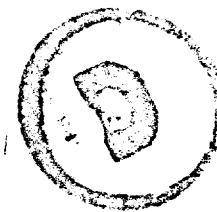


South India Motor Owners.

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no. 101

May. to Aug. 1930



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THE
ART
OF
EXTEMPORISING
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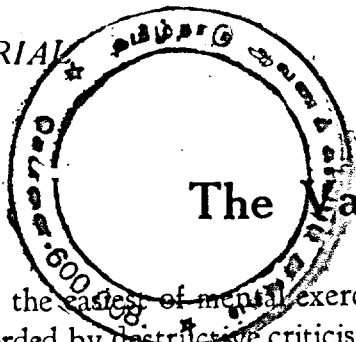
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EDITORIAL



The Value of Speed Records

ONE of the easiest of mental exercises is that afforded by destructive criticism, and that is, perhaps, the reason why so much has recently been written around the subject of speed records: Kaye Don: The Silver Bullet, and every speed record breaker of recent years. To the layman it is possible that all attempts at the breaking of records seem to be undertaken solely with the object of obtaining world-wide publicity, and that they afford no practical information of any value whatever to the designers of the cars handled by the average owner driver.

It is an old question, this; and to those who are not conversant with the details of modern day car manufacture and design, it would seem that there can be but one answer. Yet the view that high speed work can supply no useful information to designers of cars for general use is erroneous; and that there is no exaggeration in this statement becomes clearly apparent on studying the paper read by Capt. T. S. Irvine, the designer of the Golden Arrow, before the Institute of Automobile Engineers. In this lecture the talented writer explains in a characteristically straight-forward manner how the work of producing an ultra-high-speed car provides designers with invaluable data applicable to all phases of car manufacture. Ten years ago, the private car was undoubtedly a relatively inefficient piece of mechanism, and could offer none of the reliability, comfort, nor safety which obtains with the car of the present day. Racing and

speed tests have all contributed their portion to the fund of greater knowledge, with the result that we have today cars which cannot be reasonably compared to the vehicles of a decade ago without acknowledgement to the improvements attributable to tests and trials.

Just as the work done by the designers of speed models a few years ago is having its influence on the cars we drive today, so will the lessons learnt from the labours of Capt. Irvine and his contemporaries have their effect on future models. One aspect alone is sufficient to point this argument: as trunk roads improve cruising speeds will increase to such an extent that the inefficiency of present day models will become impossible from just one view point—wind resistance. The aero-dynamical aspect of high speed car design will react upon the shape and construction of ordinary cars when the need to minimise air resistance can no longer be neglected. In ultra-high-speed cars the power needed to overcome wind resistance at 250 m. p. h. was calculated to be only about four times as great as that needed to overcome tractive resistance, owing to careful stream-lining; and this despite the terrific speeds aimed for! This ratio of four to one is reached in an ordinary saloon car at a speed as low as 70 m. p. h. and is accountable for a considerable waste of petrol.

In many other ways, too, this question can be answered so as to point to advantages for the ordinary motorist to be obtained from these super cars. Steering, tyres, fuels, cooling

systems: all benefit from the facts discovered under the exceptional conditions which obtain when enormous speeds are striven for and the results are all incorporated in normal production to the added comfort and safety of millions of motorists the world over.

Lastly, must be placed the effect upon

British prestige which has been undoubtedly produced by the achievement of securing the world's speed records on land and water and in the air. If from all these omicrons of good cannot be produced for the world in general and the Britisher in particular, then it is high time we cultivated record vegetable marrows—these can be eaten, at all events!

My Greatest Racing Thrill.

Kaye Don Relates Vivid Memories of Brooklands Track.

I find it extremely difficult to put in writing what I consider to be one of my most thrilling experiences during my racing career.

I think that occasion was when I was driving the 200 h. p. Wolseley Viper in a Brooklands race some years ago, when the finishing line of the Lightning Short and Long Handicaps was on the finishing straight in front of the paddock and not as at present, on the railway straight.

It had been a quite exciting race in the first place between the late Parry Thomas driving a Leyland, Cook on a Vauxhall, and myself on the Wolseley Viper. After crossing the line hard on the heels of the winner, I made to apply the hand brake, which was placed on the outside of the car, and found to my amazement there was no response. I tried the foot brake, but without effect.

Lightning Decision.

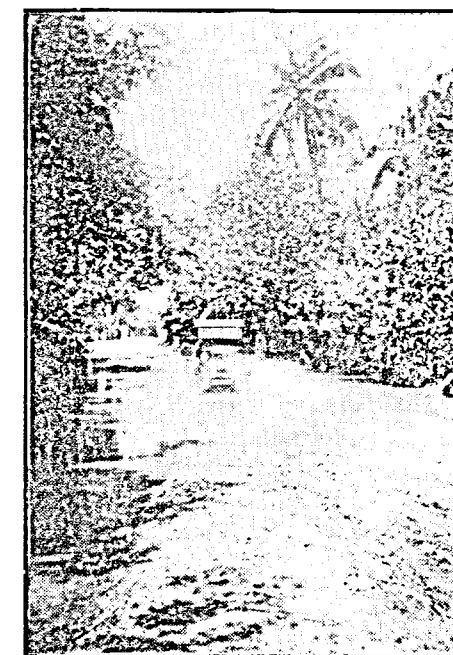
My utter dismay can well be imagined, travelling at a speed in the region of 115 to 120 m.p. h., in a car without any brakes, and with a distance of only about 200 or 250 yards to go before the car would be leaping

over the top of the banking. An effort was made to get into lower gear and thus to retard the car's progress, but this only resulted in wrecking the gear box. Precious time had then been lost and the top of the banking was closer than ever.

An idea flashed through my mind to run the car gently into the bank on the side of the track, rather than face the leap over the banking, which must have necessitated a serious accident with

perhaps fatal results. The bank it was to be, so in we went. A cloud of smoke and dust; a broadside skid to the left; corrected; another broadside skid to the right; corrected again; the speed of the car decreased sufficiently to take the bend at the top; still on all four wheels; a scream from my passenger, who had received nothing worse than a knock on the nose through being thrown on to the dash; all was then cheerful again.

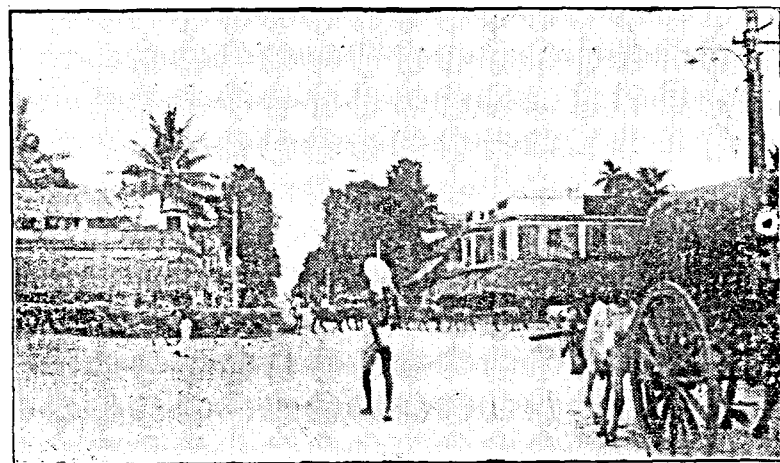
There is indeed a great thrill in an experience of this description, and a feeling of satisfaction to know that one has been in a tight corner and come out of it without serious results.



THROUGH A WATER SPLASH IN
SOUTHERN INDIA

Driving Through the Night

All-night Driving Perhaps a Form of Fanaticism, but One Offering a Distinct Fascination.



AN EARLY MORNING SCENE

ASK the average owner whether he has ever driven all night in a car, and he will probably reply in the negative.

"Wise man," retort many, to whom such an idea is distasteful in the extreme.

Yet, apart from question of convenience, there is much to charm the ordinarily imaginative man in the very idea of a run extending through the hours of darkness.

To set off at dusk, on a good car, with so great a distance before one as to warrant driving without interruption till dawn and later has a decided fascination at any time of the year. With midnight passed, and town far behind one, when the world in general is asleep, there comes over even familiar places a subtle change. As the small hours draw on one finds that there is an almost complete absence of ordinary traffic. Even the roads, thronged by day, are almost devoid of swiftly turning wheels. One is isolated from mundane things, alone in a world of almost complete silence, its quietude broken only by the muffled echo of the exhaust thrown into prominence occasionally by the hedges one passes at the roadside and interrupted by the "parked" bullock carts met and overtaken at frequent intervals.

c 19

At three or four o'clock in the morning villages are little more difficult to negotiate than the open road; even big villages are passed without realising that by day they are busy centres where countless people live and move and have their being.

To stop the car in the open country at such a time is to experience, if the night be calm, almost perfect realisation of what is meant by silence.

As the hours go by one stifles a yawn or two, and even the most enthusiastic of all-night drivers turns eager eyes to the east in search of the welcome signs of returning day.

There is a temptation to "cut" right-hand bends when driving in the early hours; surely there cannot be anything round the corner at such a time! But discretion prevails, and in that respect at least one drives normally.

Soon—it seems but an hour—and long before it is properly day life appears; a little longer and a solitary rhyot is overtaken, then another; the world is awake once more, and one's thoughts are concentrated upon breakfast.

From a more practical viewpoint there is also much to recommend the all-night drive. Valuable time may thus be saved, and advantage taken of every minute of a short holiday.

H. S. L.

The Gardner Six Tourer.

A Description of a Car which is a New-comer to Southern India.

WHILST the Gardner Six tourer is a typical transatlantic production, it is a car which contains many interesting features. On looking over the vehicle one is struck by its solidness of construction and neatness of bodywork. The car has a large six cylinder engine with a capacity of 3032 c. c. and has an excellent power-weight ratio, with the result that the performance is well above the average. Before going on to describe the performance of the car on the road, we must enumerate briefly the principal features of its construction. The Gardner Six is powered with a 19.84 h. p. Lycoming motor developing 70 h. p. at 3500 R.P.M. of L-type head, mounted on rubber to avoid vibration.

The engine, is of course, lubricated on the forced-feed system while the cooling system is thermostatically controlled, a small temperature gauge on the dashboard showing the driver at all times whether his engine is running at the correct temperature. A single-plate dry disc clutch with a ball bearing clutch pilot which cuts out vibration transmits the drive to a four-speed and reverse centrally controlled gearbox; an open propeller shaft carries the drive a stage farther to the semi-floating rear axle.

The frame is of the double drop type, very strongly braced, while the engine is mounted at four points to ensure rigidity. The springs are of the semi-elliptic type front and rear, and are fitted with self-adjusting shackles. The shock absorbers front and rear are of the Lovejoy hydraulic pattern.

The model tested is definitely a big car, but it handles extremely well. The steering is low geared, so that though the driver has to busy himself in turning the car round, very little actual effort indeed is required. No suggestion of wheel flap or wobble arises at any time, while in spite of the low ratio the steering is definite in that the car can be placed accurately on the road, and it possesses caster action with consequent sense of direction, the wheel itself being just the right shape and beautifully finished.

The clutch is typically smooth and the pedal, with a comparatively long travel, is light in action. The throttle is of the treadle type on which the

whole foot is rested, as on previous cars of this make; little movement of it produces a relatively big effect and it was set, as a personal preference, so as to require fairly considerable pressure.

The engine is extraordinarily good, smooth right through its range and extremely quiet, mechanical sounds increasing with the speed to a much lesser extent than might be expected. Although top gear is relatively high, it is undoubtedly possible to run at 4 m. p. h. on that ratio, if not actually more slowly, no skill being called for other than simple retarding of the ignition, it being perfectly feasible to employ top alone in thick traffic, using the clutch intelligently but not slipping it, the ignition control being needed in accelerating from low speed. Obviously the acceleration is something out of the ordinary.

After starting on first gear and changing straight into third almost as soon as the car has moved off, the occasions when a change of gear is demanded are very rare indeed. The driver has to be prepared for nothing more than a change down to third. All the changes, both up and down, being typically straight-forward.

Above all the machine seems scarcely to be working at all between 30 and 55 m. p. h., and it will run with barely a sound at a cruising speed which can be as high as 60 m. p. h., the timed average showing that the upper end of the range is outside ordinary requirements, thus indicating a reserve of power which is more than worth having. The maximum speed on top is in the neighbourhood of 70 m. p. h. Even on a long fast run the engine kept cool, the oil consumption seemed to be negligible, and the water level in the radiator did not vary.

On a long journey an extremely creditable average can be put up without necessarily using anything like the maximum, and such journeys do not tire the driver or the other occupants, for the car holds the road remarkably well, even when lightly loaded; there is unusually little body roll on bends, and the springing, backed by double-acting hydraulic shock absorbers, is extraordinarily good.

The brakes are powerful, in fact even more so

than they would appear to be on first acquaintance, but require a good deal of pressure to obtain a rapid stop, though when properly adjusted they do not pull to either side, even in violent braking, while the hand lever, which is well placed to the right of the driver, operates shoes on all four wheels.

As regards appearance and external finish the car is really impressive and tasteful, the proportions of the body being particularly effective. The interior upholstery and detail work are beautifully carried out, there is a tremendous amount of leg room, and the back seat carries three persons in comfort.

The instrument panel is extremely decorative, yet practical considerations have not been sacrificed. It incorporates a good fuel tank gauge and a sensitive water temperature indicator, as well as an oil pressure gauge, the indirect



lighting being remarkably clear, yet free from glare. The break down windscreen opens wide and has a neat suction wiper, which is a good point; there is a big ventilator in the top of the scuttle, and an effective non-dazzle mirror.

The head lamps, though the beams are flat topped, are very much better than those of many transatlantic cars, all the lamps being controlled from the steering wheel. The current output from the dynamo balances the consumption at about 30 m.p.h. with all lights and auxiliaries taking their requirements.

The general equipment, naturally, is very complete, including bumpers, spare wheel securely mounted; and, for the engine, which is unusually neat thermostatically controlled cooling, an oil filter, and an air cleaner.

A car with character, which is extremely comfortable to ride in and interesting to drive.

Keeping the Dynamo Cool.

How Designers have to Combine Accessibility with Efficiency.

IT is a well-known fact that the charging rate from a cold dynamo is higher than when the instrument is warm. The deleterious effect of excessive heat on the insulation is also well-known. Therefore it will be easily understood that the cooler the dynamo can be kept, the longer and the more efficiently it will continue to function.

This point, however, appears to be entirely ignored by some designers, who plant the dynamo down at the back of the power unit, sometimes only an inch or so from the exhaust pipe. Others place it where it is shielded from any sort of cooling draught or where it is prone to become hot by conduction from some other part of the engine.

A good position for the dynamo is on the top of the cylinder head where it receives the full blast of air from the fan, or, when there is no fan, the main stream of air forced through the radiator too rapidly to become heated. An alternative, adopted

by several manufacturers, is to drive the dynamo directly from the front end of the crankshaft. The component then protrudes beneath the radiator and receives the full benefit of the cooling rush of air. Certain dynamos of continental manufacture are ribbed, for cooling purposes, like the cylinders of a motorcycle engine, while the conduction of heat can be reduced by mounting the component on a non-conductor, such as a fibre block, and coupling it to its drive by means of a fabric or fibre joint.

If the dynamo is unfavourably placed as regards cooling, it is often possible to make up a light tin deflector which will force air on to it. The chief difficulty which designers have to face, however, is that of providing adequate accessibility, and very often an apparently bad position is the best compromise which can be reached between one where the dynamo is kept cool and one where it is accessible.

Notes on the Dazzle Problem

Badly adjusted Lamps on Contributory Cause.

WHILE it is admitted that the complete solution of the dazzle problem is a matter of great difficulty, it would not be hard to eliminate quite an appreciable proportion of the dazzle that now afflicts road users at night. To take but one example, how often do we find stationary cars drawn up by the side of the road with their head lamps left burning? It is satisfactory to note that the S.I.M.U. is making an appeal for the abolition of this inconsiderate behaviour on the part of certain car owners, and, incidentally it is a matter to which we ourselves have drawn attention on many occasions in the past.

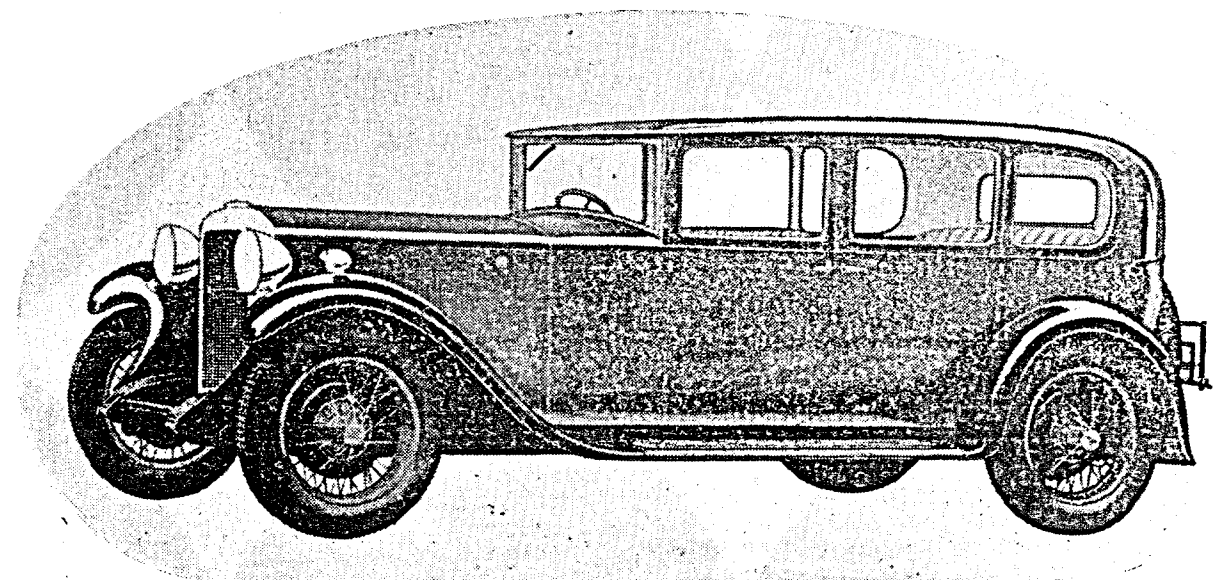
In this connection we would emphasise also the grave danger not infrequently caused by leaving cars with side, and sometimes even headlamps alight by the right-hand side of the road pointing towards the on-coming stream of traffic. Where illumination is poor, the lamps of cars left in this position are apt to be exceedingly confusing, for approaching drivers may take them as being attached to vehicles travelling towards them, and may endeavour to pass the stationary car on the near side, with the result that a collision occurs with the kerb or path edging or an incursion is made on to the path or pavement. A cardinal rule should be invariably to leave the car facing in the proper direction, on whichever side of the roadway the stoppage is made.

Ordinary consideration for other road users should prompt a driver to extinguish his head lamps the moment he draws to a standstill, and this point needs no further emphasis.

Another source of unnecessary dazzle is incorrect setting of the lamps. The great majority of the lamps fitted to modern cars are easily adjustable, the lamp body being mounted on form of ball and cup joint with a locking nut beneath it. By slackening this nut the elevation or lateral direction of the beam can be adjusted to a nicety.

Hint to Car Makers.

This trouble is accentuated by the apparent disregard of those who distribute cars to the public. It is comparatively seldom that the lamps of a car which has just been delivered are correctly set, and to this we can speak from frequent personal experience. A few weeks ago the writer took delivery of a new car, on which during the first night drive it transpired that the off-side head lamp was throwing its beam upwards and to the right (the worst possible direction), the near-side head lamp was throwing down and to the left, and the side lamps had a marked squint. To correct the errors was a matter of but a few minutes, but in our opinion, it should not be necessary for the purchaser to make even this simple adjustment.



THE HILLMAN STRAIGHT EIGHT SALOON.

From an Owner Driver's Note Book.



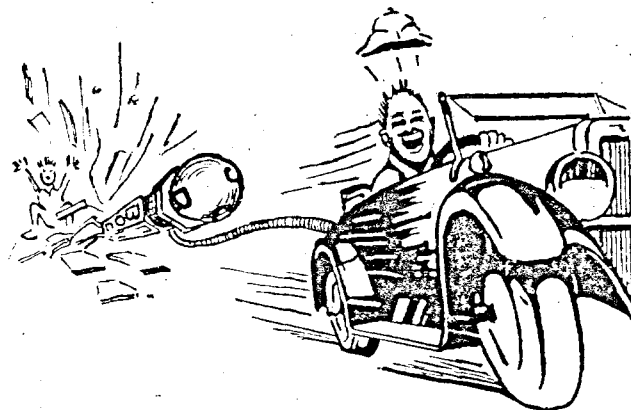
Thefts from Parked Cars.

A friend of mine has just suffered the unpleasant experience of having his car cleared of all small movables while it was standing unattended in a public place. The total value of the stolen articles was not enormous, though jacks, pump, tools, coats, and other small oddments mount up. What annoyed him was the discovery that the loss was not covered under the rather economical insurance policy which had attracted him. I fell a victim to a similar economy some years ago in rather a different fashion, for my car caught fire, and I extinguished it with an expensive coat, which together with a burnt rug constituted the bulk of the damage. I still think my insurance company treated me rather shabbily in not buying me a new coat. Low premiums are always due to some cheeseparing clause or other; and in these days, when most of us leave our cars parked every day of our lives, it is false economy to insure merely the chassis and bodywork.

Better Driving.

Despite the prominence given by the daily press to motoring accidents, evidence goes to show that motorists, as a whole, now handle their cars with restraint, discretion, and quite often with real skill. It would seem that the general level of driving is higher than was the case twelve months ago.

I have never tired of urging the principles of "Safety First", and have not hesitated to express in these Notes the opinion that ninety-nine out of every hundred accidents are not only preventable, but quite easily so by the use of ordinary common discretion and the display of decent manners. Even the somewhat exuberant drivers of fast sports cars would appear to be realising that the roads are



EXUBERANT DRIVERS

not racing tracks, and that the most sober-going user of a family car is entitled to as much consideration as they would extend to Kaye Don himself if mounted on the world's fastest car.

This is all to the good of motoring in general and to the pleasurable use of the roads, and the more this spirit of courtesy and *noblesse oblige* permeates the ranks of motorists in general the better for everyone, individually and collectively.

Shabby Hoods.

My recent paragraph on the disgraceful appearance of too many hoods after quite a brief exposure to dust and sun has stirred up readers, and in all probability I shall shortly be in possession of certain instructions relating to the upkeep and restoration of various fabrics used for hood making. In the meantime quite a number of motoring friends testify that they find ordinary black boot polish gives excellent results on most of the black leather and leatherette materials.

It is obvious that the instruction books sent out with cars should contain expert advice relating to the particular material used on the

car concerned; and this addition should be made to new editions of existing handbooks. A shabby hood ranks as a far greater eyesore now that cellulose enamel permits us to keep the rest of the car's appearance quite smart, even when the bus is growing elderly.

A Gear-changing Item.

A novel note has been sounded in several letters which have reached me recently, and detail the writers' troubles in mastering the art of gear changing. Every motor journalist has been hardened for years past to the wails of novice owners who experience difficulty in changing down silently; but these wails have decreased in strength and frequency since, double declutching became taught and practiced, for this system permits a considerable margin of error without creating nasty uproars.

Nowadays, I get more complaints about the problem of securing a silent upward change. Noisy upward changes are most invariably due to changing up too soon, before the engine revolutions have dropped sufficiently low; and I think that for novices the inclination to hurry the upward changes has been enhanced by double declutching. The anxious driver grows subconsciously accustomed to a fair amount of exhaust noise on the downward changes, and automatically expects a similar sound when changing up. In most cases the engine should sink almost to the inaudible point before a change-up is made.

Hamhanded Novices.

A dealer recently described to me some of the vicissitudes of his trade. In one happy week (he is in quite a modest way of business) he sold three cars of the make which is his staff of life. During the week immediately following these sales, all the three cars were brought back to him by their irate owners.

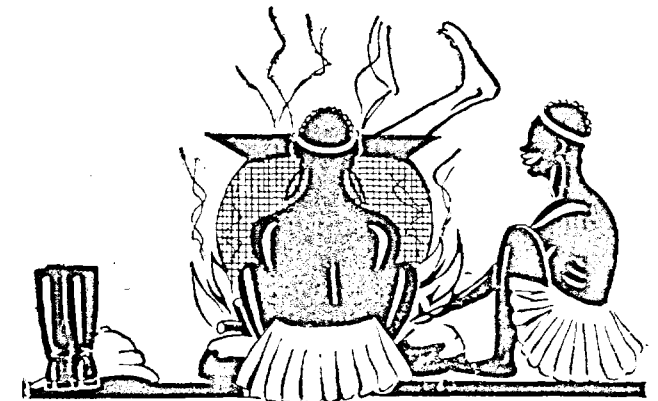
Owner A, it seems, had restarted the engine when going down hill by gravity in neutral with his engine stopped, and forced second gear into engagement, with the result that his gear box was now rather sick. Owner B. had bent his gear lever by he-man gear changing, until it fouled the brake lever. Owner C had not bent his gear lever but had sprained his wrist by

trying to engage first gear when it declined to go in.

This narrative of mishaps enforces the moral, that it probably pays a dealer to insist on novice clients taking a sufficient number of driving lessons to make themselves capable of handling a car before or at the time of purchase. These three owners are quite possibly crabbing the car in the smoking rooms of their respective clubs.

Loose Starting Handles.

Many motorists hold that among the many excellent ideas which have come to us from the United States should be ranked the detachable starting handle. Admittedly, the front of a car looks tidier if no crank protrudes permanently, though there are more important matters than mere beauty. For instance, the



MORE IMPORTANT THAN MERE BEAUTY

other day I happened to be with one of the keenest car dealers in Madras, who was burning to show me the paces of a new six. The engine was stone cold, very rough and the battery was almost flat.

He ordered his minion to start her on the handle. They looked under the cushions; but there wasn't any handle. There wasn't a sister car in the entire building, and no other make of handle would fit. A gang of lusty cleaners took the car down a ramp into the road, and pushed it till their tongues lolled out with exhaustion. But it wouldn't start, and I never got my run. So the risk of loss is one defect of the loose handle.

Another, equally silly, but real defect is that if designers do not perpetually behold the handle in position, they forget to allow ample

space for it. There is one well-known small car, which normally stores its handle somewhere under a cushion. Should the handle be inserted in the action position, there is precisely half an inch clearance for the owner's knuckles against the side-members. So that if you meet a man with a right hand resembling a raw beefsteak, and a tongue which has momentarily become exceedingly unruly, well, you may judge for yourself what car he drives.

How the Driver Impresses the Passenger.

It is surprising how the "atmosphere" of a car can change according to the driver with whom one is blessed (or cursed). There is the driver who inspires confidence among the passengers; the car "feels" different under his beneficent control, and one chats easily and naturally, even drops off to sleep when the way is long. What a supremely fine test of confidence is this—to be able to sleep and feel no qualms; would that it were ever so.

They who so kindly drive us are many, and at times one strikes unlucky. Our jumpy friend sometimes takes the wheel—he is well-meaning and does his very best, but we are

hard put to it to maintain the requisite "poker" faces. He starts off with a jerk, he pulls up with a jerk, he looks quickly left and right; his head bobs about as he scans the instruments frequently, and this performance, when carried on interminably, is apt to be wearing. Conversation becomes strained, and we all keep a sharp lookout in addition to our friend the driver.

When our loquacious sister takes the wheel, we keep an even sharper look out, especially when she has a friend sitting beside her. The flow of talk never stops, and, in addition, it is frequently necessary for her to turn towards us in order to emphasise her speech. Consequently our route deviates from the natural, and it is often necessary to yell "Look out!" in time to save our off side front wing from receiving a nasty biff.

The very sight of certain drivers' backs and their poise at the wheel seems to suggest confidence. These people appear to be in their right place; but many another takes the wheel as though he has to be there because he owns the car, yet wishes devoutly that there was some other way out of it.

A Novel Demonstration Scheme.

THE travelling Motor Show sent out as a caravan by General Motors India, Limited to tour the Bombay Presidency early in February returned to Bombay on Monday morning March 17th, after giving very successful exhibitions at Ahmednagar, Sholapur, Bijapur, Dharwar, Hubli, Belgaum, Kolhapur and Poona. The trip, which lasted a little over a month, aroused the greatest enthusiasm among the rural population in all the districts visited. It is easy to imagine the effect created on the minds of the rural classes by the spectacle of a well-organised and picturesque caravan such as paraded the principal streets of Bombay on the morning of its return. This enterprise proved most effective propaganda indeed, not only for General Motors products but as a visible demonstration of the meaning of motor transportation in its most modern sense. The obvious contrast the caravan afforded between scientific road travel and transport and the laborious, cumbrous bullock-cart and manual labour so largely used in the districts covered, was appreciated by tens of thousands who had never hitherto had a real opportunity to

realise the distinction. In order to make this travelling Motor show as attractive as possible, the caravan carried a complete cinema equipment and generator, together with a microphone and loud-speakers, with the result that the nightly cinema shows attracted hundreds of people to the Exhibition Tent, where they witnessed not only a first class mixed programme but films of demonstrations of cars and trucks, which were carried out with a view to impress on those present the value of motor transportation in every-day life.

Attractively-printed posters in various vernaculars were posted on the Exhibition Tent inviting visitors to witness the free cinema shows and demonstrations, and the fact that the caravan's visit was previously well advertised by General Motors' dealers and sub-dealers by means of posters and handbills and through the local press caused the arrival of the caravan to be eagerly awaited and liberally attended.

The results achieved, both from the viewpoint of sales, the securing of prospects and the distribution of effective propaganda, were very satisfactory.

A Message to Motor-cyclists.

I WONDER if the motor-cyclists of the present day realise how amazingly lucky they are! Motor-cycling has always been a fine sport, but in the old days it demanded too much muscular energy to become really popular. The motor-cycle of 20 years ago was a very "uncertain" machine which could only be handled by a man in the best of physical condition, by a man who was prepared to spend hours on the road side tinkering, and as often as not, to push his machine home. We had good times then, of course, but they were not always pleasant times.

What a difference to-day! The motor-cyclist of 1930 need know little or nothing of the mechanism of his machine, although the acquisition of a little knowledge will add, I think, to his enjoyment. Unlimited fields, almost, are open to the modern rider. His machine is easy to start, easy to handle and absolutely reliable. It will take its rider in comfort anywhere and at any reasonable speed. It is cheap to buy and it is economical to run.

Years ago motor-cycling was considered to be a seasonable pastime only. In the rainy months a machine was garaged and its owner embarked on an extensive annual overhaul. To-day, the majority of motor-cyclists ride all the year round.

The reason that motor-cycling has become a twelve-months-to-the-year pastime is found in the machines themselves. Twenty or twenty-five years ago, a shower of rain spelt ignition trouble, a slipping belt, and, probably, a number of unpleasant skids. To-day a machine will plough its way through streams and water splashes without a misfire, whilst improvements in design have rendered it so stable that a skid is extremely rare.

Motor-cycling is the finest pastime in the world, and moreover, the manufacturing methods of to-day have placed it within the reach of almost everyone. There are millions of people in the world who can afford to motor-cycle, but who cannot afford to run a car. And even if they can afford a car, they are not necessarily to be envied.

There is a thrill in motor-cycling which no motor-car can provide. The speed and acceleration of the two-wheeler, the way it can be "banked over" for a fast, safe corner, the keen snap of the air as it rushes past one's ears, the feeling of power and mastery over his mount which every motor-cyclist inherits—how can the close atmosphere of a car, the rattles and discomfort on rough surfaces and the limited type of roads on which it is safe to drive, be compared with these?

Being a boost for the two wheeled car with a few words of appreciation for the marked advantages of this mode of transport—A plea for a more considerate riding.

"That hill looks too steep" says the car driver. "This lane looks narrow and dangerous." "We must keep to the main road".

"Let's explore" says the motor-cyclist. "Let's see where this track leads to". And off he goes to little known spots, secure in the knowledge that no hill is too steep, no track too narrow for his modern motor-cycle.

Twenty years ago, most machines were very noisy. They proceeded to the accompaniment of ear-splitting explosions and they appeared, thereby, to be going fast. They were by no means so dangerous as they looked, but there was certainly every excuse for pedestrians considering them death-dealing contraptions.

Motor-cyclists are suffering from this today, but in addition we still have black sheep amongst us. The pastime of motor-cycling is a typical example of a case in which the many suffer for the few. Five per cent of our motor-cyclists, perhaps, are bad drivers. They drive noisily and, if not dangerously, at least without proper consideration for the rights of other road users. They parade a-round the town, driving hard in "second," when they might be doing the same speed, silently, in top. They whizz past pedestrians and they cut close in to cars when there is half the road to spare.

They are pests and it is only natural that the public should regard them so. It is difficult to educate the man in the street to the knowledge that for the one motor-cyclist who has annoyed or frightened him, there are nineteen careful and considerate riders of whose existence on the roads he is almost unaware.

I appeal to all motor cyclists to do all in their power to prevent public prejudice arising. Modern motor cycles are exceptionally silent; they can be driven without causing the slightest annoyance to anyone, anywhere. But any motor-cycle can be driven so that it becomes objectionable to someone. Our black sheep are merely showing off when they run their machines at full throttle in bottom or second gear. They think, perhaps, that they are emulating racing motor-cyclists. Actually, of course, they are doing nothing of the kind.

My advice to all motor cyclists is, first of all, to drive considerately yourselves and to make absolutely certain that you are never an annoyance to anyone else; and, second, to do all in your power to stop offenders and to warn them of the unsportsmanlike nature of their actions. All, I believe, can help considerably in this Campaign of Considerate Riding.

Suitable Water for Radiators.

The Various Impurities Which May Harm the Cooling System.

THERE are very many factors affecting the efficiency of a motorcar engine, of which the cooling system is only one. Nevertheless, it is extremely important that the cooling system should be adequate to cope with the great heat evolved by the burning mixture which would otherwise damage the working parts and make cylinder lubrication impossible. A primary requirement is that the surface with which the water is in contact should be kept, as far as possible, clean and free from scale, as scale is undoubtedly a heat insulator. Whether or not this can be done depends to a large degree upon the water habitually used.

We have recently received some interesting correspondence on the advisability of using rainwater for radiators, and in this article reprinted from 'The Motor' an expert discusses the matter in a highly interesting fashion.

The water which is generally available in India for use in radiators can be divided into three classes—streamwater, tap water and standing water. The iron of which the cylinder jackets are made is unprotected, and therefore becomes rusty very quickly, no matter what kind of water employed, but other phenomena occur which are influenced by the impurities which the water contains.

Two processes of rusting proceed on the internal surfaces of the cylinder jackets, one being simple corrosion, due to moisture, carbon-dioxide and free oxygen; this produces a uniform surface of rust. The other is local corrosion, due to galvanic action which produces pitting.

If pure iron be immersed in "pure" distilled water no trouble of any kind occurs, but these conditions are never obtained in practice. Distilled water has a greater solvent effect on metals than water containing certain salts in solution, and may attack the copper parts of the radiator, depositing the copper on the iron jackets in the form of green spots around which a galvanic action with consequent pitting will occur. This action would only

be slight, and with distilled water there should be no incrustation to impede cooling.

Causes of Galvanic Action.

There are, however, other causes of galvanic action; thus, the iron contains impurities, irregularly distributed, such as manganese and sulphur. Between spots rich in such impurities and adjacent portions of iron of differing composition a galvanic couple is set up, resulting in rapid corrosion. Uneven incrustation may also be a cause of intense local galvanic action.

At the other end of the scale there is hard, calcareous tap water, containing calcium-carbonate, often associated with magnesium-carbonate, both salts being held in solution by carbonic acid. Calcium-sulphate is often also present, and the crust deposited on the walls under normal temperature conditions which obtain in an engine is hard, dense and cohering. As it is a bad conductor of heat it impedes cooling to a marked degree.

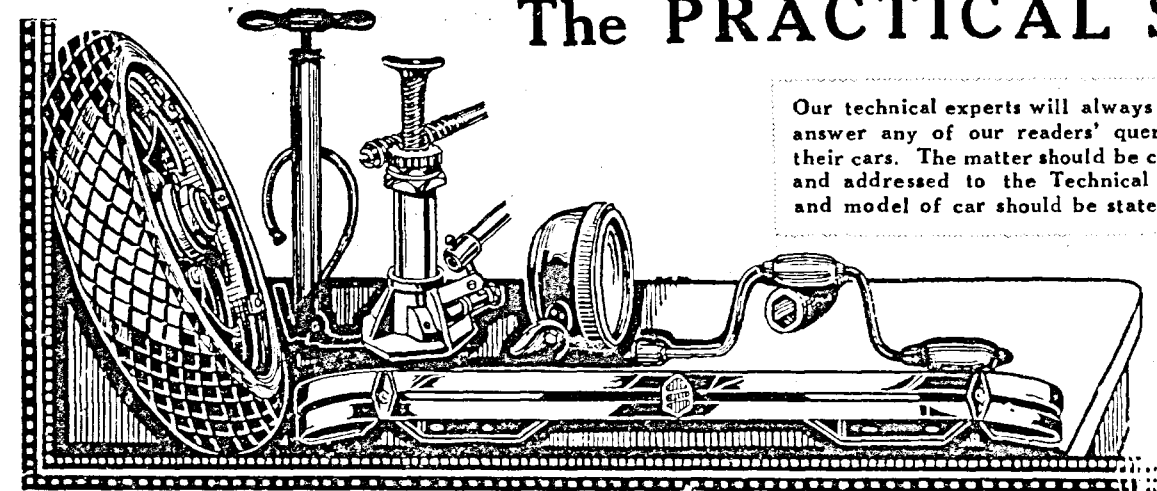
In addition to the above carbonates held in solution, water often contains small quantities of the sulphates, chlorides and nitrates.

Characteristics of Rainwater.

Rainwater collected artificially is a typical soft water containing little mineral matter. Streams running through districts devoid of vegetation have very nearly the same characteristics. As a rule, however, they dissolve peaty matter on their way, owing to the absence of salts. (Hard waters will not dissolve the calcium salts of vegetable acids.) Peaty water contains dissolved oxygen and its action on metals is enhanced by any oxide formed, so that it may tender corrosion somewhat serious.

A water yielding a heavy scale is thoroughly objectionable, but one which produces a slight film is not entirely harmful, as the film may actually serve to provide some protection from corrosion from other sources.

The PRACTICAL SIDE



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 Art of Extemporising.

Unorthodox Methods and Means of Overcoming Temporary Difficulties.

IN the early days of motoring the car driver was very largely dependent upon his own resources in the way of diagnosing troubles and overcoming them; garages were few and far between, and so numerous were the faults which cars were prone to develop that it was impossible to carry spares to cope with any and every eventuality. Ability in extemporising was very frequently called for, and so ingenious were some drivers that they secured the reputation of always being able to get their cars home, no matter what might be wrong, so long as they had with them, in addition to the tool kit, a piece of copper wire and a roll of insulating tape.

Modern Immunity.

It need hardly be said that the motorist of to-day is far more favourably situated. Rarely indeed does he meet with trouble on the road; and if and when it does come his way there is usually more or less expert help within a few miles and plenty of passing cars to carry a message invoking it.

Nevertheless, the need for extemporising still arises upon occasion, not only by the road side but sometimes in the garage as well. It may save the cost of having a "breakdown gang" (i.e. mechanics and car for towing) sent out from the nearest town; it may enable the car to be kept in use while a new part is obtained to replace a faulty one, or, if nothing else, enable an important appointment to be kept that would otherwise be missed.

Obviously it is impossible to specify here all of the innumerable makeshift methods and means that have been or could be utilised to cope with emergencies. But a few can be mentioned that may be useful at some time or other if they are stored in the back of one's mind.

A Defaulting Inlet Valve.

Thus if an inlet valve should stick in its guide and be so stiff that the spring alone will not return it to its seating, the engine will refuse to run. On the compression stroke of that cylinder the mixture will be blown back through the carburettor and the other cylinders will be robbed and become inoperative. As a roadside job, the removal of the cylinder head and valve, the cleaning or easing of the latter and reassembling are generally out of the question.

Gummy oil on the valve stem will rarely, if ever be the cause of this trouble during a run, though it might be so in the hills when the engine is cold. On a run the cause is more likely to be a tight-fitting valve, and in that case the engine will run on three cylinders of four, or five of six, if (1) the valve be closed by pressing it down (or lifting an overhead valve) with a screwdriver applied to the coil of the spring nearest to the tappet or rocker, and (2) the tappet or rocker adjustment be screwed right back so that the valve cannot be lifted by the camshaft.

If the offender is an exhaust valve the inlet valve should be treated as mentioned, for the engine will run with an exhaust permanently open so long as the inlet is permanently shut. It may run, too, with the exhaust open and the inlet operating but will probably give rise to alarming and possibly harmful "bangs" in the silencer.

A broken or defective petrol feed pipe is a faint possibility even in these days. If the leak is at one of the unions, it can be temporarily stopped or reduced to a negligible degree by soap (almost dry) applied liberally round the junction of union nut and pipe and kept in place by a wrapping of

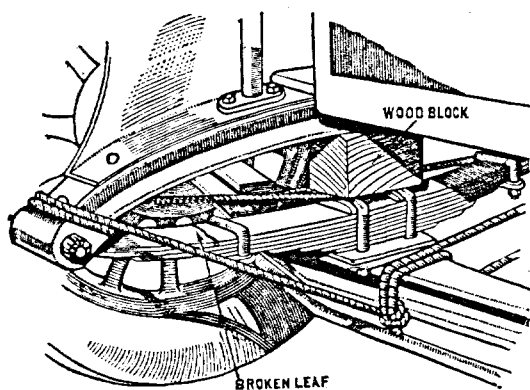
insulating tape. Failing the latter, a strip of stout and well soaped rag, wrapped round and secured with string or wire, will serve until a garage or home can be reached.

Surgical Treatment.

If the pipe is actually broken, a "splint" must be fixed first. Three or four pieces of wood (such as large wooden matches,) or stout wire will do, if they are tied firmly to the broken sections of the pipe so as to prevent the latter from moving relatively. Over the splint a layer of soap must be applied and then the wrapping of tape or rag.

A roll of insulating tape, by the way, should always have its place in the tool kit. It has served for a hundred and one kinds of make-shift repairs, and in the case of a leaking petrol pipe may be used alone (though not so effectively) if soap be unavailable as an additional means of sealing the leak.

Many and various are the ways of making a car driveable when it has become practically immovable by reason of a broken suspension spring. The best procedure depends upon the precise position and extent of the fracture. If it is in the top leaf between the axle clips, the frame near by should be jacked up (by inserting the jack between axle and frame, for instance) until it is somewhat higher than usual; then a long tyre lever, a big spanner, a cold chisel or other stiff piece of metal—or even a piece of timber—should be wired securely over the break, lengthwise in relation to the spring, extending as far as possible in both directions. The axle clips should also be tightened, if possible, as probably will be the case, because their looseness is not infrequently the indirect cause of a spring breaking.



SHOWING HOW A BLOCK OF WOOD AND A LENGTH OF ROPE CAN HELP TO GET YOU HOME WITH A BROKEN SPRING.

Another makeshift is to fix a block of wood between the spring and frame after the latter has been lifted. The weight of the car will hold it in place when the jack is removed. Before driving the car the tyre at that point should be deflated

until it is very "soft", not actually flat, so that it will absorb shocks more readily. The car may then be driven without harm, so long as ten or fifteen miles per hour is not exceeded.

If the spring fracture is between axle and spring end, the axle must be located fore and aft by rope or stout wire, and a block fitted above the axle, as before mentioned; the break-rod to the wheel alongside should be slackened off in this case, to prevent the use of the brakes imposing stress on the makeshift arrangements to locate the axle.

A Makeshift Valve Spring.

A broken valve spring can be made temporarily effective by fitting a large washer between the broken parts, encircling the valve stem; it will prevent the valves from inter-meshing. Even a piece of stout sheet metal (thick tin) can be used if a large enough washer is not available. A central hole can be formed with hammer and punch. Sometimes the washer can be dispensed with by arranging the pieces of spring so that the broken ends are respectively at top and bottom; the flattened ends coming together will not intertwine.

If a partially charged or weak battery at any time prevents the electric starter from turning the engine fast enough for a start from cold, the use of the starting handle by one person while another simultaneously presses the starter switch will often be effective in getting the engine under way when the person at the handle could not alone turn it at the required speed.

A car "bogged" in soft ground, or stuck in a sandy place, can often be moved away under its own power if the rear tyres be deflated considerably; but, needless to say, the normal air pressure must be restored as soon as a hard surface for the wheels is regained.

A car immovable in deep sand or mud can often be driven, too, with tyres at half pressure and a rope tied round the rear wheels at several points this will generally serve for a while to afford driving adhesion; whilst even thick cord or twisted rags tied around wheel and tyre will enable the car to be moved a little way. Great care should be taken, however, to ensure that the cord or other gripping medium is not allowed the slightest possibility of contact with the tyre valve—otherwise trouble with the tube is inevitable before long.

If the ignition switch fails to operate, so that the engine cannot be stopped by this means (a broken wire or defective contact is probably the cause), the engine can be stopped by engaging top gear with the hand brake hard on and gently engaging the clutch; the accelerator should not be depressed, it need hardly be said.

Robbing Peter to Pay Paul.

When the bulb of a sidelight or rear lamp "blows" and a spare is not available, it is well to remember that there may be a bulb in a roof-light, inspection lamp or spotlight that can be used to fulfil legal requirements. If the rear one has "gone west" and there are no such "convenience lamps" to rob, one of the sidelight bulbs can be used and a headlamp bulb put into the depleted sidelight: it is better to use only one headlight than risk police interference.

If all the available open-ended spanners are either too large or too small for a nut that must be moved, a large one can be used with the tip of a screwdriver or tyre lever, or a piece of flat steel, inserted between one jaw and one of the faces of the nut.

In the event of the automatic screen wiper failing, a far clearer vision than would otherwise be had in rain can be gained by smearing a sliced apple or potato over the outside of the glass; or soft soap applied very sparingly with a rag will have a similar effect in causing the rainspots to merge and disperse.

Unorthodox Use for the Jack.

One other suggestion may be added to the foregoing miscellany. If a tightly fixed wheel hub is to be removed and a wheel drawer is not available, the jack and some rope will often suffice. The jack arranged horizontally, must be secured with its head against the well-loosened nut of the axle end; secured thus by a rope to the wheels spokes and held by one person, the jack must be operated by another to cause its head to press against the axle nut while the base draws away the wheel and hub through the agency of the rope.

Another and simpler plan, applicable when the hub cap is formed of pressed steel as a unit with the detachable wheel flange, is as follows. Remove the wheel cap, wheel and axle nut, insert within the cap a piece of hard wood of such thickness as will enable the cap and wheel nuts to be refitted a little way on the wheel studs; then screw up all nuts gradually and equally. The wood will tend to press the axle end in, as an abutment, while the cap tends to draw off the hub. The wood should be small enough in diameter to make contact only with the axle end, not with the hub or other detail.

OWING to a change in the printing arrangements the Publishers found it necessary to suspend publication of the April issue of the South India Motor Owner. Subscribers therefore, are requested to accept this intimation that their subscriptions will be put forward one month.

To all who have helped us in this our effort to make the Journal still better we tender our grateful appreciation.

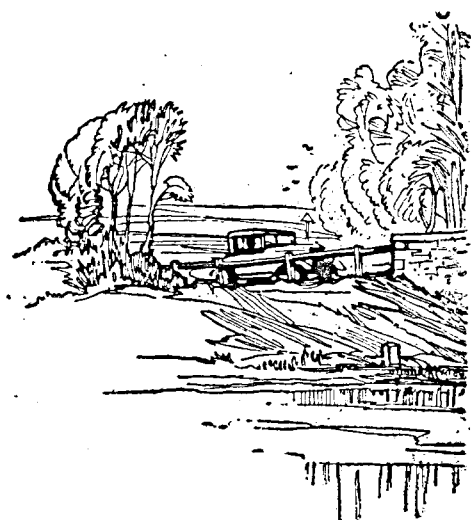
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Motor Cycling Topics

A DESIGN with AN OBJECT

A description of a novel 400 c. c. machine—the Spring Frame Matchless, with real 'everyman' characteristics - -



NOTHING less than the creation of a new standard in motor cycle performance has been the aim of the designer of the "Silver Arrow" Matchless. How well he has achieved his object may be gathered from its features of design and performance on the road.

At first glance, anyone might take the new 400 c. c. Matchless for a very compact, straight four-cylinder. Actually, the engine is a monobloc side-valve vee-twin, with the crank shaft in its normal plane across the frame and the cylinders set at the very narrow angle of 26 degrees. The frame, too, is unusual; it incorporates a very simple, yet perfectly sound, system of rear-wheel springing.

Even from these few details it will be realised that the new Matchless forms a distinct breakaway from conventional practice. But then a real endeavour has been made to provide an extremely comfortable machine of great docility—one that can be started without effort and that will run with the mechanical and exhaust silence of a high-class car. In other words, the designer has striven to produce

a machine with true "Everyman" characteristics. Although the weight is high—about 340 lb. fully equipped.

To deal first with the power unit, the engine is of 397 c. c., having a bore and stroke of 54x86 mm. The stroke is unusually long, with the idea of providing flexibility and smooth running. Mounted on a sturdy box-shaped crank case is the monobloc casting for the cylinders, which are joined together by a web. A single iron casting is fixed to the cylinder block by twelve accessible studs, and forms the two semi-turbulent combustion heads.

As on the side-valves in the standard Matchless range, the sparking plugs are set approximately in the cylinder heads and the valve gear is fully enclosed, and has a chromium-plated cover plate that can be detached on removal of a knurled hand-wheel. A copper-asbestos washer is used for the head joint.

The valves are on the off-side of the engine, and so is the cast-iron exhaust manifold, which is fixed

in position by four studs, but the carburetter is bolted on the near side. It will be seen that the ingoing gas has to pass from one side of the engine to the other. This it does by way of a cored passage between the two cylinders, so cooling them and itself becoming pre-heated.

Both aluminium pistons carry two rings and have their crowns cut at an angle so a normal combustion chamber shape is obtained.

The camshaft is set at right angles to the crankshaft from which it is driven by skew gearing. At the rear end of the camshaft there is a rubber block universal joint through which the magneto or Mag-dyno, as the case may be, is driven.

Although the engine has a compression ratio of 5.6 to 1, no exhaust valve lifter is fitted, it being found that with cylinders so small as 200 c. c. no effort is required to rotate the engine against compression. For stopping the engine, which owing to the carburetter being fitted with a throttle stop, ticks over with the throttle lever closed, there is a magneto cut-out mounted on the handlebars: when full electrical equipment is supplied, it is on the dashboard.

No External Oil Pipes.

Lubrication, which is particularly well carried out, is on the lines of the dry-sump system standardised throughout the 1930 Matchless range, but in this case there is not a single external oil pipe. At the front end of the crank case, immediately behind the front wheel, there is a bolted-on oil tank, with the necessary leads or ducts to and from the tank drilled in the crank case.

The big-end eyes are slightly offset and work side by side on the crank pin, with a set of rollers for each connecting rod. A roller bearing is also fitted on the drive side of the crankshaft, but the timing side bearing, which is force-fed with oil, is a plain bush.

In design the spring frame is ingenious in its simplicity. The centre portion is of the diamond type with three straight large-diameter tubes. The top tube or tank rail carries close to its rear end a pair of compression springs, one on each side. These

are attached to a triangular rear portion, which pivots immediately behind the saddle tube. Silent-blocs—a special form of rubber bearing—are used as the pivot bearings, so there is nothing to wear and no side play can develop until the bearing themselves fail completely through long usage.

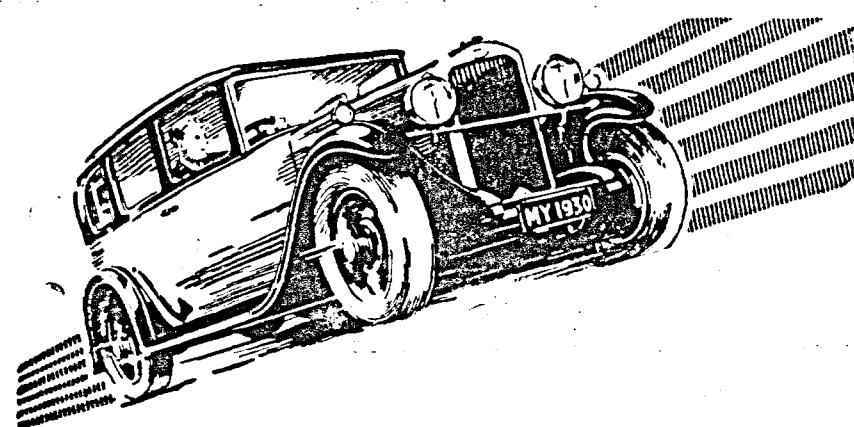
Right at the rear end of the tank rail there is a massive T-lug. This carries two rubber buffers—to prevent the possibility of the springs closing up solid in the event of the machine striking a really deep pothole—and a pair of slotted steel plates which act as saddle spring mountings, and form the necessary friction surfaces for two hand-adjusted shock dampers, one on each side of the machine. A simple means of compensating for wear of the fibre discs in the dampers is provided.

The Sturmey Archer gear box is fixed immediately behind the engine unit and in front of the saddle tube, so that the pivot of the rear portion of the frame is not concentric with the rear driving sprocket. In practice, the alteration in the tension of the chain can, however, be taken as being of negligible effect. To allow for the spring frame's action, the rear brake has a special slotted link mounted on the pivot bolt of the rear frame. Both brakes are of 8in. diameter and are interconnected.

A central rolling stand and a normal front-wheel stand are provided. For ease of access to the rear wheel the wide D-section rear mudguard is detachable from a point just behind the "seat stays". A deeply balanced guard is used for the front wheel.

The tyres are 26 X 3.25 inches, and the remaining features of the specification are similar to those of the standard range, except that a Lycett semi-bucket saddle is fitted.

A test of the "Silver Arrow" proved that it has a performance right out of the ordinary. Starting is exceptionally easy, and the machine tested had a useful top gear range of 8 to 63 miles an hour. No whip was apparent in the frame, while the degree of comfort afforded was very high indeed. In the matter of silence the new Matchless can more than bear comparison with the average light car.



The NEW Humber Products

EVER since there has been a motor industry the name Humber has been synonymous with the reliability of British Workmanship, but one has not been able to close one's eyes to the fact that a too conservative policy has retarded the progress of the Humber concern during later years. Since the Humber-Hillman combine things have definitely changed, a change for the better in every respect not only in the Humber design but in their marketing methods.

This year Humber have two 25-70 H. P. Models the "Snipe" and the "Pullman". The Snipe has a wheelbase of 10 ft. whilst the Pullman which is 1 ft. longer with lower gear ratios is particularly suitable for a seven-seater, enclosed drive Saloon or landaulette. The car which we propose to deal with in this article is the 25-70 H. P. "Snipe" so termed from its very fleetness.

Without question these new Humber's have been produced with a view to capturing Colonial markets in their price class and they will assuredly compete with their American contemporaries. We have just had the opportunity of trying the "Snipe" tourer and must express our admiration of this truly remarkable car. It has an exceptional range of speed

on top gear is a delight to drive on hills. There is however no feeling that engine power has been made the predominating feature, as there is nothing rough about it, indeed, the engine is remarkably smooth and remains so up to the limit of its revolutions.

INTERESTING DATA

23.8 h.p., six cylinders, 80 x 116 mm. (3,948.5 c.c.)		
Wheelbase 10 feet, track 4 feet, 8 inch.		
Overall length 14 feet 2 inch, width 5 feet 8 inch, height 5 feet 10 inch.		
Tyres: 29 x 5.5 inch on detachable wire wheels.		
Engine-rear axle gear ratios.	Maxima (m.p.h.)	Acceleration (10-30 m.p.h.)
16.82	...	...
11.23	32	5 sec.
6.66	55	6 sec.
4.54	75	9 sec.
Turning circle: 36 feet.		
Tank capacity 12 gallons, fuel consumption 17 m.p.g. 12 Volt lighting set.		
Weight: 30 cwt. 3 qr.		

The car is most fascinating, for the range of cruising speed lies between 40 & 65 m.p.h., that is of course on a reasonably good road with a scarcity of traffic the car appears to be travelling along peaceably at any speed within these limits. The maximum attainable is considerably higher, but not many people care to drive at such speed continuously. It must not however be imagined that the Humber "Snipe" is only intended for fast driving; far from it, as it will crawl along at the slowest of speeds without any necessity for gear changing.

In this new Humber there is an extraordinary combination, as it is that of a car with a very flexible performance on top gear and an unusual capability of hill-climbing on that ratio. Further to this, it possesses a silent third speed so silent that it is difficult to detect whether the third or top

(Continued on page 145)

Gargoyle Mobiloil

IS APPROVED BY
OVER



Motor Manufacturers.

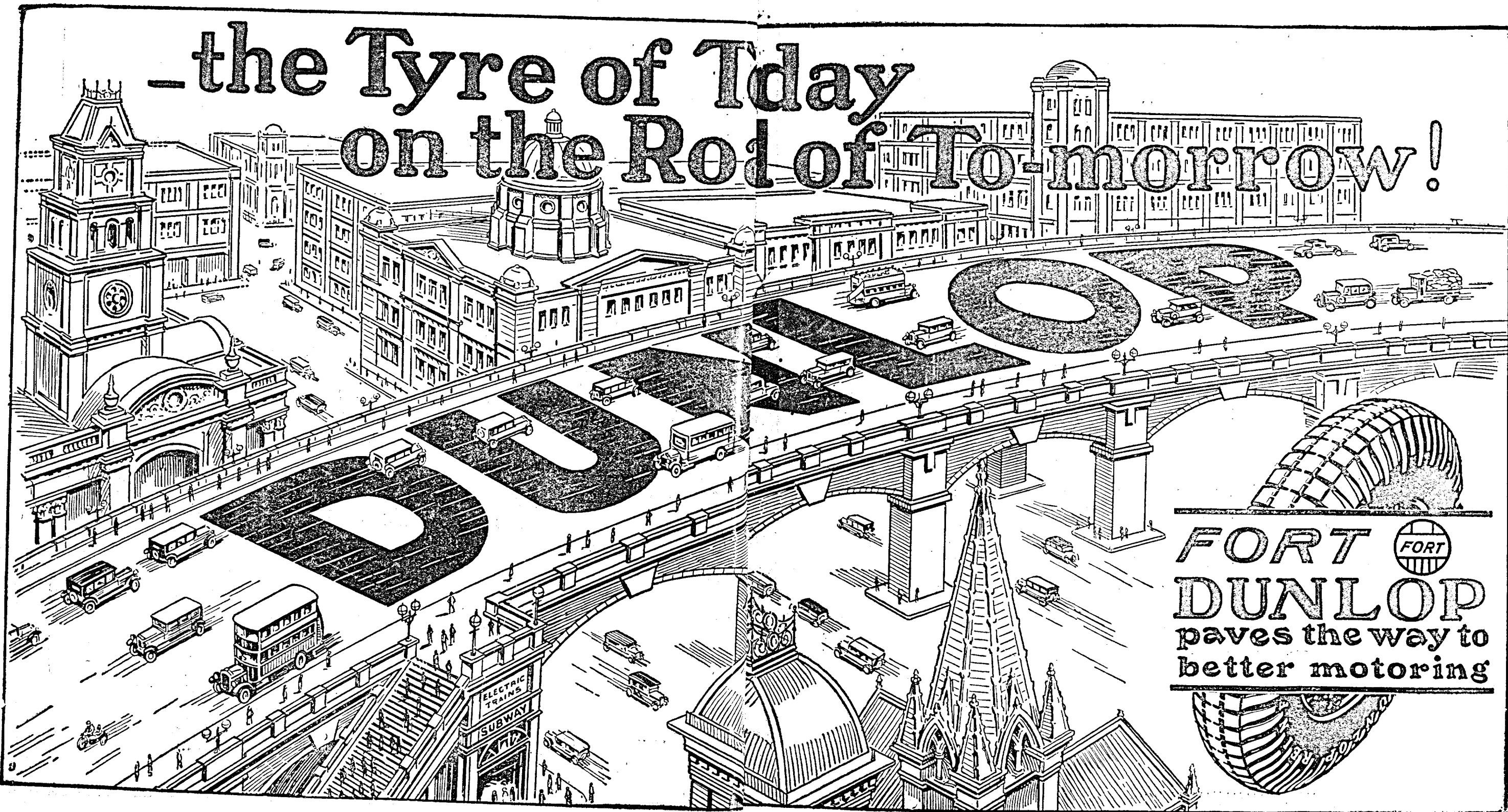
The World's Quality Oil



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VACUUM OIL COMPANY

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FORT 
DUNLOP
 paves the way to
 better motoring



IT HAS BEEN A FIXED Goodyear principle never to serve the moment at the expense of the hour. Thus, in the manufacture of products intended for the public, Goodyear has been animated by a clear sense of its responsibility to that public.

Goodyear has built its products to serve best, rather than to sell cheapest; to be sound and durable, rather than showy; to return the user the largest possible usefulness for his investment.

Goodyear has grown to be the world's largest manufacturer of rubber, not by any adroit move or brilliant manoeuvre, but by expressing everyday recognition of its responsibility in products of a quality to protect that good name.

GOODYEAR

The New Humber Products—(contd.)
gear is employed excepting by noticing the increased engine revolutions.

In this way the needs of "timid-gear" drivers are completely met with, at the same time the driver who wishes to use every expedient available to maintain a really good average has at his disposal an excellent acceleration on third speed also a gear ratio which will enable him to make a fast ascent on almost every hill. An attraction such as this must be experienced to be appreciated to the full extent the silence and smoothness of a sweet running and powerful six cylinder engine and the brisk performance on third of a real high grade sports model.

From the driver's point of view the controls are in keeping with the performance. The gear box for example besides being quiet on third and above the average for silence on first and second, provides a particularly easy gear change and the lever moves with very little resistance and no application of force being required. The clutch is easily operated and the pedal only requires very light pressure for disengagement. Small controls are neatly grouped in a circular box at the centre of the Steering wheel, there being a central button for the horn, which when lifted operates the starting motor, a switch for the "dip and switch" head lamp control and ignition and throttle levers also.

The smoothness of the car makes the speed deceptive but the brakes when applied pull the car up with a very sure grip. They are positive and gives one the feeling when applied at speed that a huge giant is responsible for the retardation of the car so positive are they in action.

The suspension is good and the car holds the road exceedingly well. It is fitted with very efficient shock absorbers and even at 60 m.p.h. and over no discomfort is felt by the occupants.

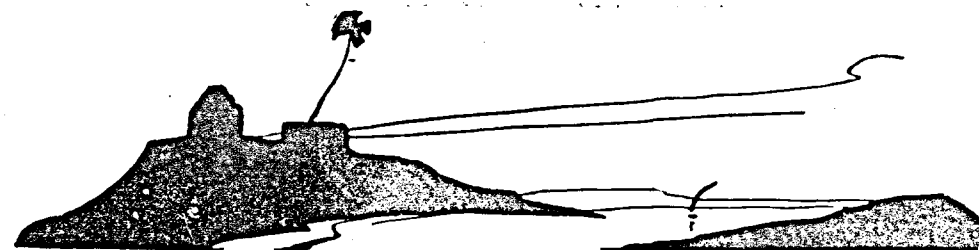
Taking it as a whole the Humber "Snipe" is from a modern point of view by far the best car yet produced by the well-known factory, and its road performance brings it directly into the front rank of present day productions.



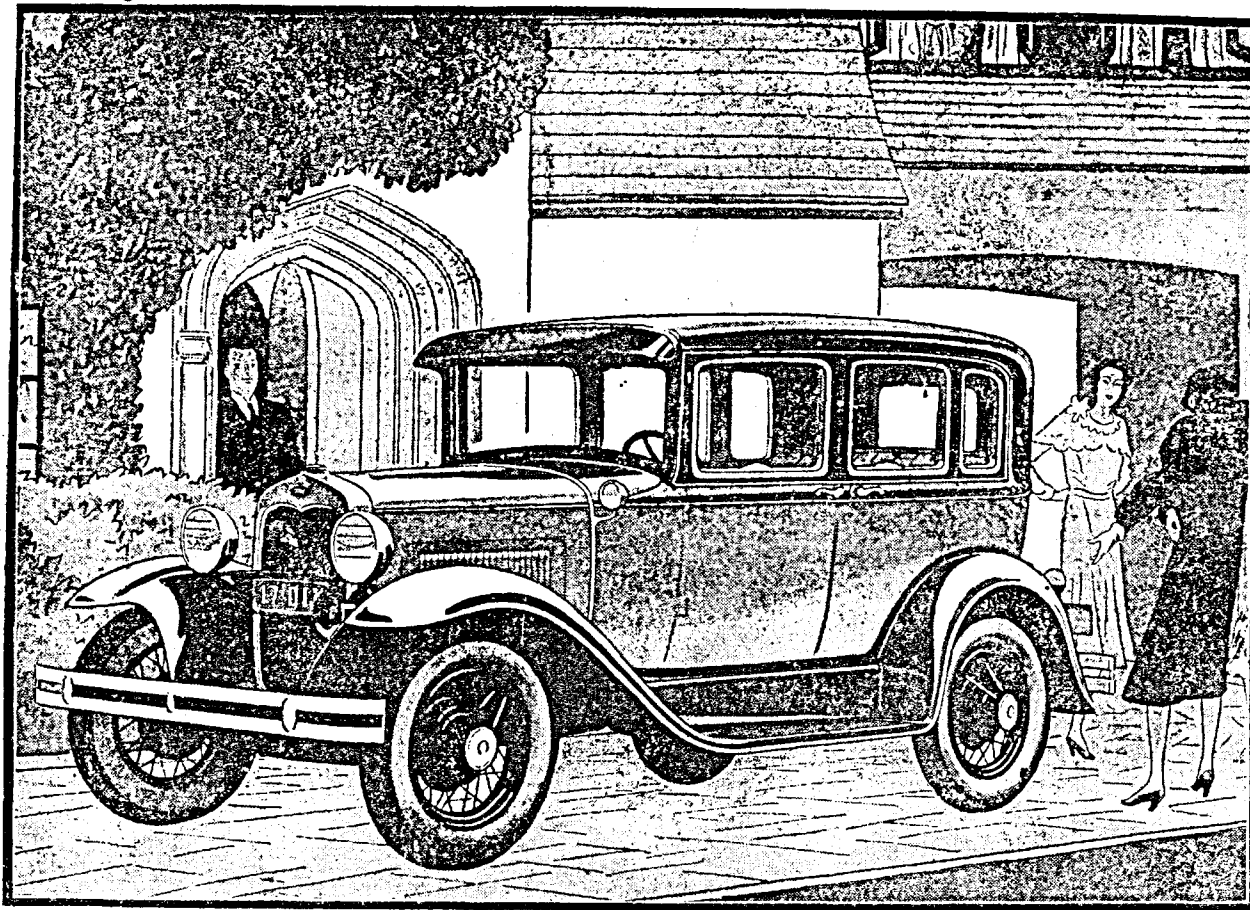
The Humber "Snipe" chassis can be supplied with Touring, Saloon, Weymann Six light Saloon, Drop Head "Coupe", or Weymann 4-door "Coupe" bodies.

The distributors for the Humber in the Madras Presidency are Messrs. Simpson & Co., Ltd.,

Madras, Ootacamund & Trichinopoly who will be pleased to furnish any readers with fuller particulars immediately upon request. We would mention here that arrangements can be made by Messrs. Simpson & Co., Ltd., for Humber cars to be supplied in the United Kingdom if desired by those proceeding on leave and all arrangements made to ship the cars after leave out to India without unnecessary trouble to the purchaser.



New Beauty for the New Ford



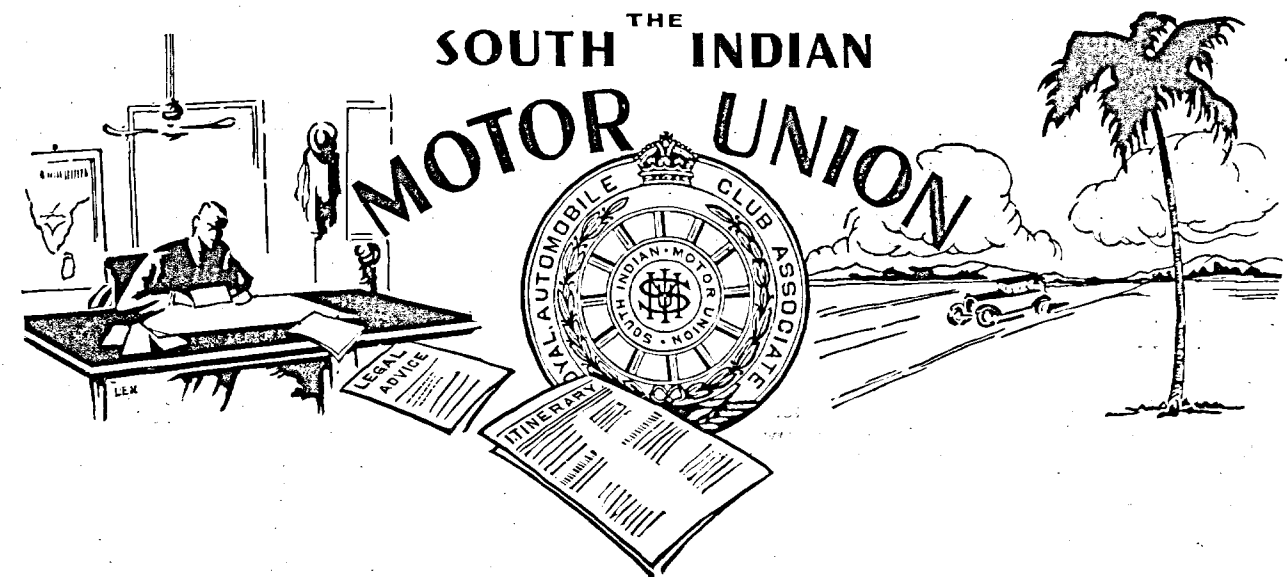
THE NEW FORD TOWN SEDAN

NEW ROOMY BODIES..NEW STREAMLINES..NEW COLOURS..NEW RADIATOR..NEW MUDGUARDS..NEW WHEELS..NEW LARGER TYRES...RUSTLESS STEEL...NOW MORE THAN EVER, THE NEW FORD IS A "VALUE FAR ABOVE THE PRICE."



FORD MOTOR COMPANY OF INDIA, LIMITED, BOMBAY.

Secretary's Report for March 1930.



1. Considerable correspondence has resulted as the result of my South Indian Tour in February which, it is hoped, will lead to improved relations between District Board Engineers and the South Indian Motor Union. Much time has been devoted to writing a narrative of the tour for the benefit of members who may wish to perform similar tours. This narrative is being published in a series of articles in the Madras Mail.

2. A series of six photographs typifying the activities of the A. A. Road Scouts in the United Kingdom has been received and will be reproduced gradually in the "South Indian Motor Owner".

3. Many requests for route itineraries continue to arrive and have been complied with, several being for long circular tours in Southern India; those for tours to the North of India and Ceylon are not infrequent.

4. The feasibility of motoring the whole of the way to Calcutta and even to Darjeeling is being explored and much useful information collected. I am hopeful of being permitted to do this trip in May or June and so open up a liaison with the Secretary of the Automobile Association of Bengal.

5. Referring to paragraph 11 of my last report, it will be interesting to members to know that the Avanashi - Mettupalaiyam short cut is to be raised to the status of a Trunk Road; as a result it may soon be so improved as to become the main approach road to Ooty and the Nilgiris from the South and East. Another point of interest in this connection, is that the direct road from Omalur to Sankeri on the Madras/Calicut Trunk Road in Salem District may also be raised to the status of a trunk road, and a new road constructed from Taramangalam (on the Omalur/Sankeri Road) to Mettur. When

these improvements are effected it may be reasonably anticipated that this will become the better route from Madras to the Nilgiris.

6. Complaints continue to arrive regarding the condition of roads in the Nilgiris, particularly the Gudalur Ghat and Kotagiri Ghat Roads; representations have been made on the subject to the Nilgiris District Board but are not favourably received. On the contrary, it would seem that they are resented and it would appear that nothing but a strong combined movement on the part of local residents will procure early improvements. The following figures, taken from the last Administrative Report on the working of the Nilgiri District Board, may be of interest to members in the Nilgiris and assist them in framing their demands for better local roads. Trunk Roads maintained 70½ miles.

Other Roads maintained 600½ miles (of which 370 miles are metalled.)

FINANCE.

Year.	Net Income.	Expenditure.
	Rs.	Rs.
1927-28.	Tolls ... 82,444	
	Motor License Fees ... 5,803	
	Govt. grants ... 1,63,410	
	Totals ... 2,51,657	2,83,881
1928-29.	Tolls ... 1,12,752	
	Motor License Fees ... 10,987	
	Govt. grants ... 92,297	
	Totals ... 2,16,036	2,39,753

The above figures show that, while the income derived from tolls and motor vehicles has increased considerably, the expenditure on roads has decreased and that motorists, who are probably the subscribers of the bulk of the income are not getting a fair return for their money.

This is a point that will be followed up by the S. I. M. Union but, as indicated above, it behoves local residents and visitors to move in the matter, particularly by joining the S.I.M.U. in larger numbers so as to strengthen that Union's claim to be a truly representative body.

7. Referring to para 18 of my last report, a member of the Union, motored from Secunderabad to Ooty recently, reports a marked improvement of the road in the Kurnool and Anantapur districts: he also says that the Penneru River causeway near Pamidi in the latter district is nearing completion.

8. As foreshadowed in my last report (para 20) the anti-glare campaign by the Madras Police has been watched, and has now caused to be the ceased of complaint by members.

9. The number of members who motor to and in Ceylon is on the increase and the Union has been able to assist several with route itineraries and Customs papers. Incidentally the Ceylon import duty on motors is now 20 per cent ad valorem against 21 per cent formerly, while the period during which a car may remain in the Island without paying Customs duty has been increased from 6 to 12 months. Itineraries and maps of Ceylon roads can be obtained for members if required, free of charge.

10. It is presumed that members have noted that, according to the public press, a number of District Boards have recorded an objection to the proposed bill for the abolition of tolls on motor vehicles. However, so far as I have been able to ascertain, in every case the objection has been based on the anticipated loss of a form of income hitherto under purely local control. There can be no doubt that such a form of objection was anticipated by the Madras Government when it was first decided to draft the bill so it is to be hoped that the Legislative Council will not allow it to over-ride the obvious advantages that the abolition of tolls on motor vehicles will confer on the public generally; to the humble peasant who rides in a motor bus as well as to opulent owner of a high power motor car.

Incidentally, I may record the fact that, in anticipation of the abolition of tolls by the Madras Government, the Administrations of contiguous Indian States have been approached with a view to the early removal of State Toll Gates. Reply so far received indicate that the lead given by the Madras Government will be followed by the Indian States.

11. Several points of interest to motorists resident in Madras have been under correspondence with the local authorities, viz. :—

- (a) Reducing to a minimum the period during which traffic is held up whilst high officials and other notable persons with their escorts are passing important road junctions.
- (b) The reduction of traffic blocks by inconvenient tram halts and reversing stations—particularly on the Hospital Bridge, in First Line Beach, and at the tram shed in Poonamallee High Road.
- (c) The sounding of motor horns when approaching road junctions. Motorists should bear in mind the law on this subject, which requires a motorist to sound his horn when turning into a side road.
- (d) Renewal of the light reflectors at the end of the Munro Statue road island on the "Island" portion of Mount Road.
- (e) The withdrawal of police constables from the centre of Mount Road as soon as darkness falls on Race days.
- (f) The very prominent "Caution" Notice recently erected on Commander-in-Chief Road opposite the Connemara Hotel exit.

12. Messrs. the Burmah Shell Oil Company have intimated their intention of erecting "advance warning boards" at places, throughout the Presidency, to warn motorists to be on the lookout for a road junction or mark some distance ahead. There are many places where the motorist runs past a sign-post and has to halt, or run back, in order to be able to read the sign and select his correct road.

District Representatives are asked to furnish a list of any such places within their respective areas, while all members are invited to assist in this direction.

13. The collection of matter for inclusion in the revised Guide Book proceeds, but is proving slow work, particularly as regards river crossings and official "road numbers".

14. The necessity for "Automobile Danger Signals" at various places in the Presidency has been under correspondence with District Boards notably near the Malam Tank on the Madras/Pondicherry Road, and dangerous turnings on the Kurnool/Bangalore Road. The erection of more direction signs at various places including Ootacamund and Tinnevely, Trichinopoly and Salem Districts has also received attention.

15. Information has been obtained regarding the roads connecting Alleppy with other places in Travancore; and are now embodied in route itineraries.

16. Reciprocal arrangements have been made with the United Provinces Automobile Association for the exchange of information and the transfer of members.

17. The following books and (or) booklets have been received and may be referred to by members, or obtained, on application:—

- (i) "Your car in England" by the Indian & Eastern Car Agency, London.
- (ii) "A car for your leave" by Mann & Egerton London.
- (iii) "Homeward Bound" - car buying from T. H. Stainton & Co, London.

The above three booklets refer to the purchase and resale of cars in England by those proceeding on leave.

- (iv) "A calendar of Historic & Important events" by the A. A.
- (v) "Motoring in Switzerland" Copies can be obtained from the Swiss A. Club on payment - price about Rs. 10/-

18. It has been ascertained that there will be no revision of the Madras Presidency Road Map during 1930.

19. The publication of a Petrol Rate Book is in hand. It will be available shortly.

20. Assistance has been afforded to four members who have proceeded on leave with the intention of purchasing a car in Italy and then touring the Continent and the United Kingdom.

21. Closer relations have been established with the Union's Official Insurers - "The National Employers' Mutual General Insurance Association Ltd." whose Chief Agents in the Presidency are

Messrs. Addison & Co., Madras. The benefits afforded to members of the South Indian Motor Union by this Insurance Company are well worth the small annual subscription paid for membership of the S. I. M. U.—in many cases the reduction allowed on the insurance premium more than covers the annual membership subscription. Members would do much to further the welfare of the South Indian Motor Union by bringing this fact to the notice of their friends.

22. During the month under review thirty four applications were received for membership, while six members resigned on departure from India.

23. It is with much regret that I have to announce the resignation from office of Mr. C. P. G. Wade who has been a member of the Committee, Honorary Secretary and Honorary Treasurer, in turn for the past two years; also of Mr. A. W. Parsons from the Committee. Until the next General Meeting when new officials will be elected Mr. D. B. Snowdon will function as Honorary Treasurer.

24. Information has been received that Motor Vehicle Registration and License Fees in the Bombay Presidency have been doubled as from 1st April 1930.

It is to be anticipated that such an easy method of raising revenue will soon be seized upon by other Provincial Governments, so it behoves all motorists in the the Madras presidency to combine with a view to combating any similar, extortionary measure on the part of the Madras Govt. Get your friends to join in the South Indian Motor Union without delay and so strengthen its hand.

MADRAS. } J. CHURCH, Major (Retd.),
4th April 1930. } Secretary

Secretary's Report for April 1930.

The Crest for Adoption if Union's Designation is Changed.

A proposal to change the designation of the Union to read "The Automobile Association of Southern India" has necessitated the designing of a suitable "crest" for inclusion in Motor Car Badges. The R.A.C. London has produced a design which has been accepted by the Committee. The cost of making a die will be £.3/10/- and new centre pieces for existing badges will cost Sh. 3.6d. New badges can be provided with the new centre "crest" at the same price as now current.

Improvement of Roads.

Much correspondence has ensued in endeavours to obtain the early improvement of roads, particularly in the Nilgiris and in Mysore State. The Nilgiris District Board have not shown much sympathy and endeavours are being made to stir up public opinion with a view to getting Government support.

International Travelling Passes.

The procedure to be followed in order to obtain an international Travelling Pass in India having been found somewhat hazy, even in official

circles, a comprehensive pamphlet has been compiled and may be had on application to the Secretary.

Touring in Ceylon.

This means of spending a holiday appears to be coming more popular, and assistance has been rendered to several members. Information has been received that a bridge having been constructed at Manaar, it is now possible to land a car at, and motor to any part of Ceylon from Talaimanaar, instead of railing the car direct to Manaar as recommended hitherto. However the first five miles off the road from Talaimanaar is very rough and must be driven over with caution. The best months of the year for touring in Ceylon are during December—February, but for those who can only get away in the summer the months of July and August are also recommended.

A pamphlet on the procedure to be followed for importing a car temporarily into Ceylon has been prepared and can be had on application. This pamphlet also gives the several routes by which Ceylon can be reached and the approximate cost of transporting a car.

A revised edition of the Road Map of Hyderabad States has been obtained and placed on record in the Union's Office.

Register of Motor Drivers.

The Union is endeavouring to compile a register of competent licensed motor drivers, in order to be able to help members who may require the services of a good driver. At present the number registered is small but it would soon increase if members who are about to leave the country would kindly register the names of the drivers they are about to discharge and the date they are likely to be available for re-employment. Incidentally this service should prove a boon to motor drivers who are about to be thrown out of employment as it will provide a free Employment Bureau.

The compilation of the list of places where petrol can be obtained, with approximate rates per gallon, has been completed and the draft sent to press. Delay in printing is no doubt due to the unrest in the City, but it is hoped that the booklet will be available for issue shortly.

Road Signs.

The collecting of information as to road junctions requiring "advance signposts" has been in progress throughout the month and should be a most comprehensive one. It is hoped that the Burmah-Shell Company who have undertaken to erect the signposts, will be able to deal with every road junction mentioned.

Car Parking.

A road scout was posted near the ferry at Seven Pagodas during the Easter holidays to control the parking of cars and see that the cars were not interfered with, or entered, by the local inhabitants. The Secretary visited the ferry with a view to making proposals for the erection of a rough shelter in which to park cars, but nothing will be done in this direction until next cold weather.

Petrol Supplies.

The possibility of erecting signs on main roads near towns and villages to indicate the direction in which a tourist should go in order to obtain petrol and oil, is being explored. The Burmah-Shell Company is prepared to erect such signs, if local boards will grant permission for them to do so, "rent free". The matter is under reference to local boards.

The erection of danger signs at several bad turnings on the Kurnool-Bangalore Road has been arranged with the Anantapur District Board.

Mailam Tank Bund on Pondicherry Road.

As a result of representations by the South Indian Motor Union, the South Arcot District Board is arranging to erect a guard fence on the sides of the bund road in miles 91-92 on the Madras/Pondicherry Road.

Customs Examinations.

The possibility of introducing a system of sealing boxes, trunks, etc., at the Customs Posts on the Pondicherry Frontier, in the case of Motorists who are only passing through French Territory, instead of the present complete examination at both points of entry and point of departure, is being considered by the Collector of Customs. If approved, this should prove a boon to motorists proceeding to Cuddalore and towns to the South thereof.

Audit of Accounts and Annual Report.

The balancing and audit of the 1929 Accounts has been in hand during the month, and has recently been completed. The Balance Sheet will be issued shortly to all members, together with a copy of the Annual Report.

Membership.

During the month thirty one motorists applied for membership, one resigned.

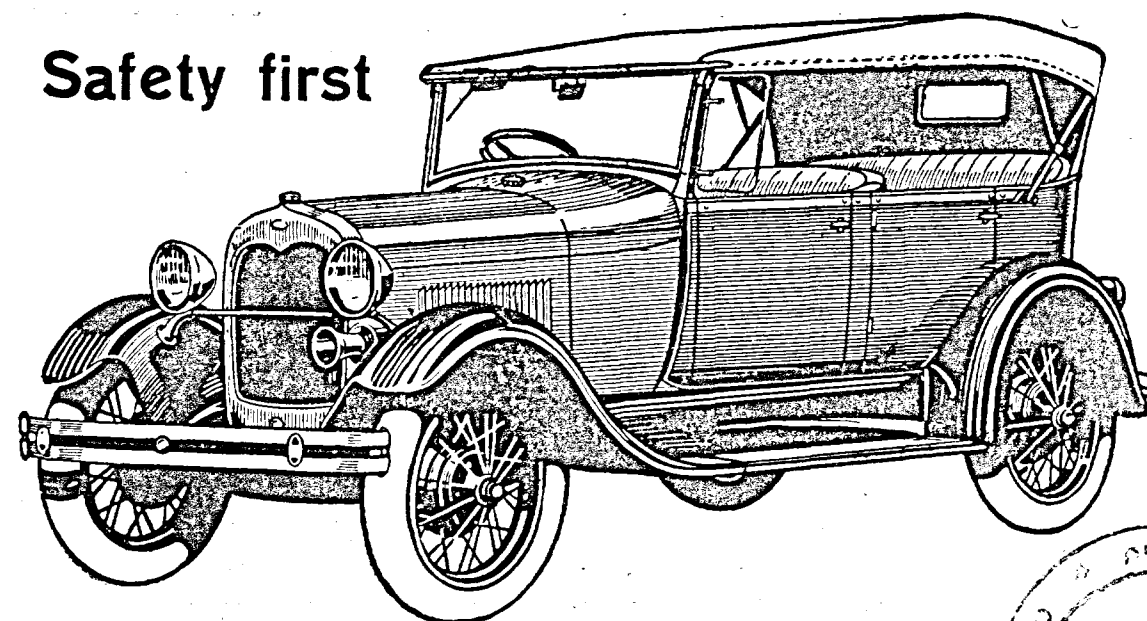
J. CHURCH, Major, (Retd.),

MADRAS, }
2nd May 1930. }

Secretary,
South Indian Motor Union.

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Safety first



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Under severe impact Ford windcreens will crack—but the glass will not fly nor will there be any jagged edges exposed—the glass held together by a patented process. :: :: :: ::

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NOTES and NEWS

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

Speed Tyre Secret.

THE closest secrecy has been observed in the making of the tyres on which Mr. Kaye Don has attempted to break the world's land speed record. The place where they are made is not known, and the manufacturers have decided not to allow their name to appear upon them.

"The tyres are of a highly specialised type," said the technical expert in charge of their manufacture in an interview, "so much so that every one of the world's record races has been won on the same make of British tyres."

Not the least of our problems in making tyres to stand up under speeds of 200 to 300 miles an hour is the difficulty of carrying out tests. Tests on Mr. Kaye Don's Sunbeam itself are not, of course, possible for the simple reason that his car cannot be run at the required speed except over one or other of the few world tracks where the record attempt can be made.

"His tyres have therefore to be tested by special apparatus. Here the difficulty is that there are no means, such as we have in normal cases, of comparing the mechanical tests with the actual running of tyres on the road. The responsibility of the tyre maker is therefore no light one, and I think that he is to be congratulated on his success in providing mechanical tests which up to now have resulted in tyres capable of standing up to world record speeds such as Segrave's."

Sir Henry Segrave's New Boat.

Although great secrecy surrounds the building of "Miss England 11," Sir Henry Segrave's new speed boat, it is understood that the power units are to be of the Rolls-Royce Schneider Trophy type and that the boat will be considerably larger than her predecessor.

The Air Ministry has now released some interesting details of this wonderful Rolls-Royce "R" engine, the power weight ratio of which is 0.805 lbs. weight per h. p. Actually, it develops over 1,900 h. p. or about the same as the latest express engine of the London and North Eastern Railway, although the latter is no less than 200 times as heavy and is 75 feet long against the aero engine's 50 inches.

A Striking Gift.

One of the most striking looking cars ever built has just been completed at the Armstrong Siddley works as a gift to a Mohammedan lady in India. The car is a 30 h.p. 6-cylinder model and the colour scheme is silver, all metal parts being chromium plated; even the luggage grid, battery box and tool box are so finished.

The Armstrong Siddley self-changing gear box is employed and the pre-selector control, mounted above the steering wheel, as well as the handle of the brake lever, is finished in ivory. The rear doors are fitted with step lights which automatically come into action when the doors are opened.

Export attracting British Manufacturers.

It is satisfactory to learn from statistics issued by the Society of Motor Manufacturers and Traders that British motor exports during 1929 showed an increase of some 33 per cent in number and 20 per cent in value over those for 1928 and, further, that the demand is far from slackening in spite of the difficulties in different markets. Undoubtedly, one of the results of financial stringency in many parts of the world and the very serious Wall Street collapse has been to popularise the small British car. The reliability and efficiency of this type, combined with its low first costs and running expenses, are now appreciated by an ever increasing public requiring sound and economic means of transport.

Petrol Economisers.

Your Carburettor, the True Petrol Saver.

DURING the last few months there has been an extraordinary crop of petrol savers of one sort and another. Some for fitting into the inlet pipe and some for attachment to the carburettor. For many of them most extraordinary claims are made, including a fifty per cent, decrease in fuel consumption, when a full hundred per cent is not claimed. One maker goes so far as to suggest that in view of the rapid but gentle acceleration, even the tyre bill is reduced a statement which one can say is optimistic, to say the least.

Some of these devices depend upon little blades which revolve in the induction pipe, a gadget which has come round, comet-wise, at regular intervals, ever since the dawn of the motor industry.

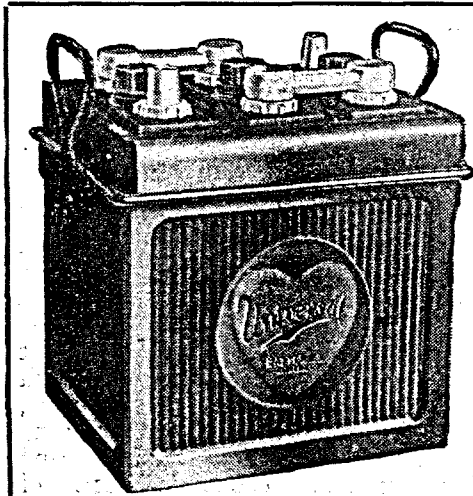
Now the best of these devices are perfectly harmless. If they don't do any good, they do not do any serious harm. On the other hand there are others which, having very fragile parts moving at a high speed, are calculated, should they fracture, to do very serious damage to the engine. We recently heard of an instance where a little vane was drawn into the cylinder when the owner of the car was returning from a long run at night, and although when the vane blocked up the valve the owner had the good sense to stop and investigate, and little damage was done, a hotel bill and the labour of taking the cylinder head off had to be charged up to the economy of the gadget, and, needless to say, mortgaged such economy (if any) for a less matter of twenty years, shall we say.

Now it is far from us to decry or discourage any inventor. We are prepared to believe that some genius may at some time or other entirely revolutionise carburation. However, we have to realise that there are upon the market a number of very fine vaporisers, not the product of chance discoveries but the result of very careful laboratory tests by some of the best brains the engineering industry can produce.

It is our opinion, then, that when such a discovery is made it is more likely to be in the laboratories and workshops of these very old established and experienced concerns which employ highly trained men doing nothing else but look for improvements in carburation, than purely as the result of a lucky thought in what is a very advanced time.

In justice we would also say that it is possible that some of the economisers may actually economise, but where such economy is registered, in the vast majority of instances a similar result could be obtained with any standard carburettor by putting it out of adjustment, i.e. running with the mixture on the weak side, which would imply a rough engine spitting back, possibly sticking-up valves and other evils which the carburettor designer has specially to circumvent.

The modern carburettor is a happy medium between a whole host of important considerations and, as we have already said, when further discoveries are made we think it will be by an expert and not by a cheap-jack.



ONE GOOD BATTERY
OUTLASTS
TWO CHEAPER BATTERIES

Superior
Quality

UNIVERSAL
BATTERIES

Moderate
Price

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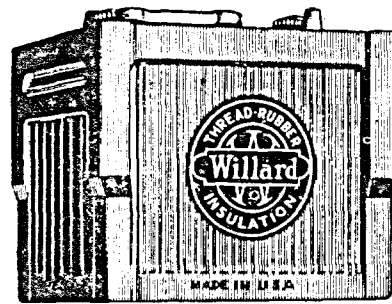
FIRST FLIGHT
INDIA-ENGLAND
ON A LIGHT 'PLANE

MR. CHAWLA & MR. ASPY ENGINEER, FLYING A. D. H. GYPSY MOTH, LEFT KARACHI ON 3RD MARCH AND ARRIVED AT CROYDON ON 20TH MARCH. IT IS FITTING THAT THE FIRST FLIGHT MADE ON A LIGHT AEROPLANE FROM INDIA TO ENGLAND SHOULD HAVE BEEN ACCOMPLISHED BY INDIAN AVIATORS IT IS A TRIBUTE BOTH TO THE KARACHI AERO CLUB, OF WHICH THEY ARE MEMBERS, AND TO GOLDEN SHELL OIL AND SHELL PETROL ON WHICH THEY EXCLUSIVELY RELIED FOR THE SUCCESS OF - - - THEIR FLIGHT - - -

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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.

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THE VIVA-TONAL
COLUMBIA
IS

: PERFECT IN TONE :
RELIABLE IN SERVICE
BEST VALUE EXTANT

Portables.

Rs. 95, 120, 140.
Deluxe Model Rs. 235

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RECORDS ARE THE BEST
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And Play Entirely Without
Scratch.

Dealers wanted throughout
South India.

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Mount Road, Madras.

CHOTA FLASHES.



By

"MINI POOCHI"

CONSTABLE (to villager who has been knocked down by car): "You didn't see the number, but could you swear to the man?"

Villager: "I did, but I don't think 'e 'eard me."

In crowded streets circumstances may, and do, arise when common sense and one's own judgment and care are the only things on which to rely. To blame someone else, even though rightly, is not always enough. The tombstone to the poor gentleman in America who was killed while on his correct side of the road by a car that was on its wrong side might be taken as a motto by all.

*Here lies the body of Mr. May,
Who died maintaining the right of the way,
He was right, dead right, as he walked along,
But he's just as dead as if he'd been wrong.*

A Gem from America.

"Is the motor cop angry with the speed maniac?"
"Oh yes. He is being very severe with her because she drove sixty-two miles an hour."

"Why doesn't the motor cop hand her a ticket?"
"The motor cop doesn't hand her a ticket because she has such big brown eyes."

You have to say it with the pucca 'Layton and Johnson' accent really to appreciate its beauty.

"Excuse me. Have you any idea of the way to Bath?"

"Garn, bath yourself!"

The coach guide, who had formerly been employed on a tour of the Windsor district had been entertained at the luncheon halt by some of his party and the information which he proffered during the afternoon, although not strictly accurate, was, perhaps, all the more entertaining. Passing through Tinterne Magna, in Dorset, he stood up unsteadily and remarked. "Now, friends, this is the village of Tinted Magna, where old Henry VIII signed the Runnymedes and Persians."

A correspondent reports that his car has not been the same bus since he departed from generally recognised practice and fitted an indiarubber crankshaft. Other interesting modifications which have been carried out by this ingenious individual include elastic transmission, thereby eliminating the differential, and a glass cylinder block which enables him to see what is going on inside.

New motorist: "I'm afraid I've smashed the thing up a bit."

Garage Proprietor: "Yes, sir; wants a new axle 'sfars I can see."

New motorist: "Right-o, give me half a dozen, they'll come in useful."

There is no truth in the rumour that many Scottish motorists buy their petrol by the half gallon in case their tanks should spring a leak.

Tragedy.

The passenger gripped the rail at his side more firmly as the exhaust's pulsations speeded up and they swung into the roaring maelstrom battling for position before the next corner.

Suddenly he remembered something. He felt in his pockets, and a cold shiver ran down his back. He had forgotten to bring them. What would happen?

There was a squealing of brakes as the driver slowed for the corner. Swiftly the passenger leapt out.

And the bus conductor shouted vainly for the two annas which the passenger had left in his other pair of trousers.

What we really want nowadays is less horse-power and more horse-sense.

"We had a wonderful trip. We saw snow-capped summits leaping toward the cerulean heavens; we saw foaming torrents raging through the bottoms of shadowy canyons; we looked down from the beetling crags into the depths of limpid lakes."

"How many miles to the gallon did you get?"

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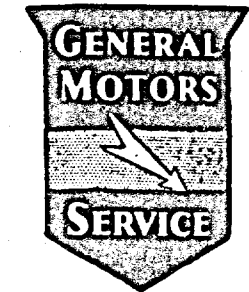
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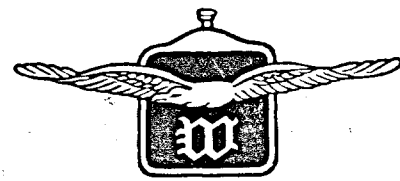
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Arranged alphabetically under vehicle headings this guide should prove extremely useful to motor owners throughout Southern India. The up-to-date Service Station and Sub-Dealer will find entries in this section to be a profitable method of inexpensive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

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Published Monthly by

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'THE South India Motor Owner' is issued on the 15th of each month. It aims to furnish the latest and most authoritative information on all matters relating to motors and motoring under South India conditions. Contributions and correspondence on all matters coming within the scope of this journal are solicited and prompt remittance will be made for all acceptable matter. Contributions should preferably be illustrated.

Subscription Rates

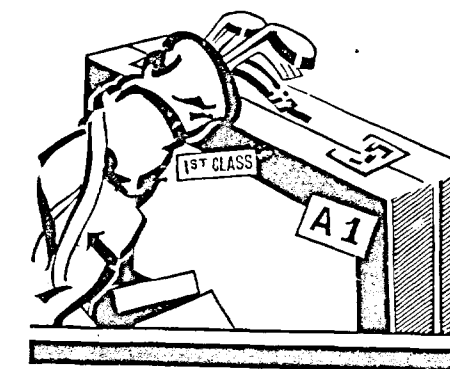
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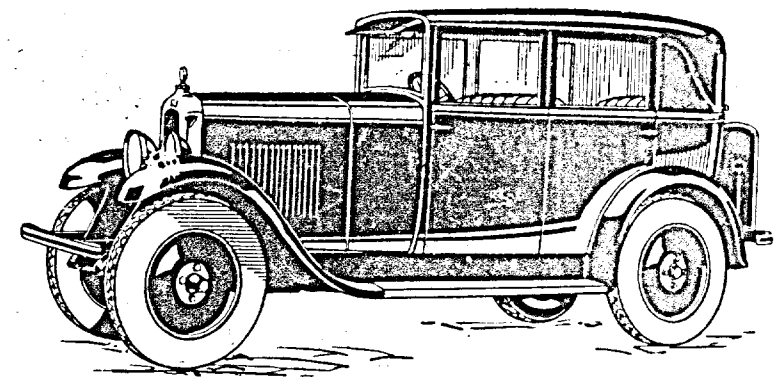
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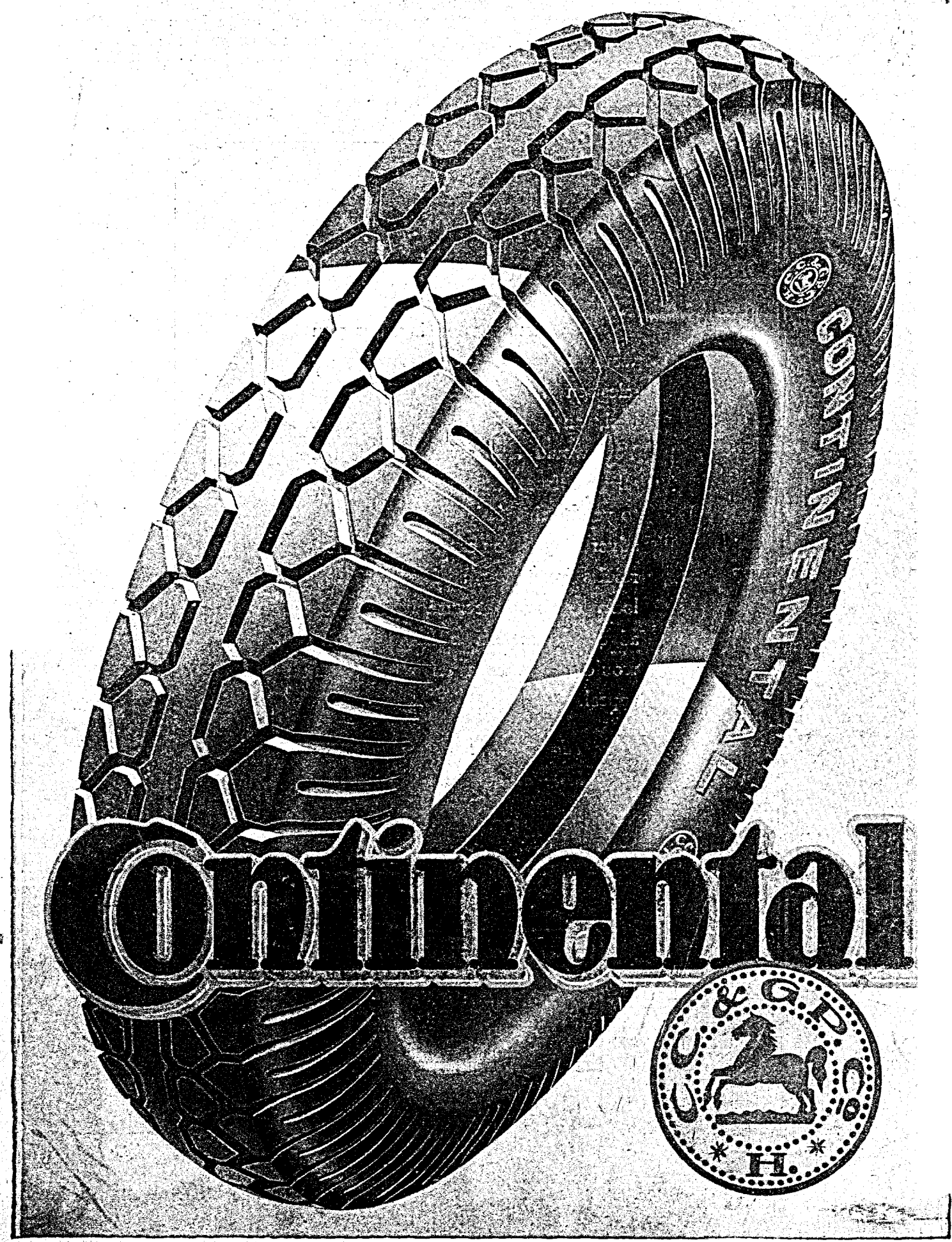
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: of Southern India :**

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

THE SOUTH INDIA **MOTOR OWNER**

Proprietors :
EASTERN TECHNICAL PUBLICATIONS
VARADA BUILDINGS, MOUNT ROAD, MADRAS

PASSING
THE
CAR
AHEAD
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Vol. II, No. 5

June, 1930

Price As. 8

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EDITORIAL

The Level Crossing Nuisance.

IN the Automobile Association of Southern India Secretary's report published elsewhere in this issue there appears a short paragraph to the effect that the matter of delays at level crossings has been taken up with the railway companies, and that the rail authorities are sufficiently sympathetic to have promised an investigation into any cases of delay which may be reported to them. Apparently the whole blame is placed on the shoulders of the crossing keeper who, the railway companies would have us believe, is solely responsible for the irksome delays which all too frequently occur in Madras and elsewhere throughout Southern India. This is the only possible reading of the paragraph in question as published in this month's Union report—and it is a reading which most unfairly prompts the motorist who suffers delays to imagine that the whole cause of the trouble lies with the keeper of the crossing.

That this entirely misleading is proved by the knowledge many road users have by frequent lessons acquired, that there are crossing gates in Madras and elsewhere which are automatically locked and freed as the signal operator closes or opens the line, which means that, plead or threaten as we may, the power of opening the gate—but not the responsibility therefor—has passed out of the hands of the gatekeeper into the keeping of the signal man. This functionary can be held in no way responsible for the necessity of closing the gates: his sole concern is the requirements of line traffic as dictated by those who organise the traffic of the section he controls.

The fault, then, lies not with either the crossing keeper or the signal operator, but can unhesitatingly be pleased with those who permit a sequence of railway traffic manoeuvres which will occupy at least ten consecutive minutes of time to take place over a level crossing which they know should only be utilised for three consecutive minutes. That this is the case is undeniable, for motorists and other users of the public road have frequently been kept waiting, impotently fuming, at a crossing where even had the gates been flung wide, the way would still be barred by the goods train slowly shunting backwards and forwards for ten minutes or quarter of an hour. The crossing keeper cannot be blamed, nor can the signal operator be held responsible.

We sympathise with those who have the responsibility of the Madras crossings in their hands, and we can realise perhaps a little the complexity of the problems they have to solve. Nevertheless, we cannot perceive how the skill which can control busy sections of line such as those in Madras can be so careless of its reputation as to permit delays of almost an hour to be made at mofussil crossings opening to three or four trains a day. An excellent example of this is afforded on the road to Bangalore where motorists from Madras, weary and dusty, have often to wait an hour to cross the line at Krishnarajapuram. Admittedly, this wearisome wait occurs usually on Sunday—but as Sunday is the owner driver's "holiday," this day of all days, should be reserved for the motorist's especial use. The particular crossing in ques-

tion is automatically locked by a signal control some three quarters of a mile down the line—or so we have often been informed by the keeper of the gates—and it is interesting to put on record that the gate is usually opened after the slow passage of considerable time without any sign of railway traffic anywhere on the line: a fact which is more than annoying to the motorist with the road dust of two hundred miles permeating the whole of his being.

Mistakes and miscalculations will occur in even the most carefully supervised institutions;

but when these become habitual and the brunt of them is borne by everyone but the concern responsible then it is time for a fresh grasp to be taken of internal organisation, however complex it may be, in order to eliminate such occurrences. We do not doubt for one moment the sincerity of the railway companies when they inform us of their sympathy, but a conscientious endeavour on their part to prove the practical quality of their sympathy would be a gesture to be really appreciated by all users of South Indian roads.

Road Sense of Wild Creatures.

I SAW to-day, writes a contributor to the Morris Owner, a large motorcar travelling fast, and beneath it a fluttering black object keeping pace, now darting to one side and now to the other in its efforts to escape from its moving prison. This continued for a few seconds, when the object saw its chance, and, darting out between the front and the back wheels, flew to the nearest tree without injury. Although the whole affair had happened in a few seconds, the blackbird had kept its wits in trying and dangerous circumstances. Keeping just off the ground, but too low to touch the bottom of the car, it had made sure of safety before attempting to escape and so had succeeded where large numbers of birds, or of animals, for that matter, would have been killed outright.

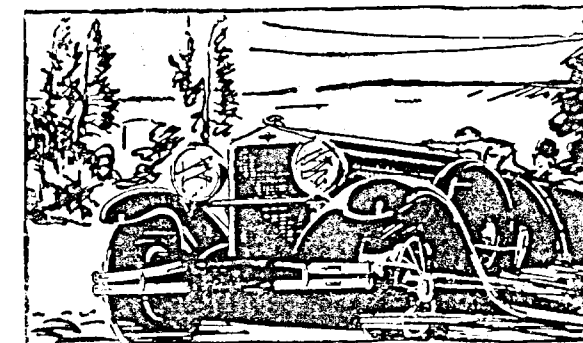
The blackbird is not the only creature which keeps its wits in times of stress. A motorcar was travelling fairly fast when the driver saw a cat sitting on the road directly in front washing itself. There was no time to avoid the animal, but the driver, as he was a man who hated to destroy life, kept straight on, but put on both brakes with a

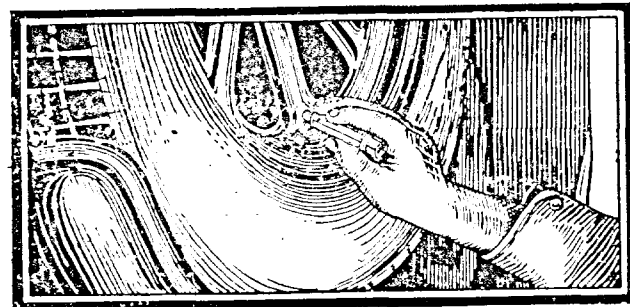
view to discovering how badly the animal was injured. On looking round he saw the cat still in the same place and still washing itself; the passing of the car right over the animal had not in the least disturbed it.

This is altogether unlike the action of the hare under the same conditions. This animal will run in front of a car for a considerable distance, first to one side and then to the other, until in very many cases it is destroyed, through its lack of decision.

It would seem indeed, that, taken collectively, birds are much more sensible than are animals. A flock of pigeons settled on the railway right in front of an oncoming train. The birds were lost to view for a few seconds, but when the train had passed it was seen that every one was alive crouching close to the ground. Had they attempted flight, all must have been killed outright.

Perhaps stupidest of all birds in front of a car is the pheasant, often refusing to fly from danger, while the partridge takes flight at the first sign of trouble.





THE CARE OF TYRES

WHY MILEAGES VARY AND HOW TO OBTAIN THE BEST RESULTS

Courtesy of the . . .
Dunlop Rubber Company

MOST motorists have probably been struck at one time or another by the widely varying results obtained not only from tyres of the same manufacture fitted to cars of different makes, but also from tyres of the same make and size fitted to cars of the same make and model. The first of these variations is fairly easy to understand but the second is rather more puzzling.

The principle of the pneumatic tyre is the employment of compressed air to form a cushion between the vehicle and the road. The inner tube is merely the container, and the outer cover its protective covering. The air carries the load and a given load requires a given quantity of compressed air to carry it. If a car is fitted with tyres which, at the maximum pressure commensurate with comfort will contain only just enough air to carry the load, it is obvious that they cannot be expected to wear as long as tyres fitted to another car which at an equally comfortable pressure will contain more than sufficient air to carry the load, any more than a horse which is only just up to a man's weight can be expected to last as long as one which is up to two stone more. Further, some cars have much smaller wheels than others; the modern tendency is all towards smaller wheel diameters and lower centres of gravity, giving better appearance and road holding capacity. The smaller the wheel the greater the number of times it revolves per mile and the more rapid the rate of wear. A reduction of 2" in tyre diameter may mean a reduction of 20 per cent to 30 per cent in tyre life. Thus of two cars one fitted with large tyres on big diameter wheels will give far greater tyre mileages than another fitted with small section tyres on small diameter wheels. These are two important factors governing the rate of wear, and others will appear when we attempt to explain why people get nearly double the mileage from their tyres than others do, their cars and tyres being similar in all respects.

Manufacturing processes in large industrial organisations at the present day have reached such a pitch of efficiency that the quality of the product

can be definitely controlled and maintained at a given standard within very fine limits. The various brands of cigarettes, for instance, maintain a consistent level of quality, and the potential mileage in say 100 tyres of the same size and type of any leading make varies only by about 5 per cent leaving out of consideration the rare case of an unsatisfactory tyre. Yet results vary by several hundreds per cent and the reasons lie in difference in the conditions of service. It is possible in an article of this nature to indicate only the main variants in these conditions, and they may be summed up under four headings; driving methods; road conditions, tyre maintenance and mechanical causes.

Those who drive cars vary greatly in the manner in which they habitually drive; the fast driver when inclined to grumble must remember that the rate of tread wear at 45 miles per hour is double that at 35 miles per hour. He probably likes to make the most of the rapid acceleration of which his modern car is capable; wheel slippage is almost always set up, causing temporarily ultra-rapid tread wear due to abrasion against the road surface. He is conscious that his powerful 4 wheel brakes will pull his car up in a very short distance, and he "drives on his brakes", or he may use his car in a very congested district; the result is much the same. A test vehicle was run at 35 miles per hour, and stopped every quarter of a mile; half the tread rubber was worn off in 108 miles; a pleasure car driven at the same speed but stopped every mile, wore off half the tread in 3,100 miles.

The man who drives at a moderate speed, seldom uses his brakes except in an emergency and who does not always consider it a point of honour to accelerate to the limit of his car's capacity deservedly obtains far greater mileages from his tyres than the man who is always in such a hurry to get there.

The influence of the different types of road found in India on tyre wear is being studied at the present moment but broadly speaking far more rapid wear is experienced on water bound macadam than on

tarmac, although the surface of some earth roads is not necessarily abrasive. The life of a tyre in the hills is of course comparatively short; an average of 10,000 miles per tyre on the plains generally means 5,000 to 6,000 on ghat roads. This is not surprising when it is remembered how much power is required to lift a car several thousand feet; this power has to be transmitted to the road through the tyres, and the tractive effort is enormous. In the descent the brakes are frequently in action, and any one familiar with ghat roads must have noticed how the surface is churned up at the many corners, due to the lateral thrust of the wheels which actually affect the tyres.

Turning to tyre maintenance, the key to economical and efficient tyre service is to keep the correct pressure, testing all tyres at least weekly and more frequently if a slow puncture or leaky valve is suspected.

The car manufacturer of to-day when designing his springing takes into consideration the cushioning properties of the size of tyre recommended by the tyre manufacturers as being adequate for the load at a certain pressure; thus there can be no sound reason for any motorist wanting to use lower pressures than those recommended and in fact it is just as illogical to run a tyre without sufficient air as an engine without oil. It is significant that all tyre makers are of one mind on this subject, and that all types of pneumatic tyres are susceptible to the same types of failure following neglect of inflation pressure.

In extreme cases of under inflation the excessive bending of the cotton cord material causes it to break up on the shoulder of the tyre. Just as there is a limit to the number of times which a piece of wire can be bent backwards and forwards, so a piece of cotton cannot be flexed indefinitely; it is bound to break in the end. Damage of this kind cannot be repaired and a tyre may be ruined before it has served one quarter of its normal life.

An effect of under inflation or overloading—two terms expressing much the same condition as regards their effect on treads—which at first glance it is difficult to visualise is rapid tread wear. The explanation is as follows:—The part of the tread which is in contact with the road being insufficiently supported by air pressure, spreads itself out, scraping against the rough surface, particularly at the sides. On being released from load by the revolution of the wheel the tread again scrapes itself against the road in recovering its normal shape. When a tyre is used on a 'splayed' front wheel in an under-inflated condition the rapid wear will naturally be confined to one side of the tyre, if the inflation is correct, the wear will of course still be greater on one side of the tread, but it will not be abnormal and can be equalised by turning the tyre round every 2000 miles or so.

A common form of damage with balloon tyres is

the concussion burst, caused by violent impact with an obstacle such as a very large stone which flexes the cord material of which the tyre casing is constituted to such an extent in one place that a few of the strands are snapped. The damage gradually extends, the tube is trapped between the jagged edges, and a burst occurs, probably days or even weeks after the actual blow, while the outside of the tyre may show no cut or bruise. Now it has been proved that correctly inflated tyres are, under all reasonable conditions, immune from concussion bursts. This is because the tyre is properly supported by the air inside it and will not give under the blow sufficiently to fracture the casing; the shock is passed on to the springs.

It is clear, then, that correct inflation is the most important item in the care of tyres, but there are others which should be mentioned. All tyres should be gone over regularly and any small stones found in the tread should be removed. Cuts should be vulcanized by a competent repairer. If they are neglected road matter and water will find their way in and cause the damage to extend, ruining the tyre. Loose gaiters should be regarded as purely temporary expedients and should be removed as soon as a proper repair can be executed, since if left in for any length of time they will friction against the casing and cause it to break up. A flap of leather, rubber or close-mesh wire fixed under the running board at an angle is very useful in turning aside bullock shoes thrown up by the front wheels, thus saving the rear tyres. Finally, all five tyres should be used in succession; if one is used as a spare for a long period the rubber is liable to deteriorate.

We now come to mechanical causes of rapid tread wear, the chief of which are misalignment and wheel irregularity. In the normal course of wear and tear, or due to minor impacts, the wheels of a car often develop irregularities or cease to point directly in the line of motion. If a tread is worn in patches, it indicates either that the wheel is loose on its studs, that the bearings are loose, or that the wheel is out of truth or wobbling. If the tread wear is excessive, but regular all the way round and has the appearance of having been filed down, it points to continual misalignment; instead of rolling truly in the direction of motion the tyre has been dragged sideways and subjected to a fierce scraping action which may completely wear it out in a few hundred miles. This is generally found with front wheels and the majority of cases can be corrected by adjustment of the tie-rod. The setting adopted should not exceed $3/16$ inch. "TOE-IN", while "TOE-OUT" even in the smallest degree should be avoided.

The secret, therefore, of big tyre mileages is 'Look after your tyres.' Drive moderately, test pressures, examine all tyres for stones and cuts weekly, and check wheel alignment and bearings periodically.

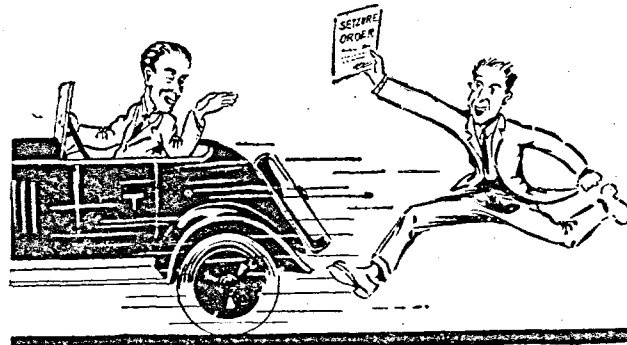
From an Owner Driver's Note Book



by
"SPOTLIGHT."

An Excellent Suggestion.

THERE is one type of road user—I cannot bring myself to call him motorist—who annoys me beyond reason: he is the immensely clever fellow who signals me to overtake him, then accelerates his car to prevent my doing so just when I am level with him. Apart from the rudeness of the action, it is a distinctly dangerous game to play especially on a narrow road. It comes then as a relief to read New Zealand has tackled the problem in a sensible manner by a definite driving law to the effect that "when being overtaken it is unlawful to accelerate after an overtaking vehicle has sounded warning." What the penalty is for this unlawful offence I do not know, but if the New Zealand authorities would like a punishment designed to fit the crime, I shall be very pleased to point a few suggestions.



"TAKEN UNAWARES"

Chinese Tax Car Rs. 275 Per Month

A tax of Rs. 257 per month is imposed on all owners of motor vehicles in Shansi, one of the interior provinces of North China. The monthly license is good on only one of the three roads; if two roads are to be used by the same car an additional license must be taken out. Petrol costs more than Rs. 47 per gallon. Motorists in India, it appears, must be thankful for small mercies.

Good and Bad Drivers.

Are you a good driver? Few motorists of either sex will admit that they are anything else

What is a good driver? How shall we know him from a bad one? While I agree that the good driver is one who takes no risks, is quick to act in an emergency and is invariably courteous and thoughtful towards other users of the road, I think he can best be recognised by his driving methods. His chief peculiarity is that he appears to drive at a uniform speed. Note the word "appears." His speed must of course vary according to conditions. There are times when he must slow down, like everyone else, but he foresees the necessity and does so imperceptibly.

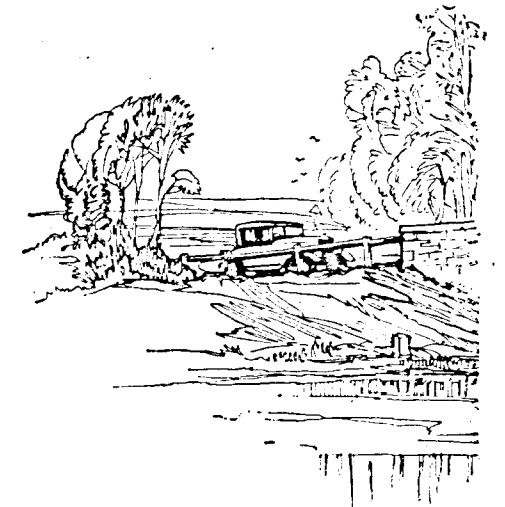
The bad driver, on the other hand, is constantly being taken unawares. He approaches danger points too fast and, at the last minute, is forced to jam on his brakes. His judgment is faulty and often he becomes alarmed and slows down, apprehensively, when there is no real need. He seems to be

always violently checking his speed, or accelerating.

He may drive just as fast as, or faster than, the good driver, but the latter will usually put up the better average.

Though a good modern car will survive a tremendous amount of mishandling, it is obvious that the bad driver's methods must impose an unfair strain on engine, clutch, brakes, transmission and tyres, while the strain on his passengers' nerves will not bear thinking about. The curious thing is that many bad drivers are bad drivers all their lives, probably because they are unconscious of their defects and so do not attempt to remedy them.

Planning Week-End Objectives - - -



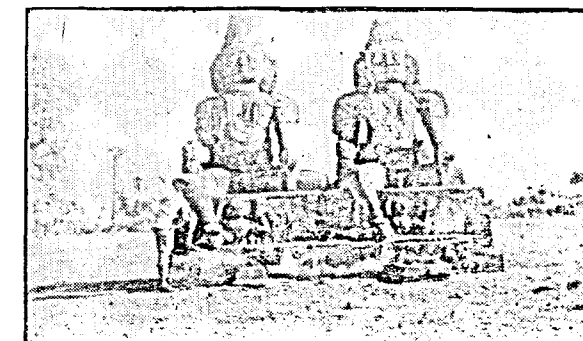
On the Value of Keeping a List of Places

: that are Likely to be Worth Visiting :

TO draw up a list of objectives for week-end runs may seem prosaic and formal. But nowadays, with the one's driving hours so limited, such a list becomes a valuable time-saving and worry-saving device.

You can waste many precious moments on a Saturday noon in puzzling and planning out a run which conforms to your own or your friends' desires. But with a selection of appropriate goals already prepared it is quite a simple question as to which one to head for.

The compiling of an "objective catalogue" is in itself a fascinating task. Attractive week-end goals may be limited in number and in range. But if you take pen and paper and deliberately begin to think them out you will be surprised how many can be discovered.



TAKE A CAMERA WITH YOU TOO!

First, there are the beauty spots, villages, familiar landmarks, and ruins only twenty miles or so from home. Scores of times, perhaps, during other trips you passed them and were attracted by them. But you never paused because you were bound for more distant, though not necessarily more entrancing, pastures. Jot them down, for the opportunity to grant them a little of the attention they deserve.

Now, too, is the chance for a little genuine exploring of the "near-distance" countryside. In almost every district there are quite a number of

comparatively unvisited spots lying just off the motorist's beaten track. You know they are there because you have seen the signposts to them or spotted their names on the map. But somehow you never seemed to have the time or the wish to turn aside and look at them: You will probably receive some agreeable surprises.

When once established, your collection of objectives grows almost automatically. Any new goal of which you read or hear you insert as a matter of habit.

But for the list to be of practical use, something else is necessary. You must know as accurately as possible how long it will take you to reach and return from each goal. The fact that Jones can return from somewhere in the dark in one hour and a half does not signify that you will be able to do the same. Your

time may be greater or less than his. That all depends upon the powers of your own car and upon your individual driving capabilities. Therefore, in every instance the estimated mileage and time required for the journey should be annotated, and the figures confirmed or rectified when the actual run is taken.

Thus the list becomes a highly serviceable and practical guide to the motoring possibilities of your area, enabling you to extract the utmost advantage from each week-end as it comes.

The 175 c.c. Triumph

The Smallest Model of
the Range has a Wonderfully Fine Performance

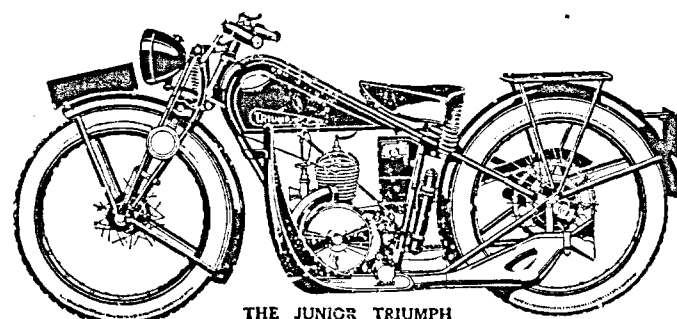
A *Motor Cycling* representative recently carried out a test of one of the first production models of the new 174 c.c. Triumphs, and it must be said at once that the performance of the machine was outstandingly good. The engine was extremely lively, and under favourable conditions a speed of approximately 50 m. p.h. was reached. At these high revs. the engine was absolutely vibrationless, nor was any two-stroke rattle noticeable. At the other end of the scale, it was possible to walk alongside the machine at a normal pace, without touching the clutch, while the engine was twostroking evenly and with no signs of any snatch.

For the small capacity the acceleration was remarkably good, and also the pulling power of the engine must be described as excellent. Even when running light, there was no sign of four stroking.

Easy Starting.

The engine started very easily, and one soon became accustomed to the rather novel procedure entailed. From cold it is necessary first of all to close the air side on the carburetter, which is not controlled by a cable. The gear lever is then pulled to first gear position; the clutch lifted and, raising the exhaust lifter trigger, the kick-starter is then used in the usual manner. The kick-starter cannot be used when the machine is in neutral. Space being somewhat limited, it was found advantageous to place only the toe of the foot upon the starter, a very little pressure being needed to turn the engine over rapidly.

Naturally, one of the points specially noticed was the transmission, and it can certainly be said that it was quite as smooth as the more orthodox separate gearbox. Rather more noise, perhaps, was noticed when the engine was over-running in top gear, but this could not be described as excessive. A perfectly silent change could be made from top to bottom, despite the somewhat large difference in the ratios, but when top was engaged there was a distinct "crutch." The clutch was almost as light, and quite as smooth and positive as the best examples to be found of the normal type.



THE JUNIOR TRIUMPH
174HP TWO-STROKE

The engine and gear-box form a unit which is both compact and cleanly fashioned. The engine is of the singleport variety and has a bore and stroke of 59.5 by 62.5, giving a capacity of 175 c.c. The carburetter faces forward and the exhaust port is cast on the near side of the barrel, the port curving forwards so that the pipe requires only a single bend. The transfer port is on the off side of the barrel. An aluminium piston is used and this fitted with two rings having special over lapping joints to prevent gas leakages, whilst the piston is mounted upon a fully floating gudgeon pin with copper end plates.

The big-end runs on roller bearings, as also does the main shaft, the bearings on the pulley side being in a double row. On either side of the balance weights of the mainshaft are cut, by Fellows gear shaper, a pair of pinions, and these mesh with two gearwheels to form the two speeds. Only two shafts are used in the unit, one the mainshaft, and the other the gearshaft. The latter runs on the roller bearings on the pulley side and in a ball race on the clutch side.

Dogs are cut on the inner faces of the gearwheels and a sliding dog is mounted on splines on the gearshaft between them. Also located between the gearwheels is a large, roughly half-moon-shaped block of aluminium, which forms the gear-control housing and also serves the purpose of filling up space in the gearbox half of the crankcase, in order to keep up the crankcase compression. This block fits into the pulley-side half of the crankcase all its flange carries a couple of screw holes for securing it and also forms a spigot which serves to locate the other half of the crankcase. Passing through the block is the pinion shaft which operates the gear selector, the teeth of the pinion meshing with a rack cut on the selector, which slides in a groove in the gear control housing.

Positive location of the gears is arranged for by means of a spring-loaded plunger bearing against notches cut in the selector. The spaces between the wheels and the crankcase, the gear control housing and the gearwheels is never more than 1/32 in. The

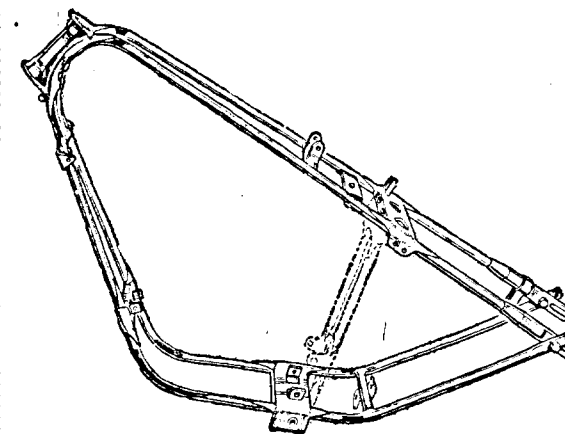
crankcase sides and the aluminium block are all die cast. The low gearwheel has a phosphor-bronze bearing, and the gearshaft is drilled and cut with oil-ways. It protrudes through its ball race and a leather packing gland on the off side and to it is keyed and locked the clutch assembly. Seven bolts hold the crankcase halves together and a cover plate is fitted over the off-side main bearing to facilitate the replacing of the rollers and also to allow for the insertion of shims to take up end play in the mainshaft.

The clutch plates are carried on a splined boss which is keyed to the gearshaft and bolted home by a retaining bolt which holds in place the kick-starter pawl spring and plate. The clutch body contains three Ferodo plates compressed by six small coil springs. The clutch is operated by a cam action in a very ingenious manner. The plate which retains the ball race is recessed on its outer surface with three dimples, into which fit ball

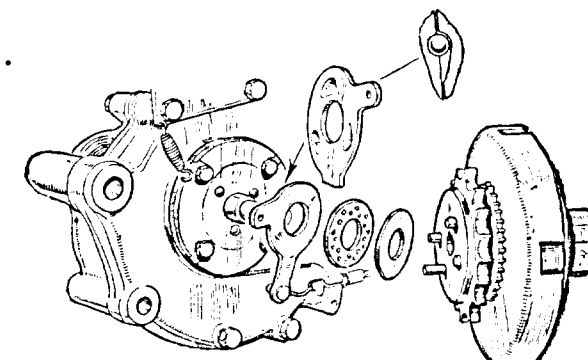
bearings. These are retained in place by a second plate, the dimples in which act as cams. The second plate has a lever and a small hook, the lever being controlled by the cable and the hook taking the return spring. The action of turning the plate causes it to move through about 1/8 in. along the shaft.

A Sturdy Clutch.

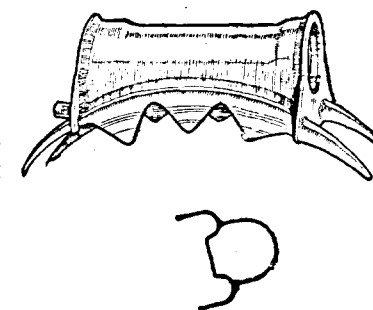
Placed between the cam plate and thrust washer is a small phosphor-bronze cage containing a number of small ball bearings. The thrust washer presses against four pins, which pass through the splined boss and their other extremities bear on a shim inside the back plate of the clutch. It will be seen, therefore, that to some extent the wearing of the clutch plates compensates for slack in the cable, so that the clutch retains its adjustment for a considerable period. Of course, a wire cable is more likely to stretch than the plates to wear, but adjustment is a very easy matter.



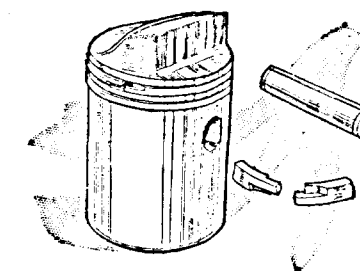
The frame, which is built up of two lengths of steel tubing, joined together by pressings, which are brazed to the main frame members.



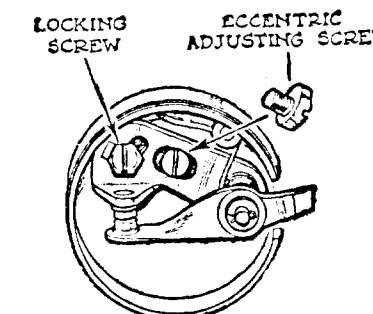
The clutch operating assembly, showing the splined boss with its four pins, the thrust washer, ball race, cam plate and the gearshaft ball-race housing.



Showing details of the head portion of the frame: the three tongues "run" with the tubes when welded.



The piston and, in the inset, compression sealing device adopted on the piston ring joints.



The contact breaker which is housed close to the mainshaft and is operated direct from the shaft.

It will further be noticed that it is necessary to kick-start the engine with the clutch released, for the kick-starter mechanism, which consists of the usual pinion with pawls engaging in notches cut in the surface of a disc secured on the splined boss, acts directly on to the gearshafts and not, as is usually the case with motorcycle clutches, on to a layshaft.

Six clutch springs bear against the other surface of the notched kick-starter disc and the cups into which the springs are fitted pass through holes cut in the dished centre of the driving plate. The kick-starter pedal, with its quadrant, is mounted on an extension of one of the engine bolts, and the whole of the clutch kick-starter mechanism is protected from mud and dust by a mud shield. The rear-drive sprocket is riveted to the clutch cover.

The ignition is looked after by an entirely new pattern of flywheel magneto manufactured by Lucas. Rotating magnets are bolted to the flywheel, whilst an aluminium stator is screwed to the side of the crankcase. A single high-tension coil deals with the ignition, and two secondary coils are provided in the lighting circuit. The contact-breaker, which is enclosed in a little aluminium box with a spring-fitting lid, is located close to the main shaft, and is operated by a cam cut directly on the shaft. The whole instrument is enclosed in an aluminium cover which makes a water-tight joint, and the terminals are also waterproof.

Novel Frame.

If the engine is novel, no less so is the frame, which in the main consists of two lengths of tubing bent into a pair of loops. The ends of the tube are lined and trapped, and are bolted together at the rear fork end. The top lengths of the tubes extend downwards, past the point where they join the bottom lengths and are slotted to provide for the adjustment of the rear-wheel spindle. No lugs are used in the construction of the frame, the cross-members and attachments being pressings and all there are brazed to the side-members. The pressings themselves, however, where they are not of a very simple type, are built up and welded. For instance, the head portion consists of four pieces and as on several of the pressings, pointed tongues of a thinner gauge than the main pressings are welded on, in order that when the pressing is brazed in place it shall "run" or harmonize with the tube to which it is fixed.

The two main tubes forming the frame itself are $\frac{3}{4}$ in. diameter and the pressings are made of a 10-gauge or 1/8 in. steel. Two saddle tubes complete the frame and serve as supports for the rear engine plates and also for the toolbox.

The gear lever, which is mounted on a pressing brazed to the bottom of the tank, is built up in a rather unusual way; the lever, itself has a short boss riveted to the centre of a disc which is formed on its lower extremity. This pin passes through the

centre of another disc, which has a short extension by which it is secured to the tank.

A fibre plate is interposed between this last disc and a pair of ball bearings are carried in holes drilled in its surface. The bearings are secured by a spring plate which is held by screws on the gear lever itself. Three recesses are drilled on the mounting plate to provide for the three positions of the gear lever, top, neutral and low and elongated holes through which the two screws pass prevent the lever from being moved past the top or low positions.

The tool kit includes extractors for the clutch and magneto flywheel, as well as a comprehensive supply of tools. A 5 in. headlamp with a dimming switch in the body is mounted on the forks, and the equipment includes a spring-seat saddle. The silencer, it is interesting to note, is exactly the same as the type used on bigger Triumph models and is easily detachable for cleaning.

The steering was beyond reproach at all speeds and under all conditions; it was possible to cross quite rough roads "flat out" without touching the handle-bars. Although no steering damper was fitted, the little Triumph showed no signs of wobbling, even after crossing a particularly deep pothole at high speed.

The rear brake, controlled by a very conveniently placed pedal on the right-hand side of the machine, although quite powerful in action, emitted a clicking noise when applied, and occasionally the pedal rode up and down. The front brake was controlled from a lever located in the usual position on the right handlebar, and retarding powers of the two are quite equal to any call which may be made on them.

Comfort was remarkably high for so small a machine, and the riding position was such that long journeys could be undertaken without the rider becoming at all tired. Even a six-foot rider felt perfectly at home and did not wish he had "left his knees at home." There was not a great deal of ground clearance, and on several occasions, when rather high-speed cornering was indulged in the footrests tended to touch the ground.

Looking exceedingly smart in its utilitarian all-black finish, relieved by the plated handlebars and other bright parts, the new Triumph can confidently be said to fill, and fill with the greatest credit, the needs of a very large and ever-growing section of the cycling public.

At its extraordinarily low price, complete with a reliable lighting system, which includes a parking light, there is no doubt whatever that this attractive and nippy little machine, with its capabilities or flattening quite severe hills, its comfort, its ability to average good speeds, goes a long way to fulfilling the ideals of the enthusiasts who have been clamouring for years for just such a machine to act as everyday transport for men all over the world.



When Passing the Car Ahead

Use Caution, Common-sense and Courtesy in Equal Proportions.

Probably one of the most difficult problems of the new motorist is to know when it is absolutely safe to overtake slower moving traffic.

This article gives some helpful information on the subject.

CONDITIONS on the road have greatly changed during the last few years. Nowadays congestion is such that there is rarely opportunity to try to overtake another vehicle. Either one can and does or one can't and doesn't and the man behind must often decide in a bare fraction of a second what he is going to do. In this brief interval he must give due consideration to both relative and absolute speeds and to road conditions; he must also decide in advance upon what he is going to do in the by no means unlikely event of the overtaken driver being prompted by inexperience or ill manners or both to do something foolish just at the critical moment.

To lay down the general principle that overtaking of any kind can be accomplished in safety only if there is adequate clear road ahead may appear to be something of a platitude. It seems to the writer, however, to be well worth while briefly to consider the commoner conditions under which overtaking definitely cannot be attempted in safety.

First Principles.

The approaching vehicle is a most fruitful source of trouble. One should never overtake in the sight of an approaching vehicle unless satisfied beyond all question that there is ample room. And in deciding on this point consideration should be given to one's speed, the other car's speed and to the speed of an approaching car, however distant.

Thus the situation may be summed up. As a corollary, it may be added that if either the car being overtaken or one possibly approaching has to slow down, the driver of the overtaking vehicle has been guilty of a definite error of judgment, even if a small one.

Conditions are similar, if simpler, when approaching cross roads or a curve. It is not sufficient to

be clear of the vehicle just overtaken by the time one is right on top of the cross-roads or curve: there must be ample room in which to slow down to negotiate the danger point ahead. And, in this case, any necessity on the part of the driver just overtaken to apply anything more than a mere touch of his brakes may be taken as prima facie evidence of recklessness and or bad judgment on the part of the driver of the overtaking vehicle.

The Hump-backed Bridge.

The rule for overtaking on a hump-back bridge or the blind crest of a hill is simple. "Don't," as Mr. Punch said of another hazard.

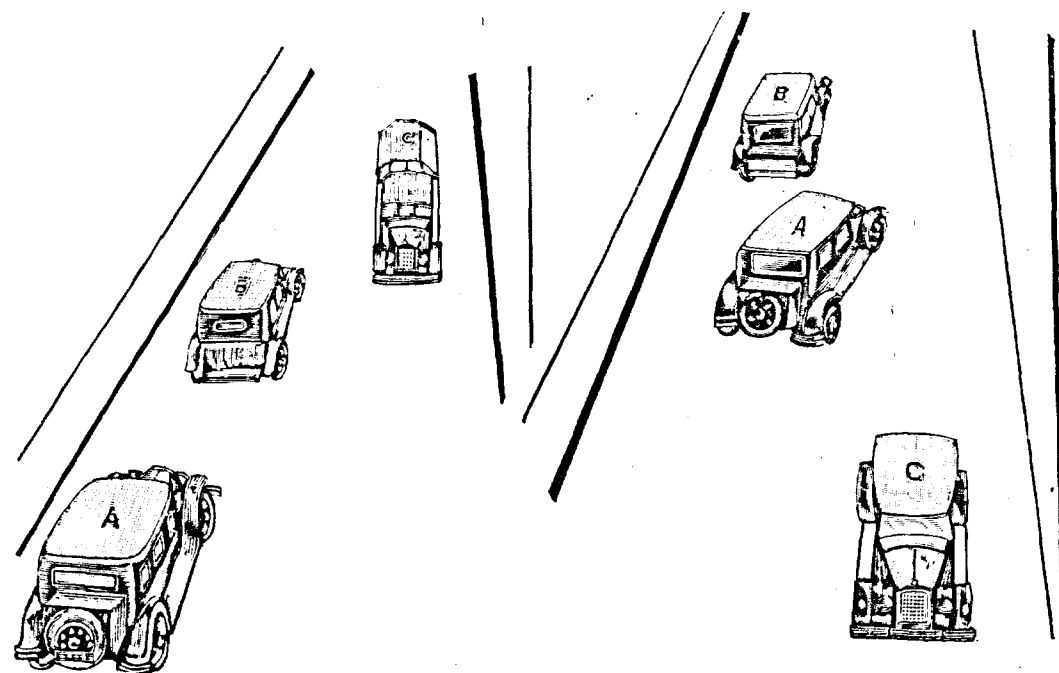
Certain other road conditions, while hardly fraught with the dangers connected with those already considered, do at least call for special caution. Thus overtaking downhill, while in itself a by no means dangerous business, may call for special caution in some circumstances. Most lorries even, exceed thirty miles per hour downhill, which means that the overtaking vehicle must exceed thirty five miles per hour to get clear in a reasonable distance.

This matters little, of course, given an absolutely clear road ahead, but at relatively high speeds the matter of the negotiation of the cross-roads or other danger points in the comparatively remote distance at once becomes one for immediate consideration. Failure to realise this results either in the danger point being taken at far too high a speed for safety or else in violent braking while as yet only a short distance in front of the overtaken vehicle.

The general mechanical condition of his own vehicle is a factor of some moment that may immediately concern the driver who has to decide whether or not to overtake under certain conditions.

The knowledge that decarbonisation is now a thousand miles overdue, so that acceleration is by no means what it should be, that the brakes should have been adjusted a month ago at least, or that not one of the four tyres has a decent tread on it should spell "Caution" with a capital C. Similarly with the state of the road at the time: a smooth concrete surface just wetted by a fine drizzle or covered by a thin film of wind may make overtaking in safety practically impossible at any speed.

A common fault in overtaking is failure to utilise the full accelerative powers of the car on the gear in use at the time. When following on and waiting for oncoming traffic to present an opening, the proper moment to start accelerating is not the moment the opening presents itself, but slightly before the last approaching car has passed—usually before it is actually alongside the vehicle to be overtaken.



Taking up the Slack.

The overtaking car is then getting nicely into its stride actually before the driver pulls out to overtake, and the time needed to get clear is thus materially decreased.

The principle employed is that of "taking up the slack" and is quite safe, always provided it does not tempt the driver to get too close before overtaking.

Warning of the intention to overtake should be given in all cases, excepting, perhaps, on a wide main road when all is obviously clear. Occasionally, especially in the case of the old and decrepit lorry travelling at a speed for which it was never designed or intended, the horn is quite useless, and the headlights may then often be used successfully—two or three flashes at close range will generally

make sufficient reflections in the driving mirror or elsewhere to be seen, even in the daylight.

No Guarantee of Safety.

The "Come on past" signal, while invariably given as an act of courtesy, should not be obeyed blindly, especially if given by any individual other than the driver of the vehicle ahead: cyclists and bus passengers, in particular, have a way of taking things upon themselves on wholly inadequate data. Even the signal given by the driver can only be taken to mean "Come on so far as I am concerned" which is no guarantee whatever.

A somewhat similar temptation to follow blindly through is sometimes presented to the driver of the vehicle A, for example, who hanging on behind B, is overtaken by another car, which goes straight on, passing B as well. A is at once tempted to reason along rather dangerous lines.

"If that car can get ahead", he thinks, "I can go too." He overlooks the fact that a car immediately ahead may constitute quite a formidable obstacle to visibility. The practice is thus one to be condemned, unless the road is wide and clear and known to be clear for some considerable distance. The tacit assumption is not always correct, and this applies especially if a tramcar, which may suddenly make its way over some section of track under repair, is involved.

And almost as necessary as the caution in overtaking is caution in being overtaken. Deliberately to obstruct an overtaking car is, to put it in its mildest form, an act of gross discourtesy and there can be no conditions that justify such conduct.

Second Hand Car Values This Month

Prospective car owners are advised to buy second hand cars now. Whilst not as good as a new car, a good second hand bargain can do much toward introducing many people to that greatest of all entertainments—the open road :

THIS is the time of the year when good second hand cars are plentiful and prices are as low as they are likely to be. As the supply falls off during the rest of the year, prices inevitably advance under the inexorable laws of supply and demand, but May and June have proved to be the months of the year when really excellent bargains are to be made. Probably this is due to the fact that many car owners take delivery of new models at this time of the year—the new year's models having, as it were, proved themselves by this time, and two or three months of observation proving to the prospective buyer by process of elimination which make justifies his choice.

As, however, the majority of new car buyers dispose of their old vehicles by leaving them with the dealer in part exchange, some further reason must be sought to account for the very large number of second hand cars which are on the market at this time of the year. The leave-car problem has, perhaps, much to do with the matter because, whilst excellent part exchange arrangements are possible against delivery of a new car for use in Southern India, there are many difficulties in the way of a reasonable arrangement being made for the purchase of a car for use in England. Unless the buyer is prepared to bring the car out with him when he returns to India, the dealer will not be prepared to entertain any part exchange deal; and the car owner is, therefore, left with the task of disposing of his car himself—relying for his transport in England on one or the other of the Home leave car service dealers who undoubtedly offer very advantageous repurchase terms.

These cars come upon the market for private sale and many of them are disposed of at prices considerably lower than those their owners would ask for them in simple part exchange. The result is that the months of May and June see Southern India motor owners purchasing second-hand cars at prices much below the usual market value and during these months wise prospective owners should obtain good secondhand cars which can be unhesitatingly recommended as the next best thing to new at bargain prices. Time was when the purchaser of a second-hand car had to go warily, but nowadays, owing to the increased efficiency and reliability of modern cars, even a novice may buy with every confidence of care-free motoring and the indulgence in the multitudinous pleasures which a car makes possible.

A second-hand car cannot of course be quite the same as a new one, but it must be remembered that a new car becomes second-hand almost as soon as it is bought, and for this reason alone it is to be recommended that the prospective motorist purchases now a car of reputable make two, three, four or five years old, rather than wait until he can buy a new one. This is the time when good bargains are to be obtained, and if the trial run satisfies all ordinary demands as to speed and running, and condition of the car betokens that it has been treated kindly by its previous owner, it may be accepted with every confidence as to its reliability and economy of running—for cars of the past three or four years have been built to give unfailing service for many, many years in the hands of the careful motor owner.

"Picking up Pins" in Modern Industry.

BY R. Q. MURPHY.

An interesting article on waste elimination.

Reprinted from the "Studebaker Wheel."

ONE of the favourite "moral stories" of the banking fraternity designed to point the way of success to young men, has as one of its most important properties, a common ordinary pin. The story has been told and retold so many times that the authenticity of its details is not above question, but nevertheless, it illustrates a point.

A young man, it seems, approached a prominent financier for a position in his banking house. Unfortunately, there was no opening. The young man turned and retraced his steps toward the door. Suddenly he stopped, stepped back a pace. He stooped, picked up a pin lying on the floor deposited it in a pin tray on an adjacent desk and departed.

The financier observed the act and turned to an associate.

"That young man will go far," he prophesied. "Any young man who can dream dreams and still see stray pins at his feet, will make his mark."

The young man justified the forecast. According to story, his name was John Pierpont Morgan. And, whether the name in connection with the fable be accurate, it is certain the moral pointed is entirely sound. It is the saving of "pins" that is the foundation of success not only in banking and meat-packing—where they boast that they use all of the pig but the squeal—but in every branch of industry. It is this assiduous elimination of waste that enables the 1930 rupee to buy a whole rupee's worth of automobile.

The broader policies of saving—the elimination of unnecessary outside profits through one-profit facilities—are well known. But there are other examples of thrift which although not so spectacular, nevertheless result in tremendous savings. They are comparable to picking up pins on a giant scale.

One of the units of a large car factory's industrial plant of particular interest to visitors is the power house, the heart of the factory. Here is generated the energy which drives acres of whirling machinery, the energy which operates the powerful presses and drop-forge hammers. Visitors marvel at its smooth efficiency—and they marvel still more when they learn that six of the boilers in one of the power houses are fueled with "worthless" refuse from the factory.

Saw dust and splinters from the wood-working departments, tiny scraps of paper, all of which might represent a source of expense in carting away are made to pay dividends in power.

Further, every few days, the boilers are raked out and a valuable quantity of metal recovered and sold. Bits of wire, nails, tiny steel chips from machine departments which might seem too insignificant to bother with, assume amazing proportions when the accumulation from acres upon acres of factory floor space are considered. Even the cinders from the boilers are not wasted. They are valuable as track ballast and as such are disposed of to railroads.

Pass on to that part of the factory where large sheets of steel are being made into body parts. The sheet is fed to the press perhaps to make a couple of body panels. That part of the sheet trimmed off goes on to another press where smaller body parts are stamped out, the trim formed into cable clips and other similar parts. The final scrap—scarcely a handful of lacy steel left from what was once a great sheet—is baled up and sold to steel mills.

Similarly, the flashings, unused portions trimmed off forgings, are also saved and sold to steel mills. Even the flying scale, you see in the form of sparks as the greater hammer pounds out crankshafts,

camshafts, connecting rods and like parts is collected and used for filling in spots in the plant roadways.

In another department, motors are being "broken in" on dynamometers under the eyes of skilled inspectors. For a time they are run by electrical power, then they are operated under their own power. Is that energy wasted? Not by any means. As soon as they start to "eat fuel," they are coupled up with a dynamo and made to build up electrical current again. About the only thing lost is the roar of their unmuffled exhaust.

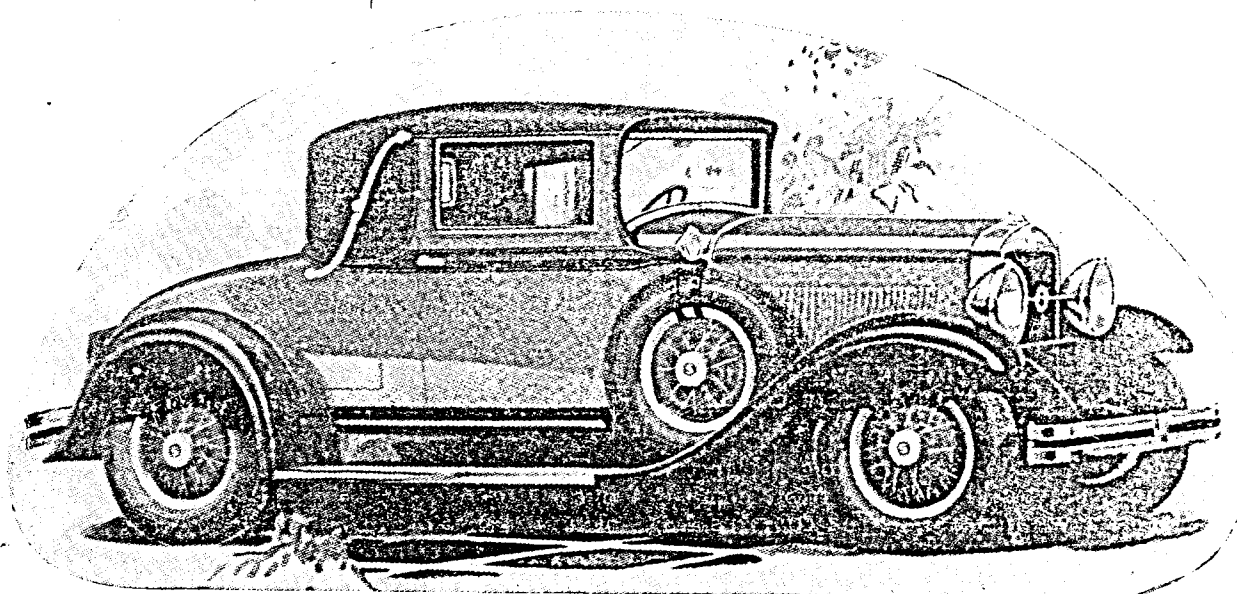
Of course, modern efficiency does away with any waste effort, too. In the upholstery department, sixty layers of cloth are cut at once. Two men in less than half a day can produce the required upholstery for sixty cars.

Perhaps no manufacturing industry has been so alert to conserve manpower as that engaged on modern car manufacturing. Not only does it employ a notable corps of efficiency engineers, but it also offers inducements to the men themselves to think out more efficient ways in which to perform their various jobs. Cash bonuses and promotion are offered workmen for acceptable suggestions on new and better methods.

In one operation in manufacturing gears, a tool known as a chamfering cutter is used. This tool resembles a drill with a specially ground cutting face. It costs about two dollars to purchase. One Studebaker workman discovered that this cutter could be made from old drills. So now these tools have been replaced with specially ground drills which have been broken in drilling operations and otherwise would have represented a loss.

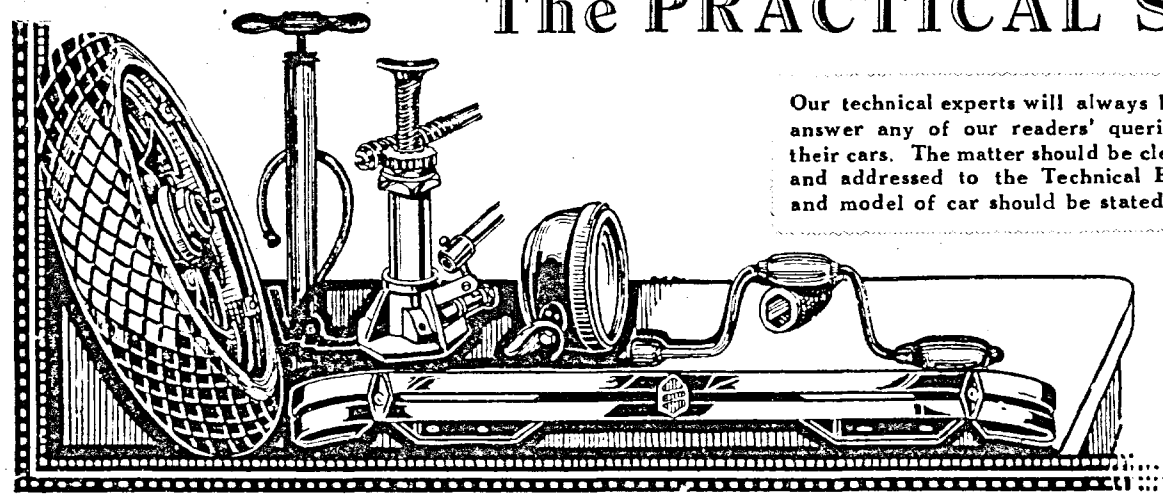
Another employee was not satisfied with the manner in which connecting rod cap nuts were tightened. The old method called for the use of a hand wrench to start the nuts one at a time and the use of an air wrench in tightening them down. This employee devised a system whereby a wrench might be made to turn down both nuts simultaneously and tight. His idea more than doubled one man's efficiency and at the same time bettered the quality of the work.

And so it goes on. A little saved here. A job improved there. Small—almost insignificant—when considered individually, but in the aggregate convincing evidence upon the reason why motorists of to-day are enabled to buy better-built motor cars at lower cost than ever before.



AN EXAMPLE OF AUTOMOBILE VALUE MADE POSSIBLE BY THE 'PICKING UP OF PINS'
—A STUDEBAKER PRESIDENT EIGHT.

The PRACTICAL SIDE



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 Importance of Correct Brake Compensation.

Various Simple Ways of Testing Brakes Described

—How Compensating Mechanism is Arranged.

IN the days when front-wheel brakes were unknown the importance of correct compensation thrust itself so forcibly on the attention of a driver that he could not afford to overlook it; in most cases, however, it looked after itself, for having only two brake drums it was a simple matter for the designer to incorporate a reliable method of compensation, which theoretically at any rate, was all that was required.

With the advent of four-wheel brakes and the great all-round increase in efficiency which has resulted, there is an increasing tendency for owners to forget about their brakes, because even when neglected they give a degree of efficiency immeasurably superior to that obtained with only two brakes at the rear.

With many types of four-wheel brake lay-out, however, the necessity for periodical brake tests is desirable, for often the compensating mechanism employed serves merely to balance the front pair and the rear pair of brakes that is to say, there is no compensation between the pair of brakes, which are pulled on by levers keyed to a common cross-shaft, and the same applies to the rear wheels.

Where cost has not to be taken into consideration it is, of course, practicable to have triple compensation, that is, a whiffle tree, as the compensating device is often called, to balance the front pair and the rear pair, and individual whiffle trees to balance each pair separately; but this introduces the complication of a number of extra moving parts and calls for expert adjustment. We, shall, therefore, confine ourselves to a system of the

single compensating type which is popular now-a-days, and which is clearly shown in an accompanying illustration.

To obtain the best results it will be observed that individual adjustment of the front pair and of the rear pair of brakes is essential. If one set of brake shoes say, that on the off-side rear wheel, comes into contact with the brake drum first they will limit the travel of the rear-brake operating mechanism, with the result that the near-side shoes will not make contact with the brake drum, and it is quite possible on a smooth road for the off-side rear wheel to lock—possibly without the driver's knowledge—and for braking efficiency to be reduced by a substantial amount, as neither rear brake is then doing really useful work.

There are several ways of obtaining correct brake equalization so as to avoid this. The most common system is to jack up both axles so that all wheels are clear of the ground and, with the pedal lightly applied by an assistant, to go round each wheel in turn, screwing up or unscrewing the adjusting nuts until the resistance to rotation of the wheels is equal.

This method of checking brake equalization has one drawback. It assumes that there is no distortion whatever of the brake drums. It is easy to see, however, that if one drum is slightly oval—the error may be almost too small to measure in the ordinary way—the wheel will tend to free itself in one place and bind in another. The only solution

(Continued on page 187.)

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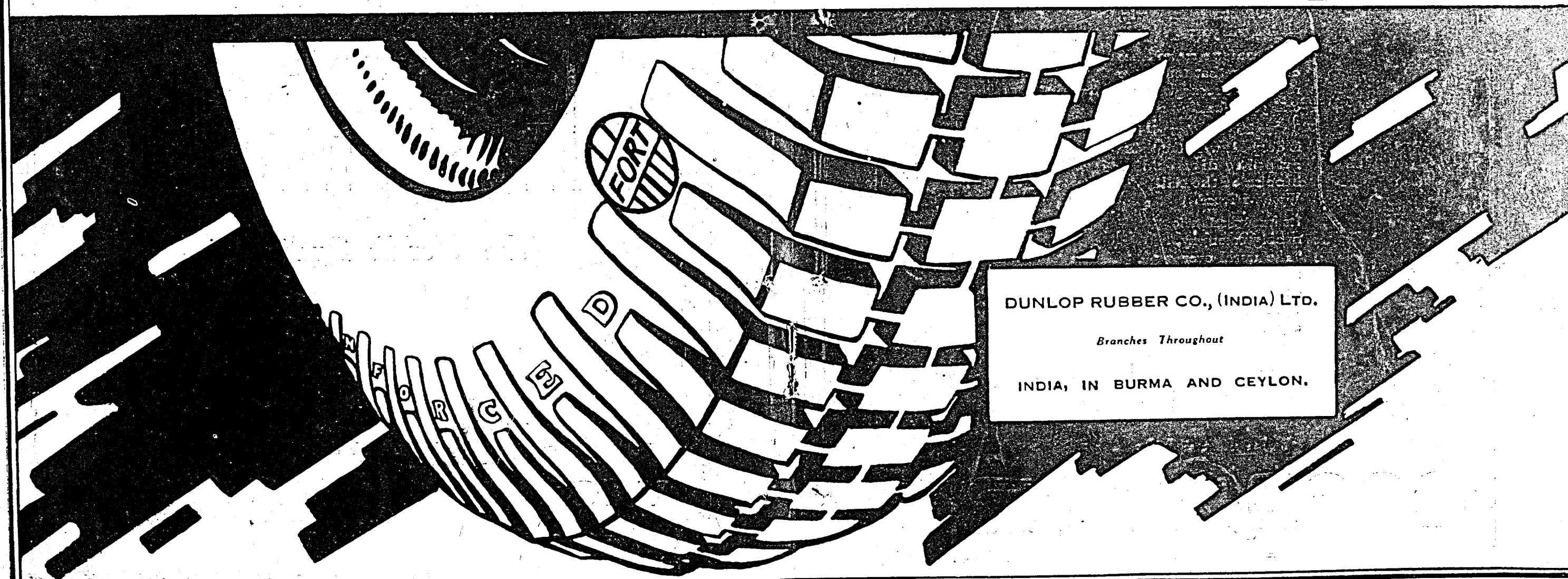
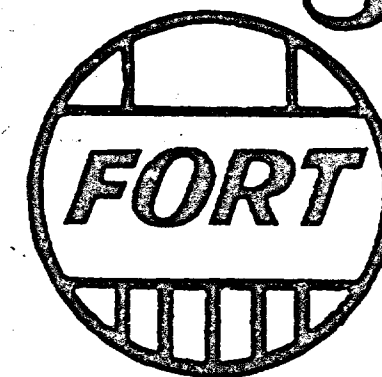
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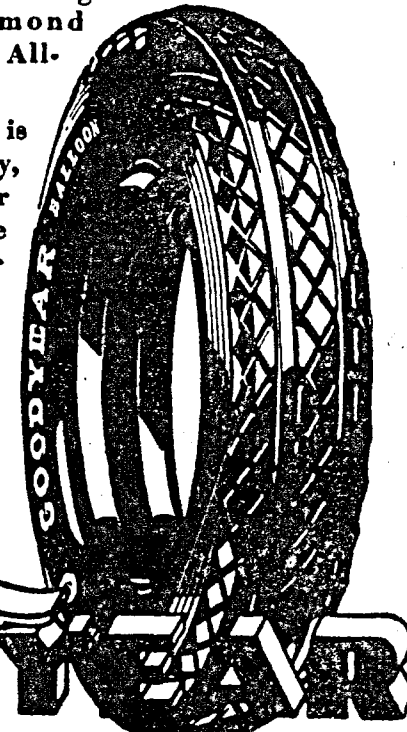


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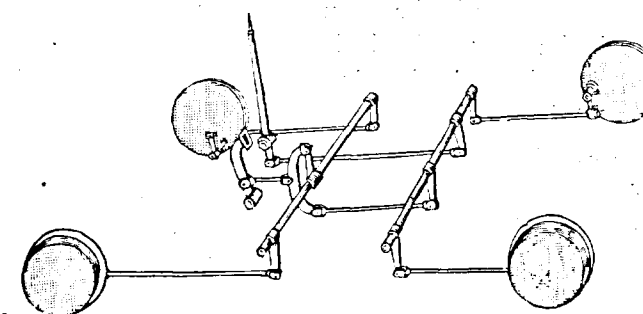
Importance of Correct Brake Compensation.

—Continued from page 182.

is to strike an average, as it were, and this is what is generally done in cases of this kind.

The second system is that adopted by up-to-date garages which have a special appliance upon which each wheel in turn is mounted. The operator turns a handle and the resistance to rotation is measured on a dial, the brake pedal meanwhile being kept in a set position by a special long extension jack which is wedged between it and, say, the seat support.

The third method of testing is to take the car on a greasy road and, having accelerated to about 20



A typical f.w.b. system. Compensation is provided only as between the individual pairs of brakes.

m. p. h., to apply the pedal with such force that if the brakes are out of adjustment one or more of the wheels will lock. When the car has been brought to rest the wheels that have locked will clearly be indicated by skid marks on the road. The car should then be driven on, turned round and the test repeated on the same area of grease. If the wheels which locked during the first test lock again during this test, it will prove that their adjusting nuts want pulling up.

The advantage of this method of procedure is that the efficiency of the brakes is being tried under actual running conditions, and if the adjusting nuts are pulled up half a turn at a time, the test being repeated after each adjustment, it should be possible to obtain very satisfactory equalization.

In dry weather, of course, such a test is impracticable for obvious reasons, but from time to time it is quite easy to adopt a happy-go lucky check by placing the hand on each brake drum in turn at the end of a run during which it has been necessary to use the brakes fairly frequently and to notice whether the temperatures of the drums are about equal.

If one appears to be hotter than its neighbour on the same axle, the adjusting nut on the cooler brake assembly may be tightened up half a turn and the

test repeated when opportunity offers. It should be pointed out, however, that this is not always a conclusive test, for the presence of even the thinnest film of oil or grease on one drum will reduce

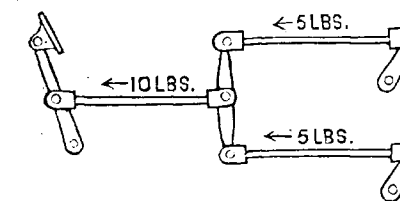


Fig. 1.—Perfect equalization The pull of 10 lbs. is halved at each brake operating arm.

the co-efficient of friction to such an extent as to cause the oil-free drum to become much hotter, even although the brakes are properly adjusted. This indicates quite clearly that before a man sets to work with the fixed intention of adjusting his brakes with meticulous care he should first of all remove the drums and thoroughly clean all the friction surfaces.

Digressing for a moment, we may discuss an aspect of braking which is not only bewildering, but often thoroughly alarming to novices. It is what is called "judder", and it usually makes itself evident, just before the car comes to rest, in the form of what feels like a heavy blow on the chassis. More than one novice has hastily alighted from his car after this has happened for the first time, in order to make sure that one of his wheels has not passed over a large obstruction like a brick. As a rule, the remedy for a fault of this kind rests with the service station of the make concerned, but in the writer's experience it can be caused when, owing to maladjustment, one drum is doing extra heavy duty.

The heat test is invaluable as a first resort when these conditions become noticeable, for the faulty drum will often be too hot to touch. The adjustment

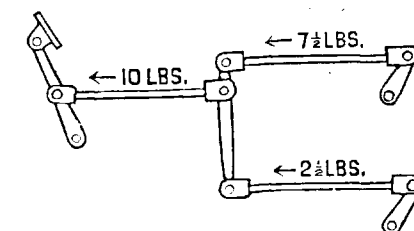


Fig. 2.—Showing how the initial pull of 10 lbs. can be divided up as required by altering the leverage.

should be slacked off appreciably to begin with, and if this reveals signs of improvement the brakes should be adjusted equally by jacking up both axles, as in the first method described.

To return. For the benefit of folk who buy cars in much the same way that they would buy a gramophone that is, without having any knowledge

of mechanics the following brief explanation of the principle of compensation may be given.

Figures 1 to 3 show a break pedal, its master rod the whiffle tree and the secondary rods operating the front and rear-wheel brakes respectively. In

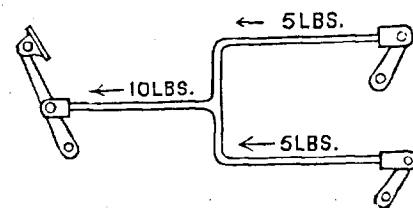


Fig. 3.— Perfect equalization without any compensating mechanism. This calls for accurate adjustments.

Fig. 1 the end yoke pins on the whiffle tree are at equal distance from the centre yoke pin, therefore the pull is evenly divided between the two rods, but the effort is, of course, halved by the time it reaches the brake arms shown. In Fig. 2 the upper rod is, let us say, $2\frac{1}{2}$ inches from the centre yoke pin, whilst the lower arm is $7\frac{1}{2}$ inches from the same point. This obviously, divides the leverage in the proportion of one-quarter and three-quarters, the upper arm benefitting by the stronger pull. Fig. 3 shows the same imaginary brake layout without any compensating medium, but with the brakes still used on some cars. In a case like this it is easy to imagine what happens when one brake comes on first. It receives the full extent of the pull of the

pedal rod, whilst its neighbour exerts no useful pull at all, because the shoes to which it is coupled are not making contact with the drums.

What is surely the nearest approach to theoretically perfect equalization of brakes is that produced by the modern lightly efficient hydraulic system. Each individual brake assembly is operated by the movement of a piston in a cylinder; the actuating medium is a fluid such as oil compressed by a piston in a master cylinder, the piston rod being coupled to the brake pedal. It is imperative, of course, that each of the brake cylinder pistons be of exactly the same area, otherwise greater pressure will be applied to one brake than another; moreover, it would be extremely difficult to correct the error unless infinitesimal adjustment of the effective length of each brake lever were provided.

It can be well understood, however, that the whole subject of brakes is too involved to be dealt with in a comparatively short article. It has been the writer's intention merely to emphasize certain points which drivers only too frequently overlook and which may make all the difference between efficient and non-efficient brakes. Careful attention to the points mentioned should result in greater efficiency and consequently a greater feeling of safety.

Giving a Trial Run.

Useful Advice to Owner-drivers when
Trying to Sell a Second-hand Car.

SOME private owners, when trying to sell a car, do not handle the trial run in quite the same manner that an expert would adopt. They are prone to talk too much. I do not mean to infer that sellers should gloss over obvious faults, but it is not necessary to allude to the fact when an engine knocks slightly on a hill, or when the springs squeak or when it is necessary to change gear on a gradient that the car ought to climb in top.

The prospective purchaser of a second-hand car goes out for a trial run because he wishes to observe for himself how the vehicle runs. That being so, the wisest course to adopt is to drive in the ordinary way, not trying any stunts on steep hills, or speed bursts on the level, unless such a demonstration is specially requested.

It is far better to let the prospective buyer do the

talking. If a man has been persuaded to take a trial run, he is probably keen on the car already, and likely to purchase if he approves of its running. Hence it is better not to talk too much, even in praise of the car; but to let its obvious merits sink in, and to concentrate on the driving.

Given a car in moderately good condition, there is no need to do more than drive it around in a reasonable way, and to show off its paces without ostentation.

One last word — if there is anything that is radically wrong with the car, such as a broken spring leaf or a leaking radiator, it is far better to point the fact out at the onset, rather than to have it found out by the would be purchaser after the trial run, and perhaps the deal, have been concluded.

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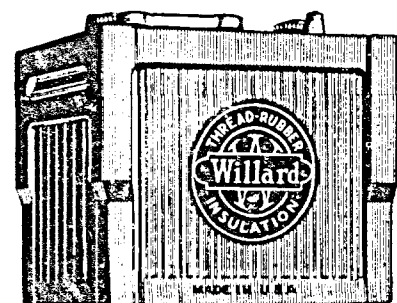
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Renovating the Hood.

Simple Advice to Enable Owner-drivers to Keep an
Oft-neglected Part of the Car in the best Condition.

IT used to be stated that the average life of the one time popular waterproof khaki double-texture twill hood was about two years, but a good number perished miserably before arriving at that age. Small repairs to the fittings or the covering material when signs of leakage appear can be done easily and efficiently, and executed by the amateur, with very little trouble or cost, providing he acquires one of the several brands of materials that are as satisfactory as they are simple in application.

With the ordinary twill-covered hood that has become dirty, stained and discoloured, and only requires cleaning, it will be found if the hood is taken off the body and stretched open to its full length and well scrubbed with a strong solution of Hudson Extract in hot water, and finally sponged off with cold water, and left stretched out until dry, if the material is of a good quality, that it will have greatly improved its appearance.

Should the hood show signs of leakage it can, when dry, be easily proofed by brushing on three or four pounds of rubber solution, mixed with solvent naphtha. After the first coat is thoroughly dry a second coat should be applied. This rubber solution is very effective, and does not affect the colour of the material, and is in no way sticky.

Of the several special compositions available ready prepared for rejuvenating leaking and faded twill hoods, one that can be well recommended is the Kaynex Reviver, a waterproof flexible dressing manufactured by the Kaynex Manufacturing Co., Ltd. It is a preparation specially supplied for treatment of the buff or khaki twill hoods as well as for those in black or grey; it dries in a few hours,

NOTHING makes an otherwise well-kept touring car look very much second-hand more than a neglected, tattered, or leaking hood. Handled carefully, a modern hood lasts a very long time, but just as the panels of a car require attention to keep them in condition, so do hoods require an occasional washing and dressing to cleanse and proof them against wet and rot. The accompanying notes give useful hints to owner-drivers on this important subject.

and imparts a new appearance without stiffening the material, yet it makes absolutely waterproof.

Rubberol, is another composition, quite simple in application, which both waterproofs the material and restores its colour without destroying or hardening the canvas or twill material, and leaving it absolutely pliable.

In regard to hood dressings it is as well to point out that they come under distinct categories, as a vast number of the present day hoods of the better class of cars are covered with a coated fabric, coloured and grained to represent leather. These hood cloths are extensively used in black, and vary much in quality, and in the lines of the folds are sometimes liable to crack and show sign of wear.

But the coated fabrics have several advantages over uncoated fabrics, notably, they do not shrink so readily and are much less easily soiled.

For most purposes these lightweight pliable leather substitutes, when in black, can be proofed and restored in appearance by making a paint of drop black in turpentine, mixed with gold size and Japan: by giving two or three coats, a glossy appearance will be imparted all over, and water cannot then penetrate. This process of making paint and its application demands from the amateur the most careful treatment, so we would advise the application of one of the many leather revivers obtainable.

The Kaynex leather hood dressing, will be found a useful waterproof jet enamel that can be easily applied, care being taken thoroughly to cleanse the top before use. Yetol for leather and Canvasol for black canvas hoods are both dressings that withstand the variation of all climates, and from this

list it will be seen that the motorist has a wide choice of compositions, requiring little skill in use, to keep the hood in a serviceable condition.

Patching of small holes or rents by an underlay requires great care in solutioning and blind stitching. Some manufacturers supply patches in which the tops can be mended in a neat and permanent way. To prepare the hood for a patch the hard surface of the rubber is scratched so that the cement or glue used can get a good hold. These patches are waterproof, easily and quickly applied.

Of recent years of the overall length of hoods and the throw forward of the front part have been considerably shortened, lessening the liability to side rock and eliminating the possibility of rattle. If rust is allowed to enter where the hinge jointed stays are riveted, chattering is certain to be found at the bows. On the best class of hoods the joints of the metal arms are fitted with brass washers which, by judicious lubricating and tightening, secure freedom of action without noise. If a bow should be broken, or through undue strain a fracture appears, it can be easily repaired by taking the size of the bow by wrapping a piece of stiff paper round the broken parts and having a tinned tube made from the paper pattern, with the seam soldered about 12 in. long, so as to slip over the fractured parts for a length of 6 in. With a good, tight fit a strong job can be made.

Bow sticks in wood sometimes fracture at the neck plates where attached to the body stays. A new end can be attached by sawing off the broken parts and making a metal sleeve. The makeshift sleeve must then be driven so as to fit tightly on the good section, fixing it with flat head rivets. The new portion of bow is then fitted up into the open ends of the sleeve and held fast by rivets. This makes a better job than a splice, and can be done without entirely removing the bow from the hood.

Too much stress cannot be laid on the importance of keeping hood coverings clean, both from the standpoint of appearance and service. Time spent on keeping the hood in first-class condition is time very well spent.

Probably 90 per cent of the deterioration of hoods is caused by neglect, which occurs both on the road and in the garage. Most hoods of the one-man type have transparent sheets of celluloid inserted at the rear for visibility when reversing, and in heavy rain pools of water are liable to collect on the hood, forming rivulets where the celluloid panels are stitched which, if not carefully wiped or dried off, soon rot the material.

Celluloid hardens and cracks in service and in course of time turns yellow or otherwise becomes discoloured, destroying visibility. With the large lights of side curtains it is liable to buckle, and it is as difficult to take out these irregularities as it is to restore the material to its original condition of colour and clearness.

With a little care new celluloid lights can be inserted easily after carefully removing the old one. The new light can be slipped into its place and carefully restitched around its shape with strong thread.

Considering the mechanical repairs that are frequently executed by the motorist, the care of the hood should be comparatively easy, and a little patience will enable even the novice to keep this part of his car neat and tidy.

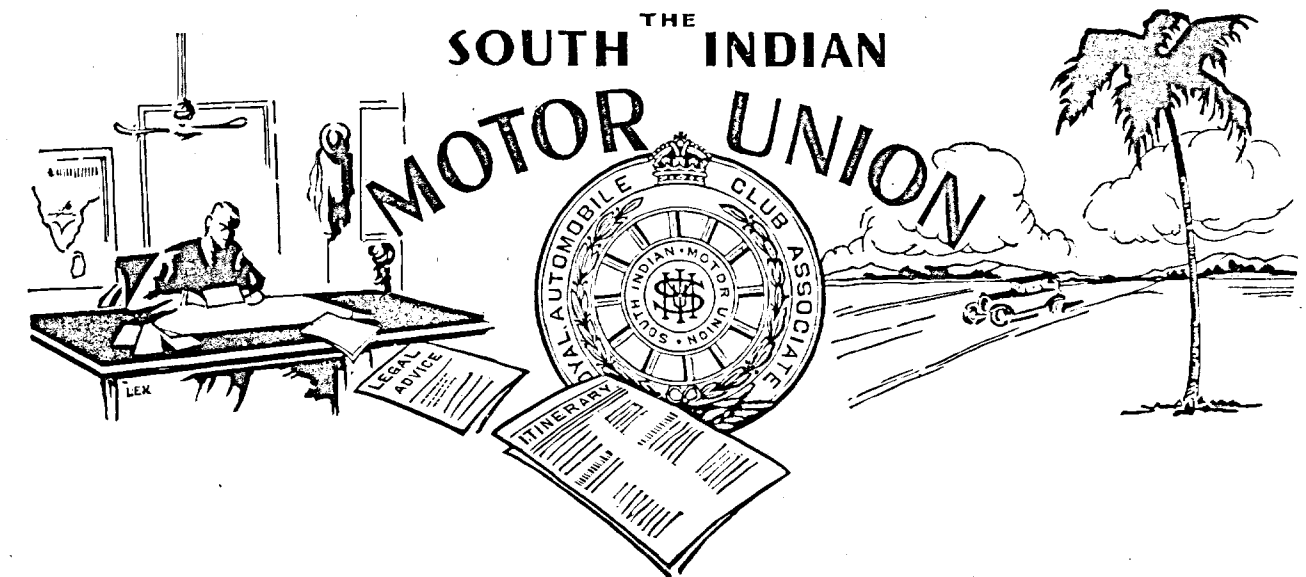
TRY KULU'S PREMIER ORCHARDS.

For Fruits combining Quality, Good Measure and Cheapness try the **Aramgarh and Raisan Orchards, Kulu, Punjab.** 9 lbs. nett Fruit—William Pears Rs. 4/14; American Apples Rs. 5/2; French Plums Rs. 6/8; V. P. P. inclusive all charges.

(These Orchard Apples awarded Special First Prize and Medal in the Poona Flower Show of 1929.)

ARAMGARH & RAISAN ORCHARDS

P. O. RAISAN, KULU, PUNJAB.



The Annual General Meeting

Proceedings of the Annual General Meeting of the Union held at the Union's registered address in Mount Road, Madras on 26th May 1930.

Opening Address.

In opening the meeting, Colonel Burnett said that he had to announce the inability of Mr. K. R. Simpson (The Chairman of the Committee) to attend the meeting owing to his having to proceed to Bombay at short notice. This did not give him (the speaker) much time to prepare a lengthy address, a fact which he thought the meeting would fully appreciate.

Regarding the Balance Sheet and Statement of Accounts, which he understood had been duly circulated to all members, he had little to remark. The financial position of the Union was stable, and a steady increase of membership was proportionately increasing its income. The excess of income over expenditure (Rs. 337) during 1929 was not large and although less than the figure for 1928 (Rs. 1639) was considerably more than in 1927 when the Union's affairs were run at a loss of Rs. 868.

In considering this point it must be born in mind that for five months of 1929 a permanent Secretary had been employed and a fairly large sum had been written off the value of furniture, office appliances, and fittings which had not been done in former years. The speaker further remarked that the Union was not a profit making concern and its policy was to spend its income to the best advantage and in the best interests of its members, consequently the small excess of income over expenditure appeared to show careful management.

As regards the Committees' Report on the work done during the year, Colonel Burnett said this had been printed and circulated to all members. It was fairly full in detail and he could say very little to amplify it. One point he wished to lay great stress on and that was the necessity for enrolling more and still more members. It is true that the sole source of income to the Union is the subscription of members, and that for this reason an increase is essential. However, there is one other very important reason why the membership should be increased—that being the necessity for establishing, beyond a shadow of doubt, that the South Indian Motor Union actually is a body representative of private motorists in the Presidency, which its present membership of approximately 800 does not indicate. There are in Madras City alone, some 7000 private motor cars, and it may be taken that in the mofussil there are another 7000 so we really only represent about one seventeenth, and with such a proportion our representations cannot be expected to carry much weight in the Legislative Council when combating measures for increased taxation; while District Boards which do not at present spend on road improvement one half of the revenue derived from motor vehicles might be forced to do so if the membership of the S. I. M. U. was double what it is. The speaker proceeding, reminded his audience that there were many signs that local governments were looking toward motor car owners as a source from which to gather increased revenue. In Bombay the registration and license fees had been doubled just recently. It behoved all motor car owners to combine in order to have their case clearly represented when increased taxation was in the air and there could be no better way of doing this than by joining the

local Automobile Association. He realised that members did keep the interests of the Union in view, but he again exhorted, them, to make every endeavour to increase the membership of the Union by getting all of their motoring friends to join.

The items of the Agenda were then taken up.

PROCEEDINGS.

The Balance Sheet for the year 1929 as already circulated to all members was accepted and passed, and the Annual Report of the Committee for 1929 which had been circulated to all members, was deemed satisfactory.

New Officers

President.

Brigadier F. G. Gilles, Commandant Madras Brigade Area.

Vice President.

Mr. C. Gopal Menon

Chairman.

Mr. K. R. Simpson

Vice Chairman.

Rao Sahib T. Rajagopalachari.

Honorary Treasurer.

Mr. D. B. Snowden

The following seven Committee members were elected by ballot :—

- Mr. F. E. James M. L. C.
- Dewan Bahadur Govindoss Chathurbhujadoss.
- Mr. G. A. Johnson
- „ K. Govindachariar
- „ J. S. Wilkes
- „ A. T. Luker
- „ W. Fyffe, A. M., I. C. E.

The following gentlemen were elected trade members by ballot :—

- Mr. F. G. Luker
- „ V. C. Mac Cracken.

Mr. W. F. S. Vaz, B. A., B. Sc., LL, E., Barrister was duly elected law member of the Committee, being unopposed.

Major F. Church proposed that the subscription of motor cyclist members should be increased from

Rs. 5/- to Rs. 10/- in order to come into line with other Automobile Associations in India.

The proposal was discussed at some length, Mr. Snowden, Mr. A. T. Luker and others moving that the increase of subscription was not necessary at the present juncture, especially since an increase in membership was so essential.

The proposal was put to the vote and was NOT carried.

A proposal that the designation of the Union should be changed from :—

“The South Indian Motor Union”

to

“The Automobile Association of Southern India. originally put forward by Major F. Church (The Secretary) was fully discussed in all its aspects.

Mr. G. A. Johnson proposed, Mr. C. Gopal Menon seconding, that the change of designation be approved and given effect to from 1st June 1930, and the proposal was carried.

Consequent on the change of designation the question of changing the monogram “SIMU” on the Union's Motor Badge to “A. A. S. I.” was discussed. A design obtained from the R. A. C., London for the die of which an initial fee of £3/10 will be charged, was examined and approved.

The cost of providing a new monogram to be substituted for the old monogram on badges already in possession of members will be Rs. 3/- approximately. Badges issued after 1st October 1930 will have the new monogram and will be the same price as the old badge (i.e. Rs. 15/-).

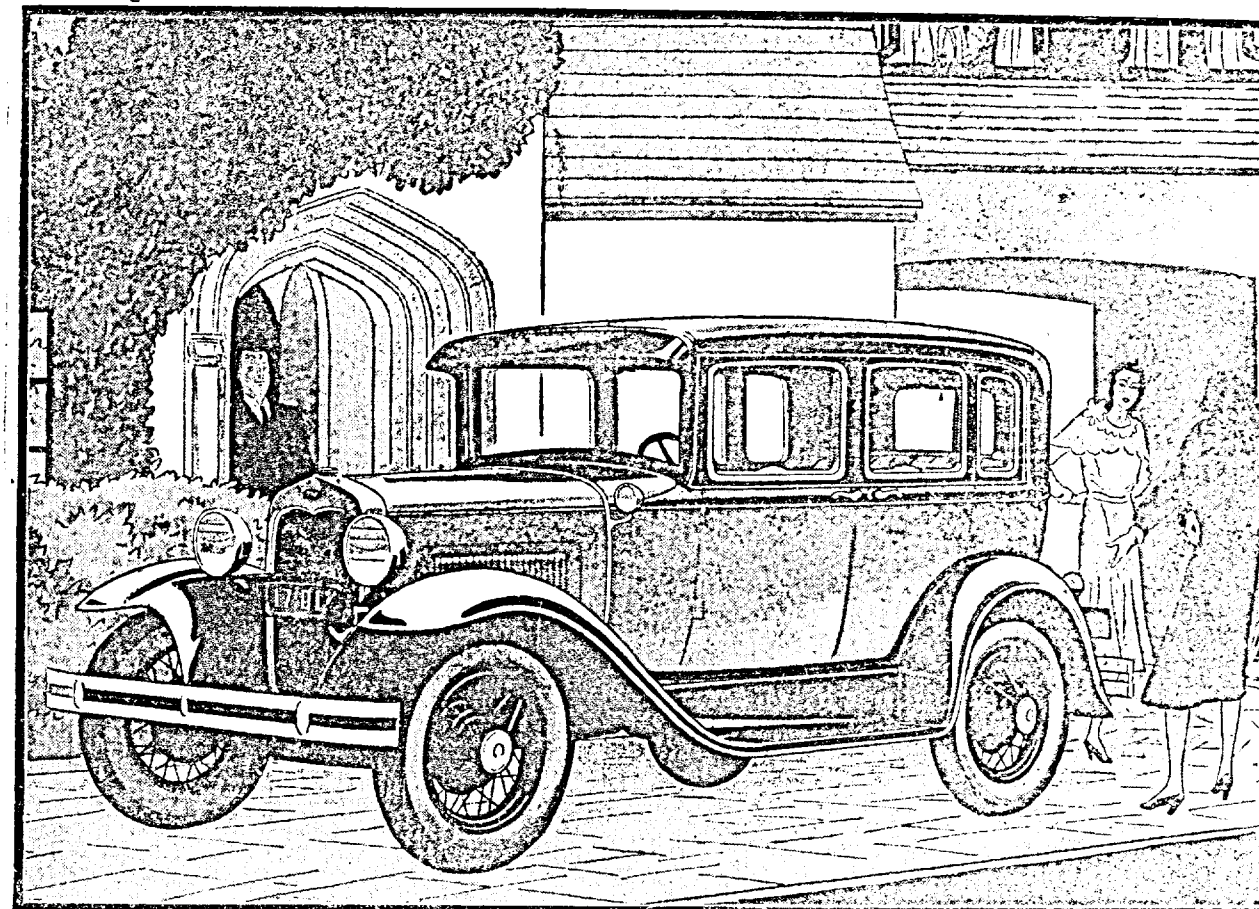
Mr. A. T. Luker proposed, Rao Sahib T. Rajagopalachari seconding, that the change of monograms on badges already in possession of members should be optional and that members desiring to change should meet the cost (Rs. 3/-) informing the Secretary of their desire to do so.

The proposal was put to the vote and carried unanimously.

The Chairman announced that Mr. C. B. Cunningham, the new Inspector General of Police, and Brigadier F. G. Gillies, Commanding Madras Brigade Area, had graciously extended their patronage to the Union and consequently would be added to the list of Vice Patrons.

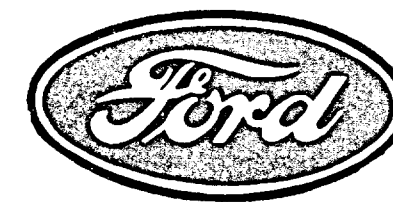
F. CHURCH, MAJOR (Retd.),
28th May 1930. Secretary.

New Beauty for the New Ford



THE NEW FORD TOWN SEDAN

NEW ROOMY BODIES..NEW STREAMLINES..NEW COLOURS..NEW RADIATOR..NEW MUDGUARDS..NEW WHEELS..NEW LARGER TYRES...RUSTLESS STEEL...NOW MORE THAN EVER, THE NEW FORD IS A “VALUE FAR ABOVE THE PRICE.”



FORD MOTOR COMPANY OF INDIA, LIMITED, BOMBAY.

Secretary's Report for May 1930.

The month has been a busy one for, in addition to the preparation of the Annual Report and arranging for the Annual General Meeting, considerable correspondence has ensued with officials on subjects of interest to motorists generally.

Two items relating to Customs Duty have been referred to the Authorities in India.

- (i) The possibility of avoiding the detailed examination of luggage carried *through* Pondicherry by motorists, by introducing a system of sealing boxes, trunks etc., at point of entry and accepting intact seals at the point of exit. This measure is intended particularly for Indian motorists who have to pass through French Territory on the way to towns in South Arcot and Tanjore. The suggestion is still under consideration.
- (ii) The acceptance of a "Guarantee" in lieu of actual payment of Customs Duty on a motor car imported temporarily into India by visitors from Ceylon. At present such visitors have to pay full duty and only obtain a refund of 7/8ths on exporting their cars; whereas the Ceylon customs authorities accept "guarantee" and give a 100% drawback on cars which leave the Island within twelve months of date of arrival. This concession is being considered by the Board of Revenue.

The Automobile Association states that new regulations have been issued by the Ministry of Transport for the temporary admittance of vehicles belonging to motorists from abroad visiting this country. These regulations grant four months' exemption from tax to visitors. In future this exemption will be reckoned within the calendar year - 1st January to 31st December - and not as heretofore within one year preceding the date of importation.

Level Crossings.

Cases of unnecessarily long closures of various level crossing gates have been referred to the S.I.R. and Mysore Railway authorities, with satisfactory results. Members should report any glaring cases to the Secretary in order that the Railway authorities, who are quite sympathetic, may deal with offending gate keepers.

- (a) The collecting of information regarding places where "advance direction signs" can be suitably erected is proceeding.
- (b) (i) With very few exceptions, District and Municipal authorities are granting "rent free" permission for signs to be erected on main roads indicating the direction to local petrol supplies. A suitable sign has been designed and will, it is understood, be

a finger board half red and half green, with the word "Petrol" and an arrow in white.

- (ii) In connection with these "Petrol Signs" a controversy has arisen between the Vacuum Oil Company and the S. I. M. U.; the former are of opinion that, by permitting the Burmah Shell Company actually to erect the "Petrol Signs" on the rent free sanction obtained by the latter from local Boards, undue advertising facilities are being accorded to that Company. It is thought that the design approved for the signboard is one which cannot be regarded as a definite advertisement for any particular brand of petrol.
- (iii) Correspondence is proceeding between the Union and the P. W. D. with regard to the types of Automobile and direction signs that should be standardised for use throughout the Presidency. The Union advocates those already adopted by the Chingleput District Board, which most closely follow the designs approved by the Ministry of Transport in the United Kingdom. However, as there are in India many motor drivers who cannot read English it has been suggested that lettering on caution signs can be omitted, a "picture" being sufficient to indicate to all the form of danger that a road sign is intended to indicate, provided the "picture" are those universally adopted and now well known to all motorists.

The possibility of erecting a number of special S. I. M. (now A.A.S.I.) signposts on Nilgiri Roads is receiving careful consideration. Estimates of the cost of such signs have been called for.

The standardisation of milestones in the presidency has also been the subject of correspondence, the S. I. M. U. recommending the adoption of stones of the same design as those found on the main roads in Coimbatore District. These stones stand at right angles to the road, and show the name of and distance to the termination town of the road and the next large town in the direction in which a traveller is proceeding when he is approaching the stone. Thus there should be four different names and four different distances on the stone, two on each side.

Endeavours are being made to obtain accurate information as to the location of milestones on all trunk and through roads in order that itineraries can be rendered more useful and complete, and to accurately locate bridges, culverts, etc., reported to be under repair or construction, or not fit to carry traffic. This information is not included on touring maps as issued by the Madras Survey Office but is most essential for reference purposes.

Tolls.

No information is yet available as to the fate of the Bill for the abolition of tolls and municipal taxes on Motor Vehicles and the substitution of a Provincial Tax was drafted by the Madras Government in January of this year.

It is known that considerable opposition is being put forward particularly by Local Boards who naturally do not wish to lose control of a profitable form of Local Fund income. It is to be hoped that members of the Legislative Council will not allow this argument to influence them unduly. Roads are essentially a matter of provincial, rather than local interest and it must follow that revenue derived from roads which must of necessity, be spent on roads, should come under provincial control.

Indian States have agreed to consider their toll systems as soon as the Madras Government arrive at a decision on the matter so far as British India is concerned, in order to obtain reciprocal concessions.

Several enthusiastic members have furnished useful criticisms of route itineraries which have been supplied to them for tours. It is hoped that many more will follow this lead and it is only by such criticisms that inaccuracies in itineraries and changes in road conditions are brought to the notice of the Secretary.

A system of "Flood Reports" is being established whereby the Secretary will get early and regular information when important river crossings become impassable for motors during monsoon seasons and heavy storms.

It is of interest to note that while the Rice Causeway was flooded and closed to traffic during the storm in May, the Wenlock Causeway was passable, though also flooded to a depth of 1' 2"

Maps of Coorg and of portions of Behar, Orissa and Bengal have been purchased for office use. They are not recommended for ordinary touring purpose.

A design has been approved for a Road Map, for publication with the Guide Book now under compilation. This map will be in three colours only - black for outline, railways and lettering, red for roads and distances and blue for sea and waterways. It will be in three sheets of about 20 by 30 inches, scale 16 miles to 1 inch. By excluding hill features and district boundaries it is hoped to produce a clearer and more useful map than the Madras Presidency Road Map at present on sale.

Motor Vehicles Rules.

A draft of Part I of the Model Motor Vehicles Rules drawn up by the Indian Roads & Transport Development Association and suggested for standardisation throughout India, has been received and copies circulated to all Committee Members for perusal. It will be fully discussed at the next meeting of the Committee.

A copy may be obtained (on loan) by any interested member, on application to the Secretary.

In this connection it may be noted that the S. I. M. U. suggested that the draft rules should contain clauses to govern road traffic other than Motor Vehicles, but the I. R. & T. Development Association regret that as some of the suggestions do not come within their terms of reference, they cannot be included.

The points are:—

- (i) The substitution of a Highway Code for the Motor Vehicles Rules.
- (ii) All road using vehicles to be registered and carry registered numbers for identification purposes.
- (iii) Owners of all animal transport vehicles to be responsible for their drivers and that they know rules of the road.
- (iv) All animal transport vehicles to carry a lamp fixed on right side showing a white light to front and a red light to rear.
- (v) Reports of disregard of the rules of the road by drivers of animal transport vehicles to be accepted by police and repeated complaints against any one owner's vehicles to lead to suspension of registration.

Owing to the present political situation, members were informed that an ordinary motor insurance policy does not insure against damage through civil commotion, and told that the Union's Official Insurers would cover agent civil commotion for an additional premium of $\frac{1}{2}$ per cent with a minimum of Rs. 15. Information has now been received that, owing to the heavy risks involved, it is not possible to have a stable rate of additional premium, and that it will change from time to time. At present it is $\frac{3}{4}$ per cent with a minimum of Rs. 25.

Members resident on the West Coast having complained of the high cost of petrol in West Coast towns, enquiries are being made with a view to ascertaining the reason for the existing prices and whether a reduction can be effected.

Endeavours are being made to establish, with the aid of various garages and repair workshops, a roadside repair (or "Get you home") Service. It will be some time before a decision will be arrived at as the funds of the Union will not admit of an independent service being maintained.

The Automobile Association, London, has made arrangements whereby for a small charge, members can be met on the outskirts of London and be piloted or driven to their destinations in London or the suburbs. Visitors from overseas should find this an exceedingly useful service.

The Annual General Meeting of the South Indian Motor Union was held on 26th May 1930. This is reported elsewhere in this issue.

Membership.

During the month of May 17 new members were elected while two members resigned.

F. CHURCH MAJOR, (Retd),
4th June 1930. Secretary.

NOTES and NEWS

*Presenting the News of
the Month together with
Interesting Notes and
Items from all Sections
of the Field*

New Triumph "Seven" Dealers.

Admirers of the small light "baby" car will be interested to hear that the Southern India dealership for the Triumph Super Seven has been taken up by Messrs. Madras Motor Sales. This car is one of the most luxurious of the small horse power models built in England and its ability to perform even the hardest task efficiently captivates all who have drivers of cars—be they small or large. Mr. J. N. Norridge of Madras Motor Sales informs us that he anticipates big sales for this car in Southern India. When the fact is taken into consideration that the Triumph is the most graceful of all small cars, and the prominent feature of it spells quality of material and of design, there is little doubt that the Triumph which has put into such wonderful performances elsewhere will still further enhance its reputation in Southern India. We understand that Messrs. Motor Sales will be only too pleased to give readers of *The South India Motor Owner* full particulars regarding this Super Seven, and we can unhesitatingly recommend all prospective buyers to investigate the claims of this latest "baby" model.

Change in Title.

There is every possibility that the motoring organisation which has hitherto been known as the South Indian Motor Union will shortly change its title to the Automobile Association of Southern India. This change certainly seems to convey more description of the objects of the organisation and should result in a greatly increased membership. Major Church, the indefatigable Secretary of the Association, has repeatedly impressed upon us the fact that he will at any time welcome an opportunity of talking over the advantage which motorists may obtain from the Association with all keen motor owners. Motorists in Madras and throughout Southern India may certainly derive many benefits from membership, and we hope to see this organisation grow rapidly during the next few months.

Reliability Trials for Southern India.

From time to time it has been suggested that some form of reliability trial be organised for motorists in Southern India. Certainly it seems that Southern India is very much behind in that keener appreciation of the pleasures of motoring to be found in the recreative and sporting side of the subject. Any proposal that aims to bring forward greater utilisation of the car for purposes other than mere transport will have the full support of *The South India Motor Owner*. Though there are of course, difficulties at the moment, it would seem that a sufficiently large number of keen motorists gather together to discuss the subject we have no doubt obstacles which seem insuperable at the moment quickly prove easy to overcome. There seems to be a misconception as regards reliability trials particularly amongst Indian owners. The reliability trial is not a speed contest—in fact it is rather the reverse—and whilst trials are always sporting there is positively no danger either to motorist or spectator. The form of trial which is most popular elsewhere in India, and England, is more a trial of brains and judgment in so far as the driver is concerned and sheer inefficiency as regards the machine. The technical editor of *The South India Motor Owner* will be pleased to hear from all who are in the least degree interested in this subject.

Will Plating become Obsolete.

One of the most interesting developments of recent months has been the adoption of stainless steel for the bright work on automobiles. The outstanding example of this is that of the Ford Motor Company which has standardised this new metal for all bright work on the new Ford models—radiator, lamps, bumpers, hub caps. We believe that this metal has been stringently tested under all sorts of conditions and even if the metal is scratched and wetted periodically no corrosion appears to mar its surface. Just how widespread the use of this metal will become remains to be seen, but the fact that Ford has adopted it would seem to indicate

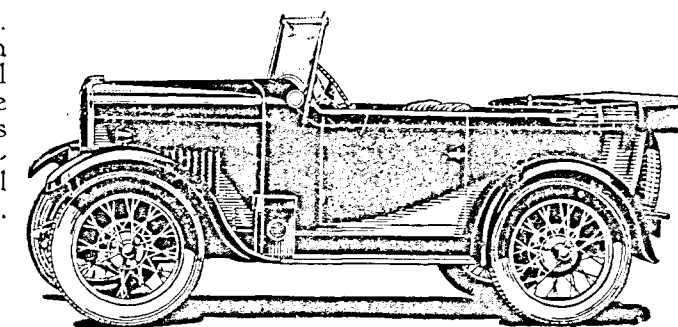
that it will be of general use in a very short time. Unfortunately the many months of frantic research to solve the problems of chromium plating will have been wasted in so far as automobiles are concerned, and also hundreds of expensive plants which have been erected for the purpose of supplying chromium plating for car manufacturers will have their main business taken away from them. Such however is the difficult path of progress.

Successful Second Tour of General Motors Caravan.

With approach of the monsoon General Motors Travelling Caravan returned from the field to Bombay on June 6th. The caravan on its second tour visited Nasik, Dhulia, Jalgaon, Khamgaon, Akola, Amraoti, Nagpur, Indore, Mhow and Rutlam after a tour lasting nearly two months. Every district visited revealed the Travelling Caravan to be an educative factor of considerable value in promoting idea of modern transportation among the rural classes, and the practical demonstrations carried out by the caravan personnel did a great deal to convince building contractors, mill agents, and other industrial organisations that the use of motor transportation brings about real economy and saves considerable labour and time, which is not the case with bullock-cart transportation. It is a noteworthy fact that a large number of interested persons asked for actual demonstrations of what a motor truck could do in the way of hauling cotton and agricultural products at less cost and time. This was in the nature of valuable propaganda and a practical way of promoting sound ideas regarding motor transportation in the minds of the rural population.

At every halt, thousands of peoples come to see Motor Exhibition and it is estimated that in the nine districts visited by caravan nearly 300,000 people witnessed the Motor Show. In Nagpur, for example, more than 45,000 people attended the shows given by the caravan during its five days stay in that city. The caravan has undoubtedly proved an invaluable medium for contacting with vast numbers of the rural population which, in the main, is illiterate, and whom no amount of printed or visual publicity can hope to reach with the same degree of success as a Mammoth Motor Exhibition like the one sent out by General Motors India, Limited, which attracted eager crowds at the different places it halted.

No better means of publicity could have been conceived to acquaint car and truck buyers in the mofussil districts has well equipped the Bombay Plant is to supply those parts and service facilities without which truck owners cannot operate with profit or car owners derive complete motoring satisfaction.



*The Finest Small Car
in the World —*

Examine the Triumph Super Seven closely, observe the graceful outline and beautiful finish, the luxury of the interior appointments, pneumatic upholstery, restful cushions. Sit in this super car and drive it and you will then appreciate why it is called the Triumph Super Seven

7.9 H. P: HYDRAULIC 4-WHEEL
BRAKES: 40. M. P. G.

TRIUMPH
Super Seven

Distributors:

**MADRAS MOTOR SALES
COMPANY,**

P. O. Box 343,

MADRAS.

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.

CARS

Armstrong-Siddeley

BERHAMPORE ... K. M. Paul & Sons.
SALEM ... V. S. Rajagopalan & Co.

Buick.

CALICUT ... English and Scottish Joint Co-operative Wholesale Society Ltd.

MADRAS ... R. Patel & Co.
SECUNDERABAD... Madras Cycle & Motor Mart.

COLOMBO ... C. A. Hutson & Co., Ltd.

Cadillac.

CALICUT ... English & Scottish Joint Co-operative Wholesale Society Ltd.

MADRAS ... R. Patel & Co.,
SECUNDERABAD... Madras Cycle & Motor Mart.

COLOMBO ... C. A. Hutson & Co., Ltd.

Chevrolet.

BANGALORE ... Hankervis Ltd.
BELLARY ... V. G. Asquith & Co.
BERHAMPORE ... Ganjam Automobiles.

BEZWADA ... Row & Brothers.
COIMBATORE ... T. Stanes & Co., Ltd.

KOTTAYAM ... Ramkrishna Chettiar & Co.,
MADRAS ... Motors & Services Limited.

MADURA ... T. V. Sundram Iyengar & Sons., Ltd.
OOTACAMUND ... Stanes Motors (Nilgiris) Ltd.

SECUNDERABAD... Hormusjee & Co.
TRICHINOPOLY ... Aiyer Motor Co.

VIZAGAPATAM ... Andhra Engineering Co.
COLOMBO ... Rowlands Garage Ltd.

Chrysler.

MADRAS ... Jones & Co.

Chrysler Plymouth.

BERHAMPORE ... K. M. Paul & Sons.

Dodge.

BERHAMPORE ... K. M. Paul & Sons.
COIMBATORE ... United Motors Ltd.
SALEM ... V. S. Rajagopalan & Co.

Erskine.

MADRAS ... Romer Dan & Co.

Ford.

BEZWADA ... Ford Stores and Service Station.

CUDDALORE ... S. Gopala Iyer.
KATPADI ... V. M. Ratnavelu & Bros.

VELLORE ... V. M. Ratnavelu & Bros.

Hillman.

MADRAS ... Simpson & Co., Ltd.
OOTACAMUND ... Simpson & Co., Ltd.
TRICHINOPOLY ... Simpson & Co., Ltd.

Hupmobile.

BERHAMPORE ... K. M. Paul & Sons.
SALEM ... V. S. Rajagopalan & Co.

La Salle.

CALICUT ... English & Scottish Joint Co-operative Wholesale Society, Ltd.

MADRAS ... R. Patel & Co.
SECUNDERABAD... Madras Cycle & Motor Mart.

COLOMBO ... C. A. Hutson & Co., Ltd.

Marquette.

CALICUT ... English & Scottish Joint Co-operative Wholesale Society Ltd.

MADRAS ... R. Patel & Co.
SECUNDERABAD... Madras Cycle and Motor Mart.

COLOMBO ... C. A. Hutson & Co., Ltd.

SALES & SERVICE GUIDE—
(continued).

Morris.

BERHAMPORE ... K. M. Paul & Sons.
COIMBATORE ... United Motors Ltd.
SALEM ... V. S. Rajagopalan & Co.

Nash.

BANGALORE ... Hanumanthappa & Co.
MADRAS ... Motor Reconditioning Station.
PUDUKOTTA ... Motor Trading Co.

Oakland.

COIMBATORE ... T. Stanes & Co., Ltd.
COLOMBO ... Rowlands Garage Ltd.

Oldsmobile.

BANGALORE ... Nankervis Ltd.
BELLARY ... V. G. Asquith & Co.
BERHAMPORE ... Ganjam Automobiles.

BEZWADA ... Row & Brothers.
KOTTAYAM ... Ramakrishna Chettiar & Co.

MADRAS ... Motors & Services Ltd.
MADURA ... T. V. Sundaram Iyengar & Sons Ltd.

OOTACAMUND ... Stanes Motors (Nilgiris) Ltd.
SECUNDERABAD... Hormusjee & Co.

TRICHINOPOLY ... Aiyer Motor Co.
VIZAGAPATAM ... Andhra Engineering Co.

COLOMBO ... C. A. Hutson & Co., Ltd.

Overland.

MADRAS ... Simpson & Co., Ltd.
OOTACAMUND ... Simpson & Co., Ltd.
TRICHINOPOLY ... Simpson & Co., Ltd.

Peugeot.

MADRAS ... Romer Dan & Co.

Pontiac.

COIMBATORE ... T. Stanes & Co., Ltd.
COLOMBO ... Rowlands Garage Ltd.

Singer.

MADRAS ... Simpson & Co., Ltd.
OOTACAMUND ... Simpson & Co., Ltd.
TRICHINOPOLY ... Simpson & Co., Ltd.

Studebaker.

MADRAS ... Romer Dan & Co.

Triumph.

MADRAS ... Madras Motor Sales.

Vauxhall.

COIMBATORE ... T. Stanes & Co., Ltd.
COLOMBO ... Rowlands Garage Co., Ltd.

Willys-Knight.

MADRAS ... Simpson & Co., Ltd.
OOTACAMUND ... Simpson & Co., Ltd.
TRICHINOPOLY ... Simpson & Co., Ltd.

TRUCKS.

Chevrolet Trucks.

BANGALORE ... Nankervis Ltd.
BELLARY ... V. G. Asquith & Co.
BERHAMPORE ... Ganjam Automobiles.

BEZWADA ... Row & Brothers.
COIMBATORE ... T. Stanes & Co., Ltd.

KOTTAYAM ... Ramakrishna Chettiar & Co.,
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TRICHINOPOLY ... Aiyer Motor Co.

VIZAGAPATAM ... Andhra Engineering Co.
COLOMBO ... Rowlands Garage Ltd.

Dodge Trucks.

BERHAMPORE ... K. M. Paul & Sons.
COIMBATORE ... United Motors Ltd.
SALEM ... V. S. Rajagopalan & Co.

Fargo Trucks.

MADRAS ... Jones & Co.

Federal Trucks.

MADRAS ... Simpson & Co., Ltd.
OOTACAMUND ... Simpson & Co., Ltd.
TRICHINOPOLY ... Simpson & Co., Ltd.

Ford Trucks.

BEZWADA ... Ford Stores and Service Station.
CUDDALORE ... S. Gopala Iyer.

KATPADI ... V. M. Ratnavelu & Bros.
VELLORE ... V. M. Ratnavelu & Bros.

G. M. C. Trucks.

CALICUT ... English & Scottish Joint Co-operative Wholesale Society Ltd.

MADRAS ... R. Patel & Co.
SECUNDERABAD... Madras Cycle and Motor Mart.

COLOMBO ... C. A. Hutson & Co., Ltd.

Overland Buses.

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'THE South India Motor Owner' is issued on the 15th of each month. It aims to furnish the latest and most authoritative information on all matters relating to motors and motoring under South India conditions. Contributions and correspondence on all matters coming within the scope of this journal are solicited and prompt remittance will be made for all acceptable matter. Contributions should preferably be illustrated.

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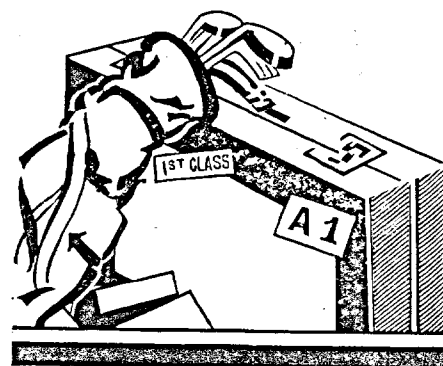
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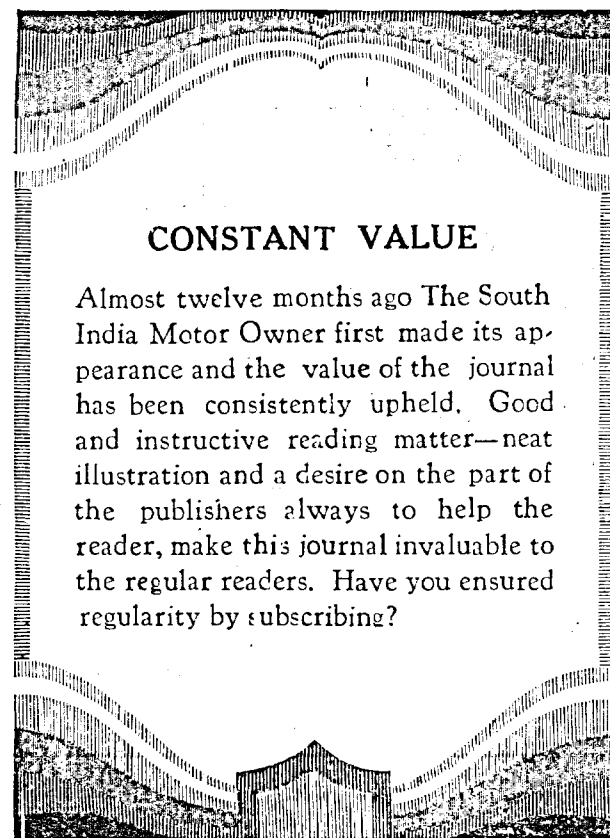
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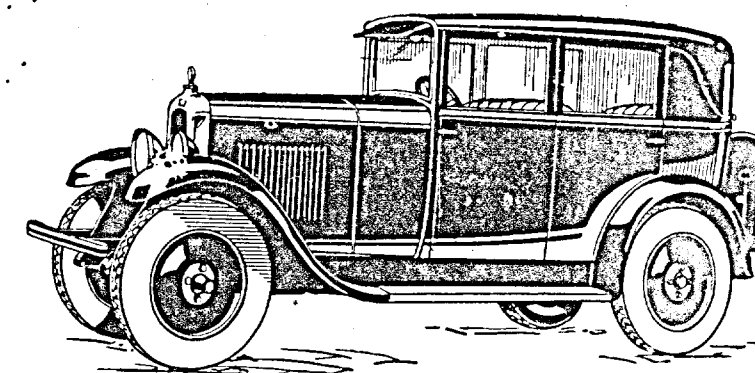
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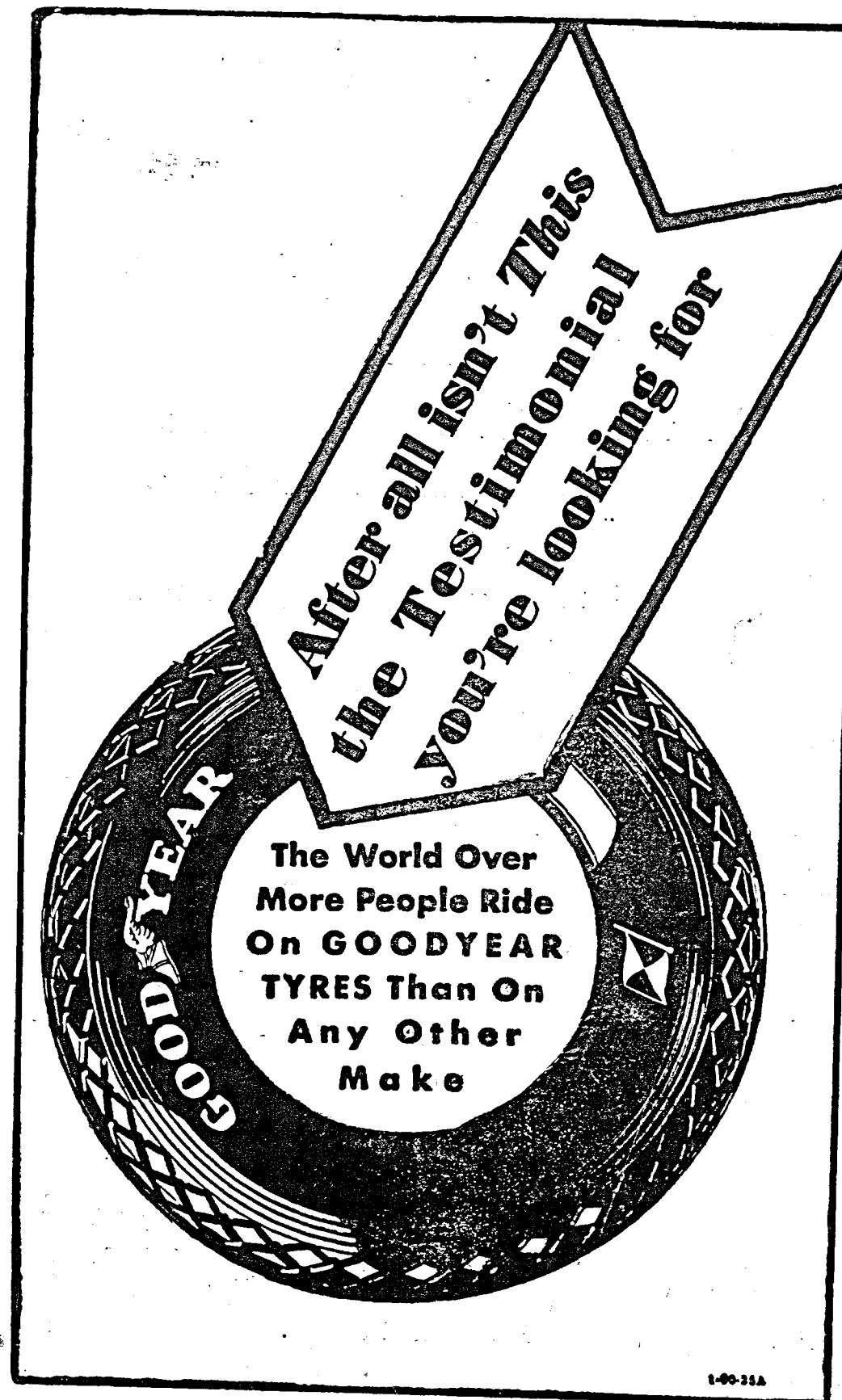
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SOUTH INDIA

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. 6

July, 1930

Price As. 8

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EDITORIAL

How Will Design Develop.

Tendencies which may be said to indicate possibilities.

TWO years ago it seemed extraordinarily unlikely that anything in the nature of a radical change would affect motor car design as it then was. That there would be improvements was undoubted, but if one thing seemed more certain than another it was that the main lines of design would run in accepted channels.

To-day it seems certain that we are on the eve of considerable and important changes, and the interesting part is that these changes principally affect the control of the car—that is to say, the tendency in most new designs is to make it possible to handle the car without as much skill as heretofore, or without the exertion of as much muscular effort.

Pride of place in the latest changes must be given, without hesitation, to two devices which have been described in these columns, devices in both cases intended to remove for ever the principal bugbear of motoring, which has been the difficulty experienced by unskilled drivers in handling the ordinary sliding type of gear mechanism.

Gear Changes without Skill.

Both devices undoubtedly eliminate skill as a factor in gear changing, and by that very fact alone they rank as something more important than anything else which has been produced for the car for many years. In fact, when the gear box becomes entirely proof against mishandling, as it should do within a couple of years, the car will not only have been brought within the reach of many more people, but, at one bound, as it were, will have become a more efficient machine.

Given the fact that gear can be changed by simply depressing a pedal and moving a lever from one slot to another slot, making no calculation of car or engine speed in the process, and it once become possible that the ordinary owner-driver will use the gear box properly—that is, he will be able to engage an intermediate

gear at high speed and therefore take advantage of the power which can be obtained from a small-bore, high-speed engine.

This, in its turn, means the disadvantages of the really small-bore engine have practically disappeared. The present demand for a car which will do its work on top gear only is simply the result of the dislike of gear changing. Top gear work entails not only larger engines, but that the engines should drive the car through gears of lower ratio than is necessary, and should drive that gear through a wider range of revolutions than is wise.

All this goes when gear changing becomes as simple as the advancing or retarding of the ignition is at present, and it is even possible that in the not distant future we may be able to convert torque so efficiently that the gear will change automatically.

A further advantage the new devices offer is that the car will free-wheel. This is of minor value compared with the simplification of the gear change, but it is none the less an advantage, since it will mean a saving in fuel consumption, relieving transmission of certain stresses, so that the parts can either be made less robust with equally good results, or remain of the same size and have longer life. It is easier to make an engine quiet and to free it from vibration if there is no overrunning in the ordinary way. Indeed, the free wheel device will convert certain cars from noisy, harsh machines to something that is both soft and quiet.

Saving Trouble and Exertions.

All this has been done as most great things are done; not by the introduction of any radically new mechanism, but by the adaptation of a known component to work for which it has not been used hitherto, and in an improved form. Thus there is no new mechanism to puzzle garages when repairs are necessary, or to constitute one extra thing which the

owner of the car must understand. Wonderful as the sliding gear box has been, its life should be even greater and its efficiency increased in the future.

We have already had experience of servo brake mechanism and the attendant servo brake shoe operation, things which are only in their infancy as far as car design is concerned, but which give so great a promise that they are certain to become an essential component for cars of certain size and weight. There is now even a servo operating mechanism which relieves the driver of all muscular effort when steering the car, and though this is more a refinement than an essential, it shows the modern trend of thought.

Those who have followed the evolution of the latest chassis cannot but be struck, also, by the fact that much more attention is being given to the lubrication system for the minor bearings of the car. We have advanced from oil holes to grease cups from grease cups to the nipples and the attendant grease gun. Now, more and more cars are to have a permanently mounted oil or grease gun and a system of piping so arranged that the movement of a single plunger supplies lubricant to all the chassis bearings automatically, and, side by side with this, another system is fed automatically whenever the car is moving.

Those, broadly speaking, are the prominent modern mechanisms, but there are other movements going on, as it were, beneath the surface.

Inspection Lamps.

HAVE you ever found yourself by the roadside after dark, with four lights shining ahead and the tail-lamp burning brightly, and yet compelled to grovel in darkness making some simple but essential adjustment of engine or chassis, or changing a wheel, with all that it implies in the way of finding and fixing the jack, jack handle, wheel brace, etc.? If you have, the probability is that you determined never again to be in the aggravating position of having five excellent lights on the car and not one that could be directed on to the scene of operations! You bought an inspection lamp, cable and connector at the earliest opportunity.

If you have not found yourself in such a position

For one thing, a great deal of attention is being devoted to the Diesel heavy oil engine for motor vehicles, principally, of course for motor lorries, but also for touring cars, and the general evidence of this work suggests that the Diesel, as a method of propulsion for motor cars, is very promising indeed, and it is needless to add that, if certain difficulties could be overcome, this type of engine would revolutionise car design.

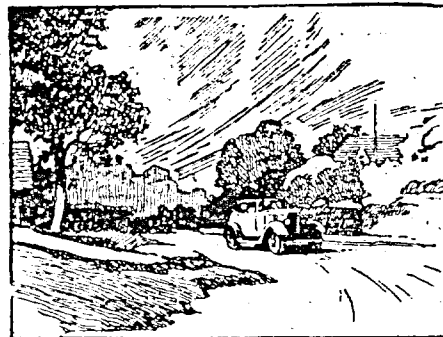
There is a marked tendency to experiment in order to discover how the car can be made lighter, with the obvious idea that if its durability and strength are unimpaired, the performance for a given size of engine will be greatly improved.

It is also quite obvious that the system of suspension at present used does not answer all requirements, and that the final word may yet be with the coil and not the leaf spring. The results obtained, for example, with this type of suspension are very much better than would have been thought possible a few years ago, and not only are the results better, but manufacturers obviously awake to its possibilities, and in France a car has been produced with a suspension of this type which has given excellent results.

Taken as whole, therefore, it seems certain that great changes are likely to occur before long, and the motor car of the future may easily be something entirely different from that to which we are accustomed at the present moment.

and do not carry an inspection lamp, my advice is that you should obtain one of the latter without delay. It is useful not only by the roadside but often in the garage as well, for a fixed overhead light is not much use in illuminating the drain tap of the oil sump, the filter, ignition details, batteries and a score of other details that may demand some simple form of attention forthwith. And if the car has no interior roof light, an inspection lamp is a very useful substitute on a dark night when passengers are entering or leaving the car, arranging rugs, etc.

Even an electric torch is better than nothing, but a proper inspection lamp is preferable and not likely to lack current when an emergency arises.



Taking a Trial Run

Points to Look for During a
Demonstration of a car with
a view to Purchase

It is never very easy to judge the performance of a car from a demonstration run in which the prospective purchaser goes as a passenger. So much depends on the skill of the driver and his powers of oratory. The best way of all, assuming the prospective buyer to be already an experienced driver, is for him to drive the car and see for himself the amount of effort required in steering, braking, etc., and whether or not gear-changing is easy and the road-holding all that it should be.

An Important Point.

If this is impossible a distinct understanding should be come to beforehand that the demonstrator shall take his instructions from the would-be buyer and do exactly what he wishes him to do.

The selection of a suitable route for a demonstration run calls for a certain amount of thought, for if the matter is left to the demonstrator the chances are that he will select a course on which his particular car is seen at its best. For example, if the car takes corners in wonderful style, but the springing is mediocre, the trial run would probably consist of a circuitous course over good roads. On the other hand, if suspension is the car's chief virtue and hill-climbing is poor, rather flat but bumpy roads would be chosen. The ideal test route, therefore, is one in which there are sections of extremely bad road, several steep ascents and descents, numerous corners and one or two long straight stretches on which the maximum speed may be attained.

The roar of city traffic is generally sufficient to drown the sound of a fairly noisy engine and transmission, while clever manipulation of the clutch by the salesman might conceal deficiencies in engine flexibility. Therefore it is much better to carry out the tests in a deserted road, imitating traffic conditions by alternately crawling slowly, accelerating and braking.

The smoothness with which the clutch will take up the drive is an important matter, and this can be tested very well by engaging the first gear and getting away from rest. Harshness in the transmission generally shows up better in reverse than when a forward speed is engaged.

Gear-changing Hints.

In changing gear particular attention should be devoted to the length of time taken to effect the

various changes, i.e., how much it is necessary to speed up the engine when changing down and how long a wait is required in neutral when changing up. If the car be equipped with a free wheel it will be found that changes down can be made extremely rapidly and without the need for double declutching or, in many cases, of declutching at all, but it will often be found, in changing up, that the pause (which, incidentally, should be made with the gear lever in gear and not in neutral) is longer than when a fixed-drive transmission is employed.

Not everybody has a steep hill at his or her back door, but, so far as possible, a gradient of at least 1 in 6 should be ascended in the course of the run, noting whether gear-changing is essential, when it was necessary to change down, how easily or otherwise the car would start from rest, accelerate or ascend the hill slowly. When the summit is reached the car could be turned round and the hill descended, both hand and footbrakes being tested to see if they will separately hold the car.

The brakes can be tried by strenuous application, when it can be observed whether there is any sort of chatter or any tendency to deviate from the straight. The actual power of the brakes can be ascertained by reading through *The Motor* road test of the car being tried. If possible, the brakes should also be applied on a greasy surface to see whether they tend to make any of the wheels lock or provoke a skid.

Steering Pointers.

The steering should be examined to see whether it has sufficient selfcentring action to make the correction of a skid an almost automatic operation, and whether considerable effort is required to pull the car round a right-angle bend at low speeds. The steering should also be tested by driving the car fast over a bad road so that it can be ascertained whether road shocks are transmitted through the wheel to the driver's hands and whether the car tends to "take charge."

Before making up his mind a prospective purchaser should ascertain the ease or otherwise with which the petrol tank and engine sump can be refilled, the accessibility of the battery and points where greasing or oiling will be required.

Finally the would-be buyer should make quite sure, if he has already a garage, that the new car will fit into it.

The Changing Fashion in Motor Car.

Popularity of Closed Models.

THE world-wide demand for closed cars shows no signs of lessening. It is not known outside the motor car industry what a phenomenal increase there has been in this respect during the last decade. From there being only 10 per cent purchasers of closed cars a few years ago there are 75% of them to-day, particularly in western countries, who prefer a closed car to an open one. These figures clearly emphasize the growth of the closed car habit and motor car manufacturers everywhere are concentrating on this market to a very great extent.

The reason for this changing fashion appears to lie in the many undoubted advantages which a closed car confers on its users. Naturally everyone wants all the comforts which modern transportation has developed to such a high degree in recent years and the provision of motoring conveniences is nowhere better demonstrated than in the closed models.

In India there is one particular advantage in using a closed car which cannot be ignored, and that is, it affords complete protection in all weathers—from the blazing sun, rain or dust of the streets. While on the other hand, in the colder climates of Northern and Central India and the United Provinces, during the winter months closed cars adequately protect passengers from the biting winds.

No one who has travelled in Delhi in December or January, for instance, can have failed to observe

the growth of the closed car traffic recently in that Province. There are more and more people to be seen driving in closed cars than ever before, and it seems fairly obvious that this increase is entirely due to a realisation of the many advantages with which this type of car provides the motorist.

In the monsoon months the usefulness of a closed car is unquestioned, either for business or pleasure, and everyone using such a car can go about his business without experiencing the discomforts arising from a heavy downpour of rain. It is rather surprising, however, to find that closed cars have not found greater vogue in India, as the customs of the people here favour their use. It is well known that a considerable proportion of the wealthy and middle classes, driving out with their families, prefer the privacy a closed car gives. In this respect we may cite Northern India, the United Provinces and the Province of Bengal, where the purdah system prevails to a very great extent, as territories in which the motor car industry can look forward to doing business in an increasing degree, once the motor car habit has been created among the people.

In this connection it is interesting to note that a well-known motor car organisation having an assembly plant in Bombay is definitely concentrating on this market, and is producing a range of cars suitable for the requirements of this country.

Using Fordson Tractors for Street Refuse Cartage.

THE Bombay municipality recently took delivery of seven of the new style Fordson tractors for use in removing refuse to the City dumps. These tractors are now being used in one section of the City only and are, we hope, the forerunners of many more that will be used for this purpose.

The City has a fleet of 16 trailers for the collection of this refuse, and these trailers are drawn by a team of bullocks from door to door. It takes from 1 to 2½ hours to load the trailer which carries about two tons of refuse.

When full, the bullocks draw the trailer to a previously arranged point when the Fordson

tractor comes along and hauls it to the nearest dumps. Each tractor handles two trailers and makes three trips a day with ease.

The saving that results from this system is tremendous as the dumps are sometimes a considerable distance from the point where the refuse is collected, and were bullocks employed, the time occupied in this work would be trebled. This would entail the purchase of three times as many trailers and the use of three times as many bullocks. Even if lorries were employed the expense would be much greater—as the driver would spend at least half of his time waiting while the lorry was being loaded and unloaded.

From an Owner Driver's Note Book



by
"SPOTLIGHT."

More Ways than One.

An English correspondent tells me that recently a friend invited him to join him on a business tour to be undertaken by a motorcar. At the appointed time they met and set off on their journey, eventually arriving in the suburb of a fairly large town. Having a small item of business to complete and not desiring to stay in the town, the suggestion was made of parking the car on a strip of grass, just a little off the road, along the back of which were some iron railings.

Having backed the car up to these railings, the narrator asked his friend if he thought the car would be safe.

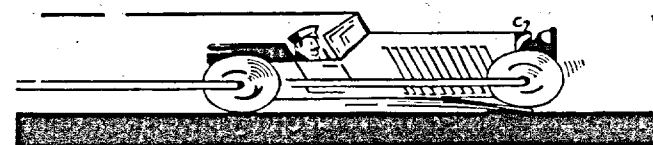
"Oh! yes," he replied, but being one of a race renowned for their cautiousness he produced a neat strong chain and lock from the toolbox and proceeded to chain one of the back wheels to the railings.

Thus satisfied, they strode off, completed the necessary business, and in less than half an hour had returned to where they had parked the car.

Imagine their amazement: the car had vanished, all that remained was the wheel still securely chained to the railings. The ingenious thieves had jacked up the car, removed the chained wheel substituted the spare and driven off!

Unique Road Sign Tells of "Fair Land" in India.

The Government of His Highness, the Maharaja of Kashmir, has opened another route into Kashmir leading through Jammu and over the 9,000 feet Banihal Pass. At Sialkot is an unusual milestone. It is like many others in appearance but its wording is arresting. It shows the distance to various important towns and centres but in addition, carries the inform-



THE SCORCHING PLAIN

ation that "an highway shall be there" (the way one is going) and that "the wayfarer has come", and the heart of the expectant traveller from the "scorching plains" is refreshed by reading, "the land (Kashmir) whither ye goest is a fair land of hills and green valleys and clear running waters". How true this is, only the visitor to the Happy Valley knows.

A Useful Garage Hint.

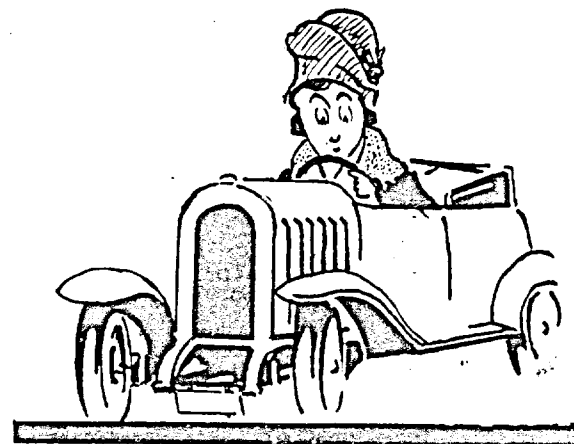
A friend tells me that he always keeps a small quantity of bi-carbonate of soda handy in his garage on account of its ability to neutralise acids. Even the most careful of motorists occasionally inadvertently splashes his clothes when topping up the battery, and the speedy application of some alkaline solution prevents those unsightly spots on clothes and upholstery which are eloquent of the destructive properties of battery acid.

Correct Tyre Pressures.

There are a number of small points in connection with the running of a car which, if given attention as occasion demands, must inevitably make a great difference to the owner's yearly maintenance bill. The owner-driver of to-day is admittedly a far wiser man than he was ten years ago. He sees that his car is oiled, greased and watered at proper intervals, he sees that the body is washed, the sump cleaned and the engine decarbonised as necessity demands or opportunity permits. But the one

thing that he treats with a withering and expensive neglect is his tyres, and with the almost universal fitting of balloons this neglect is not only a folly but also a danger.

In the days of a high pressure tyres the loss of a few pounds made no appreciable difference. So long as the gauge showed something about 60 lb. and the tyre felt hard to the toe when kicked all was well. But the balloon, with its thin, flexible wall, is a very different and a far more delicate piece of manufacture, and if it is to give the service and satisfaction of which it is capable it demands and deserves an attention which it seldom receives. This attention is



STARTERS REFUSING TO START

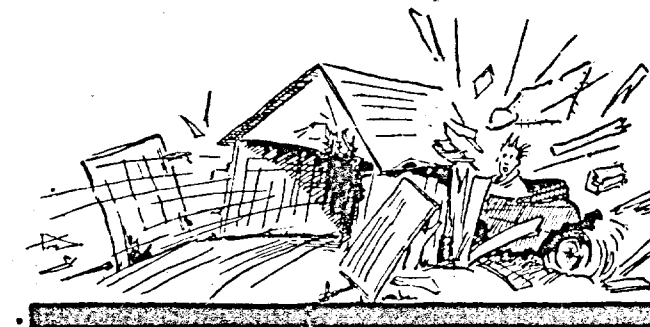
of engagement is succeeded by silence, the pinion can be turned back with the fingers quiet easily, and will probably function properly next time the button is pressed. If the smacking noise of the pinion engagement be not heard, open the bonnet and turn the armature of the starter round through a third of a turn or so. The button will then usually function, and a competent electrician should be asked to attend to the brushes at the first opportunity as the trouble will probably recur.

Brake Ratchets.

I remember complaining long ago of the inefficient ratchets with which the hand brakes of cheap cars were provided. There has naturally been a great advance in the interim and it is perfectly safe to rely on such brakes to remain "on" if the car is left standing on practically level ground.

But the *motif* of such brakes is to grip the car infallibly on any gradient during the owner's absence. I do not feel that I can trust the ordinary ratchet on a grade of 1 in 20, and when I am making frequent photographic stops in genuinely dangerous country I simply ignore the catch of the hand brake altogether, leaving bottom gear in mesh, and choking the wheels with boulders.

A number of cars sustain serious damage every year through their hand brakes springing "off" in the owner's absence. It does not seem that the perfection of this fairly important detail connotes any increase in manufacturing costs. A slight expenditure of brains should make it dependable.



DRIVES INTO THE GARAGE

neither irksome nor expensive. If one is lazy one drives into the nearest garage and asks for the tyres to be blown up to correct pressure, and no garage worthy of the name will make any charge for this service.

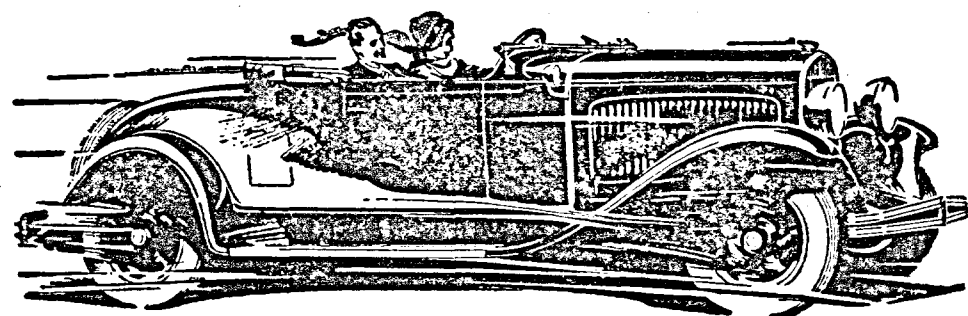
If one is energetic the biceps may be exercised with the ordinary hand pump. And that is all that is necessary.

Mute Electric Starters.

During the last few weeks I have encountered several cases (one or two of them rather chronic) of electric starters refusing to act on small cars. If the driver be an untended woman the mishap can be extremely annoying, for she may (in these days) lack any experience of swinging the engine with the handle. The customary advice on the point is that the bendix pinion has probably jammed in the fly-wheel and that the proper "immediate action" is to engage a gear and push the car a yard, when the pinion will probably free itself. This advice is naturally useless to the average girl.

If the pinion was heard to engage when the starter button was first pressed and the sound

The Engine as a Brake.



Interesting Figures that Upset Some Preconceived Ideas.

BY WILFRED GORDON ASTON.

Writing in 'The Autocar'.

WITH the advent of free wheels it is only natural that there has been recently a certain amount of discussion as to the engine functioning as a brake. Whether it is desirable or no to let it act in this capacity, not one could possibly deny that down a long hill the engine is a most efficient and convenient sort of brake. With second or third gear engaged, and with the throttle set to "idling" position, the motor will check the speed of the car to a definite limit, and thus allow long, fairly steep gradients to be negotiated without the personal fatigue involved in applying the brakes and without any risk of the shoes and drums getting overheated.

On the long declines of Alpine and Pyrenean passes the "negatively loaded" engine is beyond question a very good brake indeed. So much so that the free wheel device that does not allow the drive to run solid when required would be scarcely worth serious consideration. It is not, however, in respect of this sort of circumstances that the argument generally arises. Rather is it concerned with the braking action of the engine in more ordinary conditions.

It has always in the past, been so commonly accepted that to brake with the clutch "in" is to get a quicker stop than to brake with the clutch out (which latter implies wear and tear in a thrust-race that is often not too robust) that I was rather surprised to hear the other evening a well-known racing motorist assert that, except when an indirect gear was engaged, the engine, if a very sudden reduction of speed was required, was not only not a brake, but its momentum might easily be such as to impose an unnecessarily high load upon the wheel brakes.

When the Engine is not a Brake.

It is obvious that if the wheel brakes will, from 50 m.p.h., bring the car to a standstill in x seconds, and if the engine, from the revolutions, equivalent to 50 m.p.h. takes $x+y$ seconds to return to idling speed, then the engine has no inherent braking influence. It will only have this if its time for slowing down over the range mentioned is $x-y$ seconds.

It is always a waste of time to quarrel about "facts" which are not established, and, as in this discussion no definite facts were available, I determined to produce some as quickly as possible. Those that I obtained, with two cars of distinctly different characteristics, are offered herewith. I make no pretence at analysing them in a more than superficial manner, but I think they are interesting.

One point must, however, be mentioned at the outset. On first principles it is evident that an engine with a large flywheel will be less efficient as a brake in emergency conditions than one with a smaller flywheel. By a parity of reasoning the six-cylinder motor will be a better brake than the four-cylinder, and the eight than the six. Of the two cars, of roughly similar weight and power, with which my experiments were made, one was a four and the other a six. The figures I give will indicate how small is the real difference between them.

As to the *modus operandi*, this was simple enough. On a stretch of road as nearly as possible level, each car was driven at 20, 30 and 40 miles an hour. A passenger with a stop watch on receiving the two requisite signals measured the time required to bring the cars to a standstill, first with the clutch in and then with the clutch out.

	From 20 m.p.h.	From 30 m.p.h.	From 40 m.p.h.	
Four-cyl. car.	3 secs.	4.0 secs.	5.0 secs.	} With clutch in.
Six-cyl. car.	3 secs.	3.75 secs.	5.4 secs.	
Four-cyl. car.	3 secs.	3.5 secs.	5.0 secs.	} With clutch out.
Six-cyl. car.	3 secs.	4.0 secs.	5.0 secs.	

I do not suggest that these figures are the limit of accuracy. They could not be that, as a fallible human factor is involved. But they are not far wrong, for the runs made and the times taken were innumerable, and the figures given are the mean of them all.

An Unexpected Result.

The first thing that strikes me is that such difference as there is between them is to all intents and purposes negligible. At most it amounts only to fractions of a second. Curiously enough, the six-cylinder car was *always* a trifle slower in pulling up with the clutch out at 30 m.p.h. than with the clutch in, which was contrary to anticipation. I checked this result half a dozen times, and found no legitimate means of getting away from it. It is just one of those funny little things that happen when least expected. It does not, however, vitiate the argument.

I next made a long series of tests (it is surprisingly difficult to get reliable results without the most elaborate instruments) to ascertain how long each engine took to come from a given speed down to its idling condition, this latter being taken as equal to a road speed on top gear of six miles an hour.

These, again, are the means of numerous clockings.

They are, to my mind, singularly interesting, as they indicate that engines stop, or, rather, slow down, just about as quickly as a car under full braking stress. Evidently, if the engine in such conditions does act as a brake, it is only to a very small extent. And the advantage of the six over the four is only a matter of a very few possible yards. Previous to these measurements I would, on general impressions, have made more than a small bet that a six, revolving at not less than 2,500 r.p.m., would take a great deal more than 4½ seconds to drop to its idling speed of a little over one tenth of that speed. This is the kind of matter in which, however, one can be easily deceived. When a good stop watch returns the same result time after time one has to admit that one's personal ideas are utterly at fault. The following were the results in question:

	From 20 m.p.h.	From 30 m.p.h.	From 40 m.p.h.
Four-cyl. engine.	2.75 secs.	3.75 secs.	5.0 secs.
Six-cyl. engine.	2.5 secs.	3.5 secs.	4.5 secs.

As a further check upon the figures I had obtained I ran each car at 40 m.p.h. and measured the time it took to "come down", without the use of the brakes and with the clutch "in", to 8 m.p.h. (at any lower speed than this the engines were apt to be a little fractious). The mean time for the four-cylinder was 35 seconds, that for the six-cylinder was 30 seconds. I apologise for the fact that these figures are so "round", but neglecting immaterial fractions that is how they came out, and I guarantee that they are not faked.

Here again was something of a surprise, for half a minute and upwards is a very long period of time. It suggests that in traffic negotiation and in ordinary touring work (aside from going down long declivities) the engine is not very much use as a brake by itself, for the simple reason that it is not a quick enough brake. Further observation has but served to confirm this general statement. I find, in fact, that in normal driving I use the brake about twice as often as I thought I did. It is so deplorably easy to forget an action that is almost entirely instinctive.

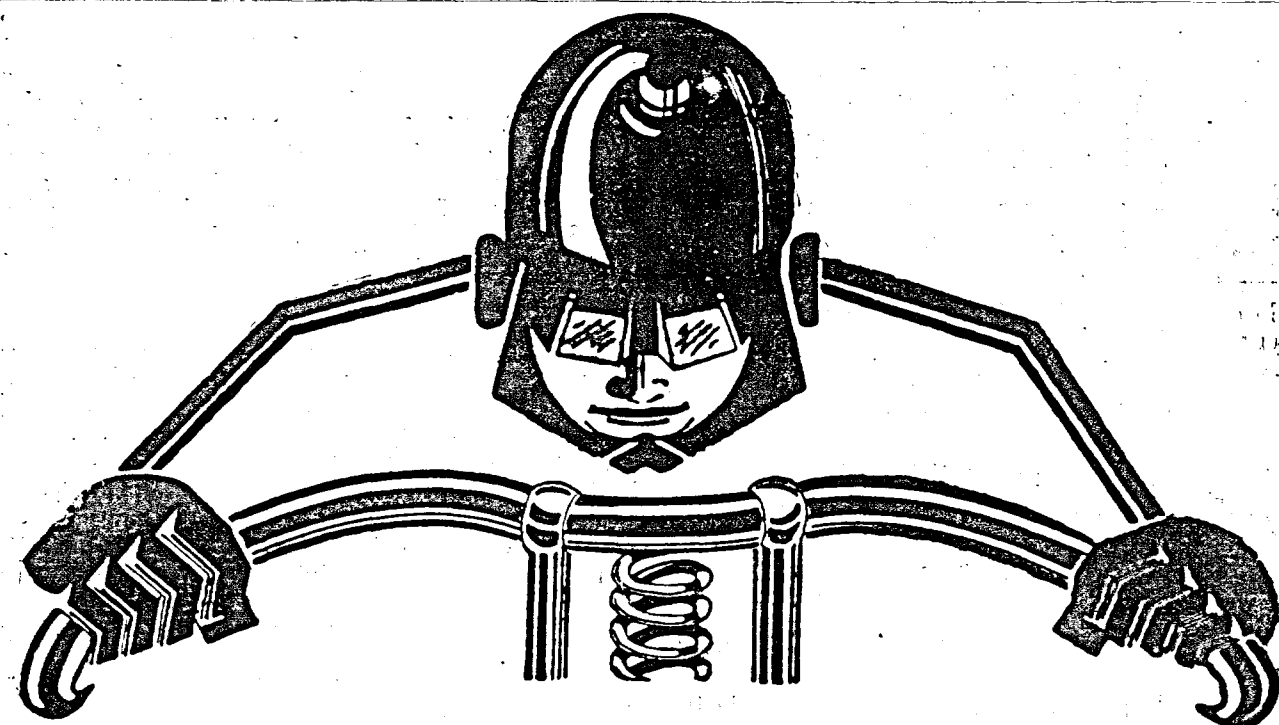
If there is any deduction to be drawn from these facts it is simply that the old idea that the engine is a valuable brake is a myth, except under the special conditions alluded to. Therefore, to suggest that the free wheel means a great deal more wear and tear on brakes is false. It means a certain amount more wear and tear, but only a certain amount. And this, be it remarked, upon a piece of mechanism deliberately designed to accept wear and tear.

Another minor deduction is that any depreciation upon the brake surfaces must be more than compensated by reduction in oil consumption. The over-run motor (i.e., the engine when driven by the rear wheels) that takes half a minute to slow from 40 m.p.h. to 8 m.p.h. is manifestly going to suck a good deal of oil into its combustion chamber. Far better let it perform the change of speed in 5 seconds.

What the Smoke Puff Means.

When you next follow a car down a long grade note what happens when its driver re-opens his throttle at the bottom. Unless he has gone down in neutral, or with the clutch cut (which is unusual), or he has a free wheel it is fifty to one that when the engine accepts its load it will eject a puff of blue smoke from the exhaust pipe. The engine has acted as a brake—but it is not quite such a perfect brake as it is sometimes represented to be.

That the engine ceases to be available as a normal driving brake is one of the worst charges I have heard brought against the free wheel principle. I am now satisfied that the objection is about equivalent in value to the efforts of a man trying to bore a hole in 9 in. armourplating with a luke-warm tallow candle.



ISLE OF MAN "T T" RACES

JUNIOR

1st H. G. Tyrell-Smith—Rudge.
2nd G. E. Nott—Rudge.
3rd Graham Walker—Rudge.

This is the fastest junior T.T. Race, being run at 71.08 M. P. H. over a course of 264 miles.

1930

LIGHTWEIGHT

1st J. Guthrie A.J.S.

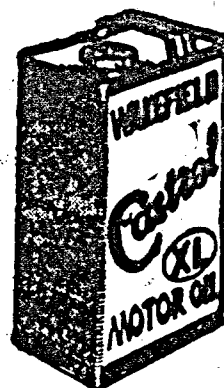
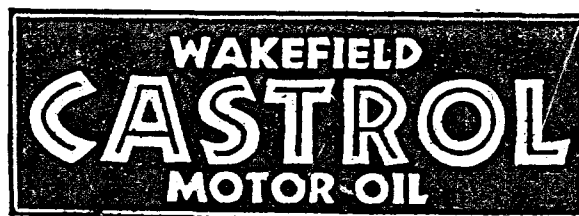
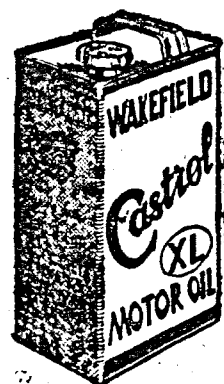
SENIOR

1st W. L. Handley—Rudge.
2nd Graham Walker—Rudge.
3rd J. Simpson—Norton.
Won on record speed of 74.24 M.P.H. and L.A.P. Record of 76.28 M.P.H.

ALL ON CASTROL

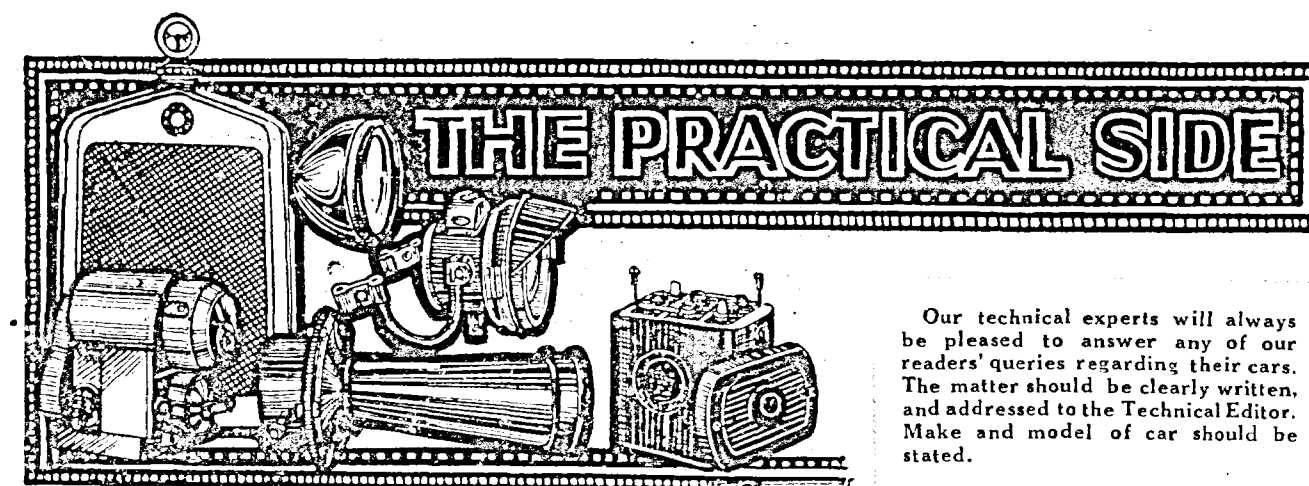
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Our technical experts will always be pleased to answer any of our readers' queries regarding their cars. The matter should be clearly written, and addressed to the Technical Editor. Make and model of car should be stated.

What's Wrong.

How a Study of Circumstances under which faults develop help in Diagnosis.

THE methods of the expert motor mechanic who is set to remedy one of the occasional ills from which all cars are liable to suffer very closely resemble those of a medical man in his attempts to diagnose the ills to which human beings are subject.

Consequently the motorist who rushes into a garage or service station, leaving his car outside, and calls out "Hi, Mr. So-and-so, let one of your men see to my car, there's something wrong somewhere" and then goes off, is unfair to himself and everybody concerned. A patient might almost as well put his head inside a doctor's consulting room and say "I don't feel well; send me a bottle of medicine."

So the writer would suggest that whenever the assistance of a repairer is required, the motor owner should be prepared to explain the circumstances under which the fault developed and the symptoms of the trouble.

Locating a Squeak.

The symptoms of the trouble should be reviewed mentally and the probable cause or causes arrived at by a process of elimination. For example, supposing a squeak develops during the course of a run and seems to arise from the front of the car. We can determine whether or not it is in some part of the engine by putting the gear lever into neutral with the accelerator released and allowing the car to coast down the first slope we come to.

If the squeak decreases in volume or frequency, its source is probably the engine, for the latter is then running slowly while the car speed is approximately maintained. But if the noise continues as before, it obviously cannot arise from the engine. As a matter of fact, too, there are very few parts of an engine that can squeak unless they "seize" almost at once; if a piston dries up through lack of

oil, for example, it may squeak and then positively howl—but only for a second or two, for the chances are it will seize in its cylinder.

As it is the intention on this occasion to deal only with engine faults we will not proceed further with attempts to diagnose the squeak just mentioned. By a process of elimination we have probably proved that it is not in the engine.

Misfire after Overheating.

Let us take a case in which an engine fault is undoubtedly the cause. In climbing a long and steep hill the radiator boils and we find that it is due to our having neglected to adjust the fan belt for a long while past; before the boiling is realised by us a lot of water has been lost. With more water and the fan belt adjusted we are soon on the move again. But thereafter, during the remainder of that run and those that follow, the engine misfires whenever it is hot and the accelerator is depressed for long periods of time.

In diagnosing this case we should couple the incidence of the misfire with the boiling of the cooling water, and ask ourselves "what part of the ignition system might suffer ill-effect from the overheating?" Not the magneto and not the battery, ignition distributor, etc.; not the high-tension wire; only the plugs. But it would not make the latter sooty or oily, nor upset the adjustment of their spark gaps.

The most promising diagnosis is a cracked insulator in one of the plugs; a very unusual happening in these days, admittedly, but not impossible. Evidently the heat caused a minute crack to develop, and now, whenever the engine warms up, the crack opens owing to expansion, so that when the resistance to the passage of the spark across the gap is high (as with full throttle and engine pulling hard),

the current takes the easier path to "earth", viz. through the crack to the body of the plug. Hence the misfiring.

Try a New Plug.

A sparkling plug with this kind of defect is not easy to identify, because it may pass the usual "shorting" tests with the engine idling. A process of elimination is again called for; utilising a new plug, we put it in place of the existing one in No. 1 cylinder. If the misfire persists, we take out No. 2 plug and plug the original No. 1 in its place; if that does not effect a cure, the old No. 2 must displace No. 3; and so on until the misfire is eliminated.

Misfiring may, unfortunately, arise from a number of different sources and causes. But as a rule if we consider its history and symptoms we can diagnose the cause in any particular instance. Not always, admittedly, and if we fail in our first diagnosis we must attempt another.

For example, supposing the misfiring occurs only at fairly high engine speeds; the higher the speed the more erratically the engine runs, so much so that the maximum speed of the car is reduced very considerably, except, perhaps, downhill. Now we must first eliminate the improbabilities, among which is a faulty or dirty plug, for that will generally cause misfiring that is most apparent at low and moderate speeds and the engine pulling hard.

A Stage Further.

Consideration will suggest that it is a mechanical defect of the ignition system, so we think at once of the contact breaker; two possible derangements of the latter would give rise to the symptoms mentioned, viz. (1) a stiffly moving make-and-break lever and (2) the gap adjustment incorrect owing to the contact points having worn or burnt away. If the car is a fairly new one the second possibility will not arise, while the first is more likely to occur with a new magneto than with an old one, and, new or old, a stiff contact lever is highly improbable in dry weather, for it is experienced it will be due to damp air causing the pivot bush to swell.

The cause will probably be the need for contact breaker adjustment, and the misfiring will be due to the gap being too wide, for that implies that the "points" may not have sufficient time to remake firm contact at high speeds before the moment arrives at which they must be separated again.

The fault will develop gradually, and an additional symptom often is that the engine is more prone to "pink" at lower speeds than it was previously, even though, it may be free from carbon; the pinking is due to the contacts being "broken" earlier in the rotation of the rocker heel.

Space does not permit of further detailed explanations, but the following summary of the symptoms usually associated with the specified faults may be useful for reference, mentally or otherwise.

Petrol System.

Partially Choked Filter. Carburetter will not flood as quickly as usual; engine appears weak at anything higher than a moderate speed; at higher speeds there is an occasional "pop" under the bonnet; at maximum speeds the engine may cut out altogether.

Partially Choked Jet. Erratic misfiring, particularly when the accelerator is depressed; acceleration is therefore bad and the engine runs feebly and falters, high speeds being unattainable; popping in the carburetter will probably occur. Confirmation of the diagnosis as applied to an S. U. carburetter as fitted to Morris cars is gained if the engine will accelerate better when the mixture control is set at "rich"; but that plan should on no account be adopted as a cure, for the jet can be cleared in a few seconds by the method explained in the manual.

No Petrol. Engine stops, usually after a few faint pops, but can sometimes be restarted after a short wait, because enough petrol will trickle through to refill the float-chamber slowly; but it will stop again almost at once. Carburetter will not flood.

Mixture Too Rich. Exhaust will smell unpleasantly, and make the eyes smart; engine will "hunt" when idling; in a bad case, black (not blue) smoke will issue from the exhaust tail pipe. Engine will run irregularly when the accelerator is depressed; it may not accelerate beyond a very moderate speed. The cause will be either the mixture control allowed to remain at or near "rich," a damaged and leaking float, or a deranged float mechanism.

Ignition System.

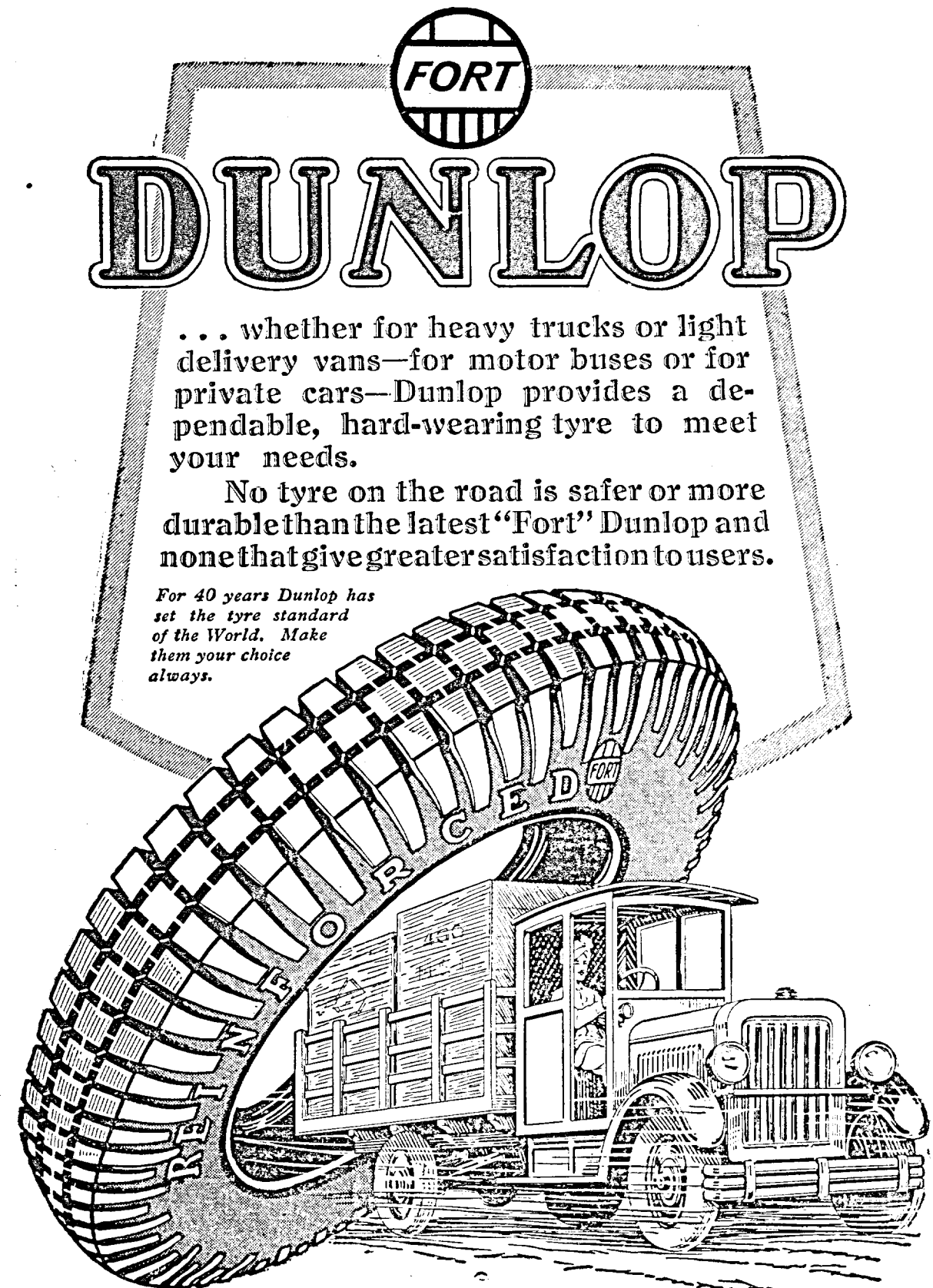
Oily or Carboned Sparking Plug. Engine misfires on one cylinder, but will start and run; under "easy" conditions on the road all cylinders may fire. Irregular exhaust sounds, with occasional muffled pops in the silencer, when the engine is idling.

Spark Gaps Too Wide. If only one plug is at fault the symptoms will closely resemble those of the last-mentioned defect. If two or more are very wide, starting will be difficult, and the engine will idle erratically and will habitually misfire when an attempt is made to accelerate under load. At moderate and high speeds nothing amiss may be noticed, the engine pulling well. In the dark, faint sparks ("brush discharges") may be seen passing from the terminal to the body of the plug.

Spark Gaps Too Narrow. Lack of power at high speed and when accelerating; starting may be difficult and slow-running erratic, and the engine may refuse to idle as slowly as formerly. If the gap of only one or two plugs is too narrow, a peculiar though faint vibration may be observable on the road.

Dirty Contact Breaker Points. Difficult starting and most erratic running, both in idling and pulling. Engine misfires badly.

(Continued on page 221).



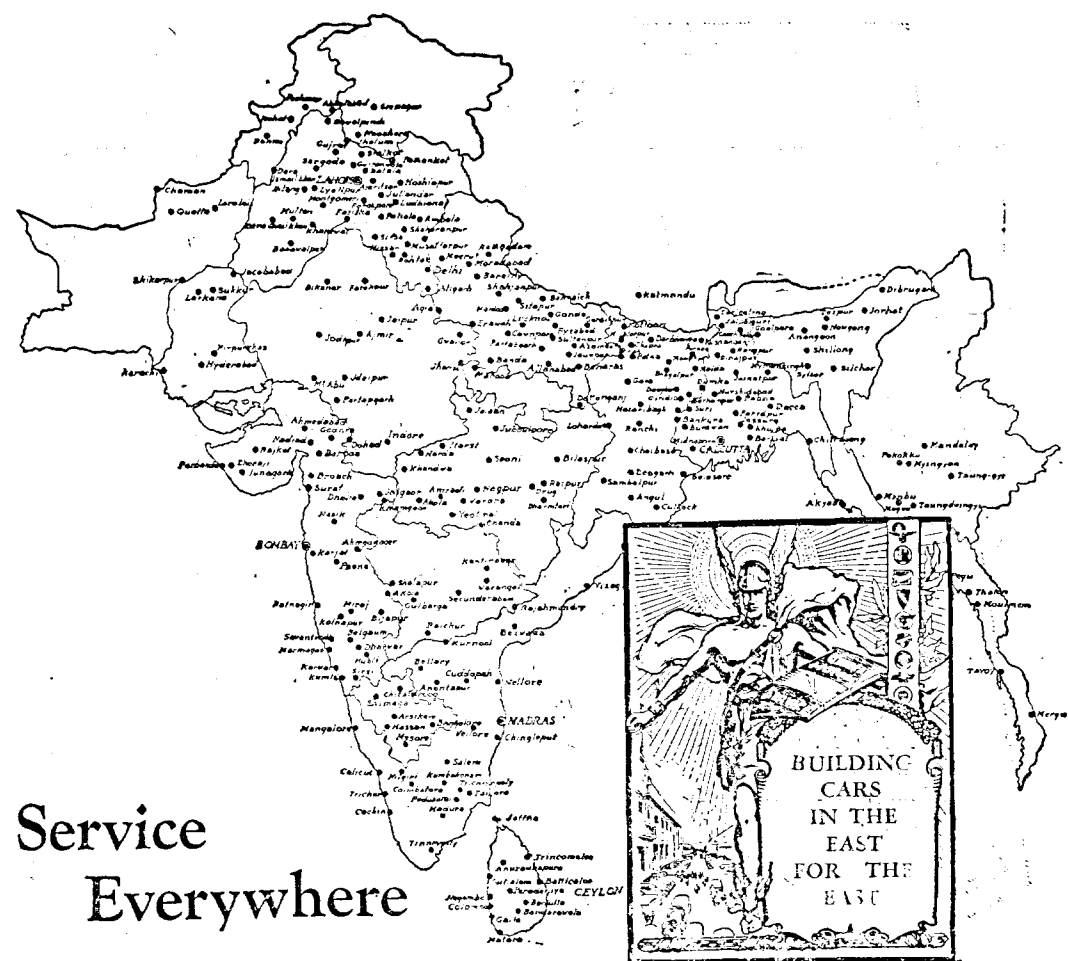
FORT

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This map shows some of the 450 General Motors dealer and sub-dealer service points, each helping to reduce running costs for owners of General Motors cars and trucks.

What's Wrong—(Continued from page 218).

Perished High-tension Cables. Symptoms almost identical with the last-mentioned fault. In addition, if the engine be run in the dark and the bonnet opened, sparks will be seen passing through the rubber insulation to any metal parts it may be touching, or to an adjacent cable. Shocks, faint or otherwise, will be felt if the faulty cable is grasped with the bare hand.

Valves.

Gummy Valve. Engine difficult to start and pulls badly until it becomes really hot, and then, also, in a bad case. Engine may refuse to start at all, but this is unlikely, though it may start and then stop with a bang in the carburetter if the sluggish valve is an inlet, or with a bang in the silencer if an exhaust valve is sticking. This trouble is usually noticed first of all in the morning after a perfectly

satisfactory run on the previous occasion. On that occasion there may have been numerous and lengthy spells of "idling," or a different brand of oil may have been used. It is an unusual fault with a modern engine that has covered more than five hundred miles or so, and has been run under the same conditions and with the same kind of oil.

Valves Need Regrinding. A very gradual loss of power, almost imperceptible from week to week. Loss of compression noticeable if the starting handle be used.

Excessive Valve Clearance. If one valve only is affected, a distinct "tap" will be heard, especially when the engine is idling or pulling slowly. If several are at fault, "taps" of different intensity will be heard when the engine is idling slowly, though at other speeds the several taps may sound as one. Loss of power is also a concomitant symptom, though slow in developing as a rule.

Longest Motor Car Trip on Record.

WHEN two tired young men arrived in New York recently, having driven a Chevrolet touring car 19,000 miles from Buenos Aires to New York, they accomplished the longest motor car trip on record. During their thrilling trip they encountered high mountains, low plains, jungles and swamps through which no wheeled vehicle has ever travelled. When Adam and Andrew Stoessel, natives of Argentina, decided to blaze a trail through the wilds of Central and South America, everyone who heard of their project discouraged them. Fired with enthusiasm, however, they set out in a stock model Chevrolet and, except for an 80-mile stretch between Carthegena, Colombia, and Colon, Panama, they covered the entire distance by car. The trip included the crossing of the Andes Mountains, from Bolivia into Peru and a difficult journey over trails through Ecuador, Venezuela and Colombia to Colon. Supplies of petrol and oil were sent ahead by mule. In one instance when the Chevrolet ran out of petrol in the Andes, 16,000 feet above sea level, the car was towed for four days by a pair of llama. In Northern Venezuela they came across an

Indian tribe who were not at all disposed to be friendly to these strange white men who travelled so swiftly and surely in a machine which they had never seen before in their lives.

Although the party set out from Buenos Aires with but a small sum of money they were able to defray expenses by taking motion pictures of their trip and showing them in various cities where, by agreement with the management of the theatres, they divided the admission receipts with the house.

On arriving in Detroit they were welcomed by Mr. W. S. Knudsen, president of the Chevrolet Motor Company. In showing the car to Mr. Knudsen they were proud of the fact that despite

the terrific punishment of 19,000 miles of adventurous driving, so arduous that 43 tyres were used up, the Chevrolet was still in good condition and well able to proceed to New York without so much as a wrench being put to it in Detroit. After touring several other American cities, the Stoessel Expedition returned to Detroit where Mr. Knudsen presented the adventurers with one of the current Chevrolet models.



Are Cars Too Heavy?

Instructive Figures Show that Much Remains to be Done in the Direction of Reducing the Ratio of Deadweight to Weight of Useful Load Carried.

Few motorists realise how poor a showing is made by the private car in the matter of deadweight required to transport its passengers. They would criticise unmercifully the commercial vehicle owner who used a four-ton truck to remove goods weighing only one ton; yet that is in effect what the private car owner is himself doing, for as a rule some 80 per cent. of the weight of a loaded motor car is represented by the deadweight of the vehicle. In this article the matter is discussed in relation to various forms of motor vehicles.

INFORMATION on the weight of a car in itself imparts little useful knowledge, and it is only when weight considered in relation to other factors that valuable conclusions can be drawn. Obviously, nothing useful can be visualised from the statement that a certain vehicle weighs 3 tons and another scales 10 cwt., for the former might be a 12-miles-an-hour 3-ton lorry or a racing monster capable of 200 miles an hour, while the latter could be either a snappy runabout or a slow van.

By considering weight in relation to horse-power the essential features of the motor vehicle are made apparent. But reliable figures on power developed are not easy to obtain, and in many cases are refused by manufacturers; consequently, it is a more general practice to consider the weight of a car in relation to its piston displacement. This is far from being a scientific method, for there is no standard of power per unit of piston displacement. A special racing engine may develop 100 h.p. per litre, while a standard engine may show less than 20 h.p.

Weight and Piston Displacement.

Even among normal engines there are wide variations, for while one maker may voluntarily restrict the power in order to reduce production costs and assure a big margin of safety, another may make every effort to secure the highest power out of the cylinder area given him. All comparisons, therefore, of weight per cubic centimetre of piston displacement must be made between cars of the same general class if mistaken conclusions are to be avoided.

Having secured, not long ago, the accurate weights and correct piston displacements of some twenty representative cars, it was found that there were very wide variations in the relation between weight and piston displacement. The one appearing to best advantage was the big, costly Bugatti straight-eight, which with an open body weighed only 34 lb. per cubic centimetre. Next on the list came the little Marmon saloon weighing 9 lb. per cubic centimetre. The figures show that a very good average is from 1.3 to 1.5 lb. per cubic centimetre; the highest figures were respectively 1.6 and 1.82, and, curiously applied to two models

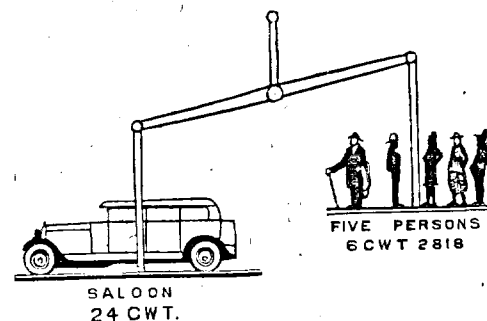
popularly looked upon as coming within the light car category.

Another aspect of weight is in relation to useful load carried. If we consider the entire range of motor vehicles we find most startling differences. At the two extremes we have motor cycles and lorries with a ratio of dead weight to useful load of 1 to 1. Large numbers of motor cycles do not weigh more than 11 stones, and they carry a load equal to their own weight; with a pillion rider the ratio may become as high as 1 to 1.7. Even in normal circumstances a lorry weighing 3 tons will carry a useful load equal to its own weight, while in certain cases the ratio between dead weight and useful load will run up to 1 to 1.3.

Weight to Load Ratio.

It will naturally be objected that the comparison is not fair, for the motor cyclist has to be content with a lower degree of comfort than is found on even the most simplified type of car, while on a lorry the body is frequently nothing more than a platform of very low weight in comparison with that of a car.

A comparison might be made between motor lorries and buses and private cars, for some of these big vehicles have a degree of luxury quite comparable with that of the normal motor car. The biggest passenger-car-



rying motor vehicle in use appears to be a double-deck bus carrying 81 persons. It has a six-cylinder engine, giant pneumatic tyres, and if the passengers on the upper deck do not have upholstered seats, those on the lower deck are really comfortably carried. This bus has a total loaded weight of 12 tons 5 cwt. 60 lb., the proportions being: passengers 42.3 per cent., vehicle 57.7 per cent.

On a luxurious single-deck motor bus, carrying 35 passengers in comfortable seats, the proportions are 30.7 per cent. for the passengers and 69.3 per cent. for the vehicle. This coach has low-pressure balloon tyres and a six-cylinder engine. On another similar six-cylinder coach the proportions are 31 per cent. passengers and 69 per cent. vehicle.

If we now turn to private cars, we find that on an average 80 per cent. of the total weight is represented by the vehicle and only 20 per cent. by the passengers. These figures refer to average models having a weight per cubic centimetre of piston displacement comprised between 1.4 and 1.5 lb., an engine of about 2,000 c.c., and a total vehicle weight of 24 to 26 cwt.

To put the matter in another form, an ordinary car has a deadweight of 3.8 to 4.1 lb. for every pound of useful load; on the biggest bus the deadweight is 2.6 lb. per pound of useful load; on a big motor coach there is a deadweight of 3.2 lb. for each pound of useful load; on a lorry the figures are equal, while if we admit a pillion rider on a motor cycle, for each pound of machine there may be carried from 1.3 to 1.4 lb. of useful load.

Private cars showing to the best advantage are very small four-seaters. The small two-seaters do not compare so well. A representative six-cylinder medium size car with five-passenger saloon body shows 16.8 per cent. of its total weight representing passengers and 83.2 per cent. the weight of chassis and body.

The bigger and more expensive a car the lower the ratio of passengers to total weight. Thus, the 14-litre Bugatti, which is on a pinnacle with 34 lb. per cubic centimetre drops nearly to the bottom when its weight is considered in relation to load carried, for its four passengers represent but 10 per cent. of the whole. There are certain expensive, heavily-built closed cars with a useful loads capacity of only 5 per cent. of the total weight.

Economy versus Comfort.

Of late the problem of reduction of weight in relation to useful load has attracted the attention of inventors and manufacturers. Certain inventors declare that within a few years the total weight of a private car carrying four or five persons in comfort at 50 to 60 miles an hour will be no greater than the useful load. At present we are very far from this, for a very fair average is 20 per cent. passengers and 80 per cent. vehicle, and although this has been improved in some cases it is generally either at a loss of speed or comfort, or both. It may be luxurious, but it is obviously uneconomical, to have a useful load representing only 10 per cent. of the total weight. We should smile pityingly at any removal contractor who used a 3-ton lorry to carry a load of 1/2 a ton but this is exactly what many private motorists are doing.

Car weight in relation to useful load carried has not shown very great improvement during the past

few years. It must not, however, be imagined from this that progress has not been made, for the weight of cars in relation to horse-power is very much lower than even in the comparatively recent period prior to the war. The reason for this is that enormous progress has been made in engine design and construction, thus giving us cars possessing more rapid acceleration and capable of attaining a very much higher average speed than was possible a few years ago.

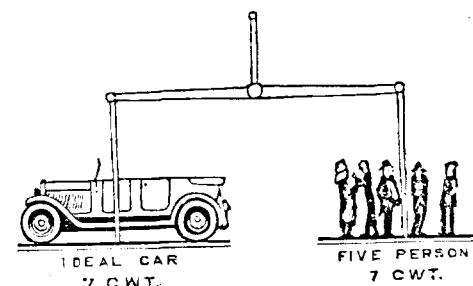
In a certain measure this improvement has tended towards a reduction in total weight, for engines are now smaller than those formerly employed. The saving in weight by the reduction in size of engines is largely counterbalanced by the more heavy construction and greater rigidity of some of the essential organs.

Saving Weight on Unimportant Parts.

It is quite possible that at some future date a revolutionary design will sweep away all present standards, but for the time being we have to be content with careful designing of individual parts, a paring where weight is not necessary to strength, and a more general use of the lighter alloys that have become available during the past few years.

Weymann showed us how to get saloon comfort with open car weight, and by his initiative set others to work on the task of reducing body weights. It is only necessary to make comparisons between a dozen different cars to realise how haphazard has been the attention given to weight reduction. For instance, the change speed lever on one car weighs three times as much as that on another, equally reputable, car; and, as this is a part which is never known to break, it may be assumed that the heavier one represents useless deadweight. The luggage platform on one car is five times the weight of the trunk it carries and four times heavier than the carrier on a similar type of car. The ratios for such parts as mudguard brackets, head-light supports, and spare wheel carriers vary as widely as 1 to 20—obvious proof that some of them are much too heavy.

An increase of the ratio of useful to non-useful load is entirely advantageous to the motorist, but



for the engineer it involves the very difficult problem of suspension. It is a comparatively easy matter to make a car comfortable when the variation of its useful loads is not more than 10 per cent. of the whole. But it is much more difficult to provide easy riding qualities when useful load may jump from 10 to 30 per cent. of the total weight.

2nd Preliminary Announcement

An Up-to-date Book on Motoring for the South India Owner-Driver.

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Please send me on publication a
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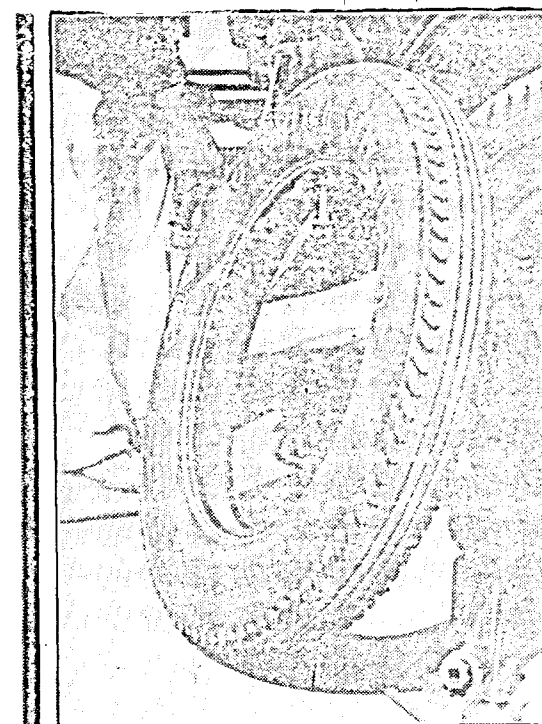
THE SOUTH INDIA **MOTOR OWNER** HANDBOOK

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dealing simply with the use, main-
tenance, principles and construction
of modern motor vehicles and
accessories.

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again...constant friction,
constant wear...how long

will YOUR
tyres last?

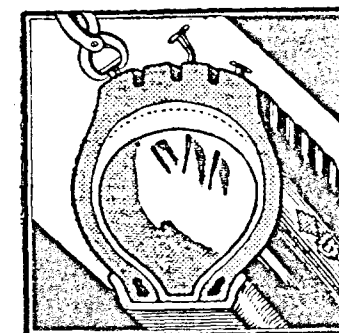


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... month after month. . . con-
stant, gruelling friction under all
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the money they cost?

Goodrich Silvertowns, because of
methods used in their manufacture, are
tougher, last longer. The now famous
weftless cord, the familiar tread that pre-
vents spreading, rubber more resilient
than steel, all combining to achieve the
designers' aim—long life.



Made in U.S.A.



The revolutionary Goodrich Air Container!

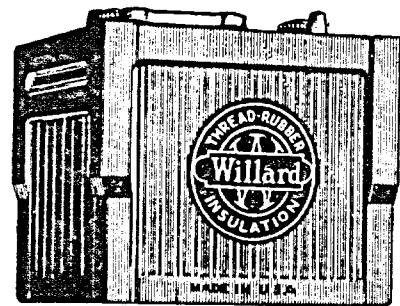
Supplanting the old-fashioned
inner tube, the Goodrich Air Con-
tainer is made from compressed
rubber. When a nail, tack, or
screw etc., that has pierced it is
removed, NO AIR ESCAPES!

And uniform air pressure is main-
tained for unbelievable lengths
of time—its heavier construction
gives unusual support to the inside
of the tyre casing.

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You can always recognise a Goodrich
Silvertown by its distinctive tread. But
this design does more than identify . . .
it actually makes riding easier.

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Obtainable in two qualities

1. Those fitted with Wood Separators at prices which defy competition and
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For particulars and prices apply to:

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

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

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THE COLUMBIA GRAMOPHONE
CO. LTD.

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RELIABLE IN SERVICE
BEST VALUE EXTANT

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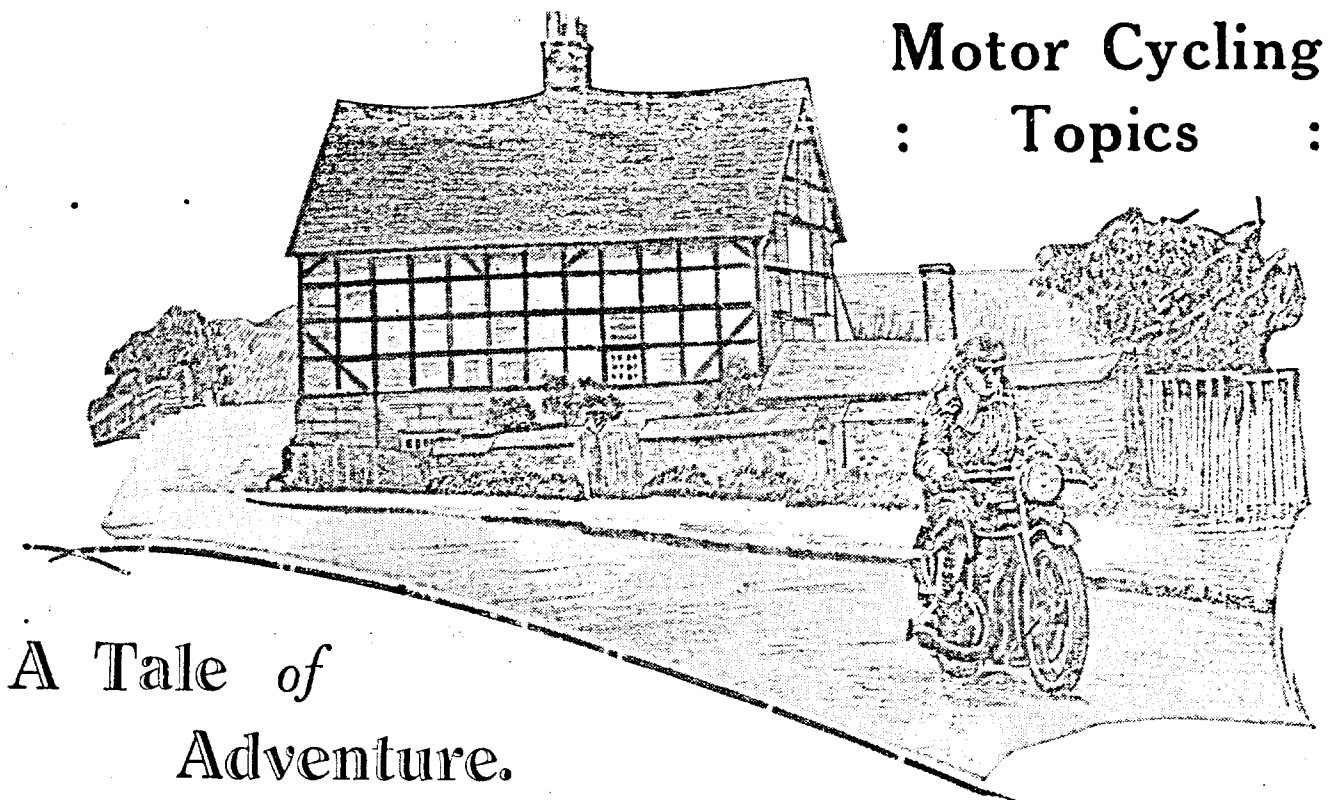
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RECORDS ARE THE BEST
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And Play Entirely Without
Scratch.

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Motor Cycling : Topics :



A Tale of Adventure.

Nineteen thousand miles without trouble.

A certain gentleman in London bought a 550 c. c. Ariel motorcycle in the spring of 1927. He used the machine for two years during which time he covered 15,000 miles without any trouble whatsoever. At the end of the two years he met two Americans who were in need of some means of transport. They wished to tour the continent and North Africa in the most expeditious manner possible and after a little bargaining they bought the Ariel from him.

They covered the whole of England and Scotland crossed over the Channel to France from thence to Germany, Luxemburg, Belgium, Holland, Poland, Czechoslovakia, Austria, Italy and Switzerland, crossed over the waters of the Mediterranean to Sicily and from there to Tunis and Algiers, and from Morocco again across the sea to Spain. They finally arrived back in England during the early part of this year and having no further use for their steed, they reluctantly parted with it to the original owner who has decided to keep it.

Many and varied were the adventures experienced on this wonderful trip of some 19,000 miles.

The driver tells how amazed he was to be able to cover an average of at least 90 miles, and sometimes 105 to the gallon of petrol.

A good deal of oil was used on purpose to keep the machine cool during its arduous task, but even so, and with the old drip feed type system, no less than 1,500 miles were covered to the gallon.

In all 210 gallons of petrol and 54 gallons of oil were used. Including £19, the original second hand cost of the machine, the whole trip cost less than £45. The average cost per mile being only just over a halfpenny.

Riders and machine shared the same fate throughout this journey, as often as not, both slept and ate together and in spite of exposures of all sorts were none the less healthy at the end. A small amount of tyre trouble and one small fault with the magneto were the only defects. This speaks well indeed for the All British Ariel—very few machines could have behaved so well and none better.

Will Rubber Paving Solve Road Problems?

Experimental Tests Carried out in England.

THE growth of vehicular traffic in India must give rise to many serious problems. A particular one which faces the road engineers relates to the building of roads which will carry this heavy traffic with least deterioration to the road-surface, and thereby effect a considerable saving in expenditure incurred on road maintenance. As it is, the money expended annually on the upkeep of roads in this country is two and a half times the amount spent on a tual construction of new roads for a particular year.

Apparently other countries as well are faced with this problem of making road-surfaces stand the strain of heavy vehicular traffic. We find that many experimental tests are being carried out in Great Britain. For instance, one phase of commercializing rubber which is receiving serious attention is feasibility of its use for street paving. A number of the British rubber companies are now manufacturing rubber paving blocks and many trial strips of paving have been laid in England.

There are many advantages to rubber paving. It has been found that deterioration and destruction of roads, both as to their surface and foundation, are caused by abrasion and vibration. Vibration is probably the more destructive of the two and is the more difficult to combat. In rubber is found a material superior to any other in the absorption of vibration. Its anti-abrasive or wearing qualities are also extremely good although this is not generally recognised. Many trial lengths of rubber paving have been laid, some of them under exacting traffic conditions and for periods extending over years, and in not any instance has there been material sign of surface wear. It has been estimated that rubber paving, even on heavily travelled streets, will probably be good for 40 years. The life of wood block paving is set at from 10 to 20 years.

Tests made in 1923 on a stretch of experimental rubber paving to determine to what extent it eliminated traffic noises showed that (a) there was a reduction in noise in the case of the rubber roadway of 30 per cent compared with wood block paving in the same neighbourhood; (b) that the remaining noise was considerably altered in type and was less objectionable, and (c) that vibration was reduced. Other tests with different types of rubber paving

showed vibration reduction of 50 to 63 per cent. over wooden block paving.

The greatest disadvantage of rubber paving to date is its price which is so high that there has been no question of it competing with other road materials on the question of first cost. At present the cost of rubber paving is about four or five times more than the next best paving known. Better and more permanent roads are in demand, however, and rubber seems to be one material with which to build them. The work that has been done up to now on this type of paving has been largely experimental. A number of types of rubber paving blocks have been evolved and tried out.

The Leyland Block is all rubber, the bottom part of the block being of hard rubber and the upper, or surface part, soft. It is three inches in depth. This block was designed especially for the purpose of minimising vibration and it is claimed that it practically eliminates it. The North British Block is partly rubber and partly concrete. The two halves are joined by a chaplet of steel with extending lugs imbedded in the tread. The Gaisman Block has a rubber surface vulcanized on a vitreous brick under part. It is laid on a concrete road foundation with a cushioning sand layer intervening between the block and the concrete. The Cowper Block is all rubber in three layers. The middle layer is hard rubber and bottom and top layers are soft. It is laid directly on a concrete road base. The Cresson Block has a rubber surface vulcanized on a hard base composed of stone chippings, sand and other ingredients combined with a rubber latex. Blocks are laid directly on a concrete base.

Although the five types of blocks referred to may be said not to have passed the experimental stage yet, they have given excellent results. It has been suggested that a development that may come will be the use of rubber as a road surface blanket applied over concrete as asphalt surfaces now are.

Another development that may come is the mixing of foreign ingredients with the rubber. This would cheapen it considerably, which is a prime consideration. Whether or not this would also lower the effectiveness of the paving is not known, as it has not yet been determined whether the full resiliency of present rubber paving is necessary.

SHELL OPENS 1930 MOTOR RACING SEASON!

BROOKLANDS "DOUBLE-12"

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IN GENERAL CLASSIFICATION

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Ford Notes.

THE show-rooms of Ford Distributors and Dealers throughout India, Burma and Ceylon offer opportunity for visitors to view for the first time a showing of the re-designed Model A Ford bodies.

Redesigned along ultra modern lines, the new Ford passenger car bodies possess the beauty, the charm and contour of large and expensive cars. Every line from the higher radiator to the tip of the curve of the rear fenders is new. The entire front is raised. Fenders are more generous and flow more artistically. Nickel plate has been replaced by rustless steel. A finish strip of this metal at the juncture of the bonnet and hood adds to the beauty of the exterior.

Wheels are smaller and tyres larger, bringing the body closer to the ground, an important safety feature. The most notable changes in body types have been made in the Tudor Sedan, the coupes and the open cars.

The Tudor Sedan is longer, making a roomier rear compartment. Access is easier around the folding seats in front. The rear seat accommodates three passengers with complete comfort.

The coupe is entirely new, with lower roof line. The seat, as in other closed cars, is adjustable to a range of four inches, adding much comfort to driving. A parcel shelf is provided behind the seat.

The sports coupe, which has a rumble seat as standard equipment, possesses all the lower body lines of the coupe. In addition, the rich gray top material, the rounded rear corners and the landau irons on the rear quarters add materially to the sport lines of the car. The rear window hangs in a heavy curtain that may be opened and attached to

the roof above, permitting contact with those in the rumble seat.

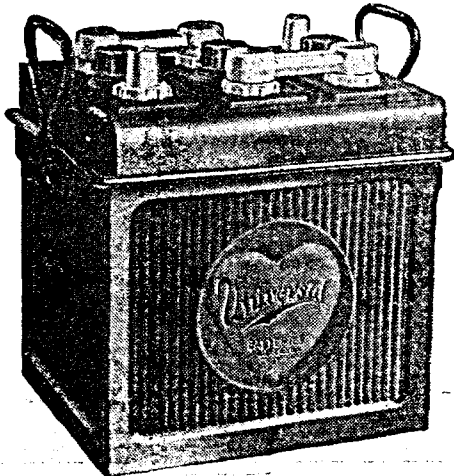
The newly designed phaeton has more the appearance of a smart sports car. The sides are higher, seats are lower, so that occupants sit well down in the car, a characteristic of sport car design thus making for more leg-room. The windshield and its wings fold flat forward. Doors are wider.

Greater comfort and exceptionally good style have been built into the new roadster body. Doors have been widened two inches. The seat has been widened to accommodate three persons comfortably. The windshield wings fold flat. The top folds compactly and quickly. The luggage space in the rear deck may be converted into a rumble seat compartment.

The town sedan has been designed especially for those who wish the distinctiveness, appearance and convenience of fine car construction. It is of the three-window, four door type. The rear seat is provided with arm rests on either side and a centre arm-rest which may be folded into the cushion back when not in use. A flexible, robe rail is fitted into the back of the front seat.

The three window Fordor Sedan is another car of striking individuality, enhanced by the attractive lines of the rear quarter. This car is more commodious than previous designs, having the same interior dimensions as the town car.

The new Ford convertible cabriolet, an all-season car, possesses all the snugness of a closed car when the weather is bad and all the advantages of an open when the weather is fair.



**ONE GOOD BATTERY
OUTLASTS
TWO CHEAPER BATTERIES**

Superior
Quality

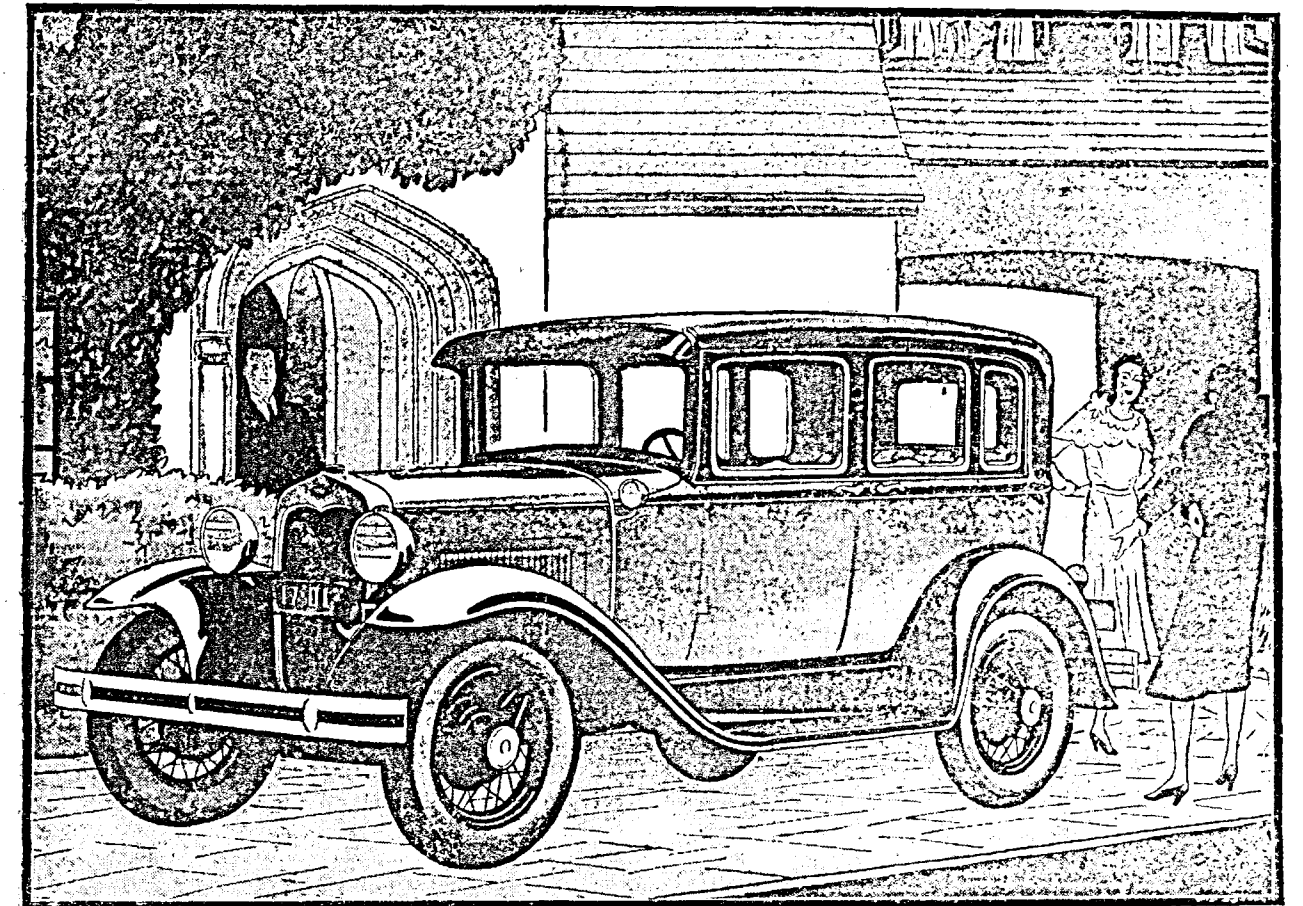
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Universal batteries are built to excel—not undersell. Heavier and thicker plates and genuine materials make Universal superior.. Try once if not already.

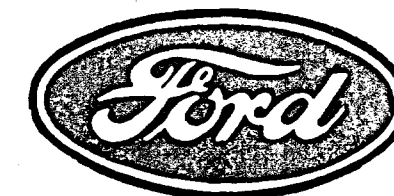
Sole Distributors : STANDARD MOTOR ELECTRIC WORKS,
Auto Electric Engineers,
No. 1, General Patters Road, MADRAS. Telephone No. 3840.
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New Beauty for the New Ford

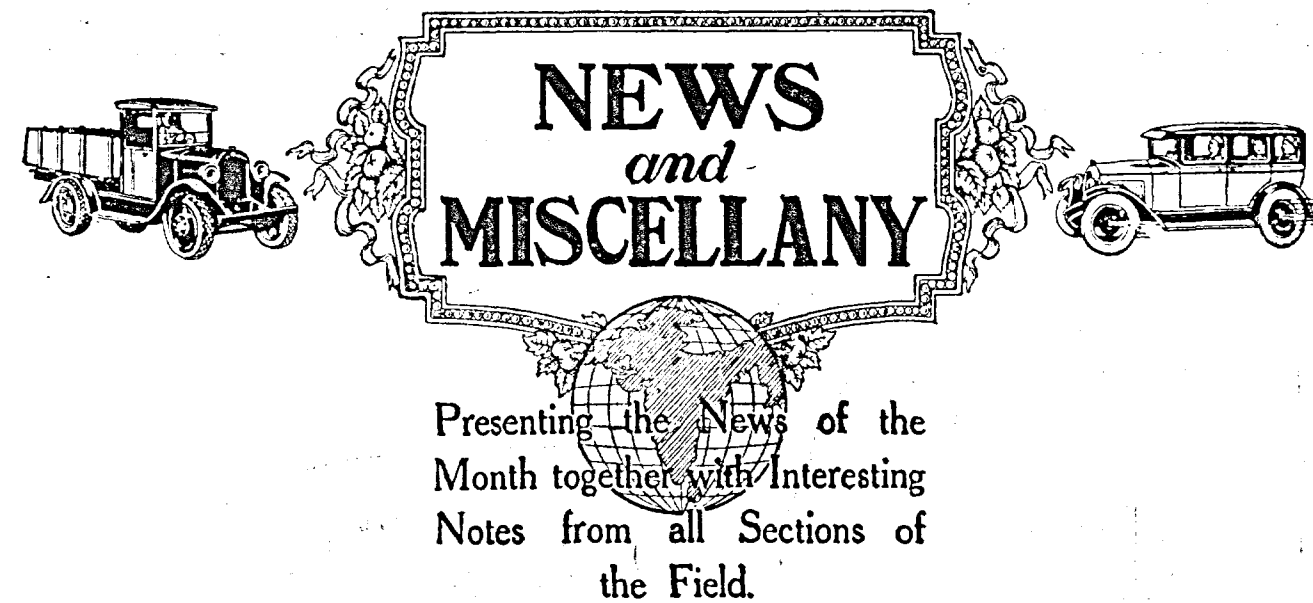


THE NEW FORD TOWN SEDAN

NEW ROOMY BODIES..NEW STREAMLINES..NEW COLOURS..NEW RADIATOR..NEW MUDGUARDS..NEW WHEELS..NEW LARGER TYRES...RUSTLESS STEEL...NOW MORE THAN EVER, THE NEW FORD IS A "VALUE FAR ABOVE THE PRICE."



FORD MOTOR COMPANY OF INDIA, LIMITED, BOMBAY.



Constantinople to Abolish Ancient Custom

The Galata Bridge tolls are to be abolished. Anyone who has ever visited Constantinople will miss the ancient custom which has been in effect in that picturesque city for many years. The Galata Bridge tolls are something of a tradition, established by the gray-coated men who stand shoulder to shoulder at each end of the Bridge. Their duty is to collect tolls from all pedestrians as well as from drivers of all motor or horse-drawn vehicles. Pedestrians pay one piastre, which is equal to about one-fourth of an anna. Taxicabs and private cars pay two annas and heavy vehicles pay more.

The toll collectors possess lynx eyes and it is popularly believed that no one has ever succeeded in crossing Galata Bridge without paying. Motorists often throw money on the ground in order to avoid stopping, while others have become expert placing the toll in the collector's hands without changing gear or slackening speed. As Galata Bridge more or less divides Constantinople in two—Stamboul on one side and Pera on the other—thousands of persons have to cross many times daily and they find the tolls an expensive item in their budget.

Motor Cars Make Many Uses of Rubber

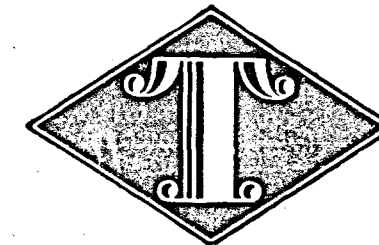
Rubber in motor cars is not confined to tyres alone. Rubber for deadening shocks and vibration has found a new part in the design of cars. Motor impulses are softened by rubber engine mountings, pads, and strips eliminate squeaks and rattles, while rubber spring mounting protect the car from road shocks. It is estimated that nearly 500 pieces of rubber, besides the tyres, are used in the average modern car as noise or shock insulators.

Many Tongues Make Hard Work

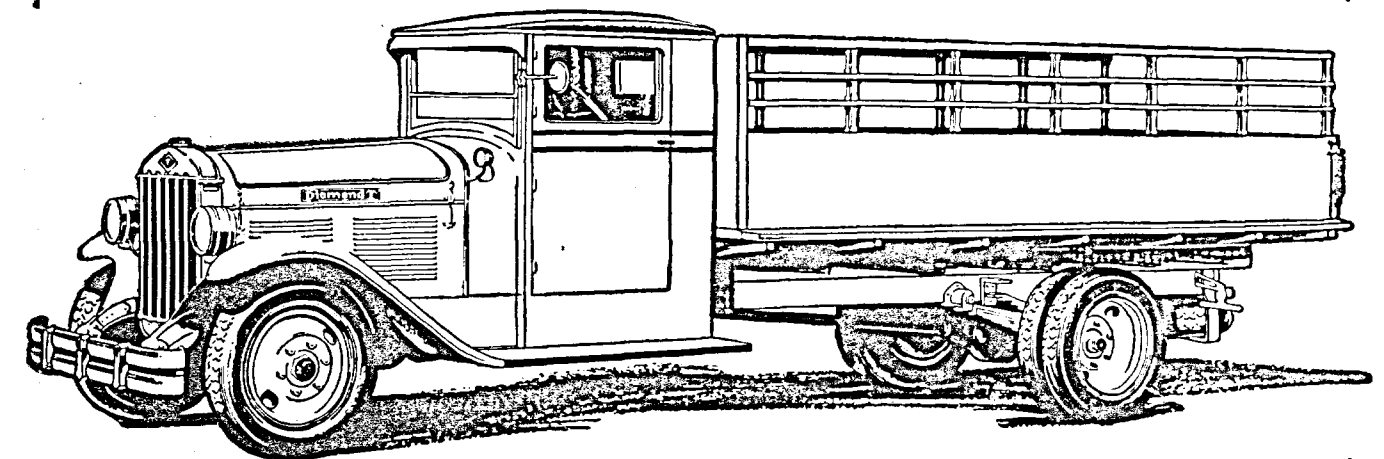
For operating in a territory that embraces a multitude of languages, General Motors India holds the record over the twenty-three other General Motor plants located all over the world. General Motor India, at Bombay, sells motor cars in 221 distinct languages, to say nothing of hundreds of dialects that exist in India, Burma and Ceylon. Advertising is prepared in fourteen predominating languages—Hindi, Bengali, Urdu, Telugu, Marathi, Tamil, Gujarathi, Burmese, Kanarese, Malayalam, Oria, Singhalese, Gurumukhi and Sindhi. As many as 307,000,000 persons belong to the races represented by this list. General Motors Near East, at Alexandria, Egypt, ranks second in the matter of diversity of language, with twenty-three different tongues in which to convey the message of motor transportation.

(Continued on page 234).

Diamond



The Diamond "T" New 1 Ton model which has proved itself so phenomenally successful all over the world is now proving its worth to South Indian Commercial Vehicle Owners. The more you study Diamond "T" quality the more convinced will you be that Diamond "T" offers a fine vehicle at an astonishingly low price. Write to us for literature, now.



COROMANDEL AUTOMOBILES
MOUNT ROAD : : : MADRAS

News and Miscellany—(Continued from page 232).

England Gave the Motorbus its Start in Life.

As early as 1904 the first petrol motorbus was licensed by Scotland Yard. This was owned by the London General Omnibus Company. Horse-drawn, electric and steam-driven buses were from that date rapidly supplanted by the new motor-type and the development immediately spread to other large cities in the British Isles.

The Company is now one of the largest city motor-transport operators in the world, carrying an average of 3,909,000 passengers daily. It owns 3990 buses and operates a total of 4887 covering 880 route-miles. Except for a limited number of suburban routes, double-deck vehicles are used exclusively in London, the seating capacity ranging from 36 to 54.

France European Highway Leader.

Among European countries, France has the best network of roads for motor car travelling, with a total length of 628,000 kilometers. Germany is next with 348,700 kilometers, while Great Britain, with a total of 287,600, ranks third.

Most of Hungary's Cars are in Budapest.

Practically all the cars in Hungary are to be found in Budapest, the capital of Hungary. Budapest has 6,076 of the 6,672 private cars; 1,257 of the 1,724 cars for hire; 307 of the 587 buses; and 2,268 of the 4,380 trucks.

Copenhagen To Try Underground Parking.

Traffic congestion in Copenhagen is becoming so acute that, as a means of alleviating the parking situation, a large underground garage is being erected. It will be situated in the centre of the city, partly beneath Town Hall Square.

Italy to Increase Highway Police.

The highway police force of Italy is to be increased so that they may patrol the entire system of national highways, about 21,000 kilometers in length. At present the 32 officers and 427 enlisted men have 110 cars at their disposal. In addition to curbing the speed mania for which Italian drivers are famed, the highway police have proved to be a very great help in time of trouble to victims of accidents, petrol shortage and other unpleasant incidents.

World-wide Communications.

The spread of the facilities for the communication of thought goes on around the world, hand in hand with the growth of the transportation of men and goods. This was strikingly illustrated recently when, with the completion of telephonic communication between North and South America, the General Motors Export Company in New York discovered that it is now within only a few minutes of thirteen of the twenty-five plants with which it contacts. The telephone network has now become so extensive that it is possible for the Managing Directors of the following plants to converse with one another with almost as little trouble as they can talk with friends and associates in the cities in which they are located:—Adam Opel, A. G., at Russelsheim, Germany General Motors G. m. b. H., Berlin, Germany; General Motors France S. A., Paris; Vauxhall Motor, Ltd., Luton, England; General Motors Limited, London; General Motors Peninsular, Madrid, Spain; General Motors Continental A. S. Antwerp, Belgium; General Motors Nordiska A. B. Stockholm, Sweden; General Motors International A. S. Copenhagen, Denmark; General Motors Argentine, S. A., Buenos Aires; General Motors Uruguay, S. A. Montevideo; General Motors do Brazil, S. A., Sao Paulo and General Motors Export Company, New York.

The King Hails a Bus.

King Alfonso of Spain rode in a "rubberneck" bus recently with a group of newspapermen from Spanish America and had a gay time guiding the visitors over the grounds of University City, the great group of educational buildings now under construction in Madrid.

French Engineers to Visit the U.S.A.

Thirty-two prominent French automotive engineers, representing the Societe des Ingenieurs de L'Automobile will arrive in New York, May 19th, for a visit to the American automobile plants in New York, Detroit, Buffalo, Akron, Indianapolis and Philadelphia.

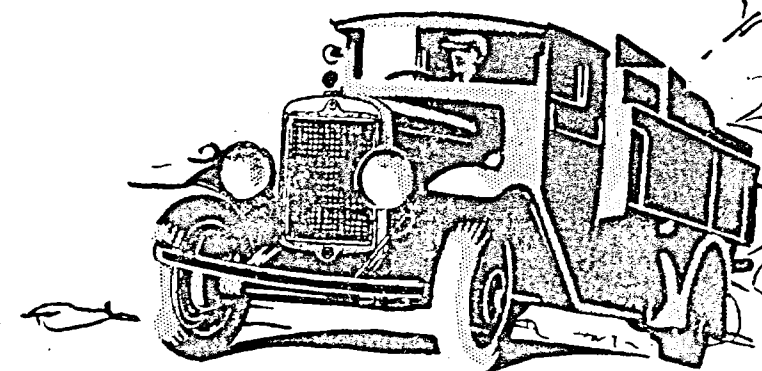
Germany Testing New Type of Car.

Successful tests have been made in Friedrichshafen, Germany, of a new type of automobile fitted with a highly elastic engine of 12 cylinders, the construction of which is based on experience gathered from performances of the Graf Zeppelin motors.

British Racing Rules Give Women Status.

For the first time in British road racing, women will be officially recognized in the Royal Automobile Club's Tourist Trophy Race over the Ards Circuit in Northern Ireland in August.

Economy!



with a Stewart 4 Cyl. Model

The new Stewarts have many modern improvements that place them far ahead of the field.

Stewarts have all the latest known, worthwhile mechanical improvements, plus the time tested and proven Stewart features that have earned our motto, "Stewarts have won by costing less to run."

They are designed and built to outlive and outwork ordinary trucks—to give the most truck for the least money. Owners and drivers everywhere say that Stewarts are America's greatest truck value.

Write for full Particulars now to:

RAJAGOPAL MOTOR WORKS

GENERAL PATTERS ROAD

MADRAS

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.

CARS

Armstrong-Siddeley

BERHAMPORE ... K. M. Paul & Sons.
SALEM ... V. S. Rajagopalan & Co.

Buick.

CALICUT ... English and Scottish Joint Co-operative Wholesale Society Ltd.
MADRAS ... R. Patel & Co.
SECUNDERABAD... Madras Cycle & Motor Mart.
COLOMBO ... C. A. Hutson & Co., Ltd.

Cadillac.

CALICUT ... English & Scottish Joint Co-operative Wholesale Society Ltd.
MADRAS ... R. Patel & Co.
SECUNDERABAD... Madras Cycle & Motor Mart.
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Chevrolet.

BANGALORE ... Nankervis Ltd.
BELLARY ... Asquith & Co.
BERHAMPORE ... Ganjam Automob-
iles.

BEZWADA ... Row & Brothers.
COIMBATORE ... T. Stanes & Co., Ltd.
KOTTAYAM ... Ramkrishna Chettiar & Co.,
MADRAS ... Motors & Services Limited.
MADURA ... T. V. Sundram Iyen-
gar & Sons., Ltd.
OOTACAMUND ... Stanes Motors (Nil-
giris) Ltd.
SECUNDERABAD... Hormusjee & Co.
TRICHINOPOLY ... Aiyer Motor Co.
VIZAGAPATAM ... Andhra Engineering Co.
COLOMBO ... Rowlands Garage Ltd.

Chrysler.

MADRAS ... Jones & Co.

Chrysler Plymouth.

BERHAMPORE ... K. M. Paul & Sons.

Dodge.

BERHAMPORE ... K. M. Paul & Sons.
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Marquette.

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The South India Motor Owner

Published Monthly by

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'THE South India Motor Owner' is issued on the 15th of each month. It aims to furnish the latest and most authoritative information on all matters relating to motors and motoring under South India conditions. Contributions and correspondence on all matters coming within the scope of this journal are solicited and prompt remittance will be made for all acceptable matter. Contributions should preferably be illustrated.

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(Turn to page 240.)

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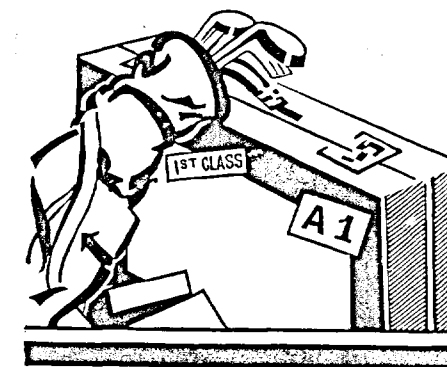
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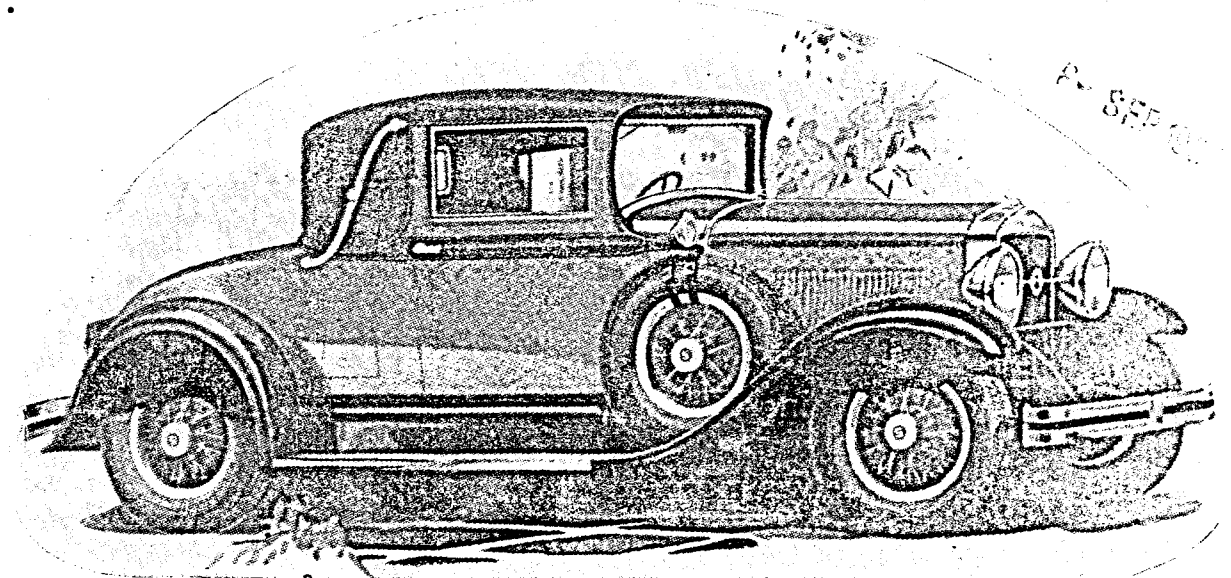
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Official Organ of the Automobile Association of Southern India



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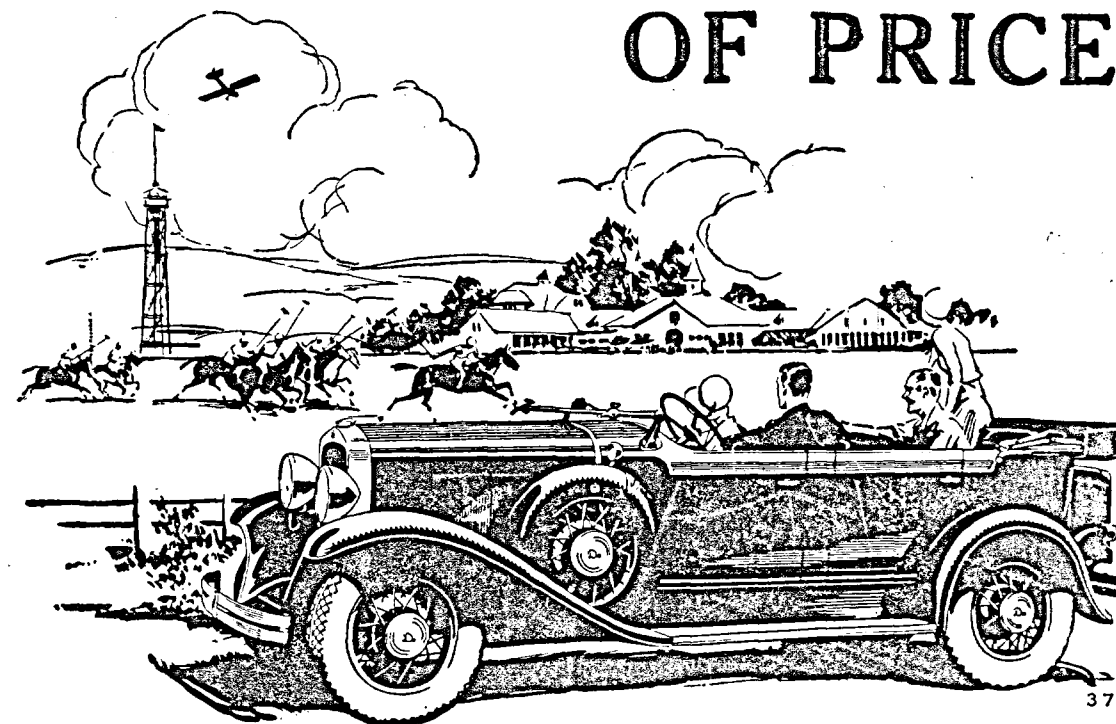
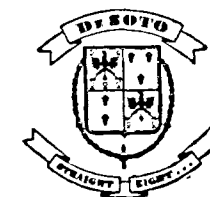
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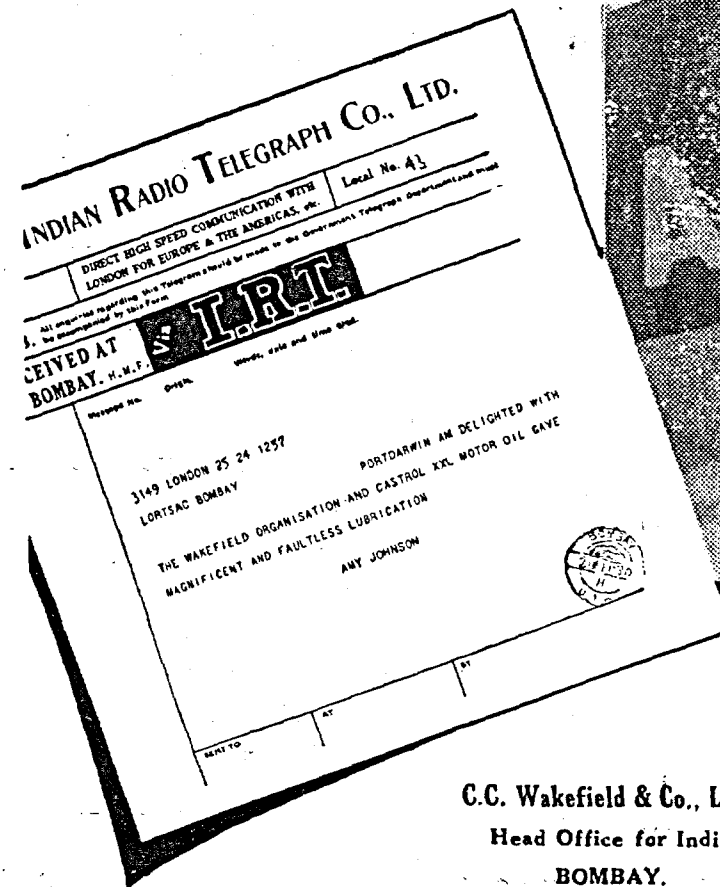
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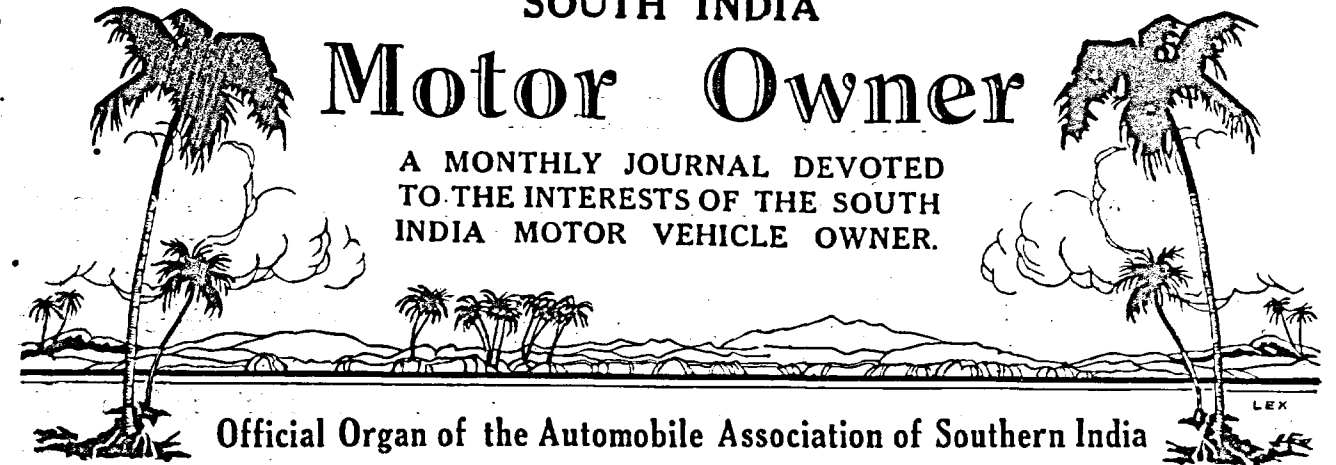
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Motor Owner

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



Vol: II, No. 7

August, 1930

Price As. 8

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EDITORIAL

Twelve Months Old

WITH this August issue The South India Motor Owner commences its second year of publication, for just twelve months ago the first issue of this journal was put before Southern India motorists. Since that first issue the journal has brought regularly every month news and comments upon all matters pertaining to automobilism to South Indian motorists. Much work has been done over the past year and many problems have had to be solved in order to keep the pages of this magazine increasingly interesting to owners of cars and other motor vehicles throughout the large area we strive to cover.

On glancing through that first issue of August 1929, one can see clearly how radically the form of The South India Motor Owner has changed since its inception at that time. We are little more staid—a little more reserved—and our initial conception has been moulded by the inevitable force of circumstances inseparable from the gradual growth of a journal such as this. Not only is this change apparent in the editorial pages but our advertisement page have taken on a changed aspect. Twelve months ago local advertisers occupied the greater portion of space available, whereas now the announcements of big national concerns take priority of place in our advertisement pages.

Nevertheless, despite these changes the journal still fulfills the end which prompted its inception. We publish regularly articles on all matters which are of interest to South India's

many motorists; we record the performance of vehicles in the hands of their many owners; we discuss new methods, new points of view and the whole of our organisation strives to give our readers every assistance toward obtaining the utmost pleasure and efficiency from their cars. This is exactly as was primarily intended. Yet we know now that The South India Motor Owner, can be of still greater service to its readers, can be a bigger, better and more profusely illustrated magazine than it is now, if only the many thousands of English reading motorists throughout Southern India would give us their support.

Some months ago we called the attention to the apathy of South Indian motorists as regards the motoring organisation which is striving so continually to further their interests. This apathy is apparent also not only in connection with the Automobile Association of Southern India but with other motoring matters also. We have proved definitely that no more than two or three motorists in every hundred take an interest in the steady work which is always going on to improve motoring conditions in Southern India. Furthermore, the number of motorists and other road users who interest themselves in other matters of direct motoring importance is ridiculously small. Roads are being improved, municipal interest is receiving every encouragement, the proposed revision of the motor vehicles rules has been thoroughly analysed in order that motorists shall receive the fairest treatment, and yet it is left to a small body of keen people to do all this work, to sift all this

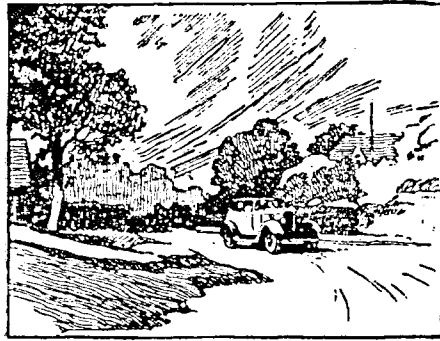
detail in order to make motor owning and motor driving the simplest and most carefree of all recreations. It is indeed surprising that Southern India motorists should be so apathetic upon these important questions, and it seems a grossly unfair division of labour that thousands of motorists should daily accept without a thought the results of the work of these few who are striving continually to bring about better conditions throughout Southern India. In Bombay, Calcutta and the United Provinces; in Ceylon and Burma the vast majority of motorists realise that concentrated effort can really produce results; their motoring organisations are strong representative bodies with that full power which can only come with force of numbers.

Yet in Southern India the Automobile Association of Southern India has so few members as to be hardly comparable with, say, Ceylon, for the area covered by the Automobile Association is so much greater than that covered by the Automobile Club of Ceylon as to make a comparison under ordinary circumstances hardly possible.

Just as the Automobile Association labours diligently with scant encouragement, so we have to give to readers of The South India Motor Owner the best we can with the resources available and much as we should like to see the journal bigger, better, and more profusely illustrated, we cannot achieve this aim unless we receive fuller support from South India's many motorists. Our subscription lists grows steadily day by day, but just as the Automobile Association of Southern India considers that a membership of seven or eight thousand should be possible, so also do we, as publishers of The South India Motor Owner believe we should have a

subscription list of a similar total. Working as we do in close collaboration with the Automobile Association of Southern India we feel that every new subscriber of The South India Motor Owner and every new member of the motor union can help considerably the joint aims of ourselves and the Association. Not only do we wish to see every reader or prospective reader of this journal members of the Automobile Association but we also expect every member of the Association to subscribe to this local organ of the Association. By co-operating in this way the Association will gain in strength and power, and we in turn will be able to help still further by giving the claims of the Association that wide publicity they assuredly deserve. It is only by means of this close co-operation that the work of the union can fulfill its full purpose; individual effort can achieve but little, but co-ordinated effort can secure for the whole motoring community those considerations and that assistance which motorists desire, yet cannot possibly obtain by individual demand.

Our policy is clearly defined as that of the Automobile Association, and just as we desire motorists throughout Southern India to give the Union the support of their membership so do we ask motorists to give this official organ of the Association the support of their subscription. It is to be our aim during the next twelve months to put The South India Motor Owner before an ever increasing number of South Indian motorists, and if we can obtain the interest of but a thousand or so more readers there is no doubt that we shall be able to give that bigger, better and more profusely illustrated magazine which could be produced at the demand of Southern India's many thousand keen motor owners.



NEGLIGENCE

An offence embracing
not what you do, but
- what you don't do -

EVERY motorist who has read the report of an accident case or who has been unfortunate enough to be involved in an actual case himself, either as an interested party, a witness or a member of the jury, must have been not a little confused and amazed at the lengthy arguments put before the Court on the question of whether the driver of this or that car has been guilty of negligence or not. In fact, I think we might well say that in every accident it will be a question of whether A or B has been negligent in deciding who will have to foot the bill for the damage done. It is therefore of the utmost importance to every driver to be acquainted with the rules governing the subject, so that if an accident happens he will know what points to impress upon his mind and what kind of question it will best suit his purpose to put to the people who have witnessed it, so that they too will have the necessary points impressed upon their minds also.

What it is

The question, therefore, asks a writer in the *Morris Owner*, and to which we must now devote our attention is: What is this thing called negligence? It is not a crime, though an act of negligence may lead to a crime such as dangerous driving or even manslaughter, nor will it always be a legal wrong. Salmond, in his book on torts, which is the technical name for legal wrongs, has defined negligence as the breach of a legal duty to take care. It is carelessness in a matter in which carefulness is made obligatory by law. And although he does not include it in his definition, to make it possible to bring an action founded on negligence there must also be some damage arising out of the negligence. The main point, however, is that there must be a duty and a breach of that duty.

A Perpetual Obligation.

From the point of view of the motorist there is little likelihood that there will ever be an absence of the duty, since every user of the highway is under an obligation to see to it that he uses reasonable care in exercising his rights upon it. The point with which we must concern ourselves, then, is that of the breach of the duty rather than its existence.

This breach of one's duty to take care—negligence—is often and easily confused with what we may call wrongful intent, or wilful wrongdoing, and also with inadvertence, and although in some cases they may in fact amount to the same thing it is well that they should be distinguished in order to show more clearly what will amount to negligence on the part of a driver and what falls short of it.

In considering the question and in distinguishing between these three we shall have to look into the mind of the driver who is under observation. If we make him guilty of wilful wrongdoing or wrongful intent, then in his mind he must intend to do a certain act, he must desire to do it, and bring to pass his intention and desire. The word deliberate well describes the state of mind of the man guilty of wilful wrongdoing. He is of course guilty of negligence also, but he may well be guilty of negligence without being guilty of what we have called wilful wrongdoing.

A Sin of Omission

Let us try and distinguish these two things and we shall be nearer finding an answer to our question of what will amount to negligence. We have decided that wrongful intent is the desire in a man's mind to do the act and produce the consequences; in negligence there may be no actual and active wish to do damage, but rather an absence of any wish to avoid doing it. His guilt is that he fails to exercise care which it is his duty to take, not that he does an act intending harm. It is negative as opposed to positive.

We will now try and distinguish negligence from inadvertence, and here again there is usually a certain amount of overlapping. Where there is negligence there will usually be inadvertence; though if the whole damage arises owing to a pure act of inadvertence, then there will be no liability on the part of the driver concerned, and the damage will be put down to what is known as inevitable accident. A man who, driving through a town at a reasonable pace, and keeping a proper look-out and so on, knocks down a small child who suddenly rushes on to the road cannot be made liable; the accident occurred through inadvertence—

it was inevitable, as it is said. If on the other hand he were driving at an excessive speed, then of course the result of an action would be different and negligence could probably be proved.

In a few words, negligence, quoting Lord Justice Bowen, is "simple neglect of some care which we are bound to exercise towards somebody."

In addition to negligence proper there is also a special branch known as contributory negligence. This arises where both drivers have been negligent, so that if A had been driving properly and carefully, he would have come to no harm in spite of the fact that B had been negligent, and, generally speaking, this will prevent A recovering anything from B. One of the most famous cases on this

subject is well worth quoting here, though it occurred before the advent of motorcars. In the month of August in the year 1809 one Forrester placed a pole across the king's highway. Down the said highway one Butterfield came riding "as fast as he could go," and ran into Forrester's pole. He brought an action for damages, to which Forrester replied: "Contributory negligence—you were riding carelessly," and indeed the rider found his careless riding to be "as complete an obstacle to his success as Forrester's pole had been to his horse," as Shirley says in his cases on the common law. And though the case is over a hundred years old it shows clearly the meaning and result of contributory negligence.

It resolves itself into a question of fact, to be decided on the circumstances under consideration.

To Avoid Dazzle

Some suggestions that May Assist the Novice



A VERY large number of novice drivers now appear to be using the Madras roads, and for their benefit we offer a piece of advice that has been frequently tendered in the past in these pages.

There is in some quarters an entirely mistaken idea that it is courteous and a sign of "good driving" to extinguish one's head lights at the approach of another vehicle, it being hoped that the other driver will respond in like manner. This practice, which is known as "blacking out," has been condemned as exceedingly dangerous by every motoring organisation and by almost every experienced car driver. When the head lamps are suddenly extinguished, the driver's eyes do not respond quickly to the sudden contrast between a well-lit road ahead and a faintly illuminated surface dimly outlined in the feeble rays of the side lamps. The result is that cyclists or pedestrians ahead of the car are not observed, and is not a few instances they have been run down by an overtaking vehicle.

Whatever excuse there may have been in years gone by for the practice of blacking out, there is none today, for anti-dazzle devices are legion. There are, for example, what are known as bi-focal bulbs, which at the operation of a switch, throw either a long, penetrating beam or a soft, diffused light, the latter having very few dazzling pro-

perties, and there are several lamp-dipping or reflector dipping contrivances, besides what are known as progressive dimmers, which can be purchased at little expense, and which are eminently satisfactory. We urge all readers to see that their lamps are equipped with one or other of the anti-dazzle attachments referred to.

Where the expenditure of even a few rupees is a material consideration, fairly effective modification of the existing wiring layout can be easily made at negligible cost. All that is necessary is to insert in the wiring to the right-hand head lamp a separate switch, on the operation of which that lamp is extinguished. At the same time, set the left hand lamp so that its beam is thrown very slightly to the left of the straight forward position. It will be found that when the right-hand lamp, which is trained and focused in the ordinary way, is extinguished no inconvenient dazzle from the left-hand lamp will be experienced by approaching drivers, while it will illuminate the left half of the road quiet sufficiently to enable the man at the wheel to pick out cyclists, pedestrians, or unlighted vehicles that may be on the road ahead.

Never forget that suddenly to extinguish both head lamps on a dark night is to court trouble. This blacking out should be definitely prohibited.

From an Owner Driver's Note Book



by
"SPOTLIGHT."

Here's to Batteries.

It is difficult to surprise or amaze women. In fact I might go so far as to say that I have only seen two women *really surprised*. The first occasion was when I proposed to my wife which I did in a most unorthodox and unexpected manner—I may tell the whole story one day. The other occasion occurred a few nights ago when a friend who had called upon us was leaving. She climbed into the driving seat, switched on, and trod on the starter. Immediately the car moved forward at least six yards before the 'driver' realized what was the matter. The expression of amazement on her face was really good and it was some time before I could convince her that she had left her gear lever in top and had been carried along by the starting motor.

I thought about the matter later and came to the conclusion that we do not pay sufficient compliments to the little black box which does so much for us. When you think of the things the car battery does it is surprising to ponder on the little attention it gets. It blows your horn, lights your lamps, and in addition to starting your engine umpteen times a day, can even propel your car and you quite a long way if necessary—quite an appreciable job, when you think about it.

Too Much Tickling.

Few car owners realise that every time the carburettor is flooded excessively they waste a great deal of petrol—and how often waste occurs can be judged from the fact that most motorists jerk the float up and down until petrol actually appears and splashes over the engine.

If every car owner wastes by this means no more than a tea-

spoonful of petrol a day this must make approximately a gallon over the course of a year—and if a million car owners follow this example every day the loss will amount to two thousand gallons daily—and wise men are talking of a 'petrol shortage'!

The whole point is that excessive flooding is entirely unnecessary because in this climate the engine of a car is always warm enough to start without it. Even in the hills, one flooding when starting early in the morning should be quite sufficient.

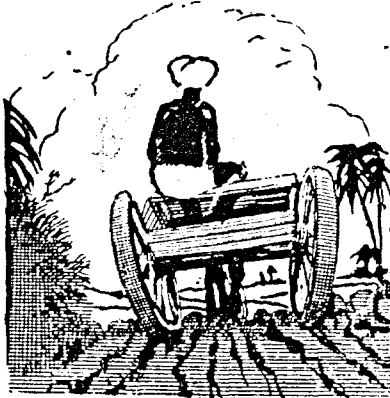
A Sign of the Times.

There is a proposal on foot, sponsored by one of the great motoring associations, for the development of an arterial road across Europe, thus linking up Great Britain with the Near and Far East. It is reported that the scheme has been favourably considered in responsible circles, and the Turkish Government has authorised the use of the triptyque for touring cars, and agrees to permit tourists to pass through the hitherto forbidden military zone. The time may not be far distant when one can step into one's car in England and proceed Madras.

Paying Attention to the Job.

I am convinced that in attention to the business on hand is responsible for the majority of accidents on our roads to-day. And the fault is not always with the much maligned pedestrian. Within the last week I have seen two really excellent examples of wool-gathering on the part of motor owners.

The first was when I was rounding a blind but easy corner, when a fellow on a motor cycle met me head on, driving about forty-five on the wrong side of the road. I saw from his face



that he was actually day-dreaming—there is no other way to describe it—and it was amusing to watch him wake up as he executed a dexterous swerve and missed me by inches. He was so far over on his wrong side that he left me not the least inch of room to swerve, unless I had gone across to my wrong side—and I detest doing that.

The second case was one where I was driving behind a single occupant of another car. Both of us were going about the same speed on a perfectly straight, clear road. Suddenly I was amazed to see the driver in front head straight for the side of the road and it was not until his near front wheel bumped in the 'rough' that we woke up. So frightened was he that he jerked the wheel right over and nearly collided with a gate post on the other side of the road, in fact he only saved himself from a nasty crash by clever driving after the awakened.

When one is driving a car or riding the



DAY DREAMING.

much more unstable motor cycle, day-dreaming even on a quiet road is asking for trouble. To be caught wool-gathering on a busy thoroughfare is assuredly suicide. And yet, I wonder how many of us really concentrate on the business of driving our cars as they should be driven—always?

Some Slip.
"Can you send some one to see my car? I have had to leave it at Hyde Park Corner, the clutch is slipping," announced a breathless motorist entering a garage in the West End of London recently.

A mechanic was sent and later returned. "Clutch slipping," he snorted. "The cardan shaft has fallen out." And one can imagine the owner revving the engine and dabbing the

clutch pedal in blissful ignorance of the all important fact that there was no connection between the gearbox and the back axle!

Changing up.

A reader who at first experienced some difficulty in changing up the gears of his small car, adopted an old dodge of mine—rooted up the floorboards, and watched his clutch to note its actual behaviour under various manipulations. That which greeted his eyes astonished him not a little.

He was so interested by the lightning stoppages of his clutchshaft that he timed them against a rev-counter, and found that his clutch stops within two seconds of being withdrawn when the engine is running at 1,500 r.p.m. He asks for similar figures in respect of other cars. His general verdict is that the momentum of the modern high clutch counts for nothing against the resistance of cold oil in a four-speed box, and that most noisy changing up is due to the driver being too slow in his movements.

It will not be possible, I fear me, to obtain many figures for him, as few owners possess both a stopwatch and a rev-counter; but it would be rather interesting to have factory figures for a few leading cars, especially if they stated whether the oil was warm or cold at the time of the test.

My correspondent avers that he can only get a silent change up from second to third by double-clutching and accelerating in neutral. This is clean country to my experience; if I scrape an upward change, it is almost always because I have attempted it too soon. I have not yet owned a car which necessitated double-clutching in the upward changes.

Two Soft Answers.

"Why the thunder didn't you signal what you were going to do?" demanded the angry he-motorist.

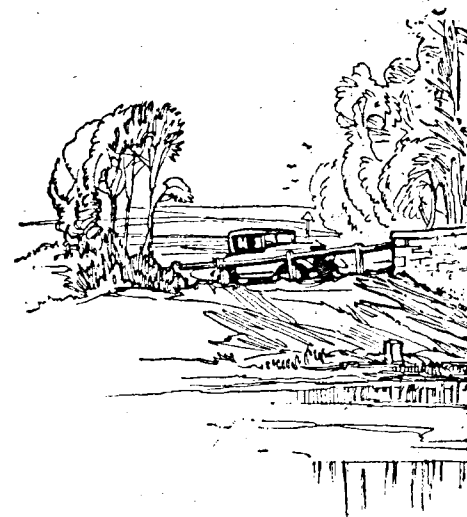
"Because I couldn't make up my mind what I wanted to do, and I wasn't going to give you the wrong signal and chance a smash-up," retorted the lady driver, haughtily.

Salesman: "And is there anything else I can show you about this new model?"

Young Lady: "Yes; please show me how to turn on the radiator if the car gets cold."

Eliminating - - - Roadside Troubles

Tyres, Plugs & Petrol Systems —Handy Places for Tools



ROADSIDE troubles, which go so far towards spoiling the comfort of a journey by car, are often avoidable. They are the punishment meted out to the driver who neglects his car. Therefore, not only this Whitsun but at all times, the wise motorist will make every effort to keep his car reliable, so that he can reduce to a minimum the chances of being held up on the road.

There is no excuse, for instance, for a choked jet. Most 1930 models are provided with very efficient petrol filters which only want cleaning out occasionally. Moreover, the popular types now in use usually have glass bowls in which the presence of impurities can readily be detected. If no such filter is fitted it is well worth the moderate cost of installing one to feel safe from troubles with the petrol feed. Even where an efficient filter is fitted, however, it is desirable occasionally to remove the lid of the float chamber on a carburettor and wipe out any dust or dirt that may be found. Certain types of impurity seem to escape in the form of infinitesimal particles through the minute passages in the filter and coagulate again on reaching the float chamber.

Sometimes there are additional filters in the petrol feed system—in the vacuum feed, for instance—which should be glanced at occasionally, while once in a while, if it is at all possible, it is not a bad idea to clean out the full tank.

As regards sparking plugs, here again there is no need to suffer trouble providing the correct type of sparking plug is being employed, except, of course, in the case where an engine is so badly worn that masses of oil escape upwards past the piston rings only to be deposited on the plug insulation.

The insulation may also be badly burnt, with the result that its properties are largely diminished.

Using too "hot" a plug, on the other hand, will result in this important component suffering readily from oiling up, particularly after descending hills with the engine in gear, while when starting up in

the morning if the engine is strangled to excess liquid petrol may be deposited in the interior of the plug, thus causing a short circuit. It is essential, therefore, for the owner-driver to find out exactly what type of plug suits his engine in ordinary use, and stick to it. It is only necessary then to take out the plugs occasionally, take them apart and wipe them if necessary, and reset the plug points to the correct gap.

Oil and Air Cleaners.

Many cars are now fitted as standard with oil cleaners and air cleaners. Neither of these is immediately apparent as trouble savers, but in the long run they prove a very great advantage as they diminish to an enormous extent the wear which takes place in an engine, and if the wear is reduced, obviously there is less leakage of oil and consequently less likelihood of the sparking plugs oiling up or of the driver continually having to stop to pour in fresh lubricant. They are particularly desirable on all roads in South India, where the roads are, in places very dusty, as they prevent dust getting sucked into the engine, mingling with the oil and being burnt to a hard carbon deposit, which is very much harder to remove than the softer deposit free from road grit, etc.

The car should be kept clean, for if the chassis is plastered with thick mud and dirt, how can loose nuts or bolts be discovered, or cracks in vital parts be perceived? Besides, dust and mud have an unfortunate habit of mingling with grease and oil and working in between the faces of such important parts of the car as the steering heads, shackles, etc. Therefore, when a car is washed, particular pains should be devoted to cleaning the working parts of the chassis, going round immediately afterwards with the grease gun or oil can in order to force out water and force in lubricant. Excellent rubber covers can now be purchased for various parts of the car, such as steering gear, brake connections,

etc., which retain lubricant and exclude dust for long periods.

At this season of the year it is desirable to change the oil in the crankcase, for during the recent hot and dusty months the frequent use of the air strangler has probably resulted in an overdose of petrol, leaking past the rings into the crankcase and diluting the lubricant. Moreover, a car starts more easily and runs more sweetly on fresh oil. It is just as well to remove the sump altogether and clean out any sludge that may have accumulated in nooks and crannies of the crankcase.

The gearbox and back axle should in the same way be drained, and, rather than flush them out with paraffin, which is a cutting oil, it is better to refill with some very thin lubricant and to take the car for a short run so that any remains of dirty oil or grease or sludge generally can be washed out. After a short run the cleaning oil should be drained out and the correct grade of lubricant poured in. Every part of the chassis should be greased; at the same time particular attention should be devoted to the steering connections and spring shackles.

The magneto should not be forgotten, as trouble could easily be the result if the spindle were at all tight and ran dry. Only the thinnest lubricant, such as sewing-machine oil, should be used for a magneto, unless the makers recommend otherwise, while with regard to the magneto, or coil-ignition distributor, the contact-breaker points should be examined to see if the gaps between them are unduly wide or, alternatively, not wide enough. The points should be bright and clean.

The tyres, also can be profitably examined from time to time to see if there are any sharp flints or small nails embedded in them. The most comfortable way of inspecting them is to jack up each wheel in turn, to seat oneself on a low stool in front of the wheel and revolve it slowly, probing every crack with one of those ingenious devices, found on large and expensive penknives, for the purpose, we have always understood, of extracting stones from horses' hoofs.

Care of the Battery

THE amount and kinds of attention required by the battery of a car to secure for it a great deal longer life than that of the average are such as to call neither for skill nor much time.

All that it needs is, first and foremost, occasional replenishment with distilled water (not tap water or rain water); this is a five-minutes' job once a fortnight in usual circumstances. The water must be poured in through the vent holes and the level of the dilute acid in each cell should be kept above the tops of the plates. Otherwise, those parts of the latter that are exposed to the air deteriorate

A Question of Jacks.

While on the subject of jacking up wheels, it is just as well to mention the desirability of every car being equipped with some form of jack that can be operated without the necessity for grovelling under the axles. True, tyre troubles nowadays are few and far between, but one is not always fortunate and in any case many parts of the car that are generally neglected would more frequently be attended to if the owner-driver knew that he could jack up his wheels with very little trouble.

Next to permanently fitted jacks which form the subject of another article in this issue, there are a run ber of excellent devices available which can be placed under the axles and operated with very little effort.

Accessible Tool-kits.

If in despite of all the precautions taken, roadside troubles overtake one, it is very desirable that the tools should be instantly accessible. The old style of storing the tools beneath the floor or under the seat cushion is fast being superseded by the selection of a variety of other more accessible positions.

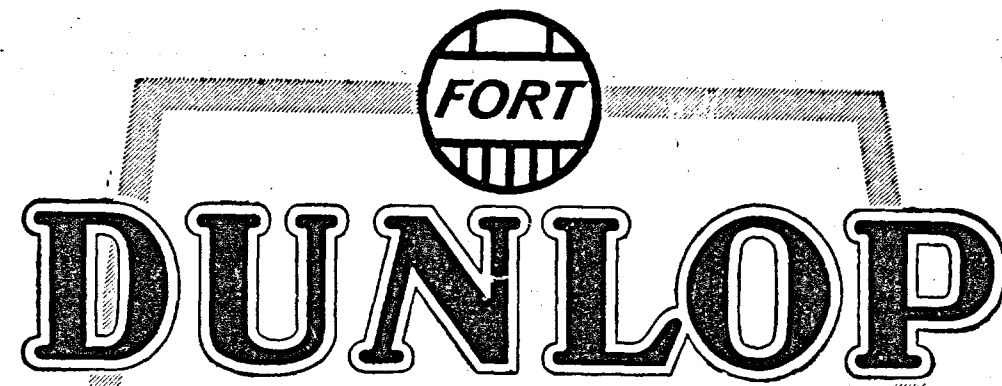
Tools are now stored under the bonnet—a good place, as very often the bonnet must be lifted in any case to deal with whatever is amiss—in drawers in the scuttle, in flaps in the doors, on or under the running boards, or in the lid of the trunk fitted at the rear of some cars. The tools should all be fitted into special recesses so that they can be immediately found and quickly put away after use, while a light under the bonnet is of very great assistance if trouble be experienced after dark. In the same way an inspection lamp that can be taken to any part of the car, is of very great value.

Finally, it is just as well to have in some handy position a tin of hand-cleansing preparation and a clean towel, so that if the unfortunate owner-driver has to do a bit of work on his car between his starting point and his destination he can, at any rate, arrive tolerably clean and presentable at his journey's end.

rapidly and reduce proportionately the capacity of the battery in storing current. After a while the capacity is so reduced that the cells will not store sufficient current to start the engine.

The second form of attention is to keep the terminals of the battery clean (free from corrosion) by wiping them with a rag occasionally and applying a fresh and liberal coating of pure vaseline. If verdigris is in evidence, the terminal nut should be removed and cleaned, and well coated with vaseline.

M.W.B.

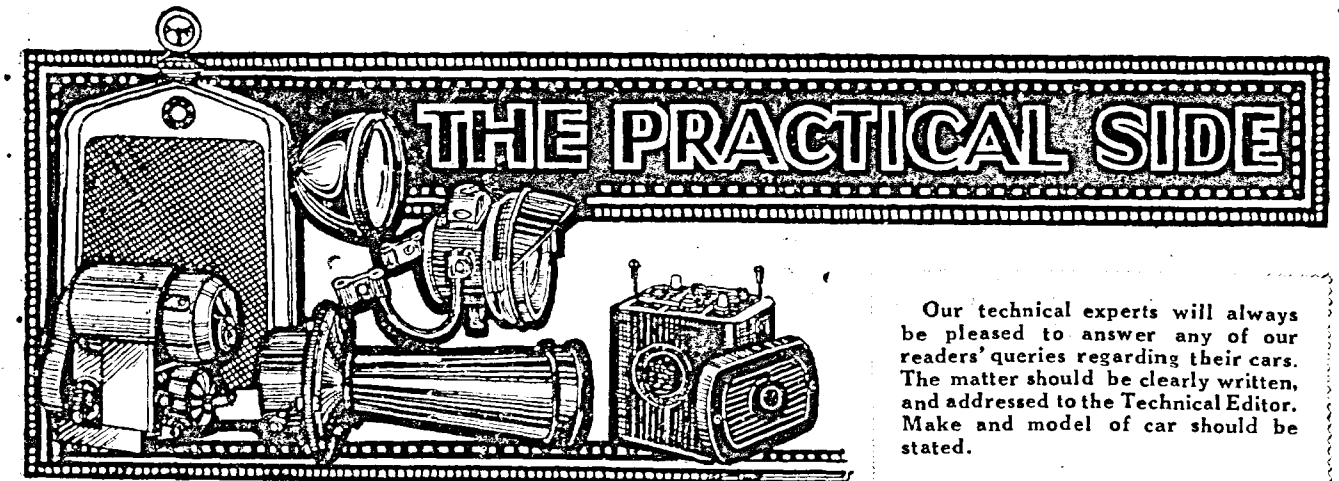
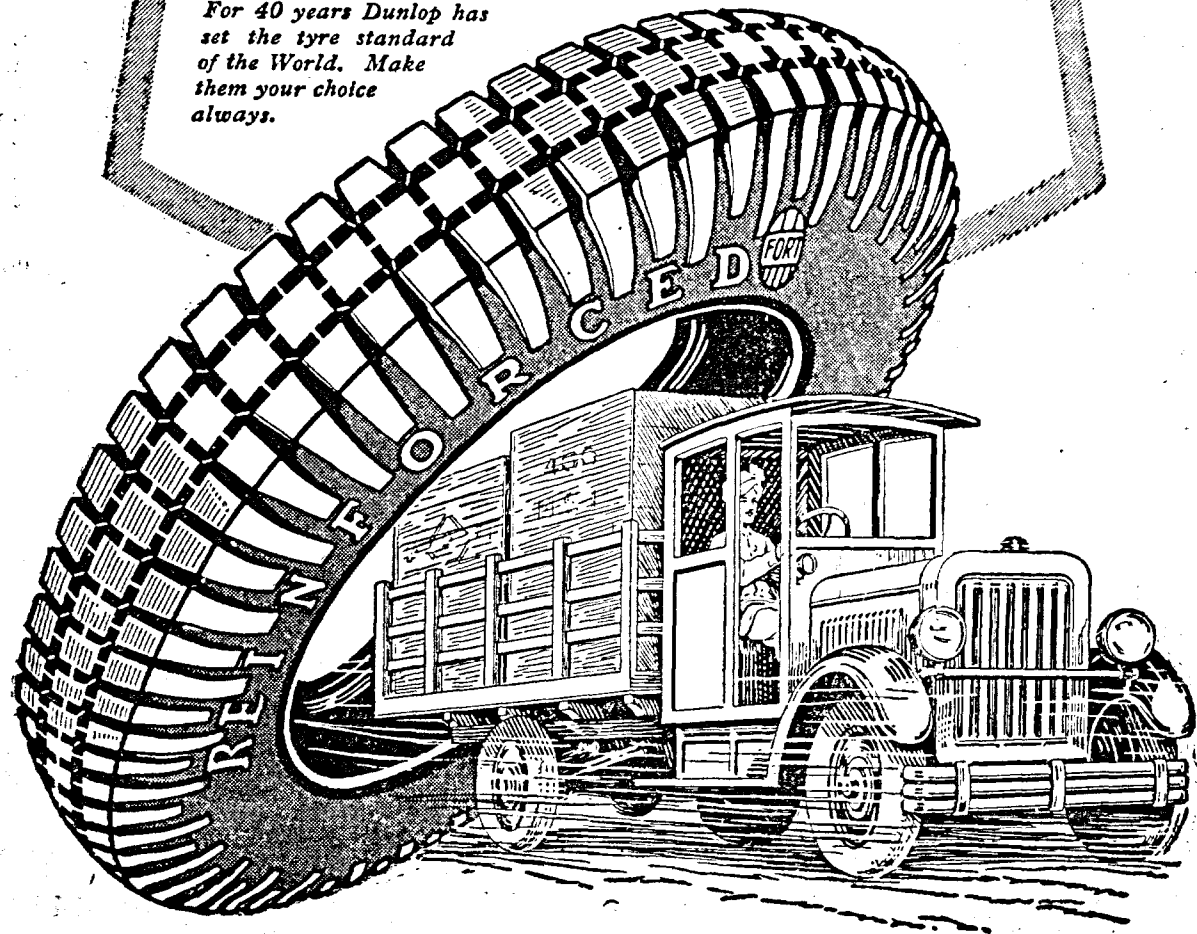


DUNLOP

... whether for heavy trucks or light delivery vans—for motor buses or for private cars—Dunlop provides a dependable, hard-wearing tyre to meet your needs.

No tyre on the road is safer or more durable than the latest "Fort" Dunlop and none that give greater satisfaction to users.

For 40 years Dunlop has set the tyre standard of the World. Make them your choice always.



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.

Curing Wheel Wobble

How an Owner-Driver Dealt Effectually and Quite Inexpensively with a Serious and a Frequently Baffling Trouble

THE final curing of a particularly obstinate case of periodical wheel wobble in a low-priced English car may prove of interest, the various attempts at correction, perhaps, giving owners of similarly offending cars ideas upon which to work.

Some eighteen months ago the car an 11'9 h.p. model—was shod with 730 x 130 mm. balloon tyres upon new wheels. The immediate result was bad wheel wobble, which necessitated stopping the car each time it occurred.

When the car was again taken out it steered perfectly. Now, the only change of conditions possible was the gradual leakage of air from the tyres, and it was found that lowering the pressure of the front tyres steadied the steering. On the other hand, lowering that of the rear tyres sometimes aggravated the trouble, the tail apparently wagging the dog, if the simile may be applied to a motor vehicle.

Inexplicable Recurrences

The trouble did not recur for some 2,000 miles, which were run with a front tyre pressure not greater than 17 lb. and a back tyre pressure of about 20 lb. per square inch, the tyre maker's figures being 20 and 25 lb. respectively.

On the next occasion examination of the axle assembly, which was of the half-elliptic type, disclosed considerable shake in the king pins and steering tie rod pins. All the vertical pins and brushes of the steering system were, therefore, renewed.

Once more the trouble disappeared, and on its reappearance several weeks later examination showed no trace of mechanical wear. It was surmised

that either the springs must be taking a 'set' through overloading, or the wooden wedges beneath them must be so crushed as to alter the castor angle of the king pins.

Accordingly, the wooden wedges were replaced with wrought-iron wedges, which gave, perhaps, some seven degrees more castor angle. Again the elusive trouble vanished, and the owner ceased to maintain tyre pressures by gauge. Then one day retribution fell upon him when making a 200-mile journey.

After some fifty miles of faultless steering the car suddenly became literally uncontrollable. The owner now changed both front wheels for the original front wheels which were carried as spares and completed the remaining 150 miles sick at heart, with the car, more or less under control, wobbling continuously.

The following day he found to his amazement that the rear tyres, although apparently sufficiently inflated, were being run at a pressure of 7 and 10 lb. respectively, and he realised that "the tail could wag the dog."

After a few more days of immunity the old trouble cropped up again. This time, for lack of any other data upon which to work, the effect of the tyre valves upon steering was considered.

Accordingly, the valves were balanced by strips of lead bound to the spokes by copper wire. This balancing seemed to bring complete immunity from wobble on good roads, but the car signalled its return to mofussil conditions some weeks later by commencing the most alarming "shimmy" the instant bad roads were struck.

Thoroughly "fed-up," the owner wrote to the makers for advice, and fitted a complete front axle assembly—unusually drastic treatment, seeing that the car's guarantee has expired some eight months previously. At the same time, new front shackles pins and plates were fitted, and thus any possibility of side-sway of the front springs was removed.

Three thousand more trouble-free miles were covered and, again the dormant failing showed up. The wooden wedges under the springs were replaced by new wedges of fibre of the same dimensions as the wrought-iron wedges previously mentioned.

On this occasion, however, the changed pivot angle did not assist matters, and the owner, by now devoid of ideas, started to reflect on the few long periods of absolutely satisfactory steering. The longest of these were after rebushing the bearings and after fitting the new axle assembly. Steadiness was always lent by low tyre pressures, though this

entailed heavy steering. Light slowly dawned upon him. It was when there was a frictional drag, either from tight-fitting new bushes or from slack tyres, that wobbling was checked. The "shimmy" was prevented from developing by the damping effect of friction.

Cured by Frictional Damper.

The solution of the problem was now that of finding an adjustable frictional damper applicable to this car. Eventually, one shock absorber of a pair designed for motor cycle front forks was fitted.

With both front wheels jacked up, the shock absorber was adjusted until its effect was just felt at the steering wheel. In trepidation, the owner set forth, but soon found that he could (and can still) steer in comfort over my road surface and at any speed. He now keeps his front tyres at the 20 lb. pressure recommended by their makers, and never experiences any "Kick" at the steering wheel.

The "Drive-in" Store

Catering for the Motorist - Customer

By G. F. WILKINSON

(An Interesting Note from the Morris Owner.)

NEW problems confront many retail trading communities as the motorcar becomes more and more an everyday necessity. Although the provision of adequate parking space for customers' cars may not be a direct responsibility of the trader, he is certainly interested in finding a solution of the problem, for an increasing number of customers cannot fail to be influenced by the manner in which their convenience as motorists is studied.

Why Not?

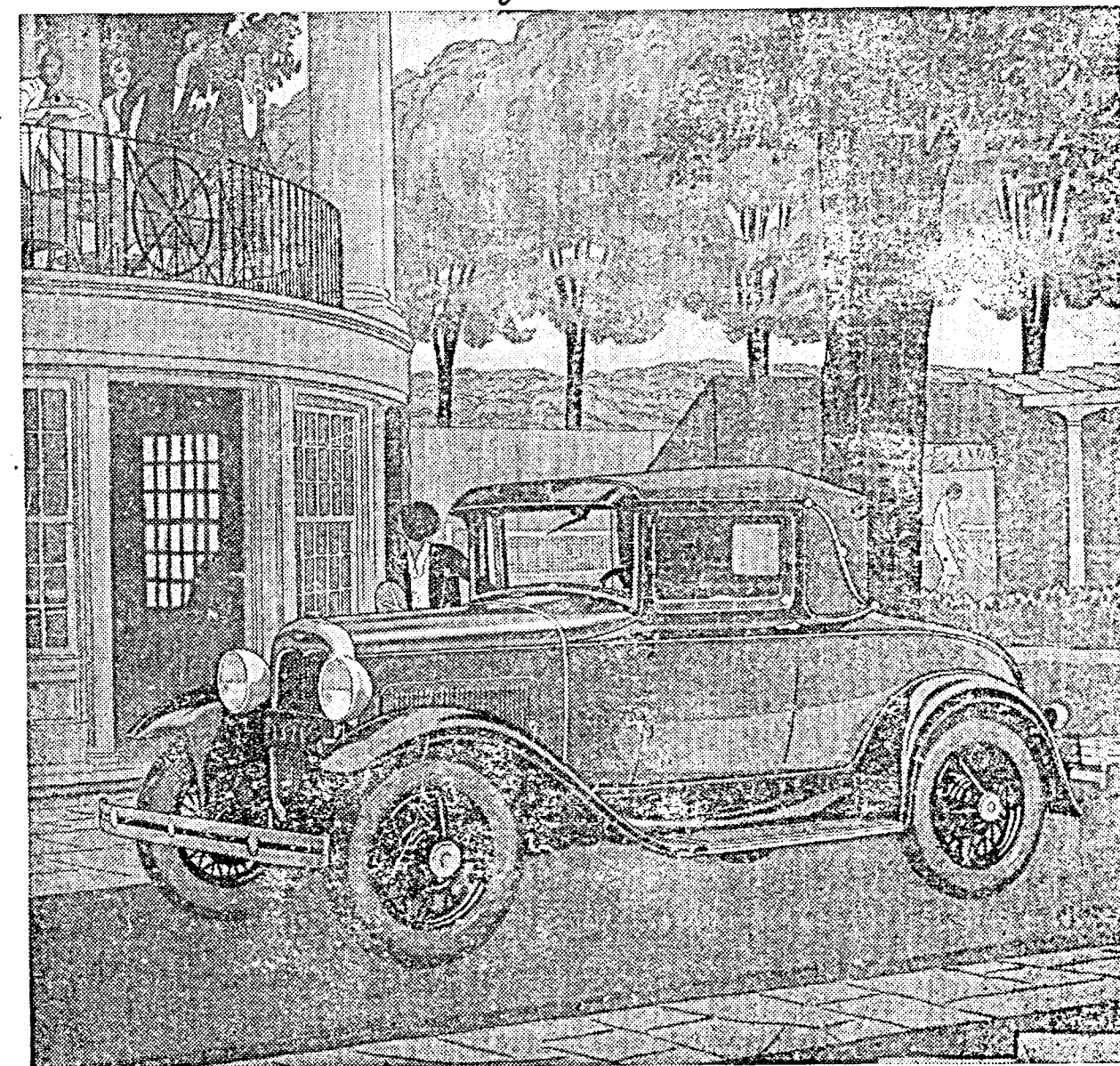
Many ideas have been put forward at intervals, but a new one that deserves consideration is that of what may be called the "drive-in" store. As far as possible, the motorist-customer desires three things—to be able to alight at the entrance to the shop, leave her car unattended, but in safety, for a reasonable period, and re-enter it again as near the shop as possible. For the owner-driver this is manifestly impossible while the car has to be left in the public street, but it would be perfectly practicable if the store were so constructed that part of the ground floor was devoted to a convenient drive-in.

There seems no reason why many stores of the future should not be designed around this principle. It would have the effect of reducing the ground floor area that could be devoted to trading, but this disadvantage would be counterbalanced by the undeniable attraction of the private car park. Incidentally, the design would add appreciably to the effective display frontage, for the run-in could be bordered by display windows, and pedestrians would be attracted as well as motorists.

A Transatlantic Parallel.

Novel as such a method of store construction may appear, something on the same lines is already growing familiar in America, where the parking problem is still more acute. On the West Coast many of the newer stores are being built with extensive parking areas—some of them having space for as many as 400 cars. In other cases markets are being laid out on the same lines, new shops being built around a spacious parking ground, instead of by the side of main thoroughfares. The shops are let to individual retailers representing as wide a variety of trades as possible, so that the shopper finds all her requirements met within a few yards of her car.

New Beauty for the New Ford



The New Ford Sports Coupe

In addition to its beauty of line and colour, the New Ford brings you an unusual degree of mechanical excellence and good performance.

The bright Rustless steel appointments, Deeper Radiator, Smaller Wheels, Larger Tyres, and Larger Hubcaps enhance the beauty of an already accredited leader of the light car field.

EASY PAYMENT TERMS GLADLY ARRANGED.

FORD MOTOR COMPANY OF  INDIA, LIMITED, BOMBAY.

THE ONLY TYRE FACT YOU NEED TO KNOW

WHEN you read a tyre advertisement that almost sweeps aside your judgment with its enthusiasm:

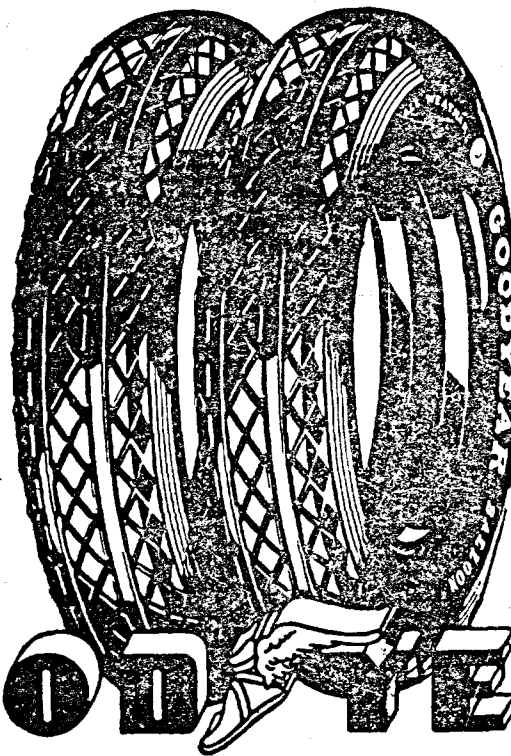
Say to yourself: "The World over more people ride on Goodyear Tyres than on any other make!"

When you face a sales argument that sounds good but you have no means of testing:

Say to yourself: "The World over more people ride on Goodyear Tyres than on any other make!"

Then, just for variety, ask yourself "Why?" Why is it true that "The World over more people ride on Goodyear Tyres than on any other make?"

In the answer to that question is the only tyre fact you really need to know, to be sure of getting the finest tyre values money can buy!

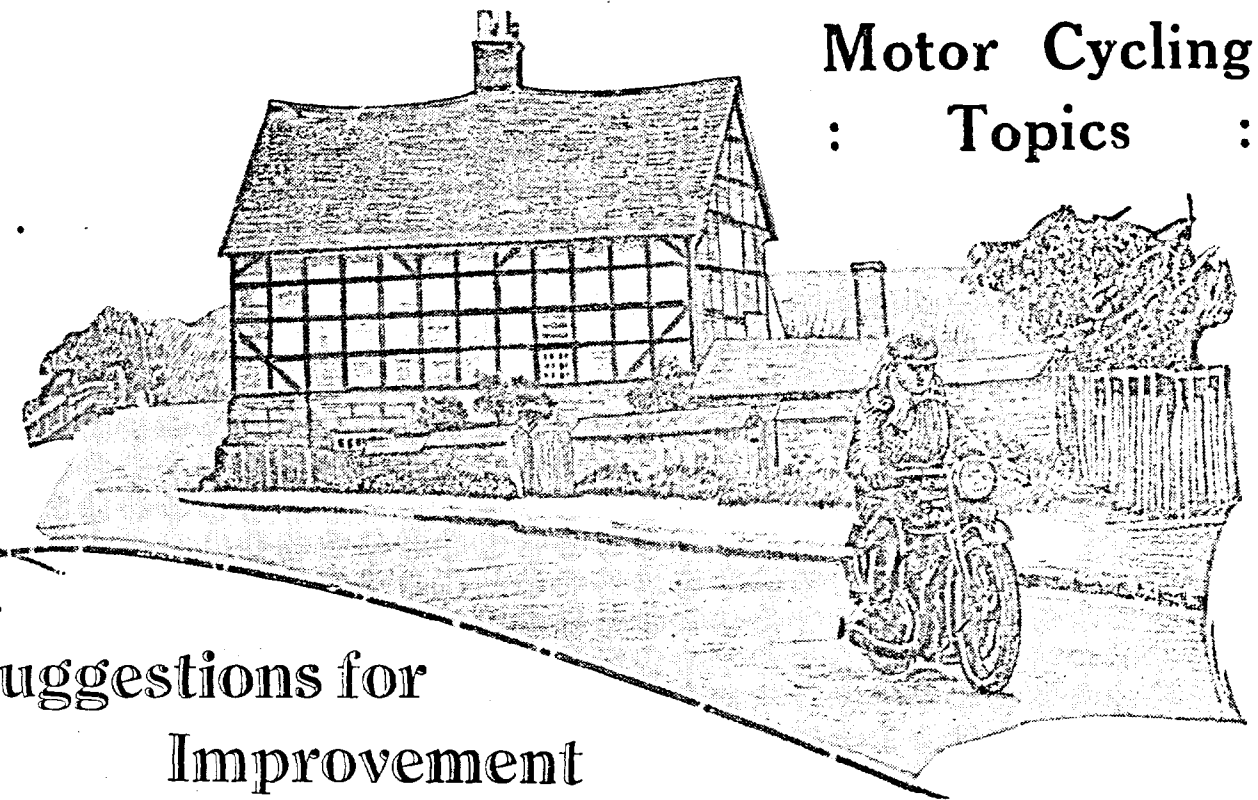


GOODYEAR

Tread and carcass: these are the two main parts of a tyre. There is greater traction in All-Weather Tread. There is greater VITALITY in the Super-twist carcass. EVIDENCE? This can be demonstrated. Proof? "The World over more people ride on Goodyear Tyres than on any other make!"

L-30-24

Motor Cycling : Topics :



Suggestions for Improvement

A few of the things which could be considered by motor cycle designers

THE majority of machines are at the best an unknown quantity when it comes to the question of starting, and manufacturers as a whole do not appear to realize how few machines can be persuaded to start without first calling for the expenditure of a considerable amount of energy. It must be borne in mind that there are many people who are perfectly capable of riding a motorcycle but who are handicapped when it comes to exerting physical strength to any marked degree.

Electric horns, in common with some from of dynamo lighting, are fast becoming standard equipment. This being so, some arrangement should be made whereby the horn can be fitted in a position that is both neat and unobtrusive. At present these horns are held by the usual from of clip just whatever room is available. In fact some modern machines present quite a problem as to finding a convenient spot to locate the hooter, and the time has now arrived when provision for the attachment of this very necessary device is made on every machine. I would suggest the best position to be beneath the petrol tank at the forward end.

Batteries too, in a number of cases, are often attached in such a manner as to spoil the lines of the mount, and usually give the impression of having been stuck on as an after-thought. Some manufacturers have solved the problem by fixing the battery behind the seat tube, but the accessibility

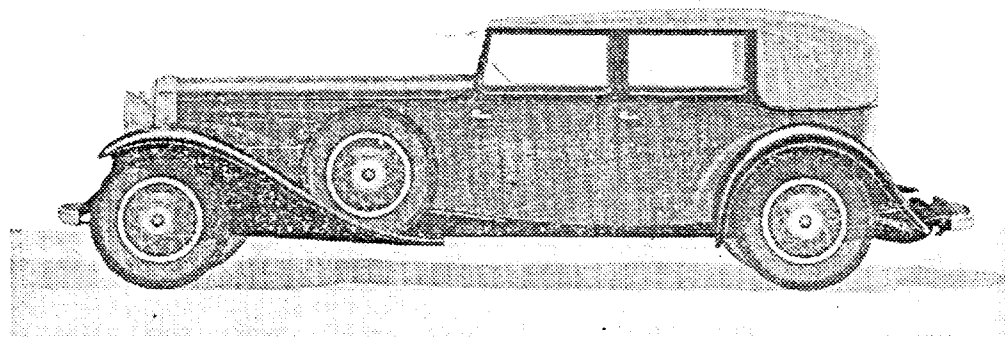
of the gearbox should not be impaired by the adoption of this plan.

It is somewhat surprising in these days that machines are not equipped with a petrol gauge, although years ago some makers fitted them. What is required nowadays, however is a dial-reading gauge incorporated in the petrol-filler cap. The fact of having to stop and peer inside the tank to see how much fuel one has can amount to a petty annoyance, particularly at night or if the weather is wet.

Sump lubrication, with force-feed to all the important parts of the engine, is quickly coming to the fore. But some of the systems at present in vogue lack any form of tell-tale to prove that the pump is still functioning. True, so efficient would the system appear to be that its reliability may be almost taken for granted, but, nevertheless, no car manufacturer would dream of marketing a car which was not equipped with an oil-gauge which was easily readable whilst the vehicle was in motion; the average motorcyclist, taking, he does, for keener interest in his engine than most car owners, would like some ready means of reassuring himself from time to time that the oiling arrangements are performing their duties in a proper manner. In this connection there would seem to be scope for mounting a neat oil-gauge of the flush-fitting type in the top of the petrol tank, from which position it could be conveniently read.

The Sixteen - Cylinder Cadillac

A Car with many Unique Features and Outstanding Mechanical Details.



THE CADILLAC V-16 ALL WEATHER PHAETON

A MOST interesting development in motor car building was witnessed this year when the Cadillac Factory placed on the market a 16 cylinder Cadillac. This new car is in addition to the 8 cylinder Cadillac and La Salle cars which will continue to be built and marketed as before.

When the Cadillac V-16 was exhibited in the United States recently it achieved instantaneous success and was acclaimed by everyone as a car of unusual merit, both in appearance and its skilful design. Power, endurance, comfort, and ease of handling are the most prominent features in the new Cadillac. It can be driven mile after mile, hour after hour, at greater speeds than any stock car has ever been driven before with a sense of security and safety hitherto unknown when travelling at high speeds. The acceleration from 40 to 90 miles an hour is astonishing and yet it is perfectly smooth. This sensation of command of lively power in one of the most fascinating features of the 16-cylinder Cadillac. Further, the car has standard of comfort, of smartness in external and interior lines, finish and equipment, new and greater strength in construction throughout commensurate with its engine power. The power of the engine was so great, the chassis to which it was harnessed so massive, the body so large, that the engineers who designed the V-16 had to solve many problems in building this luxurious car.

Features of the V-16 Described.

The cylinder bore of the V-16 motor is three inches and stroke four inches. Piston displacement is 452 cubic inches. The motor develops from 175 to 185 horse power at 3,400 revolutions per minute. Pressure feed lubrication to main and connecting rod bearings, piston pins and camshaft bearings is provided. Overhead valves are lubricated direct from the oil filter and the timing chain from the oil pressure regulator. A fine mesh screen above the oil sump, continually strains the oil.

An Inherently Balanced Engine.

The engine is inherently balanced. Forces of the pistons and rods on opposite sides of the V neutralize

each other. Any torsional vibration, naturally small because of the rigid crankshaft and light power impulses, is eliminated by the harmonic balancer. The engine is suspended on five rubber mountings, two at the front, two at the rear, and one at the rear end of the transmission. The flow of power from this engine is comparable only to the steam turbine, so brief is the interval between impulses and so continuous the torque. The lighter impulses of power, due to multi-cylinder construction, give performance not available in engine with fewer cylinders.

The cylinder blocks are of close grained nickel iron, cast in blocks of eight. They are placed on the crankcase at an angle of 45 degrees. The cylinders are machined and honed to a glass smooth finish. The cylinder heads are machined all over, retarding carbon formation and producing exactly equal volume in each combustion chamber, ensuring all cylinders receiving an equal amount of fuel vapour. The chamber is specially shaped to secure the greatest efficiency in explosion of the gas. The engine contains 32 overhead valves with a unique automatic valve silencer used only on Cadillac. This valve silencer, which includes a plunger into a small cylinder full of oil, operates much like a shock absorber. An eccentric cam arrangement automatically adjusts the silencer to compensate for wear, so that no adjustments are necessary.

Eliminating Excessive Heat.

A new type of exhaust manifold eliminates excessive heat expansion. It is cast in three sections with expansion joints and is finished and baked with porcelain enamel. Thus the appearance is unaffected by hot gases passing through it. Two separate exhaust systems provide for greater heat dissipation and allow for quicker scavenging of the cylinders.

The close-grained, annealed, nickel gray iron used in the pistons has been found to resist scuffing better than aluminium at its present stage of development, and the weight is only slightly greater than that of aluminium. Clearances are constant at all

engine temperatures because the expansion rate of the pistons is equal to that of the cylinder blocks. Nickel iron pistons cost more to machine than aluminium but hold their finish longer for the reason that nickel iron is harder than aluminium.

Connecting rods are drop forged, strong I-beam design of molybdenum steel, set side by side, two on each crank pin. Accurate fit is secured by diamond boring of the crank pin and piston pin ends; the most accurate method known. Connecting rods for each individual engine are matched in weight. Positive piston pin lubrication, essential to the long life of this vital part, is secured by gun-drilled connecting rods, providing an oil passage. All piston and rod assemblies can be removed and replaced without removing the cylinder heads, thus reducing service operations.

The two plane crankshaft is forged of high carbon steel. It weighs 130 pounds and is supported by five main bearings with a total projected area of 26½ square inches. The total bearing length is virtually one-fourth of the crankshaft length, giving unusually rigid support and accurately balanced, both dynamically and statically to within the smallest fraction of an ounce. Drilled passages in the crankshaft provide an oil supply for the connecting rod bearings.

Fuel Distribution.

Efficiency in fuel distribution is assured by two thermostatic carburetors of Cadillac design. Each carburetor is of the air valve type with thermostat, throttle pump and non-fluttering air valve. The thermostats control the auxiliary air valve, giving the correct mixture at all operating temperatures and improving performance in cold weather. The action of the throttle pump is controlled by the thermostat, which increases its effect when the engine is cold. Thermostats reduce the use of the choke to a minimum.

A 25-gallon petrol tank is provided. There is a vacuum feed to the two vacuum tanks, mounted on the dash. The petrol flows thence by gravity to the carburetors. The two vacuum tanks give the two carburetors independent sources of fuel. The vacuum pump is driven by the camshaft. The pump is used in preference to an intake manifold as it provides a more dependable vacuum at high engine speeds with the throttle wide open. An electric gauge, operated by current from the battery, gives accurate knowledge to the driver of the amount of fuel in the tank.

Specially designed Delco-Remy Equipment.

A Delco-Remy side outlet distributor especially designed for the V-16 is used. Cables for the spark plugs enter above and below a Bakelite rings. Separate ignition circuits for right and left hand cylinders are provided. There are two sets of contact points, two condensers, two coils and two sets of terminals in the distributor head. Each set of contact points has its own condenser. The coil

is mounted in the top of the radiator tank, providing an ideal location and giving a neat appearance to the power plant. Two ignition coils allow for more time between the opening and closing of the contact points and thus make for a hotter spark.

Syncro-Mesh Transmission.

The V-16 Syncro-Mesh transmission is specially designed for this car. It employs the same principle, however, which is standard on all Cadillac built cars to-day. The transmission is not complicated and more than 60,000 of them are in daily use on Cadillac products. The synchronizing mechanism operates in oil at all times and is only in operation when the gears are shifted, thus reducing wear to a minimum. The system enables the driver to change gear at all speeds and all times. Changing from top to second gear and back can be accomplished without clashing. This gives greater flexibility in traffic.

The brakes are powerful, positive and yet simple in construction. They are four-wheel, mechanical, internal, with aluminium shoes and a vacuum assister on the pedal. The hand lever operates on the rear wheels. The division of pedal pull is automatically proportioned between the front and rear systems. The outer front brake releases on a turn. Braking case is assured by fifteen sets of roller bearings in the system. Drums are finish ground after they are fastened to the hubs, insuring a perfect circle concentric with the wheel bearing. The breaks can be adjusted by a single nut on the outside of each brake dust shield.

Other Useful Features.

Tapered roller bearing above and below the worm are features of the V-16 steering gear, which responds to the slightest touch. It is of the worm and sector type. A flexible steering modulator or shackle at the forward end of the left front floats between four stiff coil springs. It absorbs all tendency to front wheel shimmy and eliminates road shock.

The unusual spring length of 102 inches on each side contributes to the remarkable riding qualities. Duo-draulic shock absorbers control upward and downward spring action with the soft masterly action of a door check closing a door. Metal covers ensure easy spring action over a long periods. The springs are packed with lubricant before they are encased in the covers.

Temperature control by thermostatically operated radiator shutters which are built in, triple chromium-plated radiator core, a condenser in the cooling system to prevent loss of water by evaporation, and specially designed wheels,—are only a few of the many other features embodied in the Cadillac V-16 and the body which is built by Fleetwood, is acclaimed to be the last word in luxury, comfort and appearance.

A Few Trifling Traffic Problems

Details which Strike the Madras Motorist

THE traffic problem is such a huge one, and so difficult of solution, that one hesitates to offer advice to the expert body that controls it. But most of us who use the road regularly are constantly irritated by a number of obvious defects in its management which could so easily be remedied.

One of the biggest evils, and one which promotes both congestion and accident, is to be encountered on all the thoroughfares, in Madras. It is the complete blocking of the road by the practice of allowing both buses and trams to pull up at the same stopping places.

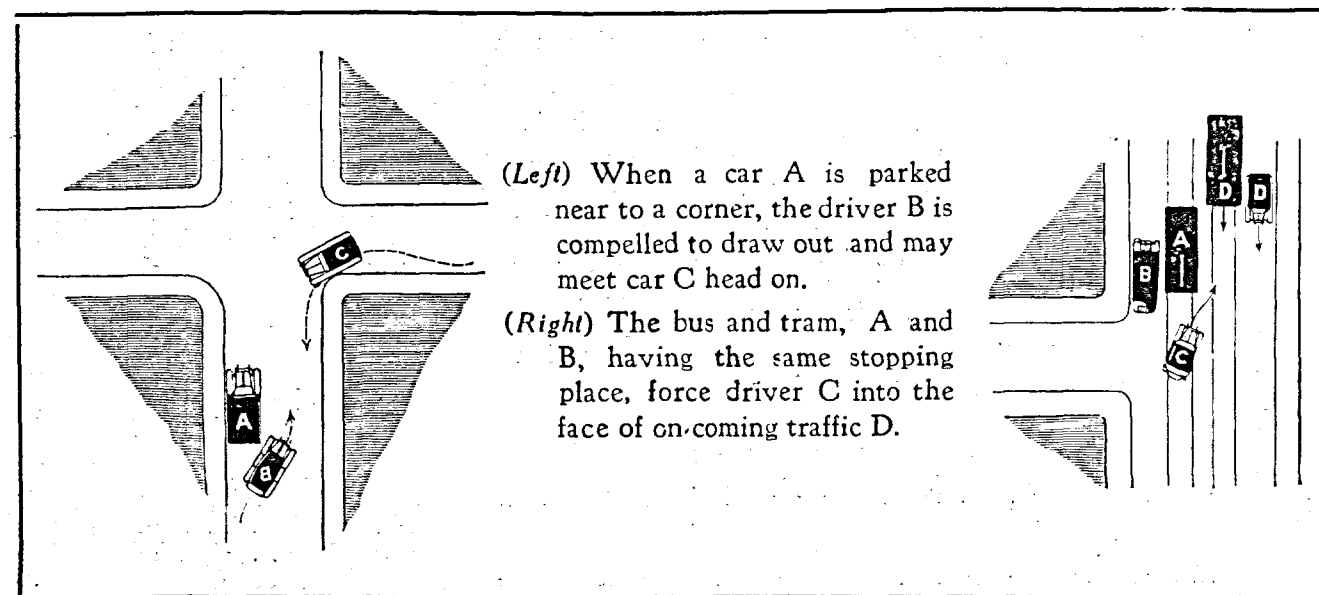
Here again, the cure is obvious—different stopping places for tram and bus.

And, whilst on the subject of stopping places, why allow either bus or tram to halt at corners? Quite apart from the blocking of the road, all on-coming traffic, together with any cross-road vehicles, are hidden from other drivers by the huge screen formed by even one tramcar. Surely this evil should be remedied by moving the stopping places of public vehicles fifty yards or so up or

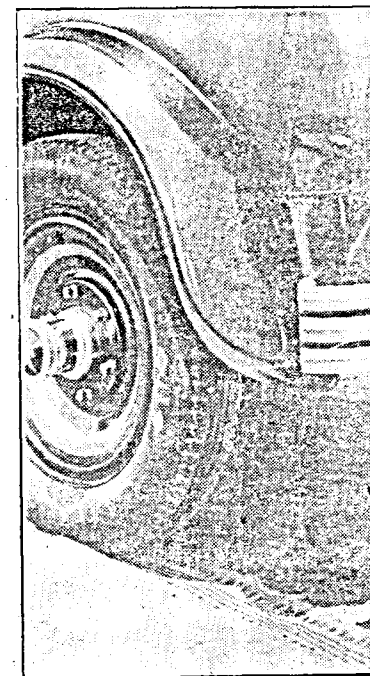
down the road? It is true that this improvement has been made in some places but in the majority of districts the dangerous practice continues.

Another complaint I have to make against tram-cars is that they can pull up with great suddenness and rarely, if ever, has the overtaking driver any warning of the tram stopping. An automatic red light stop signal at the rear of all trams would solve the difficulty at once.

Another matter, too, which might well receive the attention of the traffic control authorities, is that of vehicles being parked in narrow roads within twenty yards or so of a crossing road. As can be seen from the accompanying diagram, car B making to pass the stationery vehicle must inconvenience, or be inconvenienced by any vehicle C coming round the corner. Whilst of course there is little likelihood of collision under these circumstances, congestion is bound to result in the event of either C or B being the first of a number of vehicles. The cure is both simple and obvious—the prohibition of all vehicles standing within a prescribed distance of any corner at which such events could take place.



Wet, greasy roads... slippery... dangerous!



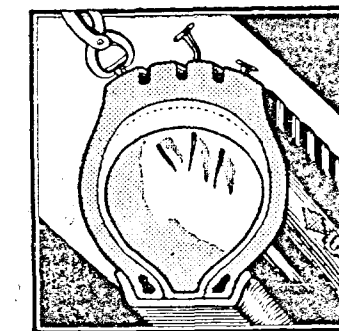
THE blind corner, a sudden emergency—brakes hard on—and then....

Goodrich Silvertowns are safer. The familiar ellipse-shaped pattern of the tread was specially designed for the maximum amount of traction under all conditions.

And this tread is also one of the reasons why Goodrich Silvertowns last longer. See how the tread is part of the tyre itself. Goodrich engineers have placed the heaviest rubber alongside the

edge, just where the load bears down. In the middle of the tyre you see three grooves—for the purpose of giving the tyre the greatest possible elasticity.

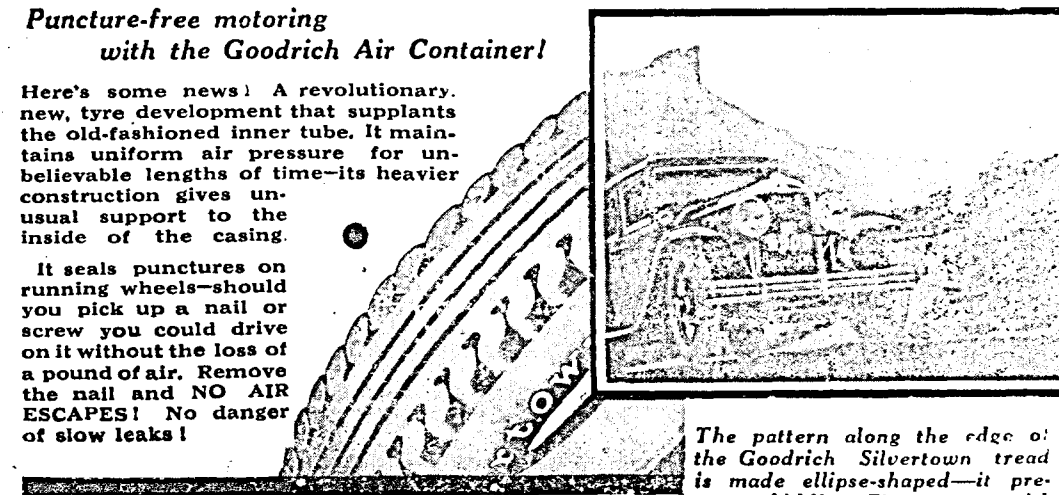
The Goodrich Silvertown tread is worth your remembering—it is an important part of a tyre that you are safe to rely on.



Puncture-free motoring with the Goodrich Air Container!

Here's some news! A revolutionary, new, tyre development that supplants the old-fashioned inner tube. It maintains uniform air pressure for unbelievable lengths of time—its heavier construction gives unusual support to the inside of the casing.

It seals punctures on running wheels—should you pick up a nail or screw you could drive on it without the loss of a pound of air. Remove the nail and NO AIR ESCAPES! No danger of slow leaks!



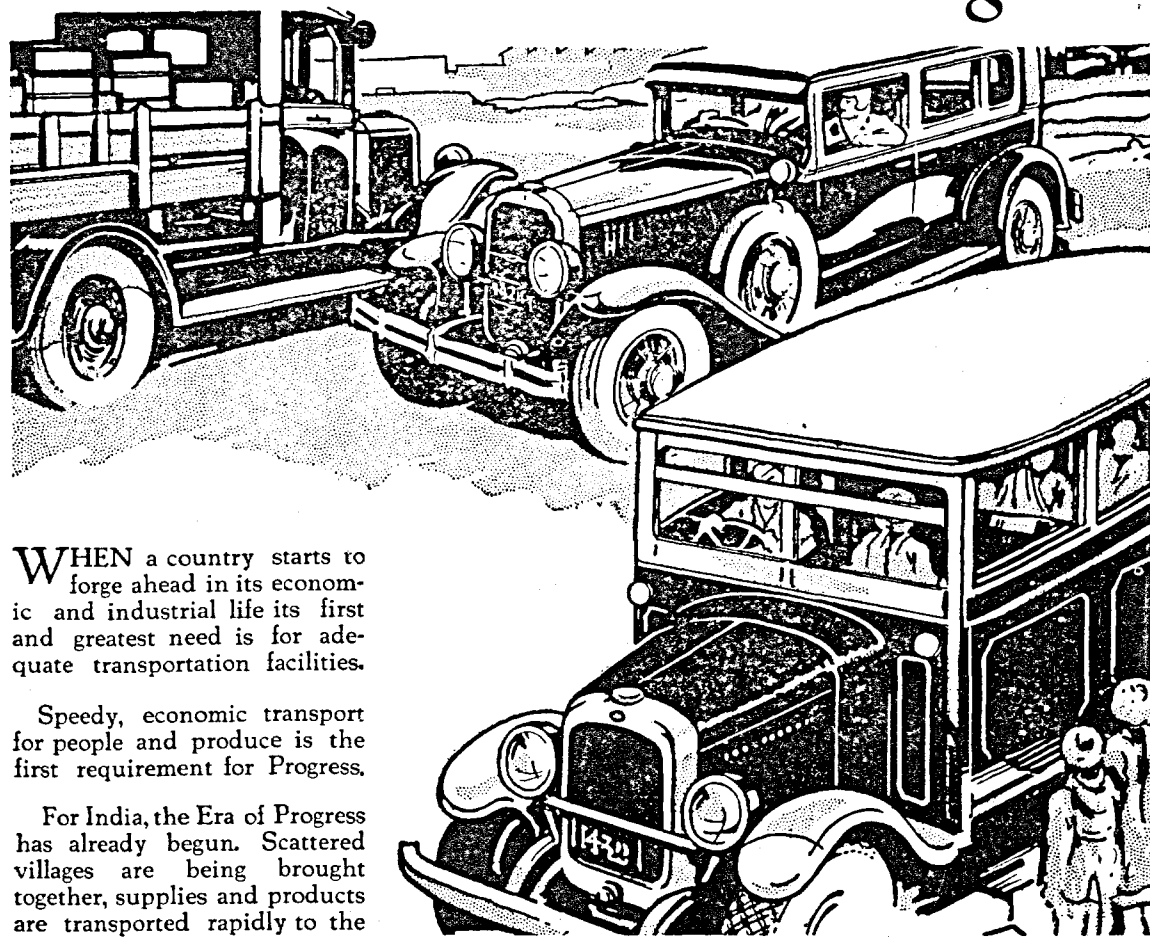
The pattern along the edge of the Goodrich Silvertown tread is made ellipse-shaped—it prevents skidding. Fit your car with Silvertowns — they are safer.

Goodrich Silvertowns



Made in U.S.A.

Transportation ... the key to National Progress



WHEN a country starts to forge ahead in its economic and industrial life its first and greatest need is for adequate transportation facilities.

Speedy, economic transport for people and produce is the first requirement for Progress.

For India, the Era of Progress has already begun. Scattered villages are being brought together, supplies and products are transported rapidly to the main avenues of commerce—for everyone there is a wider world opening as the wheels of transport keep ceaselessly moving.

In the forefront of this new development stands General Motors India Ltd. India's own member of the great International Organisation that has

made transportation history throughout the world.

On every highway and by-way throughout India you will find products of General Motors India Ltd, small trucks, large trucks, buses and private cars, providing transportation for men and produce.

General Motors India Limited

These are the General
Motors Products.



A Question of Speed

A chance conversation in which I shared the other day whilst riding in a car driven by a friend reminded me of another conversation to which I was merely a listener during the war. In that earlier episode two men were discussing Tanks.

"Do you know what they called the first lot?" asked one of the men, "Tortoises".

There was a pause, and then he added.

"Do you know what they are calling them now? Ares."

The second conversation had also to do with speed. The driver of the car in which we were travelling had to make a considerable digression in order to avoid a long strip of the main highway which was under repair. I happened to ask my companion if he had ever known a "road-up" job take longer to complete than this particular piece, and he answered with a disparaging remark about the average workman in general and those belonging to our municipality in particular. Workers of all classes were, he declared, every year becoming slower and slower; not only workmen here, but workmen all over the world.

This statement was the more interesting because, what ever might be happening to the workmen of the world, the string of vehicles in which we were at the moment was in itself undoubted palpable evidence of modern civilisation on the move. All around were workmen quickly moving; drivers of private cars, drivers of buses, workmen on tramcars!

And yet I wonder if my friend was right. I confess I am tempted to think so. The present generation is so dazzled by speed that it flatters itself it is performing prodigies of labour when in reality it is doing nothing of the kind. People forget that modern speed is the speed of the machine. Most of the world's rushing about is accomplished by the aid of rushing machinery, much of which is beneficial to the community, though much is mere restlessness, for man has become adept at chasing his own tail. We still have to ask ourselves whether we do indeed move more rapidly than our predecessors? Our machines are more rapid undoubtedly, but many thinkers have recently found cause to bewail the fact that modern speed, modern industrialism, takes the form of a man ministering to a machine, worse still, to a part of a machine. The machine moves swiftly, even

appears to think swiftly, and man is merely its slave. The machine does all the interesting work, and the slave's task is so monotonous that we can hardly blame him for wishing to make his working day ever shorter and shorter. As the machine becomes more rapid, man becomes slower in inverse proportion. Feeding the machine, the man becomes "fed-up", dull and slow.

An American the other day assured me that London was becoming the slowest city in the world. He insisted that the time was approaching when Londoners would take their siesta as to the flaccid Latins. He added, however, that New York was only about two jumps behind.

On the other hand, we advised by eminent medico psychologists to take leave from business, politics and every occupation; to rest awhile, and cease thinking too hard periodically. I seem to remember reading that Sir Arthur Pearson declared the man who returned straight to work from his lunch went to an early death, and yet C.A.P. was generally admitted to be a hustler. By rushing around we can easily deceive ourselves that we are moving quickly and yet be standing still. When we realise we are in reality standing still, it is salutary to pause for a few moments and watch the average labourer at work noting his placid dalliance with time; or contemplate machinery and its ministers, and discover who is really hustling, the man or the machine.

Where lies the truth of the matter precisely? Is machinery slowing us down? Are we accomplishing so much more work with the machine than without it that we are entitled to slack off more often and more readily? Is the wear and tear of modern life so serves that it is essential we should devote more and more time to recreation? And is the mechanic growing less and less skilled as the machine increases in complexity and efficiency?

What a lot of questions would have to be answered in order to make an attempt thoroughly to analyse the matter.

Does the driver of a modern railway train work harder than did the driver of the old stage-coach, and is he has great a specialist at his job? Pending a comprehensive enquiry, let us at least admit he goes farther and gets there much more quickly.

E. E. B.



Super Servicing in the States

THERE is an amusing skit on American super-service in *Motor Life* of America. The satire of the whole thing is typically American and a sketch of the fantastic place looks more like a pipe dream than anything else.

The example of service commences with a call by Mr. A. V. Isbister, of Montclair, N. J.

"What can we do for you?" asks an urbane manager.

"Fill 'er up with gas, slip the engine an oil cock-tail, give her a drink and a bath."

"As you go on the service conveyor that carries you through the entire station by electric power, I will connect your car with our inter-office 'phone system," says the manager. "Should you desire any other service just call our central operator. By the way, you'll be glad to know that the wheels of your car are in perfect alignment."

"How do you know that?"

"We checked your wheels when you drove into the runway, sir. The car ran over two steel plates, instantly tracing in ink on the chart in front of me the exact condition of your wheels."

"Let's see a chart of my blood pressure, or haven't you got around to that?" asked Isbister.

Customer Docketed

The car then proceeds on the journey through the station.

"Regular or High-Test gas, Mr. Isbister?"

Outside the driver's window a station attendant awaited the reply.

"High-Test. Say, how'd you know my name?"

"At the entrance our man 'phoned our station artist as soon as he sent you away. A card with your name stencilled on it was hung on your

radiator as the car passed. Every attendant can read your name before you reach his section."

"That's what I call enterprise."

Meanwhile the man in charge of the radiator department had deftly removed the cap, flushed the radiator, refilled it, replaced the cap and carefully wiped the plating to a high lustre.

"Radiator service complete, sir," he said, smilingly.

A button was pressed and the car slipped away to the lubrication pits.

"I'd suggest heavy oil for your Elite, Mr. Isbister. It gives better compression."

"That's okay with me."

Meanwhile the passengers were listening to the sound of dance music coming from some undefined point near by.

Then follows an interval for manicuring, and the charming attendant chats pleasantly during the process.

"Quite a place you have here, Miss Lawrence."

"Yes, there's always some excitement along this road. Did you come in before our ambulance went out?"

"Do you mean to say there is an ambulance connected with this place?"

"I'll say there is, and it keeps pretty busy."

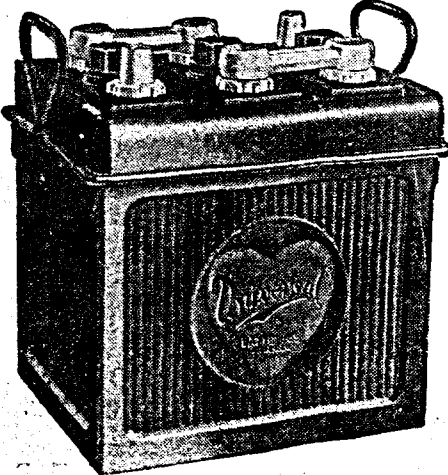
Through the Wash.

All windows were closed, and the vehicle passed through the washing tunnel, jets of hot water spraying the car on all sides. After that there were sundry other operations culminating in a hot dog luncheon eaten while the car was transferred to a slower conveyor and taken to the exit.

The total of the bill was \$7.55.

"Will you take a cheque?"

"Certainly."



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Chummery Politics

IT is remarkable how the arrival of the week-end mail revives political fervour amongst the inhabitants of the "chummery". All during the week the subjects for conversation range from bridge to bridge-building, but every Sunday tiffin sees men, whom one would think knew and cared little about the politics of England, taking it upon themselves to express the most definite, not to say dogmatic, views upon what should be done to save the old country.

The English newspapers sent by thoughtful relatives are responsible for this display of political fervour and it is always easy to foretell a man's politics by the bundle of newspaper he receives every week. We have the man who swears by the *Daily Mail*, and the one who swears at it; the man who spreads the *Herald* all over the table, and the man who reads the *Times* when we know he would much prefer a Wallace thriller.

There is no doubt that the chummery can show as varied a bunch of politicians as could be found anywhere, and we have representatives of all shades of opinion—from the true blue Tory to the philosophic anarchist—all eager to prove how easy it would be to save the country from the Red menace, the morass of Liberalism, or the stark reaction of Conservatism—as the case may be. There are others too. There is man who considers "they are all as bad as one another", the one that believes "they are all going by different paths to the same sticky end", and the cynic who denies absolutely any politicians' honesty to work for an end, however sticky!

"What will Ramsay do, I'd like to know?" he asks the table in general and the man who happens to have his mouth disengaged, in particular. "Here have the Government been in office I don't know how long" (and he does not either!) "And Dora is still as lively as ever".

"But food was just as dear when Baldwin held the reins", says some one else, with charming irrelevance.

"Yes, tenpence a pint—to say nothing of the chemicals put in it". And the wit who would interrupt a serious discussion retires cowed by the hostile glances.

We have, of course, our pet Liberal. Who can speak very feelingly about Georgian sunsets, but he withdraws discomfited on being told that such talk is all moonshine. Then the Tory takes up the running.

"Give me a good "Roast Beef of Old England" policy," he says, delicately spearing an olive. "British goods are the best in the world (hear, hear!) and that is why they should be protected."

"Then, you can do without asparagus," declares a voice. "The can say's "Product of U. S. A."

"Politics begin at home" concluded the cynic, and silence save for the rubbing of newspapers reigns for a few minutes.

Then there is our very own iconoclast. Nothing to him is right, and nothing can serve save a Samsonian shifting of the pillars.

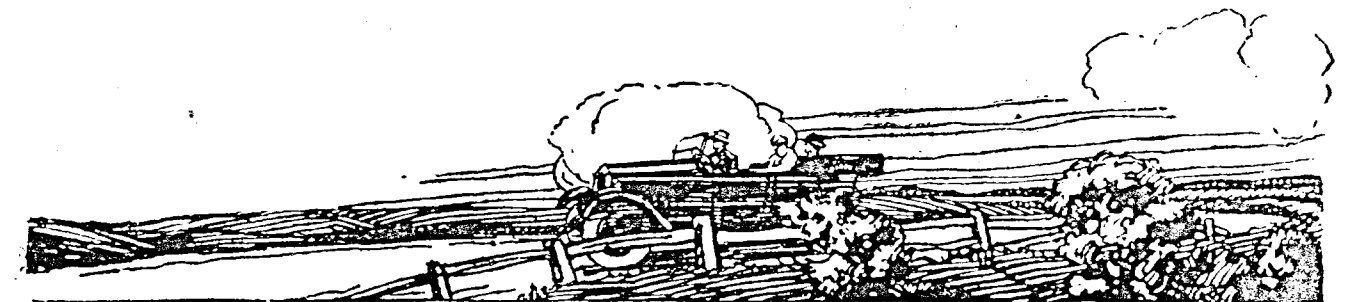
"I don't believe in any of them. They all futile", he affirms. "None of them sees the approaching upheaval and the need of a strong man."

There is a gleam in his eye as he says this, and it is fairly obvious that he firmly believes he would show the world if the leading strings were within his capable fingers. This is a pity, for he is otherwise a decent fellow, but we have never felt equal to an argument with this potential Dictator.

Standing calmly above all politics—or so he would have us believe—is our superior person. He claims to be impartial—as if anybody in this mundane existence, ever was—but we suspect that is because he does not know enough about politics to come down to earth and support someone. Anyway, there he is, and with his impartial remarks manages to upset someone, all the time, and everyone some of the time.

"Where would the country be without Ramsay MacDonald?" yelps our Labourite. Swift comes the answer "In its usual place round London, I expect" and speed retribution descends upon the head of the ass who broke up the discussion. And subsequent proceedings interested him considerably.

E. E. B.



Easy Jcking

Will Built in Jacking System become an Essential Feature of Equipment?

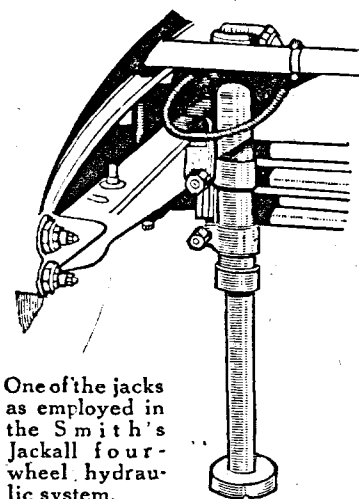
WE have recently received full particulars of the Jackall four-wheeled system whereby all or any wheels of a car may be raised from the ground simply and expeditiously.

When considering comfort surely one must regard it from the point of view of the maintenance facilities in addition to the travelling comfort. Now there are probably few jobs in connection with the upkeep of a car which the motorist dislikes so much as jacking up, if the jack employed be one of the old-fashioned mechanical types which involve much exertion in order to lift the car to the required height. Agreed, these conditions are greatly improved with the current hand-operated models, particularly the hydraulic types, but, even so, they involve crawling about, so to speak, in order that the jack should be correctly placed under the axle before the car is raised.

Obviously, the best way to lift the car is by means of jacks permanently affixed to the chassis, which can be operated in some convenient manner and the car raised just as required. There are two such systems available, one being hydraulically operated and the other mechanically operated.

A Hydraulic System.

The former is the now well-known Jackall four-wheel hydraulic system, which is manufactured and marketed by S. Smith & Sons (M.A.), Ltd., of Cricklewood, London, N.W.2. This concern has gone very thoroughly into the subject of efficient fitting, which is essential if satisfactory service is to be obtained from any such jacking system. For this purpose a spacious new bay has been erected at the works at Cricklewood, where many cars can be equipped simultaneously by mechanics thoroughly au fait with the best methods of installation. This fitting station is provided with a number of pits over



One of the jacks as employed in the Smith's Jackall four-wheel hydraulic system.

which the cars are located, so that fitting is made considerably easier; incidentally, the time taken varies according to the car. On certain models it is possible to install the Jackall system in about eight hours but on other cars it may take two days more. The Jackall hydraulic system comprises four small telescopic jacks operated hydraulically, two being fitted on each axle and in close proximity to each wheel. Each jack is connected by means of suitable armoured tubing to a central reservoir which is really quite small and is mounted on the near-side running board, although, if desired, it can be fitted in some other position according to the owner's idea. This reservoir houses also the control box, which is so designed that by moving a small turn-button one can make a connection with any one jack or with all four; then, upon the operation of a lever in the ordinary way, whichever wheel needs attention or all wheels as required are raised from the ground. Only a few seconds are taken, whilst the operation is so light that even a child can manage it. The advantages of this system are obvious, and it is already proving very popular, particularly among owners of heavy cars in which difficulty is found in manipulating a jack on account of the distance from the back of the car to the rear axle.

When did you Oil the Door Locks?

LUBRICATION charts are excellent things and are doubtless playing no inconsiderable part in the making of good motorists. How many car owners, however, remember when they are giving their vehicles the all-important greasing and oiling that the door locks are among the most hardworking components on the car.

Door locks are fittings that almost invariably receive rough treatment at the hands of the passengers. And, as with all mechanisms, their efficient working will be greatly improved with thoughtful handling. The interior of a lock will be best lubricated with thin oil, such as cycle or sewing machine oil, which should be squirted along

the latch, while the long spigot may be smeared with a little vaseline or gear oil.

The hinge pins of doors should also receive periodical attention when greasing is on the tapis. A small quantity of lubricant only is necessary for locks and hinges, and any surplus should of course be carefully wiped off, in order to avoid soiling passengers' clothes during ingress and egress.

If these simple precautions are observed, say, once a month, it will be found that doors will close and fasten easily and quietly, without the necessity of slamming, and the likelihood of any damage to bodywork or the doors themselves will be eliminated.

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 276 which is easily filled in.

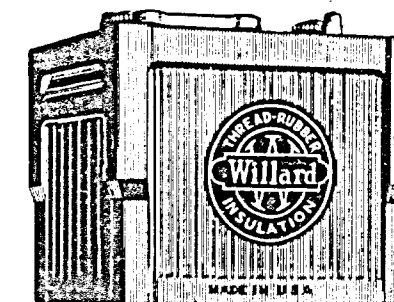
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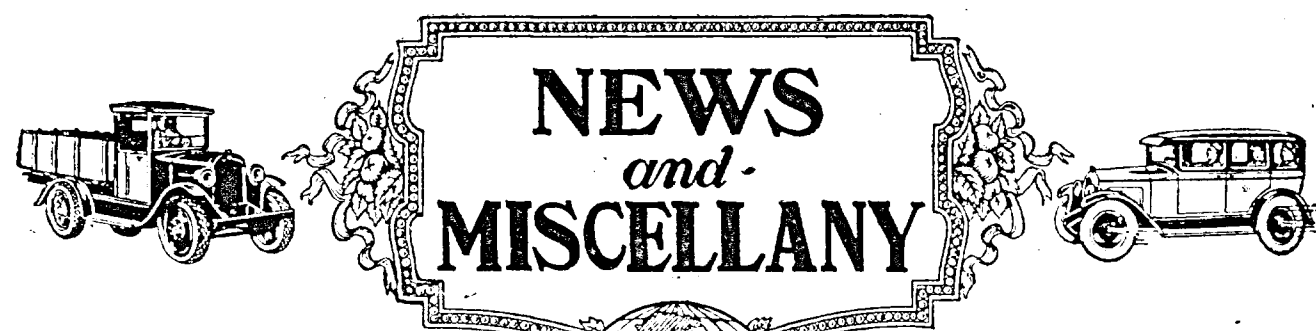
1. Those fitted with Wood Separators at prices which defy competition and
2. Those fitted with Willard Patent Threaded-Rubber Insulators, at a little extra cost but giving thousands of miles more service.

For particulars and prices apply to:

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



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

Dublin Grand Prix Of Continental Tyres

THE Continental Tyre and Rubber Company, Madras, draw attention to the fact that the Grand Prix race in Dublin was won by Carraciola driving a Mercedes fitted with Continental Tyres. It will be remembered that this German driver only just lost the LeMans race through bad luck, and his time of 3 hours 28 minutes over the Dublin course for 300 miles marks him as a driver from whom much can be expected in the future. His tremendous effort was made under very adverse conditions, and most of the time driving was hazardous in the extreme owing to pouring rain and bad roads.

Device to keep car on the road.

To tell motorists whether they are on the road or headed for a ditch, a device called the "road-meter" has been invented in England. It contains a leveller and depends for its operation on the principle that most roads are graded to curve upwards at the centre and slope off at the sides. The inventor claims that it will eliminate most of the accidents due to bad light and other adverse weather conditions.

Road-building in Russia.

Approximately 7 crores of rupees will be spent by the Russian Government for the construction of 250,000 miles of highways throughout the Soviet Union within the next five years. This figure is interesting compared with the Government of India's allocation of Rs. 72½ lakhs on road expenditure for 1930-31. It is stated that Russia's road-building programme will give employment to 2,000 engineers, 18,000 technicians and 44,000 road-layers.

Ancient craftman plys his trade.

Modern machinery and mass production may be an indication of progress, but there are still a few craftsmen of the old school who cling proudly to the ancient methods of an art that has been handed down to them from their forefathers. Tan Tong, a Chinaman, is such a person. Surrounded by the modern machines that are used in the production of cars at General Motors' plant at Java, this elderly Chinaman goes deliberately about his work as a foundryman. He makes all his own tools, patterns, cores, and moulding equipment. He casts expertly in iron, brass, aluminium and bronze.

French Engineers visit America.

Twenty-one members of the Societe des Ingenieurs de L'Automobile have just completed a three weeks' tour of representative American automobile and accessory plant. During their visit to the Detroit area they showed great interest in the General Motors factories and were particularly impressed with the Corporation's proving ground measuring 1,400 acres.

Japanese Motor League.

There is no country more wide-awake to the benefits of motor transportation than Japan, where a Motor League has been formed in Tokyo to work for better highways and other improvements to aid motor transportation.

Cadillac V-16 Caravan to tour Europe.

The International Cadillac Caravan, consisting of five de luxe models of the new V-16 cylinder Cadillac. (Continued on page 270.)

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.

Our preliminary announcements have offered this book for Sale, if ordered prior to publication, at the Price of Rs. 2 per copy, a saving of 33⅓ per cent.

Have you yet ordered your copy?

Eastern Technical Publications MADRAS.

News and Miscellany—(Continued from page 268.)

lac which will tour Europe shortly, will make New York as its starting point. The caravan will tour eight countries and on its return will have visited 27 cities including the principal capitals of Europe.

Switzerland's Tourist Trade.

That the tourist trade when properly organised is a highly profitable one is illustrated by a report from Switzerland to the effect that 131,000 persons entered that famous resort country in motor cars last year and their expenditure amounted to 7 crores of rupees. This must make the mouths of Indian railway officials water as the possibilities here are far greater.

General Motors Earnings for First Quarter of 1930.

According to a recent statement issued by Mr. Alfred P. Sloan, Jr., President of General Motors Corporation, New York, the net earnings of the Corporation, including equities in the undivided profits of subsidiary and affiliated companies not consolidated, for the first quarter ended March 31, 1930, amounted to Rs. 12, 36, 63, 614. This compares with Rs. 17, 02, 55, 214 for the corresponding quarter a year ago. After deducting dividends on preferred and debenture stocks amounting to Rs. 66, 62, 216, there remains Rs. 11, 70, 01, 396, being the amount earned on the common shares outstanding. This is equivalent to Rs. 2-11-0 per share on the common stock as compared with Rs. 3-12-3 per share for the first quarter of 1929.

For the three months ended March 31st, General Motors dealers in the United States delivered to consumers 286, 690 cars, compared with 351, 079 cars in the corresponding period of 1929. Sales by General Motors manufacturing divisions to dealers in the United States amounted to 323, 443 cars, compared with 413, 173 cars in the corresponding three months of 1929.

Total sales to dealers, including Canadian sales and overseas shipments, amounted to 367, 635 cars, compared with 523, 119 cars in the first quarter of 1929. Overseas shipments during the first three months of 1930 were considerably below shipments during the same period of 1929, due to a desire to adjust stocks in overseas countries in line with changed economic conditions.

Cash and U. S. Government securities, at March 31, 1930, amounted to Rs. 34, 59, 91, 083. Net working capital at March 31st, 1930 amounted to Rs. 73, 64, 26, 737, compared with Rs. 69, 10, 41, 399 at December 31, 1929.

12 Simple Rules

The secret of enjoyable and safe motoring can be compassed in a dozen simple precepts, according to Mr. Wallace R. Campbell, President of the Ford Motor Company of Canada, Ltd.

"Road courtesies are the best insurance of safe and pleasant driving," Mr. Campbell says. "Visitors to Canada in the past have paid tribute to our observance of the common rights of automobile drivers. We are naturally a people who value our property, who care for it and who hold proper regard for the property of others. This trait exhibits itself in our department on the road. It is inherent in most of us to be careful, especially where damage to life or property is involved.

"Soon, visiting autos by the millions will appear on our highways. These tourists will add to traffic congestion. In 1929, 4,508,808 tourist automobiles entered Canada. This was over 23 per cent more than visited us in 1928. A proportionate increase can be expected this year.

"Driving will become more complex. For the sake of common safety and courtesy, it may be well to fix in our minds, so that they may become a part of the automatic reactions of motorists on the road, the following simple automobile driving rules. These suggestions are merely common sense as applied to driving. Every experienced driver knows them. But a review of them can do no harm.

The twelve rules are:

- "1. Courtesy comes first. Consider the rights and privileges of others.
- "2. Keep your mind on your driving, and anticipate sudden emergencies.
- "3. Learn the "feel" of having your car under control.
- "4. Obey all traffic and parking regulations.
- "5. Keep to the left, and comply with road markings and signs.
- "6. Signal for stops and turns—watch the car ahead.
- "7. Slow down at crossings, schools and dangerous places.
- "8. Never pass cars on hills, curves, Crossings.
- "9. Adapt your driving to road conditions—rain, soft spots and ruts.
- "10. It doesn't pay to take the "right of way" too seriously.
- "11. When you drive, remember the times when you're a pedestrian.
- "12. Know the law. It was passed for your protection."

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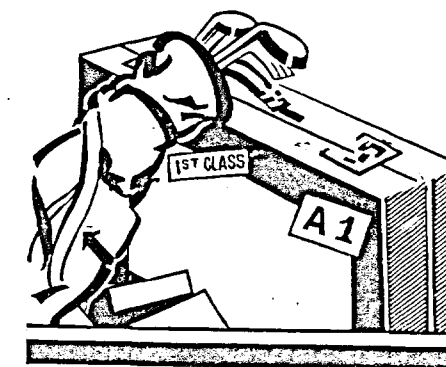
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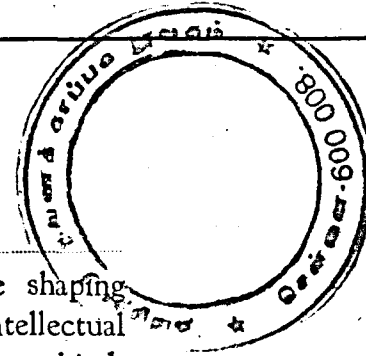
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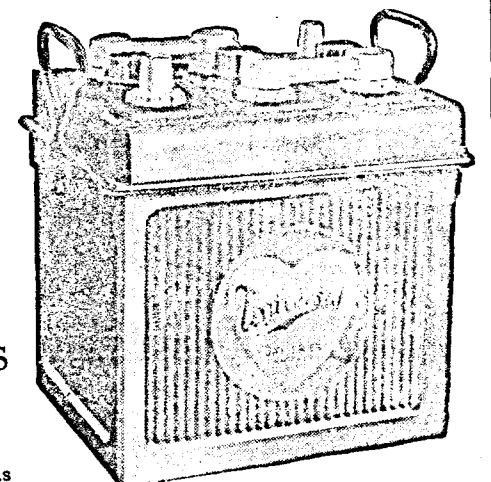
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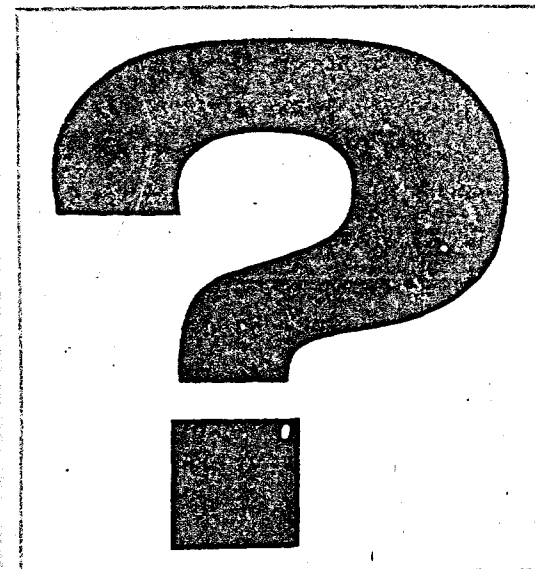
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