

# THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY

PO BOX 1838 WOLLONGONG NSW 2500

NO. 80/10

OCTOBER 1980

MEETINGS ARE HELD ON THE SECOND MONDAY OF EACH MONTH (EXCEPT JANUARY) AT 7.30 P.M. IN THE CONGREGATIONAL HALL, CORNER OF COOMBE AND MARKET STREETS, WOLLONGONG (BETWEEN KEMBLA AND CORRIAL STREETS).

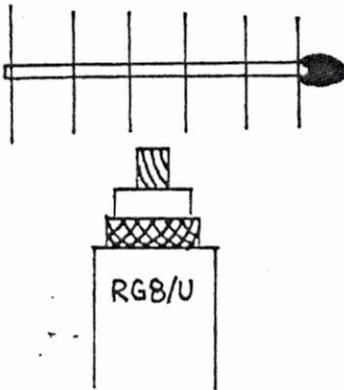
## THIS MONTH'S MEETING:

Monday 13th October, 7.30 p.m., Congregational Hall, Coombe Street.

It is hoped to feature a talk and demonstration on metal detectors. It is also hoped to have the 10-watt wire-wound resistors, all preferred values from 3 ohms to 10K, in the store at 50¢ for ten.

## LAST MONTH'S MEETING:

The planned talk on metal detectors could not be held, so special thanks to Lyle VK2ALU who stepped in at short notice to demonstrate and talk about 10.5 GHz operation.



Not to be outdone by Keith VK2OB's 4-element, 20-metre quad, Lyle brought to the meeting his own full size six-element 10.5 GHz Yagi on a matchstick boom (see full-size sketch). Also shown full-size is the end of some RG8/U coax to show why he has found it difficult to match a feedline to his matchstick.

Lyle demonstrated his 10.5 GHz transceiver, in which 15 mW generated by a Gunn diode is fed to a parabolic dish with 28 dB gain over a dipole to produce 10 watts ERP, with a 5° beamwidth. The narrow beamwidth requires that the equipment be robustly mounted and accurately pointed. Lyle has already worked easily over a 110 km path with the transceiver.

Again, thanks to Lyle for showing some of the "frontier" work in amateur radio.

Kieran VK2DAN won the 2-speed drill in the raffle.

## COMING EVENTS

October 18/19 - Jamboree of the air and Field Day at Bass Point - see further details inside.

November 10th - Regular meeting night - AUCTION NIGHT. Make money by having your unwanted junk auctioned off. Spend your money on the exciting range of high-quality equipment being auctioned. Enquiries to Denis VK2DMR.

December 7th (Sunday) - Christmas Family Barbecue on Saddleback Mountain near Kiama. A bring-your-own-everything function for the whole family, starting around lunch time. A good time was had by all at last year's barbecue, so don't miss it this year. VHF enthusiasts - work repeaters 1 (Oberon), 2 (Ulladulla), 3 (Gosford), 4 (Heathcote), 5 (Wollongong), 7 (Ginini), 8 (Dural) and 13 (High Range) from this spot with a quarter-wave whip.

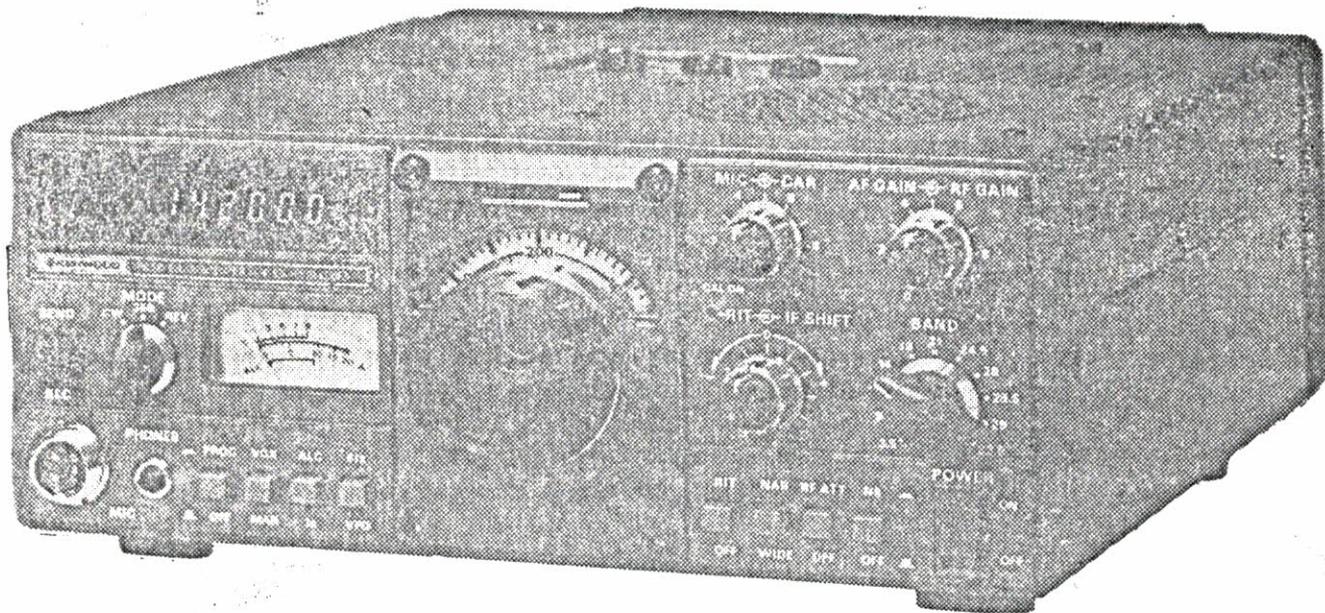
December 8th - Regular meeting night - SEE Dave VK2YKQ/VAV and Paul VK2ZQT demonstrate RTTY with their Apple and Tono computers. HEAR them speak without being drowned out by the noise of Teletypes and Creeds! OBSERVE the hernia-free operation of these lightweight solid-state devices!

*John  
Unit 33  
Honolulu  
27/10/80*

# MACELEC PTY. LTD.

**KENWOOD**  
...pacesetter in amateur radio

## Small wonder.



### Processor, N/W switch, IF shift, DFC option

## TS-130S/V

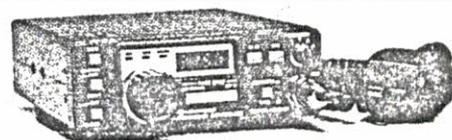
An incredibly compact, full-featured, all solid-state HF SSB/CW transceiver for both mobile and fixed operation. It covers 3.5 to 29.7 MHz (including the three new Amateur bands!) and is loaded with optimum operating features such as digital display, IF shift, speech processor, narrow/wide filter selection (on both SSB and CW), and optional DFC-230 digital frequency controller. The TS-130S runs high power and the TS-130V is a low-power version for QRP applications.

#### TS-130 SERIES FEATURES:

- **30-10 meters, including three new bands**  
Covers all Amateur bands from 3.5 to 29.7 MHz, including the new 10, 18, and 24-MHz bands. Receives WWV on 10 MHz. VFO covers more than 50 kHz above and below each 500-kHz band.
- **Two power versions... easy operation**  
TS-130S runs 200 W PEP/160 W DC input on 160-15 meters and 160 W PEP/140 W DC on 12 and 10 meters. TS-130V runs 25 W PEP/20 W DC input on all bands. Solid-state, wideband final amplifier eliminates transmitter tuning, and receiver wideband RF amplifiers eliminate preselector peaking.
- **Built-in speech processor**  
Increases audio punch and average SSB output power, while suppressing sideband splatter.

- **CW narrow/wide selection**  
"N-W" switch allows selection of wide and narrow bandwidths. Wide CW and SSB bandwidths are the same. Optional YK-88C (500 Hz) or YK-88CN (270 Hz) filter may be installed for narrow CW.
- **SSB narrow selection**  
"N-W" switch allows selection of narrow SSB bandwidth to eliminate QRM, when optional YK-88SN (1.8 kHz) filter is installed. (CW filter may still be selected in CW mode.)
- **Sideband mode selected automatically**  
LSB is selected on 40 meters and below, and USB on 30 meters and above. SSB REVERSE position is provided on the MODE switch.
- **Built-in digital display**  
Six-digit green fluorescent tube display indicates actual operating frequency to 100 Hz. Also indicates external VFO or fixed-channel frequency, RIT shift, and CW transmit/receive shifts. Also analog subdial for backup frequency indication.
- **IF shift**  
Allows IF passband to be moved away from interfering signals and sideband splatter.
- **Single-conversion PLL system**  
Improves stability as well as transmit and receive spurious characteristics.
- **Built-in RF attenuator**  
For optimum rejection of intermodulation distortion.
- **Built-in VOX**  
For convenient SSB operation, as well as semibreak-in CW with sidetone.

- **Effective noise blanker**  
Eliminates pulse-type interference such as ignition noise.
- **Built-in 25-kHz marker**  
Accurate frequency reference for calibration.
- **Compact and lightweight**  
Measures only 3-3/4 inches high, 9-1/2 inches wide, and 11-9/16 inches deep, and weighs only 12.3 pounds. It is styled to enhance the appearance of any fixed or mobile station.

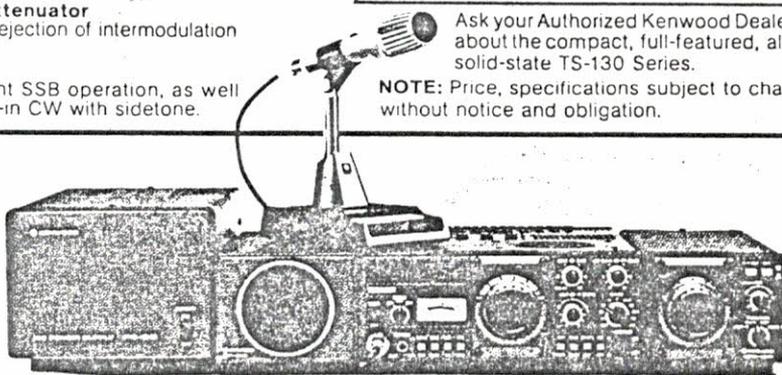


**Optional DFC-230 Digital Frequency Controller**  
Allows frequency control in 20-Hz steps with UP/DOWN microphone (supplied with DFC-230). Includes four memories (handy for split-frequency operation) and digital display. Covers 100 kHz above and below each 500-kHz band. Very compact.

Ask your Authorized Kenwood Dealer about the compact, full-featured, all solid-state TS-130 Series.  
**NOTE:** Price, specifications subject to change without notice and obligation.

#### MATCHING ACCESSORIES FOR FIXED-STATION OPERATION:

- PS-30 base-station power supply (remotely switchable on and off with TS-130S power switch).
- SP-120 external speaker
- VFO-120 remote VFO
- MC-50 50kΩ/500Ω desk microphone
- Other accessories not shown:
- YK-88C (500 Hz) and YK-88CN (270 Hz) CW filters
- YK-88SN (1.8 kHz) narrow SSB filter
- AT-130 compact antenna tuner (80-10 m, including 3 new bands)
- MB-100 mobile mounting bracket
- MC-30S and MC-35S noise cancelling hand microphones
- PC-1 phone patch
- TL-922A linear amplifier
- HS-5 and HS-4 headphones
- HC-10 world digital clock
- PS-20 base-station power supply for TS-130V



- SP-40 compact mobile speaker
- VFO-230 digital VFO with five memories

## 11 TO 10 MTR. CYBERNET CONVERSION

- Dave VK2VOI/YSN

To convert the Cybernet C.B.R. to 10 metres is remarkably easy, as the following instructions will show.

### THE PLL.

On the PLL-02A locate pin "8" which is at the back of the chip and toward the edge. Isolate this pin from the board by cutting the track right next to it. Next locate TP1 just behind the chip and put a multimeter on this pin adjust the VCO core for a voltage of 2.5 volts. The VCO is the silver block behind and to the right of the PLL.

### ON A.M.

Put a dummy load onto the rig and on AM transmit adjust the following in order T3 - T1 - T2 - T4 - T5 - T6 - L7 - T11 - L11, for maximum output. Turn L13 so the top of the slug is flush with the top of the slug holder. Now on SSB transmit with a single tone adjust T1 - T2 - T4 - T5 - T6 - L7 - T11 - L11 for maximum output.

### TO BROADBAND

Go to CH1 on SSB with a single tone input adjust T2 - T5 for maximum output. On CH18 (23-40 etc) adjust T1 - T4 for maximum output. Adjust RV1 fully anti-clockwise.

### RECEIVE

Feed a signal into the rig on CH9, on AM adjust T7-T8-T9-T10-T13-T14-T15 for maximum signal strength. Now on CH18 adjust T8 for maximum strength. Again on CH1 adjust T9 for maximum receive.

### SSB RECEIVE

On CH9 carefully adjust T11-T12 for maximum strength. Note on no account should any variable resistors be adjusted for an unnecessary reason.

This takes care of the basic modifications, which as you may have noted can be done without anything more than a dummy load, a signal source and a little plastic tuning screw-driver. However, if you have access to a scope and a frequency counter the following will be of interest.

### FREQUENCY COUNTER

Locate Q11 behind the steel shield and to the left of the rig. Cut the track so the base of Q11 is disconnected. Solder a 25 pF capacitor across CT2, then on LSB transmit with a 1 KHz tone input adjust CT2 for an output 4 KHz below the centre (AM carrier) output. Now USB will behave normally but as LSB is not used on 10 metres, LSB is actually USB down 5 KHz.

### THE CRO

Adjust RV2 fully clockwise, then with two-tone input adjust RV11 for a clean output.

### THE VXO

The VXO or as it is commonly known, the slider can be easily fitted. Merely remove R24 and D5 and place a jumper wire from pin 18 (it is located behind the power transistor with its own little heat sink) to the spare contact on the clarifier. However, if this is done the clarifier should be placed in its middle position and on USB CT1 adjusted for centre frequency. On LSB CT2 is adjusted for centre frequency. However if the LSB modification is done the 25 pF capacitor will have to be replaced with an 82 pF capacitor. The rig will now slide up 5 KHz and down 2 KHz.

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FOR SALE: SBE CB converted to 10 metres, with CW operation also.  
D/S 80 - 11 metre Transverter - working OK, partly converted for  
VXO (all details supplied).  
The lot for \$120!

Jim Smith, VK2VPS. (84 6735)

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## FOR THE BIRDS

If you have been noticing a funny smell while operating, you may have a - er - bird residue problem. Les VK2ALK reports that after lowering his 20 metre beam, and scraping the guano deposits off the driven element, his signal reports improved by 2 S-points.

Now, suppose you are running 400 watts PEP and losing 2 S-points (12 dB) to the avian accretion. Since a 25 watt PEP signal is 12 dB down on 400 watts, it would seem that 375 watts PEP is being used to heat the gull gunk, with only 25 watts PEP being radiated.

So if the shack starts to smell like a warm poultry shed after a long over, it could just be that most of your transmission was for the birds.

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Ned McIntosh VK2AGV,  
P.O. Box 986,  
Launceston, Tas. 7250.

Dear Friends,

This short note is to say that I have arrived (reasonably) intact at the Maritime College, and have by now settled into a routine of work interspersed with work and more work!

There is at the moment no college amateur station, and I have not been told when one is likely to be set up. However, a college amateur station is part of the college's plans, so I imagine one will be set up ... sooner or later. I would hazard a guess that maybe early next year would be the most probable date.

However, Glenn, VK2AFD/7 has his HF gear with him, and is active on CW (25 wpm plus) on some CW nets. Possibly I may use his station if time permits this year.

I make a point of listening on 28.460 each Sunday for the net, so I may hear some familiar voices from time to time.

So that's about it at the moment. The pressure of work is intensifying as the year goes on. I hope to return to Wollongong in time for the December club meeting, and I hope this letter reaches the club in time for the August meeting.

Till December, 73's,

Ned.

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## NEWS FROM VK2TTY RTTY BROADCASTS

### IMPERSONATION AT EXAMINATIONS:

One of the responsibilities of radio and frequency management operations branches in state offices is to periodically conduct examinations for the novice and full amateur operators certificate of proficiency.

The New South Wales state office has advised that for some time rumours of impersonation at amateur examinations have been suspected in New South Wales.

At the August Amateur Examinations conducted by the RFM operations branch, one candidate who impersonated another was arrested, charged and fined two hundred dollars or eight days gaol. The person impersonated is now the subject of a conspiracy investigation by federal police.

### SATELLITE NEWS

A.R.S.E.N.E. is the name of the satellite that the French amateurs are in the process of designing and building. F8ZS is the project manager, and it is expected that the earliest possible launch date of the Ariane vehicle will be 1983/1984.

The Russian RS3 and RS4 are not expected to be launched before 1981.

### TOP END AWARD

The Darwin Amateur Radio Club is conducting the "Top End Award". It is available after working fifteen members of the Darwin A.R.C. plus one contact with VK8DA. DX stations work ten members and one contact with VK8DA. SWL hear ten members and VK8DA or VK8VF, the 52 MHz beacon. Any band any mode. Send log extracts and one dollar to VK8DA Box 1418, Darwin, N.T. 5794.

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# Pixilated Patents

By Rick Kemmer

## "A Bard in the Beard is TOO, TOO, With a Brush"

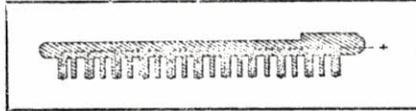
This is No. 140 in a series of odd and interesting inventions in the electrical/electronic field from the files of the US Patent Office.

The "Hair" generation might make resurgent use of a follicle-foliating electric hairbrush patented in 1908 by Kansans Max Bacon and Louis Meller (Pat. No. 936,208). Originally conceived to palpitate the pompadour or, for those unmaned, to titivate the toupee, there seems little reason why the Bacon-Meller brush wouldn't blossom a dense mask of manwhiskers on the most baby-faced hippie.

The brush's simple concept is to polarize opposing bristles so that each treasured strand or sterile cul-de-sac ensnared between them receives an energizing jolt. The jolt prods surrounding cells to proliferate and PRESTO—electric hair. Relevant you say? Hair is the current thing!

In the hands of today's bearded bards and tousled Twiggies, the hair-growing-hair-brush may come to harry the earth. Facial or cranial barrenness can be relegated to the over-30 generation and the dark ages of Charles the Bald. By appropriate brushing, the hippie can raise a bumper bush on any segment of his anatomy, the length, texture, and density depending only on currying time. By brushing his lip to the detriment of his chin, he can cultivate a fashionable underbite. By brushing his pectoral entity to the virtual exclusion of his abdomen, he can pass for a French poodle and infiltrate the home of a wealthy dowager where the meals are tops and the affection plentiful.

And the Neo-Rapunselfs? Look for



more long-frustrated beaus to scale dormitory walls. Should the fashion trend continue in its unmolested way stimulated by the Bacon-Meller brush, it will become impossible to tell which poodle is which. For all but the dowagers.

Carried to extremity (there's little reason to think it won't be) the trend to hair will pose a problem graver than population. The hippie contingent may overbrush until the continent is covered from sea to shining sea with vast, matted coagulates of tress, each having in its unfathomable center an amorphous, pulsing, ever brushing intelligence. It will require a Stanley and Livingston (at taxpayer's expense) to penetrate to the center of the human bush bearing food and supplies to sustain its life. Pollution control expenditures will rocket to support an all-out war on escalating dandruff while air and water continue to decline. HEW will submit to congress an enormous tab for cannisters and spray to sanitize hippie ecology.

Come to think of it, had Bacon and Meller perceived what their electric hairbrush is about to do to the world and the taxpayer who, like Atlas, supports it, they would perhaps have concentrated on the electric razor. Hopefully, those who consider using this rediscovered plug-in brush will have the charitable foresight to plant their feet firmly on the ground while they brush their hair.

### A ROUND TUIT

CUT IT OUT AND USE IT WISELY  
EVERYBODY NEEDS ONE  
IT IS INDISPENSABLE

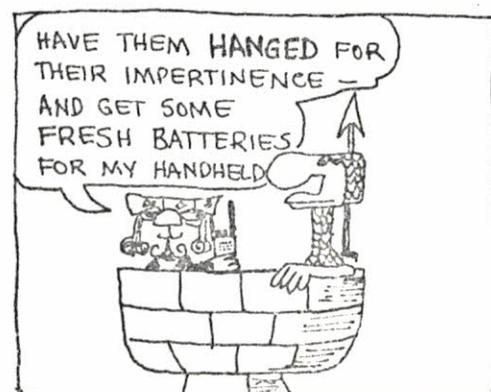
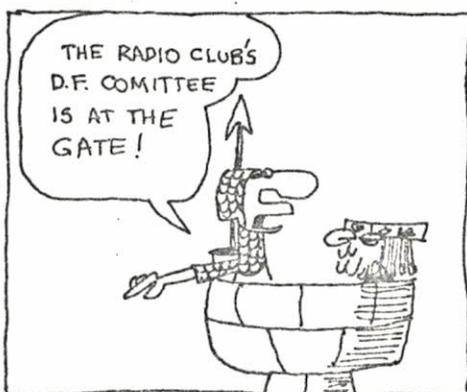
It is not a square tuit.  
It is not a triangular tuit.  
It is not a rectangular tuit.  
It is a ROUND tuit.

How many times have you said "I'll do it as soon as I get a round tuit"?

Now you will have no more trouble getting all those extras done, because you have finally got "A Round Tuit".

Use it wisely!

- contributed by John VK2VW



# UHF

## ASSEMBLY INSTRUCTIONS

MACELEC PTY. LIMITED

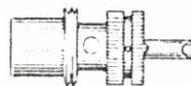
# UG STANDARD



COUPLING RING

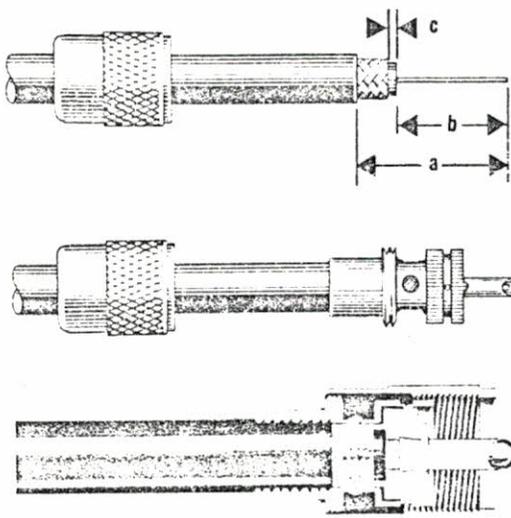


83-168 OR 83-185  
REDUCING ADAPTER  
(WHEN REQUIRED)



PLUG SUB-ASSEMBLY

### PLUGS 83-1SP, 83-5SP, 83-21SP, 83-59, 83-67, 83-822



Cut end of cable even and strip jacket, braid, and dielectric to dimensions shown in table. All cuts are to be sharp and square. Do not nick braid, dielectric or center conductor. Tin exposed center conductor and braid, avoiding excessive heat.

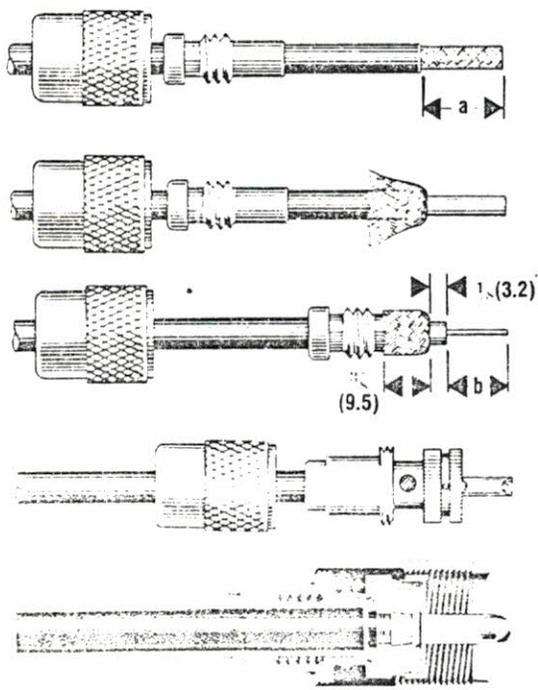
Stripping dims. inches (mm)	a $\pm 1/16$ (0.4)	b $\pm 1/16$ (0.4)	c $\pm 1/16$ (0.4)
83-1SP, 83-5SP	1 1/4(31.8)	5/8(15.9)	1 1/8(1.6)
83-21SP	1(25.4)	1 1/4(17.5)	1/2(3.2)
83-59, 83-67	2 7/16(21.4)	1/4(6.4)	9/16(3.6)
83-822	1 1/8(28.6)	5/8(15.9)	1 1/8(1.6)

**STRAIGHT PLUGS** (except 83-5SP). Slide coupling ring on cable. Screw the plug sub-assembly on cable. Solder assembly to braid through solder holes, making a good bond between braid and shell. Solder conductor to contact. Do not use excessive heat. For final assembly, move coupling ring forward and screw in place on plug sub-assembly.

**83-5SP PUSH-ON PLUG.** Screw the plug sub-assembly on cable and solder to braid as described above. Screw coupling ring in place over plug sub-assembly until threads bottom.

**ANGLE PLUGS.** Screw plug body assembly on cable. Solder assembly to braid as above. Solder conductor to contact through hole in back of connector. Screw cap into place.

### PLUGS 83-1SP, 83-59, 83-67, 83-222, 83-750 USING 83-168 OR 83-185 REDUCING ADAPTER



Cut end of cable even. Remove vinyl jacket to dimension a in table below. Slide coupling ring and adapter on cable.

Stripping dims. inches (mm)	a $\pm 1/16$ (0.4)	b $\pm 1/16$ (0.4)
83-1SP, 83-822, 83-750	3/4(19.1)	5/8(15.9)
83-59, 83-67	1 1/2(12.7)	5/16(7.9)

Fan braid slightly and fold back as shown.

Position adapter flush with cable jacket. Press braid down over body of adapter and trim to 9/16(9.5). Bare conductor to dimension b. Tin exposed center conductor.

Screw plug sub-assembly on adapter. Solder braid to shell through solder holes. Use enough heat to create bond of braid to shell. Solder conductor to contact.

For final assembly, screw coupling ring on plug sub-assembly.

- Thanks to Barry VK2FE for contributing this data.

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### TEN GIG JIG

... There have been some rumors of actual communications use of the 10.5 GHz rigs designed as radar jammers but marketed as ham transceivers as a stratagem to avoid FCC censure. If anyone has had any success in legal use of these rigs, we'd like to get information on it...

- "73", August 1980.

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PRIORITY CHANNEL and AUTO-SIMPLEXER for the IC22S by Adrian  
 VK7ZAT  
 in "Tasmanian Amateur Radio",  
 October 1979.

This easy modification gives a second channel at the flick of a switch which can be installed on the mike ; ideal when you are operating mobile.

The unit consists of two separate circuits ;

(1) Auto Simplexer

Will give simplex operation on any pre-selected channel, where the simplex/duplex switch can be in any position.

(2) Priority Channel

This disconnects the channel switch on the IC22S and switches to a separate set of matrix diodes to give a preset channel.

Construction

The circuit was built on a piece of 0.1 space veroboard (9 by 18 holes approx). The veroboard is attached to the oscillator shield on the left hand side of the PLL board. Wire brackets that are soldered to shield and vero will hold it in place.

The wire from the wiper of the channel switch is disconnected and put to +9V on the board (point A). The new wire from point B is connected to the wiper of the channel switch.

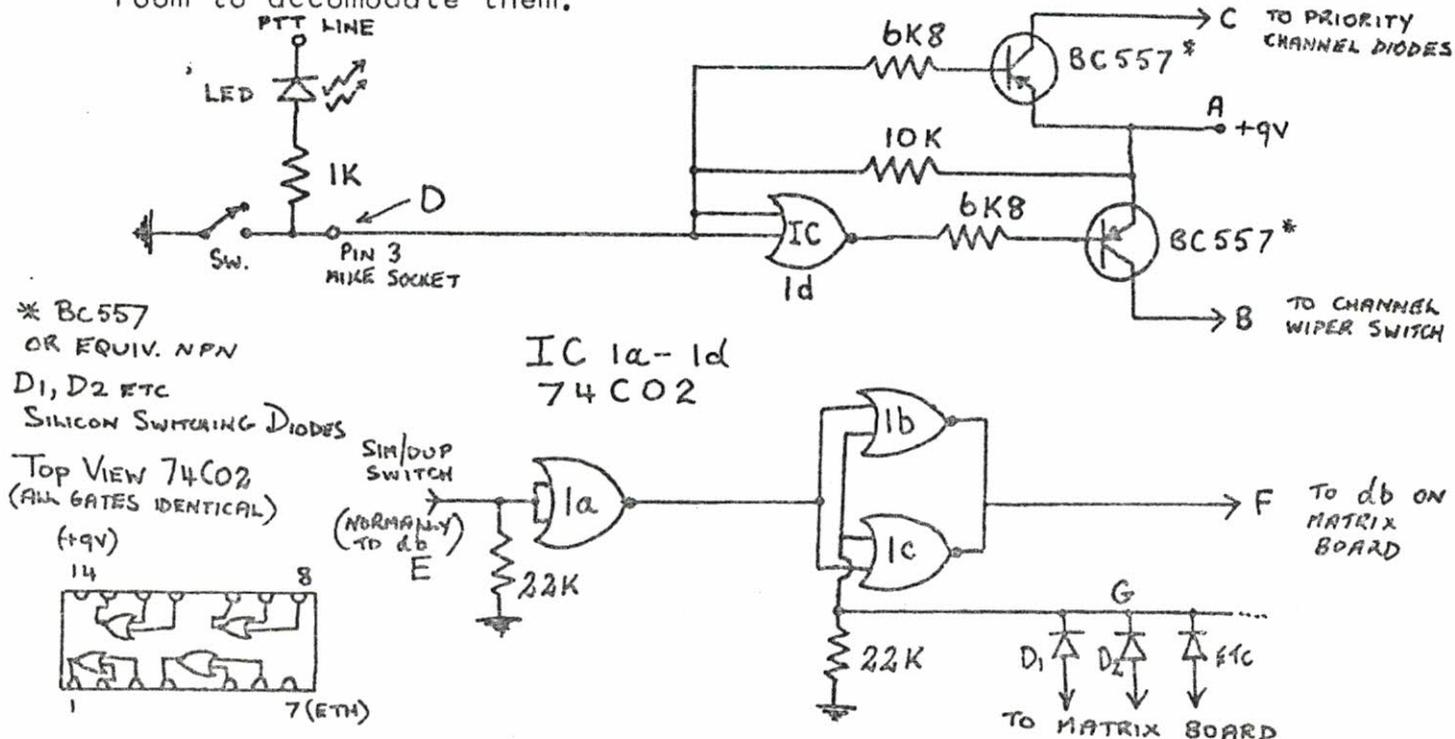
The matrix diodes for the priority channel are put in position 23 on the matrix board and wired to point C. (use programming chart)

Point D is wired to the unused pin 3 on the mike socket.

Remove the wire from the simplex/duplex switch and connect the switch to point E. The wire that was removed then connects to point F. (other end of this wire goes to 'db' on the matrix board)

The diodes D1, D2 etc, where fitted onto the matrix board (one for each channel required) have their anodes commoned and then connected to point G.

The spare mike line should be connected in the plug (pin 3) and wired to the switch in the mike. The positioning of the switch and the LED are left to the individual but there is plenty of room to accommodate them.



## CONVERTING A BROADCAST RECEIVER TO 160 METRES

The 160 metre amateur band covers frequencies of 1,800 KHz to 1,860 KHz, which is just above the broadcast band of 530 KHz to 1,600 KHz. To adjust the receiver to tune up to 1,800 KHz we need to move the top end stations like 200 and 2WL down the dial without losing the bottom end stations like 2FC.

1. Look for the radio's tuning capacitor - a clear plastic box about 20 mm square. Two small screws should be visible in the plastic case - they are the oscillator and antenna trimmer capacitors.
2. Turn the set on and tune to 2 double 0 (or 2WL), then turn one of the trimmers slightly. If it makes the station move so that you have to adjust the main tuning dial to hear it clearly again, you have the right trimmer. If not, try the other trimmer.
3. Now shift 2 double 0 down the dial. You can do this by tuning to the low frequency edge of the station (i.e., on the 2FC side of it, but so that it can just be heard) and adjust the trimmer until the station is heard clearly. Repeat several times. When you have gone as far as the trimmer will allow you to go, adjust the aerial trimmer for maximum signal from 2 double 0.
4. During the evening, you may hear VL2UV, the university of NSW station on 1750 KHz (although not during university holidays). Try listening for amateur stations above this spot on the dial. A sensitive radio and outdoor antenna help considerably. The antenna can be coupled to the set by twisting it around the ferrite aerial rod several times, and earthing one end. As always, experiment with different aeriels and earths to get the best results. You may be able to hear the W.I.A. broadcasts on Sunday (11 a.m. and 7.30 p.m.) in the 160 metre band, which originate in Sydney.
5. To resolve morse code transmissions, some form of beat frequency oscillator (BFO) is needed. The simplest way is to use the local oscillator of another broadcast receiver tuned roughly to about 2WL on the dial.  
First, tune the converted receiver to make the "thumps" of morse code as loud as possible. Then, hold the second receiver near the first, and slowly adjust the tuning dial until the morse is heard as a series of tones. Fine adjustment of the tuning dial can allow you to produce the tone of your choice.
6. To resolve single sideband signals, the same method can be used as for the morse; however, much greater tuning accuracy of the BFO is needed, and adjustment may be quite difficult.

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### S.S.B. INTELLIGIBILITY

For several years, the civil airlines have been considering the use of s.s.b. instead of a.m. for long-distance flights, and a report has been issued on the subject. One of the main questions, for such applications, is how far can the equipment be "off-tune" (that is when the inserted carrier differs from the original suppressed carrier, as to some extent it will always tend to be).

It was found that an a.f. band of 300-3000 Hz provides higher intelligibility than any other for frequency shifted speech in the presence of noise, particularly with low signal-to-noise ratios. A change to 500 Hz for the lower edge or to 5000 Hz for the upper edge were both found to degrade intelligibility.

Downward frequency shifting tends to produce greater deterioration than upward shifts, and as the listening conditions deteriorate the tolerable amount of frequency shift is reduced.

With a really good signal, speech can be shifted 400 Hz upwards or 300 Hz downwards without unduly impairing its intelligibility for communications purposes.

With a fair signal, plus 200 or minus 100 Hz are about the limits.

With a poor signal, shifts of more than 100 Hz are unsatisfactory.

#### MID SOUTH COAST MEETING:

Next meeting of the Mid South Coast Amateur Radio Club is on Saturday 11th October, at the QTH of Frank VK2HQ at Ulladulla. For directions or information, call on Repeater Channel 2.

#### SPECIAL RAFFLE:

A Datong Morse generator is the prize in this special raffle. Everyone who has tried the generator has found it so good that a crowbar has been needed to remove it from their grasp. It generates letters and numbers in a random sequence; the character speed can be varied up to about 30 w.p.m.; and the character spacing can be varied independently. It is ideal for the learner, or the amateur wishing to increase his speed.

Tickets at \$2 each will be on sale at the next meeting, and the raffle will be drawn at the Christmas Family Barbecue, Sunday 7th December, on Saddleback Mountain.

#### METAL DETECTOR NIGHT:

By all accounts there will be half a dozen different types of metal detectors on display at the October meeting - if you have one, bring it along and see how it compares with the others. President Keith has offered to lend a Volkswagen to help demonstrate the less sensitive detectors.

#### 80 METRE NET:

The Illawarra 80 metre net at 8.00 p.m. Sundays on 3.565 MHz (plus or minus QRM) is still alive and well (although it appears that the Sunday Night Movie has given some stiff opposition over the last few weeks).

However, the warmer weather and the out-of-ratings summer re-runs on TV should see more people up on the net each Sunday night. The net has been well supported by Novice Licences - it would be nice to see a few more full calls on as well.

#### AUGUST AMATEUR EXAMINATIONS:

Keith VK2OB and Denis VK2DMR have between them coaxed two students successfully through the AOLCP Examination. Quite a few of Keith's students missed by only two marks - seems they should have been studying instead of supporting the 80 metre net..... Anyway, better luck in February.

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Preliminary work to establish a DX award in Illawarra is being done by Ron VK2VOE, and permission is being sought to call it the "Lawrence Hargrave Award". It is hoped that the inauguration of the award will coincide with a major commemoration of Lawrence Hargraves to be held in March 1981.

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- (1) Locally written technical articles for the Propagator;
- (2) A monthly DX report
- (3) A monthly report on interesting news from the 80 metre net, or anywhere else.

Any offers? See Brian VK2AXI at the next club meeting.

#### PROPAGATOR DEADLINES:

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Section 1  
The first section of the document discusses the general principles of the law and the importance of maintaining accurate records.

The second section details the specific procedures for handling cases and the responsibilities of the various departments involved.

Section 2  
This section outlines the methods for collecting and analyzing data, ensuring that all information is properly documented and accessible.

The third section describes the reporting requirements and the format for presenting findings to the relevant authorities.

Section 3  
This section covers the administrative aspects of the organization, including personnel management and budgetary considerations.

The fourth section discusses the legal framework governing the organization's operations and the consequences of non-compliance.

Section 4  
This section provides information on the organization's contact details and the procedures for submitting inquiries or complaints.

The fifth section contains the concluding remarks and a statement of the organization's commitment to transparency and accountability.

Section 5  
This final section lists the appendices and provides a summary of the document's contents.

MID SOUTH COAST MEETING:

Next meeting of the Mid South Coast Amateur Radio Club is on Saturday 11th October, at the QTH of Frank VK2HQ at Ulladulla. For directions or information, call on Repeater Channel 2.

SPECIAL RAFFLE:

A Datong Morse generator is the prize in this special raffle. Everyone who has tried the generator has found it so good that a crowbar has been needed to remove it from their grasp. It generates letters and numbers in a random sequence; the character speed can be varied up to about 30 w.p.m.; and the character spacing can be varied independently. It is ideal for the learner, or the amateur wishing to increase his speed.

Tickets at \$2 each will be on sale at the next meeting, and the raffle will be drawn at the Christmas Family Barbecue, Sunday 7th December, on Saddleback Mountain.

METAL DETECTOR NIGHT:

By all accounts there will be half a dozen different types of metal detectors on display at the October meeting - if you have one, bring it along and see how it compares with the others. President Keith has offered to lend a Volkswagen to help demonstrate the less sensitive detectors.

80 METRE NET:

The Illawarra 80 metre net at 8.00 p.m. Sundays on 3.565 MHz (plus or minus QRM) is still alive and well (although it appears that the Sunday Night Movie has given some stiff opposition over the last few weeks).

However, the warmer weather and the out-of-ratings summer re-runs on TV should see more people up on the net each Sunday night. The net has been well supported by Novice Licencees - it would be nice to see a few more full calls on as well.

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Combination Event - The event will be running on the weekend 18/19 October at Bass Point (see the map elsewhere in this issue). By combining the Jamboree with a Field Day, amateurs can see or try out operation with beams, long wires, high power, etc. which might be difficult or impossible in suburban backyards. You can run your own gear into antennas on the site, or construct your own antenna. The presence of the scouts will be a bonus - they will do much of the antenna-raising, and will also get a good introduction to Amateur Radio.

Warm-up Events:

Rick VK2DAP, Les VK2ALM, Kieran VK2DAN, Paul VK2ZQT and Ian VK2DKS have already done an excellent job demonstrating amateur radio to scouting groups on the south side of Wollongong, to stir up interest for the Jamboree. Site inspection and planning together with some antenna testing, is being done prior to the weekend.

Equipment:

Equipment expected at the site on the weekend includes TH3 and TH3 beams with tower and rotator, 240 volt generators (main power will also be available), linears, tents, a 6-berth caravan with a full fridge, Paul VK2ZQT's RTTY gear, wire beam antennas (including rhombics), and steel poles for antennas.

The scouts will be moving onto the site on Friday evening (17th October) to put up poles, towers and tents. It is proposed to operate three stations throughout the weekend, from three large tents.

Some display material for the benefit of scouts and visitors - posters, QSL cards, etc - is needed. Any offers?

Barbecue:

A barbecue will be held at the site on Sunday lunchtime, so that people not able to participate in the Jamboree/Field Day can still come out, have a look around, and enjoy a picnic-barbecue lunch. A big barbecue plate will be provided, but bring everything else. All participants are especially asked not to leave rubbish at the site - there are no garbage tins, so bring garbage bags if necessary.

Operator Roster:

Don't be misled by all the available equipment - operators with their own transceivers are needed for the roster to cover the whole weekend (especially the wee small hours). If you are interested, see Paul VK2ZQT to get on the roster.

Jamboree Information:

The 23rd Jamboree on the Air, October 18-19, starts at 00.01h local time on the Saturday and finishes at 23.59h local time on the Sunday. Stations are free to begin operations earlier if they wish. World Scout phone frequencies are 3.59, 7.09, 14.29, 21.17 and 28.59 MHz. Listen on the frequency before calling "CQ Jamboree".

The opening ceremony will be at 14.00h on Saturday from VK1BP from the grounds of Government House in Canberra. The Chief Scout, Sir Zelman Cohen, will give an address, followed by one for the Girl Guides by Lady Cohen, and then one each from the Chief Commissioners for Scouts and Guides. The frequencies used will be 7.09, 14.29 and 21.17 MHz, starting half an hour before the official opening ceremony, so please keep these frequencies clear. (There might be a relay through the VK2WI news network, including Channel 8 Dural and Channel 5 Wollongong, as occurred last year.)

Kevin Campbell will operate his station VKOKC for JOTA from Mawson in Antarctica.

\*\*\*\*\*

56 Tucks  
70 cm F.M. DEVELOPMENT

- Tim Mills VK2ZTM, State Repeater  
Co-ordinator, August 1980.

The development of 70 cm in VK2 has been slow to commence. It is hoped that the findings of the Divisional Repeater Committee on suggested development and utilization and the adoption of the report by Council in July 1980 will speed things up. The report - known as Phase 1 - recommended the following:-

The guidelines for development are contained in the National band plan which is Appendix D from the 1980 Federal Convention. The plan was formulated in 1976 and adopted nationally.

The plan puts the prime reception of 70 cm F.M. (simplex and repeater) in the segment 438 to 440 MHz. Offset for repeaters is down 5 MHz to a similar 2 MHz segment 433 to 435 MHz. In each segment there are two repeater windows both 750 KHz wide and a 500 KHz simplex portion. Repeaters 438.00 to 438.750 and 439.250 to 440.000 MHz. Simplex 438.750 to 439.250 MHz. Channel spacing is 25 KHz. Channel numbering is by output using 4 figures, the last 4 of the full 6 figures of the frequency. This State tends to use shorter numbers derived from the channel spacing. If 438.000 is 8000 on the national plan we take it as 0 then 438.025 to us is 1 (The Philips FM321 displays its channels by numbers 1 to 40). This report will first quote the National number but in later reference will use the shorter number.

There is as yet little commercial equipment available. What there is available, is in the main crystal controlled and is either commercial for the networks above 450 MHz or Japanese made for a mixed up world Amateur market. There is little standardization in channel or offset allocations. Most crystals require to be expensive, high tolerance. The exception is the locally made 40 channel Philips FM321 which is synthesized. There are indications that some Japanese manufacturers will produce some synthesized units for the Australian market, in the near future.

In Phase 1 it is the intention to develop a system round the 5 prime voice channels. These channels are already in use interstate. Order of allocation appears to be \* 21 - 27 - 9 - 3 - 15. It is national policy that 21 be the prime capital city service in each state. It is our policy that the 5 channels be used in the major population centres and this has been done. Then, where ever practical these channels be used for prime country locations. Hopefully, maximum utilization on minimum channels. There will be for quite some time a lot of crystal units about.

Prime allocations:

- 8525 - 21 - Sydney - VK2RUS - now operational from VK2WI Dural.  
- VK1 Division - most likely from Mt. Ginini.
- 8675 - 27 - Newcastle - licenced but not operational.
- 8225 - 9 - Wollongong - operational VK2RUW.
- 8075 - 3 - Central Coast (a repeater is currently operational on  
1.6 MHz offset).
- 8375 - 15 - Blue Mountains. Allocation to the region.

In many country regions it will be possible, as required, to utilize one of the above channels. It will be noted from above that all 5 channels end in .5 as these prime channels were allocated to a pattern to avoid some 3rd harmonic interference from 2 metre channels. They are also channels ending in "odd" numbers.

From the first window there are channels 1 to 29, so with 5 prime there are a further 10 channels and these have been allocated as secondary voice channels. We have recommended that all operation in the first window be voice only, rather than as suggested in the national plan, because we appear to have a greater demand for voice than other states. We suggest that special modes be in the second window which also helps utilize the frequency spectrum available to us.

--- continued next page.

The suggested distribution for these 10 channels is as below:-

WICEN - Ch 11 438275 in keeping with ch 11 on VHF.

The regions of Newcastle, Central Coast, Blue Mts and Wollongong, one channel each. The remaining 5 to the Sydney region for possible services like the Northern Beaches, City, Southern, Central and South Western suburbs. (Newcastle's 2nd channel has already been requested as 25).

The uncommitted channels are:-

8025 ch 1; 8125 ch 5; 8175 ch 7; 8325 ch 13;  
8425 ch 17; 8475 ch 19; 8575 ch 23; 8725 ch 29.

At this stage it is recommended that the 50 KHz separation be maintained between repeater channels to act as guard channels.

The committee made no direct recommendations at this stage for simplex operation other than channel 40, 439.000 MHz be the prime voice - as listed. This area will be looked at in Phase 2 but in keeping with the earlier suggestions special modes above 439 is a likely outcome. The 2 secondary voice simplex by national policy are 438.825 ch 33 and 439.125 ch 45.

Further consideration will be given at later repeater meetings to other aspects of 70 cm FM. A user problem sometimes exists where an operator has a 70 cm receiver running. He transmits on 2 metres and the 3rd harmonic blocks his 70 cm receiver. This is something to consider in channel allocations. For example - there is a request for a UHF service in the Western Blue Mts - Bathurst area. This area is served by a Ch 1 and 2 VHF service. Ideally, the UHF channel should be as far removed as possible, like 23 or 29.

Channel Utilization to date:

438025	-	1	-	
8075	- P	3	-	Central Coast - Gosford region. VK2RUG.
8125	-	5	-	
8175	-	7	-	
8225	- P	9	-	Wollongong region. Operational. VK2RUW.
8275	-	11	-	WICEN allocation.
8325	-	13	-	
8375	- P	15	-	Blue Mountains allocation.
8425	-	17	-	
8475	-	19	-	
8525	- P	21	-	Sydney region. Op from Dural (VK2RUS).
8575	-	23	-	
8625	-	25	-	Hunter region 2nd allocation.
8675	- P	27	-	Hunter region. Licensed, not op.
8725	-	29	-	

P = prime voice.

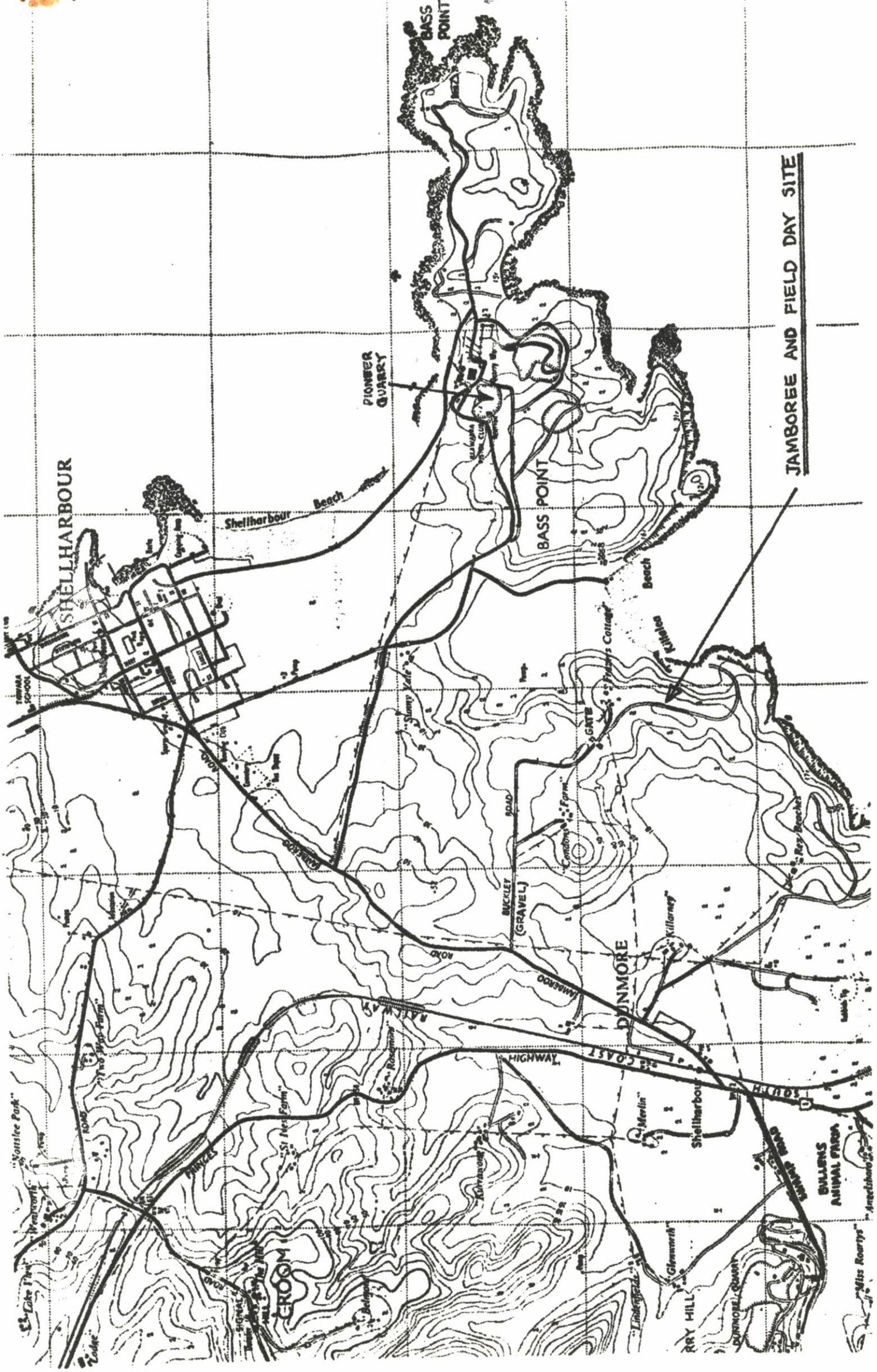
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FOR SALE: Dentron Super Tuner for 160 through 10 metres. Handles 1 Kw PEP. \$110. See John Thurston VK2DET at next club meeting.

FOR SALE: AWA CRO, 5", \$55 o.n.o. Last chance before going into storage. See Gio VK2VPD at the next meeting.

FOR SALE: Cavions at present have a large number of 5 amp battery chargers for sale around \$5, as well as a large number of...

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SHELLHARBOUR

PIONEER QUARRY

BASS POINT

BASS POINT

DUNMORE

JAMBOREE AND FIELD DAY SITE

"Vonslee Park"

CROOM

HIGHWAY

RY HILL

BULLER'S ANIMAL FARM

"Miss Rourys"



OSCAR PHASE 3B

We hear that it is hoped to launch the next Oscar satellite in early 1982. This will replace the satellite lost due to the recent Ariane rocket failure. Decision as to what facilities will be built into the satellite will be taken in January 1981.

Like its predecessor the satellite will be carried by another Ariane rocket and we hope that, this time the launch will be more successful.

TRANSMISSION SCHEDULE

Transmissions of GB2ATG take place on Sundays on 14.090 MHz plus or minus 2 KHz. From October 26th, time will be 0830 GMT.

EXEMPTION FROM LICENSING

Overseas amateurs will probably be surprised to learn that, in the U.K., it is necessary to obtain a home office licence in order to use such things as metal detectors and pipe finders as well as for the radio control of models. At present there are about 150,000 licences for metal detecting equipment and about 93,000 licences for model control but the Home Secretary has just announced that shortly the need to licence this type of equipment will be removed. Regulations in regard to frequency and power will remain, however.

CALLBACKS TO BRITISH RTTY BROADCASTS

The callsign GB2ATG is not an amateur licence, but a special "broadcast" licence, and you must call giving the callsign of the amateur who makes the transmission (this is always included in the bulletin). If you do call GB2ATG you are unlikely to get an answer. Do not start your call with a whole line of "RY", 10 is enough for him to trim his receiver. Just send our operator's call 3 times on your own call 3 times and then wait until he replies. He will then ask for your report.

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NEWS FROM VK2TTY (Sundays, 0030 GMT on 7045, 14090, and 146.6;  
0930 GMT on 3545 and 146.6)

Callsign misuse:

It has been noted by the Department that, in VK2, there has developed a tendency to "lend a callsign". It should be pointed out that the holder of the callsign must be in attendance during the use of his callsign by another operator. Any use of the callsign without the owner being in attendance is illegal. The P and T Department is definite on this, and may take action against the offending persons.

Typin' Taipans?

While we are always happy to have new members in the society, there are times when we feel that there are such things as unacceptable members, especially when they cannot read or write.

It appears that Harry (VK2AHP) used his model 19 teleprinter to type a one and a half meter brown snake to death.

Now really Harry that is not the "type" of member we need.

Intruder watch:

The Intruder Watch Co-ordinators in various states are looking for assistance from RTTY operators, to report on FI intruders. It appears that while most of the co-ordinators can read CW and SSB, they are a little lost on RTTY. Therefore if you are interested please contact Alf Chandler VK3LC.

RSGB RTTY Handbook:

The RSGB is in the final stages of preparing their new RTTY handbook. Due to printing costs, it is expected that it will be a paperback type of book. A lot of the "old" material has been deleted, and modern technology information has replaced this. The book is expected to be published somewhere in the first three months of 1981.

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THE ILLAWARRA AMATEUR RADIO SOCIETY

PRESIDENT: Keith Curle, VK2OB, 24 Beach Drive, Woonona, 2517.

VICE-PRESIDENT: Denis McKay, VK2DMR, 17 Doncaster St, Corrimal 2518

SECRETARY: John Doherty, VK2NHA, 7 Risley Road, Figtree, 2525.

TREASURER: Geoff Cuthbert, VK2ZHU.

COMMITTEE: Gio Donk VK2VPD; Ron Dorin VK2VOE; Dave Meyers VK2PBP;  
Les Kirchmajer VK2ALK; Ian Squires VK2DKS;  
Brian Wade VK2AXI; Kieran Kennedy VK2DAN.

PROPAGATOR EDITOR: Brian Wade VK2AXI, 72 Murray Road, Corrimal 2518.

ANNUAL SUBSCRIPTIONS: Send \$5 to the Treasurer, I.A.R.S., P.O. Box 1838, Wollongong, N.S.W. 2500., or see Geoff Cuthbert at meetings.

INQUIRIES: The Secretary, I.A.R.S., P.O. Box 1838, Wollongong, N.S.W. 2500.

QSL CARDS: For Illawarra members who are also W.I.A. members, see Rick Hill VK2DAP at meetings, for inwards and outwards cards.

to 31  
Betty

THE ILLAWARRA AMATEUR RADIO SOCIETY - SERVICES

MONTHLY MEETINGS: Second Monday of each month (except January) at 7.30 p.m., Congregational Hall, corner of Coombe and Market Streets, Wollongong.

MONTHLY BROADCAST: 7.15 p.m. on the Sunday night before the monthly meeting, on VHF repeater 5, UHF repeater 9, and 28.46 MHz.

SLOW MORSE BROADCAST: From VK2AMW on Monday nights (except meeting nights), 7-8 p.m., on 1.805 MHz.

W.I.A. BROADCAST RELAY: Sundays 11 a.m. and 7.30 p.m., repeater 5.

MONTHLY NEWSLETTER: The Propagator is usually posted to reach members during the week before the monthly meetings.

AMATEUR RADIO CLASSES: Preparing for Novice, Limited, and Full licences, Fridays 6-9 p.m. See Keith Curle VK2OB or Denis McKay VK2DMR.

CLUB NETS: 52.525 MHz FM, 8.30 a.m. Sundays.  
3.565 MHz, 8.00 p.m. Sundays.

VHF REPEATER: VK2RAW, Channel 5 (146.25 MHz in, 146.85 MHz out)

UHF REPEATER: VK2RUW, Channel 9 (433.225 MHz in, 438.225 MHz out)

THE PROPAGATOR

Newsletter of the Illawarra  
Amateur Radio Society.

Registered for posting as a publication  
CATEGORY B

POSTAGE  
PAID  
AUSTRALIA

Mr R. M<sup>c</sup>KNIGHT

14 IAN BRUCE CREW

BALGOWNIE

2519

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