

QRM

**October
1986**



Newsletter of the Tasmanian Division
of the
Wireless Institute of Australia

(Insert in 'A.R.')

DIVISIONAL DIRECTORY.Postal Addresses:

Tasmanian Division: P.O.Box 1010, Launceston, 7250.

Southern Branch: P.O.Box 123, Sandy Bay, 7005.

Northern Branch: P.O.Box 275, Launceston, 7250.

Northwest Branch: P.O.Box 194, Penguin, 7316.

Divisional Officers 1986/7:

President: Peter Frith, VK7PF.

Secretary: Barry Riseley, VK7RS.

Treasurer: Frank Beech, VK7BC.

Asst. Sec.: Robin Harwood, VK7RH (Also Minuting Sec.).

Federal Council: Joe Gelston, VK7JG.

Council Member: Byron Dilworth, VK7BD.

Vice- Pres. Arthur Trewaskis, VK7SE.

Vice- Pres. Russ Pitman, VK7ZRP.

Branch Notices:

NORTHERN BRANCH MEETS AT 8 P.M. ON THE SECOND FRIDAY of each month (except January) in Room G25, Swanson Building, Australian Maritime College, Newnham, Launceston.
Next two meetings: October 10th. November 14th.

NORTHWEST BRANCH MEETS AT 7.30 P.M. ON THE SECOND TUESDAY of each month at the Penguin High School.
Next two meetings: October 14th. November 11th.

SOUTHERN BRANCH MEETS AT 8.15 P.M. ON THE FIRST WEDNESDAY of the month, at The Activity Centre, 105, Newtown Road, Hobart.
Next two meetings: October 1st. November 5th.

Broadcast Officers:

Divisional Co-ordinator: Arthur, VK7GH, 34, Ashbolt Crescent, Lutana, 7009.

Tel: (H) 002.284963. (B) 002.305600.

Northern Branch Officer: VK7AV Bill.

Northwest Branch Officer: VK7ZFH Frank.

Southern Branch Officer: VK7GH Arthur.

Broadcasts commence 09.00 every Sunday, normally originated on 2m., with relays on 80m., 40m., 144.1 MHz (SSB) and ATV.

FOR SALE

FOR SALE

FOR SALE

FOR SALE

FOR SALE

Wilson Electronics Corporation Model M103C three element
10 metre Yagi antenna and 25 foot telescopic mast comprising
two 15 foot (approx) galvanised water pipes. \$70.00.

Computer Desk (Amstrad type) \$60.00.

Apply: Jim Oliver, 2, Luxmore Place, South Launceston, 7249.
VK7JO. Tel: 003.443314.

Two element QUAD, (boom - Oregon spreaders)

2 x 8 element 2m. Yagi Any offers?

Apply to: VK7HV who is QTHR.

Radiotorial.

The last couple of issues have contained a "Letters to the Editor" content that, in number at least, was more in keeping with the "newsletter" concept of "QRM" - but it took a controversy to do it. Now it's never the Editor's intention to whinge when he IS actually at last receiving some letters, but let him draw your attention to those in this edition. They are really newsy and in the spirit of the radio amateur's exchange of information. AND, would you believe it? - both of them come from interstate!! The letters are so long that we have taken the liberty of publishing an extract this month and will add the rest in the near future.

Perhaps our readers could take the point that controversy shouldn't be the only reason for writing to "QRM". We changed the distribution system to ensure that members in remote areas could have contact with the rest of the State - and news is the essence of that contact. So, imagine YOU are out in the distant parts of Tasmania, decide what sort of reading content you would like in "QRM" and then have a go at providing it.



VK7JK

FOR SALE: Commodore 64 computer and disk drive plus computer
desk - offers. Apply 105 New Town Road.

WICEN SOUTHERN TASMANIAN BRANCH

A proposed network consisting of four basic elements

1. S.E.S. HQ. LIAISON UNIT

Consists of two VHF transceivers located in the S.E.S. Hq. building and manned by WICEN operators. This unit would supply a simplex link with the WICEN base stations and under certain circumstances would utilize Repeater 2 for message handling.

2. THE BASE STATION

Consists of a home based Amateur Radio Station located to enable direct VHF contact with the S.E.S.Hq. building and possessing effective H.F. facilities. The station would be able to relay two-way transmissions cross band and have sufficient room to accommodate two or three operators. An emergency power supply would be desirable.

The backup base station would have similar facilities and be able to take over part or all of the traffic load from the main base station.

3. MOBILE AND FIXED SATELLITES

The mobile units would be vehicle based with VHF and HF facilities able to relay traffic two way cross band. They will have a portable mast and antenna adequate to give statewide coverage on HF and a reasonable range on VHF. Each unit would need accommodation to support two operators for several days and be self sufficient in power generation.

The network plan lends itself to the establishment of mobile satellites by the North and Northwest Branches which would link in to the WICEN base stations in the south. This possibility will be discussed with the other branches during the exercise planned for the north at the end of November.

Some fixed position stations would be selected for their strategic location or special capabilities (marine watch etc.)

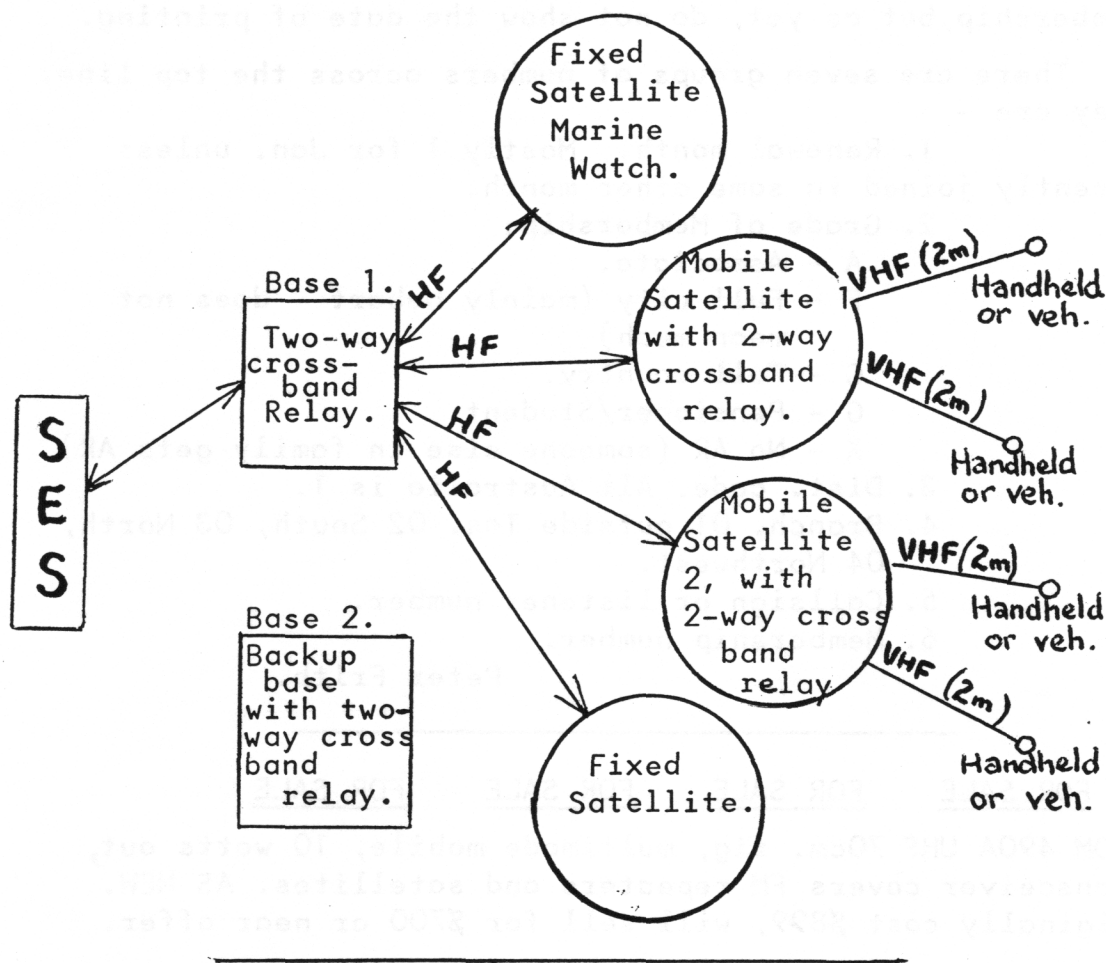
4. FIELD UNITS

These units would consist of VHF equipped vehicles or operators on foot with handhelds and would provide the link with forward elements of the S.E.S

VK7ZAR (Alan)
State co-ordinator

VK7CI (Alan)
Southern Branch co-ordinator

PROPOSED OPERATIONAL NETWORK - WICEN, Southern Branch.



New Editorial Address.

Please note that all news, articles and letters for the November issue must be in before 15th. October to:

QRM Editor,
105, Newtown Road,
Hobart,

This address will apply for both the November and December issues of QRM.

A.R. ENVELOPE LABELS.

With some problems with QRM insertion in AR traced to the labels on the posting envelopes, the following information may be of interest. The labels are also proof of membership, but as yet, do not show the date of printing.

There are seven groups of numbers across the top line. They are -

1. Renewal month. Mostly 1 for Jan. unless recently joined in some other month.
2. Grade of Membership:
 - A - Associate.
 - F - Full city (mainly Hobart - does not mean much)
 - C - Full country.
 - G - Pensioner/Student.
 - X - No AR (someone else in family gets AR)
3. Dist. code. All Australia is 1.
4. Branch. 01 outside Tas. 02 South, 03 North, 04 Northwest.
5. Callsign or listener number.
6. Membership number.

Peter Frith.

FOR SALE

FOR SALE

FOR SALE

FOR SALE

ICOM 490A UHF 70cm. rig, multimode mobile, 10 watts out, transceiver covers FM repeaters and satellites. AS NEW. Originally cost \$899, will sell for \$700 or near offer.

ALSO FV101DM Scanning VFO, NEW. Would suit FT101ZD, (late model, with FM), \$150.

Apply VK7AN, tel: 003.317914, QTHR.

WANTED

WANTED

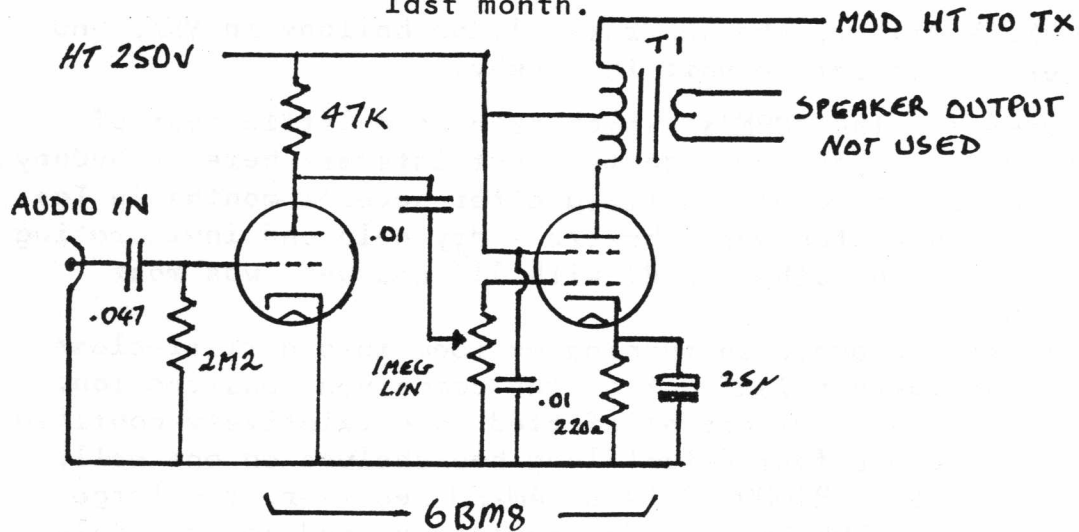
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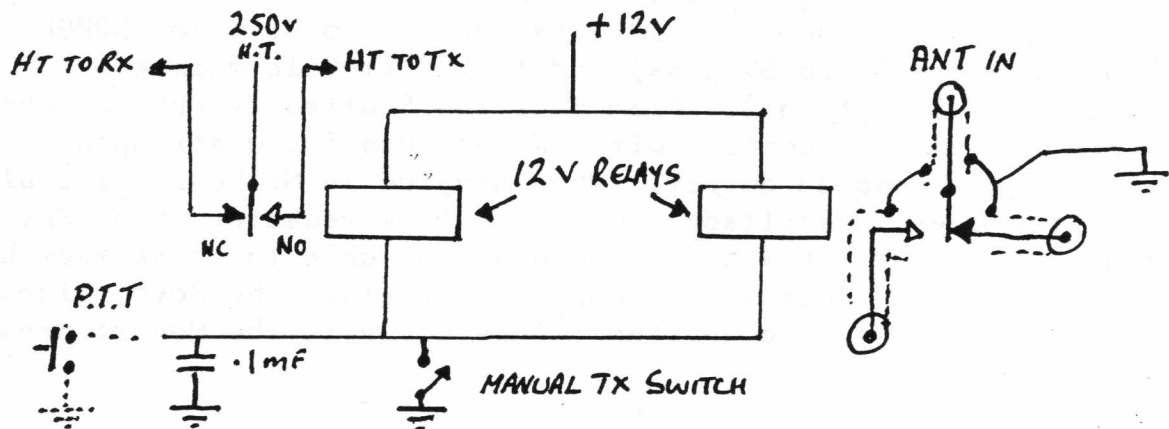
VK7ZAR is looking for an ICRM3 or ICRM2 controller for ICOM radios. Details please to A. Ruthven on 002.728393, or P.O.Box 94, Lindisfarne, 7015.

VK7BD's Valve series - two circuits held over from last month.



T1 = 10K - 7K CENTRE TAPPED SPEAKER TRANSFORMER.

LOW POWER MODULATOR FOR 'MINITRAN' OR SIMILAR TX - MODIFIED FROM A.R. MARCH 82



ANTENNA + HT SWITCHING FOR SIMPLE TX/RX

Letters to the Editor.

(From VK2AV Arthur, who was recently on holiday in VK7, and has just moved into a unit in Deewhy)

Thanks for the "QRM's" which provide a little news of happenings down your way, to my great interest here in Sydney. We must have become acclimatized after several months in Tas., and 1° in Launceston was a breeze - dry cold and invigorating. Melbourne, on the other hand, with 11° and wet, was most unpleasant.

Am busily engaged in turning my room into a first-class den, having taken a leaf out of the campervan construction. All my books and gear are now fitted in a relatively confined space. There are four 8-foot long bookshelves on one wall, a TS130, a TS670, R1000, 3 TV's, AM/FM receiver, two large floor speakers, KDK 2m. FM2033 transceiver and power supply. Plus a typewriter! Two narrow tables and a chair! With all this, I've managed to contrive a feeling of space, but it's pretty hard after living in a house on $\frac{3}{4}$ acre of land, to fit EVERYTHING into one room! Hi!

The 2 metre and HF gear worked quite well in VK7, but some areas were absolutely rotten for any sort of communication. Strahan and Queenstown were poor, and Sandy Bay wasn't very good either! Bright spots were 2m. contacts from top of Mt. Wellington to Launceston (S9 sigs) and 2m. mobile to VK3RGL (Rungarooma - S7 to S9 sigs) and to VK3 (mobile marine - VK3DML I think it was). From near the Scottsdale Public School I had 2m and 70cm contact with VK3 at surprising strength - some sigs S2 and S3 direct.. When staying in Melbourne I could hear the boys in Scottsdale on Mt. Barrow repeater (Ken 7KKV and Charles 7WW). A VK3 on the coast was able to raise them but I had no luck. Does Ted (VK7GB) know whether the Royal Signals Association (UK) is connected in any way with the Hobart crowd of the same name?

Arthur.

(From Jim VK3YJ - 73 correspondent, who has sent us copy before)

My spider quad is working O.K. and I now don't have to worry about getting up at 2 a.m. when the wind blows strong, to crank down the big monobander, dressed in my underpants in the freezing cold and rain. It's worth the slight downgrade in signal. Have you ever thought of producing a photo of a Tassie Devil wearing headphones, sitting at a rig calling CQDX? It would make a good QSL card, I reckon.

Jim.

A Signal Source for Carphone Receiver Alignment

RON HIGGINBOTHAM,* VK3RN

The May 1969 issue of the Eastern and Mountain District Radio Club Journal contained details of an extremely useful little "black box" for the alignment of f.m. carphone receivers. Since it operated from a 12v. 10 mA. d.c. supply, it held obvious attractions as a device that could be used away from power sources other than a car battery as well as in the shack for "ground based" receivers.

Another attraction was the fact that it could provide a low level signal when required (rather than having someone come up and provide carrier for your adjustments and thus occupy a net fre-

Initial bias on the diode is obtained from the two 47K resistors across the supply rail and initial frequency adjustment is made by means of the variable capacitor across the diode. Note that it may be necessary with some diodes to vary the top bias resistor until centre frequency is obtained with the trimming capacitor across the diode at half range.

On switching on the modulator the bias across the diode varies at an audio rate. This causes the capacity of the diode to change (also at an audio rate) and in turn the frequency of oscillation varies.

Two methods of construction have been used. One uses a printed circuit board and in the other system the components and transistors are mounted on tag strips which are attached to the lid of a small metal box.

In use this device has proven most useful. The only criticism is that the deviation is a little on the low side, but no doubt this could be improved by the use of a higher gain transistor in the audio oscillator, or an adjustment to the base bias. In use this slight lack of deviation has not proven any drawback.

It appears to go well with pretty well any modern crystal in the 2-15 MHz. range, but, as pointed out in the original article, older crystals such as the surplus DC11 series might need a higher gain device such as the 2N3565 in the crystal oscillator. Crystals much below 2 MHz. need different circuitry, which rather rules out the circuit as a 455 KHz. test oscillator.

Besides its utility as a signal source for the alignment of the r.f. and 1st i.f. stages of any 2 or 6 metre carphone of any make, it can also be used to line up the second i.f. stages if they are on a frequency of 2 MHz. or higher. All that is needed is a crystal of the appropriate frequency.

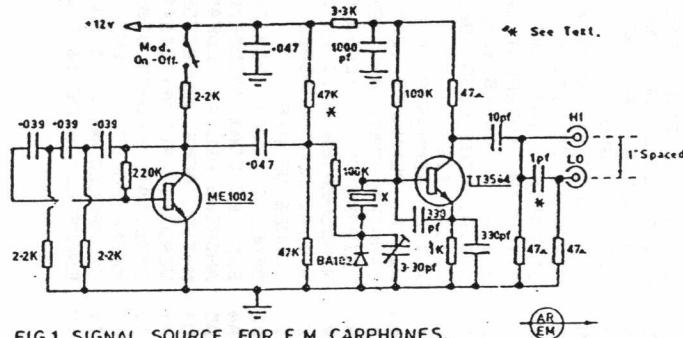


FIG.1. SIGNAL SOURCE FOR F.M. CARPHONES.

quency unnecessarily). Moreover, since the device could use the tx crystal from the set under adjustment, there was no need to buy new crystals for it.

Basically the circuit consisted of a crystal oscillator, in the 2-15 MHz. range (which produced copious harmonics useful up to and beyond the 144 MHz. band) and a simple audio oscillator modulating the oscillator by means of a BA102 diode.

The circuit was originally developed by Ken VK3AKK and gave a "high" output for initial alignment and a "low" output for final tweaking to optimum performance.

A Chinese (more or less!) copy was hooked up according to the original article, but did not modulate too well. In retrospect this failure was probably due to the very old crystal used and was no reflection on the circuit as such. However, at the time, this point was not appreciated and Les VK3ZBJ came to the rescue with some minor circuit changes which got the device going. The circuit used is shown in Fig. 1.

The audio side uses a ME1002 transistor as a phase shift oscillator and with the values shown gives about a 500 Hz. note. The crystal oscillator uses a TT (or 2N) 3564 transistor and modulation is effected by the BA102 diode at the ground end of the crystal.

The high output is taken via a 10 pF. capacitor from the collector of the crystal oscillator. Originally it was suggested that a "low" output could be obtained from a second (unconnected) output socket located 1" away from the "high" output socket. In my case the coupling was not sufficient and was increased by the 1 pF. capacitor across the two sockets. This capacity can be varied to give a suitable "low" output. In my case this was 60 uA.

CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary—not direct to "Amateur Radio".

DISTANCE TABLE FOR ROSS HULL V.H.F. CONTEST

	Syd.	Canb.	Bris.	Melb.	Hob.	Adel.	N.Z.	Dar.	Perth
Sydney	0	160	460	460	660	710	1300/1500	1950	2040
Canberra	160	0	600	290	530	670	1300/1500	1930	1940
Brisbane	460	600	0	860	1110	990	1500/1700	1790	2240
Melbourne	460	290	860	0	400	400	1500/1700	1930	1720
Hobart	660	530	1110	400	0	710	1300/1500	2280	1880
Adelaide	710	670	990	400	710	0	1900/2100	1620	1330
New Zealand	1300/1500	1300/1500	1500/1700	1500/1700	1300/1500	1900/2100	0	2550	3000/3200
Darwin	1950	1930	1790	1930	2280	1620	2550	0	1650
Perth	2040	1940	2240	1720	1880	1330	3000/3200	1650	0

* 43 Eleanor St., Ashburton, Vic., 3147.

WIRELESS INSTITUTE STORE (STOCK)
VK7ZBW (MIKE) STORES & EQUIPMENT OFFICER
PHONE (002)-28 7010 (QTHR)
PRICES & STATUS CORRECT AS AT 30/08/86

WIA	ITEM DESCRIPTION	STATUS	PRICE	WIA	ITEM DESCRIPTION	STATUS	PRICE
01	UNDERSTANDING AMATEUR RADIO	2 ON ORDER	\$ 12.60	36	RADIO AMATEUR WORLD ATLAS	IN STOCK	\$ 5.60
02	RADIO AMATEUR LICENCE MANUAL		\$ 10.25	37	R.A. PREFIX MAP OF WORLD	IN STOCK	\$ 4.10
03	OPERATING MANUAL (2ND EDIT.)		\$ 12.00	38	A.R. AND ELECTRONIC STUDY GUIDE	IN STOCK	\$ 14.50
04	ARRL HANDBOOK 1986	1 IN STOCK	\$ 34.20	39	BASIC TRAINING MANUAL NZART		
05	HINTS & KINKS FOR RADIO AMAT.		\$ 10.20	40	CALLBOOK 1985 NZART		
05D	NOVICE QUESTIONS & ANSWERS	IN STOCK	\$ 4.10	41	RTTY TODAY UN.ELEC.	IN STOCK	\$ 15.00
06	WEEKEND PROJECTS		\$ 10.50	42	WORLD PRESS SERVICE FREQ'S	IN STOCK	\$ 15.00
07	ARRL ANTENNA BOOK	IN STOCK	\$ 19.35	43	AMATEUR OPERATORS H/BOOK P & T	UPDATE OCT	
08	FM & REPEATERS FOR RADIO AMAT.	IN STOCK	\$ 12.45	44	W.I.A. BOOK VOLUME 1	IN STOCK	\$ 3.50
09	SATELLITE EXPERIMENTERS H/BOOK	IN STOCK	\$ 23.40	45	W.I.A. CALLBOOK 1985/86	IN STOCK	\$ 4.50
10	RADIO AMAT. EXAM MANUAL RSGB	1 ON ORDER	\$ 13.65	45D	W.I.A. CALLBOOK 1984/85	IN STOCK	\$ 2.00
11	RADIO AMAT. OPERATING MANUAL		\$ 23.40	46	LOG SHEETS (PER 100)	IN STOCK	\$ 2.50
12	RADIO COMMUNICATIONS H/BOOK	IN STOCK	\$ 27.50	47	W.I.A. LOGBOOK	IN STOCK	\$ 4.60
12D	AMATEUR RADIO AWARDS RSGB	IN STOCK	\$ 7.10	48	THE RADIO AMATEURS WORLD ATLAS	IN STOCK	\$ 3.00
13	AMATEUR RADIO TECHNIQUES	1 ON ORDER	\$ 21.30	49	STICKPIN TRADITIONAL AUST.	IN STOCK	\$ 4.00
14	TEST EQUIPMENT FOR RADIO AMAT.	IN STOCK	\$ 21.00	50	STICKPIN INTERNAT. DIAMOND	IN STOCK	\$ 4.00
15	HF ANTENNA'S FOR ALL LOCATIONS	IN STOCK	\$ 23.00	51	STICKPIN INTERNAT (CALLSIGN)	IN STOCK	\$ 4.00
16	VHF/UHF MANUAL RSGB	IN STOCK	\$ 31.75	52	W.I.A. STICKERS (CAR WINDOW)	IN STOCK	\$ 1.00
18	UHF COMPENDIUM PARTS 1 & 2	IN STOCK	\$ 30.00	53	W.I.A. MINI LOGO (SHEET OF 10)	IN STOCK	\$ 1.00
18A	RAD/DATA REF. BOOK	IN STOCK	\$ 16.00	54	W.I.A. TIES	IN STOCK	\$ 9.50
18B	A/R SOFTWARE	IN STOCK	\$ 13.20	56	W.I.A. PENNANTS (FELT)	IN STOCK	\$ 4.00
19	SATELLITE TRACKING SOFTWARE	IN STOCK	\$ 16.20	56A	W.I.A. PENNANTS (SATIN)	IN STOCK	\$ 6.00
20	INTERFERENCE HANDBOOK	IN STOCK	\$ 18.00	57	T-SHIRT (75TH ANNIVERSARY)	IN STOCK	\$ 8.00
21	WIRE ANTENNA'S FOR RADIO AMAT.	IN STOCK	\$ 12.40	58	LEISURE SHIRT (LOGO ON POCKET)	\$ 11.00	\$ 11.00
22	RADIO AMATEUR ANTENNA H/BOOK	IN STOCK	\$ 20.10	59	WINDCHEATER (W.I.A. LOGO)	\$ 2.50	\$ 2.50
23	BEAM ANTENNA HANDBOOK (NEW ED.)	IN STOCK	\$ 11.75	60	W.I.A. CLOTH BADGES	IN STOCK	\$ 7.00
24	ALL ABOUT CUBICAL QUAD ANTENNA	IN STOCK	\$ 16.00	61	SOUNDS OF A/R	IN STOCK	\$ 1.98
25	CARE & FEEDING POWER GRID TUBE	IN STOCK	\$ 16.00	CA3	BENELEC COAX (RG213)/METRE	IN STOCK	\$.54
26	VHF H/BOOK FOR RADIO AMATEURS	IN STOCK	\$ 16.00	CA5	BENELEC COAX (RG58C/U)/METRE	IN STOCK	P.O.A.
27	MICROCOMPUTERS IN AMAT. RADIO	1 ONLY	\$ 16.60	CA5	ANDREWS HELIAX (LDF450)	P.O.A.	P.O.A.
30	AMATEUR TELEVISION H/BOOK VOL2	IN STOCK	\$ 4.60	CO3	N-TYPE ACME CONNECTOR (C39-19)	\$ 21.00	\$ 21.00
32	REVISED AMAT/TV	IN STOCK	\$ 5.85	D11	VERBATIM FLOPPY DISKS/10	\$ 3.50	\$ 3.50
32A	MICRO & TV PROJECTS	IN STOCK	\$ 8.00	D12	CTRL. DATA FLOPPY DISKS/10	\$.75	\$.75
33	FORIEGN CALLBOOK 1986		\$ 32.00	S01	MAGNA SOLDER & FLUX (PER FOOT)	IN STOCK	
34	USA CALLBOOK 1986		\$ 33.00	W11	ENAMELLED WIRE 14 GAUGE PER/LB	IN STOCK	
35	DX GUIDE	IN STOCK	\$ 5.60	W12	ENAMELLED WIRE 16 GAUGE PER/LB	IN STOCK	