

NEWS OF INTEREST TO AUTOMOBILE OWNERS

Overhauling Not Costly Or Difficult if Owner Does It

Owner May Reduce Cost of Repairing or Renovating His Car by Doing Part or All of the Work Himself—Novice Should Not Attempt to Adjust More Complicated Parts—Service of an Expert for This Work Is Not Expensive.

Many motorists take advantage of this period of the year to give the car a systematic overhauling, and while the preparation for the summer months should be thorough, it need not involve any great labor or expense, particularly the late model, in which the maker has incorporated means for taking up components subject to wear. Machines that have seen considerable service will require more attention than those which have been driven a few thousand miles, says C. P. Shattuck, in the Motorists' Magazine. In the latter event it is probable little will be necessary other than removing the carbon deposits, resetting the valves and making minor adjustments. Some owners hesitate to undertake the work because of a lack of knowledge of mechanics. The writer does not advise the novice to attempt the disassembling, adjusting and reassembling of the more complicated parts, work that is best left to the experienced, but the motorist can accomplish successfully the greater part of the

work, and thereby effect a considerable saving in expense. As it is possible to call in the expert for adjustments requiring experience, one can easily clean and prepare the parts, work that ordinarily costs from 50 cents to a dollar an hour in the repair shop.

It is not a difficult matter to arrange with some automobile mechanic to spend a few hours with one each evening, for, as a rule, a repairman is glad of the opportunity of earning a little extra money. Generally these experts will explain the work as it progresses, and the knowledge acquired will prove extremely valuable. Many times an arrangement can be made whereby the expert oversees the work, and will make the necessary inspection of the adjustments, etc.

In the overhaul one must be systematic, and this will apply to both the partial and thorough overhaul. An accompanying table gives the progressive steps, although they may be varied to meet the requirements of design. The first step is to clean thor-

oughly the circulation system, especially if a glycerine or calcium chloride anti-freezing solution has been employed. Drain the radiator and refill with a saturated solution of common washing soda, running the motor for several minutes before drawing off the fluid and replacing it with clean, fresh water. Change the water until it is free from discoloration.

Shut Off Fuel Supply.

Wash the body and chassis clean, then remove the lamps, extra tires, accessories, etc., laying these to one side. Remove the body, placing it on suitable supports, and raise the top. Next cover the magneto, carburettor, dynamo and motor starter, so that these will be protected when the grease, oil and other foreign elements are being removed from the chassis. A stiff brush and gasoline or kerosene will displace all deposits. Next shut off the fuel supply at the tank and disconnect the supply pipe at the carburettor. Study the connections between the power plant and dash, tagging wires, etc., to insure proper replacement. If the power plant is not to be removed from the chassis, drain the crankcase or oil reservoir and flush the parts with kerosene.

The next step is to strip the motor, removing the intake and exhaust manifolds, spark plugs, water manifolds, etc., and after loosening the nuts securing the cylinders, the last named can be displaced, giving access to the pistons and rings. Carbon should be removed from the cylinders, rings and grooves of the pistons. Displacing the crankcase will afford access to the main, connecting rod and camshaft bearings, and these, if worn, should be

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Arrangements have been made with an expert automobile man to answer any questions in reference to automobile repairs, engine or other troubles, through these columns each week. Address all such communications to The Editor Automobile Section, Advertiser, London, Ont.

adjusted. Generally the removal of a shim or two will compensate for wear. The tightness of the bearing will depend upon the type, but this data is contained in the instruction book. If not familiar with the work of taking up bearings, observe the services of an expert.

Restoring the Clutch. The clutch requires attention, particularly if it has been slipping or harsh in its action. Leather-faced types become dry and can be restored by the use of neatfoot oil, while the wet plate type of multiple disc should be thoroughly washed with kerosene and the old lubricant replaced with fresh. Worn clutch bearings should be adjusted, as they are frequently the cause of difficult changing of speeds. Inspect and adjust the clutch springs if the clutch does not grip properly. The linkage operating the clutch should be carefully cleaned, adjusted and lubricated.

Coming next to the gears, remove the lubricant and wash the gears, bearings and shifting forks. Test shafts for end play and if adjustable eliminate the lost motion. Also test the mesh or alignment of the gears, and if faulty correct same. The shifting mechanism may require a slight adjustment, particularly if a gear shifts itself when in service. Examine the dogs of the high speed gear, and if badly worn have them trued up. The linkage between the lever and gearbox should be cleaned and lubricated.

Remove all lubricants from the rear axle, clean and inspect the gears, particularly the mesh of the pinion and gear, and if there be side or end play, correct same. If roller bearings are employed care must be taken not to adjust them too snugly, else damage will result. The universal joints should be cleaned and the supply of lubricant renewed, and the radius rods or torque arm cleaned, adjusted and lubricated. If the car has been in service some time, disassemble the muffler and remove the deposits. A clogged muffler is often responsible for hard starting and loss of power. Disassemble the brake mechanism and its linkage, cleaning and lubricating its working parts before attempting to reline or adjust the brakes. This part of the overhaul requires extreme care, for any friction between the facings and brake drums cuts down power and decreases fuel efficiency. Eliminate play from the rear wheel bearings if of the adjustable type, for with considerable lost motion it will not be possible to obtain efficient action of the brakes without their dragging.

Steering Gear Important. The overhaul of the steering gear is most important, and no part of the work should be slighted. End play of the steering column can be eliminated and lost motion removed by removing the steering gear, bringing a new section in mesh. Play in the drag link can usually be removed by adjusting the position of the plug in relation to the ball end of the arms, but extreme wear of the linkage of the tierod, yokes, etc., will require new bushings and bolts.

These parts should be lubricated and where bolts are utilized these repacked with grease. The bearings of the front wheels should be cleaned, lubricated and adjusted, and if the cones, races and balls are worn, replaced with new. Never use one or more new balls with old. After completing this work test the wheels for alignment, and any error can be corrected by lengthening or shortening the tierod. A test of the alignment of the wheels should be made monthly, as wheels out of true quickly destroy tires.

The springs should be either disassembled or the leaves spread apart for cleaning lubrication. A mixture of graphite and oil, forming a thick paste is excellent for springs, and the same material can be successfully employed on the tire rims, which should first be cleaned.

Worn spring bolts and hangers should be replaced with new when considerable play exists, and the spring clips set up snug. The rivets of the frame and cross members should be inspected, and the nuts and bolts retaining the fender irons and running boards gone over with the wrench, as one or more loose parts may be the cause of that annoying squeak.

Replace Worn Wires. After any car has been in service for some time it is advisable to remove carbon deposits, reset the valves, and check the timing of the engine. This work can be performed by the owner, and as the flywheel of the engine is marked it is not a difficult matter to adjust the valves so as to obtain maximum efficiency from the power plant. Irrespective of the type of ignition employed, whether it be the battery, timer and coil, the timer distributor or magneto, the components of the system should be cleaned, adjusted and lubricated. The contact points of the breaker mechanism of the magneto and the contact points of the ignition must be clean and true to obtain good results, and the gap should conform to the dimension given by the maker. It is equally important that the gap of the spark plugs do not exceed that specified and that each plug of the set have the same gap. Old and frayed wires ought to be replaced with new, and all connections made clean and tight.

Relative to the lighting and starting system, the director of the maker as to care, maintenance and lubrication should be observed. As the storage battery may require attention, it should be sent to the nearest service station while the car is being overhauled. With the body removed from the chassis, the cleaning of the upholstery top and curtains is easily accomplished.

After the work of overhauling the chassis is completed it should be taken out and given a road test. This is important, as minor corrections and adjustments are more easily made with the stripped chassis than with the body attached. If the fuel tank be located in the body, the gasoline supply can be obtained by rigging a five-gallon can on the testing seat and making a temporary connection to the carburettor. The road test should be thorough, and before replacing the body it is well to go over all nuts and bolts for a final tightening.

No suggestions are given herein as to the tools required in the work of the overhaul. Ordinarily those accompanying the car, when supplemented by a few others, will serve all practical purposes. If an arrangement be made with a repairman to assist in the work he will supply the special tools required, and it is advisable to mention this when obtaining his services. Over-

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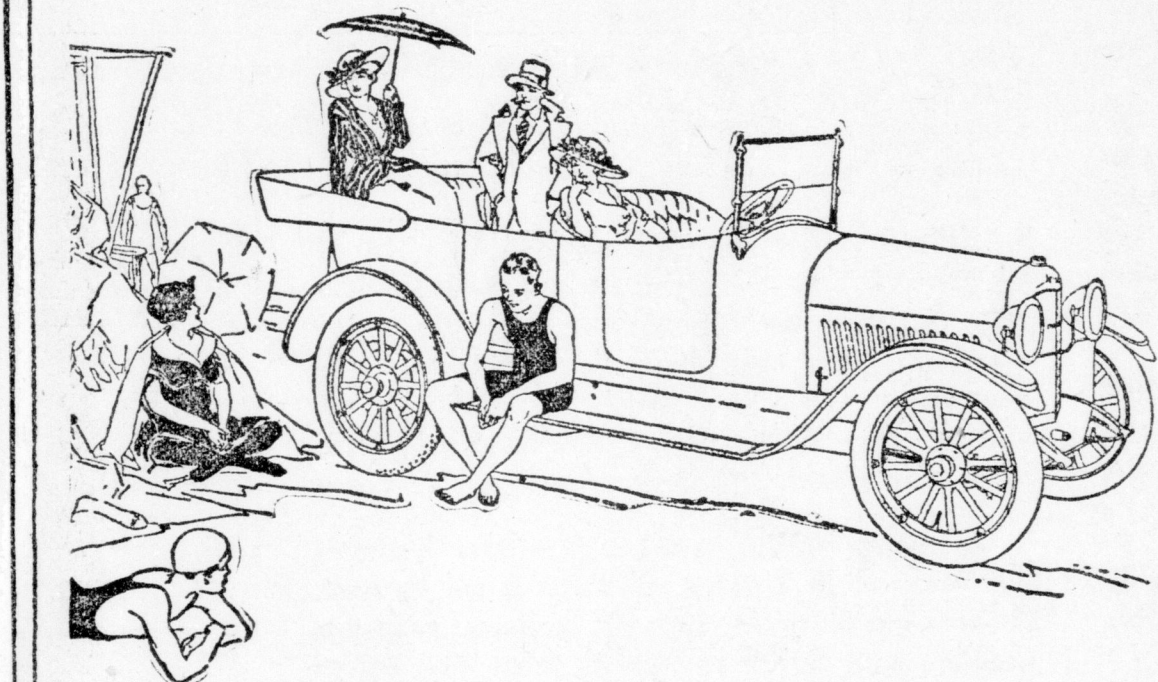
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