

THE VALUE OF MOTOR CAR LUBRICATION

George W. Dunham, Consulting Engineer of Chalmers Company Emphasizes Its Necessity

I honestly believe that one-half of the troubles experienced by drivers of motor cars are due to defective lubrication. Not because the amateur drivers of automobiles lack of intelligence, but because, as a general rule, they are people unfamiliar with machinery. Lubrication is the most neglected phase of automobile care.

And this, in spite of the fact that lubrication is really the most important item in keeping a motor car in good running order. Squeaks and rattles are not the only results of failure to properly lubricate working parts. Grease and oil have two main functions in any piece of machinery. First, to overcome undue friction. Second, to keep the rapidly moving parts cooled.

If you fail to lubricate your car, you will probably get squeaks, but more important, you will get a loss of power, and if you neglect lubrication so greatly, the motor will absolutely cease to perform its function.

At the Chalmers factory we have the general rule—when in doubt, lubricate.

It is not hard to keep a car properly oiled and greased. A little system will insure that every part which needs lubrication receives it regularly. Here are the principal parts of a car which require attention.

Once each day, or about every one hundred miles, the crankcase should be examined to insure that oil comes up to the level of the top try-cock. Simply add new motor oil whenever the oil level falls below this point. The steering gear knuckle grease cups and steering cross rod grease cups, should each receive one complete turn daily. Lubricate the grease cups on the car is absolutely suicidal and it requires only the simple turning of a grease cup each day practically to insure that you will never be placed in danger from the failure of your steering mechanism to operate. All spring oil grease cups should be given a couple of complete turns each day. The springs take the entire jolting of the car. Squeaks develop in them very rapidly, so their lubrication is highly important. The speedometer driving gears should also receive attention daily. The speedometer bears a close relationship to the engine and from undue friction through insufficient lubrication. The wheel hubs, which must work hard whenever the car is in motion, should receive from ten to fifteen drops of motor oil per day.

About twice a week, the fan hub should be given a few drops of motor oil. At the same time the pump shaft grease cups and steering gear grease cups should be given two complete turns. During this inspection, see that the steering wheel and steering column each receive ten to fifteen drops of motor oil.

Every week give the spark and broiler shafts a few drops of oil. In the weekly inspection see that the transmission case has enough oil to cover the lower sliding gear shaft. At the same time thoroughly oil the brake pull rods, the clutch and brake pedals, and give two complete turns of the brake cross rod grease cups. At this time see that the brake shafts or the rear wheels are thoroughly oiled. Inspect the torque rod, both front and rear, and on the weekly inspection the grease cups should receive two complete turns. An examination of the spring perches and one or two turns of the grease cups once a week will also do away with a lot of unpleasant noises.

About twice a month, or say every five hundred miles, attention should be given to the magneto bearings. They require only three or four drops of high grade light machine oil, but neglect of this lubrication may cause million trouble. Once a month, or about every one thousand miles of driving, the crankcase should be thoroughly drained, the oil screens and filters should be cleaned thoroughly with gasoline and the oil well should be filled with motor oil to the top try-cock. During the monthly inspection, the spring leaves should be pried apart and thoroughly lubricated with graphite grease. The hub caps should be removed and packed with new grease. The leather boots on the steering gear reach rods will also require a thorough packing with grease once a month. At the end of this monthly inspection, give particular attention to the connecting pins. The strain carried by the universal is very heavy and to prevent undue wear, the universal joint casing should be filled half full with cup grease without fail, every one thousand miles. At the end of every two thousand miles, the differential housing should be opened and about three pints of oil compound added. At this time, the transmission case should also be thoroughly drained, flushed with kerosene, and refilled with new motor oil. This detail of inspection is not at all hard work if the owner will schedule definite days on which to give his car attention.

I have found that the best system going over the car thoroughly, is to have a regular semi-monthly inspection day. There are eight main items which should be gone over thoroughly in this semi-monthly inspection. First, test the compression of the cylinders. Inspect the motor thoroughly for possible leakage around the inlet and exhaust valves. Second, go over the ignition system thoroughly. Examine all of the wires, terminals, and spark plugs. See that all connections are tight and that there are no defects in the insulation cause short circuits. Third, examine the water circulation, being sure that there are no leaks about the pump and its connections. See that the fan is operating correctly and that the fan belt is tight. Be sure that there are no leaks about the motor connection of the carburetor. Fourth, give particular attention to the gear shifting mechanism. See that all the gears move freely and that there is no possibility of their failure in an emergency. Fifth, look to the brake adjustment. It is most essential to the safety of both car and passengers that the brakes work well. Examine both the front and rear brakes and be sure that they are adjusted equally. You want to keep the brakes sufficiently tight to stop the car readily, but you also want to be sure that they do not drag. Dragging brakes reduce the pulling power of the motor, causing squeaks and of course wearing out the brake lining rapidly. Sixth, thoroughly inspect all of the bearing connections for loose nuts and bolts. Do not take any chances with the steering gear. Seventh, tighten up all spring clips and be sure that the spring bolts and washers are not loose. Tighten the car spring perches and make sure that they are free to move on the axle pins. Eighth, go over the body and chassis and thoroughly tighten all bolts. During this semi-monthly inspection, find that I am able to take care of

STEWART PROMOTED BY ABBOTT COMPANY

Will Become Superintendent of Sales For Abbott-Detroit Cars in East



C. D. Stewart, manager of the Abbott Motor Car Company factory branch at 106-108 South Second street, will hereafter be superintendent of sales for the factory and will have charge of the sales in Pennsylvania, Maryland, Delaware, Virginia and West Virginia.

Mr. Stewart came here six months ago to assume charge of the local office at the time E. P. Gerber purchased the Abbott Motor Car Company of Detroit. The promotion is a deserved recognition of Mr. Stewart's success in this territory. A great many cars have been sold during the supervision of the local office and the remodeling of the display room to its present modern appearance and the complete stock of the various models are evidences of his hustling qualities.

Mr. Stewart will assume his new duties July 1, but will retain Harrisburg as headquarters and a place of residence, where his genial disposition has gained for him a host of friends.

George Natcher, who has been associated with the Pittsburgh branch of the Abbott Motor Car Company, will succeed Mr. Stewart in charge of the local office and will arrive here Monday to familiarize himself with local conditions before Mr. Stewart begins his new duties.

Miller Three-Minute Cure For Tube Repairs

Drying and vulcanizing perfectly in three minutes the new vulcanizing cement manufactured by the Miller Rubber Company at Akron, Ohio, will make it possible for motorists to have tube repairs done, and be on their way ten minutes from the time they reach the repair shop. This is the fastest curing adhesive presented to the trade. It is known as Miller's three minute cure vulcanizing cement and is used in connection with the Akron company's tube repair gum which also has the rapid curing feature.

Much criticism has been made as to the value of a three minute cure for permanent repairs. The Miller company, however, has demonstrated the greater advantage in better curing and the faster work that can be done with their new product. Amongst the various makes of tires sold in Harrisburg is the Fisk make, represented here by George W. Myers at 225 Hummel street. The agency for the Fisk tires was assumed by Mr. Myers three years ago, during which time they have proved their worth to the satisfaction of a great many motor car owners in this vicinity. Service is one of the strong points claimed by the local Fisk agency, as all adjustments are made here without necessitating any controversy or loss of time by sending tires back to the factory. The makers guarantee 3,500 miles on the plain tread and 4,000 miles on their nonskid tires. Besides the tire agency, Mr. Myers maintains a complete vulcanizing plant for the repair and rebuilding of used tires.

Fisk Tires Represented Here by George W. Myers

Penbrook Garage Makes Many Modern Improvements

The Penbrook Garage under the management of H. A. Fishburn has undergone extensive alterations to meet the requirements necessary to care for the automobiles in that thriving borough, which adjoins Reservoir Park on the east. The large barns directly south of the S. A. Fishburn store and feed mill has been remodeled, including concrete floors throughout, and has been constructed for repair convenience. These were originally constructed to care for the three large trucks used by S. A. Fishburn in the feed, coal and hauling business, but since the son, H. A. Fishburn, as car, more room and greater facilities are necessary. Therefore, the entire second floor used for hay storage will be reconstructed for storage of cars owned by the people of that vicinity and for the new Vulcan models. A number of the roadsters have been delivered and the Vulcan touring car is expected here by the fifteenth of this month.

VIVIANI AGAIN ACCEPTS

By Associated Press Paris, June 13.—Rene Viviani, the Socialist deputy and ex-Minister of Labor, to-day again accepted the task of forming a new French Cabinet. President Poincaré called Viviani into consultation immediately after the defeat yesterday of the Ribot Cabinet, which had been in office only since Wednesday night.

The main points in the lubrication of the car. The whole job can be completed in a couple of hours and surely it is worth two hours of any owner's time to guarantee that his car is not wearing out or operating poorly on account of neglect. I have noticed that with the car thoroughly lubricated, it will run along smoothly and quietly with the minimum of adjustment, but the least neglect of lubrication marks the beginning of the trip to the repair shop. No matter what car you own—lubricate. No matter what you are doing to your car—first lubricate. In a word, no matter how much you think you know about a motor car, and no matter how painstakingly you may look after it; when you cannot think of anything else to do—lubricate.

The head of one of the greatest steel mills in America walked into a Studebaker store last week and said: "Send me out a Studebaker SIX. Studebakers are the hardest people in the automobile business to satisfy on steels. Judging by their chemical, metallurgical, and physical tests, this must be the best "Six" in the world".

Studebaker Economical Light-Weight SIX \$1575

One of the reasons why Studebakers are the hardest people in the automobile business to satisfy on steels is this: In no other way than by heat treatment of steels can the strength of a "SIX" be greatly increased while the weight is being decreased.

In no other way than by the scientific distribution of this weight through intensive manufacturing can that balance be secured which results in the superb roadability of the Studebaker SIX.

And the important thing for you to remember is that the Studebaker SIX stands absolutely alone among light "Sixes" in the application of manufacturing methods without which light-weight, strength, balance and roadability are impossible.

How Studebaker SIX Superiority Shows Itself

The Studebaker SIX will glide silently from a standing start on high into a forty mile gait, in a distance of less than 200 yards.

The Studebaker SIX when it is skimming along at a high rate of speed will actually seem to you—from the lack of effort and vibration—to be going at a rate ten miles per hour less.

The Studebaker SIX will stick to a straight line with scarcely a touch on the steering wheel, mile after mile and hour after hour—while other "Sixes" are constantly creeping to one side or the other, and being coaxed back.

The Studebaker SIX will take steeper hills and more of them,

on high, than any other "Six" it meets in a day's run.

The Studebaker SIX is not merely motor-silent, but silent all over—the transmission on the rear axle, in addition to its other advantages, contributing to that result.

The Studebaker Proof Book describes and pictures the scientific manufacturing operations of Studebaker. Send for it.

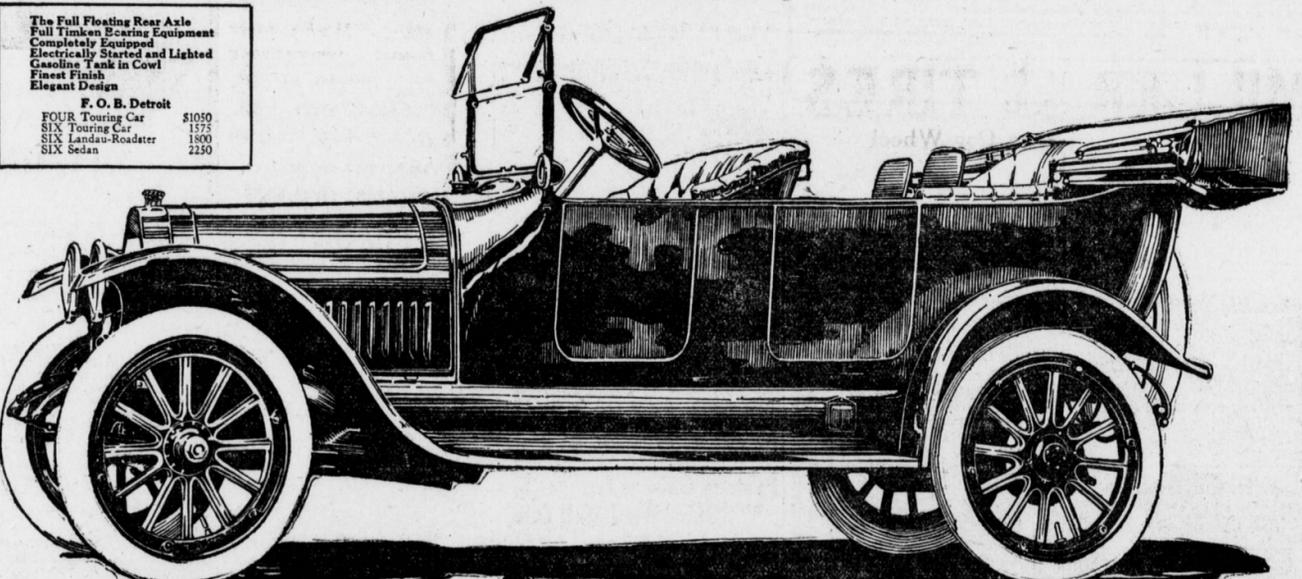
STUDEBAKER Detroit

The difference between a brand-new manufactured Studebaker SIX and a brand-new assembled or semi-manufactured "Six" is immediately apparent in the superior way in which the Studebaker holds the road. And that difference grows more marked month after month. It culminates tragically, in a second-hand sale of the non-manufactured "Six" at a terrific depreciation.

The Studebaker FOUR is characterized by the same manufacturing excellence and quality of material as the Studebaker SIX.

KEYSTONE MOTOR CAR CO. 1019-1025 Market Street Robert L. Morton, Manager

Table listing car models and prices: F. O. B. Detroit. FOUR Touring Car \$1050, SIX Touring Car 1575, SIX Landau-Roadster 1800, SIX Sedan 2250.



"Quantity Production of Quality Cars"

MOTORING EXPENSE IS COMING DOWN

Lightness of New Cars and Lowered Price of Supplies the Cause

That sales conditions in the automobile field have been widely affected by the recent cuts in the price of gasoline, oil, tires and other supplies is the declaration of Vice-President E. R. Benson of the Studebaker Corporation, who says that many recent Studebaker buyers are persons who have heretofore remained out of the market, due to their former belief that maintenance expense was greater than they could afford. "I had this increased efficiency brought home to me quite forcibly by a personal friend," said Mr. Benson. "This man owned a heavy, costly car last year. He decided that the cost of maintenance was too high, and changed last winter to a Studebaker light 'Six'.

Cadillac Agent Says Motor Cars Are Popular in Japan

Japan, at first slow to adopt the motor car, is now taking very kindly to the automobile, and in fact during the past two years the industry has made very rapid progress in all the countries of the Far East. Glowing reports of this advance are made by Henry W. Andrews, Yokohama agent for the Cadillac, who is visiting in California. "Two years ago," declares Mr. Andrews, "there were not 100 motor cars in Japan. This year more than 1,500 are registered. The aversion to the motor car which was so apparent a short time ago is rapidly disappearing. Not many years ago the sight of a motor car on the streets of any but the large cities brought forth storms of protest, usually accompanied by stones hurled at the driver and occupants of the offending car. Happily this has entirely disappeared. The Nippon Auto Club, the pioneer automobile club of Japan, is doing good work in road mapping and post-office maps of the roads suitable for automobile traffic have been made and guide posts are rapidly being erected

throughout the islands. "This club enrolls in its membership many Government officials. The good roads movement is gaining great headway. Improvements are being made with asphalt. One stretch of macadamized road 147 miles long has been laid from Yokohama to Nikko. Asphalt has been used experimentally in Tokio, but has failed so far because of the many earthquakes. "The greatest drawback for the American motorist in Japan would be the price of gasoline. It is easy to obtain, but trust or no trust, the price is 32 cents a gallon."

TIRES Extra Special ON

37x4 1/2 Penna. Vacuum Cups — over size for 36x4. List Price \$57.80 Our Price \$26.00 EXTRA HEAVY TIRES For users of small sizes 30x3 ... \$7.86 32x4 ... \$15.73 30x3 1/2 ... \$10.28 34x4 ... \$18.33 32x3 1/2 ... \$11.18 35x4 ... \$18.87 32x4 ... \$15.12 36x4 ... \$19.45 Will ship C. O. D. subject to examination. These prices are strictly NET CASH. ELECTRIC HORNS, \$4.48 EACH J. A. PLANK 1017 MARKET STREET Harrisburg, Pa. Bell Phone 3359. Next to Keystone Motor Car Co.

FOUNDED 1871 Bowman's Get Our Reduced Prices on Auto Tires Guaranteed 3,500 Miles Goodyear, Kelly Springfield Tubes, reliners, spark plugs and other accessories. Third Floor—BOWMAN'S.

THE POPULAR CAR THAT SELLS REO HAYNES NATIONAL Reo and Chase Trucks HARRISBURG AUTO CO.

Firestone Tires and Red Tubes MOST MILES PER DOLLAR SQUARE DEAL AUTO SUPPLIES 1408 North Third Street Bell Phone 3627