Data Sheet No. 5

Subject: Fault-finding - Ammeter showing NO CHARGE
Date: June 1992

AMMETER SHOWING NO CHARGE
Unplug the wires from F and D in the terminal block on the dynamo. Get a short piece of wire - boxwire, or a straightened-out paper clip. Bend to a U-shape so that it will touch both terminals in the terminal block.

Start the machine and rev up until about equivalent to 20-25 mph in top (equivalent revs that is!). Hold one end of the bent wire *into* one terminal on the terminal block, and with a stroking action, stroke the other end against the other terminal. E.g.. if one end is in D, stroke the other end against F or vice versa. **A GOOD BLUE FLASH SHOULD BE SEEN.**

If there is nothing at all ... assume the dynamo is not outputting. If there is a weak spark ... assume the dynamo is outputting some, but not sufficient. If there is a GOOD BLUE FLASH ... you can assume the dynamo is outputting. The next test can be done even if the dynamo doesn't appear to be outputting, as it sometimes excites it into starting again !

Get a piece of ordinary lighting wire similar to the piece of box-wire used in the first test. Plug one end firmly into D on the terminal block, and the other end into F, and then plug the harness wires in on top. (The terminal block is now bridged across as well as being wired up normally.)

Before going any further, *make sure the CVC is properly earthed.* (The CVC is the black 'box' inside the control box above the coil ... and the earth for it comes out of E on its back ... and must be earthed to the **FRONT** bolt that holds the control box to the frame ... **not** the rear one !). The main thing is that this **must be a good earth.** Clean the bolt up. Scratch inside the control box to make sure it has a clean connection. When satisfied ... start the machine again. Rev up until just over '/4 throttle, just over tickover ... and look at the ammeter. It should show **FULL CHARGE.** Sometimes this is sufficient to start a sticky CVC working again, so remove the bridging wire from the dynamo terminal block, refit the normal harness wires and check. You may find all is OK now, and the ammeter reads normal charge rate. But if it doesn't, then the CVC needs checking, either by a Lucas agent or send it to us.

ON NO ACCOUNT try fiddling with it yourself ... as you can do more harm than good and you may end up needing an exchange unit even if you don't now !

If the ammeter didn't show a full charge with the bridging wire fitted ... then it *could* be wiring trouble. E.g.., the yellow dynamo wire, where it goes to the ignition warning light could be shorting against the back of the reflector in the headlamp, or chafed under the tank, behind the control box, or squeezed behind the CVC. Or it *could* be that the dynamo output is insufficient or intermittent.

Going back to the beginning if the dynamo did not flash ... and does not appear to be outputting ...

Take off the cover. Check that the brushes are free in their holders . . . and that they are *not* worn down so that the wires connected to them are touching the brush holders, or chipped etc.. Make sure the armature comm. (the brass bit the brushes run on) is not dirty or scored. If greasy or dirty, turn engine over slowly with the kickstart, and wipe comm. with a petrolly rag. Test again. Still nothing ... remove field set. If the laminations on the armature ... all around it's middle are damaged at all ... any knocked out of line ... then it is almost certainly not working.

A quick check can be made with two wires from the battery ... one end held onto the laminations and the other wire onto the commutator. If you get a spark with these ... then the armature has *DEFINITELY* had it'.. . but if you do not, then this is not a conclusive test, and the armature really needs testing on a **growler.** SOME auto-

electrical firms have one and will check it for you.

If armature looks clean and wholesome ... then look at the fields. Check for breaks between the field coils (these breaks are often hidden inside the insulated covering so *tug* on the loops between each winding ... and make sure that they are joined). Check that the field holding-on screws are not holding these joining wires back against the casing to which they will short. The screws should go inside them and be clear of them.

The fields can only be checked on an ohm meter (reading between 3 and 5 ohms). The armature can look perfect and unmarked and likewise the field set but have internal breaks and thus not function. If in doubt ... send them in for testing.

SERVICE DEPARTMENT
B.S.A. CYCLES LIMITED