

QRN

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OF AUSTRALIA TAS. DIVISION

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PRICE 10¢

RETURN TO 2 METRES

This is the heading of a campaign initiated by the Geelong Amateur Radio -- TV Club. The idea being to promote the repopulation of the bottom (tunable) portion of 2 metres. This segment has been badly neglected through the use of repeaters by base stations as a means of working DX.

In Geelong they have started by making Wednesday night a 2 metres on air activities night and I for one would like to see our members follow suit. QRM will help by giving preference to any article, technical or otherwise to do with 2 metres.

See you on air next Wednesday and keep your beam north you might catch one of those VK3's off guard.

JOHN VK7JV.

M E E T I N G S

- | | |
|----------|--|
| May 5th | 1.30pm AED Rooms, High Street. Resumption of adjourned AGM of W.I.A. Tas Div. |
| May 11th | 7.30pm ARTS ROOM AED Rooms High Street, Northern Zone meeting. Wally VK7ZWX will give us a lecture on the operation of SSTV. |
| June 5th | North West Zone, Lakin's Hall, Ulverstone. |

Y R C S CLASSES

- | | |
|---------|---|
| May 5th | 10am Room 38, Kings Meadows High School |
| 19th | NO CLASS ON JUNE 2nd. |

NORTHERN NOTES

FROM NORM 7NR

"Stavo" called me the other day on channel 4 and reminded me that Page 2 of Q.R.M. was my baby for the next 12 months, or until such times as the Northern Zone members discover what a fraud they have elected for a HON. SEC. Anyhow! Our Annual Zone Meeting held on Friday 13th April, '73 produced a record attendance with 42 members crowding the room. The election of office bearers took place in a congenial atmosphere and we can only hope that members were happy with the efforts of last year's office bearers as I don't think we had any objections or discussion on the events of 1972.

Officers Elected:-

Pres. - Peter Frith VK7PF
 Vice Pres. J. Gelston VK7ZGJ. L. Dowl VK7ZLD.
 Hons. Sec. N. Richardson VK7NR
 Hon. Treasurer and Equipment Officer K. Hendricks VK7ZAH
 QSL Officer Col. Wright VK7LZ
 Q.R.M. Editor J. van Staveren VK7JV
 Auditor Carl. Waldron.

Reg. 7KK our retiring Hon. Sec. was thanked for his past services to the Zone, and intimated that he was only retiring in the hopes that he would be able to serve us further in a different manner.

Raffle.

Following the Annual Meeting the monthly meeting commenced and John 7JV reported that 1937 tickets were sold out of 2000 and a total of \$387.40 was collected. The winning tickets were drawn by Peter 7PF, and were as follows:-

- 1st - No. 1503 Miss J. White, Launceston.
- 2nd. No. 1828 J.C. Johnstone 7KJ Hobart.
- 3rd No. 1043 Dale J. Smith, Devonport.

Once the legalities, and the raffle declared, just for fun a fourth ticket was drawn and a Burnie address came up proving just how State wide the tickets were sold.

Naturally John 7JV did not escape without a well deserved vote of thanks for his efforts in organising and running the raffle.

No names, no pack drill but I've heard that a few more will soon be heard on ch. 4. Due to the proposed repeater change there are quite a few members on ch.B. only. What say we listen ch.B a little more often and give these people a contact before they lose hope.

Noted that Kevin 7ZAH and Ron VK3AKC did the fraternity a lot of good with a nice spread on the back page of the Post Office Newspaper - hope the paper gets into all P.O. Departments!

Joe 7ZGJ has now got himself a shack with living quarters attached, so with a little more hard work we hope to hear him fully active again. Brian 7ZBY has a few receiver problems to clear up and then he will be fully operational again from his new site. Will be nice to hear the old voice again, and even it may be a little late for this DX season at least he will get a chance to iron out any bugs.

NORTH WEST ZONE NOTES

Our April meeting was reasonable well attended with president 7AX in charge. A notable absentee was Ken 7KH who was in Hobart, I think. It was moved that a picnic and field day be organised. So far I haven't heard any progress but considering the current weather it will be tucker in the car for sure.

A new face or a new voice has appeared on the 2M FM net. David 7MS discovered that moving an antenna 20 feet solved all communication problems, in his case anyway. After trying for weeks for a contact he moved the antenna and is now 5/9 rbrn in Ulverstone. Welcome David!

During the Easter break a number of visitors were heard in this area, too numerous to mention. They were coming and going at all hours.

Tony 7AX has been like a one way street you can get in but he can't get out. He could receive on 2M but answer only on 6M. Very awkward when one hasn't got 6M. However he is still active mobile.

Graham 7ZAR appears to now be master of the home brew solid state rig. Overheard that a few smoking transistors held up progress but all appears OK now.

I once heard it said that the Ham fraternity is the greatest. I can vouch for this. During a period of unavoidable batching the local boys and XYLs rallied round and I express many thanks for their kindness.

I must move a vote of censure on our worthy B/C officer John. To hold forth on the noble art of trout angling during the call back, particularly with an expert like 7CK involved, and even worse with 7MX listening makes the mind boggle. What courage and what a lot of madam.

Not a doubt with the weather going bad and longer nights the shacks will be popular heavier and more communication will take place. We look forward to this.

The shock of the month. Harry 7BR broke in on 80 the other night with a might special. Welcome back Harry.

CUL 7MX.

FOR SALE OR TRADE

6 VOLT GENERATOR SUIT V.W.
GENERATOR + STARTING MOTOR FOR 1500 CWT.
COMMER VAN -
TV TUNER
SELL OR TRADE FOR 0-100 UA METERS.
ED. VK7HE QTHR.

PRODUCT NEWS

Signetics announce a new I.C. ULN2111 for FM detection employing linear gating; the device comprises a 3 stage limiter and a balanced product detector. An outstanding feature is that only one simple, low cost single-winding coil is required for tuning. Frequency range is 5 kHz to 50 MHz. Output of 0.6V with a total distortion of less than 1% and a limiting threshold voltage of 400 microvolt R.M.S. is typical. I hope to have data sheets shortly.

Frequencies for 2 metres as decided at the Federal convention held at Melbourne during Easter. We don't know how the VK3 boys manage to get their information as quickly as they do but here is what we copied from their news broadcast.

REPEATER FREQUENCIES

CHANNEL NUMBER	FREQUENCY IN		FREQUENCY OUT	
1	146.100	Mhz	145.600	Mhz
2	146.200	"	145.700	"
3	146.300	"	145.800	"
4	146.400	"	147.000	"
5	146.500	"	147.100	"
6	146.600	"	147.200	"
7	146.050	"	145.550	"
8	146.150	"	145.650	"
9	146.250	"	145.750	"
10	146.350	"	146.950	"
11	146.450	"	147.050	"
12	146.550	"	147.150	"

SIMPLEX CHANNELS

146.00 Mhz
 145.850 "
 146.650 "
 146.700 "
 146.800 "
 146.850 "

RTTY NET FREQUENCY 146.750 Mhz

It is the intention to eventually use only the channels above 146 Mhz i.e. Channels 4, 5, 6, 10, 11 & 12.

VK3's proposal to the PMG for their repeaters will be as follows:

- Channel 4 - Geelong
- 5 - Melbourne
- 6 - Mt. Macedon
- 11 - Bendigo, Gippsland and Mildura

The primary simplex channel will be 146.000 Mhz

The secondary simplex channel will be 146.800 Mhz

Providing PMG approval is given, these changes will take effect as from June 3rd.

As soon as approval is received crystals will be ordered.

Peter 7PF just informed me that it would be unwise to order your Xtals for any new channels as there may still be some changes.

STOP PRESS

It now appears certain that even the above frequency channels will not be adopted. After consultations with the PMG Department it seems likely that this number of channels will not be needed. Phone conferences between VK2 and VK3 have been held during the week and it may even lead to another postal vote between Divisions.

Back where we started from ??? Perhaps not!

A C B - Courtesy of AMSAT NEWSLETTER - By Perry Klein, K3JTE

The DJ4ZC/DJ5Kq EURO-OSCAR translator. This is a 10-14 watt PEP linear translator which accepts uplink signals between 432.125 and 432.175 Mhz, and re-transmits them between 145.975 and 145.925 Mhz. The passband is inverted, i.e. an upper sideband uplink signal is transmitted as a lower sideband signal on the downlink and vice versa. The translator has a low power mode (approximately 2.5 watts PEP) for operation when battery power is low.

A five-watt version of the two-to-ten meter linear translator now flying in OSCAR 6. The uplink frequency range will be 145.9 to 146.0 Mhz as in the present satellite, but the downlink frequency range may be changed from that used in OSCAR 6.

In addition to the OSCAR 6 configuration, in which a beacon at 29.450 Mhz is used in conjunction with a downlink range of 29.450 to 29.550 Mhz, two other alternatives are under active consideration. Were it to be deemed desirable for the beacon to remain at 29.450, the downlink range could be shifted to 29.350-29.450 Mhz. Alternatively, the beacon could be moved to 29.500 and the downlink placed at 29.400 - 29.500 Mhz. Many users have expressed regret that the OSCAR 6 downlink extends above 29.500 Mhz, since tuning that range is inconvenient with several popular receivers in current use. As a consequence, OSCAR 6 activity has been concentrated in the lowest 50 KHz of its passband.

A one-watt two-to-ten meter linear translator identical to the OSCAR 6 translator but with the same frequency plan as the five-watt version. This translator will only serve as a backup to the five-watt unit and will be used only if the higher power unit fails or during periods when battery charge is low.

---A 435.1 MHz telemetry beacon.

---Two redundant Australis Mark II 35 channel command decoders.

--- The WIA Project Australis RTTY telemetry encoder. This unit has a 60-channel capability plus an additional dozen channels of binary logic status indicators. Standard 850 Hz AFSK teletype is used at 60 wpm (45.5 baud) with phase coherent 2125 and 2975 Hz audio tones to permit the use of phase lock loops for reception.

--- A 24-channel Morse code telemetry encoder identical to the one now in OSCAR 6.

--- A Codestore message storage unit similar to the one in OSCAR 6.

A-C-B will be given an OSCAR number designation once successfully in orbit.

--- An experiment control logic system.

The experiment control logic will switch A-C-B between four basic modes:

Mode A - five watt 2/10 translator

or one-watt 2/10 translator

(the selection between units is made by ground command)

Mode B - 432/146 Mhz translator in 10-14 watt mode.

Mode C - 432/146 Mhz translator in 2.5 watt mode.

Mode D - Recharge mode.

The 435.1 Mhz telemetry beacon may be operated in Modes A or D but only when switched on by ground command. A 24-hour clock in the experiment control logic will switch between Mode A and Mode D each 24 hours. An automatic battery undervoltage sensor switches A-C-B into Mode C if the battery charge drops to some predetermined cutoff level, and Mode D is activated by this same sensor if a further battery discharge condition is reached. It is expected that the A-C-B power system will be capable of 3 to 4 times the power available in OSCAR 6 and that we can keep the spacecraft in operation 100% of the time, hopefully through its three year design lifetime.

Another significant result of the experimenters meetings was the agreement that the WIA Project Australis group would undertake the development of a new satellite, A-C-D, built around the Australis four-channel 146-to-435 Mhz FM repeater and RTTY telemetry encoder. AMSAT will provide solar panels, batteries the structure, and possibly two-to-ten meter repeater, Morse code telemetry and Codestore units for integration in Australia. As a result, two satellites were decided upon (A-C-B and A-C-D) to be built for the worldwide amateur community.

TECHNICAL ARTICLE - VK7ZBY

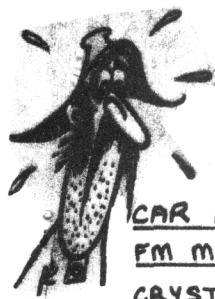
A 250 MHZ FREQUENCY COUNTER

PART 1

Any amateur who owns or has access to a frequency counter will realise what an invaluable instrument it is to have at one's disposal. Through the years I have been lucky to have reasonable access to a counter when I wanted one, but there were times when a counter was not available when I needed it. Because of this situation I started thinking what would be involved in building one, and so after about nine months the following is the end result.

The basic counter presented here has a 30 mhz (plus) capability and has an optional extension to 250 mhz. All digital integrated circuits are T.T.L. (Transistor-Transistor-Logic) with the exception of the 250 mhz pre-scaler and 30 mhz input pulse shaper which are E.C.L. (Emitter-Coupled-Logic). A single regulated +5 volt supply powers the complete instrument including the read-out tubes which are 7 segment filament type.

Fig. 1 shows a block diagram of the complete frequency counter. The input signal is fed into either the 250 mhz pre-scaler or the 30 mhz input board via BNC connectors. If the pre-scaler is to be used a short co-ax link is placed between the output of the pre-scaler and the input of the 30 mhz board. If the signal to be measured is 30 mhz or below it is fed directly into the 30 mhz input board. After the signal passes through this board where it is shaped, it is passed onto the count gate. This gate is "opened" for periods of time accurately determined by the gate control circuitry. Output of the count gate is then passed on to the counting decades for counting and displaying. The crystal oscillator and timebase chain is what determines the length and accuracy of the count gate and uses a 2 mhz crystal, whose output is first divided by two to give 1 mhz and then divided by ten 6 times to give a final timebase frequency of 10 Hz. The selected timebase frequency is applied to the gate control circuitry to open and close the count gate for the required amount of time. The strobe and reset pulses also originate from the gate control circuitry. The counter has also the facility to be able to display the frequency of which a receiver is tuned to, by subtracting the IF frequency (up to 999 khz) from the VFO frequency, provided the VFO is on the high side of signal frequency. This displayed frequency is resolved to 1 khz and is part of the gate control circuitry.



FOR SALE

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<u>CAR PHONE</u>	AWA MR20 B - 3 PIECE + AC POWER SUPPLY - CHANNELS A B & 4 ROCKS.	25
<u>FM MOBILE UNIT</u>	- PYE RANGER - TRANSISTOR P.S. UNCONVERTED	15
<u>CRYSTAL CALIBRATOR</u>	DID PYE MK 10 - COMPLETE WITH CONVERSION INSTRUCTIONS	10
<u>MODULATOR (OR P.A. SYSTEM)</u>	2XEL34 PIP - HOME BREW - MOD TRANNY BELONGS TO 72BY.	15
<u>TV SET</u>	- PYE 25" - GOES EXCEPT FOR HORIZ. SYNC. - FRONT GLASS CRACKED - (SPARES)	15
<u>CO-AX GROUND PLANE</u>	- CHROME PLATED A REAL STATUS SYMBOL - 2MX VEHICLE MOUNTS	10
<u>HEAVY DUTY TRANSFORMER</u>	- 240/25 V 22 AMP SEC'Y. NO RISK. (HOME REWOUND)	10
<u>HF WALKIE PHONE</u>	- AS USED ON MT. EVEREST 1953 ^{WE COULDN'T HAVE DONE WITHOUT THEM} GOOD PARTS	2
<u>VINTEN MOBILE</u>	- 6MX CONVERTED - AC P/S - COULD GO WELL - 3/12 FINAL (AM)	3
<u>1/4" WHIP FOR 2MX</u>	- FLEXIBLE - ONE WITH BUMPER MOUNT - USEFUL EACH	1
<u>CRYSTAL CALIBRATOR</u>	- TRANSISTOR KITSET - FOR YOUR HF RX - NEW Z PCB. NO ROCK	2
<u>80M HF HELICAL WHIP</u>	- ALL WIRE WOUND ON FIBRE GLASS BLANK - A STEAL AT ONLY	3
<u>VALVE TYPE HF RX</u>	- OF SORTS - 2 NEW VARIABLE C, SMALL 0-415 POOF -	3
<u>TX & RX OF 522 SET</u>	- COULD GO ON 2METRES ± 50MHZ - GREAT SOURCE OF PARTS	6
<u>50 FOOT OF "ALPURA"</u>	- ALUMINIUM "PYROTEK" CABLE - COMPLETE WITH INSTRUCTIONS FOR HELICAL ANTENNA (A06 TRACKER)	5
<u>HEADPHONE SET</u>	- US ARMY COMBAT TYPE MEDIUM 2	2
<u>TV ANTENNA</u>	- CH. 6 IDEAL FOR 2M - EASY TO CONVERT - A REAL BARGAIN (NEW)	3
<u>807 VALVES</u>	- TWO ONLY - TRY MAKING A SUPEREGEN. WITH THEM	1
<u>6QE 06/40</u>	- COMPLETE WITH CERAMIC SOCKET. (NORMALLY UP TO \$10?)	2
<u>TRANSISTOR DIPPER</u>	- RTV & H - WITH COILSET & INSTRUCTIONS	4
<u>DUMMY LOAD</u>	- 75 Ω ASSEMBLED KITSET BELONGS TO LEE & UHF SOCKETS	2
<u>VHF PRE-AMP</u>	- 2MX ASSEMBLED VK3 KIT ADD SENSITIVITY TO YOUR 2MX MOBILE	2
<u>1C AMP</u>	- " " " " TAA 300 (MODULATOR FOR QRP?)	2
<u>0-100 μA</u>	- ROUND PANEL METER - A SENSITIVE MUST	3
<u>0-100 μA</u>	- SQUARE KYORITSU METER (PANEL) - BRAND NEW.	4
<u>0-100 mA</u>	- " " " " " "	4
<u>Z-COUPLER</u>	- HOME BREW AS IN RSGB - TRY IT - IT MIGHT WORK	2
<u>75 Ω BALUN</u>	- UHF & BELONGS TO LEE CONNECTORS - CHASE VK7RR FOR IT - HE'S GOT IT	2
<u>ROUND SPEAKERS</u>	- VARIOUS SIZES - VARIOUS Z's - IDEAL FOR THOSE LOW-FI BODS?	
<u>6MX YAGI</u>	- 3 ELEMENT GAMMA MATCH - GAIN PLUS	2
<u>TRANSISTOR HEAT SINK</u>	- SOLID ALUMINIUM - HOME BREW A WORK OF ART.	1
<u>EHV UHF</u>	- CERAMIC STANDOFF INSULATORS. ALL FOR	1
<u>EHV UHF</u>	- STRAIN INSULATOR - 1/2" DIA BOLT EACH END - 10 TON STRAIN - ALL EPOXY	1
<u>CRO TUBE</u>	- MOD N MONITOR	1
<u>CARBON MIKES</u>	- VARIOUS PRICES ON APPLICATION.	
<u>TANNOY</u>	- ADMIRALTY PATTERN COMMANDER'S MIKE -	1
<u>VARNISH</u>	- SPECIAL HI-TEMP, HI VOLTAGE WITH THINNER & COTTON CAMBRIC REEL	2
<u>ETCHING KIT</u>	- BRAND NEW UNOPENED -	1
<u>MANY LENGTHS</u>	- 18" ALUMINIUM, BRASS & SILVER COATED BRONZE 1/8" DIA. RODS (UHF YAGI ELEMENTS)	3
<u>VARIABLE L</u>	- SILVER COATED - CERAMIC FORMER - HI POWER HF - (HI Q)	2
<u>6MX GROUND PLANE</u>	- CO-AX ANTENNA - LESS TOP ELEMENT HAS WORKED VK5	1
<u>2MX</u>	- " " " " " " COMPLETE WITH " "	2
<u>SIGNAL GENERATOR</u>	- PLASTIC TX. PORTABLE DC → HF WON'T TAKE MUCH TO GET IT WORK.	1
<u>CHASSIS WITH LONG EDDYSTONE DIAL</u>	+ 3 IF CANS (ALUMINIUM CHASSIS) (DIAL IS \$19 ALONE)	22



INSERT IN 'QRM' MAY 1973.

CQ CQ CQ de VK7UX

There is only a
RESTRICTED
 amount of gear to clear!

VK7UX

IS GOING OVERSEAS.

HE MUST SELL THE GEAR
 LISTED (AND IMPLIED) ON THESE
 TWO PAGES.

⇒ 10% OF ALL MONEYS RECEIVED
 WILL GO TO NORTHERN ZONE

CLUBHOUSE FUNDS SO BUY ALL YOU
 CAN! SAVE WITH THE BARGAIN PRICES,
 AND SAVE TOWARDS YOUR CLUBHOUSE.
 ANY REASONABLE OFFER WILL BE CONSIDERED.

CONTACT CHRIS WALKER AT WORK : COMALCO BELL BAY
 PHONE 82 1188 EXT 374, _____
HOME : 15 HENRIETTA GROVE, WEST LAUNCESTON, Ph. 443828
 OR AFTER WIA NORTHERN ZONE MEETING.

GEAR

5 STEEL FRAMED WINDOWS 2'-0" x 2'-3" GLAZED (WITCO TYPE)
 VARIOUS LENGTHS OF GOOD GRADE CO-AXIAL CABLE.
 LOTS OF OLD VALVES (FROM No 85 to 6B66 etc)
 SEVERAL SMALL (2"x2"x2") BOXES OF RESISTORS, CAPACITORS, DIODES etc.
 BACK ISSUES OF R&H; RTV&H; EA dating FROM 1945, SPORADICALLY.
"VULCAN" 2 BAR HEATER - AS NEW - 3 HEAT POSITION. - \$10
 LENGTHS OF ALL GAUGES OF WINDING WIRE.
GSRV LONG WIRE AERIAL, CUT, WITH 300Ω LADDER LINE & EGG INSULATORS
ROD CAGE SUIT VW 1200 5'-0" x 2'-0" 3/4" WATER PIPE FRAME.
 1 PAIR CHANNEL BARS TO SUIT ANY MODEL CAR. - \$7
 STEEL & PLYWOOD PLATFORM TO SUIT CH. L BARS ABOVE
 4 RADIAL PLY TYRES FIRESTONE 155 SR 15 WINTER TREAD 3000 MILES LEFT.
 MISCELLANEOUS ODD & ENDS - PLEASE APPLY FOR DETAILS.

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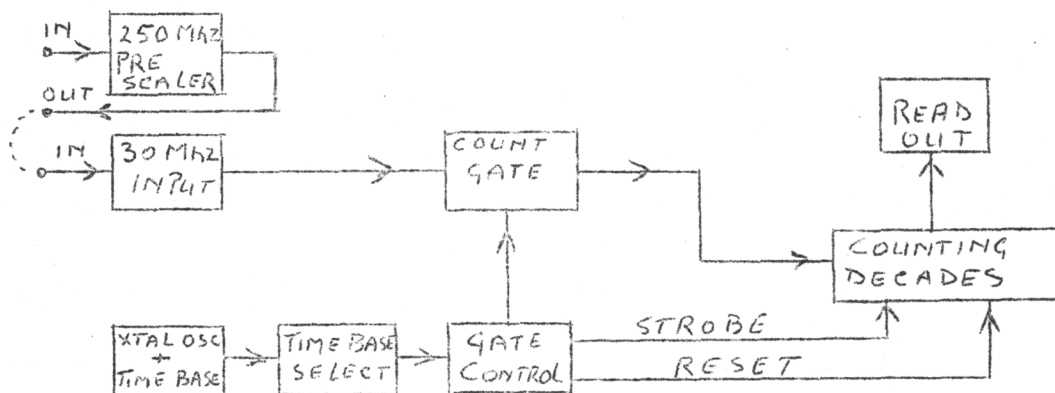
TECHNICAL ARTICLE (Cont)...

POWER SUPPLY

The power supply consists of transformer T1 (12 volts at 2 amps), bridge rectifier MRL and capacitor C6 (2000uf - 25vw). These components together supply +15 volts to an integrated circuit voltage regulator. The IC regulator (a Fairchild ua723) provides a regulated +5 volts to drive a 2N3055 series regulator transistor. A facility of this regulator is the shut down of the regulator should the load current increase above a pre-set level; in this case 1.8. amps. Further protection is provided for the counter in the form of a transistor crow-bar circuit, should the +5 rail voltage rise (due to IC regulator failure) to a value that would destroy all the ICs. The crow-bar circuit is set to operate when the voltage on +5 volt rail rises to +5.4 volts. This value is chosen because the maximum Vcc voltage that can be applied to the ICs is +7 volt and input voltages to all ICs is +5.5 volts. On the operation of the crow-bar circuit the 2 amp. fuse feeding the IC voltage regulator blows and removes all voltages from the counter and so saves an expensive replacement of all digital ICs and probably the read-out devices. The circuit of the regulated power supply appears at Fig. 2.

SIGNAL BLOCK DIAGRAM

Fig. 1



POWER SUPPLY SCHEMATIC

Fig. 2

