

QRM

Amateur
Radio
News



OCTOBER 1985

Issued by the Tasmanian Division of
the Wireless Institute of Australia

Radiotorial Comment

Radiotorial.

With the onset of spring, and summer to look forward to, we might begin seriously to take up a few of the ideas that have been mentioned at recent meetings. In spite of the socialising of the 1985 TARC, there is still much to be done to bring together more permanently the hundreds of individuals that comprise the amateur "body" of Tasmania. Last month we mentioned the need for organising the easier interchange of news; this month perhaps we could consider the organising of "outside broadcasts" - a State Field Day, the idea mooted recently of a "fox hunt", or a D/F Rally. All these things have been the subject of conversations overheard but don't seem to have progressed any further. They all have a good balance of social and technical content, and, if Statewide, would require a great deal of organisation. Our experience of the TARC operations shows that this isn't altogether a bad point - some prior meetings are often the means whereby we can enjoy one another's company and yet have some definite end in view. In fact the real aim should be to make such activities into annual events with awards to give them kudos.

It hasn't taken long for the furore of the Convention to revert to the usual situation in which the great majority of members see one another only at monthly meetings. Here, it seems to us, is one programme which could give us all a reasonable number of face-to-face contacts in between times. Don't just treat it as a bit of cloud cuckoo land, but set to and prepare for the better weather. We might even persuade some of our more diffident members to come out of their shells and enjoy the sunshine. From among the highly erudite crowd of Tasmanian amateurs there may even be some other, and better, ideas.

SOUTHERN BRANCH - CHANGE OF VENUE.

Due to a change in the policy of the State Emergency Service, it has become necessary to find a new meeting place for the W.I.A. Southern Branch in Hobart. From Wednesday, September 4th, the Branch will meet at the Elizabeth Matriculation College in Elizabeth Street, on the corner of Warwick Street. The time remains the same - 8.15 p.m. Parking is available in the streets around the College and the meeting room itself is approached from the Elizabeth Street entrance - the first room on the left along the corridor. After the September meeting, it will be possible to work out in more detail the general organisation, such as the set-up for Executive meetings.

Our thanks are due to the S.E.S. for their acceptance of our meetings in the past, and it is to be hoped that the present amicable relations will continue into the future.

NOVICE AND MORSE TRAINING COURSE

An introductory evening will be held on Thursday 10th at 7.30 PM at the Activity Centre, 105 Newtown Road, Hobart. The Morse training will be held as a separate course for the benefit of "Z" calls holders wishing to upgrade.

Members are welcome to bring along their sons or daughters, neices or nephews or anyone who may be interested in acquiring an Amateur Radio Operators Certificate.

SO YOU WANT TO CONTACT THE EDITOR?

READ THISREAD THISREAD THIS.....READ THIS.

Hey, what's going on? Well, your usual Editor thought unless he specially drew your attention to this paragraph, you wouldn't bother to read it - see the Editorial. The fact is that the Editor won't be available for the next couple of months - he's doing a marathon swim round waterlogged Britain. SO - please send all that copy to Peter, VK7ZPK, QTHR and tel. no. 438791 (002). He also joins in on 2m. most afternoons. Let him have your news, articles, comments and letters, and double the size of QRM before your rugged-up and wellie-booted Editor returns.

WOULD ALL ASPIRING CONTRIBUTORS TO QRM PLEASE NOTE THAT THE CLOSING DATE FOR COPY FOR THE NOVEMBER ISSUE IS FRIDAY 1st NOV

Copies of this newsletter will be distributed to WIA members at Branch meetings and to other interested subscribers by post at purely nominal cost. Anyone who wishes to take up this offer, please contact the Editor.

progressing.

SOUTHERN BRANCH ACTIVITY GROUP

The Southern Activities Centre is operated by the Southern Branch WIA Tas. Division in furtherance of the objects of the Institute and in particular to provide an avenue for the encouragement of 'hands on' sharing of experience and education in the hobby of amateur radio.

Subject always to the provisions of the WIA constitution and general accountability to the Southern Branch organisation, the Activities Centre shall operate as freely as possible with maximum autonomy of day to day operation as can reasonably be provided.

The management of the Activities Centre shall be vested in an Activities Centre Management Committee, which shall have the status of a sub-committee of the Southern Branch Executive.

The activities conducted at the centre shall be open to all WIA members, provided that levies or charges (if any) approved for particular activities are paid by the member as may be required. Additionally, members occasional guests may be admitted and encouraged to participate in activities and special invitation class memberships consistent with Divisional policy, shall be available, with the express purpose of introduction and encouragement of people into the hobby of amateur radio and education assistance with preparation for qualification examinations.

BASIC STRUCTURE OF SOUTHERN BRANCH ACTIVITIES CENTRE

The management of the group to be through a Group Executive consisting of a Southern Branch Executive delegate as chairman and three other WIA members who shall be appointed by the Branch Executive.

Due consideration shall be given by the Branch Executive on such appointments to the need for representation of 'youth' by ex officio appointment if appropriate.

The Group Executive shall be responsible to Southern Branch Executive for all aspects of group activities and will run the group on a day to day basis within the guidelines established by the Executive from time to time.

The Group Executive may appoint activity leaders for particular purposes - e.g. social, construction, etc. - (in this way the Group Executive will not be tied down to specifics but be able to concentrate on management and planning).

Whilst the funds of the activity group will be held by the Southern Branch as part of 'consolidated revenue' it is anticipated that the SBAG will be self-funding with the passage of time and that funds raised by the SBAG will be identified and available to the SBAG for further development.

AIMS AND OBJECTIVES OF SBAG

To provide a focus for

1. Technical assistance for Southern Branch members
2. Social activities associated with Southern Branch
3. Training facilities for members and non-members to attain DOC licence capabilities and to improve their expertise and craftsmanship within the hobby of amateur radio
4. To establish and maintain a station with all band capabilities for training purposes using all methods of amateur communication - use of the station is to be restricted to this purpose unless specifically authorised by the Executive Southern Branch
5. To encourage the growth of amateur activity in all fields
6. To introduce amateur radio to youth and community groups to enhance the status of amateur radio
7. The provision of assistance to community services as required by Southern Branch Executive e.g. WICEN, CREST, etc.

BY-LAWS SBAG

Non members of Southern Branch WIA Tas. may be invited to join as 'invitation class' members provided:

1. They are not holders of DOC licence
2. They are under 18 years of age
3. Subscriptions equal to (?10% WIA; SB refund; suggestion) are paid in advance
4. Notwithstanding (1) above, achievement of DOC licence level will not disqualify an SBAG member whilst they comply with Rule (2).
5. The Southern Branch Executive may elect to waive or modify these requirements
6. Membership of SBAG invitee-members may be terminated by a majority decision of the Southern Branch Executive at any time. Balance of subscription to be refunded.
7. Members of the SBAG will be entitled to receive a copy of QRM

SUPPRESSION FUNDAMENTALS

Identifying the Interference

Each type of interference you hear on the receiver gives a clue to its identity by its characteristic sound. You can check them by driving to a fringe reception area, or by sending a signal through the receiver in the shop as described above.

IGNITION SYSTEM

Popping sound . . . increases in tempo with higher engine speed. It stops instantly when the ignition key is shut off at fast idle.

GENERATOR AND ALTERNATOR

High pitched musical whine . . . increases in frequency with higher engine speed. It does not stop instantly when the ignition key is shut off at fast idle.

Disconnect the gauges or their sender units one at a time . . . the RFI should disappear. Bounce the vehicle to actuate the fuel gauge sender unit.

ACCESSORIES

Make a preliminary check with all accessories turned off. Turn them on one at a time, listen for increased RFI.

WHEELS AND TIRES

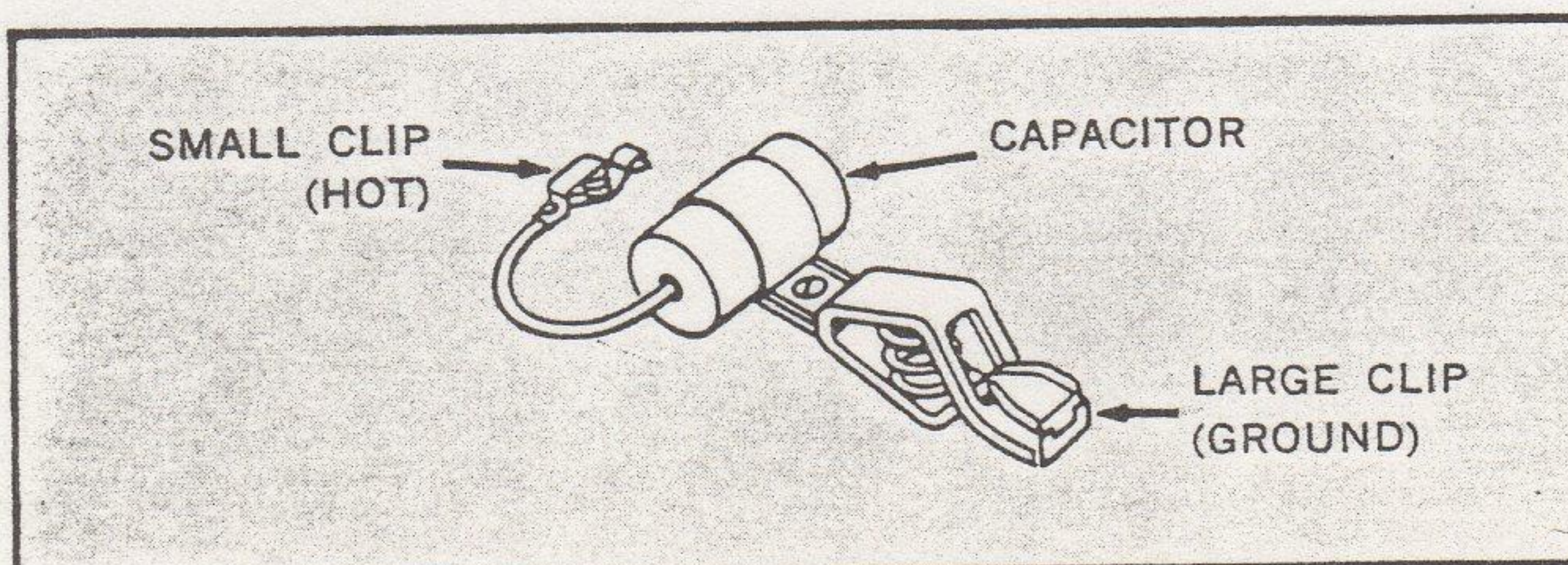
Irregular popping or rushing sound . . . occurs only in dry weather at higher speeds. It disappears when the brakes are lightly applied.

Tracing Elusive Interference

If you are unable to find the RFI sources with the above testing procedures, you may be able to locate them with one of these special tracing techniques.

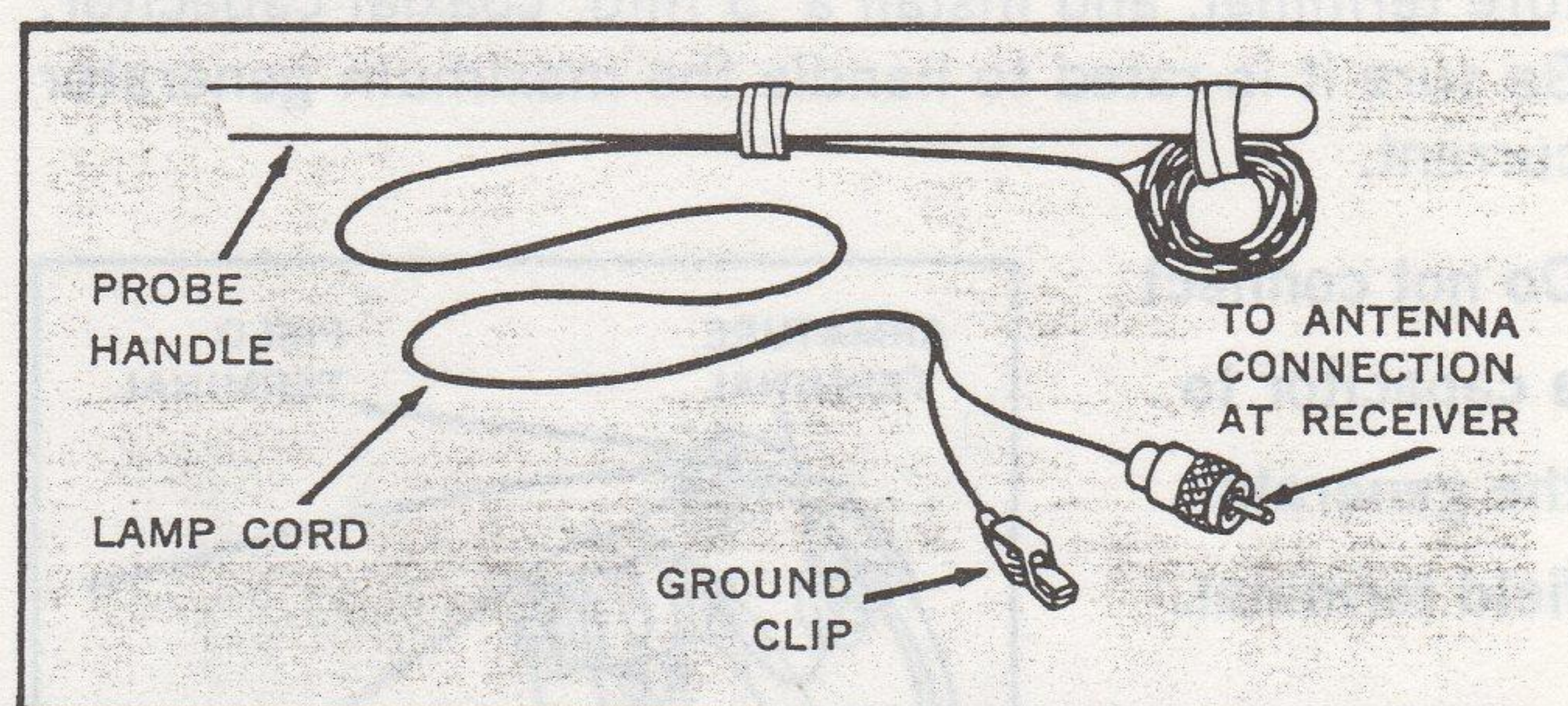
PIGTAIL CHECK

A grounded capacitor touched to all hot electrical connections will often identify the offenders.



SNIFFER COIL

Disconnect the antenna from the receiver. Wrap 50 turns of insulated wire (bell wire) into a coil 2 inches in diameter. Mount it on a wood pole. Using a few feet of lamp cord, connect one side of the coil to the receiver antenna input, the other side to ground. Start the engine, turn on the radio, and probe around the engine and wiring with the coil. Bounce or shake the vehicle during probing. Maximum interference will be heard when the probe is near the source.



Mechanics should acquaint themselves with all bonding connections and should check them frequently for looseness, breaks, or corrosion.

WHEELS

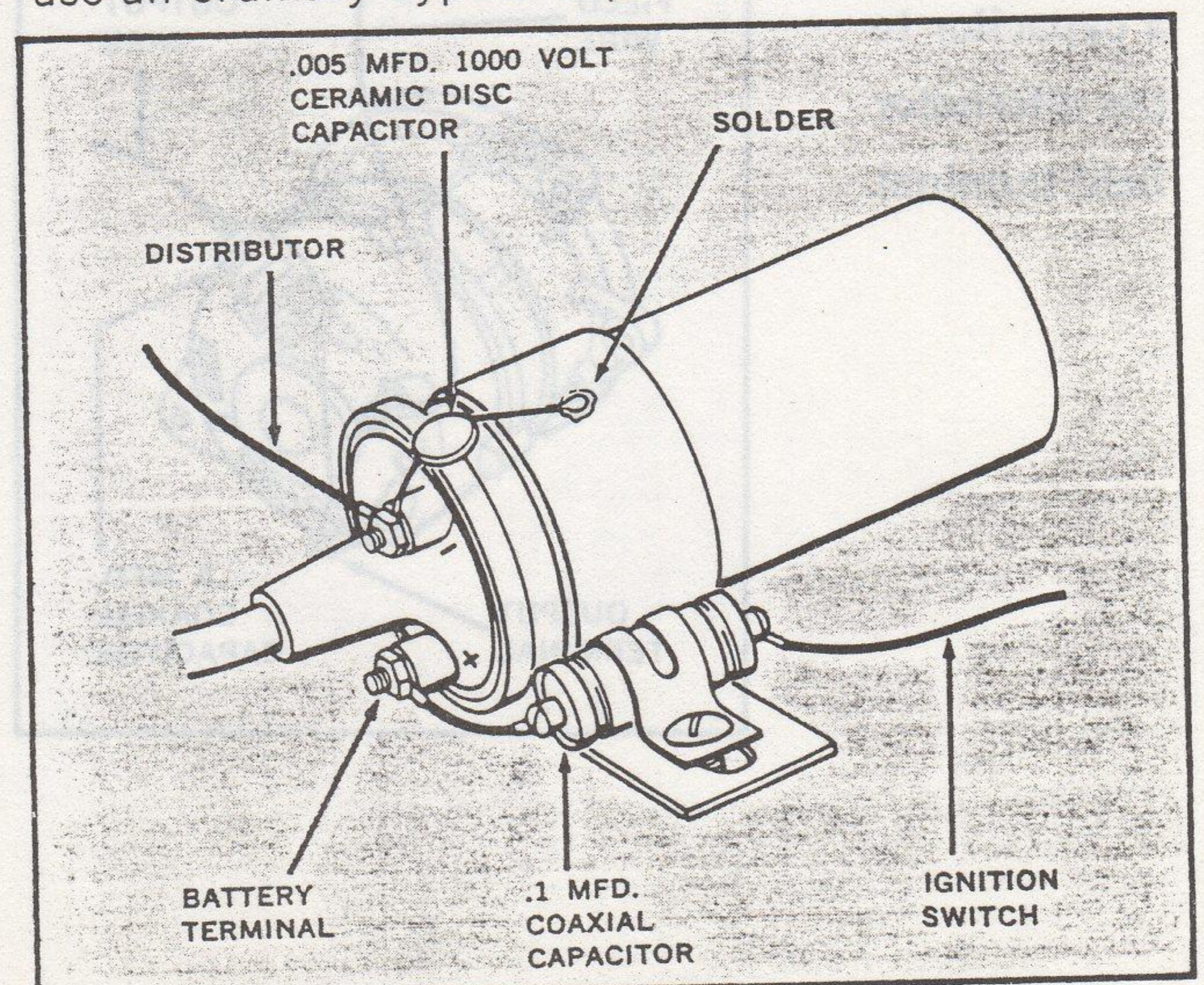
Front wheel static can be cured by installing static collector rings or springs inside the front wheel caps.

Ignition System Primary

CONVENTIONAL IGNITION

IGNITION COIL

To reduce the amount of ignition interference transferred to the car's entire wiring system, install a .1 mfd. coaxial capacitor as close as possible to the coil battery terminal, not the distributor terminal. Do not use an ordinary bypass capacitor.



Install a .005 mfd. 1000-volt ceramic disc capacitor at the coil distributor terminal, as shown in the illustration.

INTERFERENCE SUPPRESSION TECHNIQUES

Here are steps you can take to eliminate the interference after you have identified the sources.

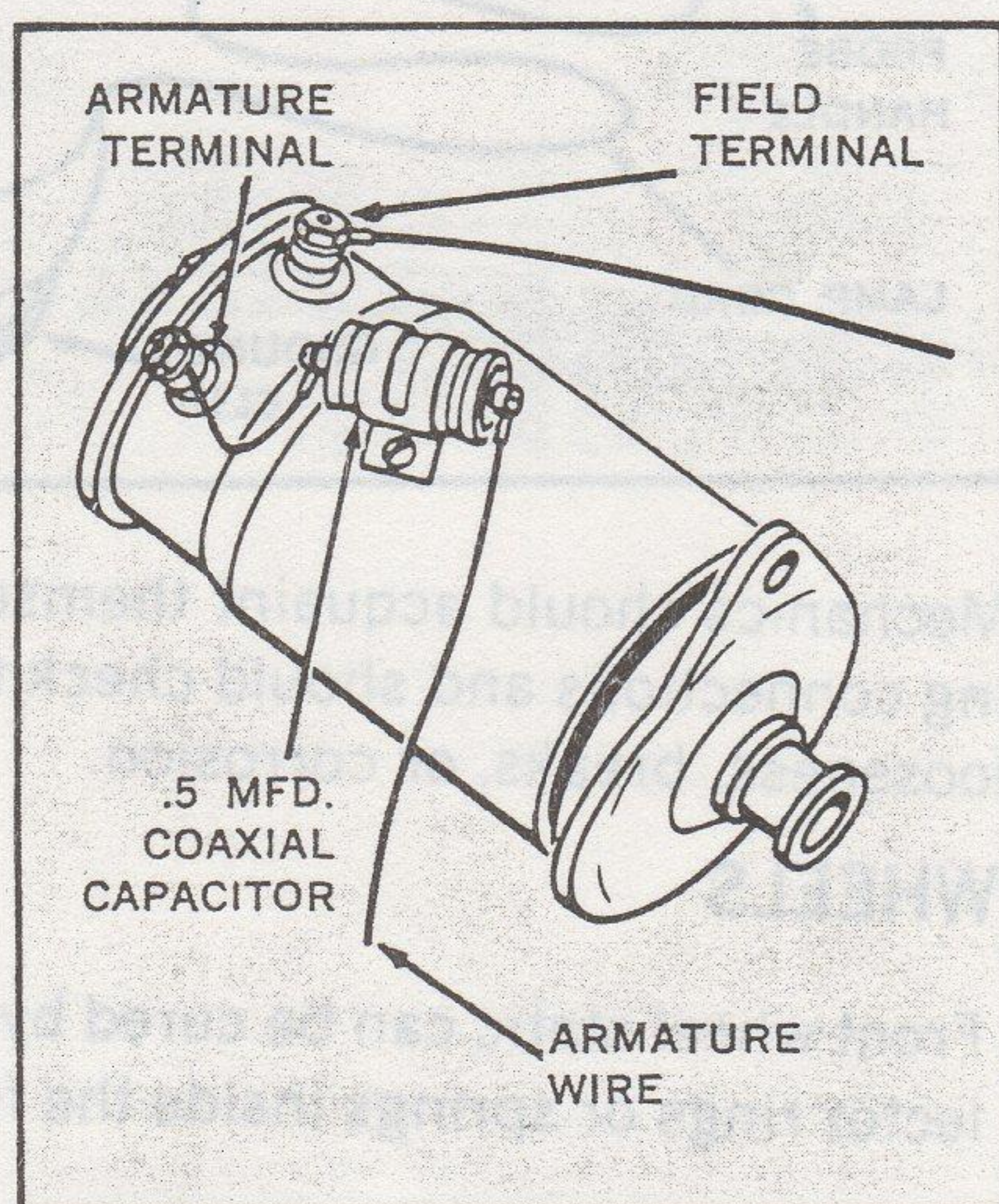
Non-Ignition

GENERATOR

Clean the commutator and make sure the brushes are making good contact. If the commutator is badly worn, have the generator reconditioned.

Remove the factory-installed capacitor from the armature terminal, and install a .5 mfd. coaxial capacitor. Be sure it is rated to handle the maximum generator current.

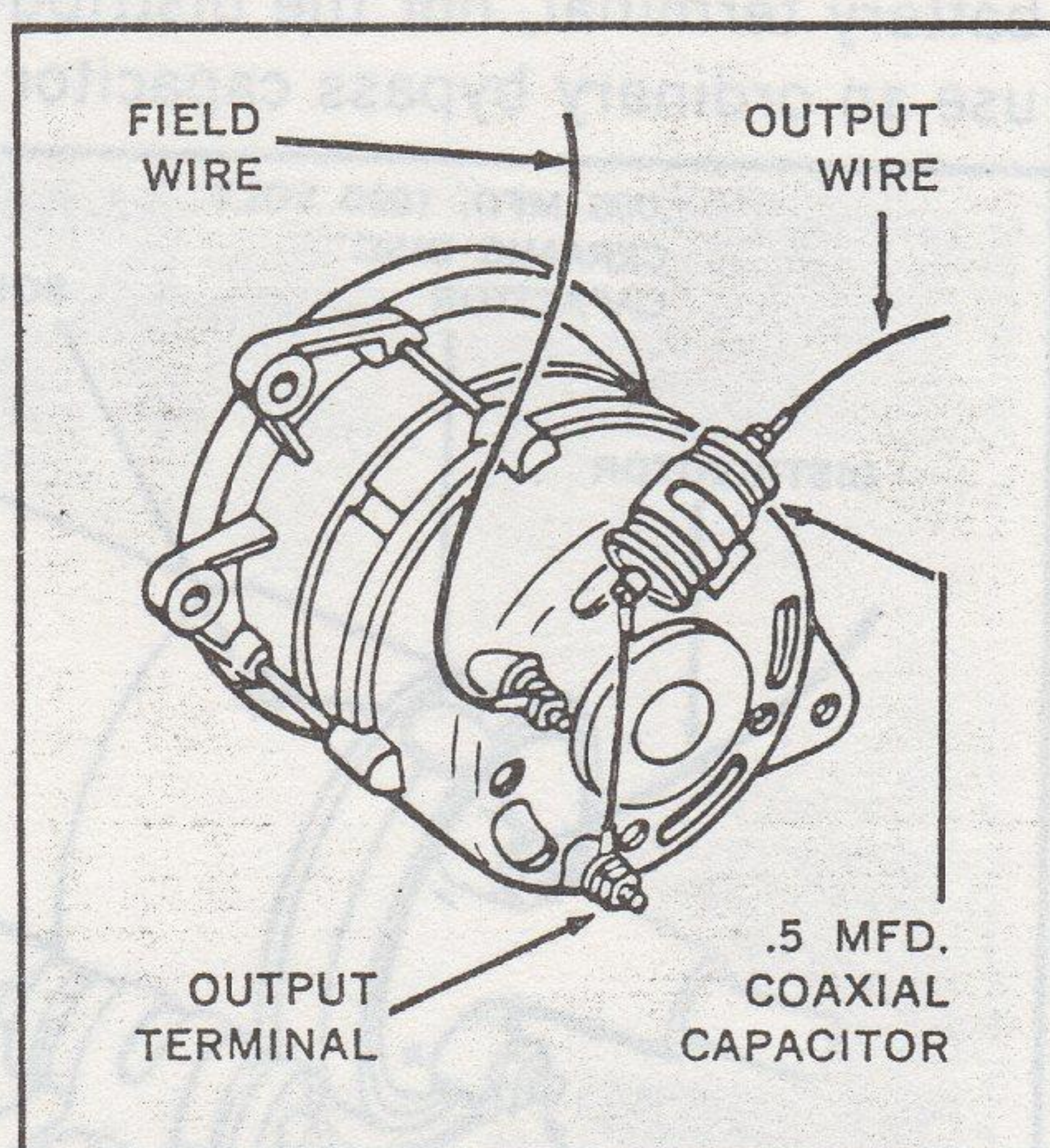
Do not connect a capacitor to the generator field terminal.



ALTERNATOR

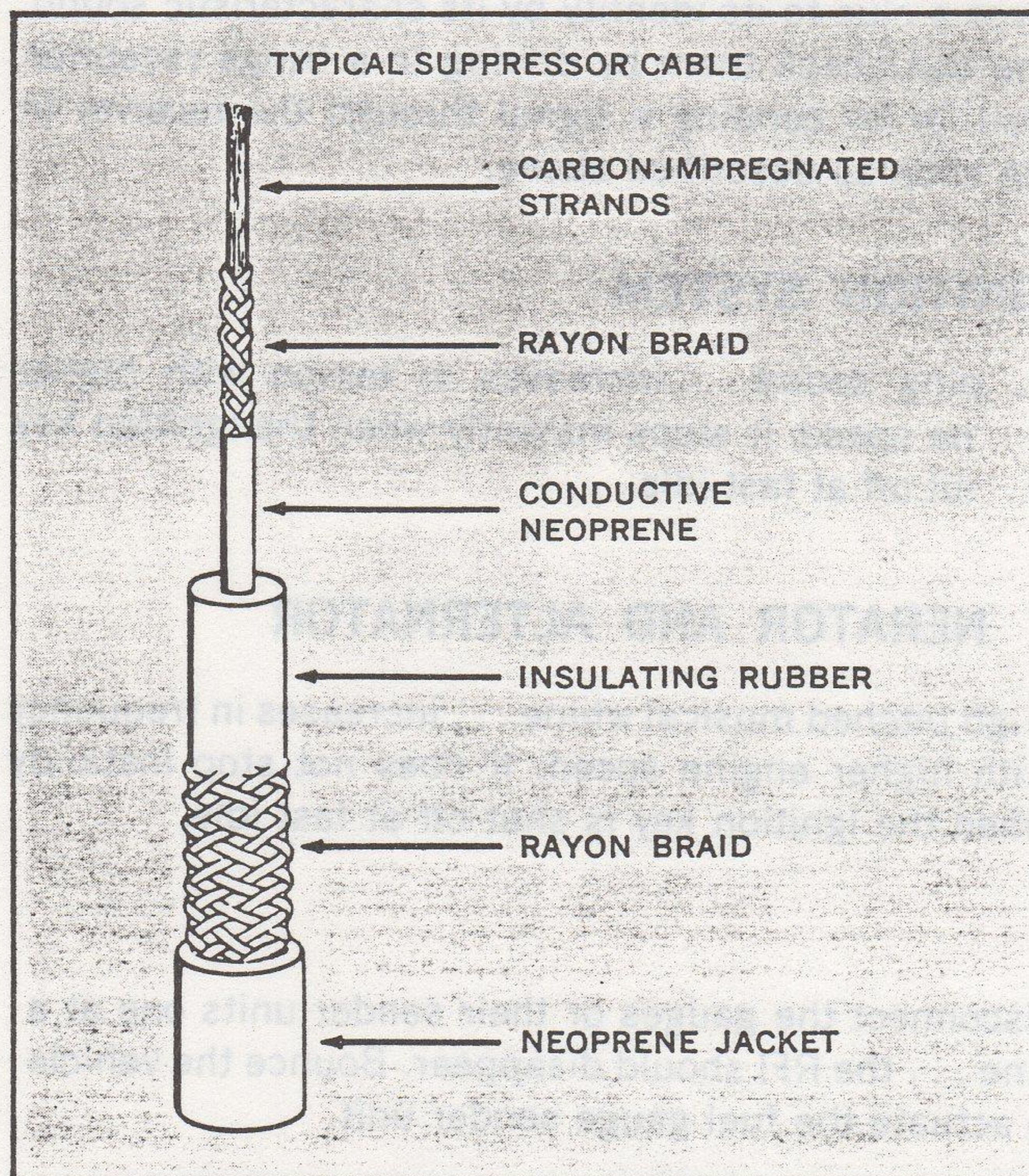
Clean the slip rings with a clean cloth and solvent, and make sure the brushes are making good contact. Install a .5 mfd. coaxial capacitor at the output terminal. Be sure it is rated to handle the maximum alternator current.

Do not connect a capacitor to the alternator field terminal.



SUPPRESSOR CABLE

The most universally used high voltage RFI suppressor is resistance ignition cable. U.S. and several European vehicle manufacturers use variations of the basic construction shown in the illustration.



Present SAE standards (J557) specify two resistance ranges for plug cables installed on new vehicles. Low resistance cable (3,000 to 7,000 ohms per foot) most commonly used; however, high resistance (6,000 to 12,000 ohms per foot) may also be used.

There are available for replacement purposes several high-quality cables of various constructions and resistance values. Resistance figures and other data are generally available from the manufacturers or their service/sales outlets.

CHAMPION "RESISTOR" SPARK PLUGS

To provide better protection from RFI with communication equipment of all types, vehicle manufacturers are increasing their installation of Resistor type spark plugs in new engines.

Resistor plugs are very effective in suppressing ignition interference for three important reasons:

TO BE CONTINUED:

SECRETARY

RAI TAYLOR
25 TWELFTH AVE
MOONAH
TASMANIA 7009
VK7VV



TREASURER

KEVIN ZIETZ
41 TOBRUK AVE
ST MARY'S
SOUTH AUSTRALIA 5042
VK5AKZ

INFORMATION SHEET

The CW OPERATORS QRP CLUB is a group of INTERNATIONAL AMATEUR RADIO OPERATORS dedicated to promoting the art of QRP (Low power, less than 5watts output) using the CW mode on ALL applicable Amateur Band Frequencies.

Output power to the antenna is limited to 5watts maximum for all QRP purposes and for QRPp the output power to the antenna is limited to 1watt maximum.

International QRP calling frequencies are 3560:7030:14060:21060:28060.
The Club operating frequencies are 1815:3530:7025:14050:21130:28125.

1000Z on 3530 seems to be a favourite rag chewing time for quite a few of our Australian members.

LO-KEY our quarterly news bullitin is issued in March, June, Sept, and Dec.

Members are encouraged to Homebrew their own gear as much as possible and a helping hand is given by the many and varied Constructional and Technical articles included in the LO-KEY bullitin.

Members articles on their constructional efforts, experimental circuits, pet project, in fact anything that will be of interest to other QRP users are always welcome by the editor.

The Club is looking for members who are KEEN on QRPing, not necessarily experienced, but willing to learn. As much as possible members are expected to be active on the air and in Club affairs.

Annual Membership fees are VK...\$A8: ZL \$A9: LO-KEY Surface mail: ZL \$A10: by Air mail: DX LO-KEY by surface mail \$A9: or by Air mail \$A12:

Please make all Money orders or Cheques payable to the CW OPERATORS QRP CLUB. Membership fees fall due JANUARY of each year. (IRC's not acceptable).

Enrolment forms and subscriptions sent direct to the TREASURER and other correspondence to the SECRETARY, both of whom waiting to welcome you to our happy and friendly fraternity.

I wish to apply for membership to the CW OPERATORS QRP CLUB,

NAME

ADDRESS.....

.....

.....

CALL SIGN.....

SIGNED.....

SPICE UP YOUR QSO WITH PHRASE DROPPERS.

Ever noticed how your QSO becomes alittle light on technical conversation ? Well, try a few of these combinations next time and no one will ever admit that they don't know what you are talking about!! Select any three of the phrases such as 3, 7 and 9. This gives parallel incremental consistancy. Maybe your transceiver just fits the bill :

- | | | |
|-----------------|-------------------|----------------|
| 0. integrated | 0. muted | 0. options |
| 1. total | 1. organizational | 1. flexibility |
| 2. systematized | 2. monitored | 2. capability |
| 3. parallel | 3. reciprocal | 3. mobility |
| 4. functional | 4. digital | 4. programming |
| 5. responsive | 5. reactive | 5. concept |
| 6. optional | 6. transitional | 6. time phase |
| 7. synchronized | 7. incremental | 7. projections |
| 8. compatible | 8. overtone | 8. hardware |
| 9. balanced | 9. emissional | 9. consistancy |

Further methods to communicate to your fellow amateur ;

The average amateur by nature is a packrat. They collect bottles, parts, screws, bent pins, old magazines and can never understand why the old lady can't get a broom in edgewise.

You can now use some of this "junk" to communicate !

Send a little to each of your contacts and if your are cunning, you will fail to note the sender's name on the parcel. On the customs form simply put "junk - no value" or "books".

This is the most effective way to communicate with amateurs in undeveloped areas. What's junk to you is treasure to them. You have no idea how a parcel of junk is appreciated elsewhere.

Find out what the other amateur does as the alternate hobby or collects. When the holidays roll in, visit a few QSL's. To communicate, nothing beats an eyeball.

It should be noted however, that these eyeballs should never take place between the hours of 10 pm and 8 am. Truly amateur radio gives us the mechanical setup to do a lot of communicating ; but few have learned to use it effectively.

Forget all that waffle about radio, antennas, linears and DX. If your really keen on communicating, then record yourself a cassette and call CQ Bassoon Players, Poker players, match box collectors, soap carvers, antelope raising, boot lace ties, barb wire collecting, tooth pick models, old newspaper hording or you just might find someone interested in converting a radio.

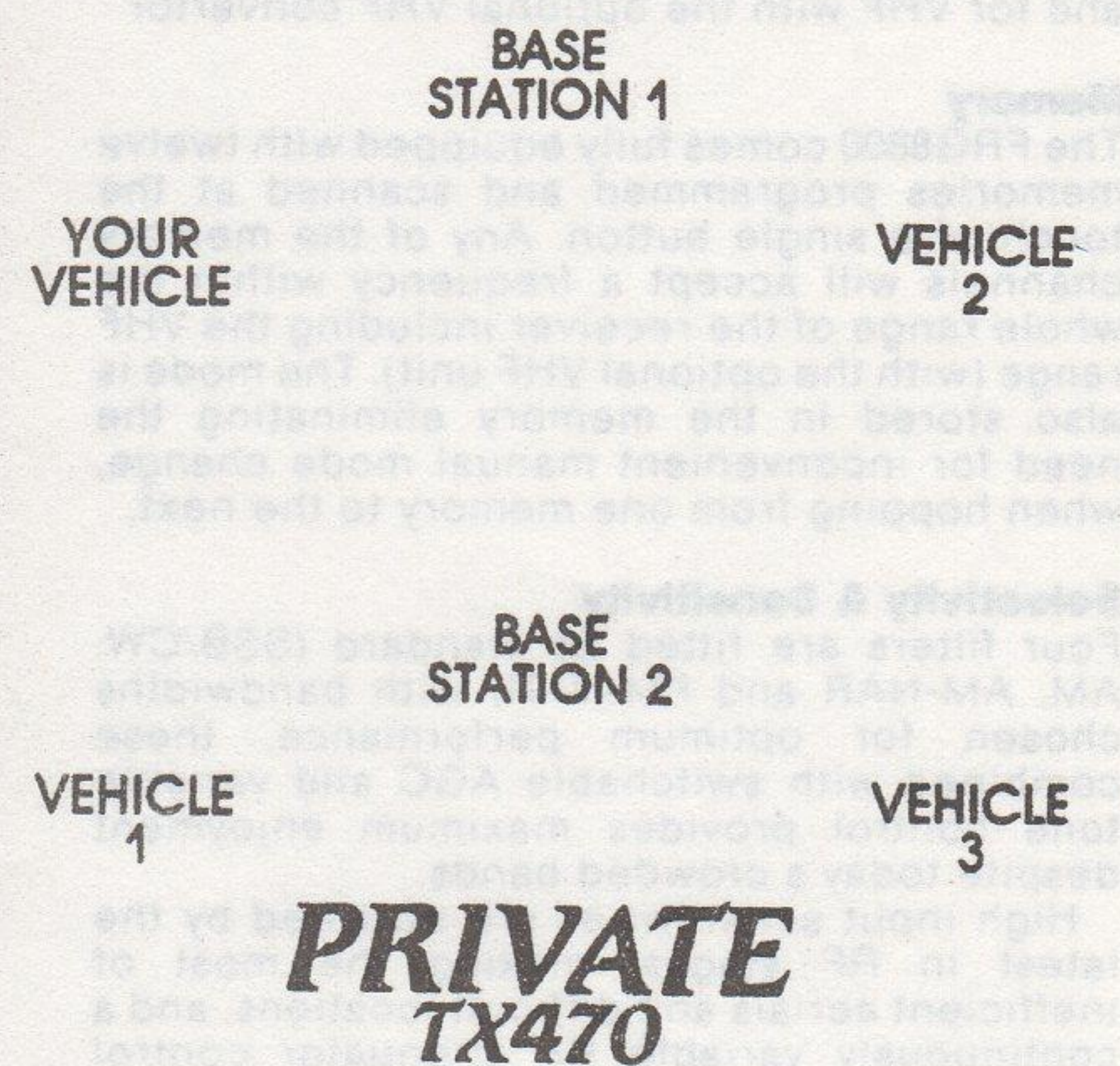
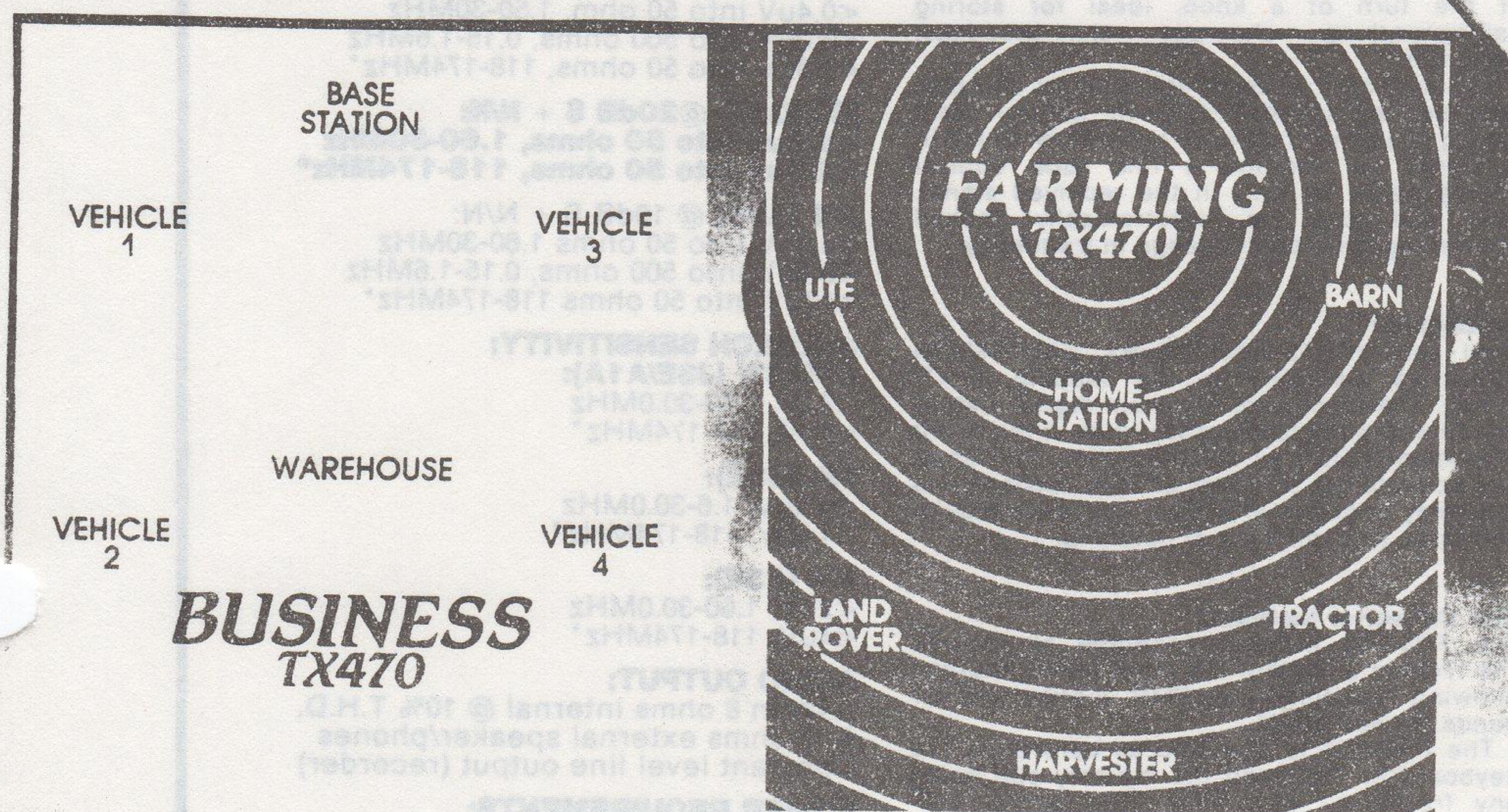
Devise some unusual and interesting subject you want to communicate about. Beats listening to third party traffic hands down.

Who knows what might happen ! You might even begin to enjoy amateur radio again.

.....

INTRODUCING

Electrophone::: TX470



wherever you drive, work, live...
TX470...THE ULTIMATE IN TWO-WAY RADIO

Electrophone TX470 UHF 2 way radio brings you your own high quality, professional communication system. The TX470 has been especially designed for Australia's harsh environment, by Japan's leading communication company.

The TX470 incorporates the exclusive Electrophone Interference Shield ... giving you crystal clear reception. Reception that is free of interference from motor ignition, electrical apparatus, or nearby transmissions.

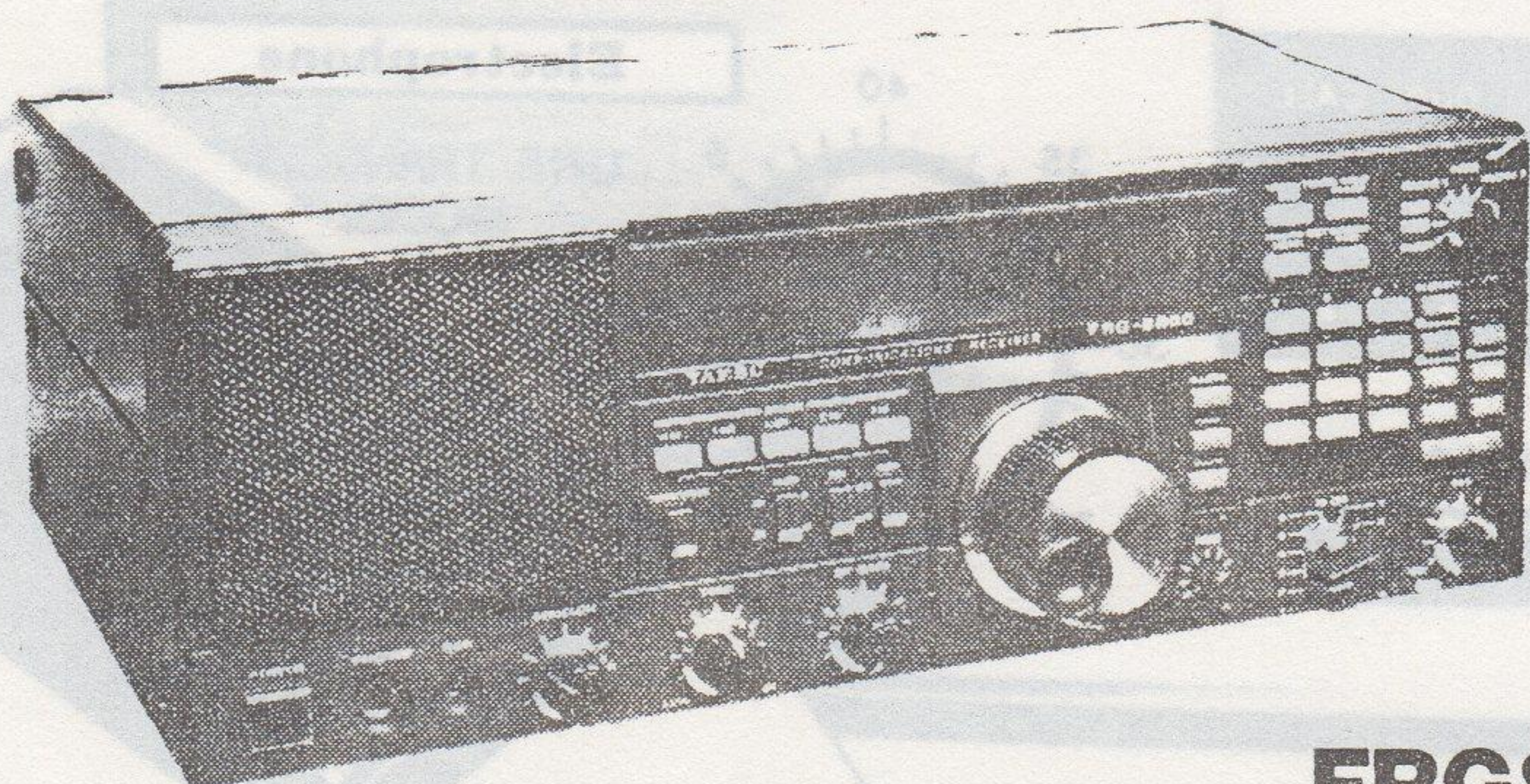
Electrophone:

AVAILABLE FROM GEORGE HARVEY ELECTRIC PTY. LTD.
76, York St.,
Launceston, 7250
003.316533

162-4, Argyle St.
Hobart, 7000.
002.342233

HOBBY ELECTRONICS

477 NELSON ROAD,
MT. NELSON 7007
Telephone (002) 23 6751



FRG8800

General Coverage

Continuous coverage from 150KHz to 30MHz. Two speed spin tuned VFO plus keyboard plus computer interface control.

All mode

The FRG8800 demodulates SSB (USB & LSB) CW, AM (Wide and Narrow) and FM narrow as standard. This, complemented by an all mode squelch, produces the most practical receiver available. The FM narrow is useful for 10M, CB and for VHF with the optional VHF converter

Memory

The FRG8800 comes fully equipped with twelve memories programmed and scanned at the touch of a single button. Any of the memory channels will accept a frequency within the whole range of the receiver including the VHF range (with the optional VHF unit). The mode is also stored in the memory eliminating the need for inconvenient manual mode change, when hopping from one memory to the next.

Selectivity & Sensitivity

Four filters are fitted as standard (SSB/CW, AM, AM-NAR and FM-NAR) with bandwidths chosen for optimum performance, these combined with switchable AGC and variable tone control provides maximum enjoyment despite today's crowded bands.

High input sensitivities are obtained by the latest in RF stages, making the most of inefficient aerials and difficult locations, and a continuously variable RF attenuator control overcomes problems encountered with very powerful stations.

LCD Display

The back-lit green LCD display incorporates easy to read 'any angle' 10mm digits.

A twelve function display indicates the transceiver's status at a glance. It includes memory channel number, mode, and frequency to a resolution of 100Hz. Also included is a two dimensional LCD, graphical SIMPO and 'S' meter, which is conventionally calibrated at 1-5 and 0-9, +20dB, +40dB, -50dB respectively.

Keyboard

A 12 button keyboard is fitted as standard allowing quick accurate changes of frequency and band (MHz and KHz programmed individually). The keyboard also has nine control buttons to allow rapid changes from memory to VFO, memory to memory and VFO to memory. Memory channels can also be recalled at the turn of a knob, ideal for storing calling/working channels or broadcast reception.

The keyboard is complemented by an opto-coupled, two speed, VFO drive: fast for rapid tuning of a band or slow for accurately tuning in a signal. In addition a fine tune control compensates for drift in the received signal. The dial can be electronically locked preventing accidental change in frequency.

Clock/Timer

Dual accurate 12 hour clocks, with AM/PM indicators are ideal for log keeping (GMT/Local). The clock uses the main digital display and features full back-up facilities in the event of a mains failure or disconnection. The timer can activate the receiver or tape recorder via the relay contacts provided. A snooze facility allows up to 59 minutes of listening.

VHF Converter (optional)

The FRV8800 extends coverage to include 118-174MHz all within the main frame, thereby allowing monitoring of: PMR, marine and air bands, as well as 2M.

The FRG8800 is operated as before via the keyboard or VFO, and the memory still holds any frequency and mode. The actual VHF frequency is displayed on the main LCD to a resolution of 100Hz.

Worldwide

At 6.1Kg (excluding converter) the FRG8800 is ideal for taking on any trip. The power supply is easily adjustable from 240-220 VAC to 110-120V, 50/60Hz mains and 12VDC operation is available as an option

SPECIFICATION

FREQUENCY COVERAGE:

150KHz - 29.999MHz
118MHz - 173.999MHz*

FREQUENCY RESOLUTION:

100Hz (Digital Readout)

FREQUENCY STABILITY:

<± 300Hz in 30 mins after 1 min on
< 50Hz in 30 mins after warm up

MODES OF RECEPTION:

AM, CW, FM NB, SSB (LSB/USB)
A3E, A1A, G3E, J3E

SELECTIVITY:

SSB/CW (J3E/A1A):

2.7KHz @ -6dB, 8.0KHz @ -50dB

FM (G3E) narrow:

12.5KHz @ -6dB, 30KHz @ -40dB

AM (A3E/A3E) (standard/narrow):

6.0KHz @ -6dB, 15KHz @ -50dB
2.7KHz @ -6dB, 8KHz @ -50dB

SENSITIVITY:

SSB/CW (J3E/A1A) @ 10dB S + N/N:

<0.4uV into 50 ohms, 1.50-30MHz
<3.0uV into 500 ohms, 0.15-1.6MHz
<1.0uV into 50 ohms, 118-174MHz*

FM (G3E) @ 20dB S + N/N:

<1.0uV into 50 ohms, 1.60-30MHz
<2.0uV into 50 ohms, 118-174MHz*

AM (A3E) @ 10dB S + N/N:

<4.0uV into 50 ohms 1.60-30MHz
<3.0uV into 500 ohms, 0.15-1.6MHz
<10uV into 50 ohms 118-174MHz*

SQUELCH SENSITIVITY:

SSB/CW (J3E/A1A):

<2uV, 1.60-30.0MHz
<4uV, 118-174MHz*

FM (G3E):

<0.5uV, 1.6-30.0MHz
<1.0uV, 118-174MHz*

AM (A3E):

<2uV, 1.60-30.0MHz
<4uV, 118-174MHz*

AUDIO OUTPUT:

1.4W in 8 ohms internal @ 10% T.H.D.
4-16 ohms external speaker/phones
Constant level line output (recorder)

POWER REQUIREMENTS:

100/120 220/24V @ 50/60Hz
35VA Rx, 5VA standby
12VDC (nominal)*
1A Rx, 0.020A standby

DIMENSIONS (Ex/Inc projections):

335/350 W, 120/130 H, 235/270 D, mm
Weight 6.1/6.3Kg (w/o, c/w VHF unit)

* OPTIONAL UNIT

WANTED: One FT7 or TS120V or TS130.

Please contact the address above.