

HINTS FOR THE MOTORIST

ALBERT L. CLOUGH

Verifying Engine Oil Level

Something That One Cannot Be Too Careful About

FOR DETERMINING THE DEPTH OF OIL in the crankcase, one of the three following devices is provided: (1) A cork float, which rides on the surface of the oil and which carries an index on its stem, to be read in connection with "full" and "low" marks. (2) A strip of steel, known as a bayonet, kept in a hole in the crankcase with its end in the oil, which when withdrawn shows by the portion of its end, which is wet with oil, the height of the lubricant supply. (3) One or sometimes two petcocks on the side of the oil reservoir, the escape or failure to escape of oil through which, when they are opened, approximately determines the level.

Incorrect Indications On Tipped Cars

In all of these devices the point at which they measure the level is at one side of the crankcase and therefore the measurement is far from correct if it is taken when the car is standing with one side higher than the other. Usually it is located on the right hand side and if this side of the car is the higher, the gage indication makes the level appear lower than it really is (which is an error in the safe direction), but if the car is tipped the other way, a fictitious high level is indicated, which may lead to trouble, if the inclination of the car is considerable.

Measure Oil Supply With Car on Level Floor

Ordinarily the gage is located to the rear of the center of the crankcase and if the car is pointed uphill, the gage gives somewhat too high readings of the level and vice versa. To obtain an accurate idea of the height of the crankcase oil supply, the car must be standing approximately level, preferably on the floor or a building, as finding a place in the road, which is level in all respects, is very difficult.

Shut Down Engine To Check Oil Level

Indications of oil level, taken with the engine running, are inaccurate, as considerable oil is then distributed over the parts, which otherwise would be in the pan, but fortunately readings thus taken are on the safe side.

Precautions Against Errors

In making readings with the bayonet or measuring rod, it should be removed and wiped off before being inserted to receive the wetting of oil, which is to be taken as the indication of the actual level. If this is not done, misleading results may be obtained. When cold, thick oil is added, a float gage does not instantly rise to its correct position. A wire should occasionally be run through an oil-petcock to make sure it is not obstructed.

TRANSMISSION-CASE LEAKS



L. M. H. writes: Oil leaks out from the transmission of my Ford, apparently between the housing and the left side supporting arm, running down the side of the case and dripping off at the drain cock. The starter mounting gasket and that between the sections of the housing have been replaced and the bolts tightened, but oil still escapes. Where does it come from?

Answer: We cannot tell you, but the best way to find out is thoroughly to clean the whole outside of the transmission case of escaped oil, then run the car for a short distance and look for oil which has run out, the source of which should be at once apparent. Possibly it escapes around the clutch shaft or one of the pedal shafts or it may be that there is a defect where the supporting arm is attached to the housing. You may find that some of the gaskets still leak or that there is some loss of oil at the flange of the universal

joint-housing. No matter where the oil escapes, it usually drips off the drain fitting, as this is the lowest point of the housing.

FITTING ONESELF FOR AUTOMOBILE POSITION

A. T. E. writes: I want to enter the automobile business. What step should I take to fit myself for this work?

Answer: We believe that the combination of a course of study in automobile subjects and of practical experience as an employee in a garage, repair shop and sales room added to a fairly good education in general subjects makes an excellent preparation. There are some automobile schools that combine in their courses the required instruction from books and by lectures and laboratory work of a practical nature, but if one is not able to take such a course, there are correspondence courses which are of distinct value to the earnest student and indeed, by some reading of motor books, of the trade journals and even of manufacturers' catalogues a very good idea of the technical side of the business may be obtained which, if supplemented by a course of actual work in a service station or factory will give one a pretty good start. A business course and instruction in salesmanship are both advisable if the student is aiming at a connection with the commercial rather than the technical side of the industry.

"Tightening Up" Around The Engine

Without It, Leaks And Annoying Noises Develop

NUTS TEND TO LOOSEN by vibration and the contraction and expansion of the parts which they hold and packings compress under constant pressure, causing imperfect joints. These effects continue to some extent throughout the life of an engine, but they are especially pronounced for a time after it has been disassembled. Tightening of all fastening devices and tightening such as require it is necessary at short intervals succeeding an overhauling and at longer intervals at other times.

The Engine Itself

All cylinder-head stud nuts must be kept tight. If water leaks into the cylinders and gas leaks into the jackets and the outside air are to be avoided. There must be no looseness of front or rear engine supports or heavy pounding will result. To prevent loss of oil, all nuts which secure the oil-pan, the timing gear-case cover and the valve-compartment cover must be secure. Exhaust manifold branches must be securely clamped to the block and the exhaust pipe to the exhaust manifold or blown gaskets and noisy operation will follow. If the block and upper crank case are separate parts, the holding nuts may be found loose.

The Cooling System

Every hose connection will need to have its clamps tightened. The nuts holding the water outflow manifold to the block may have to be set up to forestall leaks. The fan belt may be found too loose and require taking up. If there are signs of leakage at the water-pump, the shaft packing nuts require screwing in a little.

Carburation And Fuel System

The gasket at the carburetor flange connection may have squeezed loose: in which case air leakage will develop there, unless the bolts are tightened and the same likelihood of stray air and imperfect carburation is involved if intake branch connections are otherwise than tightly secured to their ports in the block. The vacuum tank will not function, if any of the joints or connections in its suction line to the inlet manifold or its draft line to the main tank are loose and leaky. Gasoline leaks will occur between the vacuum tank and the carburetor, unless the connecting unions are kept tight.

The Oiling System

Oil pipes must have tight joints throughout or oil will escape and air may be sucked in and stop pump action. Not only must unions and other joints be inspected, but cracks and breaks should be watched for.

Miscellaneous

The clips or cleats that hold electrical conductors and gas lines in place should be inspected for tightness, the supports of the vacuum tank, ignition coil and other attached auxiliaries should be checked up and the supports of the radiator on the frame should be seen to be holding properly.

TRANSMISSION LUBRICANT ESCAPES



D. P. writes: I have trouble in keeping the 40 W oil in the transmission of my car, as it runs out as soon as it gets warm. How can this difficulty be overcome? Would a heavier lubricant be suitable?

Answer: The manufacturers advise strongly against the use of a heavier lubricant, especially in cold weather. You do not state whether the oil escape is through the front or rear of the transmission case, but we suspect that it may be at the rear end, along the shaft. A felt washer is used to prevent oil escape at both these points and we think that the rear one can be replaced fairly readily, but the replacement of the front one is more of a job. Unless these washers are renewed we are afraid you will always have considerable leakage. You haven't too high a lubricant level in the transmission, have you?

The oil should not run higher than the bottom of the lower shaft.

WINTER GEAR-LUBRICANT



M. G. asks: Is medium oil heavy enough for use as transmission and differential lubricant, in winter?

Answer: Probably it would serve all right, but it would perhaps be better to use a slightly thicker lubricant, if you can do so without having it become too solid to flow in very cold weather. A good scheme is to supply the gear-box and rear-axle housing with steam cylinder oil or gear oil and then thin it down with a light engine oil until it is of a consistency that will still flow slightly at the lowest temperature to which the car is likely to be subjected. In other words, it is desirable to use a lubricant of as heavy body as can be used without danger of its becoming non-fluid.

Questions of general interest to the motorist will be answered by Mr. Clough in this column, space permitting. If an immediate answer is desired, enclose self-addressed, stamped envelope.

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