DOLPHIN SERIES II FAULT FINDING DRILL

If an engine that has been running well, suddenly misbehaves itself, the owner can be fairly sure that the trouble is either dirt in the carburetter or an ignition fault. The only mechanical faults that could cause these symptoms are broken piston rings, defective oil/gas seals in the crankcase, or something really obvious, such as a loose carburetter or cylinder head. These faults are *VERY RARELY,* if ever, encountered in service and the owner should proceed *STRICTLY in the following order to locate the trouble:*

1 .Check the quality of the spark at the H.T. leads. Remove the cover and allow the spark to jump to the spark plug terminal from which it was detached. If the spark will jump $^{5}/_{16}$" on both cylinders, there is nothing wrong with the ignition system. It is virtually impossible for the timing to become misplaced.

2. Check the spark plugs, either by substituting them with known good ones, or by having the originals checked on a pressure test rig. If further testing of the ignition is required, refer to the instruction leaflet provided by Lumenition. (A reprint of which follows this section).

3. If the engine passes the first two tests, then dirt in the carburetter or fuel feed should be suspected. Disconnect fuel line at the engine to see if fuel is present, if it is then the carburetter and/or fuel pump should be dismantled and carefully cleaned. Ensure choke holes align when refitting float chamber. Pay particular attention to the float needle valve inlet and the small passages that make up the idler circuit as these are the most likely cause of trouble, especially the latter if engine is unreliable at tickover. The carburation can be upset by fitting the AC air cleaner element the wrong way round, the central hole must always be towards the carburetter. This is unlikely to stop the engine from running.

   An engine that starts up easily and runs well for a short time, only to stop and then repeat the cycle, is almost certainly suffering from fuel starvation. On a pumped system this is most likely to be caused by restricted filters or a faulty pump diaphragm. But gravity systems have different characteristics caused by vapour locks or bad installation. Fuel lines that conform to requirements of our installation procedure should solve the problem. (See especially gravity feed — page 7.)

4. An obstructed exhaust will prevent the engine from developing more than about half power and will produce symptoms of rich carburation with heavy blowback from the carburetter intake. Low speed running will not automatically be impaired.

5. In the most unlikely event of the engine still running badly, but passing checks 1. 2. 3 & 4, have the cylinder pressures checked by a competent mechanic. If the cylinders show a pressure of over 60 Ibs/sq. in. then there is little wrong with the bores or piston rings.

   Bad or eratic running can be caused by an air leak. Check for this by brushing a little petrol over the various joints around the crankcase and inlet manifold while the engine is running slowly. If an air leak is present the petrol will be drawn in and will alter the speed of the engine. By this means external leaks can be quickly located. *The greatest possible care must be exercised when carrying out this test to obviate the risk of fire.* Air can also enter the crankcase through defective oil seals. but normally the seals outlast the main bearings, therefore, the engine will have to be in a very advanced state of wear. been flooded or been subjected to grave misuse before they give trouble.

   Do not be persuaded that the engine needs decarbonization. Since there are no valves to burn and whose seatings may deteriorate, there is little point in dismantling the engine. Dolphin engines are particularly clean in operation and what little carbon does form is regularly burnt off in the course of running. The engine should go at least ten seasons before needing a major inspection.