be embodied in those cars which every motorist will unhesitatingly pronounce as possessing character; and yet try as we will it is impossible to point to any one characteristic as that which is responsible. Undoubtedly one trait alone cannot produce the desired result, neither can the same brains and the same factory definitely guarantee to produce a range of cars with character. One type of car has it: another type with almost identical bodywork, with but a slightly different power unit, has no vestige of it—in other words this attribute is not necessarily capable of appearing to order, but rather eludes capture the more designers seek to attain it. It cannot be achieved by more ex-

penditure even as by costliness of colour alone a picture cannot possess distinction. Some of the cheapest cars on the market in the past, as well as in the present, have had and have character, yet there are some of the dearest and most lavishly expensive cars which display not the least hint of it. Many excellent cars lack it utterly, yet they will serve their owners faultlessly and faithfully for year after year. Worthy cars, excellent examples of automotive engineering—yet they are but "worthy"!

By contrast, there is the wholly distinctive car which has an attraction which one instinctively recognises as an essential peculiarity and charm arising out of a number of attributes; a quality which is not any one trait, but is the total of many functions harmoniously blended to one definite purpose. Not by engine tick-over alone is this character acquired; not by excellence of exterior appearance or by luxuriousness of interior appointments; but immediately the car is required to do that which it has been designed and built to do, then is the full force of its character brought to the notice of the driver, occupant or beholder.

You may go over the details of the engine, and of the other components of the chassis, one after another, and if you are sufficiently experienced be able to match the achievement by recalling another maker's power unit that is as easy to control, yet another's brakes that are light, smooth and potent of application, a fourth builder's suspension that is as luxurious, and so on. Yet it may be that not one of the several vehicles to which you turn for comparison of this detail or of that has character. It would seem, therefore, that part of the secret is the exhibition of that exact concinnity and evenness of excellences that makes the given machine wholly individual. In this happy blending no quality need in itself be expensive or exclusive.

Thus not the least welcome discovery is that, often the most expensive car on a manufacturer's list will lack character and the least costly will have it in abundance. Renowned examples will occur to any experienced motorist. The consummation is not dependent on size, horse-power nor cost, though a large proportion of the most expensive constructions have at least a trace of character because those who produce them employ designers who have made their mark.

Massac Buist has said that you can tell that a car has character the instant you let in the clutch and make the first motion of the steering wheel to direct its course, and you will be increasingly enchanted right up to the moment you end the experience by applying the brakes.

Character in a car is a hundred and one things more than these. A carriage having this quality never tires you to drive. You end each day's tour reluctant to give over, even for a night. Experience extending over years makes you admire more and this happy display of the secrets of design and production which

have combined thus to enliven a car. For the plain fact is that one possessing one hundred per cent of character would be a machine perfect at the date of its building. There are in the cheapest categories vehicles that possess seventy per cent of character; in the costliest, perhaps none has as much as eighty per cent.

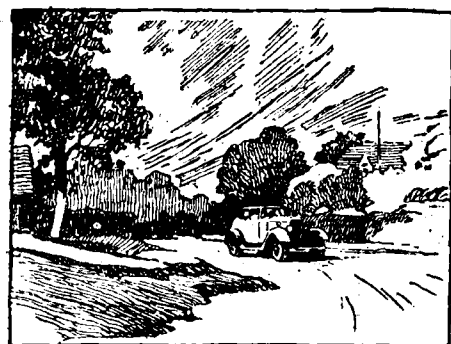
Experienced motorists affirm that many cars which are first put on the road lacking even the ghost of character acquire it slowly and surely as the miles go by—a direct result of careful, sympathetic handling. It is almost as if the character of the driver has the power to transform the commonplace car into a car with character; a reversing of that process by which the poor driver changes his car from a thing of beauty into a mere vehicle.

This is a regrettable conclusion, but as with men so it is with cars: exterior influence can make or mar character. There are cars daily offending the eye and ear of every motorist, which had they been in the hands of careful drivers could have been parked proudly by the side of even the aristocrats of the *Concourse d'Elegance*.

General Motors' Personnel.



Indians who are making good in a new industry. The photograph shows the staff of General Motors India Limited, at Sewri Bombay.



DO YOU REVERSE?

THE NOVICE, AND EVEN THE DRIVER OF EXPERIENCE, IS NOT ALWAYS HAPPY IN MOVING BACKWARDS. HERE ARE A FEW HINTS ON THE SUBJECT

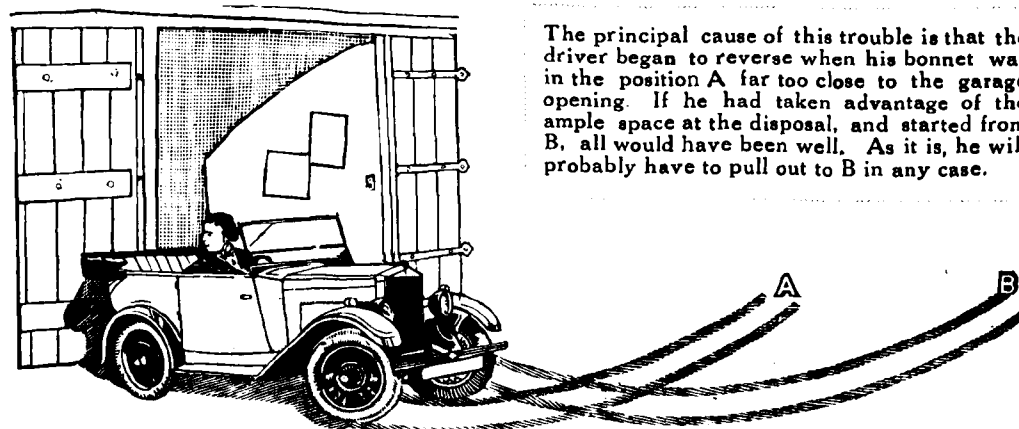
SOME drivers there are to whom reversing is and always has been something of a nightmare, and these individuals are by no means always members of the "awkward squad" where ordinary or even tricky work on the forward gears is called for. Others—probably the great majority of drivers—admit feeling distinctly at sea when reversing has to be done; even after some years at the wheel they somehow cannot "get the hang of it." What general principles, then, can be laid down for the guidance of all who lack confidence?

Reversophobia.

Some years ago the present writer hit upon a rather curious method of overcoming "reversophobia" (if there be such a malady!) in a novice, that worked well and has worked well several times since. His patience with the pupil being all but exhausted, and the wings of the car and garage gateposts showing signs of the fray, he tried taking to the water for awhile. What the pupil for some reason or other could not grasp was that every time the steering wheel is turned while reversing, the following or bonnet end of the car makes a sudden swing outwards, whereas the leading or back axle end seems to keep on relatively straight for some little distance.

A Boat Analogy.

Now in steering a boat of any kind this is the normal state of affairs. A little practice, therefore, at the tiller of a dinghy fitted with an out-board motor (but almost any river craft would do) worked wonders with this pupil. He soon understood that on putting the tiller over the first thing that happens seconds, almost, before the course of the boat seems to have altered appreciably—is that the stern swings out.



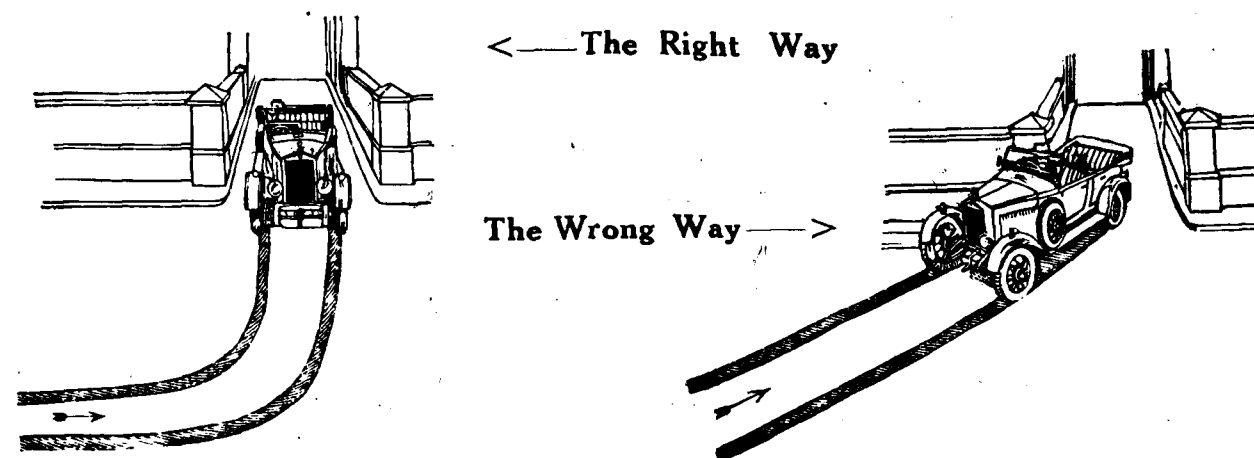
The principal cause of this trouble is that the driver began to reverse when his bonnet was in the position A far too close to the garage opening. If he had taken advantage of the ample space at the disposal, and started from B, all would have been well. As it is, he will probably have to pull out to B in any case.

Of course something rather similar happens when steering a car in an ordinary forwards direction—the back wheels cut in on the front wheels. But even the novice is rarely troubled much over this: he soon gets to understand that if he turns on a sharp lock without having at least a clear foot between his front wheel and the kerb or gatepost on the same side, there will be trouble. What he fails to appreciate is the suddenness of the sideways lurch each time the steering wheel is moved when reversing, so that it does not do for him to say to himself "that's the leading end of the car clear—the other end is bound to follow." Both ends must be watched unless running dead straight.

Shirking.

It is perhaps, logical enough for the driver who dreads reversing and is lacking in confidence to try to do as little reversing as possible. But it is in this very desire to avoid driving the car an inch farther on reverse than may be absolutely necessary that many a driver gets himself into a tight corner. Again and again in the road or garage one sees a bad mess made of an ordinary reverse in, simply because the driver tries to get in on too short a reverse, and does not make use of the ample space at his disposal.

Far better, if the space is there (as it usually is) to stop well over at the far side of the roadway and then come back the extra few yards or so—no urgent



In the right-hand picture the driver has begun to turn in too soon, a common fault with beginners. On the left he has not turned his wheels until the back of the car was almost level with the gate post, and consequently has turned in quite easily.

full locks will have to be made and the latter half of the reverse will be in a straight line. But he who hopes to save time or avoid trouble by stopping somewhere just outside the garage door makes a great mistake, for any slight error of judgment in the lie of the car when stopped will mean a difficult reverse, if not having to go over to the far side of the approach anyway and start again.

The aim, in reversing into a narrow passageway or similar place, should be to get into the straight line required at the earliest possible moment and then go straight in, looking along the side of the car pretty much as one aims a gun. Out in the yard or street there is plenty of space in which to swing the front wheels about—in the immediate neighbourhood of the gateposts or other obstacle there is precious little. As a rule it is possible to satisfy oneself that there is width enough and then to steer by the off-side of the car only, but, of course, nothing must be taken for granted. Occasionally one has to steer by the near-side, which is awkward, but by no means impossible if the driver's frame is long enough to enable him to keep his feet on the pedals while looking out on the other side; but for such as are physically incapable of such acrobatics, the services of an observer become necessary.

In reversing, above all things in motoring, the old adage about haste and speed applies. As we have seen, it pays to take a few extra yards if they are

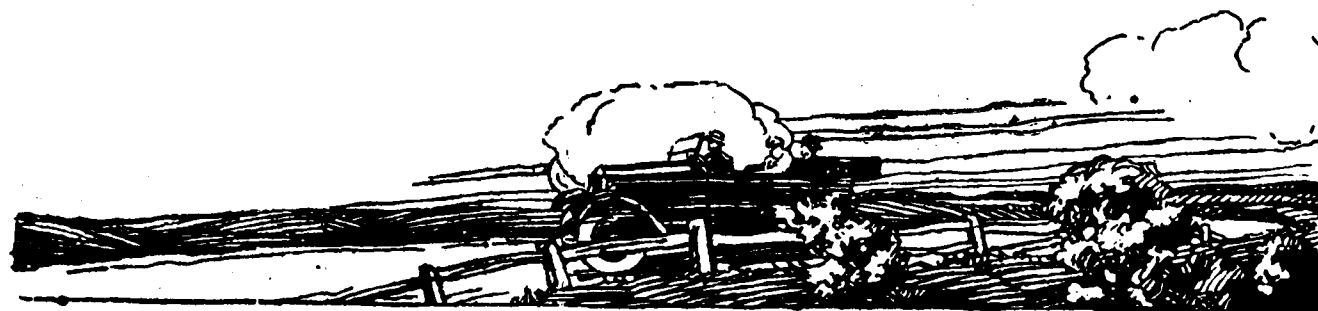
to be had; the difference is one of seconds only, whereas once the car is awkwardly placed, many minutes will be wasted in extricating it, to the accompaniment of aching wrists and a twisted neck. Similarly with speed. The time saved by reversing at anything more than a gentle walking pace is negligible, but the penalties for any slight error of judgment are out of all proportion in their severity.

"When in doubt get out and have a look" is a good motto when reversing, and this applies especially at night. Buckets and petrol cans and similar oddments lurk about the floor of the garage, and ditches or open drains occasionally trap the unwary.

Back First.

In general, it is considered better practice to back off the road into the garage or private yard, as there may be no room to turn round inside, and it is obviously preferable to come on to the road travelling forwards. As a rule, too, this practice ensures that such little daylight as is offered in the strange garage will be available for the bonnet end of the car, where it is most useful. This general rule is, however, subject to some modification in special circumstances, as in entering a strange place on a dark night.

Incidentally, when reversing, leave the driving mirror severely alone—to rely on it is both useless and dangerous.



From an Owner Driver's Note Book



by
"SPOTLIGHT."

Look to your Plugs.

VERY few people appreciate the fact that much difficult starting and irregular running is due to the want of adjustment of the sparking plug point gaps. You can buy quite cheaply a proper feeler gauge of the correct thickness for your installation and it should be remembered that the correct gap for a coil ignition set is wider than that when a magneto is responsible for the little blue sparks. Plug points gradually burn away and an almost infinitesimal adjustment will make all the difference: it is for this reason that a pukka feeler gauge should be used rather than the slip-shop method with an old knife blade or a visiting card.

And yet if you really want to do your car a good turn it is an excellent plan to buy a complete new set of plugs. Extravagant, perhaps, but oh, what a difference! Try it.

The New Crime Wave.

There is an amusing letter in the latest issue of "The Motor". Apparently the writer has just lately become a car owner and he finds as a consequence that policemen who were once his friends now eye him with hopefully suspicious expressions upon their stolid countenances. However, here's the letter.

"I have recently purchased a motorcar and I find that in consequence I appear to have joined what appears to be a select company of criminals.

I was hurried from Trafalgar Square, one evening recently by a young constable because I had

occasion to draw into the side of the road as close to the footpath as possible and wait for exactly three minutes.

I was subjected to certain supposedly humorous remarks and threats of dire consequences unless I "got a move on quickly" and "got off out of it." I was asked if I had done this and that, informed I was a liar and that the constable "wouldn't argue with people like me"!

Needless to add I did move on as quickly as was possible in case I should be placed in chains and dragged to the Tower of London.

Prior to my becoming a car owner I had thought I was a law-abiding citizen and that the Police Force existed and was partly supported by me to protect my interests. I now find, however, I have joined that company of criminals which includes Charles Peace, Crippen, Landru, the Hatry group and similar persons who have or are enjoying the protection and consideration of our Police Force."

Howlers.

The following answers received from members of a class at a local School of Motoring, in reply to a paper set by the instructor, are interesting:—

Question.—Explain briefly how the engine works, describing the process of the Otto cycle.

Answer No. 1.—The engine works internally through the petrol being forced through the cylinder which causes a spark thereby causing the piston to work.



"HOPEFULLY SUSPICIOUS."

Answer No. 2.—The works of an engine is started running from the fan wheel driven by the belt on to the Otto wheel which is connected to the main crankshaft which is fitted with different size cog wheels which are connected up to the camshaft by changing the gears.

I have brought the spelling into line with the more usual form, but otherwise the answers are as originally written. Frankly, I am of the opinion that the student who perpetrated answer number two passes my bungalow every morning, because when this driver changes up from second to top it certainly sounds as if he were doing terrible things with his engine's internals.

Lining up.

A little test that should be carried out periodically is that for wheel alignment. This can be done pretty well in one's own garage by jacking up both front wheels and using a piece of string, though it is of course best when testing to make use of a proper tracking tool. Besides leading to poor steering, both wrong tyre pressures and faulty alignment also result in unduly rapid wear of the tyres. If they are given a fair chance one can look for twelve thousand miles or more from the best modern tyres, but ill-treatment of the kind mentioned may reduce their service life to half this amount. I have seen a pair of tyres worn out in 1500 miles, owing to the wheels of the car being out of alignment as a result of drawing up to the kerb carelessly.

About the Steering Gear.

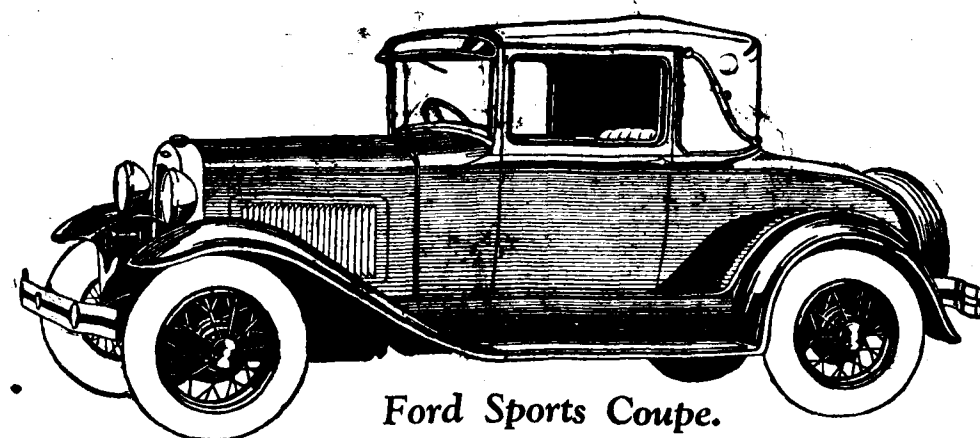
It is quite surprising sometimes when you change places with a friend at the wheel of his own car to discover that terribly faulty steering some people can put up with. By this I mean steering gear that has been rendered faulty through sheer neglect of one or two elementary precautions. When driving in another fellow's car some days ago I found that one had to be exerting an almost continual pull

on the wheel with the right hand in order to keep it from running down into the gutter. When I asked if it was always like that he replied that some days it seemed to pull one way a bit, and some days another; but it didn't seem to worry him very much. I suggested it might be worth while to try the pressure of the front tyres with the gauge. He hadn't got one. We returned via my bungalow, where there most emphatically is a gauge, and tested the tyres. The off-side wheel showed 27 lb. to the square inch, the nearside 22 lb. As his usual method was to "test" the pressure simply by kicking the tyres, one gathered that it was a mere chance if he ever went forth with both front ones equally inflated. No wonder, then, that the steering was a bit queer. Not only does it pay hands down to equalise most carefully the pressure of the front tyres but it is also a good tip to experiment a little with pressures within reasonable limits. On my own Morris, for example, I find that 27 lb. to the square inch is definitely the best pressure for the front tyres.

Deafness a Handicap.

A part from the fact that good hearing is almost essential from a safety view point, there is still more value in a good pair of ears to the motorist. The more thought one gives to the matter the more one is inclined to consider deafness a very serious handicap to a driver. Speaking for myself, I drive to an enormous extent by ear. Consciously or unconsciously, my ears are busy all the time. I judge my speed very largely by engine note, which also tells me when to change gear and how long to pause in neutral when doing so. I also rely on my sense of hearing in judging the condition of my engine. Unusual taps and rattles warn me if valve tappets need adjusting, or if there is undue play in gudgeon pins or big-end bearings. Squeaks indicate that attention with the grease gun is due. In fact, any strange sound puts me on the *qui vive*, and investigation has often been the means of staving off trouble.

Read the **MOTOR OWNER** Every Month



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"Wonderful"! that is what all motorists say when driving the **NEW FORD--The New Sports Coupe**, with its powerful engine develops amazing speed--the all steel body affords great protection - 4 Hydraulic Shock absorbers enhance riding comfort--positive control is ensured by the six brake system.

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FORD MOTOR COMPANY OF INDIA, LIMITED, BOMBAY.



Our technical experts will always be pleased to answer any of our readers' queries regarding their cars. The matter should be clearly written, and addressed to the Technical Editor. Make and model of car should be stated.

Solutions Do Not Charge Batteries.

THE following notes are reproduced from the Trade Service Bulletin issued by the National Vigilance Committee of the Associated Advertising Clubs of the World and have been published locally in leaflet form by the Standard Motor Electric Works Madras. Of interest to all motorists, the facts which follow definitely explode yet another fallacy by the exploitation of which cheap-jacks the world over reap a rich harvest from the credulous motorist.

Changing the solution in a storage battery does not charge it. An investigation has recently been made at the Bureau of Standards of certain solutions which were said to charge batteries instantly, or in a short time as compared with the usual process. These tests have shown that batteries containing these solutions, contrary to the claims made for them, behave in accordance with well-established laws of electro-chemistry.

Analysis revealed these solutions to contain 38 to 42 per cent of sulphuric acid, which is about the amount in the ordinary electrolyte of an automobile battery when charged. In some of them were found also insignificant amounts of sodium or magnesium as well as colouring matter. The sodium may have been added as soda, lye, or glauher salts; the magnesium as epsom salts. The use of sodium sulphate (glauher salts) in batteries is an old story. It was suggested more than 35 years ago, but various authorities since that time have stated that such material is without beneficial effects. This has been confirmed by the Bureau's recent experiments which show the rate of sulphation of plates to be unaffected by even 4 to 5 per cent of epsom salts or glauher salts.

Comparison was made between batteries containing these solutions and similar batteries containing

electrolyte of sulphuric acid of equivalent strength. No essential differences were shown in the charging, the voltage, the efficiency, or the temperature. When a battery is said to be charged it is understood that the battery is fully charged. A battery which is almost completely discharged may have nearly the same voltage as one that is charged. In this condition it may be able to operate the starter of an automobile, but this fact cannot be taken as evidence that the battery is fully charged. It takes as long fully to charge a battery containing one of these solutions as to charge a similar battery containing the ordinary electrolyte.

The indiscriminate addition of these solutions to a battery is not advisable, although in some cases no great harm may be done. If the solution is used to replace the electrolyte of a completely discharged battery as is usually the case the battery may be spurred on to give a little more current because the plates retain a surplus of active material. When the battery is recharged by an electric current the specific gravity will rise much too high. This is because the acid formed at the plates by the charging current is added to the acid already present in the solution. This is not desirable because the local action or self discharge within the battery is materially increased. A battery containing one of these solutions lost 47 per cent of its charge in 4 weeks as compared with 8 per cent which was lost by a similar battery with the ordinary solution. Batteries containing solutions of higher than normal specific gravity often give less capacity at high rates of discharge, as when cranking the engine of an automobile, depending upon the behaviour of the negative plates. The higher the specific gravity of the electrolyte the more injurious is the action upon the separators. It is a well recognised principle in battery operation

that acid should be added only to replace that which may have been spilled, or in rare instances to adjust the specific gravity to the required standard after the completion of a full charge.

Although the materials and colouring matter

considered individually may be harmless, the disadvantages in using such solution more than offset any temporary gain. The usual electrolyte of pure sulphuric acid and water, adjusted to the proper specific gravity at the completion of a full charge, is believed to be the best.

Industrial India

Car Building Operations by Indians in Bombay

TWO years ago not many people could have predicted that India would have in its midst a modern assembly factory, where Indians would be found busy at work building motor cars for the transportation of their countrymen. The birth of this new industry was made possible by the advent of General Motors India Limited. The Company's factory at Sewri, Bombay, gives employment to one thousand workmen, who are drawn from all sections of the population. Out of this total 91 per cent are Indians.

The workmen have shown such great adaptability that mention should be made of the background which provided them with opportunities for entering on a new career; only then is it possible to appreciate the skill shown by Indians in an entirely new sphere of activity. When General Motors began converting the huge grain godowns at Sewri into a motor car assembly factory in July 1928, the officials of the Bombay plant carried out simultaneously a search for skilled Indian labour which would be found capable of adapting itself easily to the kind of operations connected with assembly of cars and trucks.

Men were drawn from different sources and hundreds of applications were keenly scanned for the right qualities—not mere qualifications, in the applicant. The work of selection occupied several months and, when eventually they were engaged to fill the various departments, the workmen were given intensive training so as to enable them to carry out satisfactorily the many delicate and systematic operations in assembly.

Within a short time the workmen made great strides and showed that they possessed both deftness of hand and accuracy—very essential qualities in automobile construction. In many phases of the work the handicrafts in which Indians have excelled for generations have provided valuable training. Since the first Indian built Chevrolet was produced on the fourth of December 1928—twenty-one months ago—the men have built, it is claimed, nearly 15,000 Chevrolet cars and trucks alone which have been distributed throughout India, Burma, Ceylon and East Persia. It is interesting to note that Chevrolets form 70 per cent of the total production at the Bombay factory. During the last two years the Indian workmen have produced not only Chevrolets but Buicks, Marquettes, Oaklands, Pontiacs, and Oldsmobiles in large

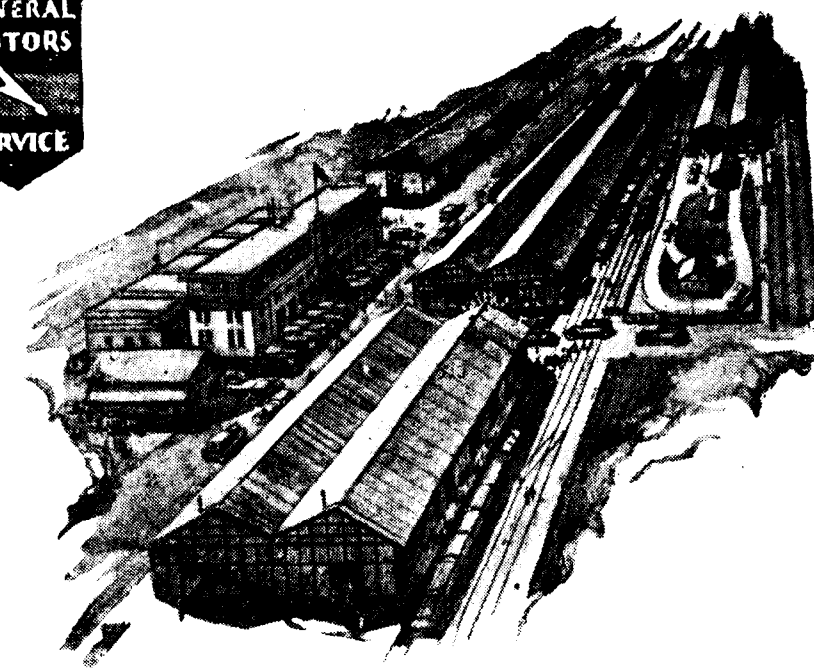
numbers. The building of these cars has given the workmen wide scope to gain more knowledge, experience and technique, which is reflected in the highly-finished products distributed country-wide from the Bombay centre.

A little over a year ago the Bombay plant introduced to the Indian motoring public a six-cylinder Chevrolet. The remarkable reception with which it was received in all parts of the country showed the public's appreciation of the low-priced six-cylinder car.

The general public now have an opportunity of seeing the latest model of the Chevrolet Six and this model is said to mark another step forward in low priced car values. There is every reason to believe that the great Indian public will be equally enthusiastic over the latest product of General Motors. This car like its predecessor is also built by Indian skill and labour and, from an advance view obtained of the 1930 Chevrolet, it may be anticipated that it will set new records in sales throughout the country.

Apart from supplying essential transportation to their countrymen, the Indian workmen are daily learning new facts and are acquiring sound technical education which cannot but prove beneficial to the community in general. On the other hand, the Bombay plant is undeniably an economic asset to this country in so far as it employs local labour, uses locally-made material, and contributes by way of wages, income-tax, custom-tax, custom duties, etc., a considerable amount of money which circulates in the country. The Bombay plant spent locally nearly a crore of rupees last year under different expenditure heads.

It is generally recognised that the development of motor transportation is vital to the economic prosperity and social well-being of India's population. The provision of transport facilities on a large scale will not only act as an incentive to the agriculturist to produce more, but secure for them better prices than they are able to command at the present time. This will of course depend on rapid marketing by the employment of cars and trucks instead of bullock carts for transporting goods. That General Motors is taking a major share in this development would seem to be proved by the fact that they claim 40 per cent. of the total cars and trucks used in India, Burma and Ceylon are their products.



Confidence in India's future built this great plant

WITHIN the past two years Bombay has witnessed the establishment of a great plant for the production of motor vehicles on a scale that is only justified by an unlimited confidence in the future progress and industrial prosperity of India.

By the establishment of its Bombay plant General Motors India Limited has demonstrated its unbounded confidence in

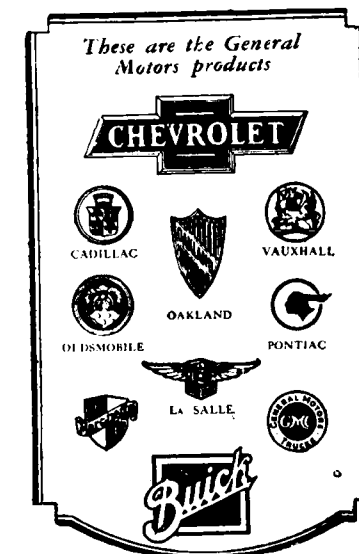
the future progress of India. Here are figures that speak for themselves:

Investment in Bombay Plant of General Motors Rs. 15,00,000

Investment in Spare Parts ... Rs. 8,00,000

During the year 1929 the Government of India received from General Motors India Ltd. no less than Rs. 57,00,000 in payment of customs duty.

In such practical forms is General Motors India Ltd. demonstrating its unbounded faith in the great future which lies ahead for India.



General Motors India Ltd.



THE NEW
Pathfinder
 by **GOOD YEAR**

COMMANDS respect on any car.
 Big and sturdy—thick of tread and fat of side. You can feel the strength and toughness in its resilient black rubber—and you can prove that toughness by your speedometer on city highways or moffussil roads.

In addition to its obvious ruggedness, it has the extra life of that famous cord material, *Supertwist*, built into its carcass.



Presenting the News of the
 Month together with Interesting
 Notes from all Sections of
 the Field.

A New Goodyear Factory.

A Modern factory for the building of tyres and tubes is to be erected in the Argentine by the Goodyear Tyre & Rubber Co.

The factory will be known as the Goodyear Tyre & Rubber Company of Argentine and will be located at Hurlingham, a suburb of Buenos Aires, situated some 16 miles outside of the city.

Construction has begun and the factory expects to be turning out tyres at the rate of 1,000 tyres and 1,000 tubes daily by February of next year.

This factory will be the fifth foreign Goodyear factory, the others being located as follows: Canada, two; England and Australia, each one. It will also be the ninth Goodyear tyre factory, four others being located in the United States. The company also operates its own tyre fabric mills at seven points in North America, cotton plantations in Arizona and rubber plantations in Sumatra and the Philippines.

In the aeronautical field, Goodyear has built an airship factory and dock at Akron, Ohio, United States of America, and the first of two United States Navy airships is now under construction.

An Insurance Point.

A decision was recently given in the Appeal Court at Iraq to the effect that in the event of the total loss of a car an insurance company must pay the full amount for which the car is insured, and not merely, as in Britain, what is known as the replacement value. It is believed that British concerns may be affected by the decision.

Show Boat Motor Display.

A novel manner of marketing motor cars has been conceived by Messrs Watson & Son Ltd.

Rangoon, General Motors' dealers in Lower Burma. This well known firm has built a picturesque "Show Boat", which will be stocked with the latest models of Buick, Marquette, Oldsmobile, Oakland, Pontiac and Chevrolet Cars and G. M. C. and Chevrolet Trucks. The boat will be towed by a steamer along the great Irrawaddy River. It is scheduled to make about thirty five halts on its way in order to display the cars to the Burmese people in the different districts. It is interesting to note that "Show boat" is a corrugated iron covered barge about 250 feet long by 40 feet wide. Elaborate arrangements have been made to display prominently the cars and trucks, while a feature of interest is the colourful decoration which will particularly appeal to the gay Burmese crowd.

The "Show Boat" will be on the water for a month leaving Rangoon on the 7th September and reaching Mandalay on the 7th October, when the final display will be given.

These "Knobbly" Interiors.

A correspondent signing himself Simple Simon, writes to *The Autocar* complaining about the knobbliness of modern coachwork.

"Excuse me, but do you ever feel like a lobster deprived of its shell? I mean you must be a keen motorist, and you must therefore sit often, and perhaps ponderously, within the "compact" bodies of many modern cars. What about all those knobs inside, the door handles, window handles, sliding seat handles? Don't they ever bruise you? They do me. I wish that some one would make a knobless car".

Certainly, there is very often sound reason for his complaint.

Driverless Car Arrested.

Remote wireless control of aeroplanes, boats and torpedoes has now been extended to a motorcar. A correspondent reports that a car was driven in this way by the President of a motor company and it was found careering about the streets by a police sergeant and taken into custody. No charge could be brought, as it could not be said that there was any danger to the public, because the car had obeyed all stops and signals and made perfect turns at corners, and there was no law to provide for driverless motorcars.

A Segrave Trophy

It is proposed to perpetuate the memory of the late Sir Henry Segrave by the annual award of a trophy to the subject of Great Britain who shall

demonstrate to the best advantage travel possibilities by land, air or water. The stimulation of others to emulate the famous motorist's courage and enterprise should be of valuable assistance to mechanical development, and in order to adjudicate upon the merits of performances lying within the provisions of the award, a representative committee is to be set up.

The promoters of the fund for the Segrave Award are of opinion that it should be a public testimonial, and that a very considerable portion of the general public will be glad to share in the memorial to Sir Henry Segrave's services to his country. Invitations to subscribe to the fund are open, and the Earl of Brecknock whose address is Westbourne House, Westbourne Street, London, W.2, will acknowledge all donations sent for the extension of this scheme.

Hill-climbing Hint

THE habit of some drivers of keeping the top gear in use on hills until the change into second can no longer be delayed results in hills that require the lower gear being climbed far slower than they need be. This is due to the fact that the speed of the engine when the lower gear is brought into use has fallen so low that the power then developed is far and away below the maximum; consequently, the engine is unable to accelerate or even to continue to drive the car at the same speed—the latter may fall off so much that bottom gear must be used.



It should be remembered that the petrol engine develops power in proportion to its speed of rotation with any given position of the throttle or accelerator pedal; as the speed falls so does the power, and vice versa. So, if a fast hill climb on second gear is required, that gear should be engaged when the car speed on top gear has fallen to about the maximum at which the engine is capable of driving the car on second gear without undue exertion.

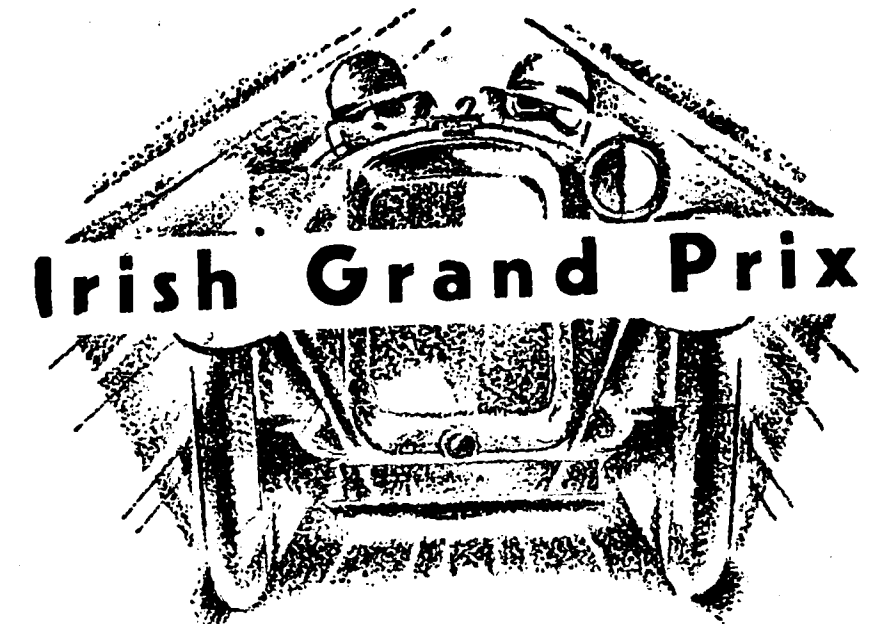
Thus, suppose the car can be driven easily at about 20 m.p.h. on second gear on a level road; that is the speed at which a change down into second from top should be made when a stiff hill is

to be climbed. At that road speed on second gear the engine will be developing its full power or thereabouts. If the change down is not made until the speed has dropped to, say, 12 m.p.h., only about half power will be available when the lower gear is brought into use, for in changing down the chances are that momentum will be lost and bring the speed down to 12-13 m.p.h.

Half power may not suffice to drive the car up the hill on second gear, and the speed may fall off until the use of the bottom gear becomes imperative to avoid "stalling." On that same hill, with a change down at 20 m.p.h. and the full power available thereafter, the car speed may never fall below 20 m.p.h.

So by delaying the change down the car may "crawl" up a hill at 6 to 8 m.p.h. on bottom gear, instead of maintaining a speed of well over 20 m.p.h. on second gear.

The early change necessitates utilising the "double-declutch" method of changing, however; but it almost goes without saying that every motorist should acquire proficiency in that method at the earliest possible moment.



MAGNIFICENT PERFORMANCE OF AUSTIN & RILEY CARS

winners of the SAORSTAT CUP; second in the actual race to the gaint Mercedes and first in the 1,100 c.c. Class such was the wonderful performance of Mr. Victor Gillow's RILEY

In the 750 c.c. Class Capt. Frazer Nash, AUSTIN, finished First & Capt. A. Waite, AUSTIN, second, Capt. Nash was also third in the race for the SAORSTAT CUP

These successful cars used
GARGOYLE

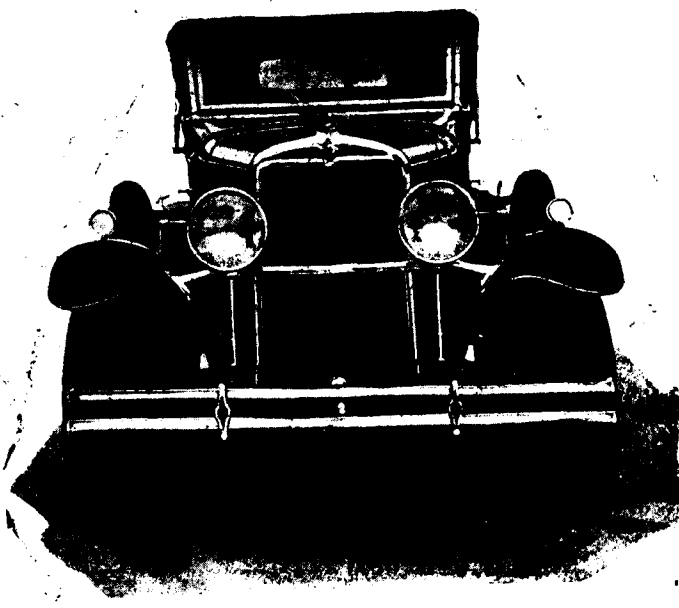
Mobiloil

made only by

VACUUM OIL COMPANY.

The New Chevrolet Models for 1930

GENERAL Motors India Limited announce the production of the 1930 Chevrolet. This new car is being displayed by all Chevrolet dealers in the country from August 23rd. Numerous improvements and refinements are embodied in the new model. The models which will be shown are: Five-passenger Tourer, Five-passenger Four-door Club Sedan with four windows, and Five-passenger Four-door Sedan with six windows. All closed models have Fisher bodies and are finished in a variety of attractive colours.



Showing the neat portal appearance, large headlights, a neat radiator, design and ample domed wings.

Here, in India, where General Motors products are locally assembled, the bodies are claimed to be specially treated by a chemical process which eliminates the risk of deterioration due to climatic conditions varying in different parts of the country. In addition to this all cars and trucks built in the Bombay factory undergo a rigorous test before they are placed on the market.

New Car Equipped with Shock Absorbers.

A valuable feature in the new Chevrolet to which special attention is drawn, are the Delco-Lovejoy shock absorbers fitted both front and rear. By the addition of this equipment better riding comfort is obtained by the elimination of road shocks. Among other improvements are an improved braking system, the new Fisher slanting non-glare VV windshield, larger tyres and smaller wheels, all making for greater ease in handling, safety, riding comfort and enhanced appearance of the new Chevrolet.

Taking the principal improvements in order, we find that the improved braking system employs the internal expanding articulated shoe type of brake front and rear, those on the front having two shoes and those on the rear, four. These brakes are fully enclosed, giving perfect protection against water and dirt. The length of service that these linings give in the Chevrolet brakes is second to none, and the brakes may be adjusted without removal of any plates from the brake drum. They operate with equal efficiency on all four wheels.

The brake drums are 11½ inches in diameter. The emergency brake is an independent unit operating on the rear drums. A new method of construction known as the "articulated shoe type" assures even braking under all conditions. Rigorous tests carried out show that the new brake will stop a car travelling 30 miles an hour in two and three-tenths seconds within 48 feet.

The well-known 6-cylinder valve-in-head engine, introduced a year ago after four years of research and development, has been further improved and refined. This engine, which is

fully enclosed with a high compression non-detonating head, develops 50 horse power.

The brake horse power in the new Chevrolet has been increased over the entire speed range, the motor developing 24.5 horse power at 1,000 revolutions per minute and 50 when turning over at 2,600 revolutions. This insures a marked improvement in acceleration and hill climbing. The rear axle ratio has been increased and the vital parts of the axle have been redesigned. The differential unit has been greatly strengthened and the oiling system redesigned to insure long life and quiet operation.

Smoother operation of the engine and longer life are assured through use of light weight cast-iron pistons, while steel-backed crankshaft bearings have been adopted because they are more durable. The oil pump and carburetor have been improved in respect to its accelerating pump and jet size, which assists acceleration by increasing the duration of the spray.

Attractive Instrument Board.

The new Chevrolet is fitted with a new type of dash-mounted petrol gauge with a double float which ensures correct reading regardless of the position of the car. Another improvement designed to give greater driving comfort is in the lowering of the position of the steering wheel.

The neat appearance of the car's interior is accentuated by the smartly designed instrument panel, the design and arrangement of which is



IRISH GRAND PRIX

DUBLIN 13TH JULY, 1930.

1st **MERCEDES**
CARACCIOLA

3rd **MERCEDES**
EARL HOWE

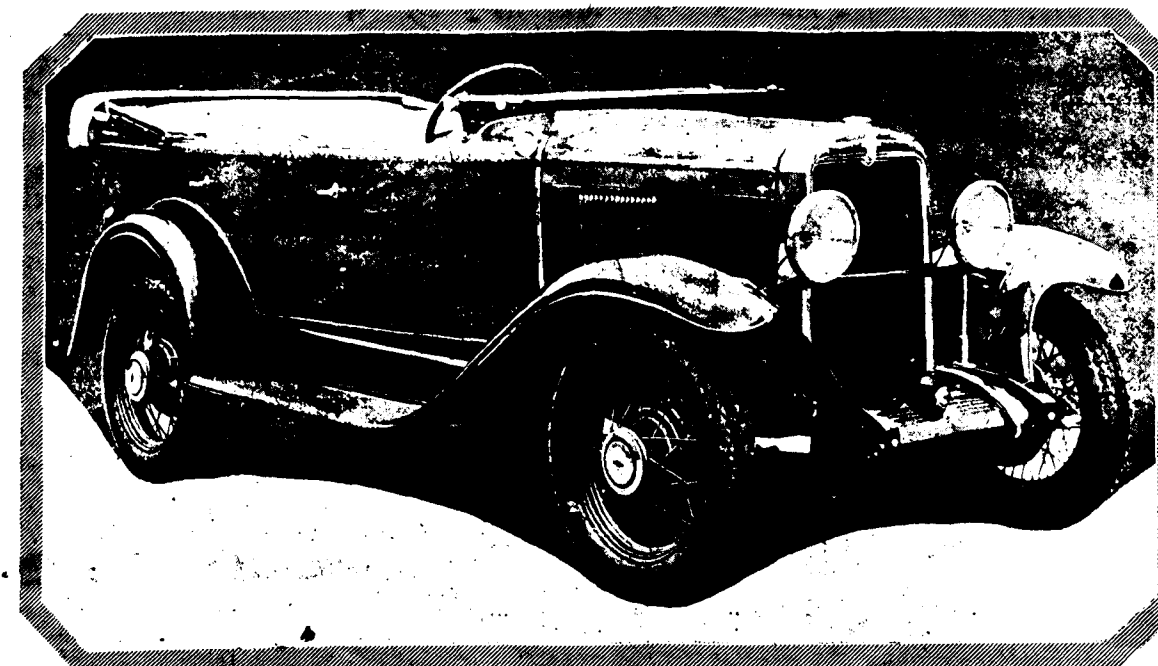
5th **MERCEDES**
MALCOLM CAMPBELL

ON

SHELL MOTOR OIL & SHELL PETROL

IN 1929 SHELL MOTOR OILS SECURED 1ST, 2ND, 3RD AND 4TH PLACES IN THE SAME RACE. IN 1930 SHELL MOTOR OILS HAVE BEEN USED BY THE WINNERS OF THE BROOKLANDS "DOUBLE 12" THE LE MANS 24-HOUR GRAND PRIX, AND THE IRISH GRAND PRIX, AND MADE THE FASTEST TIME OF THE DAY AND RECORD FOR THE COURSE AT THE RECENT SHELSLEY WALSH HILL CLIMB.

BURMAH-SHELL OIL STORAGE & DISTRIBUTING Co., OF INDIA LTD.,
(INCORPORATED IN ENGLAND)
CALCUTTA. BOMBAY. MADRAS. KARACHI. DELHI.
AGENTS



A photograph of the New Chevrolet which shows this car one which has many refinements hitherto expected only on higher price cars.

entirely new. On this panel the instruments are mounted on a single carrier plate, which is assembled from the rear, permitting removal of individual instruments for service.

The finish and upholstery on all cars have been carefully chosen in regard both to durability and appearance. In each car the general ensemble is such as to present a most attractive appearance, colour and upholstery blending perfectly. The new

Chevrolet is equipped with wire wheels which add to the smartness of the car.

The latest Chevrolet is sure to attract the widespread attention of car-buyers in India who are in the market for a car of low-price and yet capable of giving all-round performance and economical operation. It appears certain that the brilliant results achieved by Chevrolet in 1929 will be more than equalled by this car.

Misplaced Politeness

AS an instance of the potential danger of misplaced courtesy the following is interesting. A driver had almost reached his point of departure from the main road at a turning on his right, and, on taking the usual precautions to see if the way was clear, became aware of another car overtaking. He thereupon slowed down and waved on the second vehicle, which accordingly passed in reply to his signal.

Thereafter things happened. The driver of the first car, having really done more than courtesy required, swung across the road to his turning.

But in giving way to the overtaking car number two when he was quite entitled to give the proper warning and proceed down his right-hand turning, he had given time for a third car to come up behind the second. The driver of this third vehicle, seeing number one apparently waving on all and sundry, followed in the wake of number two just as number one thought everything all clear to commence his turn. As events turned out, the two cars finished upon the right-hand side of the road just abreast of the corner with barely a quarter of an inch between their running-boards.

H. F.

LIST OF TRUNK ROADS.

No. allotted.	Name	From	To	Place	Via	Remarks.
A. 1	Great Northern Trunk Road.	Madras	...	Pres. Boundary with Behar and Orissa.	Nellore, Guntur, Rajahmundry, Chatrapur.	Connecting Madras with Calcutta.
A. 2	Great Southern Trunk Road.	Madras	...	Pres. Boundary with Travancore.	Villupuram, Trichinopoly, Dindigul, Madura and Tinnevely.	To connect with Nagercoil and Trivandrum. A.
A. 3	Madras-Bombay Trunk Road.	Madras	...	Nizam's Frontier	Ranipet, Tiruvalam, Chittoor, Anantapur, Bellary and Hospet.	To connect with Bombay Presidency Road.
A. 4	Madras-Calicut Trunk Road.	Krishnagiri	...	Calicut	Salem, Coimbatore, Palghat, Perintalmanna.	The portion of this Road from Madras to Krishnagiri is included in the Madras-Bangalore Trunk Road A. 5.
A. 5	Madras-Bangalore Trunk Road.	Ranipet	...	Mysore Frontier	Krishnagiri	To connect with Bangalore. The portion of this Road from Madras to Ranipet is included in A. 3.
A. 6	Chittoor-Kurnool Trunk Road.	Chittoor	...	Nizam's Frontier	Cuddapah, Nandyal, Kurnool.	
A. 7	Kurnool-Guntur Trunk Road.	Nandyal	...	Ongole	Giddalur, Podili	The portion from Nandyal is included in A. 6 while the portion Ongole-Guntur is included in A. 1.
A. 8	Masulipatam-Hyderabad Trunk Road.	Masulipatam	...	Nizam's Dominions Boundary.	Bezwada	To connect with Hyderabad and Secunderabad.
A. 9	Kurnool-Bangalore Trunk Road.	Kurnool	...	Mysore Frontier	Bagenhalli, Anantapur...	
A. 10	Chittoor-Cuddalore Trunk Road.	Chittoor	...	Cuddalore	Tiruvannamalai	The portion of the Road from Chittoor up to its junction with the Madras-Bombay Trunk Road via Tiruvalam is included in the latter Road. A. 3.
A. 11	Trichinopoly-Coimbatore Trunk Road.	Trichinopoly	...	Coimbatore	Karur, Palladam	
A. 12	Coimbatore-Ootacamund Trunk Road.	Coimbatore	...	Ootacamund	Mettupalaiyam, Coonoor.	
A. 13	Ootacamund-Gudalur Mysore Trunk Road.	Ootacamund	...	Mysore Frontier	Gudalur	To connect with Mysore and Bangalore.
A. 14	Gudalur-Calicut Trunk Road.	Gudalur	...	Calicut	Nilambur, Manjeri	From Calicut to Manjeri; It forms part of A. 4.
A. 15	Gudalur-Vayitri Trunk Road.	Gudalur	...	Calicut	Vayitri	
A. 16	Mangalore-Mercara Trunk Road.	Mangalore	...	Coorg Frontier	Pattur, Mercara	To connect with Mercara in Coorg & thence Mysore and Bangalore via Siddapore.
A. 17	Hospet-Mysore Frontier Trunk Road.	Hospet	...	Mysore Frontier	Harpanahalli	To connect with Shimoga and Mysore.
A. 18	Vizianagram-C.P. Trunk Road.	Vizianagram	...	Behar and Orissa Boundary.	Kerada Komeilapeta	To connect with C.P. via Sambalpur.
A. 19	Ramabhadrapuram-C. P. Trunk Road.	Ramabhadrapuram.	...	Central Provinces Frontier.	Itikavalasa, Jeypore, Borigumma.	To connect Vizianagram and the C.P.
A. 20	Coimbatore-Satyamangalam-Mysore Frontier Trunk Road.	Coimbatore	...	Mysore Frontier	Annur, Satayamangalam, Hasanur.	To connect with Mysore.
A. 21	Tellicherry-Coorg Trunk Road.	Mangalore	...	Coorg Frontier	Huttuparamba, Iritty	
A. 22	Mangalore-Mysore Trunk Road.	Mangalore	...	Mysore Frontier	Bantival, Beltangadi, Charumadi.	To connect Mangalore and Kadur.
A. 23	Palamner-Mysore Frontier Trunk Road.	Palamner	...	Mysore Frontier	Pattikonda,	To connect Chittoor and Kolar.

A New Flexible "Glass"

The Paris Correspondent of "The Motor" reports details of a Process For the Manufacture of a new Synthetic "Glass" For Which a Large Factory Has Been Equipped in France.

FOR some years past a great deal of research work has been carried on in certain Continental countries towards the production of a clear, non-splintering and comparatively flexible substance which shall take the place of glass.

The advantages attaching to a really satisfactory solution of this problem are so manifold and at the same time so obvious that they need hardly be stressed. Glass enters into the construction of almost every vehicle employed for human transport, and when an accident occurs glass is responsible for the greater proportion of injuries received by passengers. Non-splintering glass, built up from sheets of ordinary glass cemented together with some colourless, flexible compound, is a palliative certainly, and a useful one, especially now that it is said to be possible to prevent the transparent cement from turning yellow. This "sandwich" glass presents certain disadvantages, however, in the way of high manufacturing cost and difficulty of drilling and working.

Special interest attaches, therefore, to an entirely new production which has just been brought to the commercial stage in France.

The new substance is termed by its inventors "Similex," and the processes employed in its production which has just been covered by patents.

Certain of the difficulties in the case of former attempts to produce a substance of this kind would appear to have been overcome and "Similex" flexible "glass," which, of course, is not actually glass at all, is shortly to be made in quantities on a commercial basis. An important factory has already been laid out for its manufacture and an encouraging feature of the enterprise is the fact that the makers intend to market their production at the approximate ruling prices for plate-glass.

Phenol and formaldehyde from the basis from which "Similex" is obtained, and the inventors claim a great advance over previous attempts to make synthetic flexible glass in the fact that not a particle of urea, CO (NH₂)₂, enters into its composition, the latter compound having given rise to various troubles, particularly in the matter of homogeneity and in the length of time required for the material to set and dry before it could be used. As

the first operation in the manufacture of "Similex" consists of a cold mixing of phenol and formol, it will be seen that the process is the exact opposite of that employed in the formation of synthetic resins at present in commercial use.

A very important feature of the "Similex" product is the fact that it can be supplied in any degree of hardness or elasticity to suit the particular purpose for which it is required.

I have examined a great number of samples, some exceedingly flexible and others almost as brittle as glass itself. Even in the hardest form, however, "Similex" appears to fracture without splintering. The absence of bubbles, even in exceedingly thick sections, was particularly noted.

When "Similex" was first made in Paris, the ordinary town water, containing traces of iron, was used in its manufacture, with the result that the finished product had a faint yellowish tinge. Distilled water is now used and the product comes out white and clear, the whiteness being particularly remarkable in saw-cut sections, where, in the case of glass, there is always a strong green tinge.

"Similex" is less than one-third the weight of ordinary plate-glass, and this should enhance its value for cars and aircraft.

The inventors claim that the stuff will retain its clear whiteness quite indefinitely, and as the experiments leading up to the launching of the material commercially have not unnaturally covered a period of several years, this particular claim may be said to have been borne out in practice.

Various other claims are made for "Similex," amongst them being that it is completely unaltered by any climatic conditions, is fire-proof, acid-proof, and forms an excellent electric insulator. Another claim is that the material will withstand violent shocks which would reduce ordinary glass to splinters. This last claim I can support as I have handled several samples and have treated them severely.

A feature of "Similex," which may or may not be of value, is that it is completely impervious to ultra-violet rays.

Bangalore Notes and News

Take a Trial Run.

THERE is no doubt that the new Chevrolet, which is described else where in this issue, is a car which will interest every motorist. With this point in mind, the Bangalore distributors have made a special display of the new models and Messrs Nankervis Ltd., inform us that they will be only too pleased to give Bangalore readers of the South India Motor Owner the fullest facilities for trying the speed and comfort of this latest General Motors product.

A Highway Code

Speaking at the House of Commons during the Report Stage of the Road Traffic Bill, Mr. Herbert Morrison, the Minister of Transport, said:

"There will be the highway code which we are going to publish, and as to which we shall secure publicity. On the basis of this code we shall conduct education, not only among motorists but among pedestrians as well, who equally need it. The view that every motorist is a villain

and every pedestrian a saint will not do. There are faults on both sides, and we have to educate everyone up to a high standard of conduct."

That a similar state of affairs obtains in Southern India is obvious to every motorist, and it is to be regretted that the pedestrians of Bangalore are said to be worst in this respect than in any other place in South India. Perhaps it is because many more people walk for pleasure in Bangalore than is usual in other towns, but the fact remains that the Bangalore pedestrians has that air of owning the whole road which is irritating to the average car driver. We do not wish to see pedestrians skipping out of the way of furiously driven cars, but we would prefer that both pedestrian and driver would use the road in a manner calculated to be the least inconvenient to either.

A New Bangalore Show-room

The opening of the Bangalore branch of Messrs. Jones Company will give motorists every opportunity of inspecting the Chrysler range of cars which have proved themselves so suitable for Southern India conditions. We hope to see this firm's branch organisation as successful as their Madras centre.

MACKENZIE & CO.,
Automobile and Mechanical
Engineers.
37, South Parade,
BANGALORE.

Brick-Slingers

We have recently been informed by some of our readers that there is a gang of small boys with a rendezvous at the Krishnarajapuram who make a speciality of hurling half-tricks at passing cars. So far, no real damage has resulted to judge from reports, but this is possibly more by good luck than by good aim, and when the full possibilities for danger which can lurk in a well flung stone are really considered, Bangalore motorists using this road will deem discretion the better part of valour and so keep a sharp look out when in this locality.

Can You Assist

We shall try to make this page both informative and interesting month by month, but we would really appreciate the assistance of all our Bangalore readers who we hope will send us regularly any interesting little notes upon matters of particular concern to motorists in the Bangalore district.

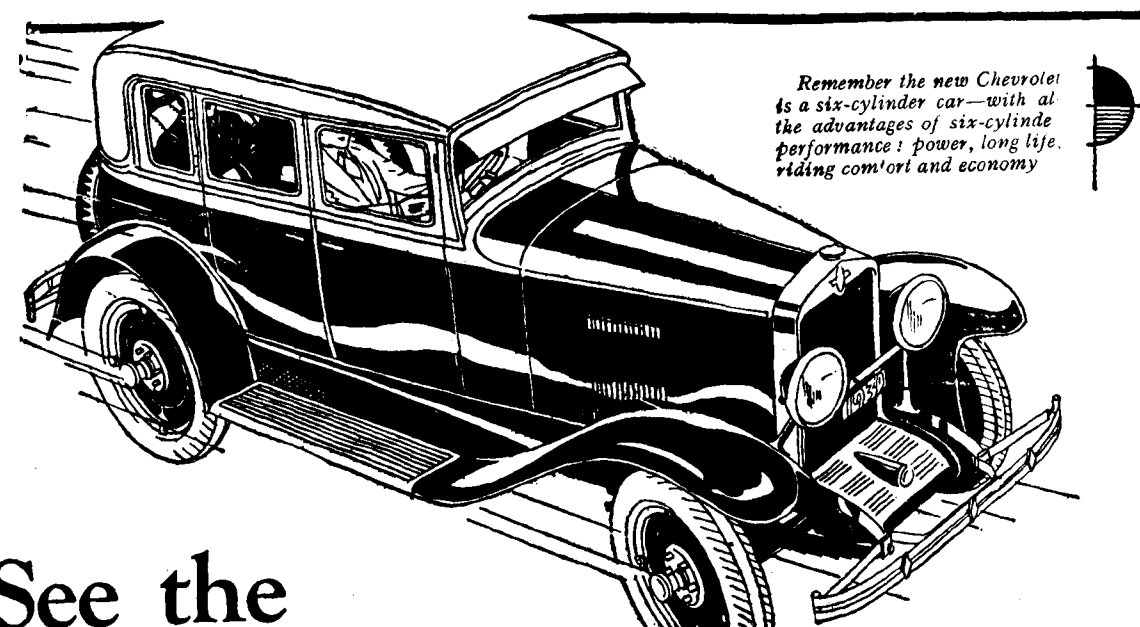
Space on this page is of real value to the Bangalore Motor Dealer. A post card will bring you full details. Why not write Now?

The South India Motor Owner,
Mount Road - MADRAS.

NANKERVIS, LTD.

Automobile Engineers
25, South Parade.
BANGALORE.

Distributors of
Chevrolet Cars and Trucks
and Oldsmobile Cars
for the Mysore
Province and Coorg
Chevrolet Sales and Service.



Remember the new Chevrolet is a six-cylinder car—with all the advantages of six-cylinder performance: power, long life, riding comfort and economy.

See the
latest and greatest
Chevrolet
now shown by Chevrolet
dealers everywhere

THE LATEST CHEVROLET—there's always magic in those words! All the world knows they stand for a new advance in motor car values—something better than ever in the way of a fine car at a low price.

It is the same this time. Moreover, you are now enabled to check these new points of motor car value for yourself.

The new Chevrolet value chart shows ten outstanding points on which real motor car values depend. Every point is important and each of them is fully met in the latest Chevrolet.

Here is the new way to buy a motor car. It assures you that you get the utmost for the money you spend. Ask the dealer about it.

The Greatest



In Chevrolet History.

The latest
CHEVROLET SIX

For the small subscription of Rs. 3 the 'South India Motor Owner' will be sent to you post free for twelve months—there is a simple form on page 312 which is easily filled in. . .

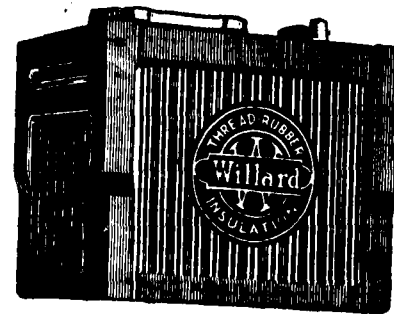
Fruit from Kulu's FINEST ORCHARDS

LUSCIOUS PEARS and crisp dessert apples straight from the Kulu valley to your table. Neatly and carefully packed in baskets containing 9 lbs. of fruit, these Pears and Apples will reach you in perfect condition anywhere in S. India or Ceylon.

Pears Rs. 4-14. Apples Rs. 5-2.
Dried Apples Pears 5 lbs. Rs. 5-4.
Walnuts, 10 lbs. Rs 5-4.
— V. P. P. —

Aramgarh and Raisan Orchards
P. O. RAISAN, . . . KULU, PUNJAB

Willard Motor Car Batteries



Obtainable in two qualities

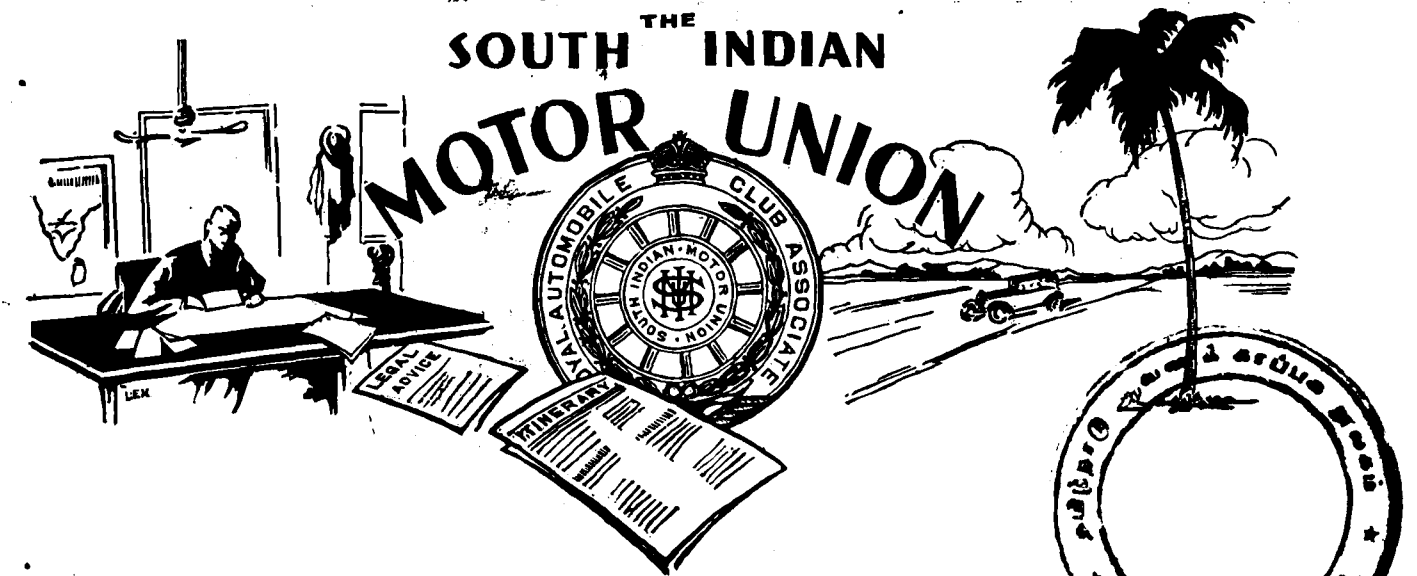
1. Those fitted with Wood Separators at prices which defy competition and
2. Those fitted with Willard Patent Threaded-Rubber Insulators, at a little extra cost but giving thousands of miles more service.

For particulars and prices apply to:

**The Crompton
Engineering Co. (MADRAS) Ltd.**

WILLARD BATTERY SERVICE STATION,
12/35, Khaleel Mansions,
Mount Road, MADRAS.

Managers :
BEST & CO., LTD., MADRAS.



MINUTES of a meeting of the Executive Committee held at the Association's Registered Office, Mount Road, Madras on 19th August 1930, Mr. K. R. Simpson in the Chair.

PRESENT.

Mr. K. R. Simpson, (*In the Chair*).
Mr. C. Gopal Menon.
Dewan Bihadur Govindoss Chathurbujadoss.
Mr. A. T. Luker.
Mr. D. B. Snowdon, (*Treasurer*)
Major F. Church, M. B. E. (*Secretary*)

MINUTES.

Minutes Last Meeting.

1. The Minutes of the Committee Meeting held on 9th June 1930 (last meeting) were produced, having been circulated to all committee members were taken as read and were duly confirmed.

Accounts.

2. A Statement of Receipts & Expenditure for June and July 1930 was produced, adopted unanimously and signed by the chairman.

New Members.

3. Thirty six new members were duly elected.

Membership.

4. A letter from the W. I. A. A. suggesting a reciprocal arrangement for transferring members from one Association to another was read.

Resolved that members of other Indian Automobile Associations permanently transferred to Southern India shall be regarded as honorary members of the A. A. S. I. until such time as their next annual subscription to the affiliated association falls due, when they should become members of the A. A. S. I. and pay their subscription to this Association.

This arrangements to be reciprocal with the

A. A. B., W. I. A. A., U. P. A. A., S. I. A. A., all of whom must be informed accordingly, and requested to furnish letters of introduction giving date up to which subscription has been paid by members so transferred.

Route Sheets.

5. Read letter from W. I. A. A. suggesting the adoption of a uniform type of route sheet (or itinerary) by all Indian Automobile Associations.

Resolved that the type of route sheet proposed by the W. I. A. A. is not of convenient size and does not give sufficient detail. A copy of one of the A. A. S. I. Route Sheets to be forwarded for consideration by the W. I. A. A.

Petrol Licenses.

6. Read and approved a letter already despatched by the Secretary to the Madras Government suggesting that a license to possess petrol should be endorsed on all motor vehicle Registration Certificates, as is done in Bombay and Bengal; the necessity for obtaining and carrying a separate petrol license will thus be obviated.

Subscriptions.

7. Read letter from the District Representative for South Travancore Planting District suggesting the desirability of having a reduced rate of subscription for members in mofussil areas remote from Madras and other large towns.

Resolved that this is a matter with which the Committee is not competent to deal, but which may be put before the next General Meeting of the Association if so desired. At the same time the Committee does not agree with the argument put forward from South Travancore that city members derive greater benefits from membership than do mofussil members. The one great aim of the A. A. S. I. is to procure better motoring conditions in the mofussil and to assist members who tour extensively.

Admission to Membership of Owners of Public Service Vehicles.

8. Read several letters from Public Service Transport Companies and individual owners of Public Service Vehicles, requesting reconsideration of the present policy of the Association on this subject.—

Resolved that the Automobile Association of Southern India is essentially an Association of private motor owners and individuals privately interested in the automobile movement; also that it would be contrary to the spirit of the Articles of Association and against the interests of the Association, to admit to membership bodies whose interest in motoring only extends to the maintenance of vehicles plying for hire or general public services.

Speed Limits.

9. Read a proposed amendment to the Madras Motor Vehicles Rules whereby the power to lay down speed limits for motor vehicles in public places shall be vested in the Commissioner of Police (for Madras) and District Magistrates (in the mofussil), instead of in the Local Government as hitherto. Also providing that notification of such a speed limit shall be made known to the public by notice boards placed at both ends of the road or place concerned.

Resolved that as the amendment constitutes no definite change in policy, it is acceptable to the A. A. S. I.

Tolls.

10. The probable rate of the proposed bill for the abolition of tolls in so far as Motor Vehicles are concerned was discussed. It appeared that there is

little likelihood of the bill being put forward as a Government one, so the Committee decided to ask Mr. F. E. James, M. L. C. to consider the possibility of putting it forward as a private bill. The Secretary was instructed to act accordingly.

Production of Driving Licenses.

11. Read a letter from the W. I. A. A. and the comment thereon by the Association's legal advisor, suggesting the adoption in India of the Home practice of allowing a period of grace within which motorists should produce their driving licenses when demanded by a police officer.

The Committee agreed that such a practice would not be suitable for India, where distances are so great and there are so many separate and independent police authorities that even one day's grace would allow sufficient time for an unlicensed driver to get away from the jurisdiction of the police authorities concerned.

The Committee further agreed that cases of private motorists being fined for the non-production of their driving licenses are very rare and the local police are usually considerate in this matter; consequently it would be better to leave the question of "grace" to be decided by police authorities.

Itineraries.

12. The question of improving the service of the touring department was discussed and the Secretary was instructed to arrange for the reversal of existing itineraries, as quickly as circumstances will permit so that members need not be called upon to read itineraries in reverse, as has been the case on several occasions in the past.

MADRAS. } Automobile Assn. of
19th August 1930. } Southern India.

Automobile Association of Southern India.

SECRETARY'S REPORT-JUNE & JULY 1930.

Annual Meetings.

1. AN extraordinary General Meeting was held on 9th June 1930 to confirm the minutes of the Annual General Meeting held on 26th May 1930. The meeting was duly confirmed amongst other items already communicated:—

- The change of designation to "The Automobile Association of Southern India".
- The adoption of the latest reprint of the Articles of Association, duly amended regards designation, for registration.

Committee meeting.

2. The newly appointed executive Committee assembled for the first time on 9th June 1930, and amongst other minor items,

(i) Appointed a sub-committee to review the draft revised Motor Vehicles Rules for all India, drawn up by a Bombay Committee.

(ii) Decided that existing conditions did not warrant for the present, the acceptance of requests for affiliation from small, local motor owner associations.

Roads.

- A revised list of trunk roads in the Presidency has been received from the Chief Engineer to the Madras Government. A copy of the revised list is to be found on page 296. The changes are practically negligible and relate mainly to routes followed.

It may be of interest to motorists to know that the trunk roads are all numbered and the numbers allotted are (or should be) pointed on road junction direction signs (or finger posts) to enable travellers to easily pick up the correct road and follow when approaching road junctions.

- Arrangements continue to be made whereby the association office will receive periodical reports on the state of various river crossings which are liable to be flooded during the rainy season. Where necessary and possible water gauges will be erected.

- Endeavours to enlist the assistance of various motor repair workshops, in the city and in the mofussil; in the organisation of a Road Scout system have met with little encouragement. However, the possibility of organising such a service will be fully explored.

- Steps are being taken to obtain accurate information as to the location of mile stones on main and trunk roads, with a view to adding this information to road maps and making our itineraries more accurate.

- Daily weather reports are being received and studied with a view foretelling the state of small river crossings where "freshes" occasion delay to road traffic.

- It may be taken that, from 12th July and until further notice, the Great Northern Trunk Road will not be motorable beyond Kavali, owing to the flooded state of the several rivers between that place and Rajahmundry. Motorists desiring to reach places beyond Kavali should rail their cars from Nellore.

- Information has been received that comparatively large sums of money have been allotted for the maintenance of roads in the Nilgiris during the current and coming years. The District Board has promised special attention to the Guda-

lur Ghat, Kotagiri Ghat and the Gudalur-Sultan Battery Roads.

- The Segur Ghat Road is reported as not fit for motor traffic at present.

- It is understood that His Exalted Highness The Nizam's Government is giving due attention to the necessity for good arterial roads connecting Hyderabad with neighbouring towns in British India and for the provision of crossing places over the river boundaries of the State.

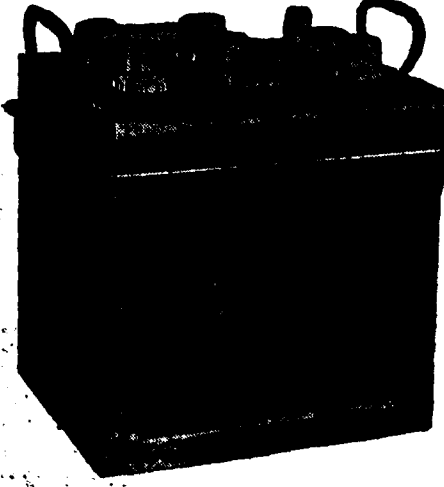
- The Avanashi-Annur-Mettupalliyam Road is being improved and should soon be motorable throughout the year.

Tolls.

- Nothing official has been heard of the proposed bill to abolish tolls in the Presidency. However, rumour has it that the prospects of success are not very bright, so it behoves all motorists to give the fullest publicity to their views on the matter by means of a press campaign.

- A member points out that, while the toll gate keeper at Kolar Town is levying a six anna toll from pleasure cars, the correct toll should be four annas only.

- It is believed that two new toll gates are to be opened at St. Thomas' Mount. In reply to a protest from the A.A.S.I. the authorities state that the gates are to be established on two village roads rarely used by motors and are not likely to affect motorists to any material extent.



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Tours Abroad

5. The R.A.C. London has intimated that, in future, a deposit of £ 5 will be required with every request for that body to undertake the landing and preparation for the road of cars from overseas.

Petrol Rates.

6. Information has been received that the prices of petrol have undergone a change in many mofussil towns with effect from 23rd July 1930.

These changes are believed to be due to variations in the method and cost of transporting the petrol. At Chidambaram the price has been raised by two annas; at the following places the rates have been increased by half an anna.

Devanahalli	Muddanur
Coimbatore	Narayaspur Road
Danuskodi	Polur
Devakotta	Rameswaram
Guntakal	Tuni
Jalarapet	

The following places and rates should be added to the Petrol Rate List issued by the Association in June last.

Arcoi	1-5-6	Kallal	1-7-6
Dorrakal	1-9-0	Kamareddi	1-10-0
Kudakavur	1-8-6	Kottayam	1-7-0
Kanadakuttam	1-7-0	Kadayanallu	1-8-0
Karaikudi	1-7-0	Kuttanad	1-8-0
Mamanasamudram	1-7-0	Padugapadu	1-6-0
Nagercoil	1-8-6	Perintalmanna	1-8-0
Namakkal	1-7-0	Rayagudda	1-9-0
Nallasankottai	1-7-6	Rasipuram	1-7-0
Nadikida	1-7-6	Tirupathur	1-8-0
Nunganeri	1-8-0	(Chettinad)	
Pallamkottah	1-8-0	Tirumayam	1-7-0
Nizamabad	1-10-0	Varkala	1-8-6
Polathur	1-7-9	Vuyyar	1-7-6

Licenses.

7. Two questions of interest to motorists have been under correspondence.

(i) Necessity for a motor owner to have a separate license to possess and transport more than 3 gallons of petrol.

A recommendation has been made to the Madras Government that this license should be endorsed on the motor vehicle registration certificate, as is done in other parts of India.

(ii) The production of driving licenses on demand by the police.

It was suggested that motorists should be given a period of seven days grace within which to produce a driving license. This has been vetoed, on legal advice, as being unsuitable for India where there are many independent police authorities, where distances are great, and where even one day's grace would allow sufficient time for an unlicensed driver to get out of British India.

It is rare that a motorist is fined for the non-production of his driving license, and it is thought best to leave the question of grace to the police, who are usually considerate in this matter.

Speed Limits.

8. Intimation has been received that the Madras Government are about to amend the Motor Vehicles Rules so as to permit the Commissioner of Police, Madras and District Magistrates elsewhere, to impose speed limits where considered desirable. The imposition of a speed limit on any road, &c., will be notified to the public by means of notice boards erected at both ends of the place concerned.

Sign Boards.

9. As notified some months ago, the Burmah-Shell Company undertook to erect signs on mofussil roads to direct touring motorists to petrol depots, where these are situated away from the main road, provided this could be done without incurring ground rent for the signs.

This Association has obtained sanction for rent free erection of these signs in many places but there may be difficulties owing to objections which are being raised by another Company who maintain that the Association is furnishing the Burmah-Shell Company facilities for advertising. It is hoped that this difficulty will be overcome. The sole object of the A.A.S.I. is claimed to be assist motorists generally to find petrol supplies. It has no intention to aid or favour any particular Company or to recommend any particular brand of petrol or oil.

Traffic in Madras.

10. In view of the congestion that is evident daily in the commercial office area of George Town where the streets are narrow and a large number of vehicles are parked for long periods, the possibility of adopting a system of one way traffic, combined with parking of cars on one side of a street only, has been suggested to the Commissioner of Police. A decision is awaited.

Membership.

11. There has been a slight decrease in the number of new members proposed during June and July which totals to thirty six only. Members are requested to do their utmost to induce motoring friends to join the A.A.S.I. The Association cannot hope to get a hearing in the Legislative Council until its membership is well over 2000. It has not yet reached the 1000 mark. New taxes are in the air and it will be motorists who will pay unless they combine and get better representation. Personal benefits of membership may not be visible, but they are nevertheless very real. Try to persuade your friends to join.

F. CHURCH, Major, (Retd.),
Secretary,

MADRAS,
19th August 1930.

Automobile Assn. of
Southern India.

THE SOUTH INDIA MOTOR OWNER HAND BOOK

THE compilation of this Handbook for South India Motor Owners is now nearing completion, and many valuable features are being added week by week in order to keep the whole production fully up-to-date.

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Have you yet ordered your copy?

Eastern Technical Publications MADRAS.

Secretary's Report August 1930.

Change of Designation.

1. OWING to a variation in the legal interpretation of "14 days", the special Resolutions changing the name of the Association from "South Indian Motor Union" passed on 26th May and confirmed on 9th June have not been accepted by the Register of Joint Stock Companies. Consequently it will be necessary to hold two further meetings in September. A Notice is under issue for 15th and 30th September respectively.

Committee Meeting.

2. The Committee Assembled on 19th August and amongst other routine items, passed resolutions:—

- (a) Agreeing to a system of transferring members from one Automobile Association in India to another without incurring double payment of subscription for any one period.
- (b) Regretting that a proposal to reduce the subscription of Motussil members could not be accepted.
- (c) Adhering to the Association's policy not to admit to membership bodies whose interest in motoring only extends to the maintenance of public service vehicles.
- (d) Accepting a proposal to amend the Madras Motor Vehicles Rules so as to permit District Magistrates and the Commissioner of Police, Madras to impose speed limits in public places; such limits to be notified by notice boards displayed at the limits of the place concerned.
- (e) Deciding that, if the proposed Bill for the Abolition of Tolls on Motor Vehicles is not proceeded with by Government, every endeavour be made to introduce the measure as a private bill.

Roads.

3. (i) Flood reports are now being received periodically from the following important river crossings which heavy rains are likely to render temporarily impassable:—

Flood Reports.

Great Northern Trunk Road.—Musi, Guddakama, Manneru, Paleru, Penneru, Swaranamukhi, Kistna.

Great Southern Trunk Road.—Pallar, Ponniyar, Gudilam (Bridge should be completed by end of current month) Mallattar, Manimukhta and Gomukhi (Also several other smaller streams on this route in S. Arcot district all of which should be bridged before March 1931).

Madras Calicut and Madras Bangalore Trunk Road.—Wenlock Causeway at Ranipet and Rice Causeway at Tiruvallam.

Coimbatore-Trichy Trunk Road.—Noyal River.

Great Southern Trunk Road.

(ii) The following information about the *Great Southern Trunk Road* will be of interest to motorists generally.

The complete repair of this connecting road with the South through South Arcot District is in hand and it is hoped will be complete by the end of 1931.

The Route is from Madras via Chingleput, Villupuram, Toledur, Trichy.

Palar Causeway near Chingleput in good order and rarely has much water over its roadway.

Ponniyar River near Villupuram. Causeway under construction but work delayed. Completion expected by August 1931 after which it will only be impassable when river is in high flood—probably fifteen days.

Three streams between Kalathur and Eluthur being bridged. Completion by end of September 1930 anticipated.

Gudilam Bridge should be completed by end of September 1930 after which motorists should be able to reach Ulundurpet without difficulty. At Ulundurpet travellers bungalow. Information will be available as to the State of the Gomukhi and Manimakhta Rivers which are being bridged but may meantime be impassable on occasions as they flood very quickly—though the floods rarely hold up traffic for more than a few hours. If the rivers are in flood motorists may proceed via Vriddhachalam to Toledur.

It is important to note that between October and December it is not advisable for motorists to try the Trunk Road between Ulundurpet and Veppur as the road is bad and several small streams are susceptible to rapid flooding.

Settiatope lower Anicut Road.

(iii) The road from Vadakutti and Settiatope to the Lower Anicut across the Coleroon River is being put in order. It is hoped that, by the end of October all traffic toward Tanjore will be able to use this road.

Cuddalore Trichy Road.

(iv) Members who have recently traversed the Cuddalore-Vriddhachalam-Trichy Road report it to be in bad condition generally—though not impossible, it is very bumpy and should be taken fairly slowly throughout.

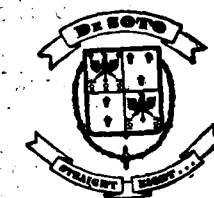
Pondicherry

(v) Extensive road repairs have been executed in Pondicherry and the roads in its vicinity.

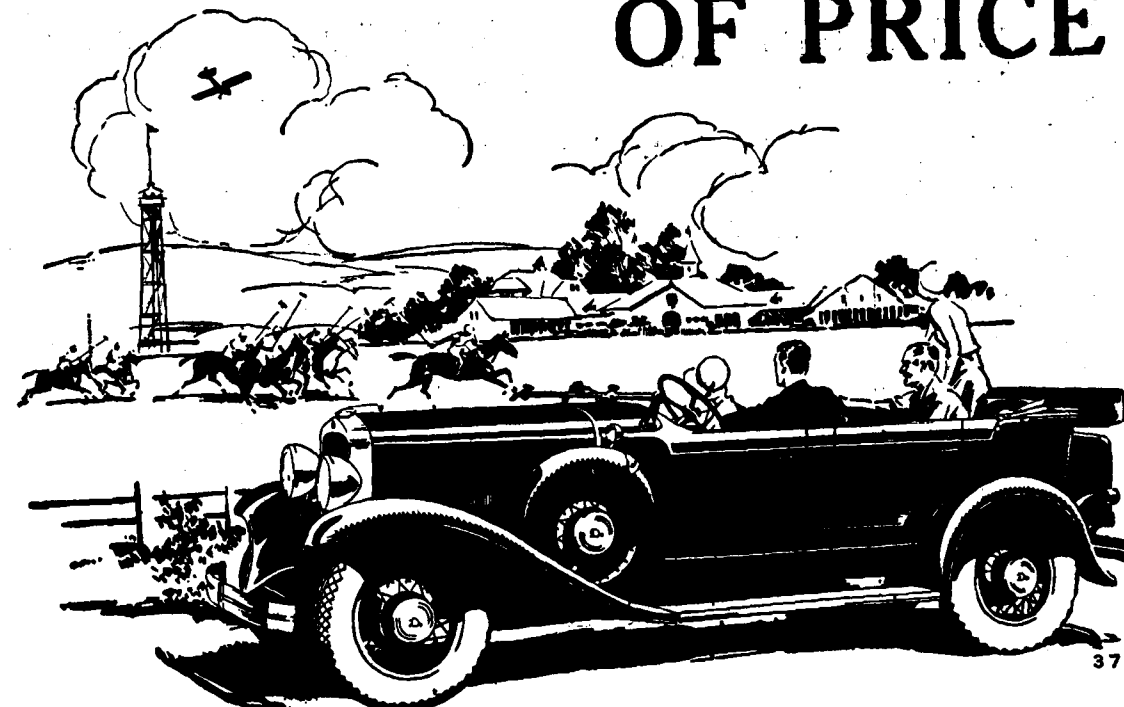
Nilgiris.

(vi) Considerable correspondence has passed on the subject of hastening the improvement of the several Nilgiri Trunk Roads for which it is understood large sums have been granted.

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- (c) Widening and improving bridges and culverts.
- (d) Clearing forest and jungle growth from sides of roads to improve vision.
- (e) Cutting back over hanging banks, especially at sharp bends.
- (f) Trimming or removal of overhanging trees.
- (g) Increase and improvement of danger signs.
- (h) Marking of repair plant and obstructions.
- (i) Careful siting of repair material so as to leave maximum fairway.

In this connection it is interesting to note that the Superintending Engineer, in an inspection report dated February 1930, called attention to most of the points raised by the A. A. S. I. as enumerated above.

Tolls.

4. (i) The question of procuring the abolition of Tolls on Motor Vehicles is receiving continual attention. A draft bill is being prepared for use in the event of the one originally drafted by Government not being proceeded with when the new Legislative Council assembles.

(ii) The following opinion recorded by the Association's Legal Advisor is reproduced as it may be of much interest to touring members :-

"I have to state that the view taken by your correspondent is entirely erroneous. Sec. 107, 'DB Act clause 3 provides that if the passenger refuses to pay the toll demanded, the keeper may seize the vehicle and send it for sale. By clause 1, 'he cannot charge more than one toll, but when the demand is made the burden lies on the passenger to prove by the production of the ticket that the keeper has exhausted his powers under clause 1 and that he cannot act under clause 3. The powers under clause 3 necessarily imply a power to close the gate and detain the vehicle until the ticket is produced. Our correspondent may be informed that he was in the wrong in going round the toll gate as that is expressly prohibited by the same section."

Road Traffic Act in V. K.

5. In view of the passing of the Road Traffic Act, 1930, the Automobile Association London is issuing a booklet, giving an alphabetical digest of the main features of the law as affecting the owners of motor cars and motor cycles. The booklet is available to all motorists by postcard application to the Secretary, Farm House, New Coventry Street, W. 1. or to any of the A.A. branch offices throughout the country.

Compulsory third party insurance; physical fitness of applicants for driving licenses; dangerous or careless driving; rights of appeal; police powers as to stopping vehicles, inspection of licenses, and arrest; disqualification for holding a driving

license; driving off the highway, etc., and all the new provisions of this Act have been summarised by the A. A. Legal Department in a condensed form suitable for the layman.

As many important matters referred to in the Act have yet to be the subject of Regulations by the Minister of Transport, this booklet will be followed at a later date by the issue of an A. A. Legal Handbook, giving a comprehensive survey of the whole of the Law and Regulations affecting the motorist. A copy of this book will then be available to every A. A. member.

Badges.

6. A small supply of new A. A. S. I. Centres for R. A. C. Club Associate Motor Car Badges have been received.

The price has been fixed at Rs. 2-8 plus postage. It has been found that there is no difficulty in changing this centre for the old S. I. M. U. centre in badges which have a screw in the centre of the wheel fixed on the back. After removing this screw, and the wheel itself (by removing these screws on its circumference) the centre can be screwed out by replacing the centre screw and turning it to the right. The new centre has a threaded collar by which it can be attached and locked in position by replacing the back wheel and centre screw.

On badges of earlier design the S. I. M. U. centre piece is soldered in three places but can be easily removed by a tinman who can then solder the new centre into place.

Revised Motor Vehicle Rules.

7. The Sub-Committee elected to consider the draft Revised Motor Vehicle Rules for all India has been working throughout the month and hopes to submit its final recommendations about 15th September 1930.

(ii) Intimation has been received that the Madras Motor vehicles Rules are to be amended.

(a) to require professional drivers to undergo a medical examination prior to being granted a driving license.

(b) to enable District Magistrates and the Commissioner of Police Madras to lay down schedules, or time tables to obtain more effective control over the running of motor buses on congested roads.

District Representatives.

8. (i) Intimation has been received with much regret, that Mr. R. V. Hanson our energetic representatives in the Nilgiris is about to leave India. I wish to express my deepest thanks to Mr. Hanson for the interest he has taken in the activities of the Association and the efforts he has made to procure better motoring facilities on Nilgiri roads.

(ii) Mr. W. F. Rale has kindly undertaken the duties of Honorary District Representative in Hyderabad State.

F. CHURCH, Major, (Retd.),

2nd September 1930. } Secretary Automobile
MADRAS, } Assn. of Southern India.

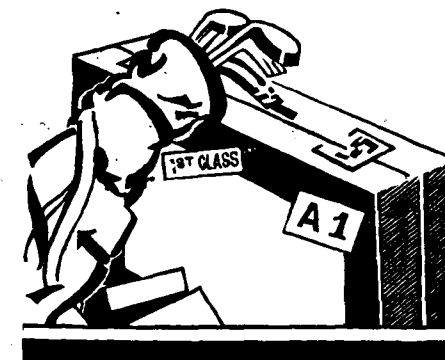
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Advertising Rates

Rates for display space will be furnished on application. For small advertisements and entries under 'Sales and Service Guide,' see page 310.

Advertisements to secure insertion in any month's issue should reach this office not later than the 20th of the month preceding. The publishers of *The South India Motor Owner* reserve the right to reject any advertisement for any cause.

CONSTANT VALUE

Twelve months ago *The South India Motor Owner* first made its appearance and the value of the journal has been consistently upheld. Good and instructive reading matter—neat illustration and a desire on the part of the publishers always to help the reader, make this journal invaluable. Have you ensured receiving your copy regularly by subscribing?

THE SOUTH INDIA MOTOR OWNER

Sales and Service Guide

Arranged alphabetically under vehicle headings this guide should prove extremely useful to motor owners throughout Southern India. The up-to-date Service Station and Sub-Dealer will find entries in this section to be a profitable method of inexpensive advertisement. Each entry in these

columns is charged for at the rate of Re. 1 per line, but no contract can be accepted for less than six consecutive insertions. Correspondence both from Dealers and Car Owners invited in order to make this section as useful as possible.

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BERHAMPORE ... Ganjam Automob-
les.

BEZWADA ... Row & Brothers.
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MADRAS ... Motors & Services Limited.

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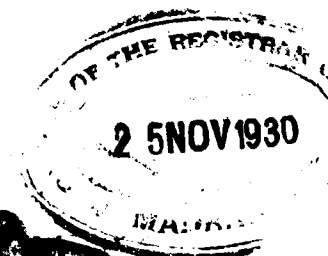
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Official Organ of the Automobile Association of Southern India



A Little Trumpet Blowing

Far from being an object for derision, the modern blower of a trumpet achieves much more than did his forbears with the blare of trumpet and clash of cymbal. A little trumpet blowing—or, its modern equivalent, publicity—is essential under present day marketing conditions, and all who are endeavouring to sell cars and accessories to Southern India motorists can obtain no greater effective broadcasting than that offered every month through the pages of **THE SOUTH INDIA MOTOR OWNER**.

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REMEMBER that there are to-day many signs to indicate that Motorists as a class are regarded by Government as a potential source of increased revenue, and are to be "squeezed" in all directions. Increased Taxes, increased Registration Fees, increased Licence Fees, are all in the air.

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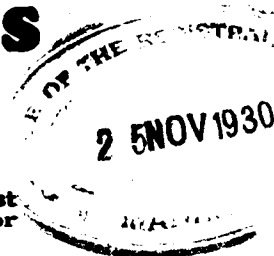
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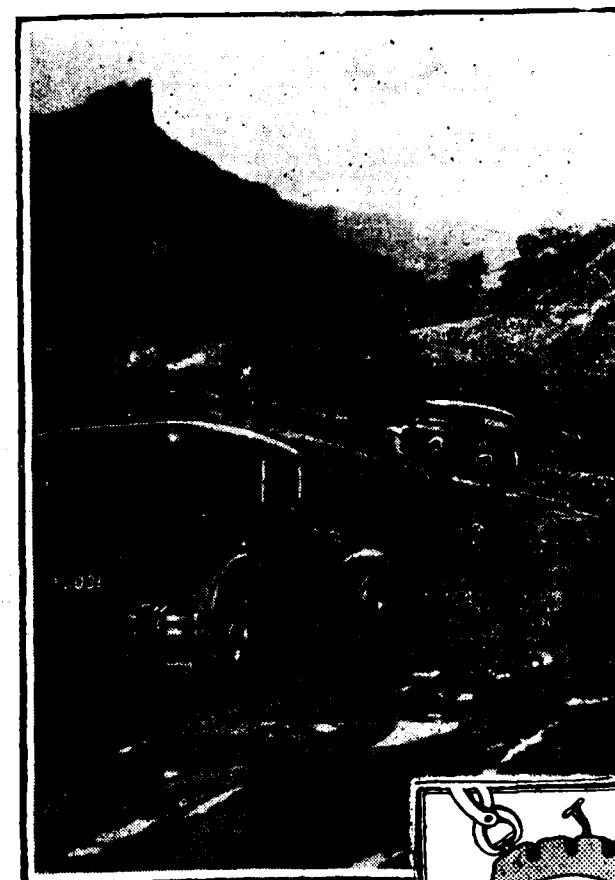
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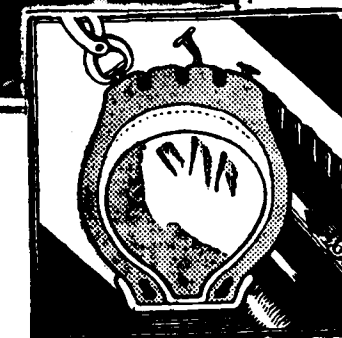
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Look for the red double diamond!

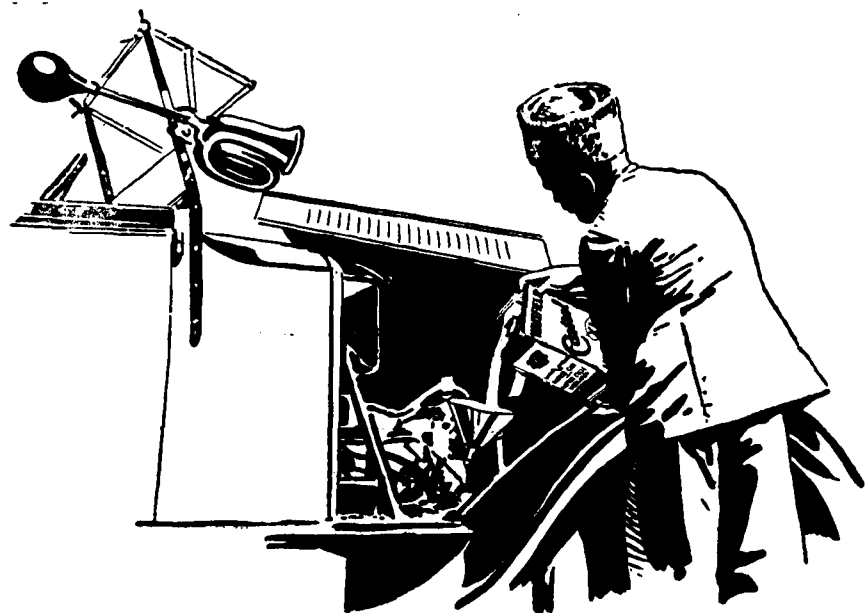
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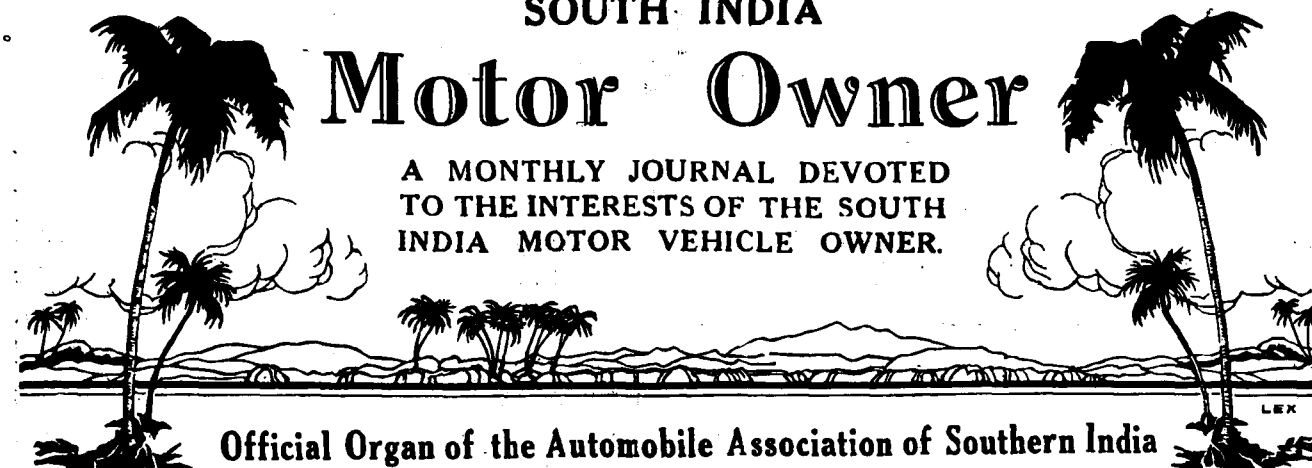
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THE SOUTH INDIA Motor Owner

A MONTHLY JOURNAL DEVOTED
TO THE INTERESTS OF THE SOUTH
INDIA MOTOR VEHICLE OWNER.



Vol. II, No. 9

October, 1930

Price As. 8

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EDITORIAL

Taxation and Licensing Reform

FROM time immemorial it has been stated that India's prosperity lies mainly in the development of the agricultural wealth of the country, and though it will take decades to transform the Indian ryot into a modern agriculturist employing up-to-date methods to win the utmost wealth from the soil, the time will be appreciably shortened by opening up easy methods of communication between village and village, and village and town. Any attempt to elaborate the idea so admirably expressed in the phrase "Transport is the life-blood of civilization" stamps the elaborator as a monotonously unoriginal individual, and yet it fully recognised the world over that efficient means of communication have a marked effect on the growth of agriculture, commerce and industry within the country so served. The development of a well thought out system of road transport facilities would have a marked influence on the general out-look of the people; mofussil people would be encouraged to look further afield for markets for their produce than that at present offered within the narrow confines of their own locality, and the restricted village existence and its attendant under development of self improvement would be forgotten on inter-village communications being made easier.

Every step taken toward the more thorough opening up of interior India will contribute enormously toward the economic and social development of the many million inhabitants of this vast peninsular. Already a definite stimulus has been given to agriculture and industry by the partial motorization of a

number of mofussil districts. What is now required is a road system which will adequately link up those districts which have internal transport systems operating at the present time which inter-communication, once laid down, would contribute in no small way toward bringing India and her people nearer to that worthy independence so near to the hearts and minds of her wise men.

It is, therefore, essential that more intelligent attention be paid by those who have these affairs in hand to those taxation problems affecting all forms of automotive road transport. Licensing, taxation and the rules laid down for the safe conduct of transport service should all be thoroughly overhauled with the object of eliminating any part of them which is in any way detrimental to the rapid and unhindered progress of transport development. Taxation is at the present time admittedly high—estimated to be equivalent to the income tax payable on a salary of Rs. 800—but still greater hindrance is occasioned by the absence for uniform licensing rules applicable throughout India. Revised rules are in course of preparation, but this does not mean that they will be adequate. No clear-thinking person will gainsay the fact that the compilation of rules satisfactory to all sections of the transport using peoples of India is no easy task; there are so many varied interests to consider and so many necessities to be provided for, that it will be exceedingly difficult to arrive at even a moderately perfect solution. Nevertheless, bearing the fact in mind that wise legislation today builds for future prosperity, it is to be hoped that better facilities will be

provided to enable motor owners operating trucks and buses to conduct their business more confidently, and without the obstacles to progress at present imposed by certain portions of the existing rules.

Heavy taxation is not conducive to those wider motor transport facilities essential in the economic interests of India. In comparison with the progressive attempts made to reduce taxation in western countries, the Government's policy of enhanced taxation can only result in a temporary gain, and if any permanent benefits are to be derived the better way lies in reducing taxation charges to that figure which motor owners will not find any difficulty in paying. Heavy taxation and unequal licensing laws in India have been the subject of a great deal of adverse comment by both motor owner and motor dealer for many years, and it is really gratifying to find that the unequal licensing rules are to be at last removed, and with this object in view, the Central Government, in consultation with Provincial Governments, has decided to reform the present rules by putting licensing laws on a uniform basis throughout India. It is obvious that this reform will go a long way toward encouraging motor transportation throughout India, thereby bringing those benefits which follow on improved inter-communication to every section of the community, and in particular, to the agriculturist on whose increased producing power the economic prosperity of this country so largely depends.

With the expected appearance of uniform licensing laws, there still remains the question of heavy taxation. That this should also be remedied is indicated by the fact that transportation facilities vitally affect all classes of the population and every member of the community benefit one way or another. Side by side with

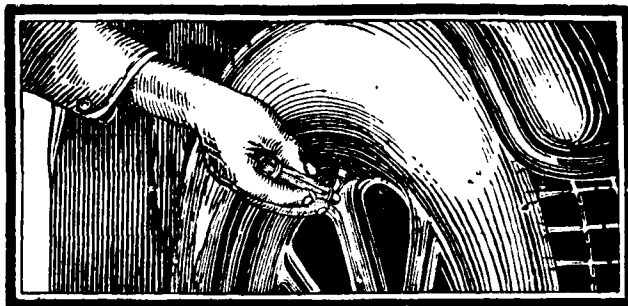
the benefits accruing to the general public as a result of the nation-wide use of motor transport the Government of the country conversely benefits by increased revenues, as lighter taxation will induce a greater number of people to use cars and trucks. This point appears to have been missed by the authorities concerned, and it is for enlightened public opinion to see that no legislative measures are enacted which will in any way retard the steady growth of motor transportation in India.

To follow this theme to its logical conclusion it is evident that reform furthering the development of motor owning must be brought about simultaneously with definite measures to provide suitable roadways for the increased number of vehicles which will appear as the result of this taxation and licensing relief. Roads are needed all over India, and when it is considered that good earth roads can be made at a cost ranging from Rs. 20 to Rs. 500 a mile there seems to be little in the way of immediate and continued improvement.

It has been stated by one authority that "A country without roads in a few years would belong to the dark ages. Also that "the greatest single forward movement being taken by the race of men to-day is the means of inter-communication, and the greatest single thing for the advancement of learning, intelligence and civilization, the opportunity that is afforded for the people of a country and of all countries to mingle with each other".

It is our intention to give from time to time authentic facts and figures which will show how the inexpensive earth road has assisted in the development of the country, and how reduction of taxation all round can produce funds more than adequate to cover the cost of that essential inter-communication system the need for which is felt all over India.

Taking Care of Your Tyres



The Author impresses upon Motorists the Necessity of Periodical Pressure Testing to Ensure Long Tyre Life.

WHEN a motorist buys a car, he does not stop at that point and call the transaction complete. He realises that there are details in connection with the running of the car which require constant attention such as brakes, the proper quantity of oil to be used, the parts of the vehicle which must be lubricated frequently; in short anything, which if not done, will seriously affect the perfect efficiency of the car.

What the motorist is really doing is that he is thinking how to care for his car so that he may obtain the most service from it at the lowest cost per mile. But the question is: how often does this considerate thought of the motor car buyer include the proper care and inflation of tyres, if at all? Just how true this is can be judged from the photographs here shown. They are published by the courtesy of the Goodyear Tyre Company, and may well be titled 'Cause and Effect.'

In most cases, any suggestions regarding tyre care are rarely followed; it being taken for granted by the motorist that anything does so long as it will keep his tyres inflated. This in itself is true, for the tyres must be inflated to allow the vehicle to operate, but whether they are properly inflated, over-inflated,

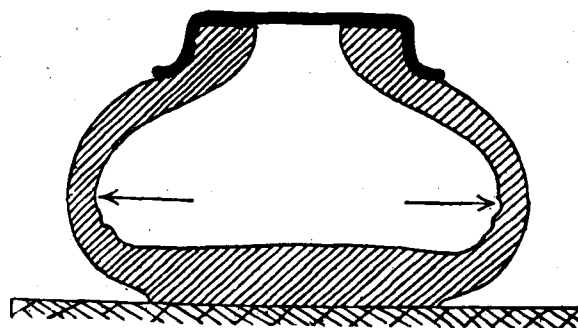
or under-inflated, seems not to make the slightest difference, as long as they have air in them.

If only the motor owner could realise that a tyre too is a machine! Built of rubber, cotton and steel, it is especially designed to take up the inequalities of the road over which the car is moving, and to give smooth, easy-riding qualities to the motor car. Hence from this, it can be seen that a tyre requires as much attention as the mechanical part of a vehicle.

A tyre that receives proper care and is properly inflated can be depended upon to deliver the full mileage that is built into it by the manufacturer, and furthermore it is the desire of the manufacturer that every user of his tyres shall receive the full mileage paid for.

It seems to be a time-honoured custom among motorists when checking inflation in tyres, either to feel the tyre with the hands, or to give it a re-

sounding kick, and pass on the next tyre to be inspected. Just exactly what this process of testing conveys to the mind of the motorist is unknown. But to those who know how to care for tyres, the aforementioned practice means absolutely nothing, and it surely is not a way to judge whether a tyre needs more air or not.



When under-inflated, a tyre will develop folds such as shown in this illustration, and under this condition it gradually creases until it cracks open, resulting in the tube being pinched thus producing a blowout.

Neither can tyre pressure be gauged by the eyes, but should always be checked with a reliable gauge. All valve parts should be tightened to prevent leakage, otherwise many of the results of under-inflation with consequent loss in service are likely to occur.

Under-inflation is without doubt the greatest tyre evil to-day with which tyre manufacturers must contend, and it accounts for more ruined covers than any other factor against which a tyre may come in its life of service. To detail some of the results of under-inflation will serve to convince even the most sceptical that it is an evil which should be abolished at once, and a point which the wise motor car owner should impress on his mind.

Assumed that a tyre is ten pounds under-inflated and this is not a wild assumption, because many tyres to-day are in that condition. What is the result? The side-walls are bulged and wrinkled and the tread rubber is distorted on the road. This causes excessive strain and wear at these points, with the result that the tyre will be damaged beyond repair or will burst.



Damage to tyre through inadequate repair. The owner of the tyre shown, in order to "economise," affixed a tyre section to the injured tyre by means of nuts and bolts! Photo, Courtesy Goodyear Company.

If a tyre is properly inflated it will withstand many a blow or shock without the least difficulty. A good tyre is designed to do just that, but if the tyre is under-inflated, the result is something entirely different. If the blow is unusually severe it will sometimes produce a large rupture causing the tyre to go flat immediately. If the blowout is less severe only few cords will be broken, but eventually the break will grow until the tube is pinched and the tyre becomes flat. The tyre might become flat or might burst on a perfectly smooth road or even while the car is standing still. Injuries of this type are caused by an under-inflated tyre striking the edge of a hole in the road or smashing the tyre against a curb or any similar obstacle.

It will be seen from the foregoing what trouble can be caused by under-inflation. Proper inflation is a point which cannot be overemphasized; and if receiving the full attention of the man who buys tyres, will result in his obtaining the full mileage originally built into his covers which is the ultimate aim of the manufacturer.

A Short History of the Motor Show

ON the 16th of this month the 24th Motor Show will open at Olympia. The first Motor Show ever held took place at the Royal Aquarium, Westminster, in 1897, the year in which the motorcar was freed from the ridiculous "man with the red flag." 1897 may definitely be said to be the year when the motorcar was recognised as a practical possibility, and the exhibition created a great deal of interest.

In the same year the Laundry Exhibition at the Royal Agricultural Hall also had sections for automobiles under the auspices of Messrs. Cordingley & Co., a pioneer firm of automobile dealers, although the connection between motorcars and washing machines would appear to be comparatively slight. On the other hand, owners of these early cars may have regarded the association as a subtle joke.

The section was sufficiently successful to justify a repetition the following year. In 1899 the recently formed Automobile Club of Great Britain and Ireland (now, of course the Royal Automobile Club) staged

a very interesting display in Richmond Park, and in the same year Messrs. Cordingley & Co. expanded the section of the Laundry Exhibition into a separate car exhibit at the Agricultural Hall.

1899 was also a year of two Shows, in that a National Show was held at the Crystal Palace, which in those days held a prominent place in the politer amusements of the metropolis.

In 1900 the Automobile Club joined forces with Cordingley and a thoroughly representative Show, well supported by the industry and public, was staged at the Royal Agricultural Hall.

These two Shows continued during 1901 and 1902, and in the latter year the Society of Motor Manufacturers and Traders was formed. The society took over the control of the National Show at the Crystal Palace and was responsible for an interesting display in 1903 and 1904, but in 1903 it was transferred to Olympia, where an annual Show has been held ever since, except for the break incidental to the war years.

From an Owner Driver's Note Book



by

"SPOTLIGHT."

To Much Control.

I have recently come to the conclusion that road control can be overdone; and though every conclusion at which I arrive by dint of much mental bestirring is far from being final, I do believe that many motorists will agree that policework, signposting and other "aids" to better motoring are becoming less useful as they become more numerous.

For one thing, the motorist now has to keep a lookout for signs and signals from every conceivable place, above, below and around him. He has to keep a watchful eye on our not too helpful police, and between these two big jobs he has also to dodge the suicidally intentioned pedestrian and the 'other damp-hool'! It is no light task continually to observe all these things, with the result that every additional source of "help" a kindly intentioned traffic commissioner puts on the road makes driving a still more difficult and "nervy" proceeding. We are thankful, naturally, for all police work, but the time has come when obviously one can see that too many cooks on point duty can make a terrible hash of things.

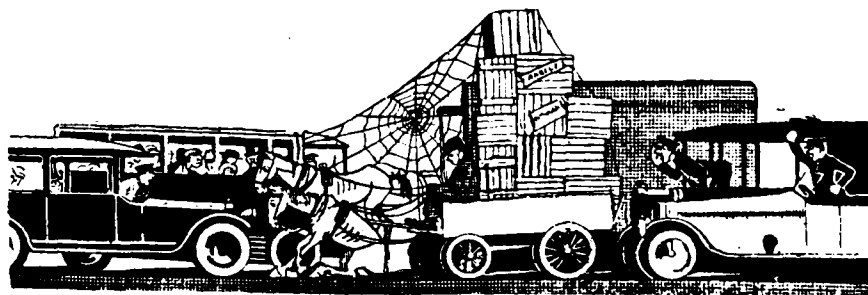
Heavy Removals.

One cannot nowadays, open any English motoring paper without coming across some reference to the

new regulations as issued by the Minister of Transport in Great Britain. Altogether the new rules are very fair and should improve motoring conditions considerably. There are, nevertheless, one or two little points which strike one as rather ludicrous: in particular, that regulation which makes it an offence for any person to let a vehicle remain on the street within the London traffic area after it breaks down. The rules are wide and comprehensive, and explicitly apply to any vehicle whatsoever, and the London police are empowered to take all necessary steps for the removal of the offending immobile vehicle from the road.

This is all very well as regards motor cars and even large motor buses, as one rarely sees such vehicles so incapacitated as to render them hopelessly immovable. What, however, tickles my sense of humour is the prospect of a bunch of London policemen endeavouring to remove the corpse of an expired tramcar. How such a vehicle could be removed bodily from the street under these conditions passes my comprehension and if, as often happens, the electricity supply fails, how a stream of many dozen tramcars is to be hauled off the roads provides one with a problem, the solution of which is hardly feasible.

Verily, the law is indeed an ass!



Hopelessly Immovable Obstruction.

An Excellent Reason.

There are people who imagine that the racing motorist is a fellow who sets about his speeding with very little thought about his physical condition. Sometimes he is seen on the starting line at Brooklands with a cigarette between his lips waiting for the fall of the flag.

He appears to spare himself none of the good things of life, and those who judge the athlete by the self-denial which he is traditionally supposed to practice look upon the speed motorist as a being who regards any kind of training with scorn and contempt.

But this is rarely so? I do not vouch for the accuracy of a statement made in the gossip vein, but here is one culled from a Sunday paper.

"I hear that....., the famous Brooklands speed driver, though normally an excellent eater, never on any account has a meal before a race. On being asked why he stints his stomach so rigorously, he replied: "Ah, it makes it so much easier for the doctors to operate!"

How many athletic stars have to abstain from food with such a motive as that?

This Month's Fable.

On a certain fine day in India a man had a motor car. And the car wouldn't go even though it knew very well the man had promised to take his "burra sahib" for a nice long run.

So the man gave the car the once over, but despite desperate methods and profuse perspiration the car still would not go.

And a second and a third time he carried out his well learned "Process of Elimination for the Diagnosing of Faults" but failed dismally to achieve any result except more perspiration.

Then he spoke with the tongues of men and of angels and had no charity. Indeed, he

swore most earnestly, slandering the car's makers and blaspheming its gods. After which, just as the hour of his appointment, was nigh, he murmured "Please start".

And the car immediately did so.

To Prevent Mud Splashing.

One cannot drive far in a car-day without realizing that rear mudguards are absolutely inadequate. If one drives fast and consequently does a lot of overtaking (or if slowly and is thus often overtaken) a great deal of inconvenience is caused by stones and grit flung up by the rear wheels of the car ahead. In wet weather the fault is even greater and mud spatters over the windscreen, often obscuring vision to such an extent as to be not only annoying but distinctly dangerous.

It would be an easy matter for makers of cars to bear this in mind and to prevent its occurrence by making mudguards say four or five inches longer.

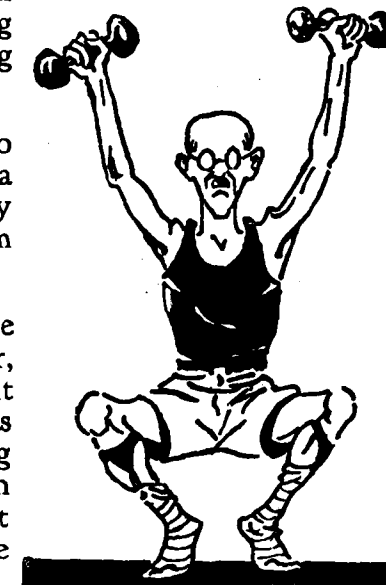
In any case a flap fitting could easily be marketed which could be attached readily to mudguards, and I have no doubt that owners would be only too pleased to use such a fitment as I would prevent annoyance to others and reduce at the same time the amount of mud which is thrown up on to the rear panels of their own cars.

Assurance.

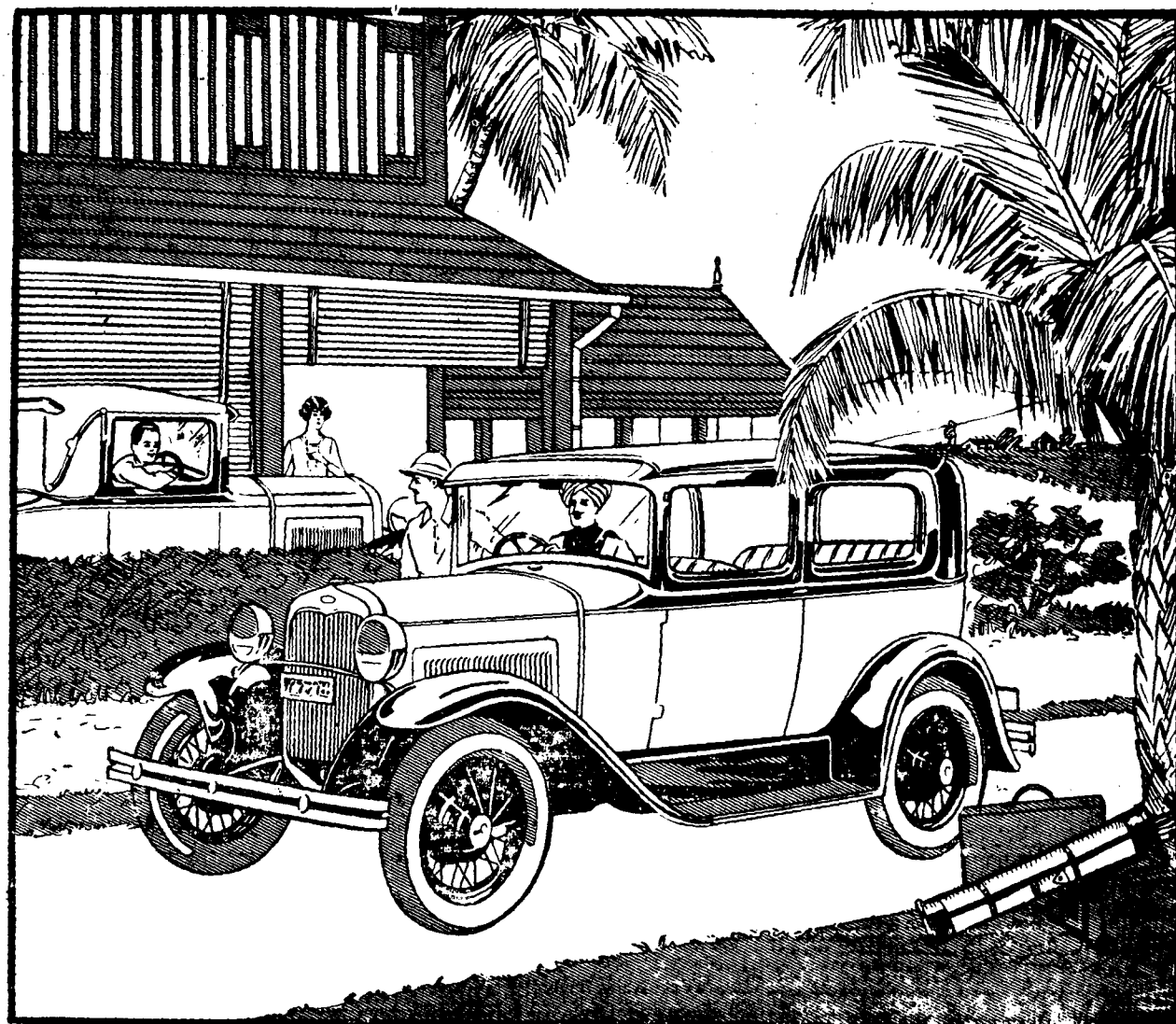
She had done everything wrong. She had disregarded the signal lights, then stalled in the middle of the road, and before re-starting had taken out her powder puff and begun to apply it to her face. The irate traffic constable strolled up:—

"Say, lady," he said "do you know anything at all about traffic rules?"

"Why, yes," she said calmly; "what is it that you want to know?"



'Any kind of training.'



FORD TUDOR SEDAN Now Rs. 2,895 at Port of Entry.

Headlamps, Radiator shell, Hubcaps, Cowl strips and Door handles of Rustless steel which will not Rust or tarnish. Ford is the only car which supplies this feature. The Hydraulic shock absorbers are double acting which means that both up and down movements are kept

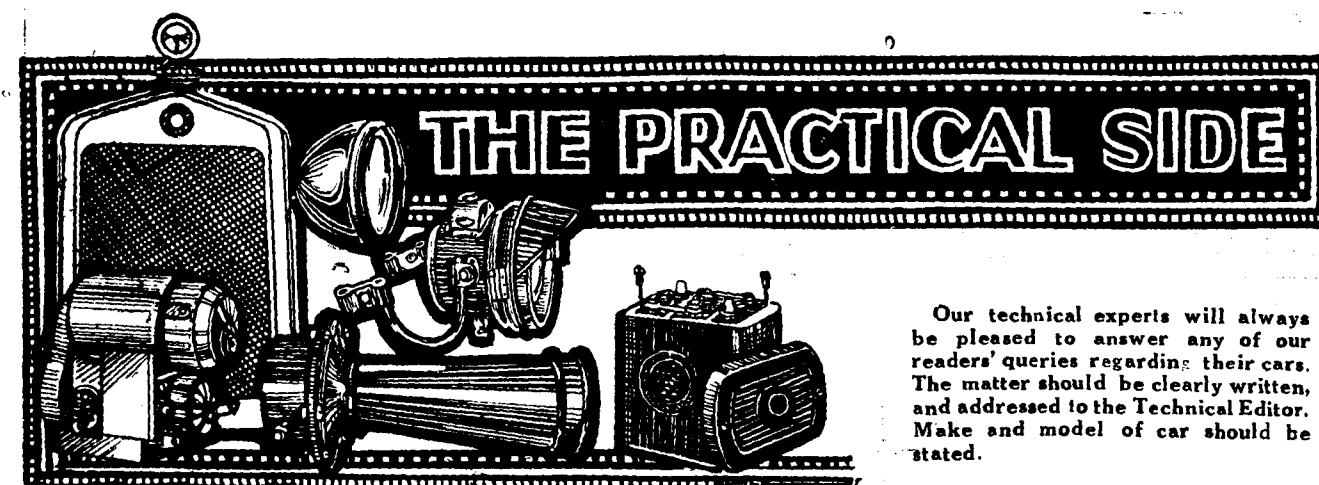
under control and riding comfort is excellent. Front bumpers and Rear Bumperettes are supplied, improving appearance and protecting fenders. A fifth tyre and tube is included as standard equipment. Shatterless glass windscreens mean safety from flying glass in case of accidents.

Easy Payment Terms gladly arranged.

FORD MOTOR COMPANY OF



INDIA LIMITED, BOMBAY



Our technical experts will always be pleased to answer any of our readers' queries regarding their cars. The matter should be clearly written, and addressed to the Technical Editor. Make and model of car should be stated.

How to make an Electric "Stop" Sign

A Useful and Easily-made Fitment for the Handyman.

CAR owners, and especially those of saloon cars given to much night driving, will doubtless be interested in the following instructions for making and fitting an inexpensive lamp and switch which is thoroughly reliable, and which has been carried out on the writer's Morris Cowley 1928 saloon satisfactorily.

First procure two empty tins which have formerly contained floor polish. The idea is that only one tin container is used, but that two lids are necessary.

It will be found that a lid will just fit over the bottom of the tin and when both thicknesses of metal have been cut as shown in the sketch, a stencil with the letters STOP, some scarlet silk, and a piece of celluloid, may be clamped between the two and held in place by two bolts and nuts. A bayonet bulb holder must now be fixed by means of its flange (procure a wall-fitting holder with flange drilled with three holes) to the bottom circumference of the tin, so that when the bulb is lit it will shine through the stencil, silk and celluloid at the back of the tin. The other lid can now be fixed in its proper place on the top of the tin, so that the whole is enclosed, and between two lids.

To make the Switch.

Some long bolts and nuts should be run through, clamping the lids, so that enough projects for fixing to an angle piece of strip steel which must be drilled to take $\frac{1}{4}$ in. bolts; these may be slipped through two of the existing holes on the off-side dumb iron of the car. Now comes the making of the switch. We shall require the stop sign to flash out its warning on pressure of the brake-pedal. This should be timed some distance before the

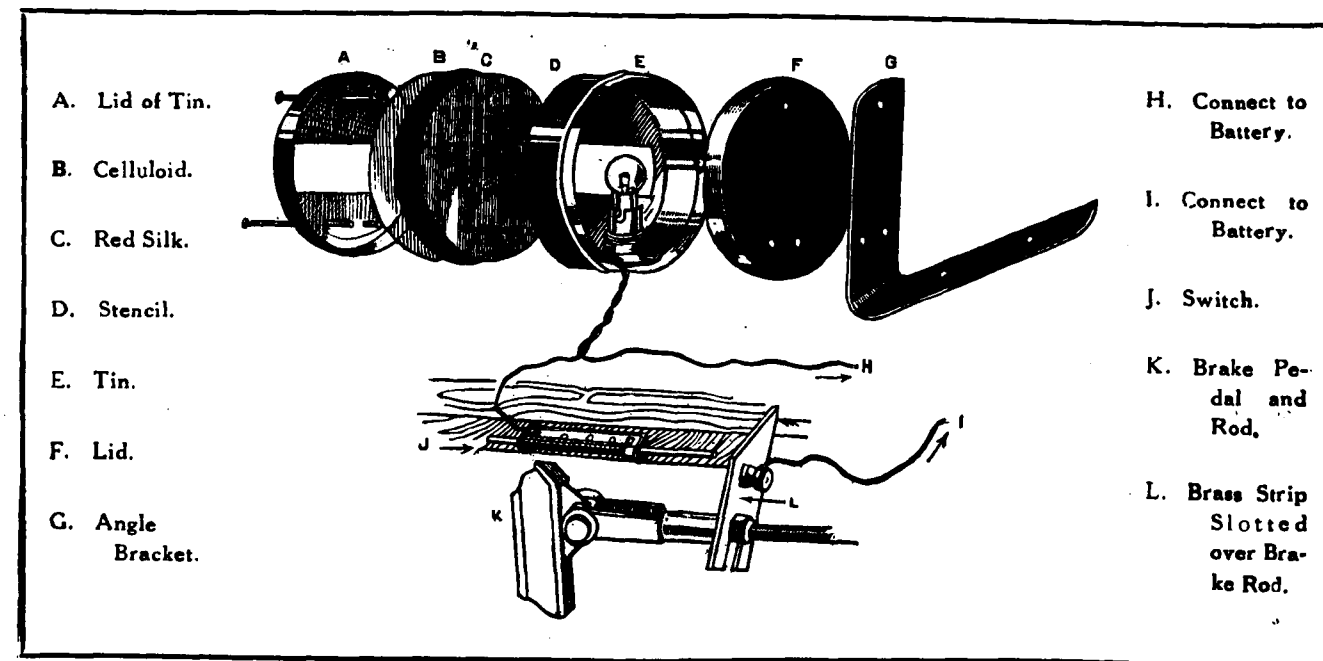
brake is full "on," and it will be realised that any switch so operated must have allowance made for the brake-operating gear to travel to its full extent; if the switch were of a rigid contact type as soon as contact was made the brake-rod could not travel any farther than the limits of the switch. The following provides a good contact, is adjustable, and can be very easily fitted to most cars.

Procure a "Meccano" strip about three inches long and bent at right angles for the last $\frac{1}{4}$ in. at each end, with a hole in each angle, a 4 in. "Meccano" round rod to slide in these bearing holes, a 3 in. light coil spring to take the rod, and a "Meccano" stop collar which can be located anywhere along the rod by means of a grub screw. This forms our sliding contact—as the brake-rod travels on it makes contact, rigidly at first, but then causes the rod to slide to the extent of its spring. We must now make a fixed contact on the brake rod.

Getting to Work.

First of all remove the two floorboards in front and then unscrew the sloping board which gives access to the clutchcase, etc., as all available working room will be required. Locate the foot-controlled brake-rod—follow it towards the pedal and you will discover that it terminates with a screw thread and a lock nut.

Cut a piece of strip brass about one inch wide, $\frac{1}{8}$ in. thick and about two inches long, slot one end so that it can be locked between the lock nut and the stop, and slope off the other end so that it clears the floor-boards normally in position above. Now we must fix the sliding contact so that the brass strip on the brake-rod will be pushed against the sliding "Meccano" rod.



An extremely convenient place is at hand. Observe a right angle formed (perhaps by accident!) below that made for receiving the floorboards - the angle formed by the first layer of wood on the chassis steel side member. Fasten, by means of wood screws, the sliding contact switch to the upright portion of this right angle, making sure that no part of it touches the metal below - otherwise a permanent switch on the "on" position will be inevitable. If there is little clearance between the metal, insulate the switch by means of a layer of inner tubing before screwing down.

Wiring.

The wiring is perfectly simple - remove the cover of the accumulator and, using twin flex, con-

nect one pole of the lamp to either terminal in battery, and the other to either the brake contact brass by means of its terminal or to the sliding contact by means of the screws which hold it to the wood. A short wire is then required from the unoccupied terminal of the battery to the other pole of the switch. The timing of the light may now be determined by means of the brass collar on the "Meccano" rod; slacken this and adjust the rod so that with the brakes normally adjusted there is about $\frac{1}{8}$ in. clearance between the rod and the brass strip. Tighten up the collar - press your foot on the pedal - get the family across to see it work - and replace accumulator lid and floorboards. As the brakes wear down, adjustment of the switch may be called for and can be carried out by means of the collar as above.

Cleaning Aluminium Components.

HEAVY grease and thick oil can be removed from aluminium parts by the use of scrapers and cotton waste soaked in kerosene oil. The addition of 5 to 10 per cent of machine oil to the kerosene used alone. Oily and greasy parts should be immersed for a few seconds in a warm 10 per cent. caustic soda bath. The castings or stampings should then be thoroughly washed and scrubbed in plenty of clean hot water. This will not, however, remove a heavy oxide coating; neither, as a rule, will it remove all the grease and dirt from a crack or break in a fairly thick casting, the metal retaining these in considerable quantity owing to its

porosity. To remove all traces of grease or oil it is preferable to heat the casting slowly and carefully until the oily and fatty matters contained in the pores of the metal are expelled, and then to brush the metal surface vigorously with a steel wire brush.

When cleaning parts in caustic soda solutions it is desirable to add very small quantities of water-glass (sodium silicate). This material has the property of rendering the metal immune against attack by the soda solution without, however, in any way interfering with the solvent action of the soda on oily and fatty matters.

Good Communications A National Asset

(From a Correspondent)

HILAIRE Belloc, in his book "The Road," has pertinently observed, "There are moments in the history of the Road in any society where the whole use of it, the construction of it, and its character have to be transformed. One such moment for instance, was when the wheeled traffic first appeared: another when there first appeared large organised armies. It occurred whenever some new method of progression succeeded the old." The truth of this statement is particularly applicable to India where the adoption of the motor car during the last decade has made amazing progress. It was recognition of this fact which led to the appointment of a Roads Committee some little time ago. This Committee made many constructive recommendations, some of them being given effect to by the Central Government. Very recently an allocation of 72 lakhs for road expenditure by the local Governments has been made by the Central Government in pursuance of the Road Committee's recommendations.

An examination of the present position shows that British India has about 200,000 miles of surfaced roads. Of this total about 60,000 are surfaced that is, suitable for motor transport purposes. When it is realised that British India alone has an area of 1,094,300 square miles with a population of 250 millions, it is obvious that a most serious lack of communications exists which needs to be urgently remedied in the interests of a "Greater India." A comparison with other countries brings out this defect in a startling manner. Sweden, for instance, with a population of a little over six millions, has 80,745 miles of motorable highway.

Growth of Motor Traffic in India.

A study of the road traffic shows that the development of communications has not kept pace with the growth of motor traffic in recent years. While there were imported into India 2,956 cars and trucks in 1914, this number rose to 33,535 in 1929. The popularity of trucks is indicated by the fact whereas only 76 trucks were imported in 1914, it rose to 14,511 in 1929, an indication that for transport purposes this mode of locomotion has become increasingly popular with all classes. Similarly the petrol consumption reveals an amazing increase. From 11 million gallons it rose to 72 million gallons during the last ten years. This is what the Road Committee said about this remarkable increase "This rapid increase is largely due to the sudden

and remarkable development of motor passenger services during the last three years. These services are penetrating to every motorable road throughout the country metalled or unmetalled, and may run comparatively long distances. The type of car most commonly used is a light chassis."



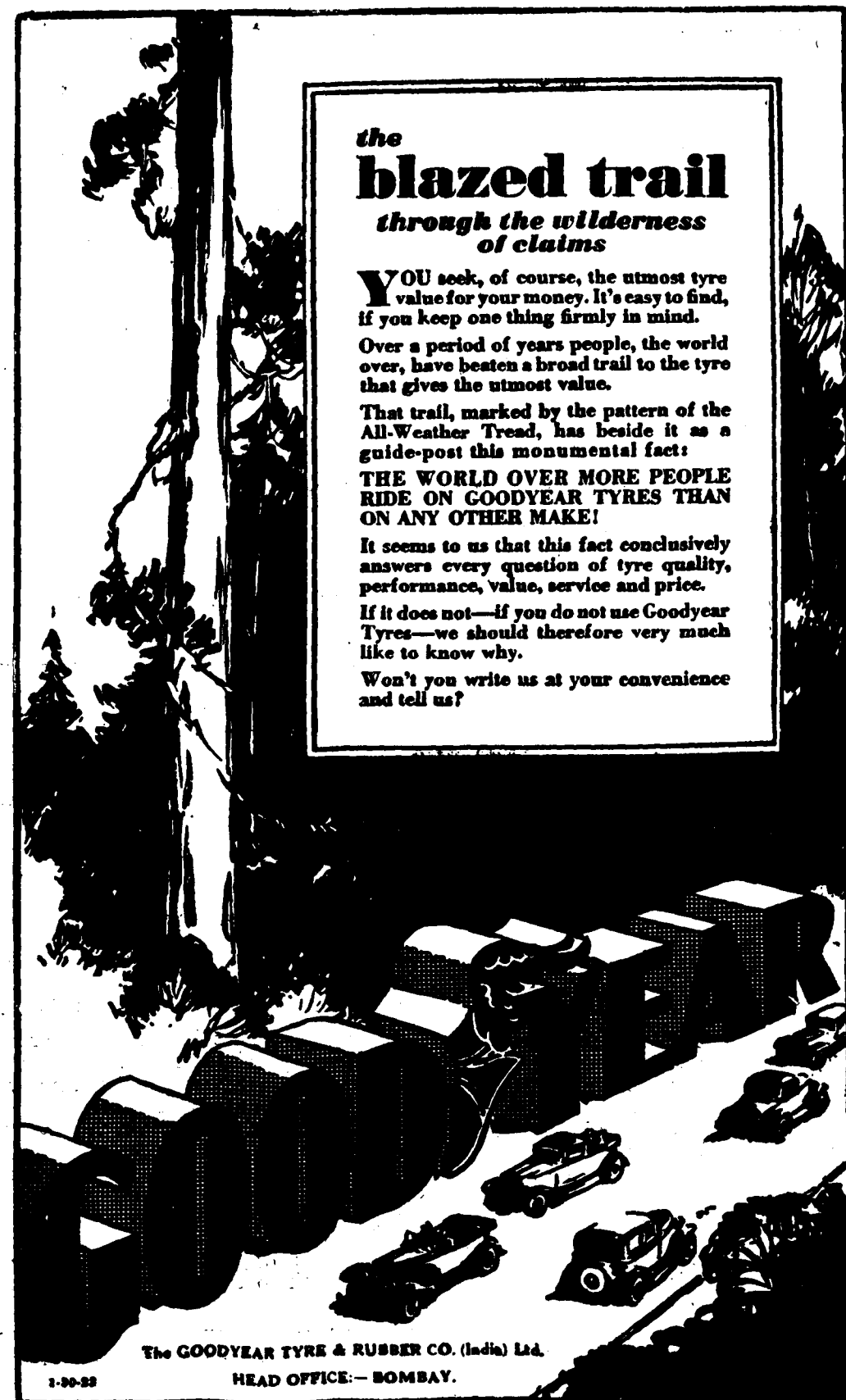
On the other hand the progress achieved in road building has been very slow. One finds that the nine Governors' Provinces, covering an area of over a million square miles, have about 59,000 miles of surfaced roads compared with 50,000 miles in 1914, only 5,600 miles have been added to the total during the last 16 years. These figures make extremely depressing reading to the economist and social reformer who visualise the growth of communications as principal factors in the creation of wealth and improved living.

National Importance of Roads.

The national importance of roads is recognised even by a country of the backwardness of China. Speaking at the World Motor Transport Congress held in America recently, Mr. Tsooming Chiu, on behalf of the Chinese Ministry of Communications, said: "We came to realise that communication is the forerunner of political, financial and industrial progress. To help agriculture and industrial development by means of communications is a national slogan." This movement resulted in a national good roads movement being launched by the Chinese people and an association for that purpose was set up in Shanghai, its object, independent of parties and Government, being to advocate the building of good roads throughout China.

It is an axiom that highways have revolutionised agricultural possibilities everywhere in the world. Formerly a farmer was content if he was able to provide for the needs of a household, or at the most, for a community within the village. But the improvement in communications has changed this outlook, so that they have now begun to grow commercial crops - such as jute, cotton, ground-nut and tobacco. The witnesses who appeared before the Roads Committee laid great emphasis on the development of communications as a means of increasing the per capita wealth of the country. Better and more roads mean the opening up of new areas which will enable the farmers to market

(Continued on Page 327.)



**the
blazed trail
through the wilderness
of claims**

YOU seek, of course, the utmost tyre value for your money. It's easy to find, if you keep one thing firmly in mind.

Over a period of years people, the world over, have beaten a broad trail to the tyre that gives the utmost value.

That trail, marked by the pattern of the All-Weather Tread, has beside it as a guide-post this monumental fact:

**THE WORLD OVER MORE PEOPLE
RIDE ON GOODYEAR TYRES THAN
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It seems to us that this fact conclusively answers every question of tyre quality, performance, value, service and price.

If it does not—if you do not use Goodyear Tyres—we should therefore very much like to know why.

Won't you write us at your convenience and tell us?

The GOODYEAR TYRE & RUBBER CO. (India) Ltd.
HEAD OFFICE:—BOMBAY.

1-30-33

Good Communications a National Asset—
(Continued from Page 325)

cheaply and thus derive greater profits than they can be expected to do under the existing circumstances.

National Aspect of Communications.

The socio-political effects of improved communications are undeniable in the case of a vast country like India. The absence of a network of roads in the neighbourhood of villages means that the bulk of the rural classes is shut out from other progressive parts of the country. Consequently they suffer from a narrow outlook, cling to primitive habits, and

are content with a low standard of existence. There is no incentive to create wealth, as there is no desire for those amenities which civilisation has developed in advanced countries.

A satisfactory feature of the road problem is the great interest which is being displayed by local bodies. Happily it is being visualised from a broader angle even by the provincial Governments. The road programmes which were formerly for a district or division now show wider considerations in relation to other parts of the country. Another healthy sign is the framing of uniform taxation and licensing laws for motor vehicles throughout India, which question is already being tackled by a responsible Committee. This way lies real progress.

The New Vauxhall

An example of British Car craftsmanship

VAUXHALL'S fine qualities are thoroughly familiar to motorists in India just as they have long been appreciated in Europe and on the Continent, where this typical British product enjoys an unexcelled reputation. After trying out the new "T" type Vauxhall, a well-known motoring critic has declared: "Although the 'T' Vauxhall is fundamentally European in design, yet it embodies most, if not all, of the salient features, particularly as regards equipment, of the best American and European cars." It is exactly this rare combination of essentials that makes the Vauxhall so suitable in all respects for India, quite apart from its aristocratic looks and the social prestige linked to Vauxhall ownership.

Among the mechanical improvements which have been incorporated in the construction of the new 'T' type chassis, is the Luvax one-shot automatic chassis lubricating system, which lubricates twenty-seven points of the chassis in direct proportion to their various requirements. This feature eliminates the grease-gun method. Greater silence and smoothness of operation result from mounting the engine upon rubber cushions, and by increasing the

bearing surfaces of the crankshaft.

The vacuum system of petrol feed to the engine has been superseded by a positive pump supply, while excellent roadholding is assured by the use of Lovejoy hydraulic shock-absorbers. The transmission is improved by the use of Hardy Spicer universal metal joints, instead of flexible fabric joints, on the propeller shaft.

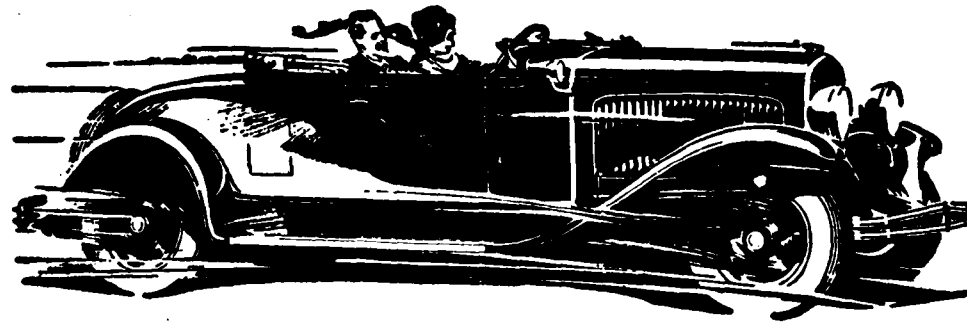
Another advanced feature is the arrangement whereby the throttle, ignition and lighting controls are mounted with the horn-push switch in the centre of the steering wheel. The headlamps are of the latest pattern giving clearly defined long-range road illumination, while all exterior bright surfaces are chromium-plated.



One of the most interesting vehicles in India. The enormous load is carried on ten Goodyear tyres.

Vauxhall's reputation for fine coachwork is enhanced by the quality, style and luxury of the new body designs, which are distinctive in purpose and appearance. To each a graceful fluted bonnet gives a characteristic touch of breeding and luxury. Careful consideration of seating angles, the use of soft, yielding upholstery materials, and expert building of the seats ensure the luxury travel which makes motoring so much more than mere transport.

Useful Notions for the Owner-Driver.



Helpful hints for the motorist who wants to get the most service and enjoyment out of his motor car.

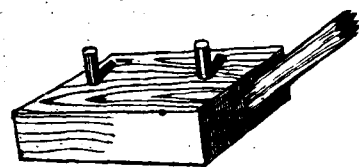
REGULAR attention to engine and chassis lubrication, battery, cooling system and tyres contribute to the efficient operation of a car. The engine, chassis and cooling system should be attended to according to the particular needs of the car. The battery should be inspected at least once every two weeks and if the liquid is below the proper level, distilled water, or in an emergency, clear rain water, should be added. The air pressure in the tyres should be checked once a week.

Water and oil are enemies of tyre fabric and, for this reason, small stone cuts in the casing should be kept filled with some good tyre filler. Oil deteriorates rubber and will ruin an inner tube in a very short time.

Never pack extra inner tubes carelessly in with the car tools and oil can. Wrap them carefully with heavy paper or keep them in a strong cloth bag.

Guard against leaks in the fuel supply pipes or flooding of the carburettor. Escaped petrol in the drip pan or elsewhere about the engine may cause serious damage or destruction of the car. Spilled petrol may become ignited by a heated exhaust pipe or manifold but much more commonly it is ignited by burning gas expelled through the carburettor air intake when a backfire occurs in the intake system.

A useful garage jack can be made by mounting the standard car jack on a block of wood with a slightly sloping handle. Drill two holes in the base of the jack and countersink the undersides, so that the jack will easily fit on to a pair of screws or bolts which protrude from the

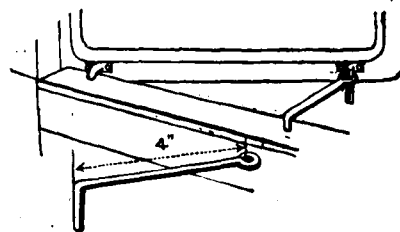


A block of wood used as a carriage for the normal jack for use in the garage.

pair of screws or bolts which protrude from the

wooden block. Naturally, the handle of the jack should be set at a convenient angle with the handle of the block.

When the hood and side curtains are erected ventilation can be improved by arranging the side screens at the rear so that the tail end points outward slightly. This can be done quite easily by getting a local blacksmith to make two small brackets, which would cost only a few annas. The brackets should at one end have a peg to insert into the hole provided for the rear peg of the side panel, whilst the other end should be drilled to accommodate the screen peg. The length should be about 4 inches and the curtains can thus be adjusted so that there is little or no draught.



Bracket made to hold a side-screen slightly open and improve ventilation.

Body squeaks many times can be eliminated by the application of penetrating oil, mixed with graphite, especially around the bolts and at other points where slight motion is suspected.

Petrol consumption per mile increases with higher car speeds due to wind resistance which increases with the square of speed. Not only does excessively high speed lower petrol economy but tyres and brakes wear faster.

The cylinder head or block is likely to crack if cold water is poured into the radiator of an overheated engine. An overheated engine should be permitted to cool gradually for at least fifteen or twenty minutes before filling the radiator.

Petrol should never be used to clean the lacquered or enamelled finish of a car. It dulls the highly polished surface.

The use of the self-starter has reduced the ease of making compression tests. When the crank was used to start the engine, more opportunities were given to test the compression. Whenever there is any sign of loss of power the starting crank should be used to see if the compression is good. Do it now while the engine is in proper condition, and then there will be a basis for comparison.

A new set of spark plugs is one of the best tonics for a motor that appears sluggish and generally out of sorts. After a set of spark plugs has delivered 10,000 miles the electrodes are apt to be burned and reduced in area so that they no longer produce a hot spark. This results in incomplete combustion of the gas vapour and wasted fuel, besides unsatisfactory performance of the motor. For this reason, it is economical to install new plugs at least once a year. Be certain the plugs that are replaced are of the same type as those originally installed in the motor by the manufacturer. Too short or too long plugs will cause oiling up and overheating of the motor due to improper firing.

In order to obtain better performance from the battery, as well as increasing its life, have the battery inspected at least every two weeks; keep the terminals and connections clean and tight to insure good electric contact; always keep the solution above the tops of the plates in each cell by adding distilled water or, in emergency, clear rain

water, and have the generator adjusted to driving conditions.

A thin layer of vaseline spread over the battery posts and terminals will prevent corrosion that causes loose connections and finally eats away the metal.

Paint or enamel should not be applied to spots on mudguards where rust exists. First remove the rust with sandpaper, then give the surface a thorough dusting and follow with a coat of Duco or air-dry enamel. Painting over rust will not produce satisfactory results as the rust will continue to eat into the metal underneath the paint and cause blisters.

A spark plug insecurely installed will cause leakage. The hot gases escaping around the plug will cause it to become excessively heated, resulting in probable damage to the plug, poor ignition and loss of power.

Anybody with a fairly old car not fitted with a petrol gauge of any sort can make one up as follows:-

Drill a 1/4 inch hole in the centre of the filler cap and into it force a 1/4 inch diameter steel rod long enough to reach practically to the bottom of the tank. The end of the rod may have to be filed slightly to make it fit. It should be soldered in position both on the inside of the cap and outside. To graduate the dipstick thus formed the tank should first be emptied and then petrol poured in in half-gallon quantities at a time and the level marked by means of a file on each occasion.

Encouraging The Careful Driver

A Gratifying Insurance Provision

THE tendency in present-day insurance to make a reduction of premium in the case of drivers who have had two consecutive no-trouble years is commendable and is undoubtedly an incentive to better driving.

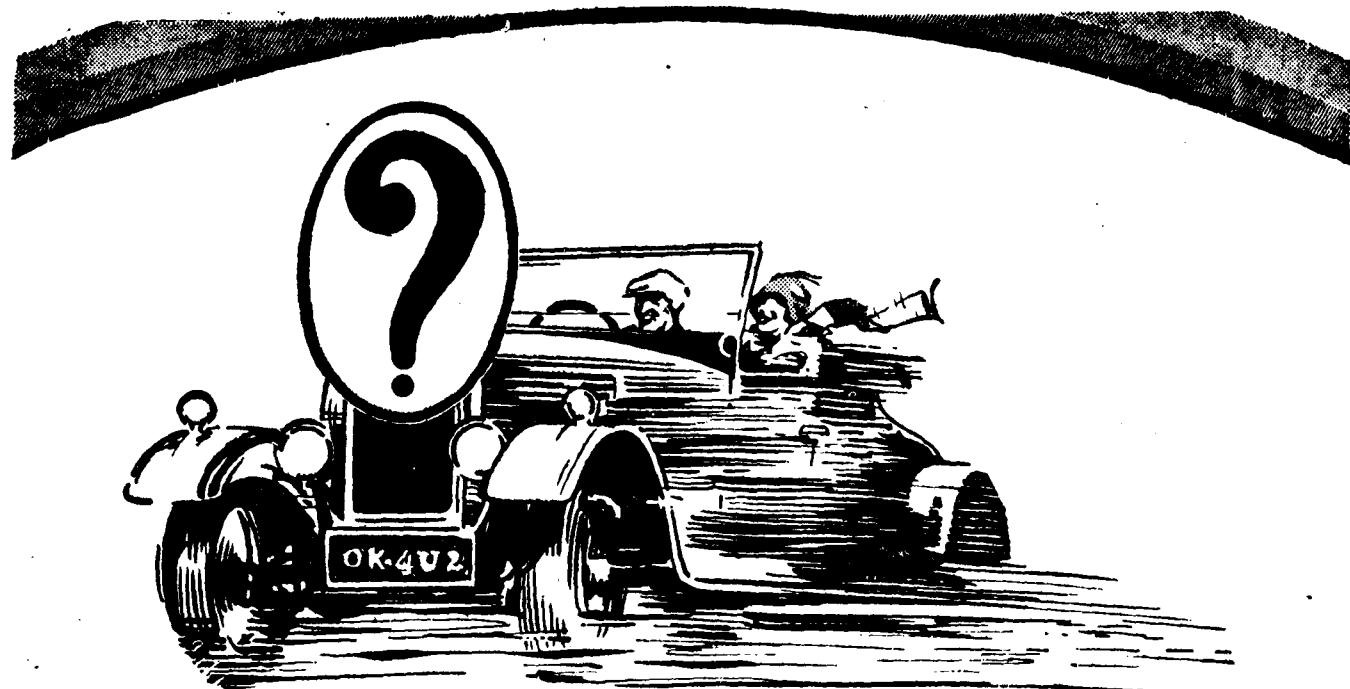
There was a feeling in the past, every time it became necessary to raise premiums, that the careful motorist had to pay for the carelessness of the few:

Many companies are now making reductions for the second and subsequent years, which means that the careful, and of course fortunate, driver who has experienced many years of driving without accident effects a substantial saving in his insurance pre-

miums, while those who through misfortune or carelessness are involved in collisions will collectively contribute a proportionately larger share.

We believe we are right in saying that the reason for the present high rate of premium is the very heavy third party claims which insurance companies have to meet, and not from damage as between motorist and motorist.

Although the car owner must of necessity be exposed to the risks of chance, there can be no question that drivers who have a clean sheet for a number of years should have a reduction in what is a comparatively heavy charge on the year's motoring.



Why did you pick the oil you now use?

To be a full-duty lubricant an oil must contain four essential properties to meet four definite needs in lubricating your engine. These properties must be blended in exactly the correct proportion for your particular engine. They are:

CARBON CONTROL—keeps down carbon in your cylinders.

HEAT RESISTANCE—makes your oil last longer.

OILY CHARACTER—protects moving parts from wear.

OXIDATION CONTROL—prevents gumming and sticking of valves, and clogging of passages in oiling system.

If any of these properties are lacking in an oil—or present in incorrect proportions, that oil is a deficient oil.

The only way a full-duty oil can be made is to start with the needs of each type of engine. Engine study is the only foundation for a full-duty oil.

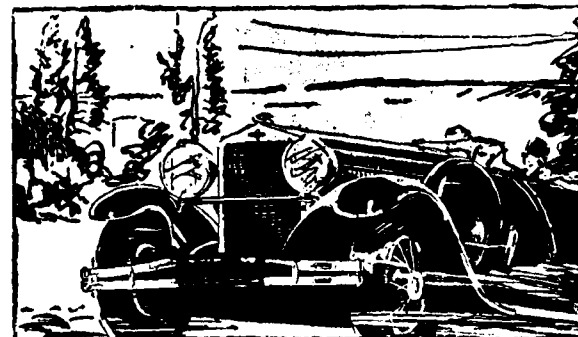
Twice as many automotive engineers use Gargoyle Mobiloil as any other oil—they know engines and they know the importance of correct lubrication. Twice as many motorists use Gargoyle Mobiloil as any other oil—they know that it gives better results. Ask for the grade of Gargoyle Mobiloil especially for your engine as recommended by the Mobiloil Chart of Recommendations.

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Left Hand Steering - Discussed -

MANY EXPERT DRIVERS ARE OF THE OPINION LEFT HAND STEERING WOULD ADVANCE SAFETY AND CONVENIENCE

THERE has been much discussion of late in English and American motoring circles regarding the advantages of near side steering over the almost universal off-side driving position. On analysing the arguments put forward it would seem that modern traffic conditions certainly call for some modification of the driving position. Summarised, the advantages in favour of near side steering can briefly be said to be:—

1. The driver can see exactly how far he is from the near-side of the road.
2. If he is a considerate motorist he can therefore give other road-users the maximum possible width for meeting and passing.
3. If he is an experienced, competent motorist he will meet no trouble in overtaking in such a manner that he will not emerge from behind a vehicle which he is overtaking until he can see what is coming toward him from the opposite direction.
4. If he is not an experienced, competent motorist he will be discouraged from passing and vehicle immediately in front of him until it is quite clear that he may do so safely.
5. If darkness, or fog, the motorist can keep track of the run of a strange road much more easily, and certainly, than he can when seated at something more than a car's width from his nearside kerb or bank. And, finally.
6. If all cars were left-hand-steered, on English roads (with the left hand side the "near" side) meeting and passing in safety would be enormously facilitated, because even the least experienced of drivers would have no excuse for omission to keep well in to the near side.

So much for the "pros". There are no "cons", because there is no objection to left-hand steering which does not, in similar circumstances, apply to right hand steering. With right-hand steering we are all exercising "judgment", which is more or less sound, according to the individual. Of course, an experienced motorist can "place" his near-side wheels to an inch on a right-hand steered car.

We can and do so place them, all day, every day. But the trouble is that there is an ever-fresh army of recruits to motoring whose judgment cannot be as sound as that of older motorists, and some instinct prompts the novice to avoid the kerb, or bank, as though it were the plague, instead of being his best friend!

There is a good-deal of truth in the arguments of Mr. S. F. Edge (who writes upon this subject in a recent issue of THE MOTOR). A really expert motorist can be said to drive equally well from either the left or right hand positions and can also be relied upon to place his near-side wheels accurately and confidently. Even under those conditions where there is a double line of traffic moving in either direction, the good driver has little difficulty in width judgment and rarely "hogs" the middle of the road when there is a perfectly good one and a half yards clear on his near-side. But the motoring novice, would invariably seem to have fixed upon a Latin motto, that which says "Medio tutissimus ibis". The middle of the road is his ideal of the safest place, if not the only safe place. "I can't hit anything if I stick to the middle," he says. Then he meets somebody travelling in the opposite direction. He knows that he must steer down to his near side, but he decides to do it at the last safe moment, does it drastically, gets flustered, and...then anything may happen.

If the novice sat on the left-hand side of his car, with the left-hand verge of the road in plain view he might still career gaily in mid-road while his road was clear; but nobody would object to that. Need arising for him to draw in to his near side, he would steer with maximum confidence. Glueing his eyes on to his near side, instinct would tell him that if he kept well in "the other fellow" would get by all right. And that is all we want, that the uncertain pilot should be able to hug his near side. Meeting or being over-taken, it is all one. Left-hand steering would give the inexperienced driver maximum security.

It is amazing to realise that the majority of cars were originally designed so that the control could be operated by the right hand, but America setting the fashion of centrally situated controls has made it necessary for English drivers of American cars with right-hand steering to change gears etc., with the left-hand. It must be remembered however that as



Apropos our article on page 318, tyre trouble will surely follow overloading such as this.

most of us are right handed it seems to come more naturally to control the car with the right hand this being undoubtedly the original intention of European and American car designers.

We cannot predict that we shall suddenly, or ever switch over; but there is a very great deal to be said for left-handed steering. On whichever side one sits at the wheel, if one is the only occupant of the forward seat of one's car one has to judge widths in overtaking other vehicles, and it is no more difficult to do this on one side than on the other. In everything else the advantage is all on the side of left-hand steering, and the universal fitting of left-hand steering for cars to be used where the English rule of the road applies would be preferable to the present layout.

The individual driver can control only his own car. To give the individual a ready means of assuring himself that when he meets other road-users he is, and his car is, where he and it should be, is to do all that can be done to promote and

maintain universal courtesy, and so maximum safety. As Mr. S. F. Edge goes on to say in his article, it is all a matter of courtesy. "Courtesy first" is merely another way of saying "Safety first". Inconsiderateness and inexperience are the foundation of all bad driving and they are really convertible terms because the second breeds the first. Nobody will persuade him that the road-greedy motorist is deliberately hoggish. He is either ignorant of what is proper or careless, meaning thoughtless, of the probable consequence of his occupying more space than he need.

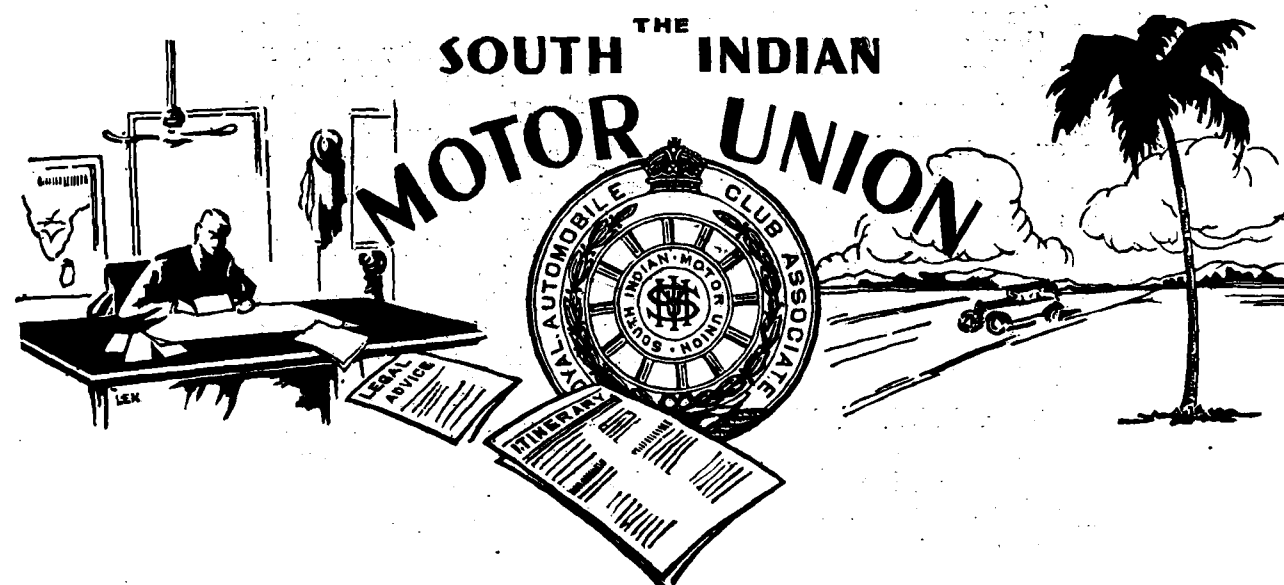
If the reader has never driven a left-hand-steered car on roads with the keep-to-the-left rule, let him do so at the first opportunity. It is not easy nowadays to make the experiment, because nearly all cars shipped to India commercially are fitted with right-hand steering, and a considerable, a surprising, proportion of those in use both on the European continent and in the U.S.A. are similarly right-hand-steered to-day.

144,000 Miles an Hour Made by Oscillograph.

A motorist may think he is travelling fast when he goes whizzing along at 75 miles an hour but figuratively he is standing still when that speed is compared with that of a delicate instrument which was used recently in connection with automobile development work. This instrument, called an oscillograph, played an important part in the recent discovery of a new and improved spark plug electrode alloy, enabling engineers to study the characteristics of the electric spark more easily. It traced a line one inch long across the exposed photographic plate in one-millionth of a second which is equivalent to 144,000 miles an hour. At this rate a trip to the moon would require less than two hours.

Motor Cars in Turkey.

Only 582 cars in Constantinople are privately owned, according to statistics just published. This is a very low figure for a population of 800,000. There 1,119 taxis and 69 government cars in operation out of a grand total of 1,770 machines in the city. In addition to this number, there are 374 motor trucks and buses. After conducting various investigations in Europe the Ministry of Public Works has adopted the following policy for highway construction. To build only substantial roads, to keep them in continual repair, to employ as much as possible materials of the country and to build roads in accordance with the most immediate needs of the people.



Automobile Association of Southern India.

SECRETARY'S REPORT FOR SEPTEMBER 1930.

Change of Designation.

1. As indicated in my last report, two extraordinary General Meetings were held during the month to regularise the change of designation.

Committee Meeting.

2. The Committee assembled on 15th September and amongst other items of minor importance passed the following resolutions.

Motor Vehicles Rules.

(a) That there were no objections to raise to Government proposals to amend the Madras Motor Vehicles Act as to:—

- (i) permit the laying down of time table more effectively to control bus traffic on congested roads.
- (ii) Prohibit the carrying of explosives in Motor Vehicles (This will not prevent owners of private cars carrying small quantities of safely packed cartridges).
- (iii) Require a report whenever the chassis number or engine block number is changed in a registered motor vehicle.
- (iv) Requiring owners of motor vehicles to report changes of address to the "registering authority" in the area left as well as in the new area.

Petrol Signs.

(b) That while the A.A.S.I. is generally in favour of The Burmah-Shell Company erecting signboards pointing to petrol supplies in the mofussil, where these supplies are remote from main roads, they cannot further lend their aid in the

matter without departing from the Association's settled policy not to advertise any particular firm or article. This decision has become necessary owing to the entry of competing interests in the petrol and oil business in the Presidency.

Itineraries.

(c) A new list of abbreviations be adopted for use in route itineraries, in order to come into line with other Automobile Associations in India.

Motor Gymkhana and Decorated Car Procession.

(d) That it was inadvisable to try to run a motor gymkhana during the cold season 1930-31, but that on the request of the Ex. Services Association, we should run a Decorated Car Procession on Poppy Day (11-11-30) in aid of that Association.

(e) That Association funds were not available to assist the Postal authorities in a scheme to erect name boards at mofussil post offices on main highways; at the same time the Committee favoured the proposal as a purely departmental measure in the public interest.

Roads.

3. Information is being collected so as to enable the correct position of milestones on the several trunk roads to be accurately recorded and utilised to improve route itineraries.

Madras City Traffic.

4. It is understood that there are serious obstacles in the way of introducing "one-way traffic" in the Georgetown area and in consequence the

Commissioner of Police is not in favour of the proposed scheme. However, conversations are proceeding and there is hope of an improvement of traffic conditions in Georgetown.

Revision on Motor Vehicles.

5. A Sub Committee has worked throughout the month, on a review of "All India Motor Vehicles Rules" prepared by a Bombay Committee. The Sub Committee has completed its deliberation and its recommendations will be forwarded to Bombay shortly.

P. W. D. and Forest Rest Houses.

6. The Chief Engineer, P. W. D., Madras has asked that publicity be given to the fact that P. W. D. Rest Houses are not "Travellers' Bungalows", and are not available for occupation by the travelling public unless permission has first been obtained from the local Executive Engineer. The same principle applies to Forest Rest Houses.

Members should please bear this point in view when arranging tours.

Subscription.

7. A member has announced his intention to put forward, for consideration at the next Annual General Meeting, a resolution reducing the rate of subscription for motuist members on the grounds that city members obtain more service and benefits than do motuist members. Experience in the office shows that the reverse is the case.

Hand-books.

8. A copy of the Handbooks of the W. I. A. A. and the U. P. A. A. both published by the respective Provincial Governments have been received for office use. The prices are Rs. 7 and Rs. 8 respectively.

Toll Gates.

9. Information has been received that two new toll gates have been established in the Chingleput District, one each on the Chingleput—Tirupoorur and Chingleput—Madras Roads. The opening of these new toll gates has been protected against, but without result.

Tungabhadra River Crossing at Kurnool.

10. Rumours that a project for bridging the Tungabhadra River at Kurnool is under consideration has been enquired into, and found to be incorrect.

River Crossing Reports.

11. Arrangements have now been completed and flood reports are being received from twelve places in the Presidency where unbridged rivers cross Trunk roads.

Signposts.

12. The necessity for direction signs and danger signs at various points in the Salem District, particularly at Dharmapuri and where the Salem—Bhavani Road turns sharply under a railway bridge about 8 miles from Sankaridurg, has been represented to the District Board and Municipal Council.

Similar action as regards Coimbatore Town has elicited information that a scheme is under consideration for the construction of "bye-pass" roads to carry trunk road traffic clear of the congested bazaar area; also that when these bye-pass roads are complete suitable direction signs will be erected.

Official Organs.

13. There appears some doubt as to which journals are recognised as "Official Organs" of this Association.

There are two —

- (i) "Indian and Eastern Motors" published in Calcutta monthly which every member should receive *free of charge*.
- (ii) "The South India Motor Owner"—which is the organ for the Madras Presidency only. This journal is published in Madras monthly, but it is not yet supplied free to A.A.S.I. members. The annual subscription for this journal is only Rs. 3 and may be forwarded to the publishers through this office.

Itineraries.

13. (a) Many applications have been received for itineraries for circular tours in the Presidency and for long tours away from the Presidency to such places as Kashmir, Delhi, Peshawar and Calcutta.

(b) Several members have forwarded very useful and acceptable information regarding roads they have traversed. This information is most welcome as it enables better and more up to date itineraries to be prepared. The Secretary hopes that all touring members will assist in this direction.

Membership.

15. During the month nineteen new members were enrolled, while three resignations were received.

The call for more and still more members is repeated, there are some 7000 private motor vehicle owners in the Presidency who are not yet members of the Association. Try to get one of them to join during November.

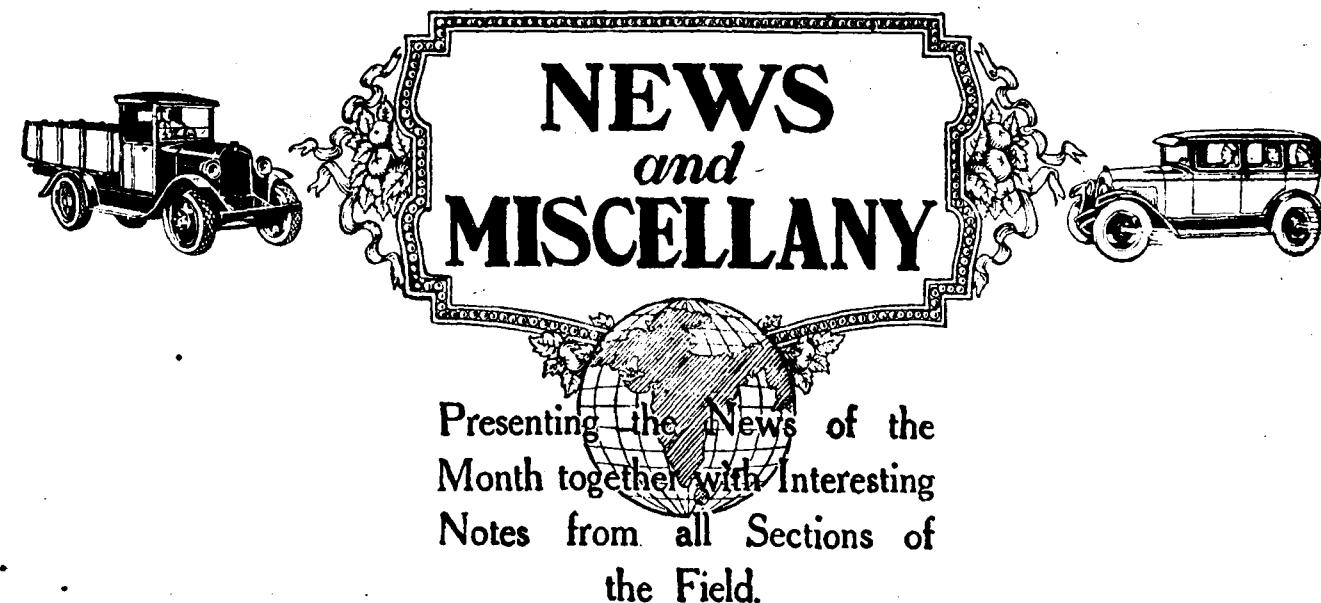
F. CHURCH, MAJOR (Retd.),

Secretary.

Automobile Assn. of Southern India.

MADRAS,

2nd October 1930.



No Restrictions on the Open Road in Europe

EUROPEAN tourists are hampered very little on the open road as far as speed is concerned but there are some vexatious restrictions within city limits. In Italy, for instance, local authorities have the right to fix the maximum speed per hour as low as fifteen kilometers, while Rumania allows them to make it as little as twelve kilometers, with the obligation to slow down to six kilometers on sharp curves and at crossings. The Czechoslovakia local rules usually prescribe fifteen kilometers with a reduction to six in heavy traffic and at dangerous places. Yugoslavia holds the rate down to between sixteen and twenty kilometers in incorporated towns, while in Switzerland the various cantons fix it at from eighteen to thirty.

Austria has a maximum of fifteen kilometers in the towns, but Hungary raises the limit to twenty-five, Denmark to thirty and Germany and Poland to forty. In France, Holland and Spain the municipalities have the right to make the speed rates as low as they please, or at high. Belgium would appear to be the ideal country from the viewpoint of the capable and careful driver, as that little known kingdom has no speed limits, either in city or country, merely requiring the motorist to keep his car under control at all times and holding him responsible for accidents resulting from failure to do so.

Only four countries fix a maximum speed for the open country. Denmark makes it fifty kilometers; Austria and Czechoslovakia, forty-five and Switzerland from forty to sixty, depending upon the canton. Practically every country, however, insists that drivers use common sense, regardless of the absence of definite limitations.

In India there is no restriction as regards speed whilst driving in the open country.

Cars Assist Rural Schools.

Improvements in roads and in efficiency and comfort of motor vehicles have brought immeasurable benefit to rural school children in Canada, but pupil transportation has not yet been reduced to a systematic business basis with government assistance. This, however, seems to be an inevitable development in view of the success of assisted pupil transportation in parts of the United States. A recent bulletin from the U. S. Bureau of Education says that transportation continues to be a necessary and growing factor in school centralization. There has been a considerable advance in recent years in the cost of accounting systems used by districts providing transportation. Approximately one-third of the States of the Union now grant aid specifically for pupil transportation.

The transportation of school children by buses in Indian towns is carried out by the school authorities without any outside subsidy.

Did you hear a Voice?

A French engineer has invented a loud-speaker to replace the motor horn. The driver shouts a warning and the loud-speaker transmits it with such volume that startled pedestrians and other drivers scurry out of the way.

World Registrations.

World registration of motor vehicles has passed the 35,000,000 mark. This represents a gain of 9 per cent over the total shown a year ago. There is now a motor vehicle for every fifty-five inhabitants of this whirling sphere against one for each sixty-one a year ago. With registrations outside the United States increasing rapidly the ratio is 4:5 for each individual while the ratio for the rest of the world is one to 216. At the beginning of 1929 the ratio was one to 247.

Improving Car Processes.

Leading motor car companies are constantly seeking better materials and processes. Recently at Oldsmobile factories a new gas was adopted for the heat treatment furnaces. The gas comes in liquid form under pressure. When the pressure is decreased it evaporates into a gas which burns with a longer flame, provides closer regulation and is less explosive than the regular illuminating gas heretofore used.

From Calais to Stamboul.

Development of a transcontinental motor route from Calais to Stamboul was favoured by the international convention of European touring clubs, which closed its session at Constantinople recently. The delegates agreed to have each club along the way take up the project and find out what it can do to promote the plan. Each must survey its own portion of the road, take steps to have necessary improvements made and arrange for all-night customs service at the frontiers. When the assembly meets next year at Prague, comprehensive reports will be submitted from each club.

An Advertiser Wins Prizes.

Mr. C. Forrest, the Proprietor of the Aramgarh and Raisan Orchards informs us that he exhibited apples and pears grown on his estate at the Fruit and Flower Show organised by the Agrihorticultural Society of Western India. This show was held in Poona on the 15th of last month, and Mr. Forrest informs us that he carried off one First class medal, another medal, and a certificate of merit in this All India competition. Our congratulations go to Mr. Forrest on this evidence of the show excellence of fruit grown on his orchards in Kulu Valley, and we can but add that the apples and pears he sends in such quantity to Southern India prove that Mr. Forrest is not only a prize winning grower but is also an expert in marketing this delicate produce.

Simplifying Traffic Regulations.

Policemen on point duty in Detroit have red lights attached to the front and back of uniforms and green ones to their sleeves. A right turn by an officer suffices to stop traffic in one direction and start it in the other.

Traffic Jam Penalised in London.

The London police have protested against having to pull some old wreck from the high way to allow other vehicles to pass. The Minister of Transport has issued a new regulation whereby it will be an offence to take into London streets a motor truck or car which is liable to break down either as a result of its being in a defective condition or through its being overloaded. A fine equivalent to seventy rupees will be the penalty for anyone causing a traffic jam due to one of these old car's inability to operate without difficulty.

Motorized Circus.

The first completely motorized circus in the world belongs to the Gentry Brothers whose circus travels all over America on General Motors Trucks. The whole of the circus equipment and all the animals, workmen and performers are transported and housed on about seventy-five modern trucks of different capacities, each truck especially equipped for its purpose.

Licensed Pilots Help Tourists in Germany.

The system of supplying strangers, especially foreigners, with car pilots, that the National German Automobile Club inaugurated some time ago, has been so popular that this season fifteen new guides have been added to the stationed on the outskirts of Berlin, bringing the total up to twenty four. Nine of these pilots are licensed drivers and most of them speak several foreign languages.

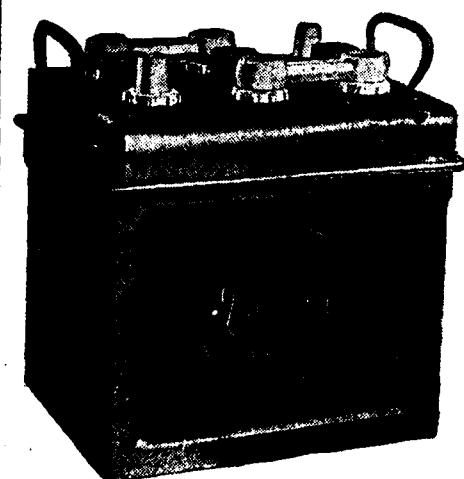
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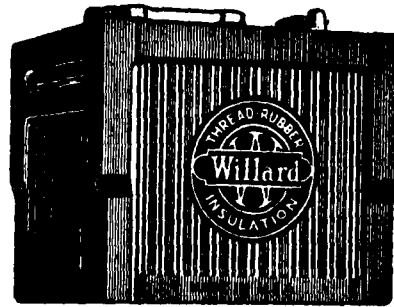
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Bangalore Notes and News

The Fourth Annual General Meeting of the Mysore District Automobile Association was held at the end of September in the Rangachailu

Memorial Hall at Mysore. The President Prof. H. R. Krishna Murthy Rao B.A., and the Vice President Mr. G. R. Josyer M.A., F.R.E.S., were present and among others were Messrs. Kamath of the C. P. C. Co., of Mangalore, K. V. Muni-sami Chetty, C. Basavaraj Urs, C. Perumal Chetty, V. Thimmiah, C. D. Narain Rao, Nadig Narain Rao and others.

After the President had explained how the Association had been of considerable help to bus owners in placing their grievances before the Government and securing their removal, there was the election of Office bearers for the Executive Committee.

The General Meeting was considered and passed several resolutions the more important of which are as follows:—

(1) That since the present arrangements for the grant of brake certificates to buses at the end of each Quarter are causing much inconvenience, the District Magistrate be requested to empower the City Superintendent of Police, Mysore, and the Superintendent of Police, French-rocks, to examine and grant brake certificates, in addition to the existing arrangements.

(2) that, for the convenience of the public, a complete table of timings of all the bus services in Mysore be prepared and put up, in cooperation with the Municipality.

(3) that, since the distances from one town to another were not definitely indicated at present, steps should be taken to ascertain

We shall try to make this page both informative and interesting month by month, but we would really appreciate the assistance of all our Bangalore readers who we hope will send us regularly any interesting little notes upon matters of particular concern to motorists in the Bangalore district.

the exact distances from place to place and they should be submitted to Government for calculation of mileage.

(4) that, a Committee

consider the feasibility of starting a General Cooperative Stores to deal with Automobile supplies in the most economic manner.

(5) that, as the roads in Mysore compare very unfavourably with the roads in Madras and Bombay Presidencies, Government be requested to consider ways and means of improving them.

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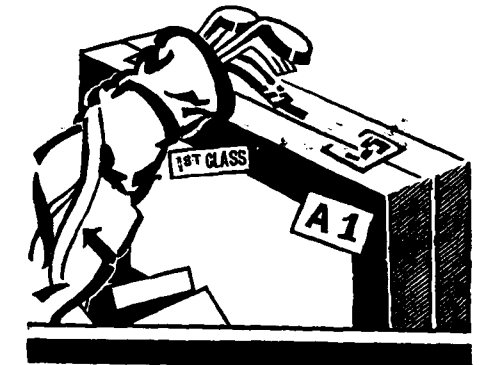
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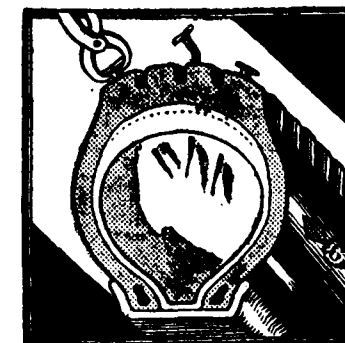
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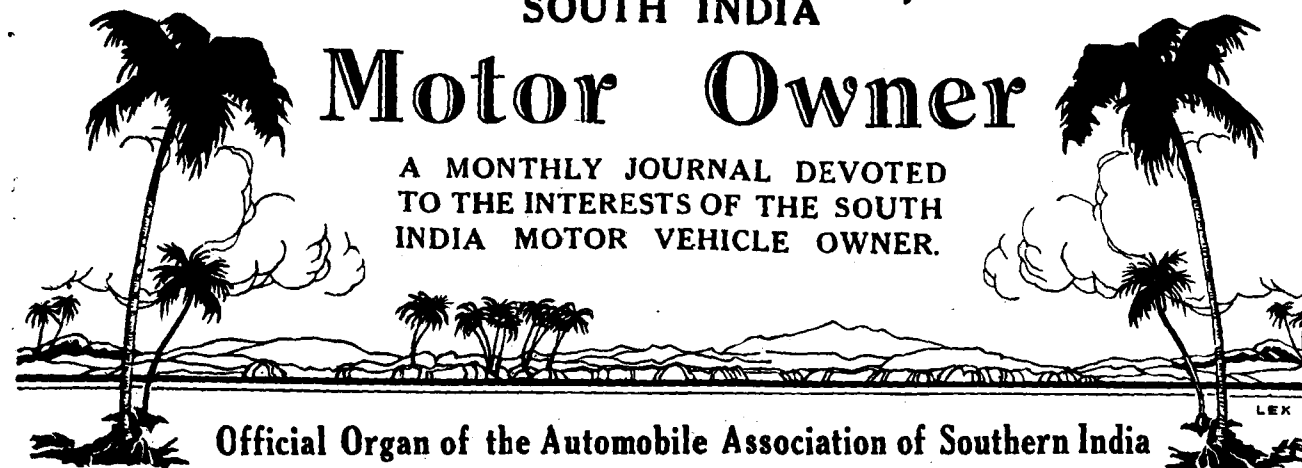
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THE SOUTH INDIA Motor Owner

A MONTHLY JOURNAL DEVOTED
TO THE INTERESTS OF THE SOUTH
INDIA MOTOR VEHICLE OWNER.



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EDITORIAL

The New Year's Models

FOR many years the Southern India motorist has had to be content with information gathered from the pages of motoring journals in seeking particulars of new models. European and American manufacturers, with a fine disregard for the calendar, have always made a point of introducing the "new year's improvements" some months before January 1st; whilst the manufacturer's distributors here in India, ignoring the calendar also, have delayed showing the new models until well into the new year. This year, however, there has been a welcome change and keen motorists have even now had the opportunity of viewing many 1931 models almost simultaneously with their release at Home. Particularly is this so in the case of British cars: many of the new models of various makes being now on view in the showrooms of the Madras and Southern India distributors.

In a general survey of new models which have been produced by manufacturers the world over, an outstanding improvement which cannot fail to impress is that which has been effected in all types of bodywork, making for increased comfort and pleasing appearance.

Manufacturers both in England and the United States who have set their designers the task of producing a new model this year have obviously insisted upon the provision of attractive bodywork as the important point of appeal to the car buying public. This trend is particularly noticeable in the work produced

by the designers of British cars, which can collectively be said to excel, as regards quality and appearance of standard coachwork, anything of recent production. There has been a markedly successful attempt on the part of British designers to produce a compact, small engined four-seater car, without the obvious disadvantages which have characterised this type of car in the past. Outward and visible features of advance are neatly designed, divided radiators; shields between the front dumbirons; well proportioned wheels with enclosed hubs, and general bodywork ensuring that comfort and neat appearance as necessary to the owner of a small car as it is to the proprietor of a large one.

This question of small cars is one which has exercised the minds of a great many British manufacturers, and so many and diverse are the types of small car offered to the public today that he would be a clever man indeed who could definitely answer the question. What is a small car? There are cars today with seven or eight h.p. engines pulling body and chassis work housing four substantially comfortable seats; there are engines from two to six cylinders of varying h.p. carrying bodywork of all reasonable capacities. Reducing this to a common basis on which comparison can be made it can safely be said that designers have realised the difficulty of selling excessively minute bodywork to even normally stout people, and though popular belief tends to the contrary there is no doubt that quite impecun-

ious citizens can become as corpulent in middle age as any plutocrat.

Thus the tendency has been to design slightly grown-up baby cars with just a little extra engine power. The Wolseley Hornet and the Triumph Scorpion are both indicative of the leaning towards small six-cylinder engines, but it is more than interesting to observe that the engine of the former is of the overhead valve type, whereas the latter has side valves. Both cars reveal a natural tendency—consequent on the adoption of six cylinders—for the baby car to grow up slightly, so that the vehicle offered is something between the real baby car to which we have become accustomed and the more commodious vehicles generally expected to be powered with six cylinder engines.

On turning to the new American models we leave behind all thought of even moderately small cars, and enter at once the field of big sixes and eights. Here the trend of design is toward still larger cars with high-powered multi-cylinder engine and body work still more "American" than ever. Accustomed as we are to this type of elaborate bodywork from American designers, there is nothing of outstanding importance to be noted except the Imperial Eight by Chrysler.

This manufacturer is expected to divert even the most sophisticated American year by year, and expectations have no doubt been fulfilled by this model. Speed is symbolised in every line traced by the body-

work designer; the familiar radiator cap wings flattened back; the radiator, V shaped like a snow-plough and tilted slightly back, is not devoid of similarity to the big Armstrong-Siddeley front-layout; whilst the wing lines give a low and "sauve" cut to the external appearance of the model.

It has been for Studebaker to take up seriously the matter of transmission improvement. The new models put forward by this concern are equipped with a pre-selection device which keeps the gears in friendly relationship with each other no matter how inexpert one may be with the gear lever, and free-wheeling helps to reduce the severe reversion strain imposed on the engine when the foot is suddenly lifted from the accelerator.

On a broad analysis, the subject of improvements in new car models can be said to reveal little of major importance. America offers nothing outstandingly new, and British manufacturers little save a marked improvement in the standard of bodywork on the popular priced models. Experience over the past twelve months cannot have indicated to manufacturers any demand for something radically different; so, pursuing the excellent policy of

leaving well alone, they have given that little extra refinement we expect. Prices are approximately the same, but the little more value offered should induce many motorists to buy the new models.



A Peaceful Backwater.

THAT GRADUAL LINK

A Few Facts about an Important Unit which will be of Particular Interest to Austin Owners

THE power of an internal combustion engine depends to a very great extent upon the number of its revolutions. An idling engine can exert very little power, as may be gathered from the ease with which it can be "stalled." Gradual opening

of the throttle gives more and more power until the effective maximum is reached. The effective maximum is, in its turn, dependent upon engine design, and it is interesting to note in passing that modern designers—European designers in particular—have concentrated upon the production of a high efficiency small capacity engine to such an extent that many well-designed small units are capable of developing more useful h.p. than much larger jobs which being so

greatly dependent upon c.c.s. are nevertheless ineffectual without "revs." However, the purpose of this article is to deal with the manner in which engine power, associated with high speed revolution, is transmitted gradually and effectively to road wheels. When the internal combustion engine was first harnessed to the job of

transport, engineers had to tackle this problem and whilst their task was simplified by the use of a gear-box, there still remained the rather difficult job of creating a link which should be gradual yet positive, smooth yet firm. Although the earliest

type of clutch did not possess all the qualities which motorists of today take so much for granted, nevertheless, it was a very excellent contrivance and did the job well.

The Early Clutch.

The primitive type of clutch, and the one adopted for practically all makes of cars in the early days, consisted of two steel cones fitted one inside the other, the inner member usually lined with leather. The leather and metal surfaces could be pressed

together, or from apart at the will of the driver by means of pedal mechanism. A good deal of trouble was experienced at first owing to harshness of engagement, but this difficulty was gradually overcome, and it is a fact that a cone clutch of this description is still fitted to some motor vehicles, particularly commercial vehicles.

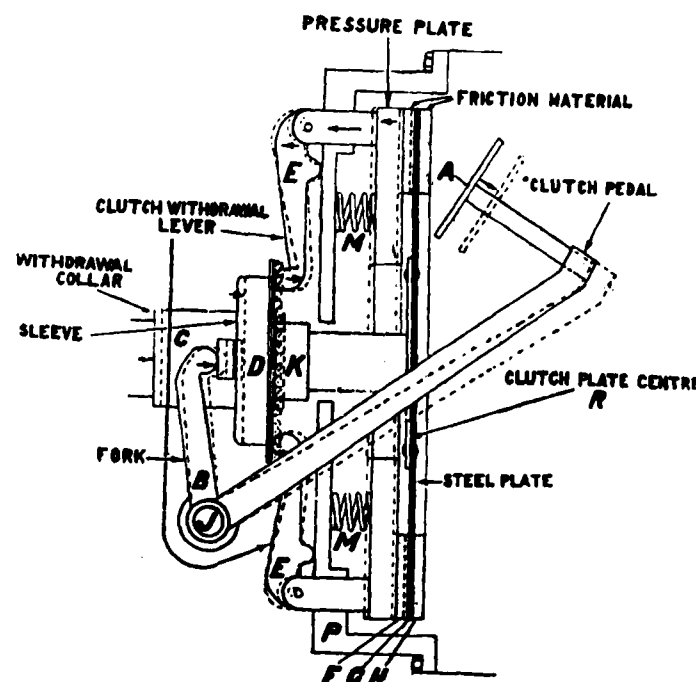


Diagram Explaining the operation of the Clutch.

Engineers presently evolved a clutch of the multiple plate type. This possessed a number of plates which were pressed hard against one another for clutch engagement, or separated for disengagement. The plates were usually of metal and ran in oil. These clutches did the job all right with everything O.K., but presented considerable difficulty when adjustments or repairs became necessary.

The clutch chosen for the purpose of illustrating the present article, and the part descriptions which are marked against the drawing reproduced on this page apply to one type of clutch, but the suggestions and hints given in this article should be taken to heart by all motor owners as clutch principles are the same fundamentally in all designs.

Clutch Operation.

To understand the following explanation of clutch operation reader should refer from time to time to the diagram:—

When the clutch pedal "A" is depressed by the driver the immediate effect is to turn the clutch operating shaft "J." The clutch operating shaft "J" carries a fork "B" the two prongs of which bear upon two bosses, one on each side of the clutch withdrawal collar "C." The pressure of the prongs "B" causes the withdrawal collar "C" to slide along "K," which is an extension of the gear-box front cover. As the collar "C" moves forward, it carries with it the clutch withdrawal sleeve "D." The sleeve "D" in turn operates the withdrawal lever "E." At this stage readers will have gathered that a certain purpose has been achieved in that the original pushing movement of the driver's foot has been converted into a pull. The withdrawal levers "E" pull the friction surface "F" away from the clutch plate "G" which, in turn slides away from contact with friction surface "L," which is fixed to the flywheel. When the pressure of the clutch pedal is released the whole process is reversed and the necessary pressure being applied by the clutch springs "M," "F" returns to press against "G," which is thereby restored to contact with "E," and the three plates become a composite unit capable of carrying out the duty of transmitting motion.

The Construction of the Clutch.

This clutch consists as we have already seen, three plates—"F," "G," and "H," "F" and "L" act as drivers and "G" alone is literally a driven plate, for which reason this clutch is sometimes described as of a single dry plate type. For the purpose of the present article we are regarding "F" and "H" as plates also. "F"—the clutch pressure plate—is lined with friction material, and "H"—the flywheel itself—is similarly lined. The driven member, or clutch plate proper, "G," is made of steel and is rivetted to the clutch plate centre "R." "R" is carried by, and can slide upon, the splined end of the first motion shaft of the gear-box. The first motion shaft is supported at one end in the gear-box, and at the other end by a bearing in the flywheel. The springs "M," which supply the pressure necessary to keep the plate in engagement,

are interposed between the clutch pressure plates and the flywheel cover.

The withdrawal sleeve "D," which is mounted on the withdrawal collar "C," is provided with a ball race, and is free to revolve. The clutch withdrawal levers "E" are held securely in position constantly pressing against the front face of the sleeve, thereby causing the sleeve "D" to rotate with the flywheel. Each lever rocks on a small fulcrum which is actually a semi-circular projection formed upon it and bearing against the flywheel cover. The levers "E" act in exactly that capacity with their name implies, in that the pushing influence exerted upon them by "D" is transformed into a pulling force upon "F," to which they are attached by small plungers passing through the flywheel cover. "F" is thereby withdrawn, leaving the friction surfaces entirely free from pressure.

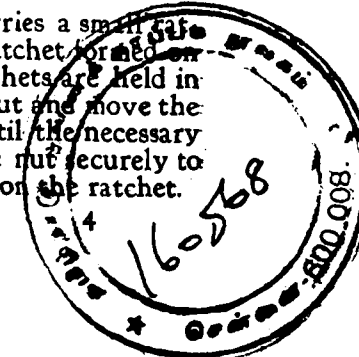
Take Your Foot Off!

A tame statistician once made a reckoning in dollars of the wastage per annum in the United States of America owing to the habit of clutch riding, which he chose to regard as indulged by something like 75 per cent of the motoring public in that country. This gentleman may have taken some liberties with his facts, and have erred a little in regard to his deductions, but it is nevertheless true that serious wastage does occur from this cause. The foot should not be allowed to rest on the clutch pedal except when required for purpose of disengagement. The habit of clutch riding can set up quite a number of mechanical troubles and must certainly result in early deterioration of the friction surfaces. "F" and "H" commonly termed "liners."

Half an inch of travel is usually permitted to the clutch pedal in original assembly, which is to ensure that there is no pressure upon the clutch springs when the plates are in engagement. The weight of the foot is more than sufficient to take up this play and exert enough pressure on the delicate mechanism to bring the plates slightly out of engagement, especially if driving on uneven surface. Clutch slip, which is eventually caused by this maltreatment, is an annoying condition, and whilst the friction material itself is comparatively cheap, the job of relining the clutch is likely to be expensive so that the moral is to park the foot on the floorboards.

It is most important that half an inch of travel or play of the clutch pedal should always be present. It may happen that when a car has covered a considerable mileage the play will have decreased owing to slight wear of the lining. This may easily be rectified and the play restored in the following manner.

The clutch operating shaft carries a small ratchet which meshes with another ratchet formed on the clutch pedal lever. These ratchets are held in mesh by a bolt. Slacken off the nut and move the pedal forward on the ratchet until the necessary clearance is obtained. Tighten the nut securely to ensure that the lever does not slip on the ratchet.



The Dry Clutch.

The outstanding feature of the clutch that has been described is that it is essentially a dry clutch, and being such, can only operate satisfactorily whilst kept dry, that is to say, free from oil. Special devices are incorporated in the gear-box front cover to ensure that oil shall not penetrate to the clutch. Special attention, however, should be given to the instructions of the makers regarding lubrication of the gear-box, because an excess quantity at this point will entail a risk of clutch slip.

Although oil will be detrimental if it gets to the wrong place, it is nevertheless very useful applied at the right spots. Practically no other attention is required by the clutch unless it be an occasional spot of oil on the pin by which the levers are held to the pressure plate projections, and also at the points where these projections slide in the flywheel cover. *This helps to sweeten engagement, as also a drop of oil now and then on the clutch

operating shaft where it is bushed in the gear-box housing.

It will have been noted that simplicity is a feature of this clutch, and if it is not seriously maltreated it will give lengthy and satisfactory service without any attention other than lubrication where indicated.

In view of the simplicity of this type of clutch no adjustment of clutch springs is provided, seeing that such is entirely unnecessary.

Three Important "Don't's."

A trio of "Don'ts" by way of conclusion:

Don't ride the clutch pedal.

Don't think the clutch is a gear-box and slip it instead of changing gear.

Don't neglect regular lubrication.

The Wheel of Progress

THE wheel is such a common object that it requires quite an effort on our part to visualize a world without wheels, and to imagine what differences in our social fabric there would have been had the wheel never been invented.

It is no doubt principally due to the fortuitous fact whereby the average tree trunk approximates to a circle in cross section, that wheels have been known since the dawn of written history. Had trees grown with square trunks it is quite possible that the invention of the wheel would have been delayed until the time of the Renaissance, out of which our modern and wonderful age of invention has grown. As it was, the engineers of the time when the construction of all those prehistoric edifices, typified so well by the example at Stonehenge, were forced with the task of moving the considerable pieces of masonry which remain today as monuments of their skill, found ready to their hands pieces of timber obligingly shaped by an all providing Providence so that they might be used to reduce the coefficient of friction between their building stones and the ground.

From the use of simple logs in this manner to the invention of the wheel revolving on an axle looks like a little step in our modern and scientific eyes; and yet, if the truth be known, the problem of thus doing away with the necessity of picking up the tree trunks as soon as they had rolled from under the object being carried, and replacing them in



front again as it advanced, was a problem which occupied, perhaps, the best and most brilliant minds not only of centuries but even thousands of years.

Just as a vast gap in time must have elapsed between the man who first learned how to keep an already started fire going, and he who discovered how to start a fire for himself where none previously existed, so the invention of wheel and axle was probably just as tardy.

In the history of wheels is written the history of human progress. The early chariot wheels were crude affairs; they had no lateral strength, and even a minor "pot-hole" must have been sufficient to break them, and the wheels of vehicles in the middle ages were heavy and often untrue. The making of locomotive and railway carriage wheels, the selective science expended on producing even the smallest of these, could have a history written all to itself. Tyres too are also eloquent in their development, and it is a long cry from the early bronze tyres fitted in the dim ages of the past to the super-comfort balloon tyres which grace the wheels of present day cars.

There is no counterpart of the wheel in nature. It is one of man's inventions purely, for besides being used for carrying vehicles on roads, it finds adaptations in every other mechanical contrivance that he makes. It is the starting point of all man made mechanism: the amoeba, as it were, of human mechanical organism.

Common Nomenclature for Motor Cars

Some popular body styles in vogue

(From a Correspondent)

THERE seems to be real need for international standardization of automobile body styles. During recent months body-builders in France, the United States and England have brought out systems of body nomenclature, and they correspond in the naming of but a few models.

Frequently, even, as in the case of the coupe, for example, the name of a body style in one country means something entirely different in another country. In the United States a coupe is a single-seat closed car with a permanent top; in France, it is a semi-enclosed job with the driver's compartment open and the passengers contained in a cab. There are other similar instances.

Comparison of the French, American and English systems of body nomenclature reveals that the French is the most complete. The Chambre Syndicale des Carrossiers has worked out a system of 22 separate designs, based on the numbers and position of doors and windows, which can be expanded, by the addition of convertible roofs and tail sections, to make 54 distinctly different models, each readily recognized at a glance.

The criticism that could be made of the French system of nomenclature is that it is a little technical for sales purposes. It does not offer easy model names for salesmen and buyers, but is more adapted to custom work.

Cars are divided into four general categories—permanently enclosed cars, convertible, or all-weather cars, open cars, and cars with chauffeurs. Addition of a tailpiece puts all models automatically in the sport class, the word "sport" being merely added to the regular model name. The possibility of installing a removable roof over the chauffeur's compartment makes the model a half-enclosed car.

The American system as brought out by the Society of Automotive Engineers, is more simple, if less complete. It includes 16 body styles, most of them closed. Of the number, ten are really basic

in design, the sport roadster, sport-coupe, sport-imperial phaeton, touring car, landaulet-sedan, and town car being only modifications of standard models. It contains but two models for chauffeurs, which are so popular in Europe.

One of the significant features of the American system is the great predominance of closed jobs. Open and convertible types are not used nearly so much in the United States as in England and on the Continent, where the climate is milder.

In England, particularly, open and all-weather models are popular. Of the 20 types officially recognized by the British Engineering Standards Association, only four are permanently closed jobs. The others are all open or convertible. Nothing could be more indicative of the British love of the open air and desire to see the country.

England also is noted for the number of motorists who use cars for touring and camping purposes. Hitching a trailer carrying tent and utensils on behind one's car, and going off on a tour is very popular in England.

As in America, most model names in England are of French origin, although they may be used without regard for original meanings of the words.

American body designing has gained in world estimation during recent years. Until four or five years ago some Europeans were disdainful of American body jobs, but now Fisher and Fleetwood types of bodies grace the most expensive cars used throughout the world.

The last few years, however, has been a great change in attitude. Attractive bodies have been put on inexpensive cars and now many European manufacturers follow the same trend. All of the less expensive European car bodies are being stamped out by machine methods, and judging from the appearance of 1931 British cars the standard of bodywork is particularly high.

From an Owner Driver's Note Book



by

"SPOTLIGHT."

A Small Complaint.

WHILST motorists in Madras are sincerely thankful for the good work daily performed by the police in traffic regulation, there is just one point which could be improved, and it is an improvement which would be welcomed by the vast majority of local car drivers.

The practice of insisting that drivers must run right round the constable on 'cross-roads' duty seems in many cases to be productive of no great advantage; in fact, there are certain points in the city where such a manoeuvre is absolutely unnecessary, and almost dangerous. When all is said and done, the traffic policeman's duty is to give one or two lines of traffic right of way, and this being so, no useful purpose is served by enforcing traffic to make a sharp right hand turn at a cross-road.

What is more incomprehensible still is that, whilst I am sometimes made to 'ride the roundabout' at many places I frequently pass, another policeman is just as annoyed if I attempt to do so. This lack of system is undoubtedly dangerous and tends to lead car drivers into awkward positions. When I am accustomed to doing a certain thing at a certain point during my daily journeys, it is annoying to be suddenly pulled up by someone who cannot even understand my protests and explanations. I just wish someone would write about this matter—if

we could have expert opinion, we may be able to achieve standardization.

What's in a Name?

I think, if I were a car manufacturer, I could not resist the temptation to give an entirely new name to every model I built. It is strange, by the way, that the name of British cars appear to be considered all important, whilst in America they appear to carry so little weight that is an exception nowadays rather than the rule for new models to bear the same name as their forerunners and stable companions.

An example of my meaning is provided by the General Motors range, which includes Cadillac, La Salle, Buick, Marquette and Chevrolet.

If these cars were made in England, they would all be called 'Generals' and we would consider it very right and proper, but in America they think differently.

Even Morris, who has cut away from the name cult a little with Cowley, Oxford, Minor and Isis, still persists in retaining the name Morris.

I have often wondered, too, why many manufacturers seem afraid to break away from some name characteristic of their competitors' products. Take unsplinterable glass for instance—all these glasses have trade names with 'ex' in them—Triplex, Splintex, Newtex, etc.—such evidence of unoriginality seems incomprehensible to the average man.



The Irate Policeman.

Gear Changing.

Every car owner who has handled a wheel has a deep seated conviction that he is just a wee bit better driver than the other fellow. I fancy myself and so, presumably, do you, but to appreciate how many bad and indifferent drivers there are on the roads one has to spend a few days in the hills.

Gear changing is not a really difficult task yet failure after failure may be seen and heard almost any day on a stiffish hill. The cause seems always to be due to the driver hanging on too long in top or, on particularly steep sections, in second. Novices seemed to be mortally scared at the sound of a fast revving engine, and the sound of the indirect gear train seems to add to his nervousness. All the same, the gears are there to be used, so why not use them?

Apart from anything else, the inability of a driver to make a certain change on a hill renders him a danger and a nuisance to following cars, and I do think that no driver should be considered proficient until he, or she, can make a rapid and certain change down to first at any time on a stiff hill.

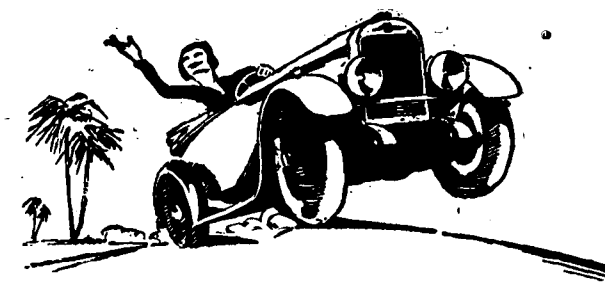
Of course, one hears often the excuse that driving in Madras and elsewhere on the plains gives one no opportunity to practise gear changing, but this does not alter the fact that those drivers who will not practice gear changing for gear changing's sake now will get into the surest and soundest trouble if ever they take their cars to the hills.

Micro-Photography as Evidence.

Exceptionally heavy gales have recently been experienced in England and in this uncomfortable conditions a motorist was driving along a coast road when his car became enveloped in wind-carried sand.

Some little time afterwards serious engine trouble developed, which upon examination revealed itself to be damaged crankshaft journals, pins, cylinder walls and pistons.

On the ground that the damage was accidental a claim was made by the owner on his insurance company, and the cause of the trouble



Not a difficult task.

was stated to be sand in the lubricating oil. A superficial examination of the oiling system, however, showed no trace of sand, and settlement was refused by the company.

Thereupon the owner invoked the assistance of the R.A.C. engineer,

who made photo micrographs of a sample of oil taken from the base chamber of the car, the extraneous matter having first of all been removed. Upon comparison with standard photo-micrographs of carbon, emery and sand, the similarity of the sand photographs emerged and analysis of the oil sample confirmed the presence of sand. The claim was admitted.

Motive.

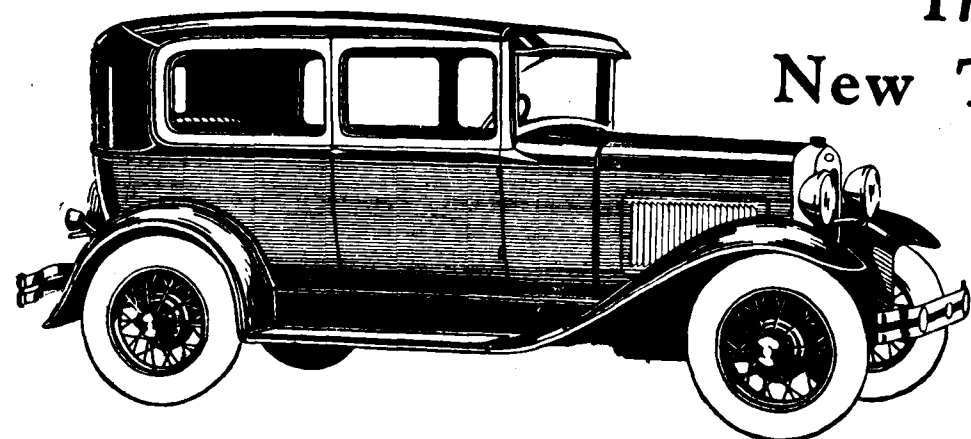
The Reverend Vicar was before the magistrate on a charge of speeding. He denied the offence.

"The constable", emphasised the magistrate "insists that you were doing over thirty-five. You say it was less than fifteen. I don't want to doubt either of you. Can you think of any reason that would cause the constable to say you were doing thirty-five? Is there any grudge he owes you?"

"Well", suggested the reverend speedster. "No, I can't think of any, except that I married him a few years ago."

Hypnotic Screen Wipers.

The recent wet weather has brought to my notice the fact that the moving finger of a windscreen wiper has a queerly varied effect upon the motley of folk who sit behind the wheel of a car. It is alleged to have so hypnotic an influence upon some individuals that it lulls them into a dangerous doze. There are perverse people who obstinately maintain that its meandering across the glass provokes them to anger and inspires desperate designs upon that glass with a hatchet. Such folk may find a soothing solution in leaving it at rest and, as a substitute, smearing the screen during rain with a moist sliced potato. This will prevent the screen from spotting-up and if the glass is really wet the process will provide clear vision.



The New Tudor

THE IDEAL ALL-WEATHER CAR

Out in the rain, in the scorching sun, or late at night in the winter months, the Ford Tudor will give you drawing-room comforts. With window glasses which can be opened or shut quickly, with a top that affords complete protection from the vagaries of nature, it is the all-weather saloon. In the winter a drive in the Tudor will give exhilarating warmth and at the end of a long drive you will feel as fresh as at the start.

Some features which cost extra on others are standard equipment of the FORD CAR.

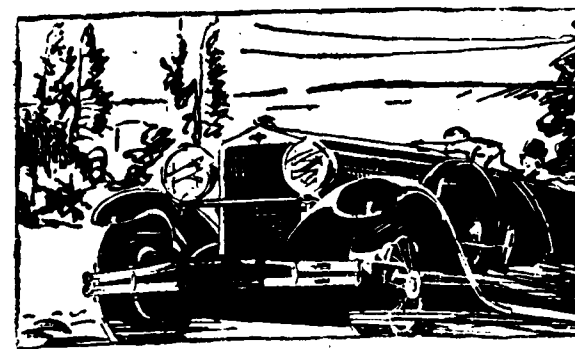
Steel Spoke Wheels.
4 Hydraulic Shock-absorbers.
Shatterless-glass Windscreen.
Electric or Automatic Windshield Wiper.
Rustless Steel Appointments.

Enjoy Ford Sedan Comforts this Cold Weather

If you prefer to pay out-of-income ask for details of the A.A.C. plan.



FORD MOTOR COMPANY OF INDIA, LIMITED, BOMBAY.



COURTESY - ON THE ROAD

AN EXPERT DRIVER POINTS
OUT A FEW COURTESIES
THE OBSERVANCE WHICH
ADVANCE SAFETY AND
CONVENIENCE - - -

THE driver who desires to exhibit consideration for other road users must do more than observe the law as to motor use. He must even do more than observe the "rules" of the road—i.e. those unwritten laws that, in many instances, have the force of custom behind them to such a degree that they have become recognised as definite legal requirements. The best known of these rules of the road is, of course, that vehicles should travel on the left-hand side of the highway and overtake and pass others on the off-side.

Beyond those laws and customs there are the courtesies of the road to be kept in mind and afforded to other drivers, cyclists, pedestrians and so on. For example, on a road wide enough for three or more than three vehicles abreast, when a hypothetical car A is meeting car B, with car C behind it and quickly overtaking it, there is no law stipulating that the driver of car A must steer well over to his left-hand side of the road; all that he must do is to keep within his own half of the road width.

Dog-in-the-Manger Driving.

But courtesy requires that he shall pull over as far to the left as he can, with due regard to his own safety, so that car C can pass B with plenty of room to spare, even though in doing so it encroaches somewhat on A's half of the road. If A does not give away he is acting in rather a "dog in the manger" fashion; he does not need the whole of his half width of the road and yet he won't let C use some of it to pass B without slackening speed. Let the positions be reversed; if C exhibited that kind of selfishness, surely A in being held up—for perhaps only a few seconds, admittedly—would think to himself: "He might have been decent and given me room to go by."

Do unto Others.—

One courtesy of the road, therefore, is to make away for others, just as you would like them to make way for you. That kind of thing is the more highly appreciated in these days than of yore, owing to the increase of road traffic; inability to get by a slow vehicle safely then and there may mean being held up for a long while.

It would be no more than courteous, too, if the driver to whom more than his rights in this respect had been afforded were to raise his hand, nod, or in some other way indicate his thanks when passing.

Particularly is making room desirable when C, the faster of two approaching cars, is overtaking the slower one, B, in climbing a hill; to C it may imply all the difference between a clean and easy climb on top and a long crawl C, on a low gear. In fact, if the road is not wide enough for three vehicles abreast, A may well slacken speed, if necessary, and signal to C to come on.

It must be emphasised, however (for a mistaken idea sometimes prevails on this point), that C is not justified in "cutting in" when climbing a hill, any more than in other circumstances; he must wait for clear evidence, the "come on" signal that he has been given permission to take the road of the oncoming car.

Consideration for Faster Car.

Another little courtesy of the road is to indicate clearly to a faster car behind that it may go by, when there is evidence or belief that its driver wishes to do so. A wave of the hand is preferable; alternately, if the car in front is not as close to its own side as it can go, it should be pulled in and held there for the time being.

As an act of discourtesy one may mention accelerating just as a faster car has drawn level or is about to do so, and then slackening again as it falls back in line. It is not merely discourteous; it is positively bad manners. And so is the act of drawing immediately across to the front of a car that has been overtaken and passed; it is as rude as in the case of one pedestrian stepping in front of another immediately he has passed by, or pushing another man aside to enter a doorway through which he also was about to pass. Leave the overtaken car at least a car's length behind before taking its road.

Under many conditions, courtesy, as distinct from the interests of safety, calls for one driver to signal appropriately to another, or others. Thus if a little way back he has passed a road obstruction that will be hidden from cars proceeding in the

(Continued on Page 359.)

After all isn't This
the Testimonial
you're looking for

▲▲▲ The World
over more people ride
on **GOODYEAR TYRES**
than on any other make

What question can you have of
tyre quality, or performance,
or service, or price, that this
eloquent fact does not decisively
answer? What is it you seek in
a tyre that is not also sought,
and found by the mil-
lions of Goodyear
users?

1-30-343

Courtesy on the Road. (Continued from Page 357)

other direction until they are close to it, some kind of warning signal may well be given.

Good Samaritanism.

It used to be the invariable rule for any motorists observing another stationary by the roadside in circumstances that suggested something amiss, to stop and ask whether help was needed or whether a message could be taken to the nearest garage for assistance to be sent. But that kind of thing is rarely done in these days, one reason, no doubt, being the vastly greater number of cars on the road and the fact that only a very small percentage of roadside halts are now due to trouble with the car. Nevertheless, it is no more than courteous to make some sign of interrogation as one passes by a driver who seems apparently to be in trouble—the bonnet raised, for example, or the tool kit in use. A slackening of speed with a hand raised is often enough. Courtesy is often exhibited—and discourtesy, too, one is sorry to be compelled to say—by the way in which the horn is used. The prolonged screech that seems to indicate “Get out of the way, you” is totally unnecessary as a rule. For one thing, a short warning note may be quite sufficient; for another it may be impossible or impracticable for the person to whom the imperative demand is directed to clear the way at once.

Some drivers hold their finger on the horn switch as though everybody ought instantly to make room for them. They seem to look upon the horn as a road clearer; it is not, it is simply a warning device.

It is just as discourteous, just as rude, to use the

horn in a manner indicating an imperative demand in quite ordinary circumstances, as to shout “Get out of the way” at a group of people blocking the way, for instance, to the door of an hotel dining room.

Cyclists and Pedestrian.

The same applies to hooting at cyclists and pedestrians, and in connection with these it must be remembered that they are fully entitled to make use of the carriage-way as the motorist. The latter

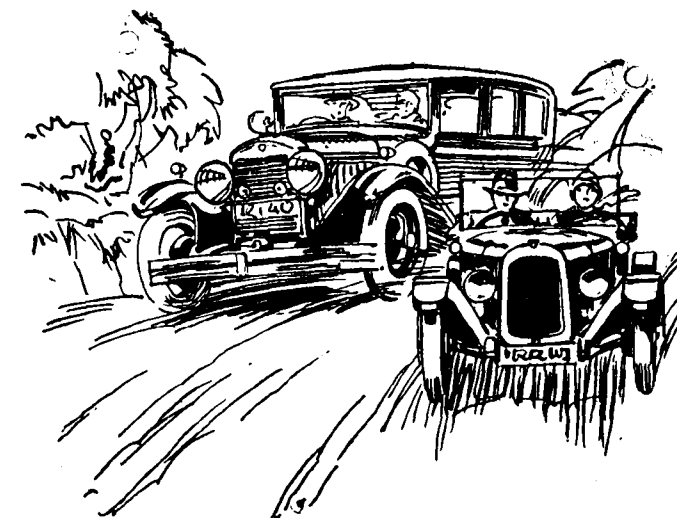
has no right to insist, by the imperative use of his horn that the cyclist shall ride in the gutter when a vehicle is approaching from the opposite direction. If he does so he exhibits either ignorance of the rules of the road, selfishness or discourtesy.

Bear in mind, too, that an invalid in a bath chair, the person in charge of young children, the equestrian, the majority of cyclists and many other classes of road users, not unnaturally feel nervous when a car approaches or overtakes them on a

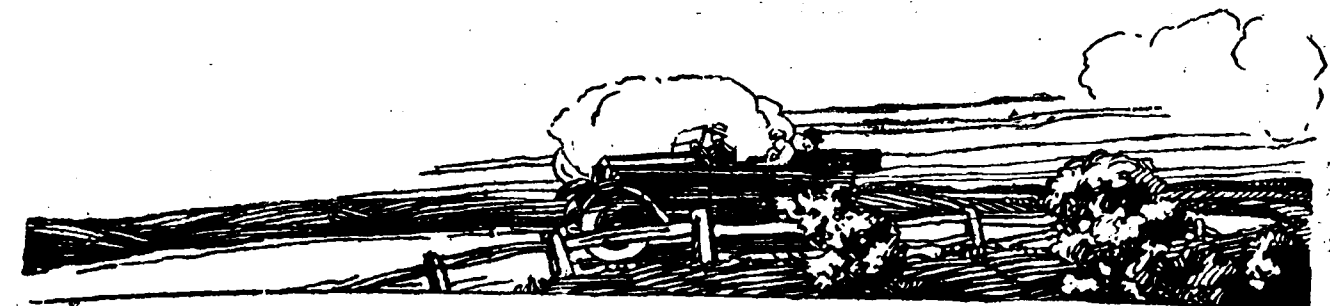
rather narrow road. For that reason it is discourteous, to say the least, and may be positively dangerous, to drive by at high speed, and even at a moderate speed without giving as much, not as little, room as possible.

Manners make the Motorist.

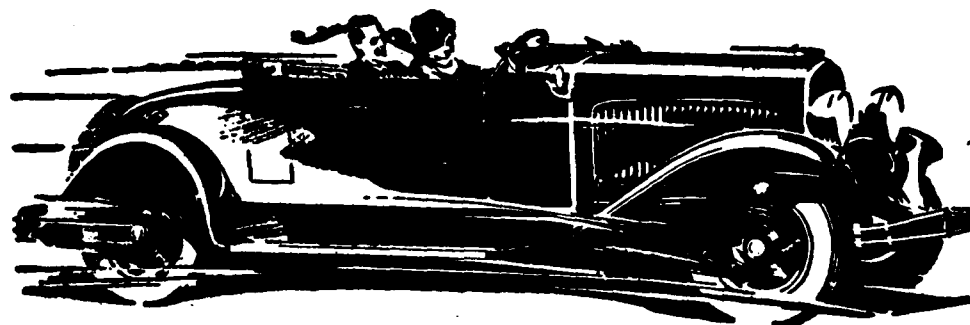
There are many other conditions under which courtesy—good manners in driving and road use generally—is nothing more than consideration for the safety and welfare of all concerned. It would be a good thing if some drivers remembered that the converse applies; they seem to think it a great joke when told that they are reckless, and even admit the impeachment; but tell them, instead, that their careless driving shows them to be discourteous and unmannerly, or something meaning the same thing, and they will often take it far more seriously.



Can pass with plenty of room to spare.



Useful Notions for the Owner-Driver.



Helpful hints for the motorist who wants to get the most service and enjoyment out of his motor car.

MOST water used in car cooling systems carries a small amount of lime and other substances in solution. Sometimes it carries small quantities of silt or solid matter in suspension. When this mineral or silt-bearing water is heated and circulated through the cooling system, it leaves a deposit of sludge or mud or a coating of scale in the cylinder jackets and water passages of the radiator. Also, a certain amount of iron is formed in the water jackets and joins with the other impurities in the water or may accumulate in the jackets and radiator. This mud, scale or rust interferes with the flow of the heat from the water into the air that passes through the radiator core.

Ordinary washing soda dissolved in water will loosen the sediment and scale. The engine may be run with the radiator covered and radiator cap on tight so the circulating water and chemical is circulated at a boiling temperature for a few minutes. Then remove the drain cocks or hose connections to permit the water to drain rapidly. Unless the hose connections are in very good condition, it is advisable to replace them after the operations.

Changes in seasons impose different duties on various parts of the car which call for periodic adjustments. Vibration causes looseness. Dirt leads to diminished efficiency. If the car were inspected every month and cleaned and adjusted as inspection revealed necessary, the owner rarely would know such a thing as sluggish acceleration, uneven operation, lack of power on hills or poor petrol and oil economy.

An engine, to operate efficiently, must have an occasional change of oil. If the lubricating value of the oil is diminished there is undue wear of all engine parts, which may lead to serious damage. Oil becomes practically worthless if an excessive amount of petrol has become mixed with the lubri-

cant, so as to make it very thin; or if water has got into it and caused it to emulsify. Also, if dust, metal particles, pieces of carbon or other hard and abrasive material have polluted the oil in considerable quantities, its further use will cause very rapid wear of engine parts.

In order to obtain the full benefits of the oil filter, owners should have it renewed every 10,000 miles.

The oil filter keeps the oil clean, which means longer life and smoother performance. After 10,000 miles the filter becomes filled with dirt, carbon and other foreign matter taken from the oil. By renewing the filtering element the filter is made as good as new.

When a car has been idle for several weeks, it is advisable to drain the float chamber of the carburetor in order to get rid of any sediment or water before starting the engine. A small piece of dirt or a few drops of water in the carburetor will cause the motor to misfire or fail to start.

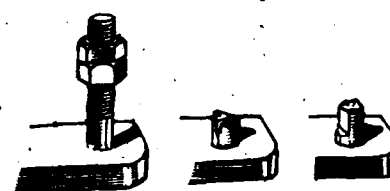
Many car owners are under the impression that chromium plated parts do not require attention. Because chromium-plated parts do not require repeated polishing like nickel, there is a tendency to ignore them entirely with the result that they are frequently not kept clean.

It is particularly important to clean regularly the plated parts on the chassis which are exposed to the road elements, and polishing with a good metal polish will usually remove the discoloration and restore the lustre. Wiping with a cloth dampened in kerosene will help to protect the plating from further deterioration. Discoloration of chromium-plated parts under the action of chemicals used on roads and pavements is a normal result and is not indicative of defective plating.

If you lose the gas tank cap do not go for long with a rag or piece of cork plugging up the hole as this may prevent air from entering the tank and so interfere with the functioning of the petrol system. Also, lint or particles of cork are almost sure to fall in and clog the fuel line.

If it is necessary to remove a stud, in the cylinder head, for instance, any difficulties experienced can often be overcome by screwing two nuts on to the stud and locking them tightly together. Then if one spanner be used which will cover both nuts it will be found possible to use it as a bolt head and

1. Locked Nuts.
2. Slot for Screwdriver.
3. Spanner Flats.



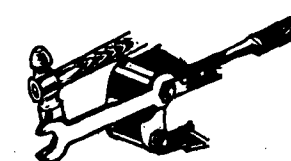
Three methods of dealing with obdurate studs.

thus withdraw the stud. Should there be no thread available, make a saw cut across the top and use a screw-driver. There is a third method and that is to file two flats at any part of the stud which is not threaded and which does not matter, so that it can be gripped with a spanner.

To reduce wear and lessen the noise about the car, do not fail to lubricate door latches, striker

plates and other locking parts frequently. Wiping the striker plates with an oil-moistened cloth will be sufficient and does not involve much danger of soiling clothing which may touch them. Road shocks distributed throughout the car produce looseness, dirt detracts from the appearance and is a corrosive element that leads to diminished efficiency and appearance, and lack of lubrication causes wear. A clean car, on inspection at definite mileage intervals with adjustments made when needed and a thorough lubrication is a guarantee of economical and satisfactory performance.

A wheel nut, or, come to that, any nut which is difficult to undo because the edges have become rounded off on previous attempts to move it, can be shifted very often by forcing a screwdriver between the worn nut and the jaws of the spanner as shown in the sketch; this will afford a much better grip.



A method of shifting tight nuts.

If you want to test for a slipping clutch, set the hand-brake and try to run the car. If the engine stalls immediately the clutch is not slipping; if it races for a moment without moving the car the clutch is slipping. This test should be made very carefully as it involves slipping the clutch which is injurious if prolonged.

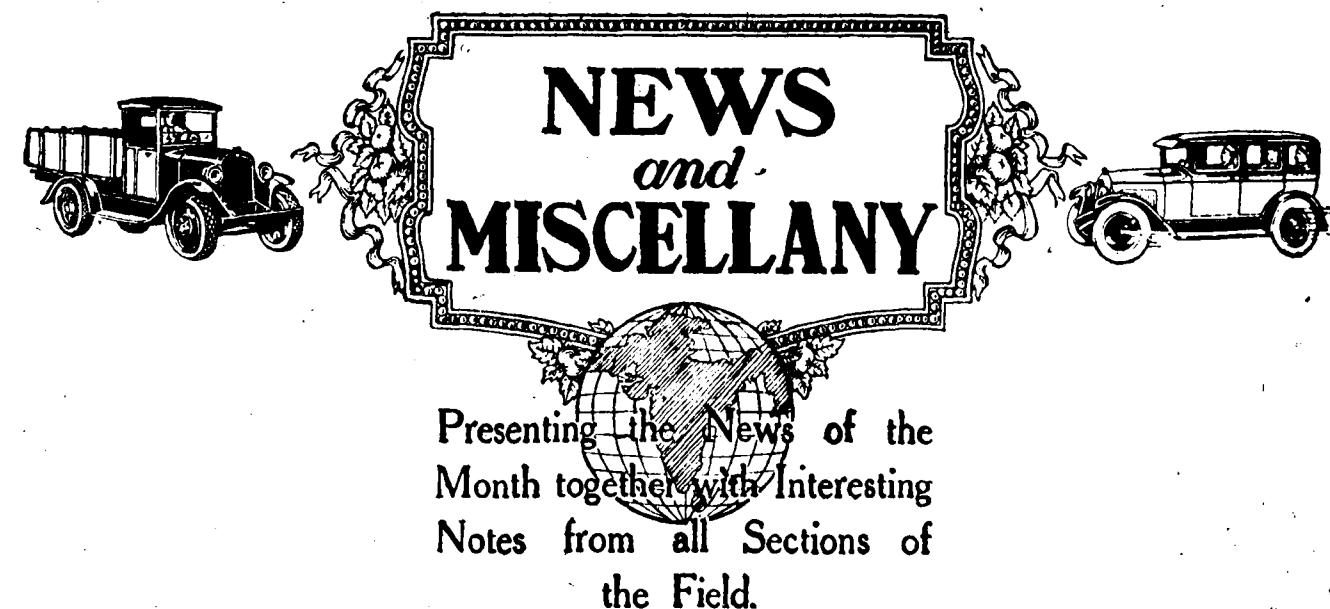
Ford in Burma

A NEW Ford Show and advertising Caravan comprising a Phaeton, a Light Delivery Vanette, on which was erected a false canopy covered with Burmese Ford signs, a standard 30 cwt. chassis with an express type body, a 20 Passenger Omnibus, a 10 Passenger Omnibus on the Commercial chassis, and a 157" wheelbase Truck fitted with dual rear wheels and an immense sign-board also in Burmese, left Rangoon for an extensive tour of Burma as far north as Myingyan and East to Loilem. Throughout the extended tour of 22 days the Ford cars and commercial models showed their suitability for travel under extremely difficult road conditions.

In one section, the road was piled high with huge boulders, preparatory to their being broken up into road metal. There being no diversion on either side of the road, this meant the passing over these rocks for a distance of about $\frac{1}{2}$ mile at a speed

not exceeding two miles an hour. The driver of the light delivery van attempted to keep one front and rear wheel of the off side on a narrow margin of what appeared to be solid earth about two inches in width. This seemingly solid patch was in reality thick mud with a thin layer of hard crust. Consequently, the vehicle sank into the mud up to the rear axle, and lying at an angle of 25° made the Light Delivery a rather difficult task to pull out. Shovels were commandeered from a nearby road construction gang, and the mud dug away from the bogged wheels, substituting rocks and boards. Then under its own power, the vehicle pulled out none the worse for its experience.

"Chaungs", as they call rivers in Burma, were full at the time of the Caravan's tour, but the Ford vehicles crossed many "Chaungs" which were extremely dangerous, with considerable ease.



NEWS and MISCELLANY

Presenting the News of the
Month together with Interesting
Notes from all Sections of
the Field.

Ford Phaeton Wins International Races.

Ford cars again demonstrated their ability for fast and hard travel when they captured first and third prizes in the recent international automobile race staged by the Automobile Club of Poland.

The race covered some 2,000 miles. Starting in Warsaw, the contestants passed through nearly all of the main cities of Poland, including Karkow, Katowicz, Poznan, Bydgoszcz, Gdynia, Bialystok and Wilna. The route followed the Russian border to Lemberg and thence back to Warsaw. The race covered six days with stops in all the important Polish cities.

First prize was won by a standard Ford phaeton which had been received from the dealer only three days before the race. It was awarded no less than fifteen prizes, the most important being the Golden Victory Cup offered by the Polish Automobile Club. Other prizes were awarded for speed, endurance, performance in mountains and in other classifications. Another Ford phaeton captured third prize.

Italy's 1,000-mile Race.

The most unusual motor race in the world is held annually in Italy over a distance of 1,000 miles. The race is organised by the Automobile Club of Brescia and, starting from the town from which the club takes its name, the course traces a rough figure through Bologna, Florence, Rome, Ancona, back through Balona and on through Treviso, Feltre, Vicenza, Verona and finally back to Brescia. The most unusual feature of the race is its course. The roads over which it is run are left open to ordinary traffic while the

race is in progress, but an appeal is made through the newspapers to the sporting instincts of the people to keep away from the course of their own free will. The request has always been complied with.

Rubber for your Comfort.

Every motorist knows some reasons why his car rides easier than its predecessor of a year or so ago, but he may not have an idea as to how much easier it rides. If the amount of rubber used in motor cars can be taken as a criterion, to-day's cars are three times easier in riding qualities than they were three years ago. To-day, the average car contains from 40 to 60 lbs. of rubber. In 1927 it had from 10 to 15 lbs. A good car contains about 150 pieces of rubber, fitted here and there, to produce easier riding and less vibration.

Papal Car valued at Rs. 1,38,000.

Pope Pius has a new car valued at Rs. 1,38,000, presented to the Pontiff by the Automobile Club of Milan. It has a gilded throne, for use when the Pontiff motors alone, which can be removed and replaced by two other highly decorative and comfortable seats when he has a companion. It is decorated in gold, silver and ivory. Fittings include tapestry in the Venetian style.

Bikanir Royal Wedding.

At the recent wedding of the daughter of H. H. the Maharaja of Bikanir to the Prince of Kotah, the bride's father presented two Cadillacs to the young couple. The Cadillac Sedan presented to the princess contained many novel features which had been installed at the express wish of the princess. The most unique innovation were the screens of fine gauze ingeniously fitted to the doors,

windows and even the partitions. By means of a clever device the gauze can be raised or lowered independently of the windows.

Automobile's Contribution to General Revenues.

New York was the first state to require motor vehicle licenses. The practice was started in 1901 and Rs. 2,500 was collected for the first year. In 1929 the total motor vehicles registration of New York State was 2,263,259 units representing Rs. 10 crores and 64 lakhs.

German Invented Selective Gear Shift.

The selective gear shift used in to-day's cars was the invention of Wilhelm Maybach, one of the world's greatest motor car engineers. He died just a year ago at the age of 84 at Stuttgart, Germany.

Chevrolet's Long Life.

While millions of new Chevrolets are on the highways to-day, one of the chassis numbered among the first 3,000 units built by the Chevrolet Company since its organisation in 1911 is still doing daily service in Goliad, Texas.

Sixth International Road Congress.

More than 50 countries were represented at the Sixth International Road Congress held recently in Washington, U. S. A. The delegates included engineers, highway officials, highway contractors, equipment manufacturers, highway safety specialists, motor truck and bus operators and others interested in questions pertaining to road construction, maintenance, traffic and administration. It is noteworthy that this is the first time the Congress has been held in the United States of America.

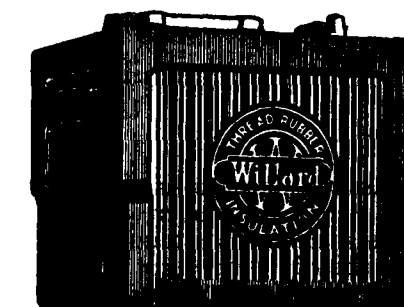
The Gadilam Bridge.

Messrs. Gannon & Dunkerly, Engineers, are doing their best to complete the repairs to the Gadilam bridge next month. The causeway which was washed away by the recent floods has not yet been repaired and Europeans going to Cuddalore Old Town suffer a good deal of inconvenience.

Police Probationers and Tools.

An appeal has been preferred in the Sub-Magistrate's Court at Vellore, in the case in which Messrs. A. V. Patro and M. Sirajuddin Sahib, Probationary District Superintendents of Police, were prosecuted for the non-payment of motor tolls. The purpose of the test case is to decide whether probationary officers undergoing training are entitled to exemption from payment of tolls as police officers on duty.

Willard Motor Car Batteries



Obtainable in two qualities

1. Those fitted with Wood Separators at prices which defy competition and

2. Those fitted with Willard Patent Threaded-Rubber Insulators, at a little extra cost but giving thousands of miles more service.

For particulars and prices apply to:

**The Crompton
Engineering Co. (MADRAS) Ltd.**

WILLARD BATTERY SERVICE STATION,

**12/35, Khaleel Mansions,
Mount Road, MADRAS.**

**Managers :
BEST & CO., LTD., MADRAS.**

When the Last Drop's Gone

The prospect of a petrol shortage alarms our contributor who predicts endless trouble when the precious fluid is no longer available :

I DON'T want to alarm folks, or have them think me, a heartless scaremonger, or again to put the wind up the millions of staunch chappies who haven't paid their last (or second, for that matter) instalment on their cars. Yet in honour bound I have to draw their attention to the horrid fact that Professor Hiram K. Chute asserts the world's supply of oil, and consequently petrol, can't last a minute after July 28th, 1931. Mind you it may be possible to prolong things a bit by careful economy, but, at the present rate of consumption, it appears we shall inevitably be petrol-less after that date.

One hates to believe it, of course, but on thinking the matter over, one cannot help but wonder however the supply has lasted so long as it has. Every Saturday night the world over there must be millions and millions of cars standing at petrol-pumps cheerfully drawing on the world's petrol supply, absolutely unaware that they are innocently hastening the end.

It stands to sense, if you think about it, that the supply can't last for ever—just think of all these petrol-pumps connected by India-rubber pipes to the subterranean petrol supply, draining off gallon after gallon of the precious fluid. And all the while you and I are tootling around in the old bus, this drain on the oil fields is going on. It's obvious that it's only a question of mathematics and geology when the supply peters out.

When you come to think about it too, there are many other ways in which petrol is used apart from the generally recognised one of taking one to and from office and the wife for a breather. Think of the enormous quantity which must be consumed in taking stains of clothes. Every day some careless fellow—me included—gets tar and things on his trousers. Not only tar and things, but other things, too! Curry, and-er-gravy, and-er-lip stick, and what not. Everyone is apt to be careless, and one really can't help a piece of kidney occasionally falling on to one's waistcoat from whence it bounces gracefully, sketchily smears one's trousers and so to the carpet. But it is this kind of thing which is helping the extinction of the world's petrol. All over the world prudent (and impecunious) sellers are busy each night with a sponge, and a gallon of petrol cursefully removing the souvenirs of recent meals from their best clothes.

Proof of the foregoing is easily to be obtained from the numerous accounts one reads in the Sunday papers of how Mrs. Blebwiggle or Mrs. Woofbite suffered in a petrol explosion—how the roof scattered following a loud bang, and how awe-stricken sightseers describe tearfully the sight of Mrs. So-and-So floating upward toward the stars, faithfully clutching the pants of her lord and master. It is estimated that the amount of petrol consumed by clothes cleaning and in Scottish petrol lighters is over a hundred and twenty times the amount of beer consumed in England. India and the Lessor Andalusian Isles.

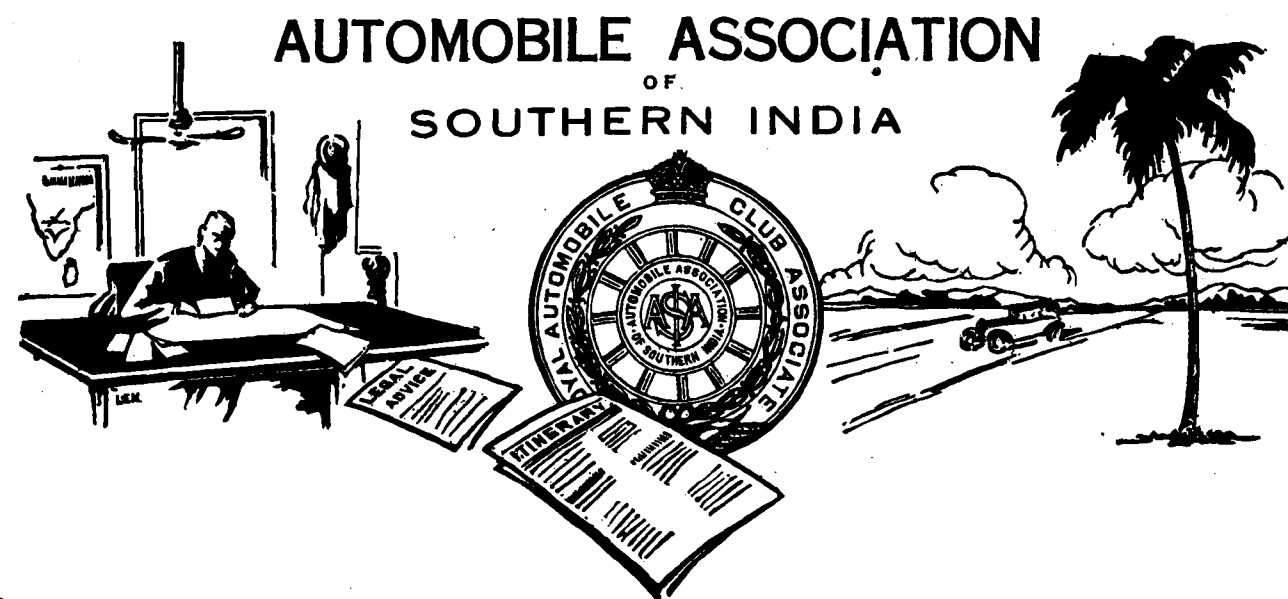
This state of affairs is alarming. It is more, it is terrifying. Just think what the state of my waistcoats will be in, say, December 1931. I shall be a positive animated menu—with samples attached. Ugh!

Of course, one hears folks say that all this non-petrol business is rubbish; that new oil fields are being discovered every day by some one or other. True, but these oil fields contain everything else but oil. Don't I know it. I have here a wad of share certificates in numerous oil fields, and no-reasonable offer—anything in the nature of a chip or two—for the lot will be refused. There is no doubt that the finders of these oil fields certainly strike oil—but—but—Anyhow, let's drop the subject.

What then is to be done about this petrol affair. It is obvious that we must have some substitute, and the only thing I can suggest as likely to be of any use is electricity. It would be awkward though. One cannot go and buy a gallon of electricity at any old pump. One has to have a meter from the Supply Company, and prospect of a gang of coolies disconnecting your service if you don't pay your bill. Even now I have a light bill unpaid because it isn't by any means light; and though I can eat my dinner by candlelight, it is not possible for me to drive my car by the same means if I'm dependent on the electricity folks for motive power.....Very awkward indeed.

Another thing, too, and a very big problem. Can one take stains out of a pair of trousers by electricity as readily as with petrol?

Alas, I think not, I think not.



Secretary's Report for October 1930.

Change of Designation.

1. The change of designation from "South Indian Motor Union" to "Automobile Association of Southern India" has been approved by the Govt. of Madras and necessary notifications published in the Fort St. George Gazette.

Committee Meeting.

2. The Committee assembled on 20th October 1930 and amongst other item of minor importance passed resolutions as follows:—

Motor Vehicles Rules.

(a) Adopted the report of a Sub Committee appointed to review a Revised Draft of Motor Vehicles Rules compiled by a Committee in Bombay.

(Note:—This Committee suggested many amendments and additions to the draft and in view of the delay which will be inevitable before a suitable set of "Rules for all India" can become law, recommended that a copy of the draft rules containing their suggested alterations should be sent to the Madras Government with a request that early steps should now be taken to revise and bring up to date the Madras Motor Vehicles Rules.)

Decorated Car Procession.

(b) Appointed a sub-committee to arrange details of the Poppy Day "Decorated Car Procession."

Abolition of Tolls.

(c) Appointed a Deputation to wait upon the new Chief Minister, as soon as he

was appointed, to press our case for the "Abolition of Tolls."

(Note:—Mr. F. F. James, M.L.C., who was to be the leader of this Deputation, has interviewed the Chief Minister and does not consider a Deputation would serve any useful purpose until the new Chief Minister has had time to go into the official files on this subject.)

Car Park Attendant.

(d) Decided that a capable Car Park Attendant should be engaged to work in co-operation with the police to park and watch members' cars at the Elphinstone Theatre and elsewhere as required.

(Note:—This has now been done.)

Traffic in Madras.

3. (a) The attention of the Commissioner of Police has been again invited to the creation of "blind corners" by recent new buildings and the formation of a "Traffic Advisory Committee" suggested to watch these and kindred points in town-planning and traffic arrangements.
- (b) The new (Marina) type of large bus which has recently appeared on the road has the driver's seat in the centre of the vehicle where he cannot give efficient traffic signals to following vehicles. On a representation from the A. A. S. I. the Commissioner of Police is making it compulsory for these buses to carry as normal equipment electrically operated stop-lights and direction signals.

(c) The Commissioner of Police has also promised that buses will only be allowed to display advertisements on securely fitted boards.

(d) At the request of the A. A. S. I. the Corporation have again renewed the reflectors at the ends of the Munro Statue island in Mount Road (Island portion.)

Signposts.

4. (a) The early replacing of sign and direction posts in Salem District which have been removed for repainting for some months past, is being attended to by the District Board.

(b) The Government of Madras has suggested that a "Flaming Torch," which is the international automobile sign for a "A school area," is not suitable and not understood in India. The Association has been asked to suggest another sign but as decided to first consult other Automobile Associations so as to obtain uniformity.

Abolition of Tolls.

5. A new Bill has been drafted for use as a "Private Bill," should the new council reject or decide not to consider the bill drafted by Government in February last.

Education in Road Sense.

6. The question of educating pedestrians and children in "Road Sense" has been taken up in conjunction with the police. Endeavours are being made to collect a series of a statistics, lectures, lantern slides, films, &c., on this subject from Automobile Associations in the United Kingdom and from the police of large cities for use in this connection.

Motor Vehicle Rules.

7. Members will have noticed in the press a proposed amendment to Section 19 A. of the Madras Motor Vehicles Rules, regarding a medical certificate necessary to obtain a driving license. This is nothing new; it applies only to professional drivers and only gives the existing rules application to renewals of existing licenses held by professional drivers.

Floods.

8. (a) The recent heavy rains have caused much dislocation to road traffic and every effort has been made to collect, and disseminate useful information on this subject by posting flood notice in clubs &c., &c., all over the Presidency.

For the first time for many years the Wenlock Causeway has been rendered impassable. On one occasion this was the case when the Rice Causeway was open to traffic, contrary to previous experiences.

The system of periodical "flood reports" arranged for by the Association has proved of great service.

(b) Endeavours are being made to compile for publication a list of roads liable to flood and consequently to be impassable for motors during heavy rains.

Bridges.

9. (a) Information has been received that the Koodakadava Bridge, situated on the coast road between Tellicherry and Cannanore has been completed.

(b) The completion this month of Nellipusha Bridge near Mannarghat on the Madras-Calicut Trunk Road between Palghat and Perintalmanna will make that road the better approach to Calicut. Hitherto the better route has been by a District Road via Pattambi.

Level Crossings.

10. Very few complaints regarding the period level crossing gates remain closed have been received recently. In such cases that have been reported, the railway authorities have given their assurance that the period of closure was not unduly protracted.

Official Organs.

11. (a) Some members have complained of non-receipt of a monthly copy of the Journal "Indian & Eastern Motors"; this journal should be received free, by all members, from the month following that in which elected. Any member not regularly receiving his copy should please inform the Secretary.

It is essential that members report to the secretary without delay any change of address, to enable the journal to be correctly despatched.

(b) Members are again reminded that the monthly Madras journal "South India Motor Owner" is also an official organ of the A. A. S. I. which publishes monthly full details of the activities of the Association on a date which will bring them to the hands of members much earlier than will the free copy of "Indian & Eastern Motors."

Funds will not yet permit of a free distribution of "The South India Motor Owner," but the annual subscription is only Rs. 3 and it is hoped every A. A. S. I. member will become a subscriber to it. Applications may be addressed to the Secretary, A. A. S. I.

Petrol Rates.

12. The recent all round reduction of 1½ annas on the price per gallon of petrol has been most welcome. A revised Petrol Rate List is under compilation.

District Representative.

13. It is with much regret that the resignation of Mr. R. W. Hanson, representative for the South Nilgiris, has been received. Mr. Hanson did much,

during his period of office, to induce the authorities to give serious consideration to the state of Nilgiri Roads. His place has been taken by Mr. J. Vernade of Kotagiri who will, I am sure, ably second all that Mr. Hanson has done.

Decorated Car Procession.

14. The organisation of the Decorated Car Procession for Poppy Day has occasioned considerable effort on the part of the staff of the Association. Full details will be published in my next report, when the value of these efforts will have been realised by the holding of the show.

Membership.

15. There was a disappointing and unaccountable fall in the number of new members who joined during October, i.e. eight. It is hoped there will be an improvement next month.

Three members tendered their registration during the month.

F. CHURCH, MAJOR (Retd.),

Secretary.

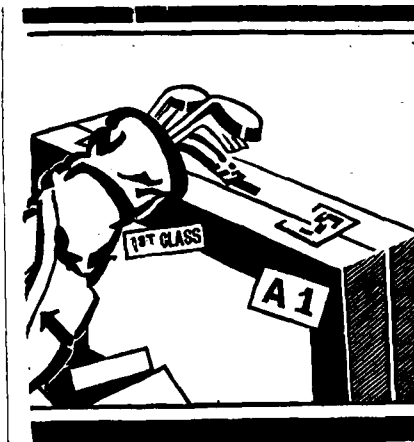
Automobile Assn. of Southern India.

MADRAS,

5th November 1930.

Subsidised Vehicles.

The Government of India at the instance of the Army Department, it is reported, have called for the opinion of provincial Government concerning the number of Government contracts in their jurisdiction which in their opinion might afford scope for the use of subsidised vehicles as it seems possible that on certain roads there may at present be a number of separate contracts given by different departments which may profitably be combined into a single larger contracts, affording scope for the use of subsidised vehicles. Possibly, some form of central authority may be established in each province to deal with and coordinate contracts of this nature including Central Government contracts.



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Ford Reverses the Production Line for Junking Operation

By Harold M. Baker

WHAT might be termed the first major automobile disassembly line in being operated by the Ford Motor Co., at its River Rouge plant. Patterned on the straight line assembly system, it is an experiment to determine the feasibility of factory salvaging of old cars. The "Junkers," descript cars of all makes, are purchased from dealers in the Detroit distribution area for up to \$20 each and are conveyed to the factory on trucks making the return after delivery of new Ford units.

No longer a potential menace to public safety and a source of discomfiture to retail automobile men, the "Junker" is placed on the huge conveyor line which is located in the open hearth building. In something like half an hour its objectionable entity is completely lost, and there remains only its component parts, neatly sorted and ready for disposal. In perhaps a few days a quantity of its metallic parts, remelted, recast and re-machined, will leave the factory as integral portions of a new Ford vehicle.

The company is carrying on its dismantling operations in two eight-hour shifts, employing 55 men on each. Approximately 300 cars are being scrapped daily. The greatest number yet to be scrapped in a single shift is 185. A portion of space in the open hearth building, some 300 ft. by 100 ft., is being utilized. All makes of cars are being placed on a single line at present, but a conveyor system is soon to be put into operation for the separate handling of Ford units. The company's knowledge of composition of each part of its own product has made it desirable to experiment separately in the scrapping of Ford cars.

Already the Ford Model T engines are being torn down on a separate conveyor and it is in this division that the most striking feature of the whole dismantling process is to be found. A battery of multiple spindle drill machines, originally adapted for the assembly of the magneto to the flywheel, are now being used for disassembly, the machines being operated in reverse gear.

With acetylene torches playing a prominent part in the dismantling, the "junker" moves along the conveyor line more rapidly than it could have been assembled. First the tires and rims are removed. If the tyre is too old for second-hand sale, a huge shear is used to cut through both rim and tire and the two scrap parts are torn apart and piled separately. The gas tank is next removed by means of bolt cutters.

A crew of four men, equipped with sharp knives, next attack the upholstery. Both covering material and matting are carefully and deftly removed from the car and transferred to work benches at the edge of the conveyor. While the half-stripped "junker" proceeds on its way to oblivion, some 12 or 15 men cut and sort the upholstery materials. It has been found that a quantity of the fabric can be used on the buffing machines out in the metal finishing and other departments. The velour, mohair and other covering materials are baled and the matting is placed in bags for easy disposal.

Glass from the windshield, windows and lamps is next taken from the car to be remelted in the company's glass plant. Other parts of the car successively removed are the steering wheel (this is cut away by torches, close to the top of the steering wheel column), radiator, ignition wiring and battery.

By this time the "junker" has practically reached the end of the line. The engine supports and mountings are cut by torches and a crane lifts the complete powerplant from the chassis. With this operation the remaining unit is stripped down to the chassis and body, and this denuded bulk, consisting entirely of steel and iron is hoisted from the conveyor by crane and deposited in a large pile, ready to enter the open hearth furnace. At the time of the writer's visit to the plant a press, equipped with a huge flat die, was practically installed at the edge of the conveyor. This is to be used for flattening the skeleton car.

Particular care is being taken in the separate disassembly of the Ford Model T engines. The cylinder block, pistons, connecting rods, crankshafts, fan, metal tubing, clutch, starter, generator, bushings, bearings, gears, etc., are placed in large steel containers for separate remelting. The company is devoting especial attention to this part of its salvaging experiment to determine whether the extra labour and time involved in separating all the parts of the Ford engine is merited by the advantage of thus obtaining distinct groups of remeltable metals, the exact composition of each of which is known.

The initiative of the Ford organization in proceeding with junking operations at the rate of some 75,000 units a year to ascertain the practicability of such an endeavour places it once more in the position of sponsoring something unique in the trade.

The progress of this experiment undoubtedly will determine what the Ford organization will do in the way of car-salvaging on a national basis. It is hardly to be expected that whole cars would be shipped to the Dearborn plant from other portions of the country. Some plan for tearing down the

"junkers" near their source and possibly shipping the salvaged metals in convenient form to the main factory would appear to be comparatively more economical. It is logical to speculate upon the possibility that ultimately each of the 30 odd Ford assembly plants through the United States might function also as salvaging units.

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position of both driver and passengers, who are also given plenty of elbow and headroom. The cars are decidedly graceful in outline and tastefully decorated, both inside and out. There are many sensible detail improvements, such as the disposition of tools in accessible places, the provision of picnic tables, which appeal to the average family man, while attention is paid to ventilation.

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Ambiguous Summonses

A point of great interest to all motorists

HERE is an interesting letter which appeared recently in the correspondence columns of the Motor Bulletin the organ of the Northern India Automobile Association.

Sir,—While referring to ambiguous summonses against accused for offences under the Motor Vehicles Act, you write that these summonses are issued even without regard to the bare requirement of the law. It will interest your readers to know that the requirements with respect to the formalities of law to be observed in issuing these summonses is given in Form No. 1 in Schedule No. 5 to the Code of Criminal Procedure. The Courts are bound to inform the accused with a short statement of the offence, which phrase has been the subject of interpretation in several rulings given by the Indian High Courts.

The matter was argued at length before the Allahabad High Court in a case reported as 1928 All. page 261 A.L.R. The Judges held as follows:

"The procedure of issuing 'summonses by the Magisterial Courts purporting to charge 'motor owners or drivers with 'offences under the Act without giving the slightest 'particulars of the offence 'alleged is not justified by 'law. Section 68 of the 'Criminal Procedure Code 'incorporates the form of

"summons, which is a statutory 'form contained in Schedule 5 'to the Code, which summons 'is to be issued to accused 'persons.

"A summons issued by a 'Magistrate's Court which 'does not contain in the form 'particulars prescribed by the 'Statute—particulars of the 'place where, the time when, 'and the nature of the offence 'charged may be disregarded 'by the person summoned and 'proceedings taken thereon, if 'objected to, must necessarily 'be invalid."

The same view has been taken in a recent judgment of Lahore High Court, reported as 1930 Lah. page 450 Ind. Rulings. It will thus be seen that the issue of a summons against an accused which does not state the time and place of the occurrence, or does not state the nature of the offence is not only very inconvenient and harassing, but is also absolutely illegal. It is hoped that the ministerial officers to which the work of writing out summonses is generally entrusted will be careful in future to comply with the requirements of the law.

Readers of the South India Motor Owner, therefore, who happen to be so unfortunate as to be summoned to appear before a Magistrate to answer for some minor motoring offence, would perhaps profit by scanning carefully the summons form.

Bangalore Notes and News

BEFORE the ordinary meeting of the Station Municipal Commissioners there was a special meeting at which it was decided to place before the Hon. the Resident for confirmation the resolutions of the Commissioners at their last meeting on the subject of regulating the recovery of fees from a licensee, who is unable to renew his driver's licence in time, and for requiring motor buses that ply for hire to run at timings that will be laid down.

The construction of the Neriya-mangalam-Pallivasal Road is nearing completion, and the road is expected to be opened for traffic during December or January next.

A Bangalore reader, writing to us on the subject of overloading, mentions new statute in America which might well be imitated elsewhere. It expressly forbids a vehicle to be driven "when there is on the front seat such number of persons as to obstruct the view of the operator to the front or sides or to interfere with the driver's control over the driving mechanism of the machine." In India there is no regulation on the subject except in respect of buses and taxicabs, but the spectacle is by no means unknown of a private car being absolutely "stuffed" with passengers, and the driver is wedged in in a way that is obviously not unallied with risk. Some drivers, moreover, sometimes carry a large dog on the front seat, even when the animal is of a playful disposition.

A comprehensive scheme came up for discussion at a recent meeting of the Mysore City Improvement Board, for tarring about 7½ miles of the principal roads in the City at an estimated cost of about Rs. 2 lakhs has been contemplated by the Municipality, and the Board and the Government have been requested to advance this amount to be re-

covered in annual instalments. Government have now approved the estimate of Rs. 30,000 for tarring the road from the northern toll-gate limit of the City up to the Silver Jubilee Clock Tower. The way which is known at the Doddapetta is a busy centre of trade and is further the route which His Highness the Maharajah takes when he travels in procession both on the occasion of Dusserah and of his Birthday.

Government have further approved the free grant of sites by the Board in the southern extension of the City for constructing the Sarada Vilas High School and the All-Mysore Teachers' Association buildings. The Principal of the Mysore Medical College had asked the Board for the grant of vacant ground in front of the new Exhibition buildings as a play-ground for the students of the College.

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TO

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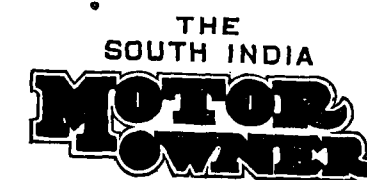
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Rates for display space will be furnished on application. For small advertisements and entries under 'Sales and Service Guide,' see page 374.

Advertisements to secure insertion in any month's issue should reach this office not later than the 20th of the month preceding. The publishers of *The South India Motor Owner* reserve the right to reject any advertisement for any cause.

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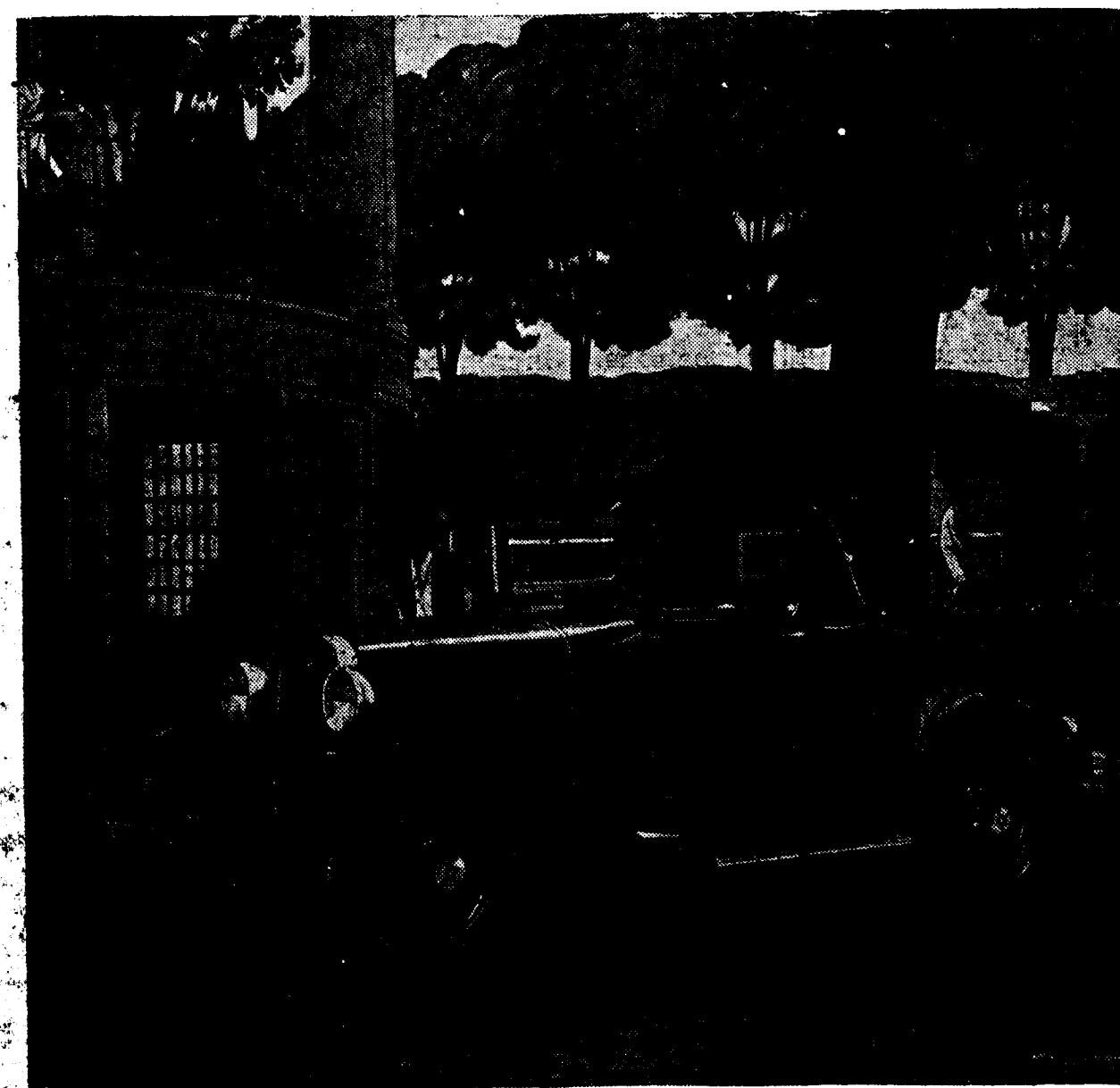
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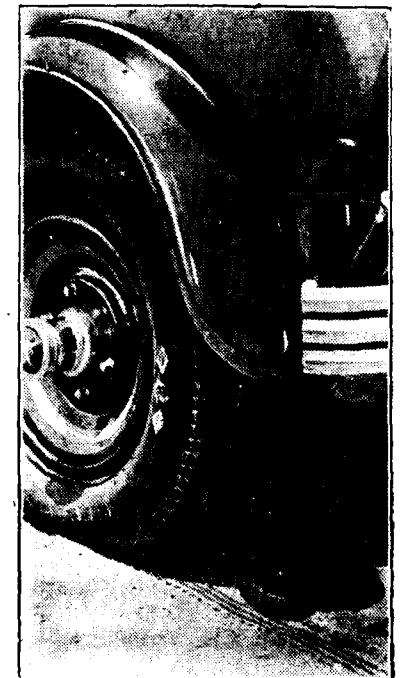
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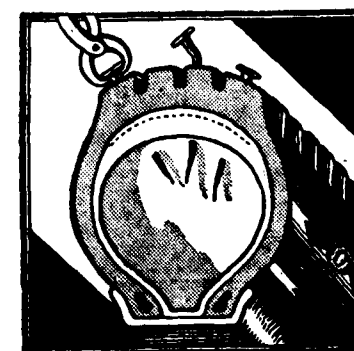
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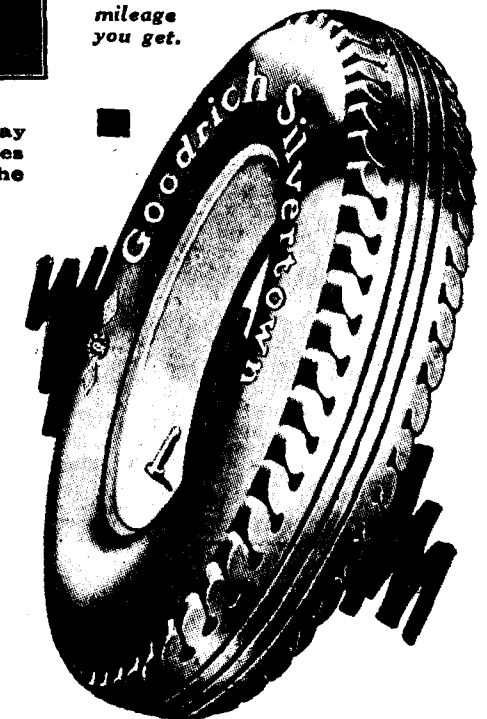


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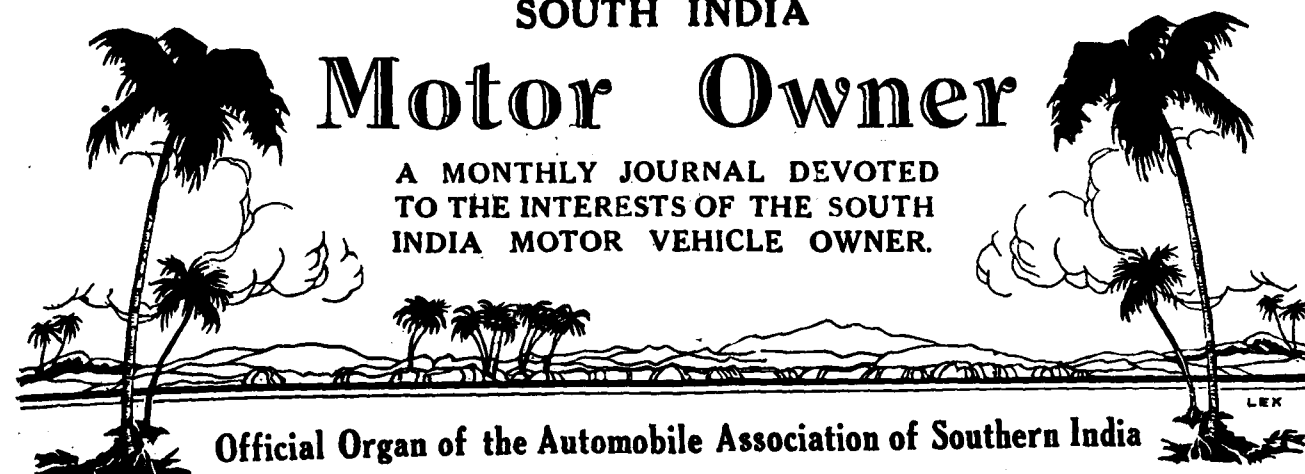
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SOUTH INDIA

Motor Owner

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TO THE INTERESTS OF THE SOUTH
INDIA MOTOR VEHICLE OWNER.



Official Organ of the Automobile Association of Southern India

Vol. II, No. 11

December, 1930

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TO ALL OUR
READERS:

*A Merry Xmas
and a Happy
New Year.*

A 3,000 R. P. M. Light Car Diesel

German Engineers convert 525 c.c. Two-cylinder D. W. K. Engine to work on Semi-Diesel Principle—Satisfactory Road Performance Obtained—Further Experiments Being under-taken

THERE is a certain amount of doubt in motoring circles relative to the adaptability of compression ignition engines for private cars, but actually the development of this type of engine is making such progress as to warrant the assertion that sooner or later it will challenge the ordinary petrol engine even in small cars, writes a German correspondent.

Inventors, engineers and scientists all over the world are hard at work perfecting this type of engine, (generally named "Diesel" after its originator) to make it lighter, faster and stronger. With modern metals and alloys at their disposal and present-day methods of research there seems little cause for doubt that one day we shall have reliable small Diesel engines with all the advantages of their high efficiency, exceedingly low working costs and great simplicity—factors of special importance to small car owners!

Diesels, also called compression-ignition engines and heavy oil engines, are very similar to ordinary petrol engines; furthermore, they work either on the four-stroke or two stroke principle. They do not, however, have either a carburetter or an electric ignition system, except in the modified forms called semi-Diesels, which occasionally have an electric means of heating or ignition. They also do not use petrol, but oil of the kind employed in heating ships' boilers, which is very cheap, has practically no volatility and a high flash point, making it much less dangerous than petrol.

The compression ratio of these engines is much higher than in the petrol type, being about 16 to 1 as against 4.8 or 5 to 1. Only pure air is drawn into the cylinders by the pistons, and owing to the high rate of compression, this is brought to such a heat that oil injected into it immediately begins to burn. At the end of the compression stroke, without oil having been injected, the pressure in the cylinders amounts to about 425 lb. per square inch, which is about the maximum pressure generated in an ordinary petrol engine when the charge is ignited.

The pressure in a Diesel engine, when the oil is injected and expansion takes place owing to its

burning, rises to far above 1,000 lb. per square inch. This immense and sudden load on all working parts is one of the main difficulties to be faced in designing Diesel engines, for it necessitates their being built very strongly, which opposes the big demand for light weight. Another great difficulty encountered is the injection of the fuel, which has to be finely metered to each cylinder and so atomized as to burn readily and with exceeding rapidity.

Fuel Injection Difficulties.

In the large and slow Diesel engines employed, for instance, in ships, the injection no longer causes any trouble, but in a fast light-weight Diesel, of the kind needed for road vehicles, it is difficult to evolve means ensuring a correctly timed injection of what is really an infinitesimal quantity of exactly measured fuel, inside the mere fraction of a second that is at the disposal of the designer, just before the piston reaches top dead centre.

A large number of pumps and injector nozzles have been invented and constructed, but to this day the highest speed obtainable in a Diesel engine has not exceeded 2,000 r.p.m., and even then the working was not wholly satisfactory. Most oil engines used on road vehicles to day do not exceed 1,000 to 1,300 r.p.m. If this speed could be multiplied by two or three it goes without saying that the engines could be built much smaller and would, therefore, weigh much less, while supplying the same or more power than the slower ones at present employed.

As already indicated, there is a type of engine called semi-Diesel. This is constructed to circumvent the weight problem by reducing the working pressures and building the engines lighter. In them the air is not compressed to so high a degree that its temperature will ignite oil injected into it; to effect its burning recourse has to be taken to a special ignition method consisting, in some engines, of a bulb heated from outside by a lamp, and in others of an electrically heated core.

It is by using the semi-Diesel principle that two German engineers have just succeeded in developing

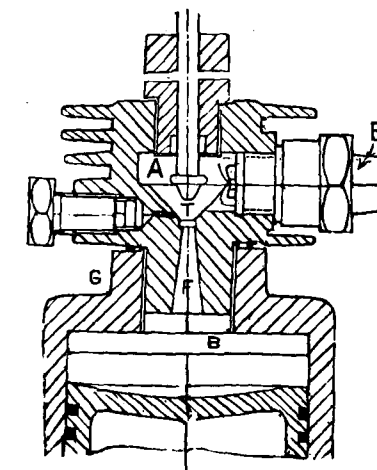
a small two-cylinder heavy oil engine capable of working constantly at 3,000 r.p.m., which is a tremendous advance, the more so as the principle evolved readily lends itself to adoption in full-Diesel engines and to further improvement. In a new engine under construction the inventors, indeed, hope to attain a speed of 4,000 r.p.m. which means that then their engine will be as fast as many petrol engines now available in light cars.

A Successful Conversion.

The two engineers, to demonstrate the practical usefulness of their invention, took the engine out of a small D.K.W. car and converted it in quite a provisional manner. The engine is a normal two-stroke with two water-cooled cylinders in one block, and having a piston displacement of only 525 c.c. Normally it is run on the "petrol" system, the oil mixture being pressed out of the gas by the compression in the crank case, causing the lubricant to settle in the latter and permeate all bearings.

As, in the converted engine, the fuel has to be injected, a special lubrication pump had to be fitted. Also crankcase compression of the air charge was discarded for various reasons and a small Zoller rotary supercharger provided instead, which feeds the requisite supply of air straight into the air ports of the cylinders. New pistons were fitted, and the compression ratio increased to 12 to 1, giving an end compression pressure of 285 lb. per square inch. In addition to this the engine was provided with a new cylinder head and a fuel-injection pump.

The secret of success lies in the cylinder head, which embodies a new ante-chamber arrangement. Before continuing the description of the converted engine the working principle may be explained. An accompanying sketch shows the section through an air-cooled experimental engine cylinder, in which constitutes a small ante-chamber in the cylinder head having a funnel-shaped bottom and a venturi-shaped channel (F) connecting it with the combustion chamber (B) of the cylinder. A very simple kind of horizontally arranged nozzle is shown at D. It embodies merely a non-return valve of the ball type, and for the rest has merely an open boring (G) of 1.5 mm. diameter ending in the ante-chamber at the point T just above the rim of the connecting channel. The electrodes of an ordinary sparking Plug (E) protude into the ante-chamber, and C is



This sectional sketch of the cylinder head and fuel valve shows the ante-chamber and its funnel-shaped outlet to the main combustion chamber. The points marked with reference letters are fully explained in the text.

merely a needle valve, the function of which will be explained later.

The method of working is as follows. When the piston rises it compresses the air above it and a violent upward current rushes through the connecting channel (F) into the ante-chamber. Simultaneously a few tiny drops of fuel are pressed out of the nozzle by the timed fuel pump into the bottom of the ante-chamber, where they are partially caught up by the air current and atomized, which is the more quickly accomplished as the air, owing to the compression, has a high temperature; it is, in fact, little short of what is required to ignite the oil.

Firing the Charge.

At the crucial moment, when the piston has almost reached its upper dead centre, a spark occurs at the plug electrodes and instantaneously fires the vaporized oil in the ante-chamber, causing a sudden and exceedingly powerful increase of pressure, which is much greater than that in the working cylinder. Hence the burning mixture of air and oil is blown downwards into the combustion chamber, taking along with it, and vaporizing, what remnants of oil there may be in the ante-chamber or connecting channel. All this takes place in the merest fraction of a second. The needle valve (C) is employed only when the engine has to be started from cold. It is then pressed down so far as considerably to reduce the size of the upper opening of the connecting channel, thereby increasing the velocity of the air current passing through this opening and its ability to atomize the injected fuel.

All this is exceedingly simple compared with other Diesel and semi-Diesel engines, and has some valuable advantages in its favour. First of all the nozzle is not called on to atomize the fuel and, therefore, requires no finely calibrated and easily clogged spray openings. This makes it easy and very cheap to produce. Secondly, only a cheap and simple low-pressure fuel pump, delivering the oil with a pressure of only about 300 lb. per square inch—just enough to overcome the air pressure in the ante-chamber—is required.

Both of these components, as used on the normal type of Diesel, are usually very intricate and expensive, as they have to be made very carefully from specially selected and tested materials, for they have to deliver oil at pressures of many thousands of

pounds per square inch. Thirdly, and this is of greatest importance, there is the efficient and exceedingly simple method of fuel atomization, which cannot possibly get out order.

A Road Test.

The writer had the privilege of a run in the D.K.W. car equipped with the converted engine, and is able to testify to its efficient working. It was not, of course, perfect, for it was far from noiseless and did not appear to develop the same power as the normal engine. But it had come all the way to Berlin from Dusseldorf with two men and much luggage on board over the Teutoburger hills without giving trouble and at an infinitesimal fuel cost.

The main components of the engine are shown in the accompanying sketch. In the fore front is the Zoller supercharger with an air filter on top and driven by a roller chain. Immediately behind it is a rather clumsy-looking fuel pump. There is much too large for the engine and had to be modified, but there was no smaller pump available on the market and the inventors did not want to make a special pump of their own just for this one engine.

In this engine it was found that the needle valves for starting were wholly superfluous. They were, therefore, fixed permanently in their top position. Mention should also be made of the fact that the car ran for many miles with the electric ignition wholly cut out. The heat of the engine and compressed air sufficed alone to ignite the fuel charges. In fact, by merely increasing the compression ratio slightly and strengthening certain parts, electric ignition could be wholly dispensed with, as then the engine would work as a full Diesel. An engine of this type is now in course of construction.

Proved Efficiency.

The main proof of the efficiency of this invention, however, is to be found in the fact that the combustion, in spite of the high engine speed of approximately 3,000 r.p.m., and at all intermediate speeds, when starting and changing gears, was so perfect as to leave no traces of fumes or odour in the exhaust gas. It will, therefore, be very interesting to witness the performance of the first engine designed and built from the beginning to work by this principle. Some time will, of course, elapse before the invention is brought to the height of perfection, but already in its present state it is very promising.

The Toll of the Road.

MOONLIGHT and motoring are a passion with Joan, and I confess I am very fond of both of them myself. Last night, however, our romantic wanderings received rather a shock.

Stopping to enjoy a smoke in the solitude of a wood, my attention was excitedly drawn by my companion to a figure sitting by the roadside, just near a heap of granite.

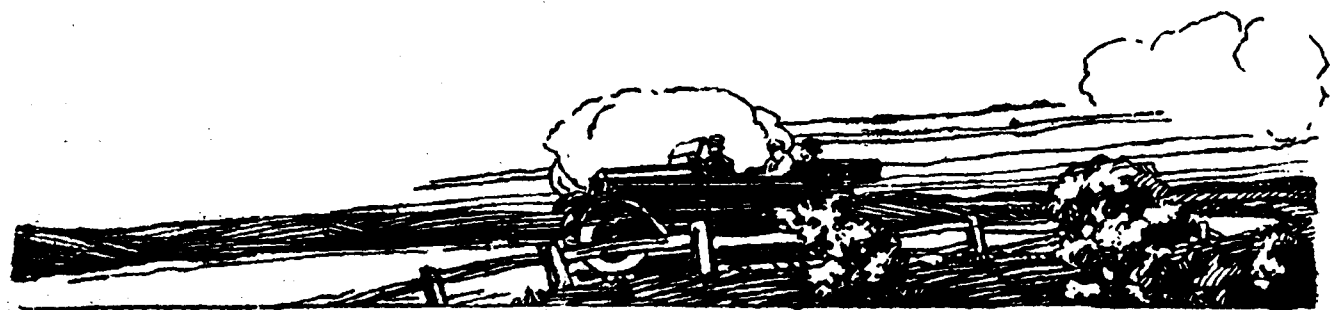
At first he seemed to resent our presence, then becoming reconciled to our intrusion went on with his supper, leaving us to watch with fascination his deliberate meal and toilet.

"I wonder if he's waiting for someone?" asked John. "He must be awfully lonely all alone on a night like this."

The faint hum of a car in the distance, followed by its powerful headlamps dancing in the tree-tops, seemed to excite him; evidently this was to be the solution of the problem. Looking past us now, his eyes were riveted on the oncoming lights, and we noticed that he raised himself to his full height, then moved slowly to the edge of the grass verge—surely that fugitive look did not denote a would-be suicide.

A furtive dash, a scream, and it was all over. A morbid curiosity drew us to the spot to see if we could be of help, but it was apparent at a glance that he was past this as we expected.

Joan broke the silence, her voice full of pity. "poor little bunny." L. T.



Successful Diagnosis.

How the Novice in Difficulty may Save Time, Temper and often Money by Rapid Elimination of Possible Faults.

What should the novice do when confronted with his first involuntary stop on the road? Vague general search for the cause is useless; rather should he indulge in systematic elimination of possible trouble, and by that process arrive at the reason for the stop. In the following notes typical examples of such procedure will provide him with sound clues for future detective work on his car.

WITH a new car it is rarely that trouble, even of a minor sort, is experienced, but there are occasions when the knowledge of how to diagnose simple faults is of the utmost importance.

If, for example, the engine will not pull and the driver immediately sets about examining the various auxiliaries that might be responsible, he will find, eventually, that he has done much work and spent much time which could have been saved by thinking out the cause of the trouble beforehand.

The whole base on which diagnosis is founded is the behaviour of the car when trouble first occurs. If, for instance, the engine is running properly at one moment and at the next all four cylinders cease firing together, it is obviously highly improbable that either the plugs or the carburetter are at fault. Carburetter trouble does not cut off all the cylinders sharply, and it is practically impossible that all the plugs will develop faults simultaneously.

Process of Elimination.

It is probable that the current to the plugs has been cut off, and this suggests that the switch has been accidentally knocked off, that the switch wire has short circuited, or that the magneto has ceased to develop current. Proceeding from that basis, and having found that the switch is not off, the most probable cause is that the contact breaker arm has stuck, and will no longer rock on its spindle.

Since the car is new, a short-circuit in the switch wire is most unlikely, and it is, in any case, quite easy to test this by removing the switch wire from the contact maker cover and trying the engine with the starting motor. If the rocker has stuck, work it to and fro on its spindle until it is sufficiently free to move easily, and then, when a convenient moment arrives, ask a mechanic to free the arm properly.

The most unlikely thing is that the magneto has ceased to develop current, but if it has there is nothing for it but to summon expert assistance. If, however, the rocker arm is free and the wiring is intact—that is to say, the distributor is in position, because sometimes it falls out of its clips—make quite certain there is no current by removing one plug from the engine, connect it to its wire, and

lay the plug on the engine, so that the body, and not the terminal, is resting on the head. Shade the points with a rag or piece of cardboard, or anything which will throw a deep shadow on the plug end, then either rotate the crankshaft with the handle, or use the starting motor, and make quite certain that no spark is passing the plug points. If the plug is allowed to rest on the cylinder head in sunlight it is sometimes difficult to distinguish whether there is a spark or not.

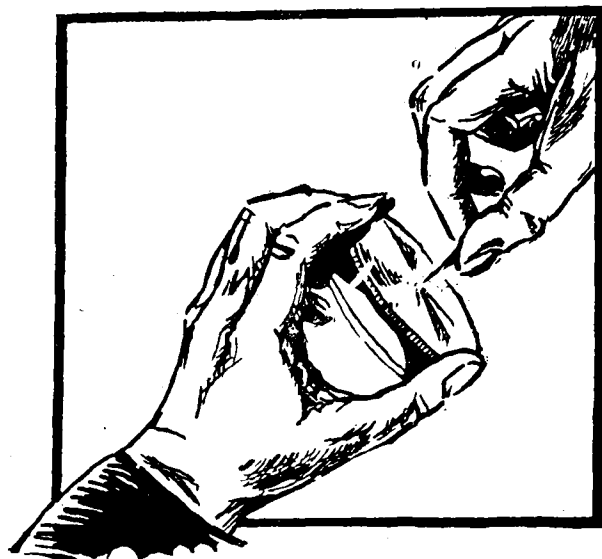
It will be seen that the whole diagnosis depends on thinking out the probable cause of the trouble before touching any part of the engine. The most probable trouble with a new car is that it will, at some time or other, run out of petrol, in which case the engine will suddenly and quickly become weaker and weaker until finally it dies away with, perhaps, an explosion or two in the silencer and, as a rule, the car will travel a yard or two farther if the throttle is almost closed, because the last dregs of the fuel will pass through the slow-running jet when they will not pass the larger main jet.

When the Fuel Fails.

In certain cars the end of the petrol pipe in the tank will be uncovered when going down hill, covered again when the car leaves the gradient if the fuel in the tank is at the low limit, but the feel of the engine when the carburetter dries up is quite different from what it is if the ignition is cut off, as the novice can discover by switching off the ignition for one test and then stopping the engine by turning off the petrol for another.

Dealing now with plugs in general—for plug trouble may be encountered at some time or other—the first symptom that a plug has ceased to fire will be that the engine is not pulling well, especially on hills, and that on the flat there is an unusual noise, it may be an irregular beat in the running of the engine, or it may only be that the indirect gears emit more noise than usual and that that noise is distinctly irregular. In some engines this will be the only clue to the fact that one cylinder has ceased firing. Explosions in the silencer sometimes occur.

When it is certain that the engine is not pulling, therefore, run for a little while, then pull into the



A stopped vent hole in the filler cap can prevent petrol flowing freely to the carburetter.

side of the road and, without switching off the engine, make it run quite slowly and listen to the exhaust note. As a rule, there will be a distinct break in the rhythm of the exhaust beats. Leave the engine running and extract from the tool kit a screw-driver, the metal shaft and blade of which is tangled in the wooden handle and not passed round it, as is the case with certain American screwdrivers. Rest the shaft of the screwdriver on the head (see opposite page), then turn the blade until it touches the terminal of one plug. If the exhaust note then becomes more irregular than ever, it is obvious that the screwdriver has stopped that plug from firing, from which it follows that that particular plug is not at fault. Try each plug in turn until the one which can be short-circuited with the screwdriver without making any difference to the exhaust note is found.

Incidentally, when a good plug is shorted, the engine will run more slowly; when a faulty plug is short-circuited it will continue at the same speed as before.

Testing the Plugs.

Now move the screwdriver blade a millimetre or so away from the terminal, noting that a spark passes from the terminal of the plug to the blade, which proves that current is reaching the plug, though nothing happens when it does so. Switch off the engine and put a finger first on the body of the faulty plug and then on that of a plug which is known to be firing. In nine cases out of ten it will be found that the faulty plug is colder than the other plugs, and that is a very useful thing to remember for tracing the trouble next time, and, incidentally, is one of the reasons why it is useful to run a little distance after the trouble has become apparent.

If the plug now is unscrewed it will probably be found that the interior of the threaded portion is covered with oil, which also bridges the gap between the points. Alternatively, carbon may have formed between the points, the points may be loose so that the central one will move, or the insulation of the plug itself may be faulty.

Put in a new plug and run the engine, listening to the exhaust noise for a second or so to make sure that the trouble has been cured.

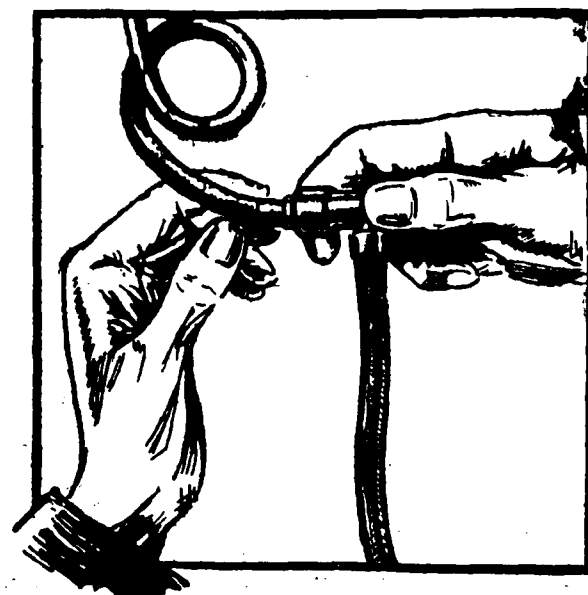
How to Clean Plugs.

When the car has been brought back to the garage, if the plug can be taken to pieces, clean the interior thoroughly with petrol, or if the trouble is carbon, carefully scrape the parts until they are clean.

It is well to remember that a plug that has once oiled up very often gives trouble again, especially if it has not been cleaned thoroughly.

It does not always happen that a plug ceases to fire instantly. Sometimes it sparks irregularly, which, as a rule, can be detected by a slight loss of power, an uneven exhaust note, and a snatchy feeling when accelerating. Occasionally, also, explosions occur in the silencer because unfired charges from the erring cylinder are pumped into the silencer and there exploded by the flame of the exhaust gases from other cylinders. The diagnosis and remedy are exactly the same as has been described in connection with the plug which ceases to fire altogether.

The next most probable cause of trouble would be the carburetter, and broadly speaking, all carburetters have three principal jets. There are, naturally, exceptions, but the majority come under



Showing how to use the tyre pump to clear a blocked petrol connection.

this heading. Of these jets one operates when the throttle is very nearly closed, that is, when the throttle pedal is released, and its function is to supply a rich mixture for starting and slow running.

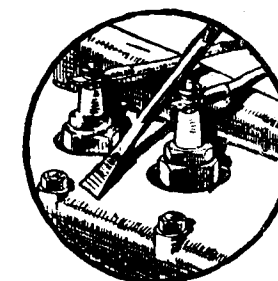
After the driver has started the engine, when the throttle pedal is moved forward, this jet ceases to function, and the main jet commences to operate, being supplied with an extra quantity of fuel temporarily by the compensating jet. If the throttle is opened wider this extra supply of fuel ceases, the compensating jet goes out of action, and the main jet only operates in the supply of gas to the cylinders.

There is, therefore, a definite function for each jet. The first affects starting and slow running, the second is for acceleration, while the third keeps the car running at ordinary speed, and each is affected by the position of the throttle. If the throttle pedal is released and the engine will not start, the slow running jet is probably blocked. If the throttle is opened a bit and the engine then starts with difficulty but ceases to fire when the throttle is released, it is certain that the slow runner is stopped up, and if after a long run, the driver finds that the engine stops every time the throttle pedal is released it is again obvious that the slow runner is at fault. The compensator is all right because the engine will accelerate. The main jet is all right because the engine runs at normal speed. There remains only the pilot, or slow runner jet to be the culprit and it must be cleaned out carefully.

Suppose, however, that the engine starts, consequently, that compensating jet is blocked up. If, on the other hand, starting, slow running and acceleration are not affected, but the moment the throttle is opened the engine stops, then it is the main jet that is at fault. Small explosions in the carburetter, due to a weak mixture sometimes betray the last-mentioned faults.

Correct Needle Seating.

If the float chamber lid is removed for some reason or other, flooding may take place after it has been replaced, and this may mean that the needle is not properly on its seating. Slight flooding, as



Testing Plugs with a Screwdriver.

indicated by dripping from the mouth of the air intake occurs with certain makes of carburetter whenever the car is left on the camber at the side of the road with the engine stopped. There is no cure for this rather annoying habit save to turn off the petrol.

Sometimes the novice, having started the engine by closing the strangler, finds that the car will only run a short distance and then stops, clouds of black smoke coming from the exhaust pipe. He will then, as a rule, find that he has forgotten to open the strang-

ler as soon as the engine was warm enough to run in a normal fashion. This should be the case in a few seconds with any correctly turned and adjusted engine.

Valve trouble with a new engine is unlikely and need not be touched upon, but the sudden development of an extremely nasty vibration, together with an odd noise, an effect as though the brake had been applied, and a sudden, violent rise of the radiator thermometer reading probably shows that a piston is on the point of seizing because the engine has been run too fast too early before it is "run-in" and bedded down snugly to its cylinder.

Practice Tyre Removal.

Sometimes the shoes of one brake rub. The trouble is shown by a hot brake drum when the car has been stopped, and can be remedied by slacking off the adjustment slightly, taking care not to overdo this and unduly weaken the brake power.

Tyres to-day are very reliable indeed, but a novice should find out as soon as possible how the cover is removed from the wheel and the air tube extracted. It sometimes happens that two punctures occur in one day, and it is better to patch the hole in one of the tubes with a modern, rapid-acting patch at once, than to attempt to drive the car a mile or so on a flat tyre to a garage to get the work done.

The symptoms in the last few cases are obvious and the remedy easy, but the whole point of diagnosis, it will be seen, lies in thinking out the cause of trouble before attempting the remedy, and so avoiding useless labour.

Wet Weather Hints.

In various parts of India where the annual rainfall is very heavy, rust often sets in on the mudguards, the hood shows signs of leaks and the upholstery becomes discolored, at the same time staining the clothing. In the first place, to prevent the mudguards from deteriorating, the best thing to do is thoroughly to clean and duco them, as water does not effect duco paint.

A mason cover which will fit over the hood with push buttons, will not only preserve the hood, but will also make the car absolutely water-

tight. Leather revivers, sold in various colours, are very effective in renovating the upholstery in addition to blending the colour of the upholstery with that of the body. Similar preservers are sold for the roofs of closed cars. Seat covers add to the appearance of a car, preserve the upholstery, and eliminate the risk of soiling clothing. It is advisable, if seat covers are used, to remove them at least once a month and clean the upholstery, so that the dust that may have accumulated between the seats and covers will not destroy the upholstery.



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BECAUSE...

They serve better, look better, grip better, wear better—yet cost no more to buy.

GOOD YEAR

2-30-10

From an Owner Driver's Note Book



by

"SPOTLIGHT."

A friend of mine put me wise to a new trick recently. It appears he had been dissatisfied for some time with the results he obtained from a certain well known brand of oil—excessive carbon, sooted plugs and sticking valves proving definitely that something was wrong somewhere. Now this friend of mine is nothing if not conscientious, so he determined to have a clean start—completely draining the sump and refilling with new oil. He noticed, however, that his cleaner seemed over-pleased to do the job, and eager to obtain new supplies of oil. And no wonder!

Enquiries elicited the information that the cleaner was hand-in-glove with some unscrupulous oil vendor. Empty tins which had once contained a good brand of oil were refilled by the dealer with a very low grade mixture, a receipt for the full price of the branded oil was given and the difference, one supposes pocketed by the cleaner and oil dealer.

A wink being as good as a nod under these circumstances, I shall take care in future that oil is bought from a reputable vendor by myself in person.

A Sad Story.

Motor agents in London, it is alleged, are being victimised by a plausible, prosperous-looking man, who inspects their second-hand stock, selects a car, writes out a cheque on the spot and drives off in his purchase. All

very nice, but the cheque-book is stolen—and so is the car!

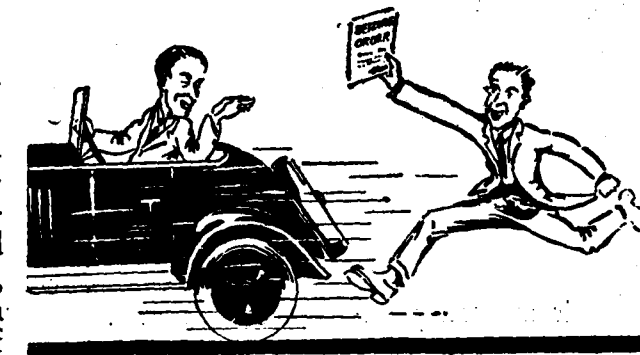
A Labour Saver.

I am trying something entirely new on my car. As already mentioned my bus has been recently come back to me from the repair shops after a thorough overhaul. The clean start necessary prompted me to try a new gadget which has recently come upon the market—a carbon solvent which, the vendors claim, will completely eliminate the necessity for periodical "de-coking". The idea is, briefly, the injection of a liquid into the combustion chambers on garaging the bus for the night. This has a solvent or loosening effect on the carbon formed during the day, so that when the car is started up in the morning the loosened particles are blown out through the exhaust.

I was a little dubious at first, as such a fluid might have some queer action on lubrication or even upon the metal of the combustion chamber itself. As, however, the stuff is made by one of the most knowledgeable concerns in the States and marketed here by a reputable firm, I should think the stuff is dependable.

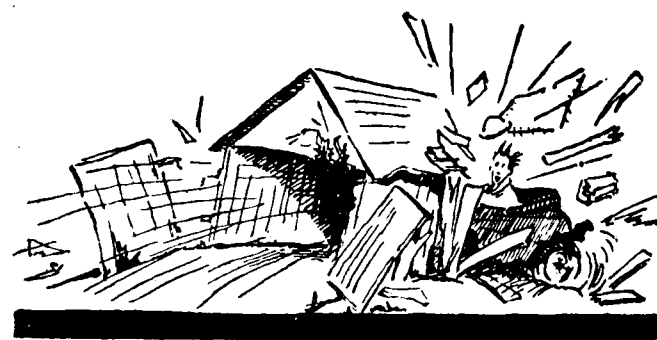
Justice in Naples.

A traveller returned from Europe told of an incident in Naples. He got out of a taxicab there and in doing so accidentally slammed the door too smartly, breaking the window glass. In Naples this was, oi



'Is stolen and so is the car.'

course, the occasion for a long harangue by the driver. He demanded five hundred lire for the damage, came down to three hundred, finally agreed to settle for two hundred. He was about to do this, having been pretty well worn out by the argument, when two policemen appeared. After making inquiry they told everybody to stay right where they were and hurried off, separately. In a short time one officer returned. He had been, he said, to a glazier's; the price for replacing a taxi window was only sixty lire. The driver groaned. The visitor began to assemble sixty lire. Before he had done so the second policeman reappeared. He had telephoned and found that the taxi was covered by insurance. There was nothing to pay. The police then shooed the driver off and wished the tourist good morning.



'Backed into a stable'.

When we grumble at the cost of insurance let us remember the medal has two sides. A damsel of my acquaintance bought a new car—not her first, either—early this year. During the past five months she has contrived to run into somebody or be run into by somebody no fewer than three times. In addition, she packed into an unfamiliar stable without noticing that it had a central hard enough to bring the roof down.

I neither possess nor express an opinion as to whether she was more sinned against than sinning. But even if the other parties were insured also, on the "knock-for-knock" principle, her company would have to pay up on all four occasions.

Since most people begin their motoring exi-

stence with small cars, whereas large cars are usually driven by experts or professionals, our insurance is necessarily dear. But I feel much encouraged at the tale of this girl's misfortunes, as her company shows no signs of terminating her policy or demanding a higher premium.

Of Vital Interest.

Road safety is a question in which every self-respecting motorist has a great interest. Numerous demands and suggestions have been expressed from time to time, and it is hoped that this mention will not be likened to the last straw which fractured the camel's spine.

Just picture the common form of collision on the road. After the respective occupants of the two vehicles have extricated themselves, they proceed to exchange their views as to the cause of the accident. In a very short period the temperature rises rapidly, and one will say to the other, 'If you had . . .'; to which the other replies, 'If you had only . . .'; and in the end a state of excitement has been reached where neither is sufficiently steady even to write down the name and address of the other man. The debris is then solemnly piled on the side of the road and each owner makes his way home, only to reconstruct the accident with a view to showing that he was entirely in the right and the other man entirely in the wrong.

The case is investigated at length, and anyone who is left to decide who was in the wrong is merely confronted with a host of accusations, most of which cannot be substantiated. Bad feeling is engendered, and some time elapses before the two vehicles are spick and span again and ready for the road.

We in Southern India do not want to be smothered by rules and regulations, but we do want a simple and clear code of understanding. The wild motorist will always be found, and he must be ruthlessly suppressed, for there is no room on our roads for people who are not only a danger to themselves but to all with whom they come in contact, in more senses than one.

Morris New Range of Six-cylinder Models.

Better Bodywork and Many Detail Improvements Characterise

Morris 1931 Programme.

GENEROUSLY generously equipped, roomy, six-cylinder cars at an astoundingly low price are offered in the new range of Morris Major models. Constructed upon a sturdy chassis, every item in which has stood the test of time, comfortably upholstered and embodying long, semi-elliptic suspension, they have for a power unit a six-cylinder powerful engine rated at 14.9 h. p.

The Engine.

Incorporating side by-side valves, an air-cleaner head, battery ignition, centrifugal water pump and radiator shutters, automatically operated by a calor-stat, the engine provides swift yet silky acceleration, conspicuously good hill-climbing qualities, is economical in its fuel and oil demands, and will hold its tune for incredibly long periods with a minimum of attention. These new cars—all closed models—embrace a fabric saloonette, a coachbuilt coupe with folding head, and a coachbuilt saloon, also with folding head. The coachbuilt saloon is a handsome car, for four persons, or five if necessary. Its lines are admirably set off by its wire wheels. The coupe is a good-looking car, and with its six-cylinders offers superlative acceleration and a high reserve of speed. Both these models are finished in an attractive lake or black cellulose.

We can unhesitatingly say that this new range of Morris models once more makes history in the British motor industry, as offering real value for folk of modest means. It may be said that a high-grade six-cylinder engine, with coachwork which can take its place with credit in any company, is available to the man of quite moderate circumstances.

In the Morris Minor range there is a new two-seater model. It has a wide, deeply-upholstered seat and ample leg room. Exceptionally good springing and road-holding qualities are offered by the long semi-elliptic springs on this model, which is a happy mean between the sports car proper and a touring model.

Economical Running.

Covering fifty miles to the gallon of petrol, having a maximum speed of over fifty miles an hour, and a cruising performance which will shame many larger cars, this new-

comer must not only appeal to the younger generation of motorists, but must attract also the seasoned owner of a fast car. Where a speedy second car is desired as a tender to a more commodious vehicle, this little Minor model assuredly have a large following.

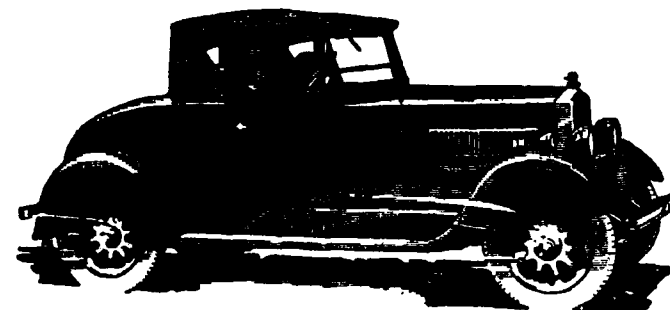
The low hood and weatherproof sidescreens enhance rather than mar its lines when erected, and, such is the ease of erection, render it an all-weather model in the full meaning of the term.

Apart from small detail improvements, the other Minor models remain unchanged, except that the fabric saloon is offered in black as well as blue. The tourer will be offered in blue, and the panelled saloon, which has, of course, the popular and very successful folding head, will appear in dark maroon.

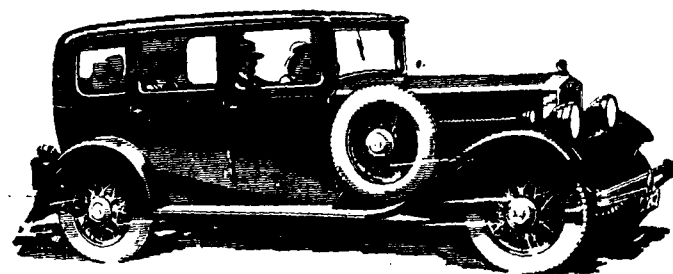
The ubiquitous and ever-popular Morris-Cowley cars have improved body lines, particularly the saloon. The radiator is slightly higher, and this has given the designers an opportunity to improve the bonnet line—small changes admittedly, but changes which definitely enhance the appearance of an already well-proportioned car. The upholstery for the coming season will be covered in Karhyde, exceedingly durable, yet soft to the touch.

A big mechanical advance in design which owners will appreciate is the new group lubrication. The grease gun system which has been standard on Morris models for a number of years—the Morris concern being one of the first to recognise its many advantages over the screw-down greasers which it superseded—inevitably leaves many important lubricating points less accessible than other. In practice, this has meant that where an owner has insufficient time to grease the whole car he has merely applied the gun to those points which he could reach easily and neglected the remainder.

In the group system of lubrication all the previously rather inaccessible nipples are mounted in a line just over the back axle, so that the owner has merely to pull up a floorboard and apply the gun to each in turn, a matter of two minutes easy work.



The Morris-Cowley Two-Seater.



The Morris-Oxford Saloon.

An important mechanical improvement on the Cowleys is a new cylinder head of advanced design, which offers a material increase in speed, improves still further the excellent hill-climbing of these models, and permits of the elapse of the maximum period between decarbonising.

Valves and Steering.

Lighter valves have also been incorporated, a feature which has improved the acceleration, while Bishop cam-type steering is now standard.

Good as the steering has been on early models, we may confidently say that this new steering improves the handling of the car in no small degree. Nor must we forget the modified brake gear, in which all four shoes of the four-wheel system operated by the pedal can be compensated for wear by a single butterfly nut accessibly placed under the forward floorboard while another performs a similar duty for the hand brake-shoes. This new arrangement considerably simplifies the periodical attention which all brakes require, and will leave positively no excuse for badly adjusted brakes however busy the owner may be.

A New Saloon Oxford.

An interesting new model has been introduced to the Oxford range in the form of a saloon with a fixed head (in addition to the sliding head of the present season) at a slightly lower cost. A detail refinement of both these saloons is an arm-rest for the back seats, which adds materially to the comfort on a long journey when only two passengers are seated, and pushes up flush with the back squab in order to accommodate a third if necessary.

The Morris Oxford range is now equipped with Magna type wire wheels, with enclosed wheel stud nuts. Not only do they keep these nuts clean and free from mud, but they add materially to the

appearance of the car and are get-at-able in a second when wheel changing operations become necessary. Another small innovation on the Oxfords is a shoe-type accelerator. This offers steady support for the foot, and is to be appreciated on a long journey.

So successful has the Isis proved during the past season, that very few modifications have been deemed either necessary or advisable. The engine has, however, been given the benefit of a new head which incorporates an air cleaner on lines somewhat similar to that fitted to the Oxford models of 1930. This renders the car particularly serviceable in districts where dust, and in some cases sand, is a thing to be reckoned with, and of course, where a car spends a great deal of its life on the coast, there can be no question that an air cleaner fitted to the cylinder head is a valuable acquisition, making for still longer life for wearing parts, the cylinder bore especially.

The device also functions as a fume consumer and positively prevents vitiation of the atmosphere of the interior of the car, even when all the windows have to be closed.

The saloon model now has louvres fitted, to all windows, which not only add to the appearance, but make it possible to have the windows lowered an inch or so for the purposes of ventilation without introducing a

draught either to the driver or other occupants of the car.

Needless to add, these louvres are of Triplex safety glass, which is being continued as a standard fitting on all Morris cars, along with chromium finish on external bright parts. In this connection we might call attention to the new



The Morris-Cowley Tourer.



The Isis Six Saloon.

(Continued on Page 392.)

For **MORRIS CARS**

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ONLY OIL

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SHELL OIL

As the result of searching comparative tests and long experience in actual use, Morris Motors Limited now only use and recommend "Shell" oil for all Morris models.

Use "DOUBLE SHELL" OIL for 4-Cylinder models
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chromium-finished metal band between the scuttle and the bonnet, which is included on all models. It will, of course, keep its colour indefinitely and cope adequately with the business of opening and shutting the bonnet.

Protecting the Tank.

The petrol tank on the Isis now has a pebble guard to act as a protection to the fuel supply. This is really a necessary precaution when the petrol tank is situated at the rear, not so much because there is any likelihood of damage but because the damage is so serious should it occur. This Isis will be available as a tourer and saloon, the former in blue or lake, and the latter in blue, lake, or black with red upholstery, or black with green upholstery.

In introducing these new models to the public the makers advance the sterling qualities which have made Morris cars famous, not only at home, where they constitute a very large proportion of the total cars upon the road, irrespective of make and nationality, but also in other countries, where

their economy of upkeep, long life for wearing parts and good all-round qualities generally have shown them superior to cars of twice their engine capacity and price. In short, these new models are worthy of the good name their predecessors have built up.

The high degree of reliability of the early Morris cars has been maintained, and when we say that in spite of many additional refinements in many instances it has been possible to make a reduction in the price, is striking evidence of the efficiency of modern production methods, which spread all the heavier overhead charges over a very large number of cars to the ultimate benefit of the purchaser.

We understand Addison & Company, Limited. The local Morris distributors have received advance shipments of the many models and will be pleased to show to all interested. An attractive "Home leave" programme is being worked out and this will interest many whose furlough is due next spring.

Protect Your Investment.

IT is remarkable that shrewd business people will make an outlay of from Rs. 2,500 upwards to purchase a motor vehicle and then not protect their investment by seeing that this is properly maintained. Maintenance service is insurance against expensive repairs at a future time. It is a guarantee that the vehicle will not let you down and that running costs will be kept to a minimum.

In patronizing first class service stations, these are encouraged to put in better tools, keep better mechanics and pay them a sufficient amount that satisfactory work is done because the men are interested in keeping their jobs. It is false economy to go to shops for repairs on an expensive machine, where the only recommendation the shops have is a few annas less for doing the job. The company who sold you your car or are now selling that make, should be the one to make repairs on it. Dealers obtain a great deal of factory information regarding adjustments and repairs which the other garages cannot get. If the dealer who sells a car does not maintain a service to back this up and assist customers in getting repairs made, he is shirking a definite responsibility.

The reason used cars do not command higher prices than they do, is that they are not worth more. Cars are old and worn out before their time because they are not properly maintained. Almost any vehicle made to-day will run 100,000 miles if properly serviced. It is true that parts subject to wear, require replacement when worn.

A medium priced car which has travelled 20,000 miles should have at least 4-5 of its useful life left. If sold, however, as an used car its market value is about half (or less) of the original price, because it is the general impression that vehicles are not properly maintained and that parts may be worn out through ill treatment and neglect.

It is only logical that the better care given to any machine the longer it will last. This does not mean that vehicles will not stand up to hard usage. Take for example the well organised transport companies who give their vehicles regular inspections and overhauls. These cars, trucks and buses are on the road day after day piling up miles that are a marvel to the individual owner, whose car is a wreck after a few thousand miles.

The reason is obvious; the vehicles that are given proper maintenance service run thousands of miles against hundreds of miles for the others. When adjustments are needed they receive it. If the top leaks, this is fixed immediately at small cost before the water gets in to rot the wood and upholstery and rust the metal parts. If the finish wears through or rust starts, the metal is cleaned and then protected by paint or ducol. When the oil has thinned out this is drawn off and good new oil is replaced. When wear occurs adjustments are taken up. Body bolts are tightened and shims kept in place to prevent the body sagging and the doors from getting out of alignment.

The car dealer's service station is organized to take care of maintenance work for the individual owner or the fleet owner who does not maintain his own service garage. Nearly every dealer will make a contract with an owner to take care of this maintenance service on a flat rate basis, that is very nominal, considering the investment the owner has in his vehicle.

No manufacturer can force an owner to have his car looked after. It is the owner's choice whether he prefers to protect his investment or gamble against what has proven to be a certainty that vehicles not given proper maintenance service are a source of dissatisfaction to their owners.

The New Wolseley

The HORNET 6 CYLINDER

See this
car at
our show
rooms and
enjoy a
trial run
without
obligation

GIVES YOU.

65 miles per hour. 35 miles per gallon of petrol. Comfortable seating for four adults. Plenty of leg room.

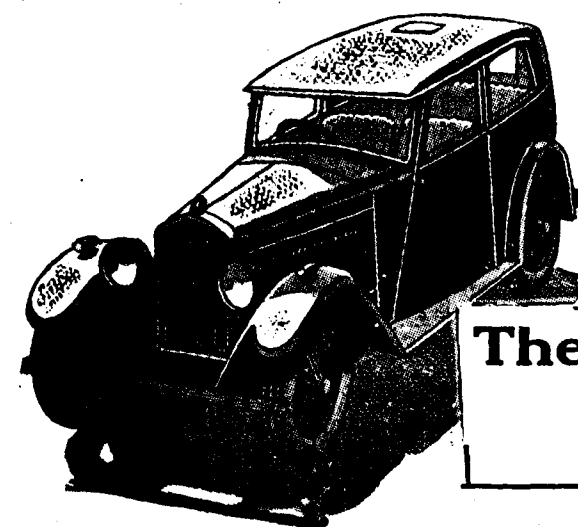
Easy riding over bad roads—achieved by long half elliptic springs and hydraulic shock absorbers. Smooth and rapid acceleration with a minimum of gear changing.

Thermostatically controlled engine temperature by large radiator with automatic shutters.

A performance comparable only with that of a big six cylinder car that is costly to buy and costly to run.

Perfect safety at all speeds. Powerful hydraulic braking on all four wheels.

Every possible refinement to be found on large, expensive cars.



The Coachbuilt Saloon with Sunshine Roof is one of the most attractive small cars ever built—spaciously comfortable, finished inside and out in perfect taste, this model will appeal to all car owners.

The UNION Company

MOUNT ROAD,
MADRAS.

Graphite As A Lubricant.

A Fascinating Description of the Advantages of Colloidal

Graphite in Oil as a Lubricant.

IN "The Valley of the Blind," by H. G. Wells, the people described had developed so delicate a sense of touch that, to them, the most noticeable quality of all earthly things was roughness of surface. To-day, engineers have had developed for them a sense at least as delicate—the microscope—which shows them that, grind, hone and polish as they will, surfaces that appear smooth are actually still rough when magnified.

The drawings reproduced show part of a shaft in section. To the naked eye the surface, fresh from the cutting tool appears perfectly smooth, as shown in Fig. 1. Under a microscope it will appear somewhat as shown in Fig. 2. Grind it and hone it with fine abrasives, and under the same magnifying power the greater degree of smoothness obtained is only as shown in Fig. 3.

Submit the surface to greater magnification and it will appear as in Fig. 2, again, although the degree of roughness is actually reduced. Furthermore, none of these grinding processes has any power to abolish the holes or cavities in the metal which cannot be seen with the naked eye, despite the fact that they constitute no less than 30 per cent. of the superficial area. Under a strong microscope they make the shaft look like a piece of coke.

All Surfaces are Rough.

Relatively to the degree to which it is magnified, each and every surface remains rough; whether it be that of piston or piston ring, shaft or bearing, and at this point the limitations imposed in obtaining a smooth surface by *wearing down* have been reached. Yet if two such surfaces rub together even this slight roughness generates enormous friction, heat, and consequent resistance.

To overcome this difficulty we introduce between the two the quality of greasiness by means of oil. Now when one comes to think of it, this essential quality of every lubricant defies definition. Whatever it is, one needs no other quality to lubricate a slow-moving, cool-running surface. It is, perhaps, permissible to imagine the oil film to con-

stitute a greasy ball bearing, which serves to keep the coke-like surfaces separated.

That being so, one is tempted to say that the whole problem is solved and that in consequence accelerator pedal and footboard can be made to meet in perfect safety. Well, more than one has said it and acted upon it, and on many more occasions than one he has been proved wrong. Mankind has no more achieved infinite strength in the "greasy ball bearings" of oil than infinite smoothness in metal surfaces.

The heat, pressure and friction arising from high-speed rubbing "cracks" those ball bearings, with the result that they no longer keep the peace between the two rough surfaces of metal.

It is at this point that graphite—unique among lubricants, solid and practically everlasting, presents itself as possible solution to our difficulties. It is greasy (blessed word!). It is made at a temperature exceeding 7,000 degrees Fahr. and so cannot be effected by any heat to be met with in an internal combustion engine. It will withstand enormous pressure and, if fine enough, will fill all the holes, cavities and roughnesses in metals. At first blush, then, it seems the very thing.

Unfortunately, graphite has certain characteristics which make difficulties. It is a solid and is therefore not easily rendered "pliable" enough to be carried to the position in which its lubricating properties are required. Again, if it be mixed with oil to act as a conveyor, it is so heavy that it drops to the bottom of the sump and so never reaches the bearings.

The surface of a journal, in section and magnified, as described in the text.

Furthermore, graphite is of a gregarious nature which leads it to form masses that choke oil pipes.

Graphite also tends to "build up" on itself. The first layer sticks to the metal surface. A second layer forms itself on the first, and so on. Before long the very narrow clearances between surfaces, to which engineers work nowadays, are choked up with layers of graphite and the machinery jams. Here, then, are the main reasons why ordinary graphite has not been widely used.



Fig. 1.



Fig. 2.

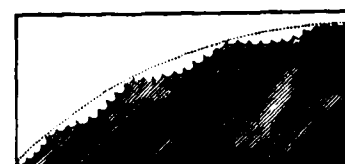


Fig. 3.



Fig. 4.

We now come to colloidal graphite, which as some allege, banishes all the ills which assail two rough surfaces in contact. Colloids are very often described as "solids in an apparent state of solution." So for colloidal graphite, in particular, it is claimed that when mixed and used with oil it remains in permanent and definite suspension and travels with it wherever the oil goes.

Remarkably Small Particles.

To achieve this state synthetic graphite, which is 99.9 per cent. pure, has to be reduced to such a degree of "fineness" that one authority estimates the diameter of each particle to be considerably less than one hundred and fifty millionth part of an inch.

Whatever is the truth on this matter, colloidal graphite is certainly so "fine" that only an ultra microscope can detect it. Here, then, it is claimed, is a complete avoidance of all dangers of choked pipes and ducts, and all fear of the graphite becoming ineffectual from precipitation in the sump.

The only remaining question to be answered is whether colloidal graphite builds itself up and jams fine clearances?

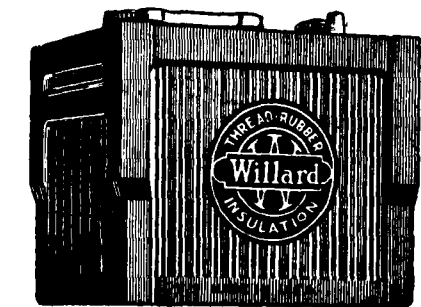
The writer offers here his own experience covering, as it does, an appreciable length of time in the use of colloidal graphite on a very great number of machines in a diversity of industrial undertakings. It covers, too, an experience in its use with quite a lot of different makes of car, and he can only say that no single instance of colloidal graphite "building up" has ever been seen by him or reported to him.

And now it is, perhaps, only fair to tell the reader that we are leaving the realm of facts, definite and admitted, as they concern colloidal graphite, to enter the realm of mixed facts and theory.

It is contended that, borne on the oil flow, graphite in molecular dimensions is forced by pressure, hammering and vibration into the grain, roughnesses and cavities of metal surfaces. That, being small enough to do so, they enter and fill them up. This forms on both working parts a hard, smooth, lubricating surface as shown in fig. 4. Note here, particularly, that, having abandoned all hope of achieving infinite smoothness through wearing down, we are now exploiting the possibilities of obtaining it by levelling up.

In addition to the elimination of friction thus secured, several other unique advantages are claimed for colloidal graphite. These are, briefly, an increase in effectual bearing area due to "levelling up" (which reduces the stress on the oil film), greater safety against failure due to the lubricating effect of the graphite which is squeezed out into the clearance spaces should the oil supply fail, and a reduction of wear on pistons and cylinders.

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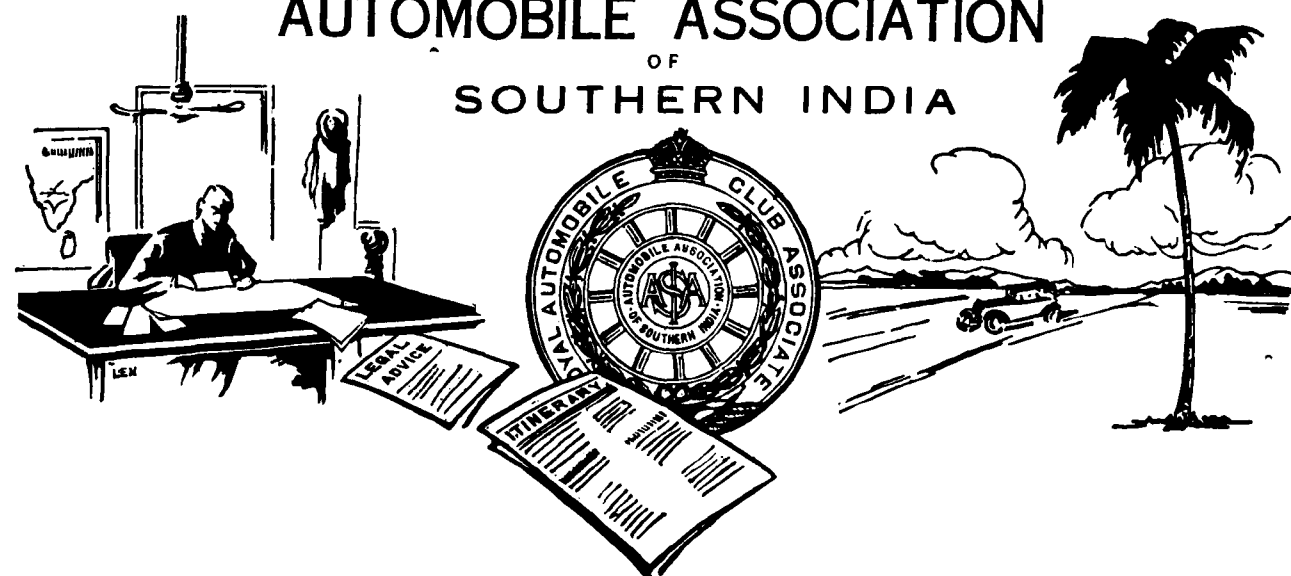
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AUTOMOBILE ASSOCIATION OF SOUTHERN INDIA



Secretary's Report for November 1930

Decorated Car Procession.

1. The early days of the month were fully occupied in the organisation of the Decorated Car Procession for Poppy Day. The proceeds of this show, handed over to the Ex-Services Association amounted to Rs. 603.2-6, a fair result considering the small number of vehicles entered (twenty). Notes have been taken to assist the organisers of any future "Procession".

Floods.

2. (a) For the second time during six weeks heavy rains caused much flooding of roads and consequent dislocation of traffic. Floods notices were issued, but many reports have failed to come to hand, probably owing to dislocation of the postal services.

(b) Collecting of information regarding areas liable to flood continues, but is naturally slow as the various engineering staffs are fully occupied in putting right the ravages of the floods.

Committee Meeting.

3. The usual Committee meeting was held on 17th November when, amongst other routine business, the following resolutions were passed:—

Committee Members.

- Accepting with regret the resignation of Mr. G. A. Johnson from the Committee.
- That in future, two leading Madras papers ("The Madras Mail" and "The Hindu") be asked, in turn to furnish a representative for the Committee. As Mr. G. A. Johnson is on the staff of the "Madras Mail", it was decided to invite "The Hindu" to nominate a represen-

ative to fill his vacancy on the Committee.

Guide Book.

- It was decided to reconsider the matter of publishing a new Guide Book and to ask the Madras Government if it proposed to follow the lead of other Provincial Governments who have produced very useful Road Books.

Advertising.

- Rejecting a proposal to advertise the A. A. S. I. at public cinemas

Road Sense.

- Actively participating in any measure taken by the authorities in the education of the masses in "Road Sense".

Traffic Advisory Committees.

- Recommending to Government the necessity for "Traffic Advisory Committee" in Madras City and large mofussil towns.

Agreement with R. A. Club London.

- Entering into a new Agreement with the Royal Automobile Club.

(This agreement differs but little from the one now extant. So far as members are concerned, the new agreement extends the period of free Associate Membership of the R. A. C. to those visiting the U. K. from 3 to 4 months. It also prohibits the Association from entering into any arrangement or understanding, directly or indirectly with, or

afford its members any introduction to any motoring organisation in the U. K. other than the R. A. C.).

Traffic in Madras City.

4. (i) Conversations were held with the Commissioner of Police and his Deputy on the subject of traffic control at the Elphinstone Theatre. Certain improvements were considered and it is hoped that a new scheme will shortly be evolved.

(ii) The taking of periodical traffic census at various busy traffic centres in the City has been mooted.

River Crossing.

5. The local authorities have been addressed with a view to improving the design of the Rice Causeway. Nothing definite has yet been settled. The local authorities have also been asked to erect Guard Rails on the downstream side of the Palar River Causeway just south of Chingleput.

Dak Bungalows.

6. (i) Endeavours are being made to push on a scheme for providing good Travellers' Bungalows at all District headquarter towns and at intervals of about 100 miles on all trunk roads.

(ii) Members are again reminded that P. W. D. Bungalows may only be occupied by travellers with the prior consent of the Executive Engineer of the District.

7. (i) Endeavours are being made to improve the signpost arrangement in Pondicherry and at various places in the mofussil.

(ii) Complaints that the river crossing on the Trichinopoly Dindigul Trunk Road had no danger signs elicited the fact that danger signs (a black triangle on a white disc) were erected at both approaches in April 1930. Motorists should watch or these danger signs as they are not of the type met with elsewhere.

The collection of information relating to the

exact location of milestones is proceeding though very slowly. This information is most essential for the compilation of really reliable route itineraries.

Petrol Rates.

8. (i) Some cases of excessive charge for petrol at places in the mofussil have been taken up with good results.

(ii) A new Petrol Rate List is under compilation.

Tools.

9. Several cases of the incorrect levying of tolls have been taken up. One case of considerable interest relates to Kolar Town (in Mysore State) where no toll should be levied from motor cars passing directly through the town, but where a six annas fee was being levied until recently.

Land Customs.

10. A suggestion that motorists passing through Pondicherry should have their trunks, boxes, &c., sealed at the Customs post at point of entry to avoid delay at point of exit where the contents are subject to examination has been definitely rejected by the Central Board of Revenue.

Itineraries.

11. Many itineraries were issued during the month, and many enquiries regarding the state of various river crossings have been replied to, in several cases by telegraph.

Membership.

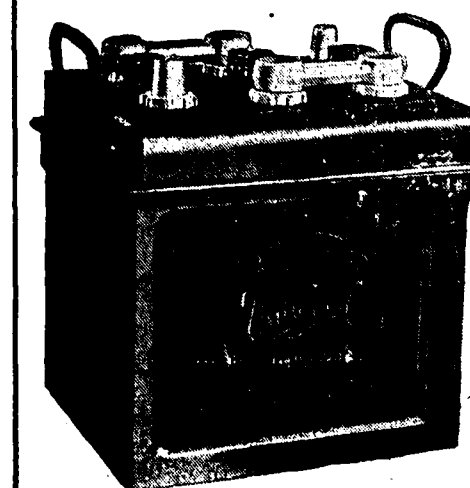
12. Seven new members were elected during the month, while one member resigned.

F. CHURCH, MAJOR, (Retd.).

Secretary.

Automobile Assn. of Southern India.

MADRAS.
1st December 1930.



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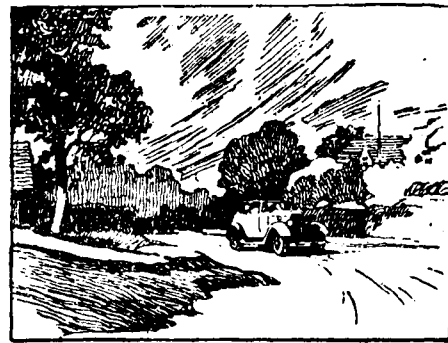
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The New Wolseley : : Hornet : : Coach-built Saloon

ONCE seated behind the wheel of the new Wolseley Hornet it is easy to appreciate how much that little extra room has improved this model. The interior is spaciously comfortable and provides ample accommodation for four people with plenty of head and leg room.

On each side there is a wide door giving access to the front seats, which are separate and of the bucket type, adjustable in three positions for reach, and having backs arranged to tilt so as to make entry into the rear compartment easy. In each door there is a double panel sliding window with a device to lock the panes in any position, and the interior of the car, as well as the outlook is enhanced by a second sliding panel window on each side reaching almost to the back. Across the back itself is a wide light to provide for easy reversing, whilst the front is closed in by a single panel reinforced glass windscreen, which can be opened to any position by means of flynut clamps on outriggers. Comfortable cushions and upholstery add to the comfort and appearance of the interior, and a valuable feature is the provision of an easily operated sliding roof of an effective type.

Lanish Equipment.

Outwardly the appearance of the Hornet is neat and smart, the proportions being well balanced and the whole set off by an elegantly designed radiator with a neat shutter. Exterior bright parts are chromium plated, and the equipment includes a fixed-lamp lighting set, the head and side lamps being separately mounted on the front wings. As regards controls, the change speed lever and the brake are centrally placed, below the steering wheel is the ignition lever, and on the wheel placed handily is a horn button. Close by the foot of the change speed lever the electric starter switch is situated, and on the dash is a throttle setting control. The various

instruments are neatly grouped in the centre of the fascia board.

One of the first points to observe is that half-elliptic road springs are provided back and front, damped by hydraulic shock absorbers. Another feature is that the fuel tank, which holds five gallons, is mounted under the scuttle, and feeds to the S. W. carburettor. The engine is mounted on rubber bushes, its six cylinders having a bore and stroke of 57 x 83 mm. (1273.3 c.c.).

Cylinder block and crank case are formed in one casting which carries the crankshaft in four bearings. The cylinder head, as is usual, is detachable, and carries the overhead valves and camshaft. The camshaft is driven by spiral bevel gears arranged at the front of the engine, the whole of the valve gear being enclosed by a readily detachable oiltight cover.

Pressure feed lubrication to the crankshaft, the big ends and the camshaft bearings is provided by a gear type pump submerged in the sump and driven by spiral gears from the crankshaft. On the left of the engine the exhaust and inlet manifolds are attached; the exhaust pipe runs down at the front well away from the floor-boards, and the inlet manifold, which is of square section, touches the exhaust in the centre so as to provide a hot spot above the carburettor.

Final Drive and Brakes.

Within the flywheel is a dry single plate clutch surrounded by a bell housing to which the three-speed gear box is bolted. Final drive is by an open propeller-shaft, with a fabric disc joints at each end, to a spiral bevel gear in an axle casing of the pressed steel banjo type. The four wheel brakes are of the internal expanding type controlled by the Lockheed hydraulic system. This type of braking has been standardised on a great number of cars recently and ensures excellent braking, smoothly and efficiently.

While the World Sleeps

Just a Few Words of Re-
monstrance on being asked to
Admit the Dog

Gfmmmmmmph..... Ahhhhhh.....
Mmmmm? Whasit? Eh?
Here Marion, I say, be reasonable: Wha'y wan waken m'up for, eh?

It's not morn..... Oh, be careful! You'll damage my spine. What's the idea waking me up in the middle of the night like this? Steady! THAT'S MY BACK!!!

Oh, no! I'm not awake, silly. I'm dead. Dead with my back broken. How leave me 'lone. Grmmmmmmph...

Here, I..... Dog? What dog? Don't be foolish, you've only been dreaming. In any case, never mind. Go to sleep again, and switch off...

What?

Well?

What if the dog is out? I can't help it. She's been out before, hasn't she? Do her of.....

No, I'm blown if I do. I don't see why I should let her in. If she chooses to stay out until this hour she can jolly well stop out. I won't go traipsing downstairs to.....

May be so. But she's a disgraceful and ungrateful beast, anyway. In any case I'm sure she is just as comfortable outside as she would be on the chester-field.

Probably. Her comfort before mine, eh? Anyway, comfort begins at home, and if you'll leave my spine alone I'm going to sleep again. Here am I weary and work worn, yet you would have me leave my bed in the middle of the night, deprive me of sleep, and all because of a nondescript piece of fur which chooses to call itself a dog and stay out half the night. It isn't right, Marion, it isn't fair.

I know all about that. But she's had pups before, and I suppose she'll have 'em again. In any case that doesn't strike me as sufficient reason why I should go padding about the compound at this time of night. There may be snakes in the compound, there may be tigers, there may even be elephants.

Ah no! Of course not! I may not get bitten; but, again, I may. And what's going to happen if a snake transforms you from a tender and loving wife into a sorrowful and fascinating widow all with one fell bite? Don't think of me, though; I'm of so little consequence. Think rather, how queer you always look in black.

What's that? Of course I can hear her barking. I heard her the first time. Or the second, anyway.

And I've told you just what I think about it. I'm going to sleep. If you want to stay awake you can—I don't mind, really. I mean, it's not as if I wanted to get up at this time of night to let the dog in. I don't. And what's more, wild horses won't drag me out of bed until seven o'clock in the morning.

Do about it? What do you expect me to do about it?

Yes, yes, I know all about that! You've made that suggestion at least twenty times, but I'm not going downstairs for anything or anyone. I don't mind shouting from the top of the stairs, if you like.

Afraid of? Well, there may be something in your accusation. There's lots to be afraid of—there may be burglars downstairs.

Oh, yes there may! There have been quite a number of burglaries around here lately, and I've too great a respect for my insurance company—my *two* insurance companies—to risk being knifed by a burglar. What is the use of my going downstairs to, perhaps, a deadly battle with a burglar just for the sake of a dog. Just think what a mess I should make if he murdered me in the dining room? In any case, have I ever given you the slightest reason to suppose I am the type of individual who'd fight a burglar to the death? My death, I mean, not his! It's not as if.....

Now Marion, will you please be reasonable, and let me get a word in edgeways. Why should such as we take it upon ourselves to regulate a dog's morals? She won't get *killed*, and I might.....

No, no, no! I know I wasn't really serious about thieves, but there are lots of things much worse than burglars. Suppose I fall downstairs or catch double pneumonia. Do I *look* as if I could fall downstairs without injuring myself? And I've got my best pyjamas on, too.

Yes, I know the barking is getting worse, and that is what's worrying me. If you ask me, I think the dog's mad. And yet you would have me go downstairs to let a mad dog loose upon our defenceless household.

Just suppose we got bitten? Rabies...hydrophobia...it's too awful to contemplate.

Even if she isn't mad, she may be frightfully annoyed we have kept her waiting so long, and bite me just the same. And then I'd probably get blood poisoning from the dye off these new pyjamas.

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BOUND VOLUMES

See page 406

While the World Sleeps.

(Continued from previous page.)

What does it matter what the neighbours think? If the Burgesses are disturbed it is up to them to crawl downstairs and let the dog in. The compound wall isn't hard to climb. I can get to sleep—dog or no dog.....

It isn't the slightest use talking, Marion, I'm not going down. P'raps tomorrow I'll try to think of some arrangement so that you can open the door from your bed, so that if the dog stays out again all you have to do is pull a string or something... But I'm going to sleep now.

Whaaaaat?..... Oh, don't start again, Marion. I'm going to sleep.

Wha'? Yes, of course we can. The *mal* drowned the others, didn't he.

That's what we pay him for.
E.E.B.

"Jones doesn't know much about art."

"No, one radiator cap is just like another to him."

o o o

"What I say always goes."

"Well then, say, 'Flivver,' because this one we're in won't."

o o o

"Is Jones a responsible driver?"

"Absolutely. He's responsible to his wife in the back seat for every turn he makes."

o o o

How'd you get that smudge on your face?"

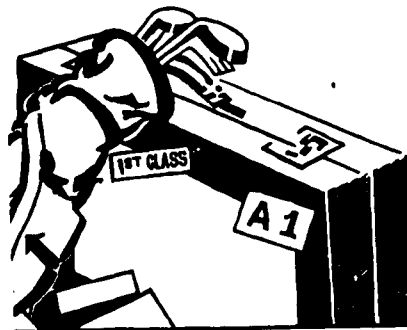
"Well, dear the car broke down and I had to fix it."

"Since when have you greased your car with red grease?"

o o o

Salesman: And how would you like the deferred payments?

Customer: Permanently deferred.



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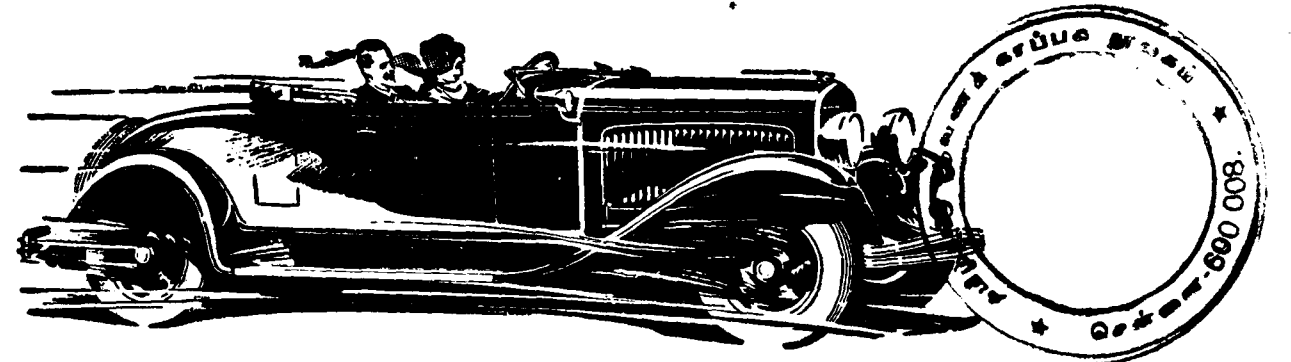
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Useful Notions for the Owner-Driver

Helpful hints for the motorist who wants to get the most service and enjoyment out of his motor car

A storage battery can only be charged by a direct current and when charging, the positive wire of the charging current must be connected to the positive of the battery and the negative to the negative. The voltage of the charging current should be somewhat greater than that of the battery while the amperage should not be above one-tenth of the capacity. When a battery is charged or discharged very quickly it will overheat and may result in the plates warping. When the plates warp, the paste will fall out of the grids. Not only will this prevent the battery from taking a charge, but it will short-circuit the plates at the bottom. For this reason the battery must be charged slowly. Using the starting motor for a considerable time at a stretch means a quick discharging of the battery and a possible overheating and warping. Therefore, if the engine does not start quickly, do not use the starter for a long time but find out why the engine does not start.

For cleaning spots from the car upholstery, ammonia has much to recommend it. As compared with many substances, such as naphtha, it has the especial virtue of being non-inflammable and consequently less dangerous. Never hold a match over the battery to check the level of the solution. It is like holding a match over the gasoline tank.

Never put acid or tap water into the battery. Distilled water is the only kind to be poured into a battery. This is because in distilling water the steam is driven off, then caught and cooled. This process leaves the iron and other minerals behind, so that the water obtained by distillation contains nothing that can cause destruction to the battery plates. Battery plates need pure sulphuric acid in which the evaporation is made up of distilled water. The distilled water should cover the battery plates.

Wheel "wobble" inherent in the design of the car shows up mostly at high speeds. If the wheels shake at lower rates it is probably due to looseness or wear rather than design.

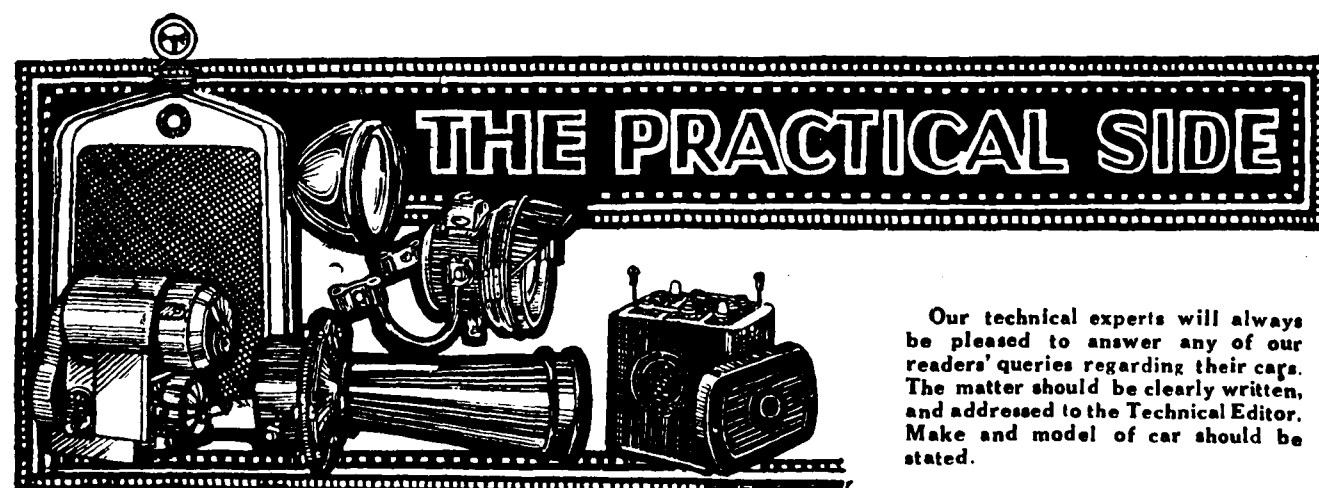
It is most important that tyres be kept properly inflated in warm weather. Heat is rubber's natural enemy. Under-inflated tyres flexing more, generate more heat.

There are two methods of holding the car at a standstill while waiting on a hill for a change in the traffic signal. One is to use the hand brake; the other is to use the hand throttle to feed fuel to the engine. In the case when one uses the hand brake to hold the car foot control of the throttle is normal. However, by using the hand throttle the right foot can be used on the service brake. It pays to be master of both methods.

Often the clutch is to blame for a jerky start; it may be due to the accelerator spring tension. If the tension is too light, pressure on the accelerator is apt to vary with every bump in the road. Such variation is hard on the drive mechanism from clutch to differential.

The reason the back of the car gets so dirty under average circumstances, and especially when driving fast, as on a tour, is that a partial vacuum is created behind it which pulls the dust and mud towards the body.

Unless the top of a closed car is covered with a paint of a good quality the fabric will deteriorate rapidly and the surface will probably develop leaks through cracking and tearing away. It does not require much experience to apply a top dressing and the costs are little. A brilliant top finish adds much to the appearance of the car.



Our technical experts will always be pleased to answer any of our readers' queries regarding their cars. The matter should be clearly written, and addressed to the Technical Editor. Make and model of car should be stated.

The Technique of Plugs

THE unhappy experience of a young motoring friend of mine prompts me to write a few notes upon that part of a car which today is perhaps less understood than any other, and thank goodness, the principal reason for this state of affairs is that it so rarely gives any trouble. This young car owner is full of youthful enthusiasm for every kind of gadget and accessory that will enable him to get an extra yard a month out of his car.

The latter represents a sort of half-way house between a modest run-about and a hot-stuff sports machine, and it need hardly be said that its development in the hands of its owner is all in the sporting direction. He was recently much struck by the fact that its engine was equipped with quite ordinary sparking plugs such as are to be found fitted to quite ordinary engines. He felt convinced that this was all wrong and accordingly, squandered quite a respectable sum of money upon a set of plugs which were guaranteed to be of exactly the same make and type as those which had, a month or two ago, figured prominently in an important sporting event.

These plugs are certainly beautiful things to look upon and there is not the least doubt that they would perform equally beautifully if they were fitted into the sort of engine for which they are suited and, in fact, specifically designed. But my young friend's engine, unfortunately, is not of this type. He had the mortification of finding that within less than two hundred miles of fitting these new plugs his engine was reduced to a state of inanition. He could hardly believe that his wonderful plugs could be the cause of trouble, but on taking them out they were all found to be thoroughly oiled up.

Now the conditions might as easily have been exactly reversed. Had this young gentleman owned a genuinely hot-stuff, high compression car it would have been initially fitted with the proper sort of plug and if for this he had substituted a quite ordinary kind of plug, he would also have had ignition trouble, but in this case it would have been because the plug points attained, and maintained, so high a temperature that they caused pre-ignition to be produced.

The two little sketches show in a very clear manner how one plug may differ from another. First, we have in Fig. 1 that which is designed for a cool running engine which is apt to be on the oily side. Here quite a long portion of the central electrode projects into the combustion chamber and it is encouraged thereby to get hot enough to burn off any oil that may fall upon it. On the other hand, we have a different kind of plug altogether for the hot running, high compression engine. In this case, Fig. 2, the central electrode is made of great thickness so as to encourage heat to be conducted away to the miniature radiator which forms its upper part. This electrode is also arranged so that only a very small amount of its surface is impinged upon by the burning gases. This type of plug, then, will keep cool under very strenuous conditions, and unless those conditions are strenuous, it will simply keep too cool and in course of quite a short time get smothered with oil if there is any excess of this above the pistons. It may be pointed out that the expressions "hot running" and "cool running" as applied to engines have no reference whatever to the temperature of the water in the radiator. A hot running engine, i.e., of efficiency and high compression ratio, may just as easily be over-cooled, as a low duty, cool running engine may be under-cooled.

Far too many motorists to-day have fallen into the habit of thinking that all plugs are alike and this little essay will well have served its purpose if it persuades just a few of them that this is a fallacy. They cannot do better in the selection of sparking plug replacements than follow the lead of the makers of their cars. These, one can be sure, have ascertained by lengthy experiment

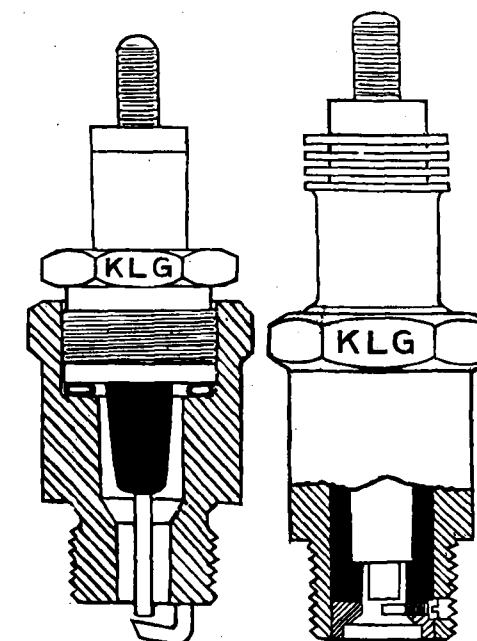


Fig 1.

Fig 2.

what plug gives the best all-round results.

It is to be doubted whether in the ordinary car of commerce to-day the changing of just ordinary plugs for highly specialised ones will ever make a difference in horse-power that can be measured. With the highly specialised engine the case is different, but here again the car owner may rely upon the fact that the makers know best.

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- † Give full particulars of the make, model and year of manufacture with any points about speciality fittings which may interest the buyer.
- † Use a box number: it insures privacy.

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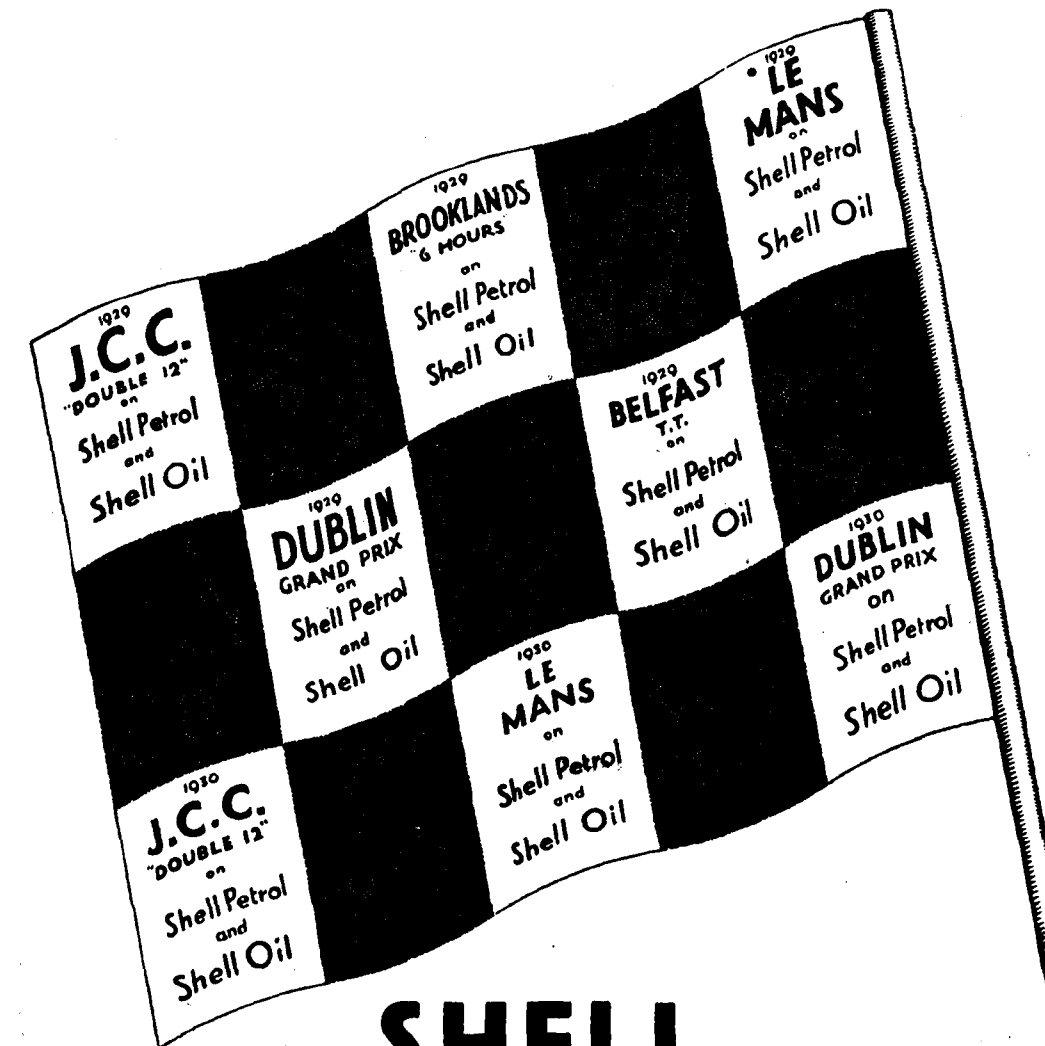
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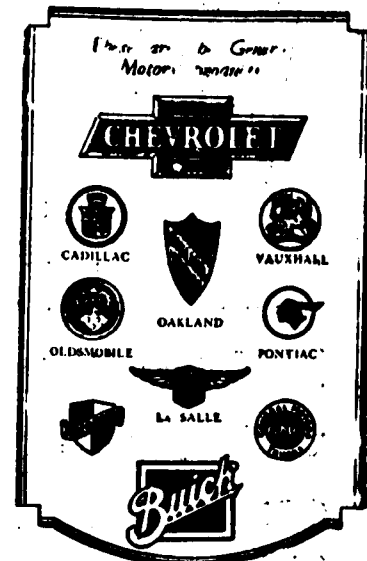
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