

# Oil Filters Prolong Machine Life

By CLINTON K. BRADLEY

**I**NCREASING difficulty of getting new powered turf upkeep machines, and repair parts for old ones, makes it essential that life be prolonged for machinery in use. The engines of tractors, trucks, mowers and other equipment may be compared to living bodies. The air cleaner, oil pump, fuel strainer, carburetor and ignition are likened to the lungs, heart, and digestive system,—both have means of locomotion and elimination of waste materials.

The life blood of an engine is the lubricating oil circulated by a splash or forced pump system. Some engines have, and many do not—a blood cleaner or “kidney”—an oil filter. It has been found that 1¼ lbs. is a good average for the amount of foreign matter filtered from oil in a car traveling 8,000 miles.

Available statistics,—and this article is based throuth on such, shows the average golf tractor runs in engine hours equal to 25,000 car miles yearly. The annual oil consumption on 18-hole courses where manufacturers' lubrication recommendations are followed equals contents of a 55 gallon drum, although each machine does not use the same S. A. E. oil viscosity. Of the 125,000 gallons of oil used in a year on U. S. A. courses, 1/3 to ½ is actually “burned” or engine-consumed in running, and the rest goes into drainings when periodic crankcase oil changes are made.

Recognizing this oil waste, parts wear and increased fuel consumption due to dirty oil, manufacturers in recent years equipped turf tractors with oil filters. Figures cited above were compiled previous to this installation era. Many tractors still in use were made before that time. Wherever oil filters can be used, it is economically sound to do so.

## Functions of Filter

A properly designed filter functions to keep oil clean and close to refined color, prevents sludge and sediment accumulation in crankcase and helps control oil acids forming. A crankcase with considerable sludge in the bottom will give a false reading on the oil gauge rod, and the motor will not have the right oil volume called for best operation.

By doing as required, an oil filter helps

keep an engine internally clean, reduces deposits of carbon and binders (such as gum and engine “varnish” that makes valves stick), and catches abrasives that cause wear, lower power and increase fuel needs. Clean oil also permits better evaporation of water and gasoline vapors from the crankcase ventilator.

## Trend Toward Cartridge Type

Filter design trends are toward the replacement element or cartridge type. These have a case or shell fixed to the engine and the filter part can be renewed when too clogged to operate. Some of the better known makes available are the Fram “Dip Stick”, Purolator, and Reclaimo. Discussion on these based on manufacturers' claims and findings of various lubrication authorities is a subject in itself.\*



New Fram filter is shown (center) installed on McCormick Deering 1935 model tractor. To the left of filter is old screw type filter no longer used; to right, the oil bath air cleaner.

Two tractors that come under the writer's observation were equipped with Fram filters after the engines had run a total of some 11,000 hours. Tractor “A” used 72 quarts of oil in a yearly average 800 hour run. Of this, 24 quarts were “burned” in use, and 48 quarts drained in 16 changes each 50 hours run. Tractor “B” used 90 quarts of which 62 were “burned”, 28 quarts drained in 10 changes at 100 hour intervals, 1,000 hours yearly run. Tractors were both used in maintenance and construction work, practically

12 months a year. Tractor "B" as standard equipment had a fine mesh wire screen filter that was flushed out when oil was changed as per instruction book. Also top dirty oil was drained from crankcase at side petcocks between changes. This oil was included in the amount stated as "burned."

Each tractor was overhauled seasonally, worn parts replaced, and cylinders honed to keep engines in best running condition. After one such overhaul, the Fram filters were put on both tractors. The screen filter was taken from the shell on tractor "B" at this time. Oil consumption in the ensuing year was a total of 82 quarts less than previous averages under similar operating hour totals for both tractors. But one change was made, and that in tractor "A". The saving in oil cost was \$13.35 and \$3 for labor in not making drains. Without citing numerous figures, the gain on oil cost, labor, fuel, wear and replacement parts, over and above initial cost of filters and one new element, totaled \$60.

The oil gallonage saved by filter use, was more than enough to supply requirements for 8 one cylinder engined machines used in maintenance a full season. Those engines were on a Worthington Overgreen tractor, a Gravely power plow, Whirlwind mower, Hardie Sprayer, Toro lawn and sickle bar mower, Wichita compost shredder, a Terferator and a Jacobsen putting green mower.

Four of the machines mentioned above had Briggs and Stratton air cooled engines drained of oil each 25 hours run. All drainings were allowed to settle, and the clean oil used in spring bottom oil cans for hand mowers and the like.

Oil filters are carried in stock by many hardware, auto supply, and mail order stores. Where two or more are needed, some makes can be bought at a "fleet owner's discount."

Anticipating some questions, and welcoming all, the writer will at a later date attempt to supply further information on the topics of oil filters. Subjects concerning lubrication he has found to be as deep as some greenkeeping discussions, where much has been learned, but considerably more yet to be discovered.

(\* Fram filter made by Fram Corp., Rumford P. O., East Prov., R. I. Purolator, by The Purolator Co., Newark, N. J. (Motor Improvements, Inc.). Reclamo, by Reclamo Mfg. Co., 5083-85 Elston Ave., Chicago, Ill.)

## Ridgewood Instructs Members On Transportation Procedure

FROM Dan Carter, Mgr., Ridgewood (N. J.) CC, comes a booklet on Transportation Aids for members of the Ridgewood Country Club. This booklet is more than an excellent work of planning to handle the transportation problem that, unless effectively solved, might seriously restrict the operations of a country club and curtail its wartime recreation and health service. The booklet is a model job in organizing a substantial section of a community in meeting a wartime situation.

The Ridgewood booklet contains a complete roster of the club's 478 members, the residence addresses and telephone numbers, listed according to districts. Maps of the various districts are printed.

Taxi, train and bus service fares and time tables are printed. The booklet also contains helpful information for conserving tires, gasoline and automotive equipment. Ridgewood's slogan "Let's Get Together" appears on many pages.

J. Howard Smith, the club's president, in a preface to the booklet writes that the information is supplied to help members and their families get to and from the club with the greatest possible facility. The booklet certainly does make it easy to take turns in sharing their cars. Clubs in localities not yet hit by gasoline restriction can see the necessity of foresighted planning as they study how many cars drive into the clubs' parking areas, without having carried full cargoes of passengers.

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**\$6,000 H. A. Prize Money**—Six thousand dollars, 20% of which will be in War Bonds, will be the prize money for the Hale America Open which takes the place of the National Open this year, and will be played at Ridgemoor CC, Chicago, June 18-21.

Precedent for this tournament was the Open Patriotic Tournament played at Whittemarch Valley CC (Philadelphia district) June 20-22, 1917. Jock Hutchison was winner with 292. His prize was a Red Cross medal. There was no entry fee. Ten lowest scorers got certificates. The Red Cross was given \$1,600 by the USGA in lieu of prize money for the event.