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The Ontario Amateur

Official Journal of Radio Society of Ontario Inc.

JUNE ISSUE

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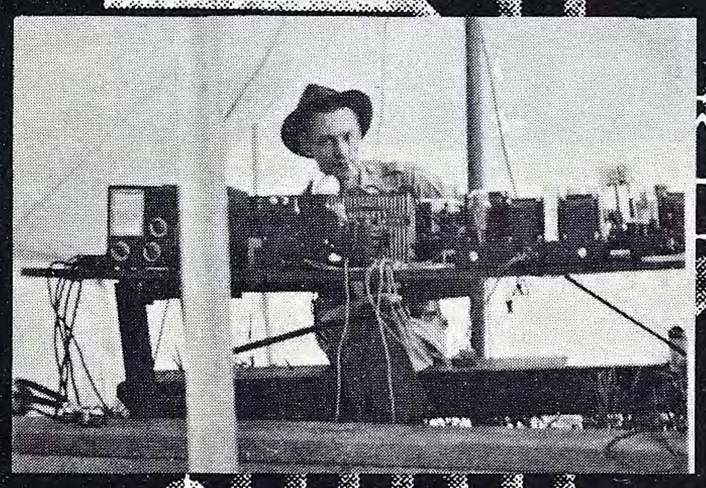

PICTURES OF YESTERYEAR
See Page 18!

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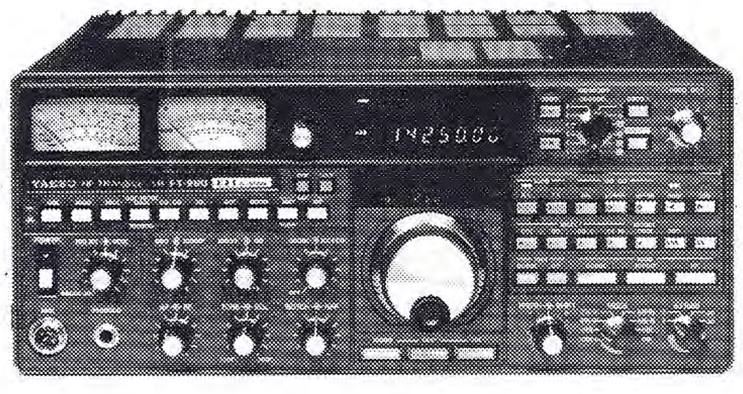

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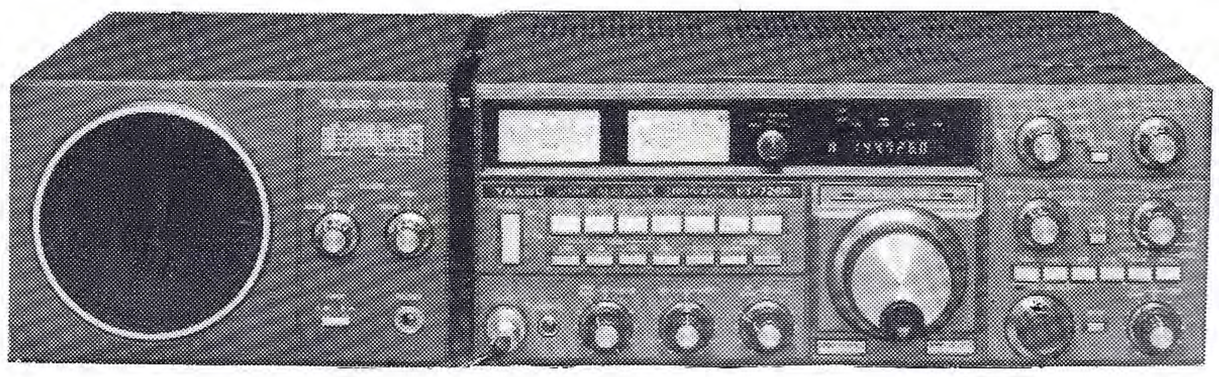

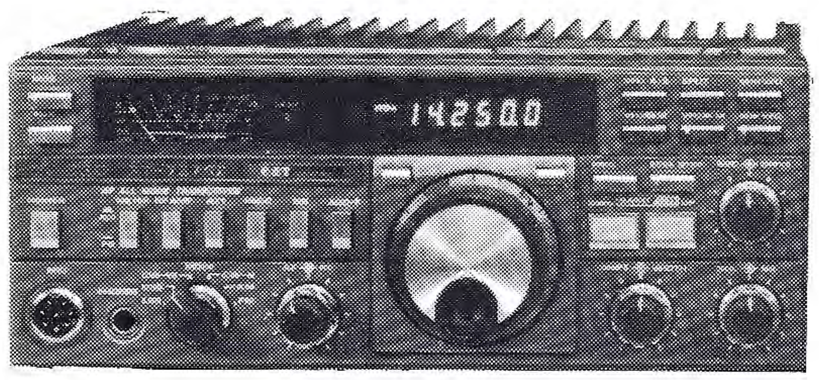

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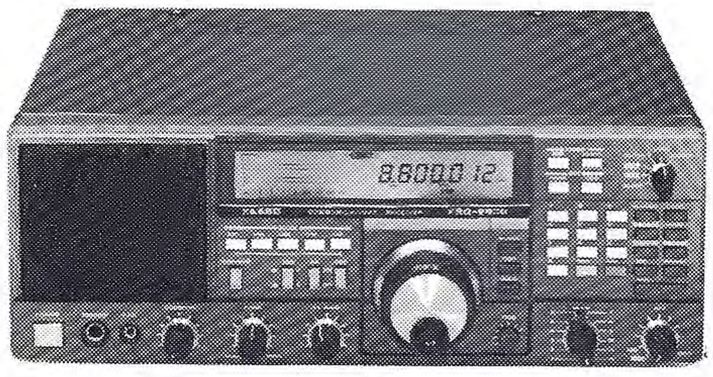

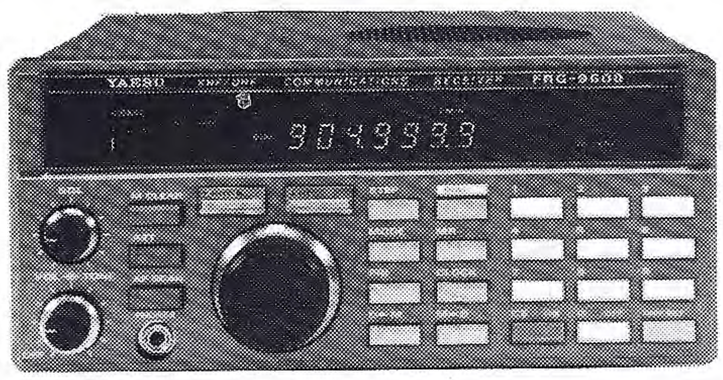

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Radio Society Of Ontario Inc.

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To promote the interest of the amateur radio fraternity, and to improve communications between clubs and societies, material published in **TOA** may be reproduced in bulletins and newsletters of bona fide clubs. An appropriate acknowledgement of the source would be appreciated.

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All correspondence for the RSO should be sent to: **The Radio Society Of Ontario, P.O. Box 246, Port Credit Postal Station, Mississauga, Ont. L5G 4L8. All articles** and **Club News** should be sent To: **Editor, Ray Pellowe VE3BAK 7 Doncliffe Drive, Toronto, Ontario M4N 2E5. All advertising** inquires or materials to: **Al Stevens VE3DQJ 21 Ida Street, Toronto, Ontario L3T 1X4.**

The Ontario Amateur is published 4 times a year.

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THE PRESIDENT REPORTS

Hello there all you hams - and others; it is a pleasure to once again report to you. Briefly:

Your society has received interest from the Ontario Government regarding our proposed EMERGENCY COMMUNICATIONS DIRECTORY. Once more let me emphasize that this IS NOT a new or competing service.

Your executive has also pledged the Society's support of the Ravenscroft appeal. I have also written to the Parliamentary Secretary for the Minister of Communications.

This year our Annual Meeting will include seminars, dinner and entertainment, rather than an actual convention; and will be IN CONJUNCTION WITH the York Region A.R.C. Newmarket Hamfest. Expected date November 8th, watch for announcements.

Through the efforts of the Scarborough A.R.C. your society is producing a new ONTARIO 2 Metre Directory to be ready later this summer.

WANTED - An editor to assist Ray, our present honoured editor, with the idea of reducing Ray's work load; changing circumstances make this necessary.

We also are seeking a Communications manager, in fact any VOLUNTEERS who would be willing to assist in any way in the operation of the magazine, reporting, authors, artists, photographers who can give a bit of time to the ACTIVITIES OF YOUR SOCIETY! Those interested men apply through any of the Executive.

The E.S. Directory is planned to go to all possible users (e.g. Police Forces; OPP Detachments; Community Health services; Welfare organizations). To be a true directory it will include other communications service such as responsible GRS or CB groups. Area R.S.O delegates are being asked to prepare a summary of ALL EMERGENCY COMMUNICATIONS SERVICES IN THEIR AREA. All information will be welcome, sent it to Marion VE3NLN our E.S. Co-ordinator.

The Ravenscroft appeal deserves your continued, and perhaps additional support. Whatever our opinions of this case as it was originally brought about, THE JUDGEMENT IS A THREAT TO EVERY ONE OF US WHO USE THE AIR WAVES! If you want a copy of the reasons for Judgement, send an S.A.S.E. to the R.S.O. - - even if you are not a member. For details read the articles to the right of this column.

An finally, after being threatened with legal action for fraudulent and mis-leading advertising here is an (honest) current photograph.

73 Evan VE3IND

THE RF SUSCEPTIBILITY PROBLEM

In March, the Ottawa Valley Mobile Radio Club sent a letter accompanied by an excellent resolution to The Honourable Marcel Masse, M.P., Minister of Communications.

The letter pointed out the many problems existing in Canada because of the lack of adequate circuitry designed to reject unwanted radio emissions in many commonly used household appliances.

The resolution, which appears to hit the nail on the head, and which is supported by the Radio Society of Ontario, is printed in full:

RESOLUTION

RELATING TO INTERFERENCE WITH THE USE OF RADIO ARISING FROM THE SUSCEPTIBILITY OF CONSUMER ELECTRONIC EQUIPMENT.

The Ottawa Valley Mobile Radio Club Inc.,

mindful of,

1) the continually increasing number of problems of interference arising from the susceptibility of consumer electronic equipment to licensed radio transmissions,

2) the increasing number of licensed radio stations and the rapidly increasing amount of consumer electronic equipment being used in Canada,

3) the fact that, while Canadian manufacturers have recognized the problems due to susceptibility and have been willing to advise on corrective measures, most retailers and practically all users are, as yet, unaware of the fact that much of the consumer electronic equipment that they purchase may experience interference at some time and are unaware of how to deal with it,

recalling that,

4) in 1977 the Department of Communications told manufacturers and others by means of Electromagnetic Compatibility Advisory Bulletin #1 about radio field strengths in which consumer electronic equipment could be expected to operate,

5) this Bulletin, which was very widely circulated in Canada and around the world, was updated in 1982 and again received very wide circulation,

6) engineering committees of the Radio Advisory Board of Canada and the Canadian Standards Association have been studying this matter for at least seven years,

7) the means for reducing the susceptibility of consumer electronics equipment to radio fields have been well known since the early days of radio and that these means are not expensive when taken at the time of manufacture,

recognizing that,

8) the radio spectrum is a national resource and that Canadians have a right to benefit from the responsible use of radio, hence, having complied with the requirements of the Radio Act and Regulations and having received a radio license, they should not be held hostage in the courts by the users of consumer electronic equipment that reacts improperly and undesireably to licensed radio transmissions,

is deeply concerned that,

9) a court in Ontario has already ordered that a licensed amateur radio station may now not be operated because some consumer's electronic equipment malfunctioned,

10) failure to take positive action on the matter of consumer electronic equipment susceptibility could result in a widely used precedent being set and further court decisions which will severely restrict the use of all kinds of radio in Canada and thus limit the benefits of radio to Canadians in general,

therefore unanimously recommends,

11) that the Minister of Communications urgently take steps to amend the law to place responsibility for resolving susceptibility problems squarely on the manufacturers and users of affected equipment,

12) that the Minister of Consumer and Corporate Affairs be asked to require that each piece of electronic equipment sold in Canada have a notice permanently affixed to it

on a place where the notice can be easily seen by its user. The notice shall say,

"The operation of this appliance may be affected by nearby radio transmitters. Contact your dealer and/or manufacturer should it malfunction and refer to the susceptibility of the appliance to radio transmissions."

and further unanimously resolves,

13) to ask all amateurs, especially those who have suffered as a result of the susceptibility of consumer electronic equipment, amateur radio clubs, the Canadian Amateur Radio Federation and the Canadian Radio Relay League to write their Members of Parliament, the Minister of Communications and the Minister of Consumer and Corporate Affairs, supporting this resolution and asking that steps be taken immediately to implement the above recommendations.

14) to ask the Canadian Amateur Radio Federation and the Canadian Radio Relay League to present this resolution to the Radio Advisory Board of Canada and the Canadian Standards Association and, since all radio services will benefit, request their support of the above recommendations to the government.

Ottawa, February 20th, 1986.

HELP !!! HELP !!! HELP !!!

By now everybody knows the story about Jack Ravenscroft. The trouble is that not everybody knows that Jack's problem is the problem of every amateur in Canada.

Jack has had a lot of worry, frustration, heartache and financial loss. The expenses he has incurred are enough to cause the average amateur to lose his/her home.

We should all stop and think for a few moments how we would be affected if this judgment had been against us! Every time you want to switch on the rig . . . oh no, I can't do that, I've been put off the air . . . Take a look at your shack. How much money have you invested in that room? How much is your hobby worth to you?

I heard a few amateurs discussing the decision the other day, and somehow the subject came up about financial support. I believe the amount mentioned was $1.00 from each amateur across Canada. Come on! Get back to reality! This isn't nickels and dimes stuff; let's decide right now that we have to give as much as we can afford, as much as we think our hobby is worth to us, to help Jack in his appeal.

I hope you have long arms and short pockets . . . dig deep . . . send your donation to protect your interests, to support Jack, to:

JACK RAVENSCROFT RF
SUSCEPTIBILITY DEFENCE FUND
P.O. BOX 8873
OTTAWA, ONTARIO
K1G 3J2

Jack Ravenscroft VE3SR
Kanata, Ontario

Jack has lost his case in Provincial Court and has permanent injunction placed on him, effectively preventing him from enjoying his hobby. He is also out of pocket some $40,000 as a result of this judgement. Jack as you should be aware is the Ottawa area Amateur who was sued by a neighbour for allegedly causing interference with the neighbours' microwave oven, electric organ and operation of the furnace. The judgement does not mention that the DOC testified that Jack's station was CLEAN. In fact, there was no mention of any part of the defence. The judgement drew from the Radio Act that Amateurs could not interfere with the Broadcast band, the Judge felt this part would apply to electric organs. The fact that another Amateur some 3 or 4 blocks away also caused the same interference was ignored.

The ramifications of this judgement are far reaching to both the Amateur as well as all commercial radio systems. On the basis of this judgement, no one is safe from a "Nuisance" legal suit.

The case will be appealed, however, Jack is up to now out of pocket some $40,000 less the $18,000 already collected. Our financial support is absolutly necessary. The Canadian Amateurs must provide the support necessary to protect our hobby and to say nothing of our investment in time and equipment.

At the recent Flea Market in Pickering, Ontario, there were many donations to the defence fund. some 160 area Amateurs and friends donated about $2200.00. There were some 1200 Amateurs present that day with only 160 contributing, this is just not good enough. Where were the other 1000 Amateurs? Had they donated in the same generous manner that the 160 did, we would have had an additional $12,000. We all must contribute to the fund. This could happen to you!! We must protect our hobby. We need the support NOW, not when it is too late. This is no time to "Freeload". Talk it up - - too many people do not know about the case or the serious consequences.

The address is:

The Jack Ravenscroft Defence Fund
P.O. Box 8873
Ottawa, Ontario
K1G 3G2

Alan W. Stevens VE3DQ3

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SAUDI ARABIA	**7Z**
SOMALI	**6O**
THAILAND	**HS**
TURKEY	**TA**
	TC
YEMEN (NORTH)	**4W**
YEMEN (SOUTH)	**7O**
ZAIRE	**9Q**

Some Simple Antennae For The 160 Meter Band

GOING TO EXPO 86?

If so, call in at the amateur radio station set up in the Canadian Pavilion. Its cass sign will be VE7EXPO. Can you imagine the pileups waiting to work that station? It will be as bad as it was for VE3RCMP.

NATIONAL DAYS EXPO '86

VE7EXPO will dedicate its' operating to participating countries on their national Day at EXPO '86. Canada's provinces and territories will also be sought by VE7EXPO as follows:

June 21	North West Territories
June 25	Quebec
July 1	Canada Day (C.A.R.F. Contest 20 pt. bonus)
July 11	Ontario
July 27	Yukon
Aug. 2	Nova Scotia
Aug. 3	British Columbia
Aug. 8	Saskatchewan
Aug. 10	New Brunswick
Aug. 17	Alberta
Sept. 7	Manitoba
Sept. 22	Prince Edward Island
Sept. 28	Newfoundland and Labrador

Station VE7EXPO will operate:
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Time - 17:00 UTC to 05:00 UTC
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3.695	3.740	3.590
7.050	7.060	7.040
10.105	— — —	10.140
14.020	14.135	14.090
21.020	21.135	21.090
28.020	28.135	28.090

VE7EXPO will periodically monitor 14.140 and 3.758 calling frequencies. Other modes and frequencies can be scheduled with a QSO to EXPO.

SOME SIMPLE ANTENNAE FOR THE 160 METRE BAND

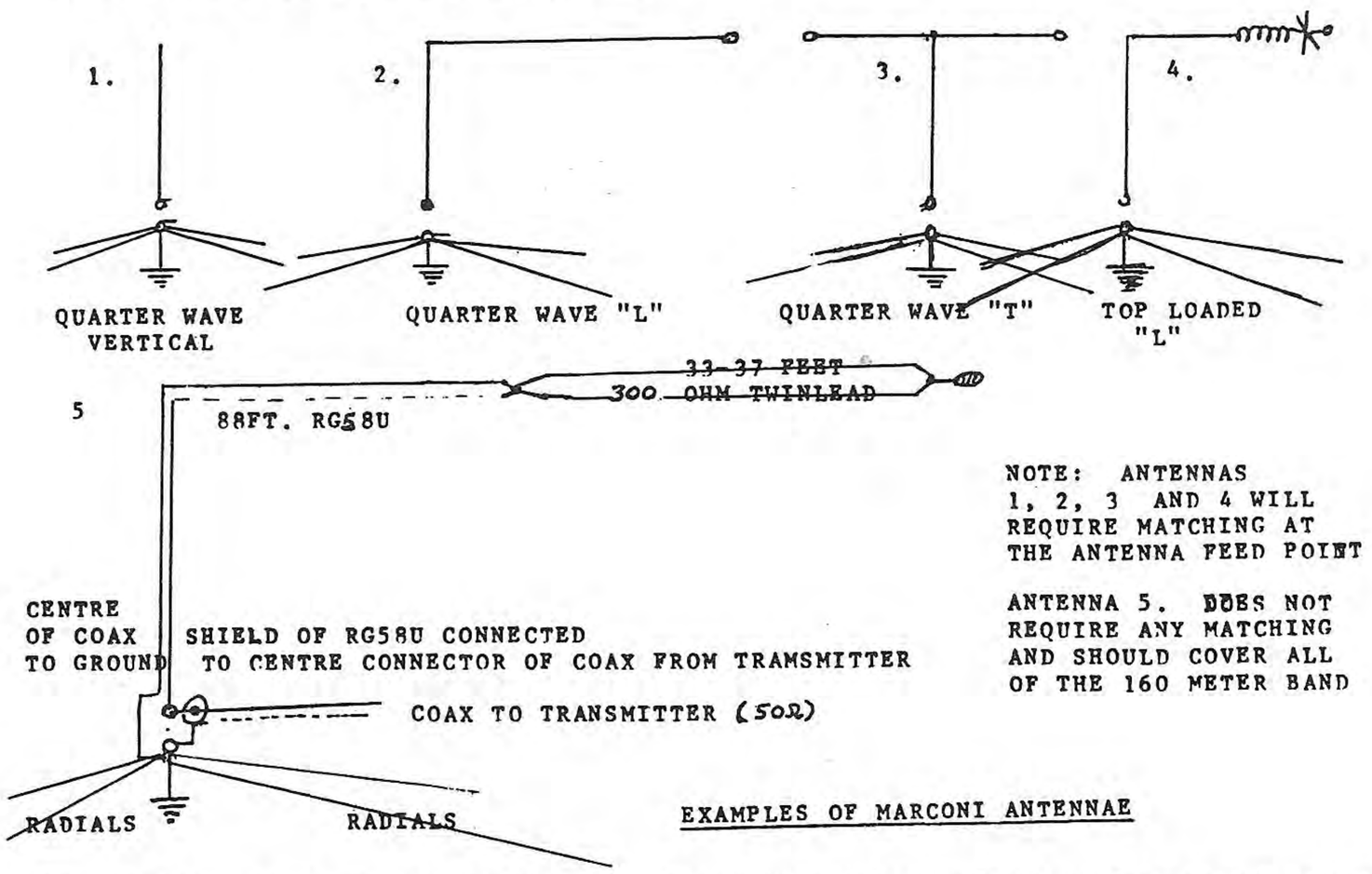
In the January issue of the LARC Bulletin, we gave some background on 160 meters and mentioned that we would continue with some relatively simple antennae which could be used to advantage on the band.

RADIALS AND GROUNDING OF THE MARCONI ANTENNAE

The simplist antenna, other than shorting out the braid and centre connector of the 80 meter antenna (see Jan. 86 Bulletin) is a Marconi. A Marconi antenna is any configuration that uses the ground as half of the actual antenna. (see figures 1, 2, 3, 4 and 5.) Unless you can manage a salt marsh (Sackville, N.B., has a nice one, but CBC got there first with their Shortwave transmitters,) or get to the seashore (it's the better part of 1500 KM from London) you will require a radial system. A standard AM broadcast transmitting antenna utilizes 120 copper radials two fifths of a wavelength long. Complicated studies using this model have proved that it approaches the same ground effect as placing a solid circular plate of copper one wave length in diameter under the antenna.

"So?", you say "I've got a 110 x 40 foot lot, I can't get one radial 135 feet long down, let alone 120 of them, and he promised me something simple! SHEEEEEEEEH" Okay already! Most of us are on the same lot (pardon the pun), and WE CAN make it work. Remember the greater the number of radials, the greater the efficiency, but that doesn't mean that you need that many to put out quite a respectable signal. Two or three radials will make quite a substantial difference, and even one or two will provide the antenna with its "mirror image", distorted as it may be. Amateurs can tolerate a few dB loss, if necessary, where the Broadcast Industry can't. Drive a couple of ground stakes (8 feet plus) into the ground, and tie the radials to it. The radials need not be in a straight line, but it's best that they not cross over one another. If you can't get out the whole 135 feet, 15 or 20 short (10 to 20 foot) radials will help the radiation greatly. Get a copy of the ARRL ANTENNA HANDBOOK, or any of the other publications for more information on radiation resistance, tuning and matching.

The antenna itself should be as much in the clear as is possible. The vertical portion of the antenna should be as long as is practical. Remember that the whole idea of this antenna is to get as much of your signal radiated at as low an angle as you can manage in order to work stations at a distance.



EXAMPLES OF MARCONI ANTENNAE

You can see some configurations that should work reasonably well for you. Each has it's own merits and uses.

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We are all radio amateurs — some with 20 years of experience. All of us keep up with the latest technology and we enjoy talking about it! So, whether you are an experienced amateur, or just a beginner, you'll find that we will be happy to take the time to explain anything you want to know. **AND**, since we carry **ALL** major lines of amateur radio equipment you will get an unbiased opinion! Pick our brains before you pick your rig!

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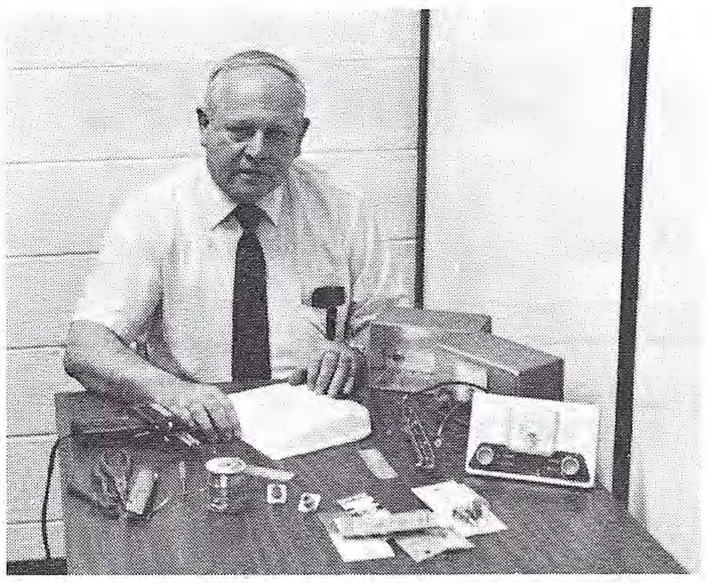
Romancing The Wheatstone



By Mike Quarmby, VE3CKQ

I read an excellent article in "73" magazine, September 1985 issue, by William Vissers, K4KI. It was entitled "Wheatstones Are Not Crackers". As I was about to build an antenna tuner, this article arrived at a most opportune moment. Doing a little redesigning enabled me to incorporate the Wheatstone Nuller bridge in the same enclosure. After completion, I discovered that I owned a real gem - and simple to use.

Not everyone wishes to build an antenna tuner, nor is it always practical to install a "Nuller Bridge", as this circuit is, in the same cabinet. The thought occurred to me, "Why not build the Wheatstone circuit into the S.W.R. cabinet and utilize the same meter?" In other words, give the unit a dual role as S.W.R. Bridge and Wheatstone Bridge.

Many hams are using the HEATHKIT S.W.R. Bridge Model II. Often, these can be obtained at Flea Markets and Swap Shops at reasonable prices. I modified a Model II and will describe the method I used.

Basically, I added two chassis mount coax connectors to the rear cabinet. Two toggle switches (1 DPDT and 1 SPDT) and a 50K Linear Taper Potentiometer with rear switch, to the front panel. I built the Wheatstone circuit on copper clad board and installed it on the meter bracket. As shown in the diagrams, the Wheatstone circuit was connected, via the SPDT, in order to switch the meter from S.W.R. circuit to the Wheatstone circuit. I used 9-inch lengths of RG 58 U from the coax connectors to the circuit board and DPDT switch (S2). Elsewhere, I used ordinary insulated hook-up wire. No measurements are given for parts placement as positioning is not critical - the choice is yours.

See Fig. 1 for positions of added components to the HEATH cabinet.

See Fig. 2 for K4KI's Wheatstone circuit and the modified HEATH S.W.R. circuit.

See Fig. 3 for circuit board and parts placement.

The original INPUT coax connector will not be used and should be capped or taped over. The new coax connector "B" will be the INPUT from the transmitter. The second new coax connector "C" will be the "DUMMY LOAD" connection. The original OUTPUT coax connector "D" is used to connect the antenna tuner and the antenna.

Prepare a printed circuit board for the Wheatstone circuit. My board is 3 centimetres by 11 centimetres, and has foil on one side only, after etching. The method I used was to cut the copper-clad board to size and cover the copper-clad side with "self-adhesive" address labels. I then drew lines on the labels to form a grid of 5 millimetre squares. I shaded in the squares that would form the un-etched foil for the circuit. Using a sharp blade. I cut away all the unshaded squares, peeled off the paper thus exposing the copper surface to be etched away. Next, I placed the board in copper etchant solution until developed. After etching, wash the board, peel off the remaining paper and clean the foil. My system is cheap and easy - yours is probably better. Just remember that the etching solution is very dangerous to skin and eyes so use rubber gloves and eye protection in case of splashes.

I mounted the resistors, capacitors, and diode on the foil side of the board. in saddle fashion. I preferred to have the components accessible when the board is installed in case of later changes. For example, depending on transmitter power, it may be necessary to change the values of the two parallel 3.3K, 2-watt resistors in order to keep the meter within scale limits. I used 2 parallel 10K and 1 series 100 ohm resistors for the 5.1K (2-watt) resistor. Incidentally, K4KI used a 50 microamp meter. The HEATHKIT meter is 100 microamp. All things being equal, the unit should work within half scale on the Heath meter as is. The scale is not used as such, but merely as an indication that the needle is dipping towards zero in the TUNE position of Switch S2.

I mounted the completed circuit board on the top side of the HEATH METER bracket using small nuts, bolts, and spacers. Just be certain that the hardware does not short the foil to anything. The board could be mounted with contact cement. Complete the remaining wiring. Check your work and close up the cabinet.

OPERATION

CAUTION: Do not throw toggle switches when transmitting.

connect the transmitter output to the new input connector "B".

connect 50 Ohm Dummy Load to the new Dummy Load connector "c".

connect the original Output to the antenna Tuner and then to the Antenna.

TO USE AS A S.W.R. BRIDGE:

Switch "S3" to S.W.R. position and switch "S2" to Transmit position.

Use unit as before as a S.W.R. indicator.

TO USE AS WHEATSTONE "NULLER" BRIDGE:

Switch "S3" to Nuller position

Switch "S2" to Transmit position

Listen to receiver and select desired frequency

Switch "S2" to Tune position, (50 Ohm Dummy Load is now connected).

Apply transmitter power and adjust loading into the dummy load. The meter will show relative output of the transmitter.

Close Switch "S1" by turning the 50K pot clockwise and adjust the pot for a mid-scale reading. Your antenna tuner is now also connected.

FIGURE #1

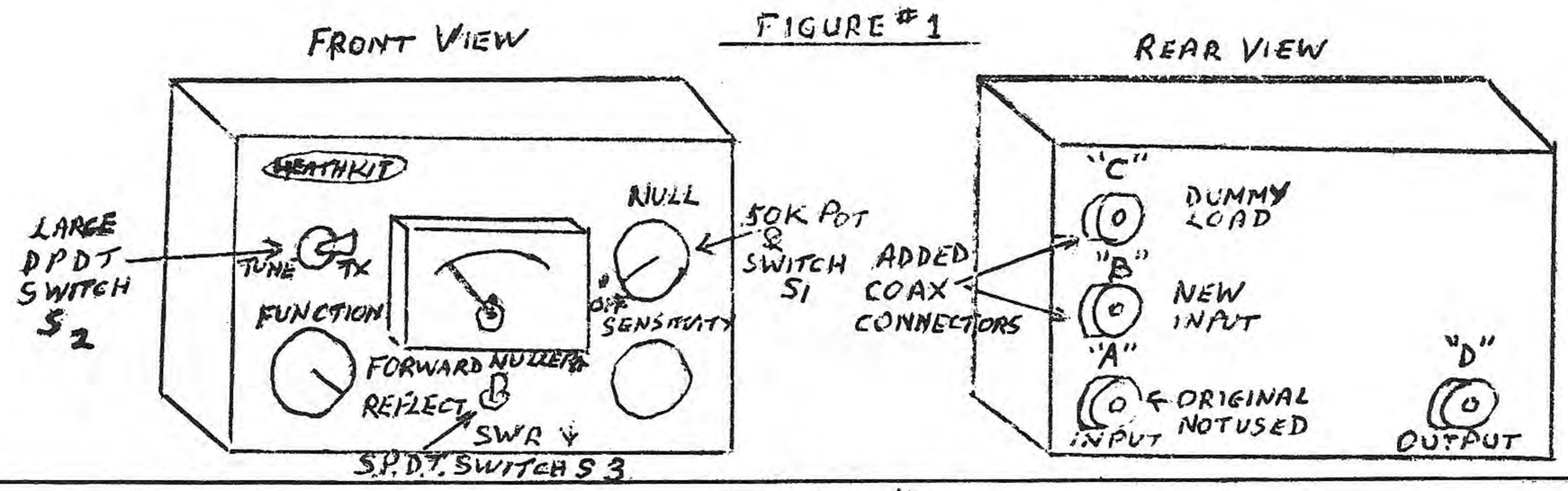


FIGURE #2

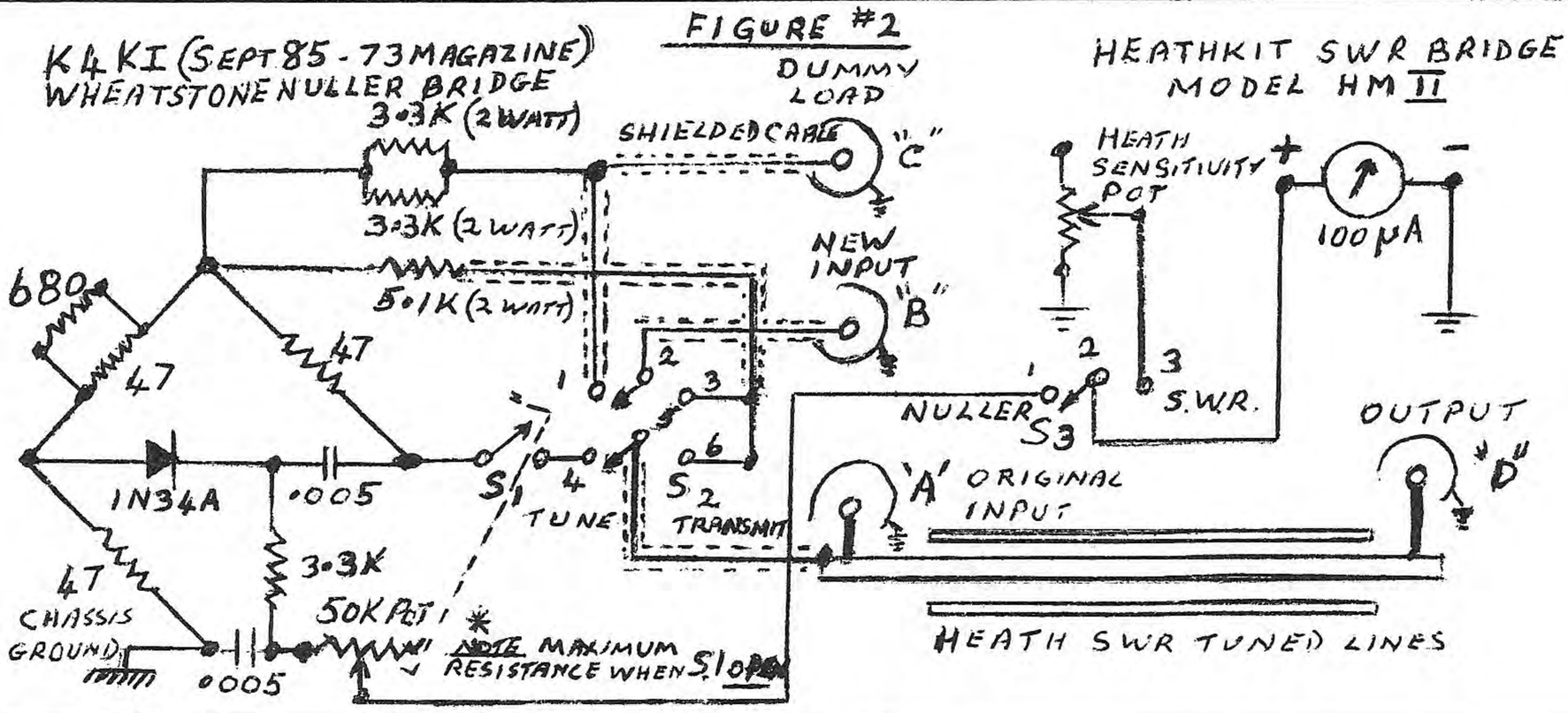
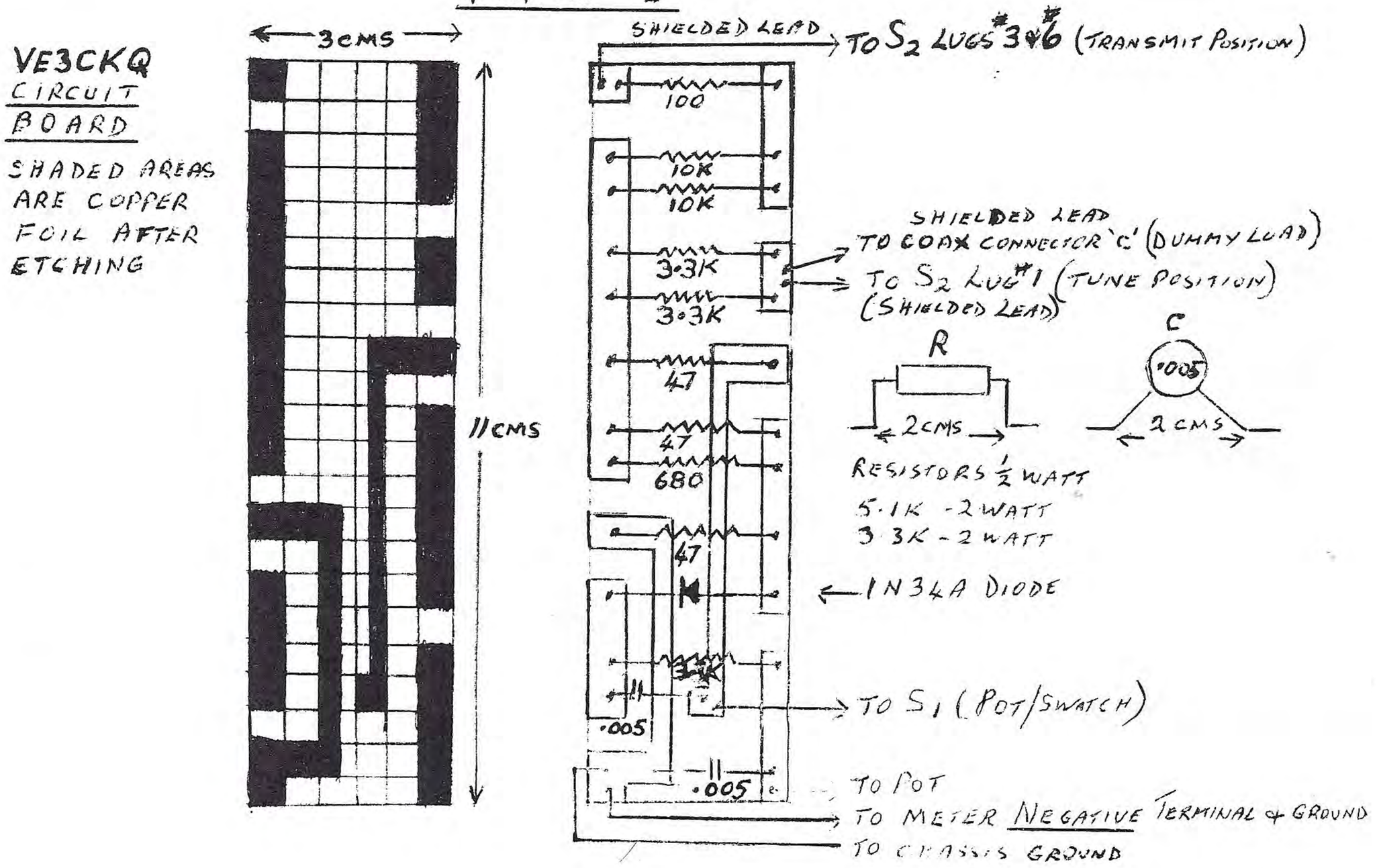


FIGURE # 3

VE3CKQ CIRCUIT BOARD

SHADED AREAS ARE COPPER FOIL AFTER ETCHING



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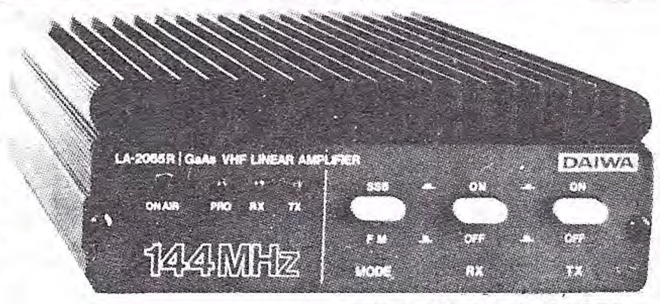
LA-2065R 2M 10W in gives 50W out with Preamp--$179.95
LA-4030 430-450MHz 3W in gives 35W out--------$179.95

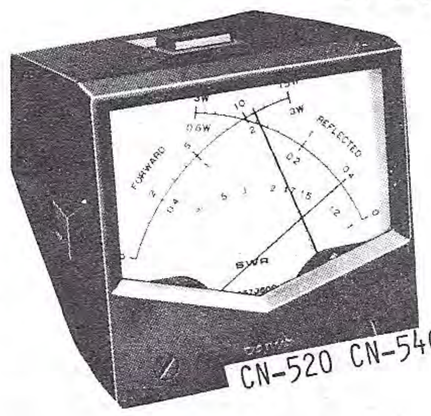


LA-2035R LA-2065R

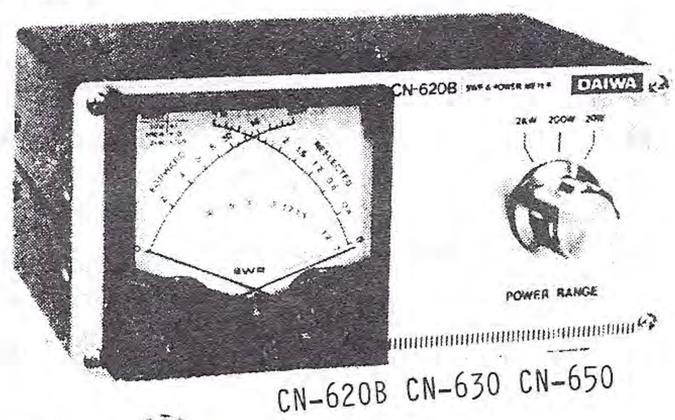
LA-2035 LA-2060 LA-4030

CROSS NEEDLE METERS.

CN-520 1.8-60MHz 200/2kW----------$ 79.95
CN-540 50-150MHz 20/200W----------$ 89.95
CN-620B 1.8-150MHz 20/200/2kW----------$149.95
CN-630 140-450MHz 20/200W----------$169.95
CN-630n140-450MHz 20/200W with 'N' connector--$179.95
CN-650n 1.2-2.5GHz 2/20W with 'N' connector---$199.95



CN-520 CN-540



CN-620B CN-630 CN-650

OTHER DAIWA PRODUCTS.

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CS-201G 2 position coax switch with 'N' conn.-$ 39.95
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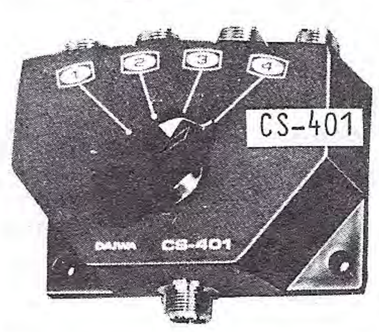
MR-750PE As above with preset control & motor-$399.95
MR-750U extra motor for 750 rotators---------$119.95

CNW-419 200W antenna tuner with X needle meter$299.95
CNW-518 1kW antenna tuner with X needle meter-$449.95

DK-210 Electronic Keyer with LED speed meter--$109.95

AF-606K Audio filter with PLL control---------$149.95

RX-110G 2M Ga-As FET preamp----------$ 99.95



CS-201

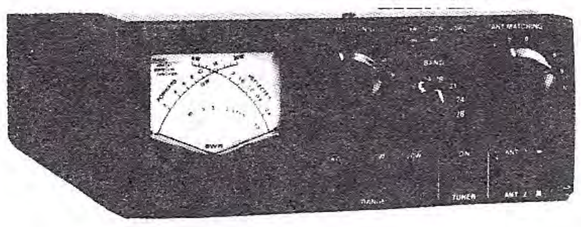
RX-110G

AF-606K

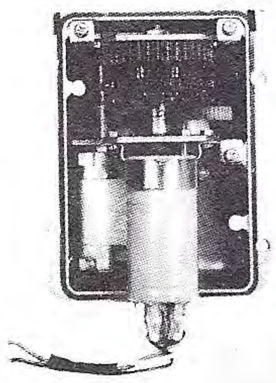
CNW-419

DK-210

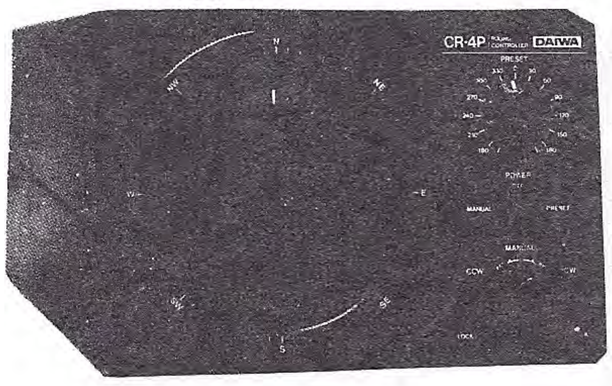
CNW-518



MR-750U



MR-750PE



MR-750

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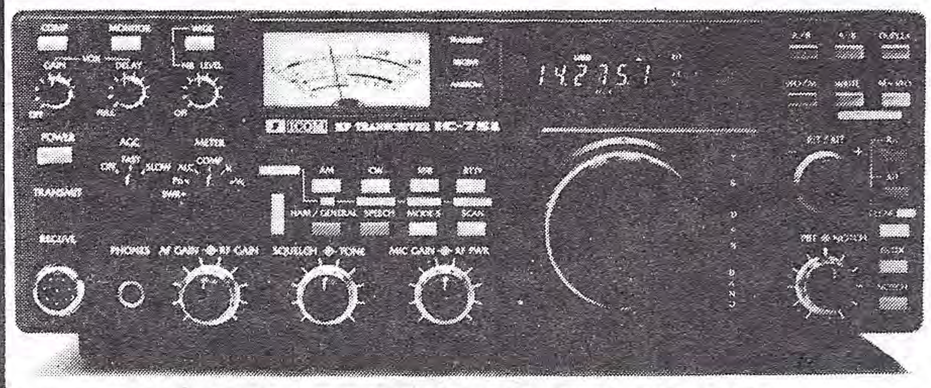

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AT-500 Auto Antenna Tuner 500W	$699	$629
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INFORMATION ON CURRENCY EXCHANGE

Since exchange rates vs. the Canadian Dollar have changed so much in the past 6 months we wanted to give you some info on changing prices. Since Mid-Sept the cost of 1000 Japanese Yen has risen to $8.00 from $5.50 a rise of 45%. While many items have increased in price they have NOT risen by 45%. The dealer and the importer have absorbed some of the increase. SOME ITEMS ARE STILL IN STOCK FROM PRIOR TO THE INCREASE SO HURRY IF YOU WANT TO SAVE MONEY.....

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- For dipoles, yagis, inverted vees and doublets
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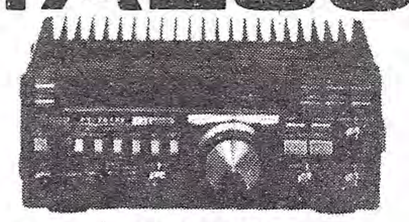

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HF transceiver with general coverage receiver. 8 memories. Dual VFO's. Programmable memory scanning. CAT system computer control.

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YAESU FRA-7700 Act Ant	$ 89
YAESU FV-901DM VFO	$199
DRAKE RV-7 VFO	$199
YAESU SP-901P Sp/Patch	$ 99

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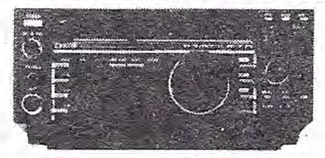

IC735 NEW General Coverage HF Transceiver Full Featured -Ultra Compact - Economical

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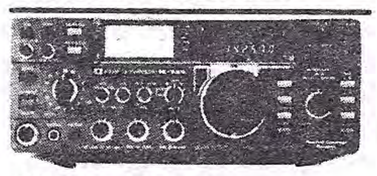

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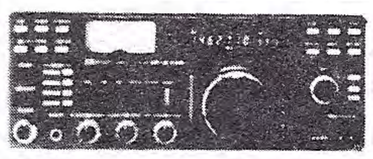

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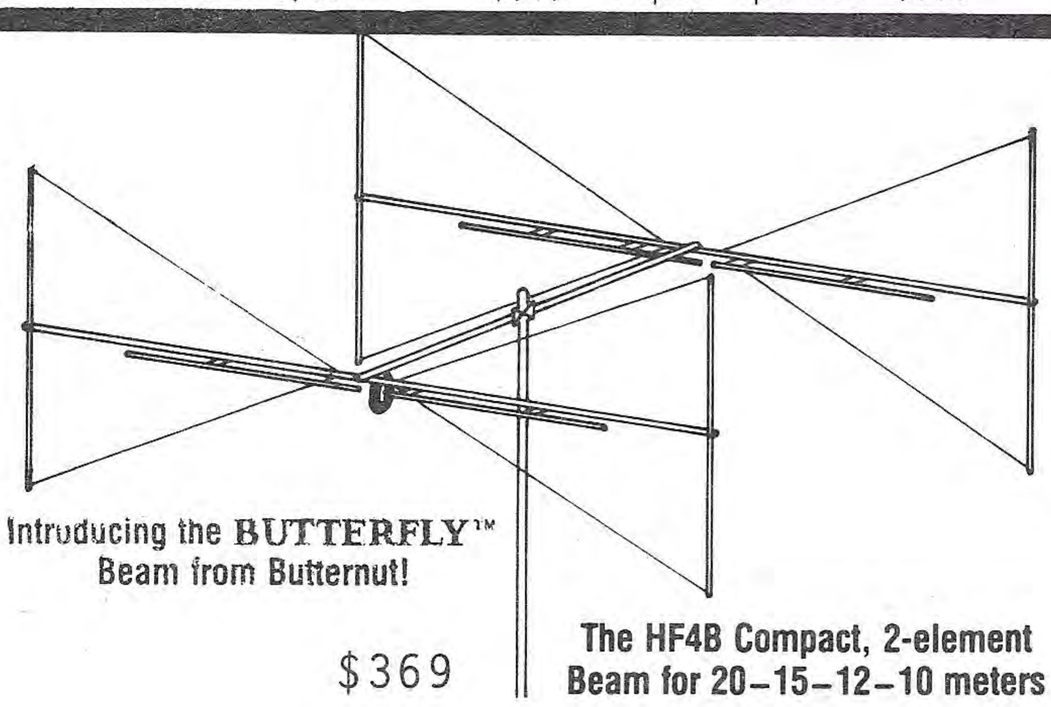

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The HF4B's 12½-foot elements and 6-foot boom are ideal for home-station use and for weekend retreats, condos, apartments and other places where oversized beams are prohibited. Its light weight (17 pounds) means it can be turned with a tv rotator, yet it is robustly constructed in the best tradition of our world-famous Butternut verticals.

Performance
The HF4B **BUTTERFLY** ™ has not sacrificed performance for compactness. Its unique design with fanned elements and L-C circuits avoids use of power-robbing traps yet provided high-efficiency operating on all bands. The **BUTTERFLY** ™ outperforms anything in its class.

The HF4B offers an SWR of 1.5:1 or less at resonance. Its 2:1 bandwidth is 200 kHz on 20 meters, 450 kHz on 15, 1.7 MHz on 10, and across the entire 12 meter band. And it will handle the legal power limits both CW & SSB. Gain is at least 3 dB on 20, 4.5 dB on 15 and 5 dB on 10 & 12 meters. Front-to-back is up to 18 dB on 10, 12 and 20m, and up to 15 dB on 15m.

HF-6V 10-15-20-30-40-80M Vert	$229
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RMK-II Roof Mount Kit c/w STR	$ 99
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Adjust the antenna tuner for a dip or Null on the meter.

Fine adjust the tuner controls until zero or near zero is obtained. Your transmitter is now connected to the dummy load and also matched to the tuner and antenna. Note, you have not been radiating any appreciable power!

Turn the transmitter to Receive.

Switch "S2" to transmit.

Listen to Receiver.

Now, operate your transmitter as usual.

I could have utilized the original HEATH sensitivity potentiometer which is also 50K, by adding switch "S1" to its rear, and switching the pot to Nuller or S.W.R. by using a DPDT switch for "S3". I left this alternative for my next modification and, perhaps, to encourage you to experiment yourself. Up to now, I've tried to keep it simple.

I make no claims for inventiveness of design, as this belongs to K4KI. I hope I have furthered his project by convincing more hams to tune up into a dummy load thereby reducing the amount of interference on the bands. Net controllers will be very appreciative of your consideration.

As the advertisement says, "Give it to Mike. He likes it". Build a "Nuller" and you'll like it too!

73, Mike VE3CKQ

(Thanks again to '73' Magazine for permission to use material as noted. — Ed.)

MIKE SMITH, VE3CHS, HONOURED

TOA learned just before going to press, that Mike was presented a plaque and Fire Services long service medal for his outstanding contribution to the town of Mindemoya for 30 years. Believe it or not, Mike was the one-man fire department for that community from 1946 to 1976. Since retiring in 1983, Mike has become very active in amateur radio.

Congratulations, Mike!

(Tnx to John Enns VE3AIM)

DELTA LOOP ANTENNA FOR TWENTY METRES

By Dick Shave, VE3BIS

The author acknowledges the following sources for this article: ARRL Handbook, and Doug. DeMaw's (W1FB) article in QST, October, 1984.

This antenna has been very effective in maintaining skeds with stations in Ontario and other parts of Canada from Florida.

Formulae:

Loop length in feet: $\frac{1005}{f(Mhz)}$

(ARRL HANDBOOK 20-19)

Matching stub length in feet:

$= \frac{L}{f(Mhz)} = \frac{246 \times 0.66}{f(Mhz)}$

(ARRL Handbook 19-3)

The loop is to be hung in the vertical plane. The direction of propogation is at 90 degrees from the plane of the loop, i.e., looking through the loop. While the loop can be suspended at an angle to the perpendicular, its performance will be reduced.

The impedance of the loop is about 100 ohms. A piece of 75 ohm coaxial cable is used to transform the impedance from 100 ohms to 50 ohms for transmission.

I use a small pulley at the apex of the antenna. Thread the antenna wire through the pulley; it helps to make the antenna hang in a balanced configuration. Don't forget to make sure all supports and insulators are sound as they are very important to a good antenna system. Don't let the wind flex the connection point; make sure it can move freely without strain at the connection.

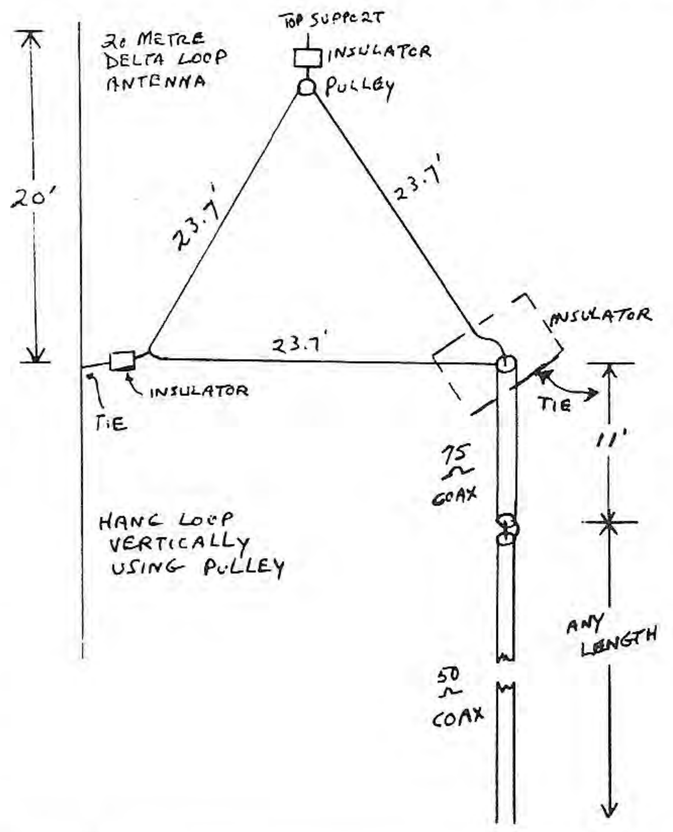
Referring to the diagram, you will see that the link between the antenna and the feed line is a piece of 75 ohm coax eleven feet long. Note the way the connection is made at the loop - the centre conductor of the coax is taken to the more vertical part of the loop, while the coax shield is connected to the horizontal or bottom part of the loop.

The connection between the 75 ohm and 50 ohm coax may be made with proper fittings or a simple splice. Make the splice as much like the dimensions of the coax as possible, and seal the joint with tape and moldable plastic coax seal, or building caulking material. This may sound crude, but since I was only on 14 Mhz., it worked quite satisfactorily. Solder all antenna connections properly. This is the best way to avoid noisy systems. Use lots of heat and sweat all joints.

I supported the antenna with a thirty foot TV pipe and the horizontal portion was about eleven feet off the ground and about four feet away from the aluminum side of our mobile home.

Prune the antenna if your site isn't giving an SWR of 1.0 to 1.5 or better.

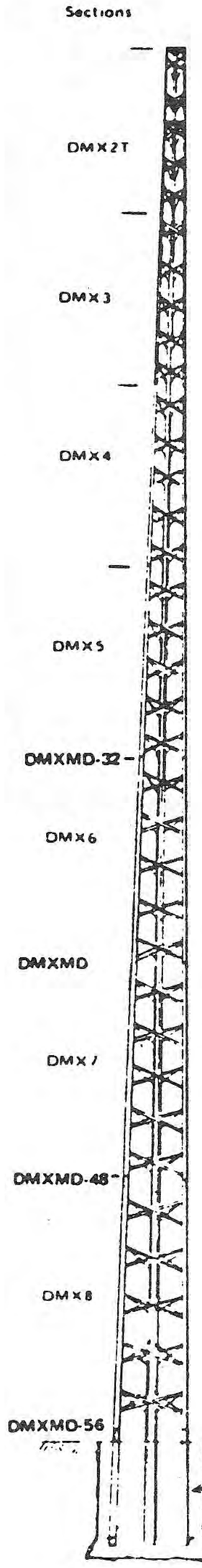
73, Dick VE3BIS

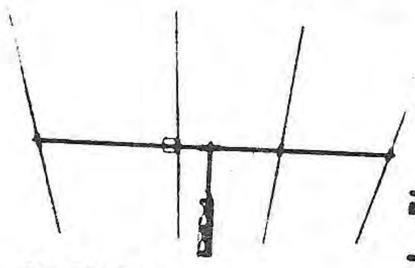


DOC EXAMINATIONS

The first examination in the autumn will be conducted on October 21st, 1986. The closing date for the department to accept applications to write the examination is September 23rd.

DELHI AND TRYLON ABC TOWERS





20 Meter

Four elements on a 26' (7.9 m) boom Feeds with 52 ohm coax and is Beta Matched for 10 dB gain. The 204BAS has a tiltable cast aluminum boom-to-mast clamp, heavy gauge machine-formed element-to-boom brackets and stainless steel hardware and clamps. BN-86 balun is recommended for use with model 204BAS.

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Shipping Wt: 55 lbs. (24.9 kg)

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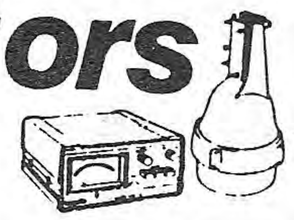
RG213 Coax	75¢ ft.
Rotor Cable	45¢ ft.
#14 Copperweld	12¢ ft.
1.1 balun	27.00

Rotors



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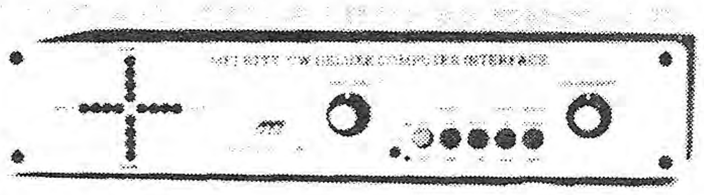

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MFJ-1224 interface	$159.00
MFJ-422 Econo c/w Bencher key	$179.00
MFJ-941D Deluxe versa tuner	$169.00
MFJ-949C Super deluxe tuner	$249.00
MFJ-962 1.5KW versa tuner	$359.00
MFJ-1020 Active Antenna	$129.00
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MFJ-407 Deluxe keyer	$119.00
MFJ-262 300W Dummy Load	$44.95

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AES-160, 160 & 30 metre Dipole, 96 ft.	Special $179.00
TR-40 traps for 80 & 40 metres, copperweld, balun, etc.	SPECIAL $119.00

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A3 3el Tri-band	$495.00
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ARX-2B Ringo 2 mtr.	$79.00
A147-4 4el beam	$59.00
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A-147.20T twist	$159.00
AFM-4D "four pole"	$159.00
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32-19 deluxe 16.2DB	$219.00
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Mosley

TA-33jr. 3el tri-band	$359.00
TA-33Sr. 3el. tri-band	$495.00
TA40KR 40 mtr.adapter	$179.00
CL-33 3el tri-band	$549.00
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RV-8C 80 mtr. conv	$79.00
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FT-209R	SPECIAL $389.00
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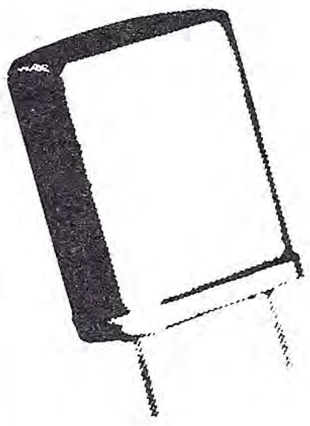

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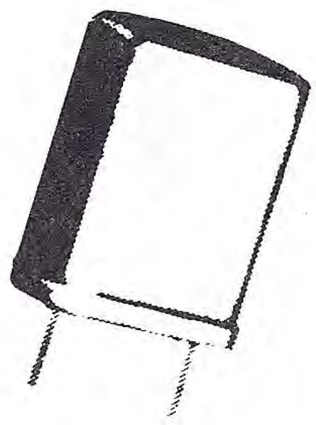

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World News Update

Travelling abroad this summer? Canada has reciprocal licensing agreements with the following countries: Antigua and Barbuda, Australia. Austria, Bahamas, Barbados, Belgium, Bermuda, Botswana, Brazil, Chile, Colombia, Costa Rica, Denmark, Dominica, Dominican Republic, Ecuador, Finland, France, Germany (Federal Republic of), Greece, Grenada, Guatemala, Haiti, Honduras, Iceland, India, Indonesia, Ireland, Israel, Italy, Jamaica, Luxembourg, Malta, Netherlands, New Zealand, Nicaragua, Norway, Panama, Papau New Guinea, Peru, Phillipines, Poland, Portugal, Saint Lucia, Senegal, Sweden, Switzerland, Trinidad and Tobago, United Kingdom, United States, Venezuela, and Yugoslavia. CRRL has information and, in many cases, application forms for obtaining a licence or operating permit in these and over 100 other countries. Just keep the number of your requests reasonable, and the information and applications forms are yours, free for the asking.

An update: The following countries have notified the International Telecommunications Union that they forbid telecommunications with amateurs under their jurisdiction: Angola, Burma, Ethiopia, Ghana, Iraq, Libya, Pakistan, Saudi Arabia, Somali, Thailand, Turkey, Yemen and Zaire. A side note on Turkey: There are Turkish amateurs and they are active. The Turkish Amateur Radio Society has been in correspondence with CRRL.

Another update: Canada has third-party traffic agreements with the following countries: Antiqua and Barbuda, Australia, Bolivia, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Israel, Jamaica, Mexico, Nicaragua, Paraguay, Peru, Trinidad and Tobago, United Kingdom (certain special-event stations only), United States, Uruguay, and Venezuela.

SORRY TO HEAR . . .

That the editor of the Chatham-Kent ARC bulletin "Clear Signals" was disappointed during a recent trip to Toronto. He was unable to have a QSO on any of the many repeaters in town. Over a period of two days he had two responses to his transmissions and they were from Libby, VE3IOT, and one other station not identified in his report.

The editor of TOA regrets this apparent indifference, and while it is difficult to explain, please rest assured that Toronto hams are just the same as hams anywhere else - friendly and willing to be of assistance.

As a matter of fact, I've done a lot of travelling in various countries and I find that people are about the same the world over no matter what language they speak.

So, come to "TO" again. Give me a holler at 489-5373 and (other commitments allowing), I'll do my best to show you a few of the interesting things in this fine city.

73, Ray, VE3BAK

THE 12th ANNUAL CENTRAL ONTARIO AMATEUR RADIO FLEA MARKET AND COMPUTERFEST SATURDAY, JUNE 7th, 1986

Place: Col. John McRae Legion Hall, Guelph. This is located west of the Guelph line on Rockwood just east of the Guelph Correctional Centre.

Talk-in freq: 52-52 simplex
147.960 - 147-360 VE3ZMG

Time: 8:00 A.M. to 2:00 P.M.

General Admission $2.00 (children 12 years and under FREE)

Doors will be open to vendors only from 6:00 A.M. and vendors are required to prepay their registration fee of $8.00 per inside 8-foot space. A 3 x 8 foot table is included. If outside space is requested the cost will be $3.00 per space.

Further information from the Kitchener-Waterloo Amateur Radio Club, P.O. Box 812, Kitchener, Ontario N2J 4C2

SILENT KEYS

We regret to report the passing of the following amateurs:

VE3EI Dwight Field, Forest

VE3GC Gordon Ruth, London

VE3DHU George Bennett, Scarborough

VE3AXE Pat Ogilvie, Ottawa

VE3ELN Ernie Reynolds, London

VE3UY Ralph Turner, Hillsborough

VE3BBT Jerry Wolfe, Orillia

VE3EHV Russ Anderson, Kitchener

VE3DK Morley Patterson, Toronto

VE3FP Stewart Clark, Windsor

VE3HA Sidney Jefferies, Scarborough

We extend our condolences to their families.

Our sympathy is extended also to Ron Bell, VE3BDZ, whose wife, Madeline, passed away in March.

PACKET RADIO SYMPOSIUM SEPTEMBER 20, 1986 BARRIE, ONTARIO, CANADA

The Hex-9 Group of the Barrie Amateur Radio Club is holding its second PACKET RADIO SYMPOSIUM Sept. 20, 1986, with flea market in the morning. Co-sponsored by and held at Georgian College, Barrie, Ontario, the guest speakers will be Harold Price NK6K, a director of AMSAT, and Ed Jackson of Buffalo.

Talk-in frequency 146.25/146.85 VE3LSR.

Admission $5.00. Enquiries to Hex-9 Group, Box 151, Orillia, Ont. Canada L3V 6J3.

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☐ ASSOCIATE MEMBER - Non-licensed or out of Ontario - **$18.00**
☐ FAMILY MEMBERSHIP - Full Member fee plus **$3/person**
☐ LIFE MEMBERSHIP - **$250.00** Conditional Life Membership, **$100.00** with this application, **$75.00** on first anniversary, **$75.00** on second anniversary.

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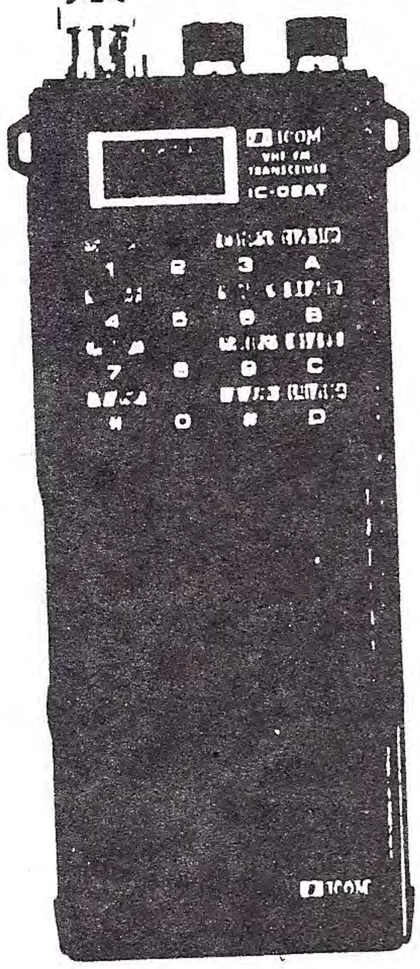

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Hobbytronique Inc.

New Product News

HEATH COMPANY ADDS VLF CONVERTER, ANTENNA NOISE BRIDGE, ACTIVE SWL ANTENNA AND TONE DECODER TO LINE OF AMATEUR RADIO EQUIPMENT.

Four new Amateur Radio kit products have been introduced by Heath Company, the world's largest manufacturers of high technology electronic kit products. The new products are the HE-1420 VLF Converter, HD-1422 Antenna Noise Bridge, HD-1424 Active SWL Antenna, and the HD-1530 Touch Tone Decoder.

The HD-1420 Very Low Frequency (VLF) Converter allows a standard shortwave receiver to tune the 10 to 5000 kHz band using the receiver's 3.5 to 4.0 MHz band. The VLF Converter installs in the receiver antenna line. The unit operates on 9-volt battery or 6-14 VDC external power supply.

The HD-1422 Antenna Noise Bridge is a useful antenna tuning aid which reveals the cause of any mismatch between a station's transmitter and its antenna. A tone-modulated, broadband noise signal is generated in the Antenna Noise Bridge and coupled to an impedance bridge. Using the receiver as an indicator, the impedance bridge is used to measure the reactive components of the antenna. This allows each antenna to be trimmed to a favorite operating frequency for the most effective and efficient transmission of signals. In addition, the HD-1422 can be used to present an antenna tuner for faster tune-up; to tune a quarterwave transmission line; and to measure the value of unknown capacitors and inductors.

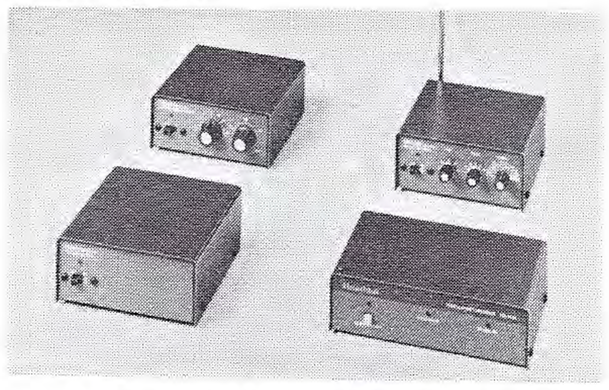
The HD-1424 Active SWL Antenna allows a shortwave radio to receive signals between 300 kHz to 30 MHz. These bands cover all of the international broadcast bands, high-frequency amateur bands and many other services. The versatile unit also acts as a high frequency preamplifier when used with an external 50 ohm antenna. In addition, the HD-1424 may be used as a preselector for both indoor and outdoor antennas. The HD-1424 is ideal for the apartment dwelling shortwave listener or for portable operations where an outdoor antenna is not available. The unit has a built-in collapsible antenna and provisions for a 50 ohm external antenna. The Active SWL Antenna operates on a 9-volt alkaline battery or external 6 to 14 volt DC source.

The HD-1530 Touch Tone Decoder is used in series with the speaker of a receiver or scanner. When activated, the HD-1530 mutes the receiver speaker until it detects a unique DTMF (Dual-tone multi-frequency) code. The unit will then operate in a preprogrammed manner. A code consisting of symbols and numbers found on most 12- or 16-digit keypads is programmed into the HD-1530. If an incorrect code is detected the decoder will automatically reset, cancelling any action. An entry timer may be set from 3 to 26 seconds. If the correct code is not entered within this time period the unit will reset. The most common application of the HD-1530 is to remove the mute on the receiver speaker. The HD-1530 may also be used for the operation of single functions in the control of a repeater, such as ON/OFF control or as a secondary control link for autopatch. The Touch Tone Decoder operates on 7.5 to 11 VAC or 11 to 16 VDC; 175 mA maximum and optional power cubes are available.

These Amateur Radio products are just a few of many electronic kit products offered by the Heath Company in the new 1986 Catalogue. To receive this colorful catalogue FREE OF CHARGE, write Heath Company, 1020 Islington Avenue, Dept. 3100, Toronto, Ontario, M8Z 5Z3. Free catalogues are also available at Heath/Zenith Computers and Electronics Centers in Canada. Consult telephone directory white pages for the nearest store.

Heath Company is a DIVISION OF ZENITH RADIO CANADA LTD. Heath/Zenith Computers and Electronics Centers are operated by Heath Company.

Product availability, specifications and prices are subject to change without notice.



Four new Amateur Radio products from Heath include Tone Decoder, Antenna Noise Bridge, Active SWL Antenna, and a VLF Converter.

CONTACT PERSON: Gary Harris
PHONE: 416-232-2686

ATLANTIC HAM RADIO LTD.
378 Wilson Ave.,
Downsview, Ontario M3H 1S9

April 17, 1986

Mr. Frank Hughes
Editor, TCA
Box 855
Hawkesbury, Ontario
K6A 3C9

Dear Frank,

During the past week we were informed that Jack Ravenscroft had lost his court battle pertaining to RFI. It is a decision that the amateur radio community cannot afford to let stand as a precedent. I strongly urge CARF and the TCA to take a strong stand in promoting a successful appeal of this court decision.

To help in this matter I enclose a cheque for $1000.00 for the fund and I hope you will encourage other dealers and manufacturers to help. Just $5.00 from every active amateur will raise more than $60,000.00 and I hope that amateur radio clubs from Newfoundland to British Columbia will initiate fund raising events to collect money for a successful appeal.

Through your editorials and hopefully full page ads in TCA to promote the fund raising campaign we should be successful in our goal.

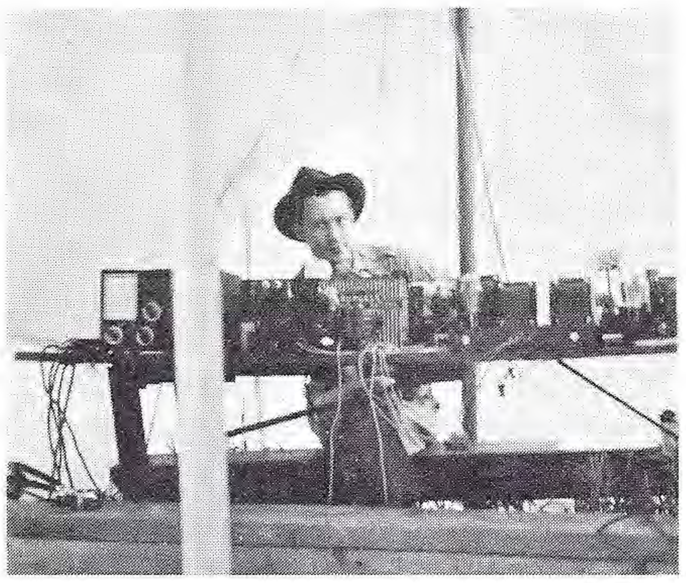
Yours very truly,

Lutz D. Ecker, P. Eng.
General Manager.

Pictures from Yesteryear

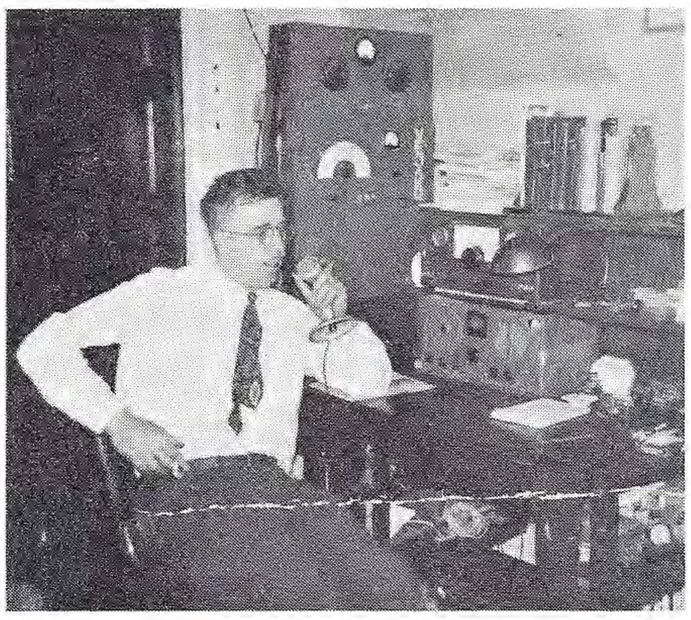
TOA is grateful, to VE3AJW, Fred Wilkinson, Simcoe, for these photos taken of amateurs many years ago. We hope that the photos will elicit a few moments of nastalgia for some who read this magazine.

If you have sharp photographs of your station, preferebly with you at the key or mike, or of a special project that was successful, please send them along. All photographs will be returned.



VE3ANY

VE3DLLand VE3DLM,
Alma and John Irvine
about 1955



VE3AKQ Carl Vollick

From L to R: ——————
VE3AJW, Fred; VE3DLM, John;
VE3Sm, Stan.

THE HAMMOND MUSEUM

Fred Hammond, VE3HC, has been an amateur radio operator and a friend of amateurs for many years.

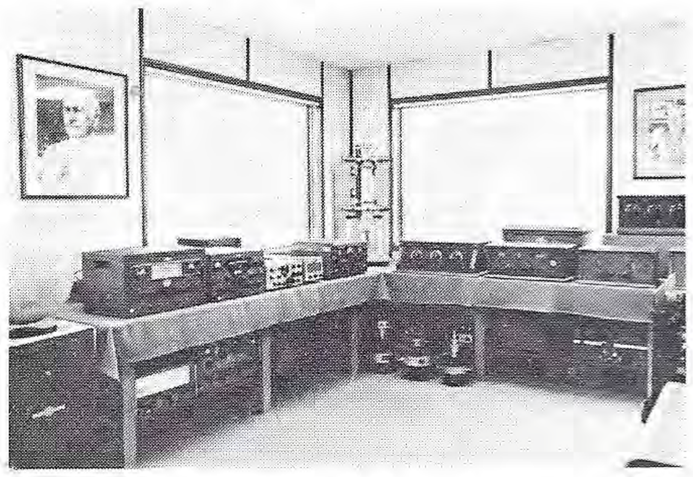
In his usual meticulour style, Fred has assembled one of the finest museums of its kind in the world. Located in Guelph, Ontario, this display of ham gear from the earliest days of our hobby is open to all amateurs during regular business hours. Tours of the museum at other times may be obtained by special arrangement with Fred.

Some of the tubes
on display.

It would be a wonderful idea to visit this outstanding collection while taking in the Central Ontario Flea Market on June 7th. This important event is advertized elsewhere in this issue.

We are pleased to publish several photos of Fred's museum through the courtesy of Marshall S. Killen, VE3KK, Waterloo.

——— Horn Loud Speakers.
Pre war world II
radio broadcast receivers.



Some of the old
radio receivers.

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The many features are:

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- Low pass filter installed for a cleaner signal
- All units include a protection circuit
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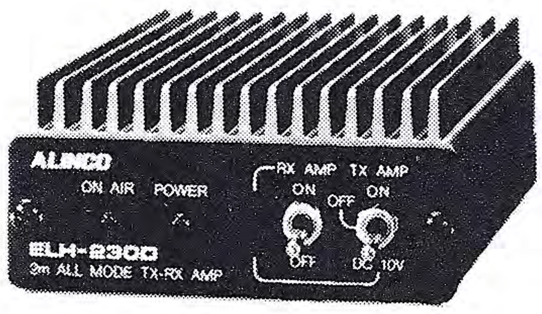
- ELH-260D includes an RF meter and Protection Circuit L.E.D.



ELH-230D
$139

ELH-230D
140-150MHz
All Mode (FM SSB CW)
200mw-5W Input Power
3W In = 30W Output Power
DC13.8V/4.5A
10dB Gain Rx Pre-Amp
50 ohms
3.58″×1.61″×6.42″
1.12 lbs.

ELH-230G
140-150MHz
All Mode (FM SSB CW)
200mw-5W Input Power
3W In = 30W Output Power
DC13.8V/4.5A
50 ohms
3.58″×1.61″×6.42″
1.12 lbs.

ELH-230G
$109

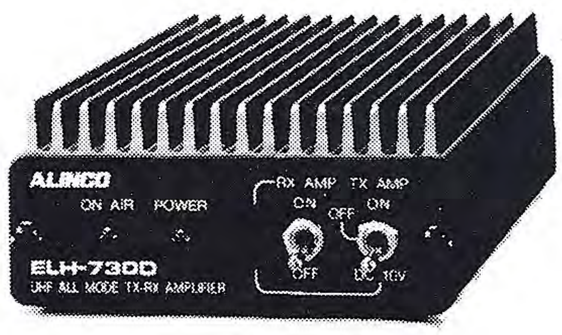
ELH-260D
$229

ELH-260D
140-150MHz
All Mode (FM SSB CW)
200mw-5W Input Power
3W In = 50W Output Power
DC13.8V/10A
10dB Gain Rx Pre-Amp
50 ohms
3.58″×1.61″×8.50″
1.50 lbs.

ELH-220GF
220-225MHz
All Mode (FM SSB CW)
200mw-5W Input Power
3W In = 30W Output Power
DC13.8V/4.5A
15dB Gain (GaAs FET)
50 ohms
3.58″×1.61″×6.42″
1.12 lbs.

(Picture Not Available)

ELH-220GF
$169



ELH-730D
$242

ELH-730D
430-450MHz
All Mode (FM SSB CW)
200mw-5W Input Power
3W In = 30W Output Power
DC13.8V/7A
15dB Gain (GaAs FET)
50 ohms
3.58″×1.61″×7.68″
1.19 lbs.

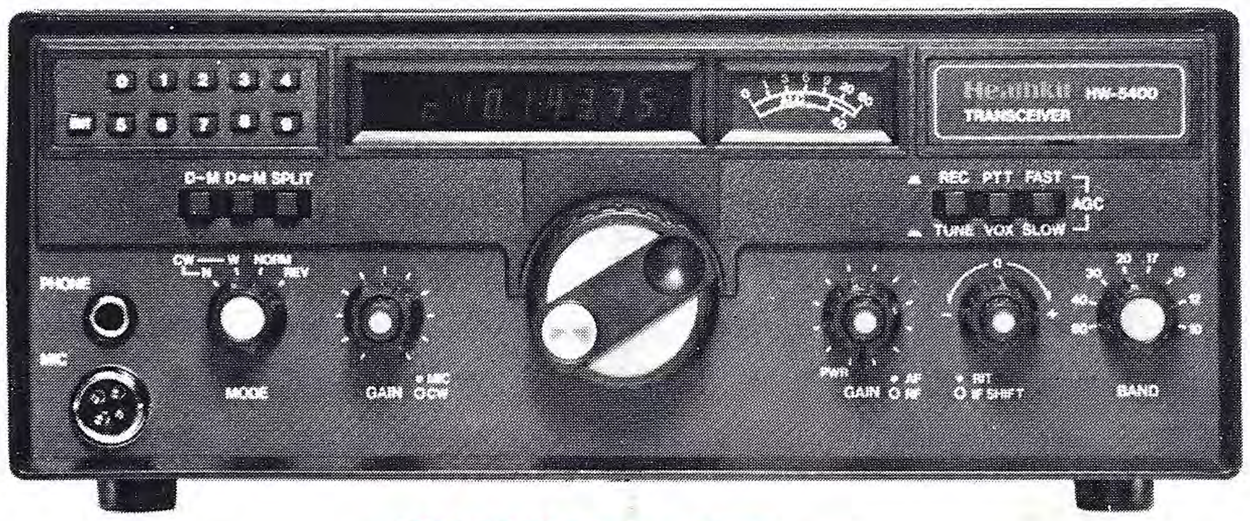
ELH-730G
430-450MHz
All Mode (FM SSB CW)
200mw-5W Input Power
3W In = 30W Output Power
DC13.8V/7A
50 ohms
3.58″×1.61″×6.81″
1.19 lbs.

ELH-730G
$199

Dealer Enquiries Invited

More kit quality

A triumph of price and performance — Heath's new HW-5400 Synthesized HF SSB Transceiver kit makes high technology affordable. With more versatile, far-reaching capabilities, it puts the original skill and adventure back into Amateur Radio...



HW-5400 Transceiver

Heath breaks the price barrier on sophisticated transceivers, offering the highest value for your hamshack dollar. The slim, new HW-5400 is a marvel of kit-form engineering that performs like a dream on 80-10 meters.

MORE ADVANCED IDEAS

Solid state and broadbanded, the HW-5400 incorporates more performance-improving features at a lower price than any comparable transceiver. It's fully synthesized for crystal stability and accuracy. Operating in USB, LSB and CW with automatic sideband selection, it has full break-in (QSK) for proficient keyers, two memories per band, power supply activation at the Transceiver, defeatable amplifier relay, reverse and over voltage protection as well as high VSWR forward power cut-back circuitry for the finals.

A custom microprocessor yields flexible, fingertip control over all phases of T/R operation.

MORE CONVENIENCE

This perfection-packed kit has many benefits. A unique dual-speed tuning system can extract new QSOs or fly through a band in 1 kHz increments with 50 Hz resolution! *Split-Memory Access* lets you review and change the transmit frequency while in receive, without missing a single word or fragment of code. With it, you can beat the QRM every time. Essential vox and sidetone controls are located behind the front panel nameplate. Seven mode and function symbols confirm transceiver status at a glance.

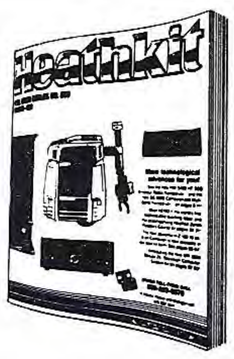
The HW-5400's Frequency Entry Keypad option allows directly-synthesized QSY to any point in the band, and permits fast DX control when used with the Split Memory function. The matching HWA-5400-1 Power Supply/Speaker & Digital Clock (not shown) provides a double-fused source of 13.8 VDC from 120 or 240 VAC.

MORE ENJOYMENT

Novice or active pro, the HW-5400 is perfect for operators who want a Transceiver that's second to none, plus the pride, knowledge and satisfaction that come from building it yourself with our world famous step-by-step manuals. You may find it to be the first microprocessor-controlled rig with enough potential to match the level of professionalism in every radio amateur!

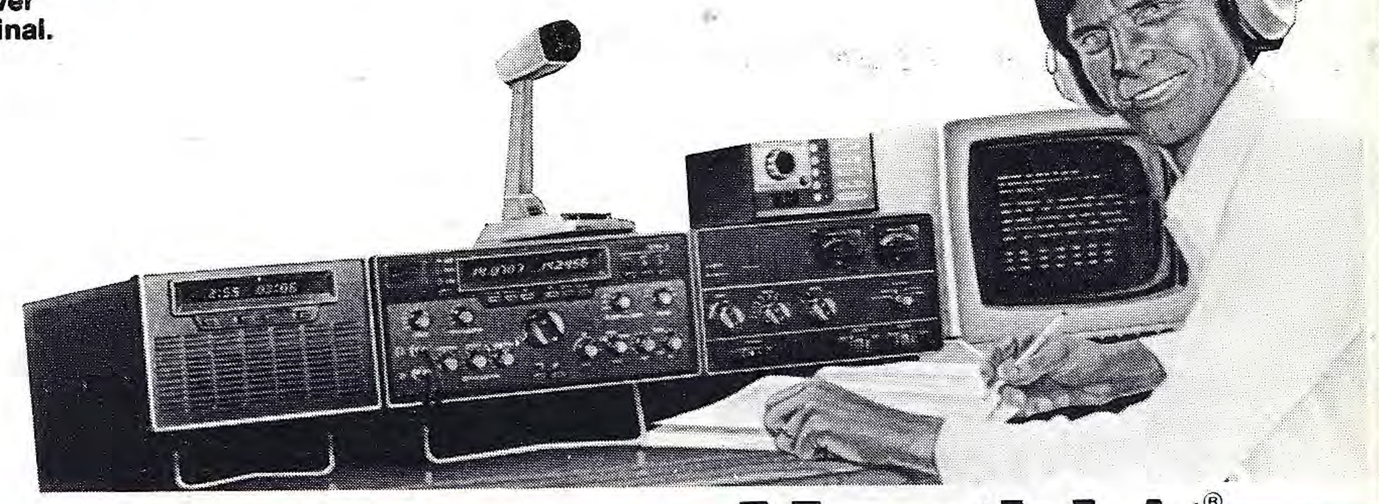
MORE DETAILS IN CATALOG

FREE! For complete details and specifications get a copy of the latest Heathkit Catalogue. **WRITE:** Heath Company, 1020 Islington Ave., Toronto, Ontario M8Z 5Z3. Visit your nearest Heath/Zenith Computers and Electronics Centre, listed below left, for an exciting hands-on try-out.



There's more for the Ham at Heath

Also see our State-of-the-art SS-9000 Deluxe HF Synthesized Transceiver (pictured below), which can be controlled by a computer or ASCII terminal.



Visit your nearest **Heath/Zenith Computers and Electronics Centre.** Our Centres, located in Vancouverk Calgary, Edmonton, Winnipeg, Mississauga, Ottawa and Montreal sell, display and service the complete Heathkit product line.

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