

QRM

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Most readers of QRM and WIA Bulletin will recall reading in the last issues of the pending sale of gear owned by Mr. Len Crooks VK7BQ who incidentally, is Patron and Life Member of the Tas. Division of the W.I.A. What therefore could be a more fitting time to pause for a moment to reflect on Radio as it was when Len commenced operation back in 1925.

Truly, they were the great days, hard but terribly interesting, when the plate voltage was largely dependent on the number of marmite jars you could scrounge and you put brackets on the shack wall to hold your Tank coil so you didn't QSY everytime someone walked into the shack and it wasn't uncommon to see tubes with their cases removed for greater efficiency. These occasions were common place when Len first got on the air. I can recall Len winning a prize for the best home-built receiver, in an exhibition in Launceston, of which the front panel was glass. Imagine the effort involved in drilling all the holes, no arguments in those days between users of commercial and home brew equipment. If you couldn't afford what little was offering you made it. This encouraged visits between hams as the various members of the fraternity went looking for ideas and discussed their problems with one another and the memory of these get-togethers is something every old-timer will remember as long as he lives. If you don't think so ask Len next time you see him.

Yes, those were the young days of 7BQ; the days when Len put a recorded programme on the air on 200 metres every Sunday morning before we had any Broadcast stations in the North of the Island and I can assure you the quality and presentation of the programmes were excellent and remembered by many of the older citizens of Launceston to this day.

Len progressed through these periods down to the early days of 50 Mcs followed by 144 and 432 Mcs and later to FM gear. Unfortunately age was taking its toll and to the great regret of everyone, Len made a big decision; he would sell all his gear. On Saturday morning at 10 o'clock he made his last broadcast to his son John VK3AAC whilst the crowd gathered outside waiting for the sale to commence. It is with great pleasure that we can announce that it was a huge success and the sum of \$250.00 was raised.

For some reason or other some gear still remained in the shack together with the QSL's on the wall reminding us of days gone by. Strangely enough this gear included a 40 metre transmitter, a modulator and associated power supplies, so you haven't heard the last of 7BQ yet which goes to show you how wrong we were.

At 81 years 7BQ is still with us and we hope it will stay that way for a long time.

To you Len - GOOD LUCK, GOOD HEALTH and MANY MANY MORE HAPPY DAYS!

COL, 7LZ.

COMING EVENTS

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COMING EVENTS

NOV. 2nd	NORTH WEST MEETING, Lakin's Hall, Ulverstone
NOV. 12th	NORTHERN ZONE MEETING, A.E.B. Rooms, 8 High Street, Launceston.
NOV. 27th - 28th	HAM FEST.

THE NORTHERN ZONE meeting held on October 8th was attended by 36 members. Visitors and new faces included Max 7MX and Ed. 7HE.

Amongst the inward mail was a letter from our State Intruder Watch Co-ordinator Ian 7KB and members were pleased with the report forms included (let's hope they all get returned full of info.)

Peter 7PF reported that everything pointed towards a license for the repeater being forthcoming in the near future.

Approaches made for Jamboree on the air participation were detailed. Three groups had requested help and this had been organised but more operators were required. A Fox Hunt was organised for October 22nd. It was suggested that further orders be taken for name badges. (If you need one contact Kevin 7ZAH).

After the meeting closed at 9.45 Den 7DK gave a very interesting talk and presented a very well put together colour film of his recent 16,000 mile trip around Australia.

If we are able to use the right room at the next meeting, Rex 7RB will give a lecture on Audio and distortion. Don't miss out on this one chaps!

PERHAPS the number one event on the VK7 Ham Calender is on the doorstep - THE HAMFEST. Why is it of this importance? It's the only time when amateurs from all over the state can get to see each other for more than an hour or two. Conventions and Hamfests are an important event to amateurs interstate and overseas. If they think then such fun, why are you going to miss out? It seems that a group of amateurs from interstate are likely to come including Federal President, Michael Owen.

To come along is one thing; to participate is even more important.

What's needed to participate - in order of difficulty:

(a) a shortwave transistor

(b) a car

(c) a transistor sniffer

(d) a 3 F1 2 mtr beam 5M CH B Comhono

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- (c) a transistor sniffer
- (d) a 3 EL. 2 mtr. beam FM CH.B Carphone

I believe one well known identity built a sniffer and got it going in 30 minutes - try it. The Hamfest will be much more fun !

REG. 7KK.

NORTH-WESTERN ZONE

Last meeting was well attended with a number of young people present and we hope these boys will continue to come. John 7JV and also Robin Harwood were present from Launceston. We also welcomed a new licensee, Graham Simpson. Congratulations Graham and hope to hear you on the band soon.

Now the apologies revealed some interesting human drama. Tony 7AX was in Hobart, working he maintains. Brian 7ZBE was deeply involved in something important. Athol 7LR was involved in ESP or was it EDP. Bob 7ZGR was on time and a half or double perhaps. Les 7LH ran foul of a dentist and had a jaw to prove it. We wrote down John Webster's name and had to scratch it out, because when we looked he was there complete with harmonic who appears to be teaching Dad some finer points of Radio.

Ken 7KH ably chaired the meeting.

Associate Reg. Polden was present. We appreciate your regular attendance Reg. John 7JV brought us up to date with Institute matters. Ian 7KB was present and presented some pointers to help us to log intruder stations. Some log forms were distributed and members are asked to return them next meeting.

David 7MS became involved with Marilyn M. somehow or was it current loops of 2 half waves in phase. Confusing.

We are pleased to welcome Charlie 7CF back to the HF bands. Good to hear old timers again.

We remind our members - if you haven't registered for the Hamfest - do so urgently. You might just make it.

The writer had the pleasure of attending the last meeting of the Northern Zone. Well attended, well conducted and I really felt at home. At the conclusion of business Don 7DK presented the best amateur travalogue I have seen. Don, we would love to see you complete with map and film at a N.W. Zone meeting. Please accept this as a personal invitation.

Saturday morning of the 9th found me at the QTH of 7BQ, where a sale was taking place. Some very fortunate people came away with home brew gear of a very high order.

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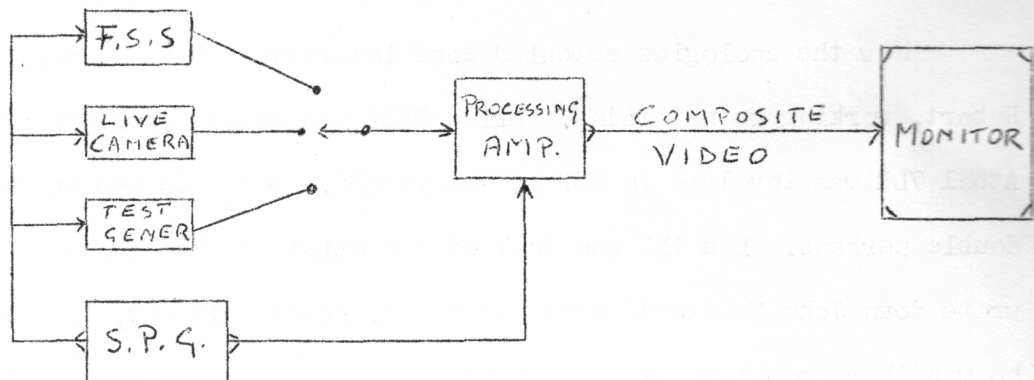
We wish you the best of luck Len in your new environment.

See you next month.

MAX 7MX

AMATEUR TELEVISION (PART 3)

CLOSED CIRCUIT



Above is some of the basic gear required for an A.T.V. closed circuit set up. As mentioned previously, the heart of any system is the sync. pulse generator (S.P.G.) The S.P.G. generates the horizontal and vertical sync. pulses together with blanking and equalising pulses. These pulses are then fed to the F.S.S. (Flying spot scanner), live camera, or testing generators etc. These pulses are used to synchronise the oscillators (horizontal and vertical) and provide blanking. The video producing equipment can then be selected by manual switching or all used together simultaneously. The video produced is passed to a processing amplifier. The purpose of this amplifier is to combine the video with sync. and blanking pulses to the correct proportions. The output from this processing amp, is known as composite video (i.e. all vision and sync. etc. necessary to produce a television picture less the sound). This composite video is then fed into one or several monitors.

At this stage you are probably wondering about the various standards to use, there are many arguments about these, however it is my opinion that the answer so far as Australian A.T.V. is concerned, is to use the 625 line system from the start. The lower frequency line systems do have some advantages, including narrower bandwidth. This I feel can still be outweighed by the improvement in definition obtained from the 625 line system, and the fact that our lowest frequency for transmission of video is 420-450 MHZ band, 6 MHZ bandwidth is not too hard to achieve at this frequency.

Secondly the use of 625 enables us to use a standard TV receiver modified slightly for use as a monitor. A switch arrangement on the receiver can be wired to allow either the normal IF of the receiver through to the video amp, or the composite video from our system as required. More about this in a later article.

Having achieved a closed cct. system and being satisfied with same, it is only a relatively simple matter to feed the composite video to a special type of modulator and thence to a U.H.F. transmitter.

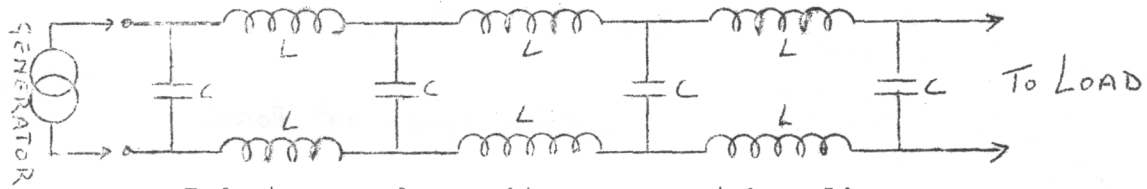
Next time I hope to outline a little on the receiving of A.T.V.

TONY (VK7AX)

SOME FUNDAMENTAL POINTS ABOUT R.F. TRANSMISSION LINES.

One of the main objectives of a transmission line, is to transfer RF energy from a generator (transmitter) to a load (aerial).

WHAT A TRANSMISSION LINE LOOKS LIKE:



Inductance and capacitance present in a line.

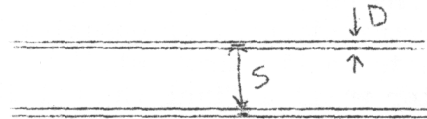
An infinite number of shunt capacitance, series inductance, and resistance sections having a CHARACTERISTIC IMPEDANCE OR SURGE IMPEDANCE (Z_0)

$$Z_0 = \sqrt{\frac{L}{C}} = \frac{(\text{HENRIES})}{(\text{FARADS})}$$

The characteristic impedance (Z_0) is a function of wire diameter and spacing NOT frequency: the characteristic impedance will remain constant regardless of frequency.

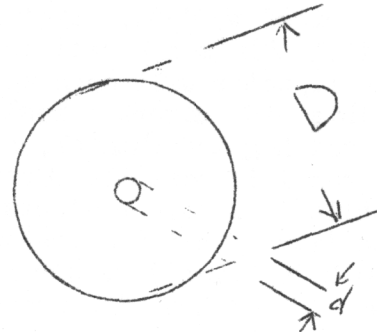
Z_0 for open line:

$$Z_0 = 276 \log_{10} \frac{2S}{D}$$



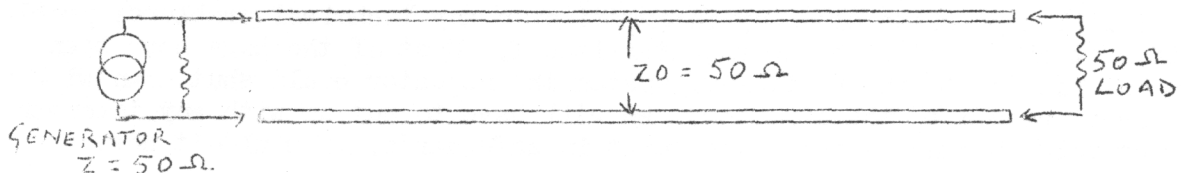
Z_0 for coaxial cable:

$$Z_0 = 138 \log_{10} \frac{D}{d}$$



If a transmission line is used to transmit RF energy from the generator to the load, the line must be terminated at each end (with a resistive load) to a value equal to the value of Z_0 .

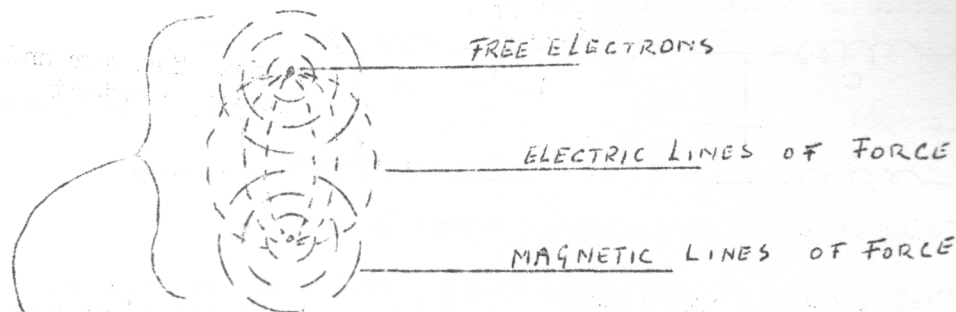
e.g. $Z_0 = 50 \text{ ohm}$.



If a transmission line of finite length is terminated in resistance equal to its Z_0 , the line will, regardless of length, demonstrate all the properties of the infinitely long line.

R.F. TRANSMISSION LINES TRANSPORT ELECTROMAGNETIC ENERGY

Applying R.F. energy to the input of the line will result in, (a) a magnetic field surrounding each conductor, (b) an electric field between the two conductors; these two fields appear at right angles to each other and the combination is called an electromagnetic field. The electromagnetic field moves in one direction - that is from the generator towards the load.



The energy advances towards the load as an electromagnetic field.

NEXT MONTH: Electrical wavelength; Velocity of propagation; Terminating a line; Resonant transmission lines.

VK7TB.

MT. BARROW 2 METRE REPEATER VK7WI/R2

This repeater is now licensed and operating on channel 4, 146.4 mhz input and 145.9 mhz out. This is only a temporary frequency pair until a proposed Australia wide re-organisation of frequencies has been finalised. The change back to channel 4 was made to enable those stations already fitted with crystals to make use of the repeater until a final channel is selected. This could be the old channel 1 input of 146.1 mhz with output 500 khz higher at 146.6 mhz, but nothing definite has been decided to date. Stations not fitted with Ch. 4 should hold off buying crystals till things are settled.

The repeater will open up a new means of reliable communication over a wide area and this wide coverage must be considered during its use.

Do not hog the channel, allow for other stations to break in and go to another channel if possible for those long rag-chews.

Mobile to mobile contacts will make up most of the contacts in daylight hours with fixed station operation at night. I believe this fixed station operation will do much to bring together operators in the different centres, especially the Z calls who do not have the use of HF for this purpose.

I, as station nominee become responsible for any improper operation of the repeater, be it technical or by the people using it. Do use all of your call sign or not at all (you have five minutes). Watch what you say, being on VHF you may have become used to being heard a few miles instead of the 100 or so you may be heard now. Don't believe that because VK3s do it that you can get away with poor operating, they are finding out now that they can't either. In the advent that I hear improper operation, it could be a pirate, I will have to turn the repeater off. I hope this will never be necessary and VK7s will show how they can operate and share a common frequency.

I will appreciate also any information on any technical problems; problems in different areas and with the repeater itself. Most of the bugs have been sorted out but due to the monitoring system the repeater could shut down without any apparent reason to the listener. We will have to put up with any inconvenience caused by this, because without the built in safeguards, we wouldn't have a repeater.

So there it is, on the air at last after what amounts to about four years of experimenting and work by myself, 7KW, 7ZRF, 7PD and others.

VK7PF.

EQUIPMENT STORES

CONTACT KEVIN HENRICKS, 8 Clarendon St. Youngtown.
PHONE - Home 46 9772 or Work 32 1208.

2N3055	1.60	ea.
2N3563	0.60¢	"
2N3564	0.60¢	"
2N3565	0.50¢	"
SE1001	0.30¢	"
MPF121 MOSFET	0.90¢	"
2N140 MOSFET	1.90	"
2N5245T1588JFET	0.95¢	"
2N3819 JFET	0.70¢	"
MC1550G I.C. R.F, I.F. AMP.	\$1.30	ea.
LM370N I.C. Audio Squelch & A.G.C.	\$4.00	ea.
EM408 DIODE 800 P.I.V. 1 amp.	0.50¢	"
10 MFD 65 VW Non Polarised Capacitors.	10¢	"
9V Zener Diodes. 340 mw	0.50¢	"
470 PF Button Bypasses	0.50¢	"
0.7-6 PF Trimmers Ceramic	0.25¢	"
1.5-9 PF PTFE Trimmers	0.25¢	"
1.5-12 PF PTFE Trimmers	0.25¢	"
NEOSID FORMERS	0.05¢	"
SLUGS F29 and F16	0.04¢	"
SINGLE CANS	0.07¢	"
DOUBLE CANS	0.08¢	"
XTAL SOCKETS D type for P.C.B.	0.20¢	"
PACK OF 5 VALVES 1-6AK5 2-6AU6		
2-6BA6	\$1.00	"
B/Lee Coax Sockets for P.C.B.	0.25¢	"
RESISTORS $\frac{1}{2}$ W Individual Values	0.04¢	"
Relays 4 Change over contacts		
12V Miniature	\$2.50	"
Socket for Relay	0.45¢	"
B/Lee standard sockets	0.35¢	"
B/Lee Alum. Plugs	0.30¢	"
W.I.A. Car Transfer	0.15¢	"
QSL Stickers. Sheet of 40	0.50¢	"
T.C.A. 1674 Circuits	0.50¢	"
Handbooks AWA MR-20B FM Carphone	0.50¢	"
Call Books 1971	0.50¢	"
Log Books and Air Dux Coils		
WIA TIES Blue or Maroon		
Full Members only	\$2.75	"
TIE BARS (GOLD) with WIA Badge		
Full Members only	\$1.60	"
PRINTED CIRCUIT BOARD 10"X5"	0.50¢	"
10 POTENTIOMETERS Various Values	\$1.00	"
ELECTROLYTIC CAPACITORS		
220 MF - 16 Volt	0.20¢	"
100 MF - 10 Volt	0.15¢	"
25 MF - 25 Volt	0.15¢	"
.001 CERAMIC 500 Volt	0.05¢	"

P.C.B. TYPE 0.25¢ ea.

THE FOLLOWING ITEMS ARE AVAILABLE ON ORDER ONLY

50 ohm Dummy Load-Wattmeter Kit	\$3.20
2M VK3 Converters New Price	\$10.58
2M VK3 Pre AMP " "	\$4.86
ALL RSGB AND ARRL PUBLICATIONS	