HOW TO SOLVE NOISE PROBLEMS

Noises from an automobile ignition system can be catagorized as:

A. Pulse Noise.
   Sources: spark plugs, coil, high voltage wiring.
   Erratic sources: voltage regulators (mechanical type), switch noise, blinkers.

B. Continuous Noise.
   Sources: generator (alternator), fan, wipers.

To avoid long hours of fruitless labor, be sure the ignition system is in good working order and properly tuned before going any further.

Spark plug cables should be checked or replace every 15,000 miles. A good cable will read between 10K Ohm and 12K Ohm on an Ohmmeter.

A good place to start with noise troubleshooting is to first unscrew the antenna coax from the CB unit and then see if the noise goes away. If it does, the noise is not comming in on the DC power lead, but from radiated RF interference. Check for these:

1) Is the coax shield wire connected to the chassis at the antenna end?

2) Is the shield wire connection broken or corroded?

3) Is anntenna mounted on a poor ground, such as a mirror, luggage rack, or bumper? Always install braided shielding between a suspected poor ground and a known good ground such as the main chassis.

4) Noise often comes from poorly grounded metal on the car body. Install ground straps on hood hinges, trunk hinges, doors, exhaust system (front and rear), and the motor mounts.

An easy way to locate noise caused by radiation is to use a walkie-talkie as a noise receiver. Pull out the antenna about 6" and walk around the body, holding the antenna around various suspected areas while listening to changes in the speaker. Check any bad areas and install ground straps as necessary.

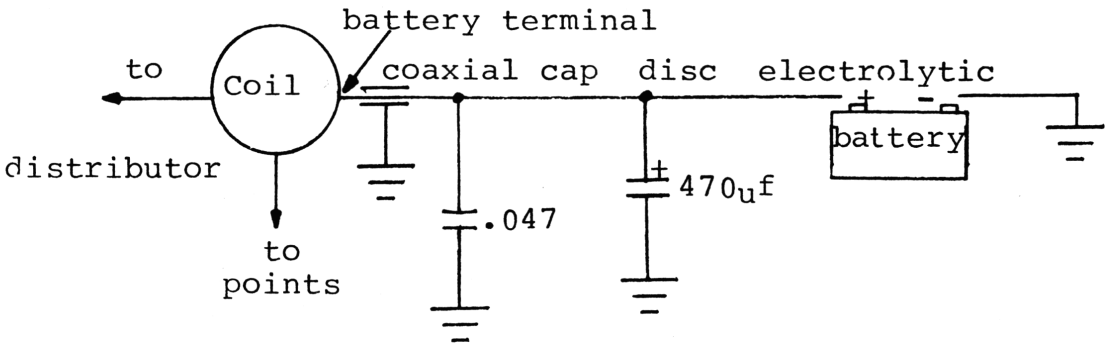
DC NOISE

Remember this important advice- noise suppression, ostensibly, is more effective when applied to the device producing the noise, than to the device receiving the noise.

An alternator produces both "hash", and "whine". The whine is actually a ripple voltage superimposed on the DC line. Coaxial high-current feedthrough capacitors are the best way to go.

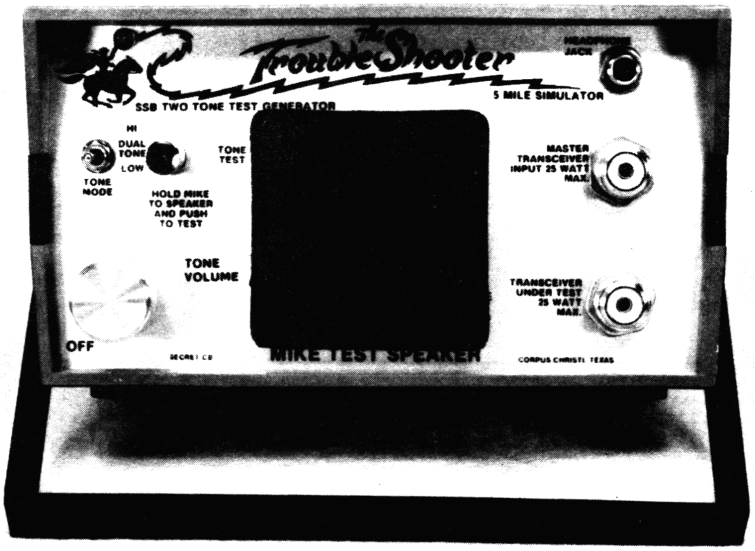
HOW TO SOLVE NOISE PROBLEMS (CONT)

Most noise can be elimated by using a separate heavy guage power wire from the CB to the battery to eliminate voltage drops.



One more method to reduce noise can be done if you use your radio on negative ground systems only. That is to go through and short across all the bypass capacitors so the chassis is grounded.

NOW AVAILABLE FULLY ASSEMBLED:

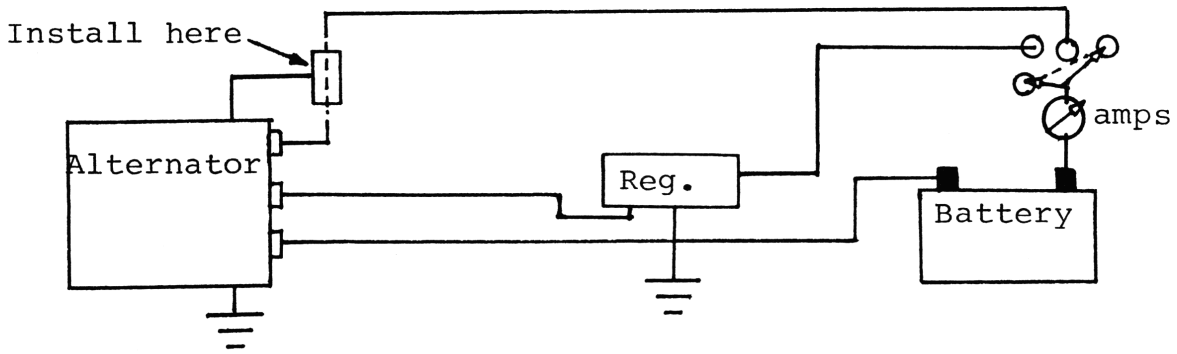


UNIT FEATURES A 5 MILE SIMULATOR FOR TRANSMITTER/RECEIVER TESTS (20 MILE SIMULATOR HAS BEEN ELIMINATED FROM PRODUCTION MODEL DUE TO UNAVAILABILITY OF SPECIAL PARTS); DUAL TEST TONES FOR TUNE-UPS; HEADPHONE OUTPUT JACK FOR MODULATION AUDIO CHECKS; DUAL 25 WATT DUMMY LOADS; WORKS ON INTERNAL 9V BATTERY AND HAS A JACK FOR OPTIONAL AC ADAPTOR.

NOISE IN DIESEL TRUCKS

Diesel engines do not have noise-producing high-energy ignition systems and therefore have less of a radiated noise problem. However, there are still noise sources to be found.

1) Alternator- polish and smooth Slip-rings, replace brushes. Most of the noise comes from the rectifier diodes. It will appear as a whine, which changes pitch with RPM (RF radiation is modulated by diode switching frequency). The cure is to install a coaxial 100 amp capacitor at the DC output terminal. This capacitor can be a value of .1-.5$_u$f.



If your rig has a generator instead, periodic dressing of the commutator, along with replacing the brushes as required for proper mantainence. Add a .005$_u$f capacitor across the DC output line and ground.

If you have a noisy regulator, remove the wire from the regulator to the FIELD terminal on the alternator. DO NOT put a capacitor in this line! The cure for this is to replace the wire with coax, grounding the shield at both ends.

2) Fans, Blowers, Solenoids- use a 20 amp coaxial capacitor in the hot lead.

3) Electrical Fuel Pump- install a .005$_u$f across the motor.

4) Oil Pressure Sender, Water Temperature Sensors, etc.- Install .005$_u$f across unit.

5) Windshield wipers- install a .005$_u$f disc cap. on all hot wires to ground. For stubborn cases, use a .1$_u$f coaxial cap. in series with the offending lead.