

QRM

**September
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 Tregaskis, 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: 12th. September. 10th. October.

NORTHWEST BRANCH MEETS AT ~~730~~ P.M. ON THE SECOND TUESDAY of each month at the Penguin High School.
 Next two meetings: 9th. September. 14th. October.

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: 3rd. September. 1st. October.

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.

LETTERS TO THE EDITOR.

Dear John,

I do not know what the oldies are going to think if they see the letter from me in July "QRM" which finishes up "73's from". That " 's " wasn't there when the letter left me, so I can only think that the "QRM" gremlins slipped it in knowing that it would annoy me greatly!

Strictly speaking, I was at fault in using "73" in a written communication as it is a telegraphist's abbreviation for "Best Regards" when using the key, but it is widely used in this way and also on telephony these days. "Very 73" is O.K. if you must add something, but never add an "s" or, as is frequently seen, "Best 73's", the meaning of which is "Best best regards's".

73. Chas. VK7CH.

Editor's Note: Thanks, Chas, for your comment. Of course the error was inserted after the letter left you. What these "QRM" gremlins, plus the idiosyncrasies of an electric typewriter with 7JK as a typist, will do next to create havoc, no-one can possibly tell!

Dear John,

Our worthy President seems to have stirred up a hornet's nest, considering he stated "for comment only". He certainly got that! Anyone who is trying to do a job that nobody wants can be sure of criticism. I know. May I explain my position as a full pensioner? A few years ago, I applied for and received the pensioner's rebate. Soon after, I learned that my rebate was deducted from Division. So I gave the local Branch a cheque for the difference. I soon decided that this was a farce and arranged to pay full sub thereafter.

So I suggest that:

1. If you can afford it, and approve, pay the full sub.
2. If your finances are such that the rebate is important, apply for it.
3. If it is impossible to pay at all, we accept that and thank you for past membership.

If you are one who accepts all the benefits of the W.I.A. without membership at any time, the above will not

apply. In my opinion, the sub is too much, but we have a democratic way of dealing with this if enough members think likewise.

Meanwhile, I will pay my sub in full without grizzles, and hope that there's enough left to feed me and Mum.

Warning - watch your blood-pressure, chaps!.

Max, VK7MX.

Dear John,

I am writing to let you know that my callsign is now VK7ZFM and not VK7ZBX, the change being due to an error, not of my making, but at the DoC. (A photostat of their letter was enclosed - Ed.). Several weeks ago, I informed the Divisional Office in Launceston and the N.W. Branch as well. However, there has been no response from either, so I thought I would ask you to insert a line or two in "QRM" on my behalf to publicise the change. As I worked for several months with the incorrect callsign and also had my QSL cards printed in the meantime, the whole affair has been rather frustrating to me. During this time I have worked several stations on VHF and UHF and I think this is the best way to let them know. Thank you for your assistance.

Cheers and 73, Frank, VK7ZFM.

Editor's Note: Sorry to hear your "QRM" hasn't arrived this month, Frank. I hope the replacement one has come by post by now. All the stick-on labels for "A.R." seem to have been guillotined in the wrong place with the result that callsigns are half on one label and half on the next. I have a feeling that "QRM" is probably floating around VK3, VK4 etc., as well this month, and goodness knows what they'll make of it!

HOW TO GET HOLD OF THE EDITOR.

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

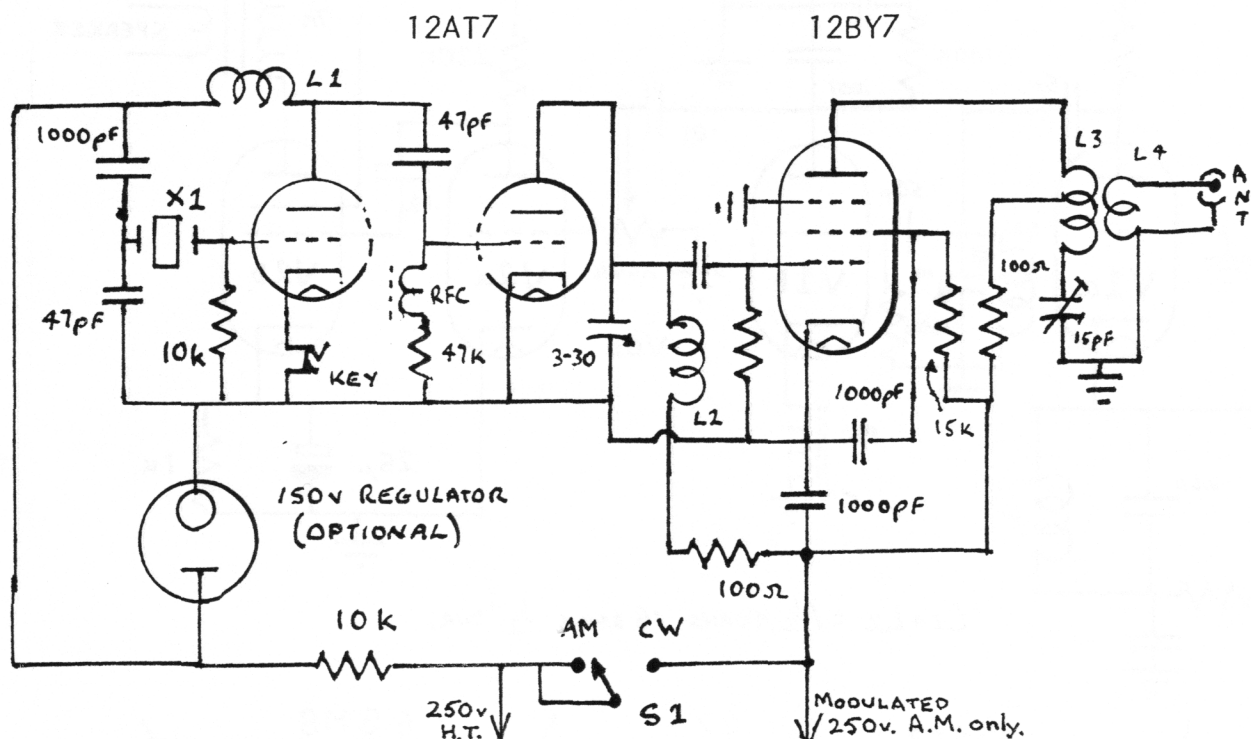
No 1, Darville Court,
Blackman's Bay,
Hobart, 7152.

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.

FURTHER CHAPTERS ON SIMPLE VALVE VHF GEAR, by VK7BD.

The following circuits may be of interest to readers of "QRM" - they really constitute a conclusion to my series of valved 2m. gear. The designs are basically from (1) the VK7 VHF Group's VHF Communicator for the regen receiver and (2) the Minitran 2, by VK2's ZTM, ZCF, and ZCK for the transmitter and modulator. I divided these into separate sections.

All these have been built by myself and modified to suit parts that are still available. Due to inherent drift, however, in both the receiver and transmitter (O.K. in the 1960's but poor by today's standards), their practical use is somewhat restricted. Notwithstanding these problems, they will all go together to form a basic AM Tx/Rx on two metres, and are a cheap way to get some simple VHF gear which is ideal for general demonstration purposes.



X1 - 8MHz range.

L1 - Resonant at 24 MHz L2 - 4 turns, $\frac{1}{2}$ " dia. (32 MHz)

L3 - 3 turns, $\frac{1}{2}$ " dia. 144 MHz.

L4 - 1 turn insulated loop coupled in L3.

Key Jack is closed type when key not plugged in.

S1 - Make switch or change-over type wired as shown.

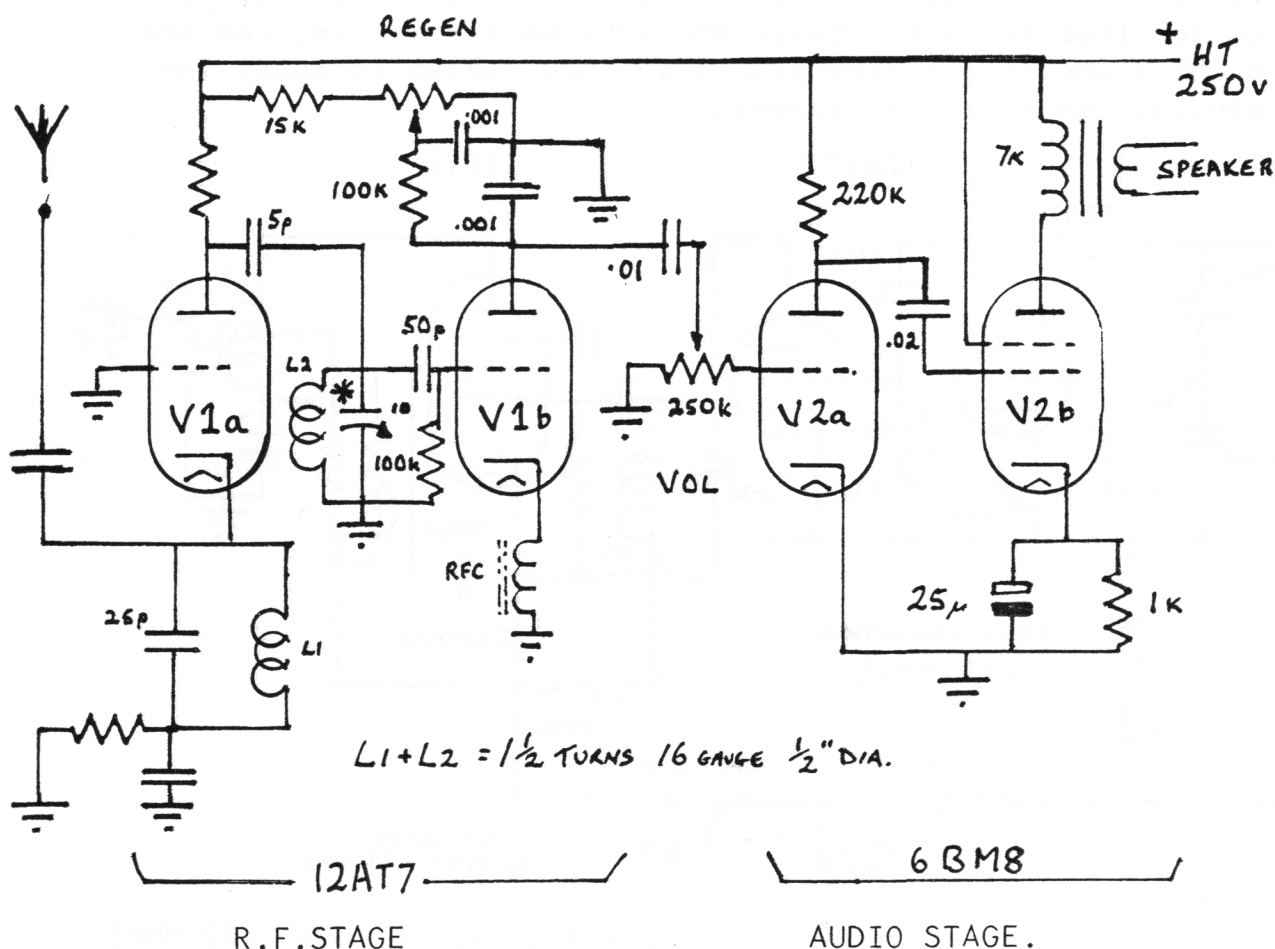
Oscillator and P.A. Stage of "Minitran 2"

(Refer "A.R." March 1962 for full description)

Coil details differ from original description. The ones shown are those which worked for me.

The regulator tube in the Oscillator supply made little difference to stability - note the two separate supplies used for A.M., so no oscillator pulling occurs on A.M. However, some pulling will be evident on C.W. where a common supply is used.

It should also be noted that drift (severe by modern standards) will occur, so a broadband receiver is a must. The regen types I have described earlier are ideal.



10pF tuning capacitor is a modified "Eddystone" VHF type with only one moving plate.

REGENERATIVE RECEIVER FOR 2 METRES.

(Based on VK7 VHF Group "Communicator", "A.R." Dec. 1962)

This design is for single band use (as compared with the previous design in "QRM") and is modified from the original

"Communicator" design where the audio amp was also the modulator for the A.M. transmitter.

V1A is a grounded grid "amplifier" with unity gain to provide buffering between antenna and detector.

V1B is a regenerative (plate) detector.

V2A and B form a "normal" type audio amplifier.

Byron VK7BD.

Dear Sir,

NAVY CONCERNED AT CANCER DEATHS

CANBERRA — The Navy is concerned at the number of deaths from cancer and cancer-related diseases of former personnel who worked at shore stations with high-powered radios, the Senate heard yesterday.

During the adjournment debate, Senator Austin Lewis (Lib., Vic.) said: "The Navy has been... concerned about the number of fellows (ex-Navy personnel) who have died in the last 12 months or so of cancer.

"They have all worked at naval shore radio stations which have high-powered radio transmitters."

He called on the Government to make a thorough investigation into naval and ex-

naval personnel who have contracted cancer or cancer-related diseases.

He suggested there could be some link with asbestos used in ships and asbestos-related diseases.

"I hope the number of cancer-related deaths are simply coincidental and that some investigation would indicate naval personnel are not exposed to any more hazards than the population as a whole," Senator Lewis said.

The Deputy Leader of the Government in the Senate (Senator Grimes) said the Government would investigate the matter.

The possibility that high-frequency radio waves could cause cancer was already being investigated, he said.

I found this item in our local paper up here on the coast and thought it would be of interest to "QRM" readers.

Max VK7KY - Sulphur Creek.

SUNDAY BROADCAST ARRANGEMENTS.

31st. August: Originator VK7RH, Robin.

7th. September: " VK7AMC (Maritime College
Club Station).

14th. September: " VK7MX, Max.

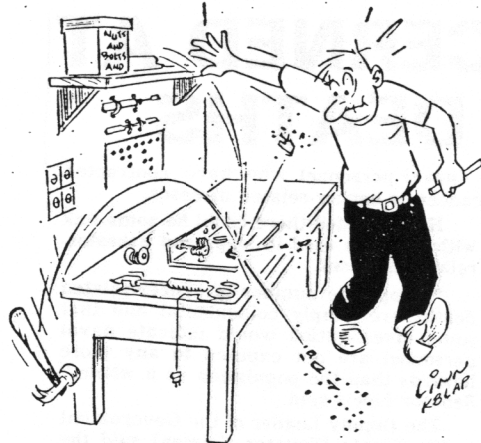
21st. September } Originators N.W. Branch stations to be
28th. September } notified.

Our broadcast co-ordinator, Arthur, VK7GH reports that we have had callbacks on 40m. from N.S.W. and Victoria and even from a VK6 (mind you, he WAS on holiday on the north coast - of Tassie!)

Edsel Murphy's Laws

Murphy's General Law as Applied to Amateur Radio

There have been attempts recently in several publications to obtain a unified theory of the behavior of inanimate objects. These articles represented dissatisfaction with the predictability of the perversity of matter. All treatments of this subject included contributions from one Edsel Murphy, the infamous rascal, and scallawag, who related in his thesis the basic laws relating to the behavior of inanimate objects. Our author, having had 44 years of experience in building amateur radio equipment, has compiled in the accompanying article a sample of the application of Murphy's laws to amateur radio engineering.



A DROPPED TOOL WILL LAND WHERE IT CAN DO THE MOST DAMAGE. (ALSO KNOWN AS THE LAW OF SELECTIVE GRAVITATION.)

BY MYRON E. LAWSON,* WSAC

PRACTICALLY the entire scope of our hobby is under the influence of Edsel Murphy's Laws. Without a thorough understanding of his principles one cannot derive maximum pleasure from his work. In fact, you can't even get started.

His basic law is: "If anything can go wrong, it will." Or to state it in more exact mathematical form: $1 + 1 = 2$ where $=$ is the mathematical symbol for hardly ever.

To show the all-pervasive nature of Murphy's work, here are a few corollaries of his basic law which are applicable to ham radio:

A. — Design

- 1) In any given price estimate, cost of equipment will exceed estimated expenditure by a factor of 3.
- 2) Dimensions will always be expressed in the least usable term. Velocity, for example, will be expressed in furlongs per fortnight.
- 3) If the breadboard trial model functions perfectly, the finished product will not percolate.
- 4) In a mathematical calculation, any error that can creep in, will. It will be in the direction that will do the most damage to the calculation.
- 5) In any given computation, the figure that is most obviously correct will be the source of error.
- 6) The probability of a dimension or value being omitted from a drawing is directly proportional to its importance.
- 7) In specifications, Murphy's Law supercedes Ohm's.

B. — Assembly

- 1) If a project requires n components, there will be $n-1$ components available.
- 2) Interchangeable parts won't.
- 3) Components that must not and cannot be assembled improperly will be.
- 4) The most delicate component will be dropped.
- 5) The construction and operating manual will be discarded with the packing material. The garbage truck will have picked up five minutes before the mad dash to the rubbish can.
- 6) The necessity of making a major design change increases as assembly and wiring of the unit approach completion.
- 7) A dropped tool will land where it can do the most damage. (Also known as the law of selective gravitation.)
- 8) A component selected at random from a group having 99% reliability will be a member of the 1% group.
- 9) Tolerances will accumulate unidirectionally toward maximum difficulty of assembly.
- 10) The availability of a component is inversely proportional to the need for that component.
- 11) If a particular resistance is needed, that value will not be available. Further, it cannot be developed with any available series or parallel combination.
- 12) After an instrument has been fully assembled extra components will be found on the bench.

C. — Wiring

- 1) Any wire cut to length will be too short.
- 2) Milliammeters will be connected across the power source, voltmeters in series with it.
- 3) The probability of an error in the schematic is directly proportional to the trouble it can cause.

D. — Test

- 1) Identical units tested under identical conditions will not be identical on final test after being buried under other components and wiring.
- 2) A self-starting oscillator won't.
- 3) A crystal oscillator will oscillate at the wrong frequency — if it oscillates.
- 4) A p-n-p transistor will be found to be an n-p-n.
- 5) A fail-safe circuit will destroy others.

E. — Operation

- 1) If a circuit cannot fail, it will.
- 2) A transistor protected by a fast-acting fuse will protect the fuse by blowing first.
- 3) Probability of failure of a component is inversely proportional to the ease of repair or replacement.

F. — Trouble Shooting

- 1) After the 24th cabinet-to-chassis screw has been removed to replace the under-chassis fuse, it will be observed that the line cord plug has become disengaged from the a.c. receptacle.
- 2) After the last of 24 cabinet-to-chassis screws has been assembled, the driver tube will be found under the schematic on the bench.
- 3) The bleeder resistor will quit discharging the filter capacitors as the operator reaches into the power supply enclosure.

G. — General

- 1) In an instrument or device characterized by a number of plus-or-minus errors, the total error will be the sum of all errors adding in the same direction.
 - 2) In any given miscalculation, the fault will never be placed if more than one person is involved.
 - 3) All warranty and guarantee clauses become void upon payment of final invoice.
- The man who developed one of the most profound concepts of the twentieth century is practically unknown to most of us. He is the victim of his own law. Destined for a secure place in the engineering hall of fame, something went wrong.

(With acknowledgments and thanks to "QST" Magazine).

NEW W.I.A. MEMBERS.

The following new members have been notified to "QRM" by Frank, VK7BC:

From Bradey's Lake: J. HILEY, VK7JH.

From Golden Valley: G. De GROOT, VK7GY.

From Launceston: J.D. SEAMAN VK7NJJ.

From Latrobe: An Associate Member, D.A. ODGERS.

RADIOTORIAL.

Conversations with colleagues and friends at W.I.A. meetings and Activity Centre groups seem to support the view that W.I.A. monthly meetings should be much more widely based than they are at present. In previous issues we have talked about the need to interest younger members and recent letters and comment in "QRM" have indicated strong views on problems of future membership. Perhaps W.I.A. groups should organise regular lectures, teaching videotapes, demonstrations and experiments to be used at the normal meetings. Business and W.I.A. politics should be the work of the executive committee at each branch, and such work ought to be completed, with decisions taken without the lengthy thrashing around which often takes place in the general meetings. After all, what does "executive" mean? It means "action" - and if the committee lives up to its name, there should be a great deal more opportunity for the sort of content we have listed above.

John VK7JK.

HELP WANTED ! ! !

SOUTHERN BRANCH ACTIVITY
CENTRE WANT TO OBTAIN
YOUR "BASKET-CASE" OLD
CB OR AMATEUR SSB RIG
WE WANT "PARTS" FOR
QRP REBUILDING.
ANYTHING CONSIDERED
SOME FUNDS AVAILABLE FOR
PURCHASE.

RING 002 72-7743 A.H.
(RAI VK7VV).

MICROLOG AIR-1 RTTY
TERMINAL WANTED TO
SUIT EITHER VIC-20 OR C64
BALLY VK7RS QTHR
002 - 437504 or 286351 B.H.