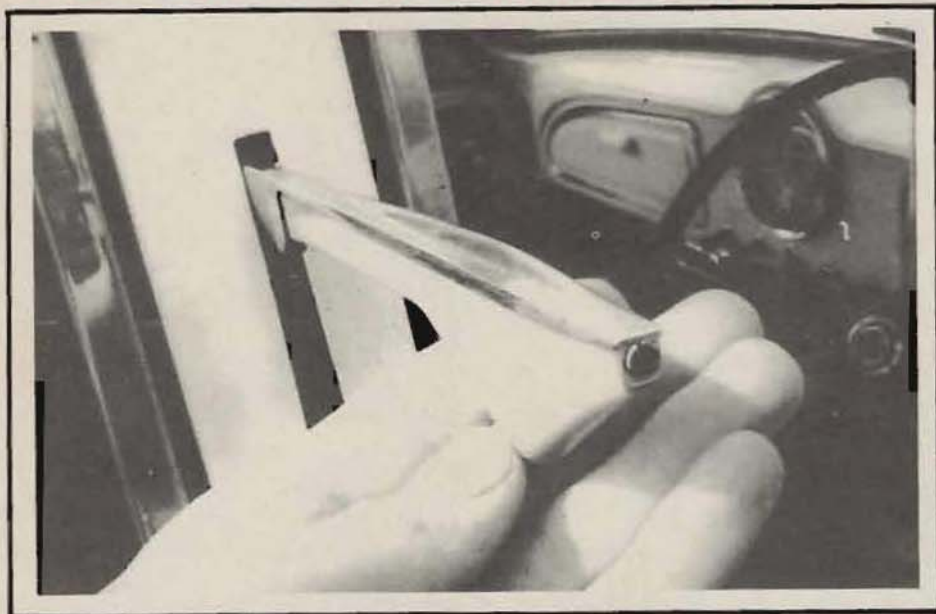


Trafficators



How they work and what to do if they don't. We investigate the subject with the help of the Vintage & Classic Car Spares Co.

Semaphore indicators lingered on into the sixties (the Morris Minor being one of the last cars to succumb to 'flashers') and while it's a bit dodgy to rely on other road users noticing that funny little lit-up stick, if you have them on your car then at least you should make sure that they work as effectively as possible. It isn't difficult, and although there are ten or more different types, they all work on exactly the same principle.

The most common type of Trafficator (a Lucas trade name, though other firms made them too) in use today is the type SF80 which was introduced around 1950 and was standardised about 1956. The SF80 differs from its forerunners through the electrical contact for the bulb being made at the end of the arm itself, rather than by a separate wire running into the arm. Other than that, the mode of operation is the same — when the indicator is switched on, an electrical current energises a solenoid, the armature of which is drawn into the core and thus lifts the arm; additionally, a current is passed to the bulb which lights up.

Above:

The most common type of semaphore indicator, the SF80, fitted here to a Morris Minor 1000.

When switched off, the arm returns by gravity — or it should do!

Largely because it is so simple, the electrical part of a Trafficator rarely causes any trouble; about the worst thing that can happen is that the coil burns out, in which case the cheapest way out is to look around for another unit; new or second-hand, although it is possible to have the solenoid re-wound, at some expense. Or on the pre-SF80 types, the wire which carries the current to the bulb can fray and earth somewhere — easily repaired, a model shop being a good place to find a suitable length of sleeving. Other than these, the only further electrical item to check is the auxilliary ignition fuse in the car's control box, which supplies the trafficator circuit when the ignition is switched on. Ensure that the fuse is making proper contact and isn't burnt-out. The indicator switch and associated wiring can be checked if in doubt through 'bypassing' with a separate lead connected to the Trafficator.

However, if there is still no joy the unit may have to be removed from the car. Sometimes this is done by removing an outer escutcheon plate, or otherwise the trim on the door pillar (or whatever) must be taken off if access to the couple of set-screws which hold the unit in place, is from inside the car. Only one wire usually joins the indicator to the car, normally



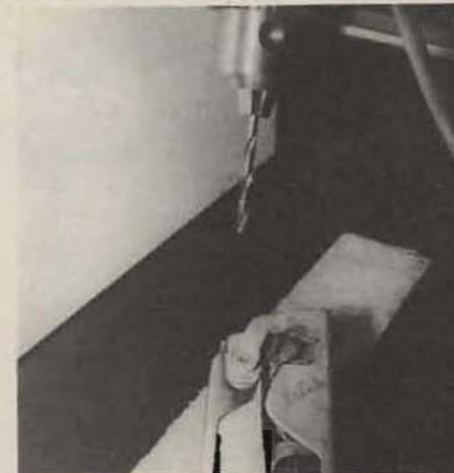
The very earliest type of Trafficator (the SF26) had the very 'twenties' looking arm as held here; later types were less ornate and are considerably easier to find.



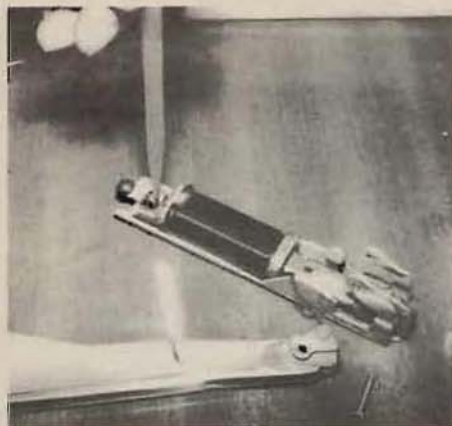
Some Trafficators, both pre- and post-war, were contained in an exterior die-cast or pressed steel case; the actual 'works' were identical to the concealed type however.



Accumulated dirt (sometimes caused by over-oiling) can easily prevent the indicator from working properly. A thorough clean, whether you intend to dismantle or not is the best procedure.



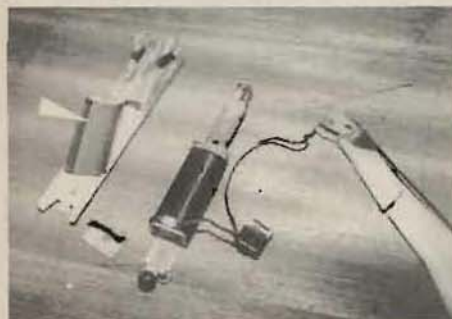
To remove the arm from the base, the end of the securing rivet must be carefully drilled to allow it to be pushed through with a screwdriver.



The rivet which acts as the arm's hinge can be seen bottom right; to remove solenoid assembly from casing means undoing this small screw.



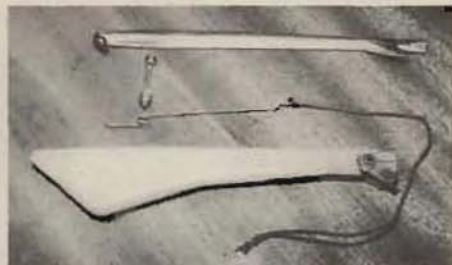
Make sure you know how the insulators are positioned under the screw which locates the solenoid and connector.



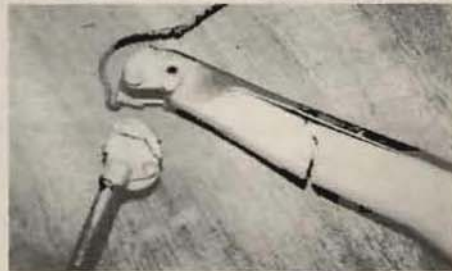
Note that solenoid sits on a paper insulator; some of the wiring connections are by solder.



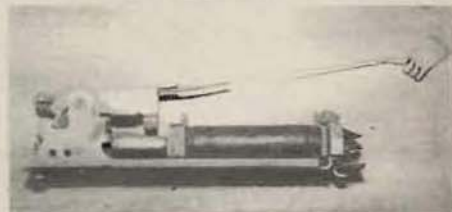
On pre-SF80 units as illustrated here, wire to arm is released by carefully bending back clip.



The arm assembly in dismantled state; wire lead can sometimes fray and short out. Circuit to bulb is completed by bulb coming into contact with metal sheath as arm rises.



This is the armature which pushes the arm up. A casting, the end assembly is prone to breakage as it weakens with age. Cracked plastic lenses are not that uncommon either — amber types are getting quite hard to find.



This is an SF80 unit, minus lens assembly. Note absence of separate lead to bulb — remainder of unit is the same in principle as the older types.

via a push-in connector, though a further earth wire may be present especially on an older wood-framed car. You can now take the assembly to the work-bench for a proper examination.

The easiest thing to do is remove the small screw from the end of the arm and slide the metal casing off so that you can take a look at the bulb, but to actually detach the arm from the unit means drilling the end off the rivet on which it hinges. Then to dismantle the solenoid and get at the various connections and the base-plate, the screw just above the arm's rubber buffer must be undone (if the rubber is still there — and if it is, check that it hasn't gone sticky with age and glues the arm closed). Be careful to note the various insulating pieces disclosed as you take the assembly apart, particularly the order they go back in. Solenoid and armature can now be cleaned using paraffin or contact cleaner. Examine the alloy 'carrier' with its spring loaded jaws at the end of the armature — this is subject to fracture as it deteriorates with age, and may be the cause of the indicator not working.

After cleaning, reassembly can begin providing you've traced the fault (if any). Do not over-lubricate as this will attract dirt, but a drop of oil should be applied to the arm's

OPERATING TESTS

For those of you with the necessary equipment, this is the official Lucas test procedure as laid down when the Trafficator was current.

All MODELS Except SF80

1. With the arm bulb in the circuit, the unit must operate satisfactorily, i.e., unlock and lift arm to the horizontal position when the unit is inclined backwards at 5° to the vertical at a voltage between the terminals of:

4.5 volts for 6 volt units.
9.0 volts for 12 volt units.

(Units to be cold when tested).

2. The arm must fall right home and lock when released from a position making an angle of 60° to the vertical.
3. The unit must be operated intermittently for five minutes with periods of 10 seconds on and 10 seconds off, with the nominal voltage across its terminals, and mounted at 5° to the vertical (as stated in Test 1). The unit must function correctly throughout the test.

MODELS SF80

1. With the arm bulb in circuit, the unit must operate satisfactorily, i.e., unlock and lift arm to bring the lower edge of the arm to cover to within 2° of the horizontal when the unit is inclined backwards at 5° to the vertical with a voltage between the terminals of:

4.5 volts for 6 volt units.
9.0 volts for 12 volt units.

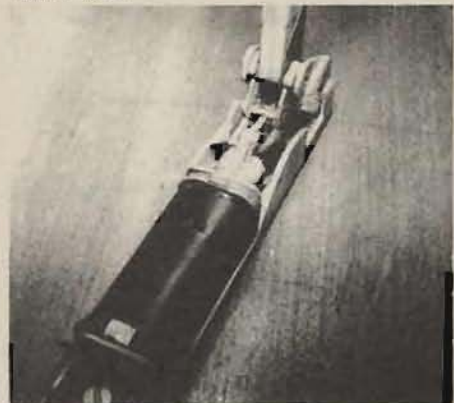
(Units to be cold when tested).

2. The arm must fall right home and lock when released from a position making an angle of 45° to the vertical.
3. The unit must be operated intermittently for five minutes, with periods of 10 seconds on and 10 seconds off, with a nominal voltage across its terminals. The unit must function correctly throughout the test.

BOBBIN RESISTANCES

	6 volt	12 volt
All models except SF80	0.82-0.93 ohms	3.9-4.4 ohms
Model SF80	1.5-1.7 ohms	4.5-5.2 ohms

Continued



pivot, and petroleum jelly or thin grease to the spring-loaded jaws. Points to watch at this stage are that the armature moves easily inside the solenoid, that the various insulators are in their proper positions, and that the spring on which the festoon bulb sits goes back into the lens first, and in the first slot. When rivetting the arm back on, ensure that the 'jaws' on the armature are in position on the indicator arm base first — easy to forget.

On reassembly, ensure that the jaws of the operating lever (armature) are over the indicator arm properly before rivetting the latter back into place (simply put rivet through arm and mounting, lay unit on its side on hard surface, and use something like a centre punch to open out the rivet).

The chances are you won't need any spare parts as just a build-up of dirt or a poor connection somewhere is often the culprit when a Trafficator is reluctant to function correctly. However, for some reason (perhaps because they are the most-used) it is the later (usually amber) plastic lenses which are hard to get, the earlier yellow-type being more easily found. Incidentally, many older cars have collected the later SF80 type unit as a result of a previous owner updating his car by fitting a new unit rather than repairing the old one. At anyrate, the semaphore indicator is easier to strip and rebuild than an article of this length might appear to suggest, so long as you note how the unit comes apart and don't lose any of the bits! □