

QRM

Amateur
Radio
News



April 1985

Issued by the Tasmanian Division of
the Wireless Institute of Australia



WIAA Seventy Fifth Anniversary

WIRELESS INSTITUTE of AUSTRALIA

TASMANIAN DIVISION

PRESIDENT'S REPORT 1985

Ladies and Gentlemen,

It is with pleasure that I present to you the annual report of the Wireless Institute of Australia, Tasmanian Division, for 1984.

Divisional Council this year had two Councillors each from the South and North-West, one from the North and an ex-officio member as secretary. Meetings were held in members' homes in Launceston. Attendance during the year were satisfactory, although the frequency of meetings should be given consideration by next year's council.

The past year again has seen Council adopting the the role of co-ordinator between branches with the main activities being controlled from Liaison & Branches.

This was highlighted by Search and Rescue Exercise conducted by the Tasmania Police & State Emergency Services over the 27th/28th October 1984 in the Mt Rowallan - Walls of Jerusalem area in which WICEN was invited to participate. The Northern Branch being assigned to co-ordinate the North-West and South for the supply of personnel and equipment. The exercise was highly successful in demonstrating the capabilities and usefulness of the Amateur Radio Service. The three Branches benefited greatly from this exercise.

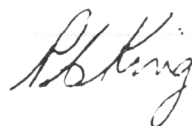
March 1984 saw the reintroduction of QRM under the editorship of John Rogers, distribution presently via Branch meetings. Sunday morning broadcasts have been brought to you each week by a few dedicated amateurs, who originate and relay onto frequencies for all classes of licencees to listen statewide, however not without some difficulties during the year. This is an area which requires the attention of Council.

The Tasmania Award has continued in popularity and is well sought after. The SL Bureau shows a reduction in the number of cards being handled in 1984, 18,687 cards being handled for the year. A clear indication of present band conditions.

Divisional finances during the year have shown an increase, brought about by keeping expenses to a minimum, increased membership and renewals of lapsed membership.

During this last year we saw the introduction of the Max Loveless Pioneer Memorial Collection by the Tasmanian Branch of the Australian Telecommunications Employees Association and has been endorsed by the Wireless Institute of Australia, Tasmanian Division, in its endeavours to provide a permanent memorial to the pioneers of wireless in Australia.

Finally, to all elected and ex-officio members of Council, I thank you for your support and co-operation during the past year.



Peter C. King VK7ZPK

Divisional President

Radiatorial Comment

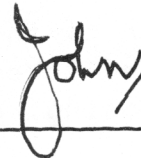
Our 75th Anniversary preparations have tempted several people to polish up the crystal ball and look ahead for the next 25 years. Some notes by Don Field G3XTT in "A.R." (U.K.) seemed to fill the bill, so here are some extracts to set you thinking.

"When amateurs first started to explore the HF bands, they found themselves doing valuable pioneering work, and they still demonstrate innovation. There was their adoption of SSB on HF during the 50's and 60's, a path followed later by the professionals. However, many now believe that the only pioneering work now being done by amateurs is in the microwave part of the spectrum. Certainly the professionals are very advanced in their use of HF, while we seek to preserve the status quo of about 20 years ago. Our contests are based on SSB and CW operations, our techniques are no more efficient in their use of the spectrum than they were then and our ability to raise a specific station other than by pre-arranged schedule is still largely a matter of chance. None of this need be so. Amateurs on VHF are experimenting with selective calling and packet radio which enable messages to be sent to pre-determined stations even when the distant operator is absent or otherwise engaged. Potentially, our HF bands could be used as the "trunk" element of a world-wide packet-switched data network, with the VHF bands forming the local end. Improved propagation forecasting would permit reliable messaging between radio amateurs throughout the world. Increasing sophistication should not disenfranchise up-and-coming amateurs in the third world, so CW must continue to have a place - also, of course, for those nearer home who cannot afford the latest in microprocessor controlled creations. We English speaking amateurs often forget that those in many other countries have overcome a language barrier, and CW can help a great deal in this.

(cont.)

So, what sort of scenario do you envisage for HF amateur radio in the year 2010? Will it be as now, but with more RTTY, given the increasing use of micros by amateurs? Will HF have developed along the lines mentioned above, or will it be dead, replaced by a worldwide VHF network based on geostationary satellites acting as telephone exchanges in the sky?"

Quite a thought, isn't it?

 VK7JK.

FOR SALE.

MUIRHEAD variable air condenser, 1000 pF Type A-430-BMS.
Offers invited to Harry VK7CZ. QTHR.

WANTED.

Linear Amplifier to suit 70cm. handheld. VK7CV.
Ring QTHR or call on Repeater 2.

WANTED.

Communications Receiver, FRG7 or similar. Contact VK7JK. QTHR.

PUZZLE CORNER.

Dear Editor John,

It is extraordinary how hard you work trying to get contributions (for QRM). Sorry I can't give you a technical contribution but having solved your little geometry problem in December QRM, I can offer you another little teaser. It is called "The Monkey Puzzle", and, as you can see, there is nothing to it, so get busy:

The Monkey Puzzle.

A rope passed over a pulley, having a monkey at one end and a weight at the other, and the whole remained in equilibrium with the same amount of rope on each side of the pulley. The rope weighed four ounces per foot and the age of the monkey and the monkey's mother together was four years, and the weight of the monkey was as many pounds as the monkey's mother was years old, and the monkey's mother was twice as old as the monkey was when the monkey's mother was half as old as the monkey will be when the monkey is three times as old as the monkey's mother was when the monkey's mother was three times as old as the monkey, and the weight of the weight and the weight of the rope was half as much again as the difference between the weight of the weight and the weight of the weight plus the weight of the monkey. What was the length of the rope???

73's from Bill VK7WL.

DEPARTMENT OF ANTENNAS.

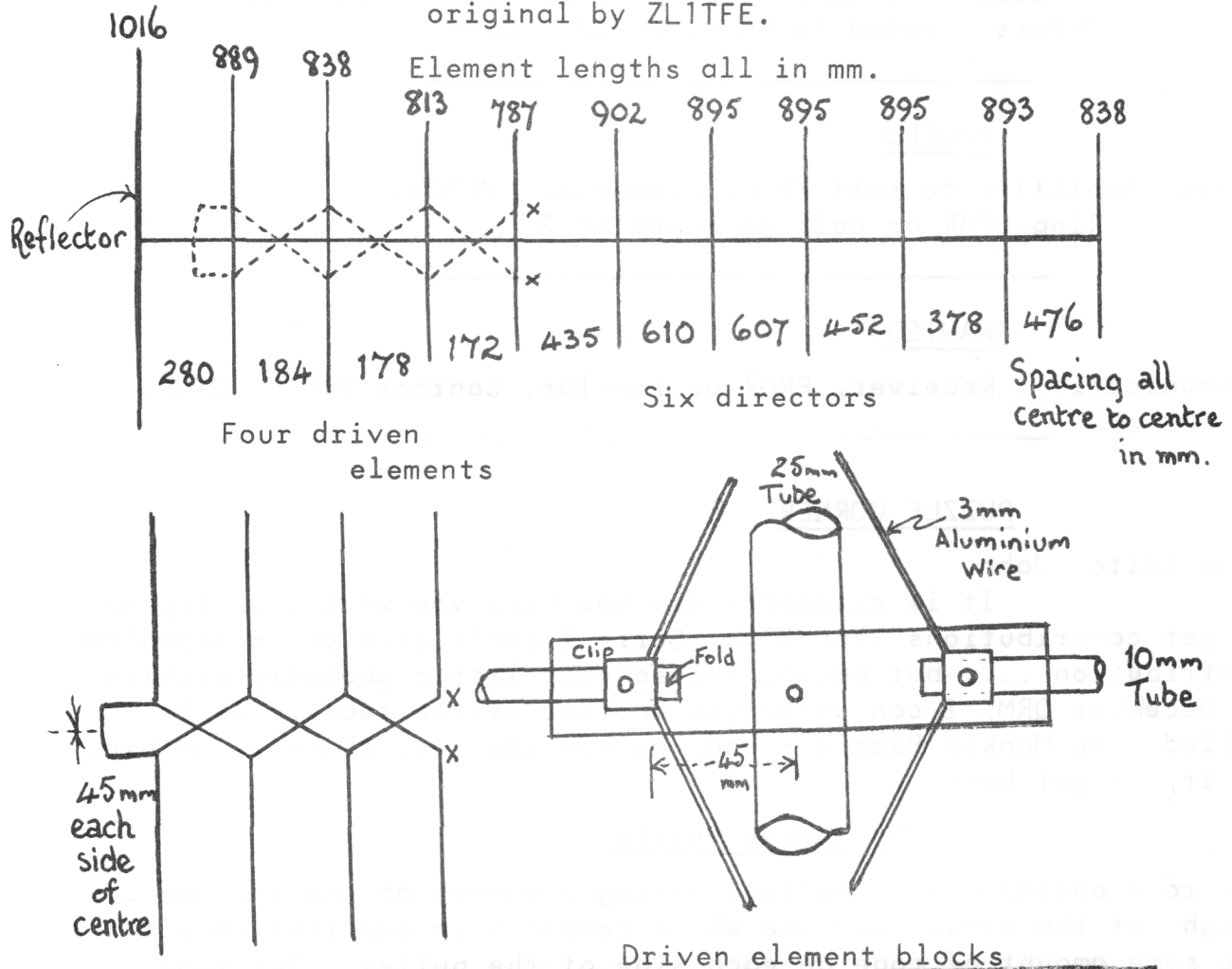
Many Tasmanians and North Island Amateurs have shown interest in, and asked questions about, the 2m. antenna used by me, VK7CV to bounce signals off Mt. Wellington into Repeaters 8 and 6.

This article may help someone to improve their 2m. band range. It is not a new design, but an existing one modified to suit local terrain and conditions.

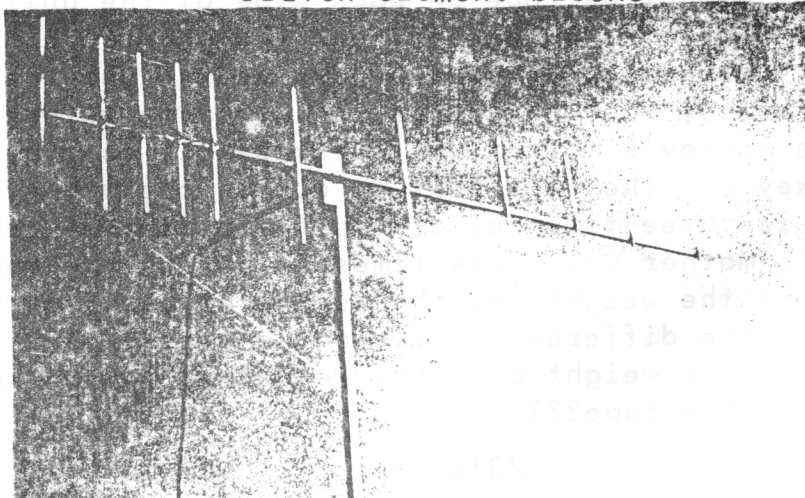
The construction of the antenna is not difficult, BUT infinite care must be taken with the placing of the driven elements and the phasing, or the resulting reactive force will become unmanageable.

The Log Periodic Yagi for 2m. as used by VK7CV.

The design and dimensions were adapted by VK7ZAR from the original by ZL1TFE.



Phasing.



Cont....

Phasing wiring must follow this layout exactly.
Cover 3mm. soft aluminium wire with PVC tubing. Wire length should be 1448 mm. exactly. (Wire available from Tandy.)
All screws, nuts, washers, etc., should be stainless steel and are available from Peter Johnson P/L.

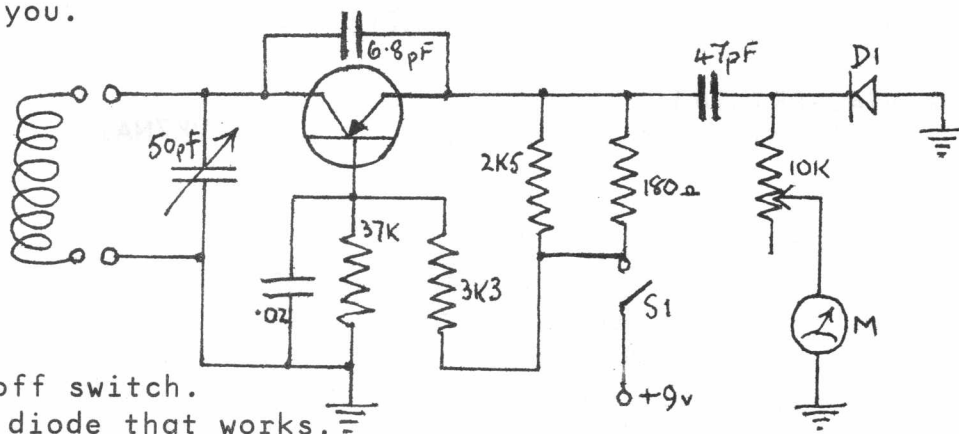
The aluminium tube was purchased from Moonraker, the insulators from VK7ZIF, who can also supply a suitable balun.

NOTE: The antenna should be mounted vertical on a wooden post.

A DIP OSCILLATOR FOR HF AND VHF.

This article was taken from an earlier issue of QRM (March 1978) and reprinted from Eastern Zone News, by Ray Price, VK3AWQ. It is printed in line with the QRM policy - and that of the activity centre now being set up in Newtown Road, Hobart - of including as much homebrew test equipment as we can find.

The writer had on many occasions built up GDO's from circuits given in various magazines, only to find that either they wouldn't oscillate at VHF, or they were so full of false dips as to be virtually unuseable. The following circuit seems to behave itself on all frequencies. It's not original, rather a modification of other circuits, but it works well for me. Let's hope it does the same for you.



S1 - on/off switch.

D1 - any diode that works.

I used an OC171 transistor as it was in the junk box, but a AF114,5 or 6 would do just as well. The coils are cut and try, depending on the former and wire size. I used $\frac{3}{4}$ " o.d. formers out of an old transceiver, but hypodermic syringe bodies make beaut formers. The 144 MHz coil is 2 turns wound on a 5/16 drill shank with legs $1\frac{3}{4}$ " long. The 72MHz coil is 3 turns on a 7/16" drill shank with legs $1\frac{3}{4}$ " long. 18g wire was used. For the HF coils, wind about 15 turns on a $\frac{3}{4}$ " o.d. former with 26g. wire and listen on your general coverage receiver. Once this coil is calibrated, the rest is easy, either more or less turns depending on the coverage required. A VU meter was used for M. Don't forget to keep all leads as short as possible.

WOULD ALL ASPIRING CONTRIBUTORS TO "QRM" PLEASE NOTE THAT THE EDITOR'S CLOSING DATE FOR THE MAY ISSUE IS FRIDAY, 26th. APRIL.

COMPUTER PROGRAMMES.

By Bob, VK7NAI

Have you ever been troubled by those awards where certification is required by yourself and two other amateurs, and you can never remember the proper wording? Here is a short programme that may solve the problem. Written for the Vic 20, it should work equally well on most other computers. One essential requirement is, of course, a printer.

Lines 740 750 770 and 780 should be altered to contain your own address.

```
10 OPEN3,6
30 PRINT"s"
40 PRINT"NAME OF AWARD:":INPUTNA$
50 PRINT"NAME OF CLUB:":INPUTCA$
60 PRINT"NAME OR CALL SIGN OF AWARDS MANAGER:":INPUTAW$
70 PRINT"POSTAL (STREET":INPUTPA$
80 PRINT"CITY:":INPUTCI$
90 PRINT"POSTCODE:":INPUT PO
95 CMD3
100 PRINT#3,NA$:PRINT#3:PRINT#3,CA$:PRINT#3:PRINT#3,AW$:
PRINT#3,PA$
110 PRINT#3,CI$;PO
120 PRINT#3:PRINT#3:PRINT#3
190 PRINT#3,"I CERTIFY THAT THE ATTACHED IS AN EXACT"
200 PRINT#3,"COPY OF MY STATION LOG."
300 PRINT#3:PRINT#3
400 PRINT#3,"SIGNED:.....VK7NAI"
450 PRINT#3
500 PRINT#3,"DATE:..../.../..."
600 PRINT#3:PRINT#3:PRINT#3
610 PRINT#3,"WE HAVE EXAMINED THE LOG OF VK7NAI AND"
620 PRINT#3,"FOUND THAT THE EXTRACT ATTACHED HERETO"
630 PRINT#3,"BE CORRECT AS PER HIS STATION LOG."
640 PRINT#3:PRINT#3
650 PRINT#3,"SIGNED:....."
660 PRINT#3
670 PRINT#3,"CALL:....."
680 PRINT#3:PRINT#3:PRINT#3
690 PRINT#3,"SIGNED:....."
700 PRINT#3
710 PRINT#3,"CALL:....."
715 PRINT#3:PRINT#3:PRINT#3
720 PRINT#3,"QTH"
730 PRINT#3
740 PRINT#3,"POSTAL: PO BOX 168"
750 PRINT#3          LAUNCESTON 7250"
760 PRINT#3
770 PRINT#3,"STATION: 14 KINROSS PLACE"
780 PRINT#3,"          INVERMAY 7248"
790 CLOSE3
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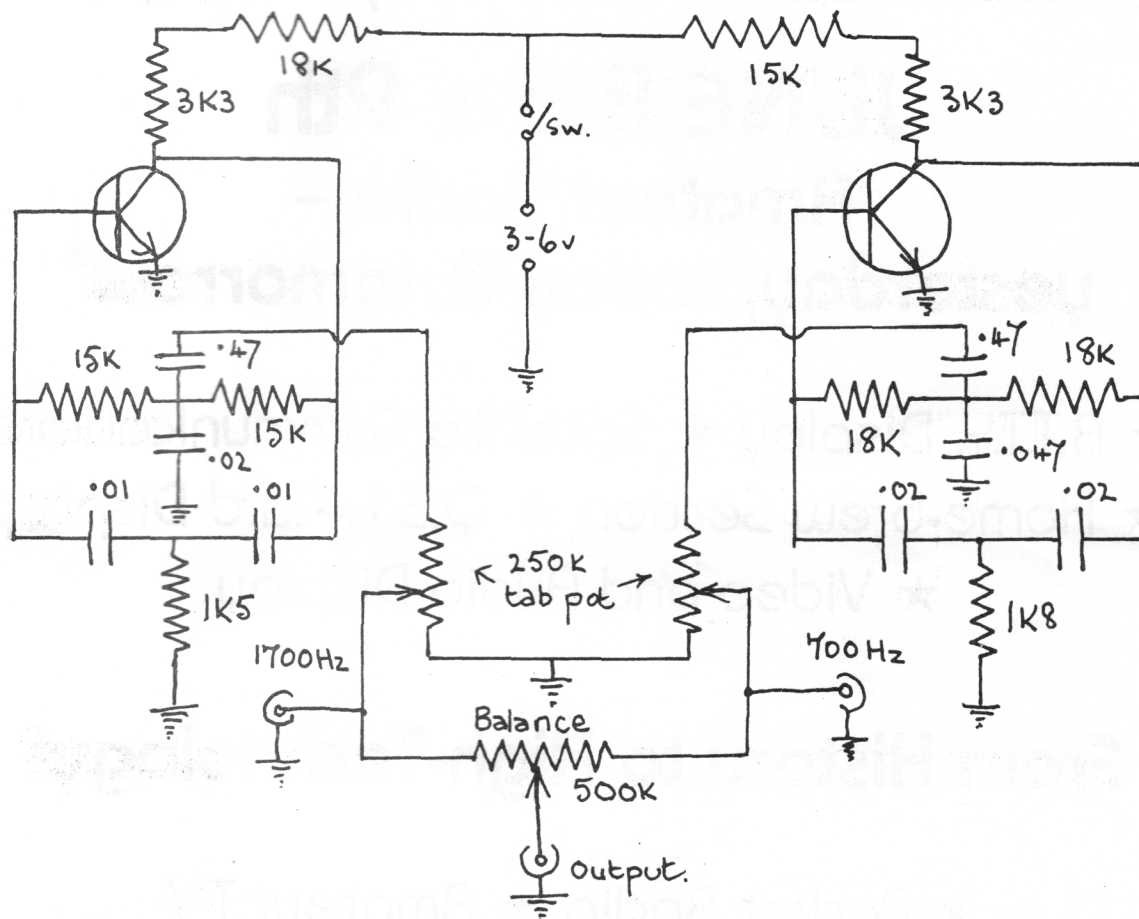
READY.

ENDS

TWO TONE OSCILLATOR, 700 Hz and 1700 Hz.

This circuit, stated to be very stable, was received from Charlie, VK3ACR. The 1700 Hz and 700 Hz outlets are required only if you really need separate outlets. Note that you will get the same effect if you swing the balance control from one side to the other.

The tab pots are for adjusting the outputs of each oscillator, and I found the central position is just about right. They could, in fact, be replaced by 250k resistors if you like, taking the output for the balance control from the end farthest from earth. Transistors: 2N706, BC108, 2N3566 or similar. Capacitors: green caps.



SO YOU WANT TO CONTACT THE EDITOR?

His name is John Rogers. His callsign is VK7JK. His telephone number is 002.293402. His address is:

1, Darville Court,
Blackman's Bay,
Hobart, 7152.

And when you lose your copy of QRM, remember he's QTHR. When he is at home, the 2m rig is normally running and listening to Repeater 2.

The copies of this newsletter will be distributed to WIA members at Branch meetings and to other interested subscribers by post at purely nominal cost. Anyone who would wish to take up this offer, please contact the Editor on 002.293402.



W.I.A.

The 75th Anniversary Hamfest
at the
Montrose Yacht Club, Hobart

JUNE 8th & 9th
'Amateur Radio –
yesterday, today & tomorrow'

- ★ R.T.T.Y. Display ★ Satellite Communications
- ★ Home-brew Section ★ Q.S.L. Card Display
- ★ Video and Audio Display

From History to High-Technology!

- ★ Packet Radio ★ Amateur TV
- ★ Social Event ★ Big Prizes Raffle

GIANT JUMBLE SALE SATURDAY ARVO -

SORT OUT YOUR GEAR NOW ! !

Come and Meet Fellow Amateurs!

Don't forget to send in the booking form inside April AR.

**ICOM**

PRICE LIST
AMATEUR PRODUCTS

MODEL	DESCRIPTION	R.R.P.
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POWER SUPPLIES (Cont'd)

IC PS25	8A Power Supply for IC 271A/IC 471A	189.00
IC PS30	System Power Supply 25AMP	375.00
IC PS35	Internal Power Supply for 751A/745A	258.00
IC PS45	System Power Supply 8AMP	199.00
IC PS652	Wall Charger for IC2A/IC4E	15.00

ACCESSORIES

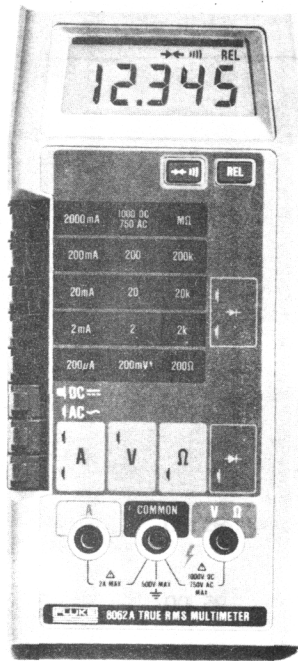
AG1	Mast Head Preamp For Use with 451/45A/471A	95.00
AG 20	2m. Internal Preamp 25W, 271A	95.00
AG 25	2m. Mast Head Preamp, 100W/271H	112.00
AG 35	70cm. Mast Head Preamp 100/271H	128.00
AH 1	3.5-28MHz 5 Band Mobile Antenna	299.00
BC 16	Wall Charger for BP7/BP8	18.00
BC 36	Drop in Rapid Charger BP2/BP3/BP4/BP5/BP7/BP8	99.00
BP 2	425ma at 7.2v Nicad for IC2A/IC4E	55.50
BP 3	Nicad Pack for IC2A/IC4E	36.00
BP 4	Alkeline Case for IC2A/IC4E	12.50
BP 5	425ma at 10.8v Nicad for IC2A/IC4E	76.50
BP 7	High Capacity Battery Pack (13.5v) Nicad for 02A/04E	115.00
BP 8	Nicad Pack (8.4v) for IC02A/IC04E	105.00
BP 10	Internal Nicad Pack for IC 505	115.00
BU 1	Memory Back Up Module for 290/25A/45A	39.50
CA 5	5/8 Telescopic Antenna for IC2A	24.00
CA 1200	5/8 MBL Antenna for IC 120	126.00
CF 1	Cooling Fan for 701PS/PS20/PS15 with EX 144	40.50
CK 70	13.8v DC Cable Kit for R70/R71	15.00
CP 1	Cigarette Lighter Plug and Cord for IC 2A/IC 4E	7.50
CP 10	Battery Pack Separation Cable for 02A/04A/2A/4E	35.00
CR 64	High Stability PLL Ref XTAL for IC 751/R71A	114.00
CT 10	Computer Interface/Terminal Unit (720A/R70/751/271A/471A/271A/255A/260A/551/D/251A/451A/560) Optional Interface Unit (EX 509) is required for all models.	499.00

OBTAINABLE FROM:
Hobby Electronics,
477 Nelson Road, Mount Nelson,
Hobart, Tasmania.

Ph: (002) 23 6751.



4½-DIGIT HANDHELD DMMs

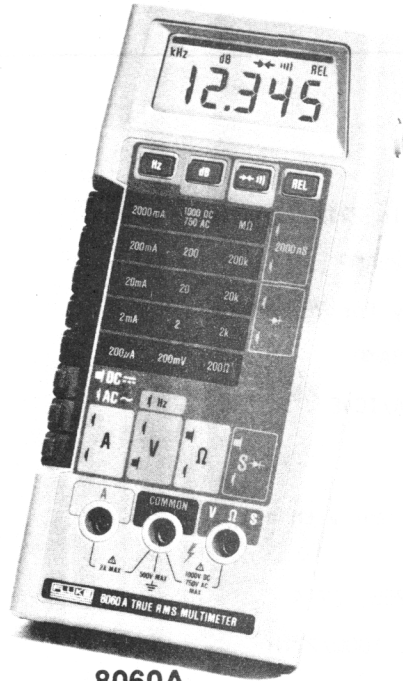


8062A

The 8060A and 8062A 4½-digit true-rms DMMs

These two 4½-digit handheld DMM's offer far more measurement capabilities than found in most bench/portable DMM's. They are Fluke's first *microcomputer-based* handheld DMM's and consequently offer unique and valuable features never before found in a small low-cost DMM. The 8060A even measures *frequency* — from 12 Hz to more than 200 kHz — autoring over four decades from 200 Hz to 200 kHz.

The microcomputer lets you automatically do such things as subtract lead resistance when measuring ohms, convert voltage to dB or dBm, average each set of updated measurements to reduce noise, take the



8060A

reciprocal of period measurements to indicate frequency, and display only the difference between a stored reference value and a measured value. Three self-test diagnostic routines are built in. One test occurs each time the power switch is turned on.

The 8060A and 8062A are exceptionally well-suited to the needs of engineers, technicians, and hobbyists skilled in audio, video, telecommunication, or computer technology. They are designed using the same rugged case and safety engineered jacks, test leads, and double-fused current inputs found on other Fluke handheld DMM's. And the same extensive overload protection is built in for the other functions and ranges.

8062A

- Stable 4½-digit (20,000 count) resolution
- 0.05% basic dc accuracy
- True-rms ac voltages to 30 kHz
- Fast audible and/or visual continuity tests
- Relative reference (offset)
- Low-power ohms on all resistance ranges
- Constant-current diode test mode
- Measures resistances to 300 MΩ
- Self diagnostics
- 1-year warranty and calibration cycle

Because the 8062A has several unique modes, several special annunciator symbols may appear in the LCD readout. For example REL will appear when the relative reference button has been pushed — a helpful reminder to any operator. The 300 MΩ top resistance range in the 8062A is fifteen times higher than the usual 20 MΩ. To keep the front panel simple, there is only one manually-selectable position above 200 kΩ. When that position is used, the appropriate 2 MΩ, 20 MΩ, or 300 MΩ range is automatically selected.

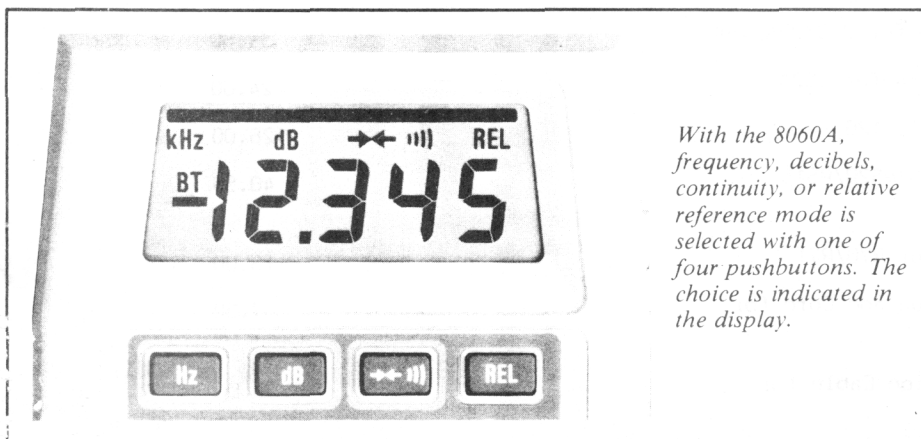
There are five ac and dc voltage ranges on the 8062A from 200 mV to 1000V for dc, to 750V for ac. Resolution is 10 μV on the 200 mV range. True-rms ac accuracy is specified to 30 kHz. Basic ac accuracy is 0.5%.

There are four ac and dc current ranges on the 8062A from 20 mA to 2A. Resolution is 10 nA on the 20 mA range.

8060A

- All the features of the 8062A, plus
- Frequency... 12 Hz to 200 kHz
- True-rms ac voltages to 300 kHz
- 0.04% basic dc accuracy
- 0.2% basic ac accuracy
- dBm or relative dB measurements
- Conductance measurements

It is easy to determine dB gain or loss of amplifiers, filters, attenuators, etc. with a DMM that has dB features. It also combines that feature in a handheld DMM that also measures frequency, providing a nearly ideal test instrument for many applications. LCD annunciators appear in the display when the dB or Hz pushbuttons are used to select one of those inputs.



With the 8060A, frequency, decibels, continuity, or relative reference mode is selected with one of four pushbuttons. The choice is indicated in the display.

AVAILABLE FROM: GEORGE HARVEY ELECTRIC PTY. LTD.

76, York St.
Launceston
000.3155 3

162-4, Argyle St.
Hobart, 7000.
002.22233