TECHNICAL INFORMATION

No: 86/01/00/NAS
Ref:
Issue: 1
Date: 03/03/00

Quiescent Current Draw

AFFECTED VEHICLE RANGE:

All Vehicles

SITUATION:

BATTERY IS DEAD OR FAILS TO MAINTAIN CHARGE

△ **NOTE: "Quiescent current" is current drawn from the battery by vehicle components that require power when the key is in the "off" position. The draw may include the radio, clock, security system and ECU memory. It will also vary depending on the "sleep" status of various ECUs.**

Some electronics, including plips from other vehicles in the vicinity, can "awaken" an ECU. When testing avoid the use of plips in the vicinity. If consistently and repeatedly "awakened" over an extended time, the ECU quiescent draw can drain a battery.

A battery will self discharge at a rate between 0.1 – 1% at 20°C (68°F) depending on the age and condition of the battery. The self discharge rate will INCREASE 1% for every 10°C (19°F) increase in temperature

Dirt and moisture on the top surface of the battery will also increase the discharge rate.

A quiescent current draw that exceeds specification can cause excessive battery drain while the engine is off. This may result in a dead battery or inability of the battery to maintain a charge.

RESOLUTION:

TEST VEHICLE FOR EXCESSIVE QUIESCENT CURRENT DRAW

When a vehicle exhibits the above symptoms, measure the current from the battery after all vehicle systems have been shut down. Verify that the current is less than or equal to the specified current level for that vehicle in the Repair Procedure section of this TIB.

PARTS INFORMATION:

No parts are necessary.

WARRANTY CLAIMS:

86.60.89/26..... Time 0.40 hrs.
Measure quiescent current draw from battery

FAULT CODE: T

Normal warranty policy and procedures apply

TIB	CIRCULATE:	Service Mgr	Warranty	Workshop	Body Shop	Parts
86/01/00/NAS	TO	X	X	X	X	X

REPAIR PROCEDURE

MEASURE QUIESCENT CURRENT LEVEL

1. Verify that the battery is fully charged.
2. Remove key from ignition lock.
3. Open hood.
4. Disconnect bonnet switch.
5. Close all doors.
6. Verify that all interior lights have extinguished.
7. Lock vehicle with remote.

△ **NOTE: Ensure that the vehicle electrical system remains powered throughout the following steps.**

8. Connect a suitable ammeter between the battery and vehicle electrical system.
9. Wait 30 minutes for all on-board systems to power down. In some cases a Discovery Series II may take up to 60 minutes to completely power down.

△ **NOTE: Any accessories fitted to the vehicle with a permanent battery connection, will adversely affect quiescent current. They should be disconnected before testing the vehicle**

10. Measure the current level between the battery and vehicle electrical system.
11. Verify that the current levels recorded are less than those specified for that vehicle in the table below:

Vehicle	Max Allowable Quiescent Current Draw ✣
Range Rover Classic	40 mA
Discovery	40 mA
Range Rover 4.0/4.6	30 mA* †
Discovery Series II	35 mA

✣ All Vehicles except Range Rover 4.0/4.6 will have an extra 10-20mA draw if the key remains in the ignition lock.

* This value applies when the vehicle is in sleep mode.

† Some 1997 MY Range Rover 4.0/4.6 vehicles could have a 50 mA draw due to communications with the instrument pack.

12. If current levels exceed those specified in the above table, it is necessary to evaluate each electrical subsystem to locate the source of the excessive current draw.