

## Service and Winter Care of Motor Equipment

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Good points for the attention of the chairmen of green committees are brought out both in the December BULLETIN by Mr. J. S. Clapper in the article "Service—Who is Responsible?" and in the January BULLETIN by Mr. C. C. Ross in the article "Winter Care of Motor Equipment." There seems, however, to be little reason for one writer to question the statements of the other, as I am sure that they have the same purpose in view, namely, that the equipment should be cared for and not neglected until serious trouble develops.

Mr. Ross's viewpoint of leaving "well enough alone" is one of good advice to the average driver of an automobile and should be well taken when applied to some operators of tractor equipment. The carrying out of Mr. Clapper's suggestion as to the examination of bearings, pistons, piston pins, valves, valve seats, etc., should of course be done by a person competent to judge conditions and apply the proper remedy whenever needed. Since the tractor is put to much harder service under more unfavorable conditions than an automobile, such a competent person should be available to every club, preferably the operator of the machine. There is great danger in waiting until some indication is given that trouble exists, such as loose bearings, carbon deposit, and pitted valve seats, if incompetent operators are to be left to themselves to judge. Reasonable intelligence should be the proper guide in determining just how far to go in examining and overhauling the tractor at the end of the season. The age of the tractor and general condition apparent may influence the procedure in such cases as removal of pistons, although the examination of parts should always extend as far as possible at the time the motor is opened, and a decision reached as to whether any hidden difficulties are likely to exist demanding further removal of parts. If a tractor has had nothing more than very light use for an entire season, there will be ample reason for going as far as dropping the oil pan and removing the cylinder heads, as foreign matter drawn into the tractor motor will by that time have formed a muddy sediment in the bottom which can not be thoroughly removed by ordinary flushing, thus requiring the removal and washing out of the pan with gasoline or kerosene. For flushing without removal of the pan, kerosene should first be used, and this in turn flushed out with clean oil before closing the drain and refilling.

Removal of the cylinder head is the only means for scraping away the carbon which is almost certain to have accumulated on piston heads and in the combustion chamber. Negligence in the removal of this material will cause damage to the bearings through preignition, and loosened particles of it lodging on the valve seats cause burning and pitting of valves and seats, which can quickly damage these parts to the extent of rendering subsequent repairs far more difficult and more expensive than need be. Pitted valve seats cause overheating and warping of the valve heads, reducing compression and loss of power in the tractor.

Should we not give the tractor consideration for the hard work it does under adverse conditions and look after these matters at least once a year rather than depend alone upon an operator to report conditions which he may not understand and which can lead to extensive damage?