

## GET YOU HOME

Electrical breakdowns-can you cope? In a lot of cases a little knowledge of a problem can often help get you out of a mess as opposed to having to reach for your Insurance-‘get you home’ card. Perhaps you might fancy a nice ride for you and your bike in a nice bright yellow truck, but being able to fix it might also be beneficial, and more fun. Lets us look at some basic facts that could help you survive the odd electrical gremlin. Lack of battery charge is our first problem area. How do we know that we have stopped charging? Ammeter stops registering? Perhaps the red light is on? Do you have either of these devices in the first place? and were they in good order to start with? Surprising the number of people who aren’t sure-don’t care in the first place. Perhaps it would be a good idea to check if your ‘non charging’ device is in working order first.

The 3AW, the earlier warning light assimilator on the Commando was a notoriously unreliable piece of Lucas equipment in the first place, often when this failed, lamp could be on or off! Not only had the warning light ‘gubbins’ failed with respect to switching the little lamp properly, but the 3AW can actually cause the output from the alternator to be shorted out! Best test here is to put a voltmeter across the battery and look for a rising voltage with engine revved up, with the 3AW disconnected.

Just in case you’re not sure on this Voltage. The usual vehicle battery voltage at rest will be a nominal 12V maybe just under 12V(bit flat) or as high as 13V(fully charged). This should rise with revs up to 14V ish, ignition only, hopefully not too much above 15V. With lights on hopefully between 13V and 14V ish. The precise figure is down to your Voltmeter and is not too specific but the changes NEED to be seen. (half these figure for a 6V system)

So you have decided ‘by the side of the road’ that your battery isn’t charging. What can we test and with what? If you haven’t got a multimeter we can still do a lot with a little knowledge. A very useful basic test instrument can be a 12V Bulb! If you are searching for a failed something i.e. headlight or indicators or even some sparks then a poke around with say one of those idiot lamps (one end with a crocodile clip lead the other with a small pointer/poker made from a short piece of sharpened welding rod?) can easily find some electricity (or not!)

Back to the non-charging plot. We need to test for an output (or not) from the alternator. The best for this even at home, is to use a 12V headlamp bulb (even on a 6V system) but by the side of the road an indicator 21W lamp can be used (or the stop filament from the rear lamp). Again arrange the lamp with a couple wires from it and proceed thus.

Alternator- disconnect the two (or 3) wires from the bikes wiring. Connect the bulb across any two wires-start engine; at a brisk tickover there should be a bright light. (Very bright, soon blown if you use a 21W take care) Now disconnect one test lamp wire and connect it to engine metal work. There should NOT be a light. This alternator has just passed its test.

Rectifier or even Regulator/rectifier- the former can be tested with a multimeter the latter not, but we can ascertain their working order again with the bulb. Disconnect the output of said device from the bikes wiring. Connect your test bulb (21W with care) preferable headlamp bulb, across the rectifier or regulator/rectifier output. Start engine-lamp should light up.

Zener diode- This will very rarely stop you charging if faulty. It is there to stop over charging. If it fails- short circuit it should blow the fuse. Disconnect the Zener and ride on with the lights on to keep the battery voltage safe. If the Zener fails open circuit (or broken connection) you would be over charging anyway-lights on, ride on.

Alternative to the above, if you catch your bike not charging virtually as it happens and you are reasonably sure your battery is well charged you still might be able to get home. Say you have a 9AHR Battery, your ignition only usage should be no more than 2 Amps. This should give you 4 hrs running. Average 50MPH =200miles! (I do not want to hear about smart pants with magnetos!)

Blowing fuse- very hard to find such problems sometimes. First question to ask yourself did you operate anything that blew the fuse? Horn Stoplight? Head light? Run out of fuses? A piece of standard bike wiring (14/030) can be stripped and each strand is worth about 5 amps, wrap accordingly around the normal glass fuse or push in behind the blade fuse. Do NOT use the metal foil from your cigarette or sandwich packet!! You have no idea of the amperage.

Failure- the bike has stopped, a switch, ignition or headlight, dip etc has stopped working. What to do? In a lot of cases one wishes one had the circuit diagram, but a little bit of self training with the colours and a properly wired bike with the standard colour scheme from 1960s onwards will often be very helpful. Knowing that the BROWN/BLUE wire is live battery and the WHITE is ignition, then tying the two together will get your ignition working again! A correctly wired Commando will have about 6 basic wires-know their colours and you should be able to cobble your way home. Want to know the colour scheme? Consult your Wiring diagram. If your bike was wired 'haphazard' then I suggest you do not try the long haul on your own!