OCTOBER- 1970

the Groundwave

OTTAWA
AMATEUR RADIO CLUB

A PUBLICATION OF
THE OTTAWA AMATEUR RADIO CLUB

G R O U N D W A V E

October, 1970

OARC OCTOBER MEETING

Place: National Research Council Auditorium, Sussex Drive

Date: Wednesday, 7 October, 1970.

Time: 8:00 p.m. (2000 hrs.)

Program:
(a) Committee Reports
(b) Short Business Session
(c) Fundamentals of modern radio control - presented by Dick Monnon
(d) A background in Amateur Radio - presented by Mr. Holland Shepherd
(e) Coffee and Ragchew

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GROUNDWAVE is the official bulletin of the Ottawa Amateur Radio Club, a noncommercial association of radio amateurs devoted to the promotion of interest in amateur radio communication and experimentation in the Ottawa regional area, and to the advancement of technical competence and achievement of club members.

Editor:

Publisher: J.R. Bassil VE3YT 2061 Lenester 722-8457

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OTTAWA AMATEUR RADIO CLUB EXECUTIVE, 1970-71

Pres:	Larry Emmerson	VE3GGA	883	Dunlevie	728-7307
V.P.:	George Roach	VE3BNO	103	Strathcona	234-0885
Sec:	Dick Bonnycastle	VE3FUA	810	Edgeworth	728-8655
Treas:	Gord Grant	VE3DY	2050	Balharrie	733-4892
Directors:	Jack Bassil	VE3YT	2061	Lenester	722-8457
	Bill Ross	VE3GDW	50	Selkirk	746-4973
	J.M. Morton	VE3ALK	1055	Cameo Dr.	722-9841

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Check into the
Capital City F.M. 2 Meter Net
Time - 2000 hrs. each Monday Evening
Frequency - 146.460 in and 146.940 out
via the VE2CRA Repeater

FROM THE MINUTES OF THE MEETING OF THE

OTTAWA AMATEUR RADIO CLUB

SEPTEMBER 9, 1970.

The regular meeting of the OARC was held at the Auditorium of the National Research Council on September 9, 1970 with a good turn out.

The first item of business was announced by the President, Larry Emmerson, VE3GGA, as the need for the confirmation of the executive for the 1970-71 season as it had been impossible to verify these at the last fall meeting as there was not a quorium of the members.

Larry introduced each of the proposed executive except for J.M. Morton who was absent from the meeting. The President then asked for a show of hands to verify election of these officers. The meeting confirmed the executive with no dissenters.

Shinerama - Roy Maskell, VE3ADM, discussed shinerama and stated that he wanted about 30-40 mobiles, base stations, and walkie-talkies for this project. He indicated that the repeater would be used for this project but if there were sufficient who could operate mobile on other bands a second band would be considered. The Shinerama would be held on September 25, Friday evening, and all day September 26. He indicated that each volunteer would be assigned a shift and be contacted by phone.

Beginners Class - George Roach, VE3BNO, announced that the beginner's classes would start on Wednesday October 14 and that the Classes would probably be held in the N.R.C. as last year. The cost of the course would be $5.00 and the classes would be held on Mondays and Wednesdays.

All persons who take the course must be members of the OARC at a cost of $2.00 for the year.

It is the Club's policy that the original fee of $5.00 will guarantee you a license even if it takes you more than one season to get the license.

Slow Scan T.V. - Syd Horne, VE3EGO, explained to the meeting that he had been asked to demonstrate his Slow Scan T.V. system at the coming ARRL convention at Boston, Mass. He indicated that he and Don Walmsley, VE3CQX, might consider motoring down to the convention. Syd pointed out that this would be a chance to get publicity both for Canada and for the Ottawa Amateur Radio Club.

The meeting agreed to provide funds to sponsor this trip up to $100. The motion to provide the money was moved by Bill Ross, VE3GDW, and seconded by George Acton, VE3EQH, and carried.

Diplexer for VE2CRA - George Roach, VE3BNO, explained to the meeting that at present the receiver and the transmitter were at different locations and that only the transmitter site had standby power. He indicated that there were frequent losses of power and it had been considered advisable to put in a diplexer

so both of the units could be located where there was stand-by power available. The Diplexer had been given to the Club but it was necessary to have it tuned.

This cost about $100 but contributions from many of the Repeater users had brought the cost to the Club below $40.

George indicated that the executive had provided the extra funds and the diplexer would be ready very soon.

Other Business

The President apologized for the delay in the mailing of the Groundwave. He indicated that the mail situation had contributed to the delay. Larry did say however that it was in the mail and it would probably be delivered tomorrow.

The president asked for anyone who would help with the editorship of the Groundwave as Mr. Jim Dean was not able to be editor this year as he had been posted to Kingston.

Larry, VE3GGA, mentioned that Gord Grant would be at the front of the Hall after the meeting to take renewal of the memberships for this year. The fee this year has remained at $2.00 for full and associated membership.

Mike Patriarche, VE3DNJ, indicated to the meeting that the proposed change in the constitution of the Club would be submitted at a later date. This change had been submitted last year but had been withdrawn until this year. It had concerned a change in the methods of nominating the executive at the end of the year.

Andre Pilon, VE3CLN, announced that the 6 Meter repeater was now in operation under the call sign of VE2CCC. It receives on 53.525 and transmits on 51.0 MHz. This repeater is on A.M. and the carrier is on all the time. This allows the superregenerate receivers to be used without having the background hiss which is common to this type of set.

Andre indicated that the Sixer will operate the repeater any place in Ottawa. There are already about 6 amateurs using the repeater.

The repeater is at present under test and has not yet been installed up on the hill in the Gatineau, its final resting place.

Program

The speaker for the evening was Dr. Harry Sheffer, Vice-Chairman of the Defence Research Board who was introduced by Bill Ross, VE3GDW.

Dr. Sheffer was one of the directors of the task force to clean up the oil spillage resulting from the sinking of the tanker arrow. He showed a large number of slides and explained in detail all of the problems and what was done about them. He mentioned that one of the problems was the lack of efficient

communications as many of the units participating in the project were operating on different frequencies. He was wishing that the hams were around to coordinate communications.

Dr. Sheffer in his closing remarks indicated that there was a report being prepared by them which could be used as a guide in handling a similar mishap.

Dr. Sheffer was thanked by Mr. Holland Shepherd on behalf of the Club.

50 MHz Beacon - Larry Kaiser, VE3QB, spoke to the group and explained that he has been interested, for some time, in propogations especially in the North Country. He explained that he had built a beacon and was proposing to send it up north where it will operate on a 24 hour per day schedule. The unit is automatic and will send the call sign VE8YT on the frequency 50.098 MHz about once every 40 or so seconds.

He explained that the German radio club (DARC) was planning a series of beacons on 15, 10, 4 and 2 meters in the next 5 to 10 years.

He indicated that he was also planning to build a 10 meter beacon for the Ottawa Area.

Larry demonstrated the unit and showed how it was packaged. He also indicated his thanks to the OARC for providing the necessary $50 for the shipment of the unit to the north country. Larry said he would report when the unit was working.

The President then introduced a number of visitors to the Club and invited them to Coffee.

The meeting closed at 9:55 p.m.

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BEGINNERS CLASSES

The beginners classes will start on the 14th of October and, as before, will be held at the National Research Council on Sussex Drive. Registration will take place at the regular meeting of the OARC on the 7th of October or at the first class night.

The course costs $5.00 which will provide the supplies used on the course. It is also necessary to be a member of the OARC before you can take the course. The membership fee is $2.00 making a total cost of $7.00. The classes are usually held twice a week, on Mondays and Wednesdays, but variations in this are sometimes made after the first class if there is good reason for a change. If for some reason you are unable to complete your license in the spring you can return to the next class without paying any further fees.

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NEW HEATH SB 303 RECEIVER

by Jim Dean, VE3DRV

In mid-September I was in Toronto and happened to drop into the Heathkit showroom. There I saw a new Heathkit receiver, the SB 303. The man on duty wasn't able to tell me much about it; he had no specification sheets, price or availability data, but stated it was a solid state amateur band receiver, and would probably be announced in January. The model I saw was called a "proof model", and I was not able to persuade him to take it out of the cabinet.

Some features were obvious and may be of interest to those in the market for a ham-band receiver. The receiver covered all amateur bands, the same as the SB 300, SB 301, and had a 15 MHz position on the bandswitch for tuning in WWV to calibrate the XTAL calibrator.

On the function switch there are two "calibrate" positions, one for 100 kHz and another for 25 kHz. Obviously the 25 kHz was put in to help with the new band limits in the U.S. created by the incentive licencing.

The rig had the usual R.F., A.F. and preselector controls, and also had a potentiometer control labelled "noise blanker". I surmise it has a noise limiter with adjustable threshold. I was not able to find out about different filters for SSB, AM, or CW.

Also as a front-panel control there was a switch to allow selection of two VHF converters. Looking at the accessory plug on the back, it had + and - 15 volt connections and AGC. From this I deduce that Heath will make solid-state 2 and 6 meter converters. The showroom attendant had no information about converters.

The back of the cabinet had input output connections similar to those on the SB 301. There are outputs for the LMO, BFO, and HET OSC, so I assume it will be suitable for use as part of a transceive arrangement. I was unable to find out if there is a solid-state or hybrid matching transmitter in the works to go with the SB 303. The receiver had the usual ANTI-VOX and control lines, and requires an external speaker.

In appearance the receiver looks like the SB 300 or SB 301, but is not as wide across the front. It has the same dial with 1 kHz readout. The cabinet is grey, and the panel is green, matching the Heath SB line.

I checked with the Heathkit Centre in Ottawa but they have no knowledge of the SB 303.

The rig looks interesting, and is very compact. I think, but am not sure, it could be readily used in portable operation from battery power. At any rate, I did see the proof model, and you should soon see it in the magazines and flyers. Any of you wanting new HF gear might want to wait and see what surprises Heath will have in 1971.

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DX TOPICS

by R. John Athey, VE3CTX

August was a poor month for DX. A solar disturbance in the early part of the month made for lean pickings. The unsettled conditions began to dissipate by the beginning of September. However, random sampling of the H.F. bands proved less productive than one would normally expect at this time of year.

Special thanks to reporter Brian, VE3CRG, for his contribution of C.W. and 21 MHz information.

14 MHz C.W.

FK8AH	New Caledonia	14.032 at 0414 G.M.T.	QSL to W2CTN
HBØXJK/m	Liechtenstein	14.031 at 0231 "	QSL via K5JFP
VP2AZ	Antigua	14.014 at 0233 "	Bill
UM8AP	Kirghiz	14.016 at 1830 "	Vlad.
3B7DA	St. Brandon Is.	14.015 at 0315 "	Alex QSL to VQ8DA

14 MHz SSB

VS5RG	Brunei	14.196 at 1538 "	QSL to VE7BWG
YB9AAJ	Indonesia	14.233 at 1127 "	QSL to W7VRO
3B8CR	Mauritius	14.180 at 1133 "	Ray
FR7ZG	Reunion Is.	14.217 at 1224 "	Guy
JDIABO	Marcus Is.	14.204 at 1445 "	
FP8CT	St. Pierre	14.174 at 0030 "	Lawrence C.B.A.
TY7ATF	Dahomey Rep.	14.200 at 0033 "	Andre QSL via K3RLY
FB8WW	Crozet Is.	14.214 at 1140 "	Robert H.
FB8XX	Kerguelen Is.	14.214 at 1144 "	H.
FB8ZZ	Amsterdam Is.	14.217 at 1138 "	H.
AC3PT	Sikkim	14.305 at 1230 "	H.

21 MHz SSB

JYI	Jordan	21.208 at 1600 "	King Hussein

Heard only. This one is on the Canadian banned list.

HSIABU	Thailand	21.330 at 1524 "	
9VINR	Singapore	21.315 at 1608 "	
YBØAB	Indonesia	21.300 at 1620 "	Strong 5-9 signal
EA8GZ	Canary Is.	21.285 at 1639 "	Christina YL Op.
HC8FN	Galapagos Is.	21.275 at 1645 "	
3V8AL	Tunisia	21.280 at 1820 "	

Good QSL'ers promptly delivered these paste boards:-
OJØDX, OH2BH/ZA, HSIACW, VU2BEO, YB3AAI, HS6ADE, 3B8CZ.

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SHINERAMA

The OARC wishes to thank all those who participated in the Shinerama outing with the Ottawa University Students. It was a very successful project and again the Ottawa University retains the Canadian Championship. The total collected this year was $16,511.

The Club also wishes to extend a special thanks to Tony Vandenbelt, VE3FXG, and Roy Maskell, VE3ADM, for the fine job they did in organizing the communications for the project.

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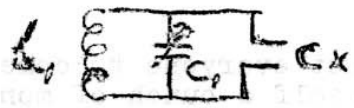
A GDO CAPACITY BRIDGE FOR MEASURING SMALL CAPACITORS

by George Acton, VE3EQH

This Bridge proves very useful in measuring those small capacitors (0-100 pf.), whose markings are blurred, or whose exact value is doubtful.

The Bridge consists of a coil and capacitor of known values, and hence a known resonant frequency. The Circuit is shown below:



C-1 is a 100 pf Variable capacitor, Straight-line-frequency type (semi-circular plates)

L-1 is a 1.5 uh coil, air-wound on a piece of poly rod ¾" in diameter (this is recommended instead of a B&W type coil due to the handling unit gets).

F-1 in this unit is 12.5 MHz approximately.

C-x is where the capacitor to be measured is connected.

Also, the dial for C-1 should be one with markings 0-100 over an arc of 180 degrees. These spec's for C-1 make for very easy calibration.

Method of Operation

The dial of the Bridge is set at "0" (C-1 at Max Capacity)
Coil L-1 is dipped with GDO. Use only enough Coupling for a readable dip.
The capacitor to be measured is connected at C-x.
Bridge is then placed near GDO as before, but this time the dial of C-1 is turned to restore the dip.
Value of the capacitor is then read off dial of C-1 at the index mark.
If no dip is obtainable, either the capacitor is open or it is larger than 100 pf.

NOTES: The range of this unit can be increased, but it would be easier to make another to cover say 0-500 pf. A dial of 0-100 is recommended as above because it would then read in percentage of capacity of C-1.

Reference: QST February 1967

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15TH ANNUAL VHF ROUNDUP SPONSORED BY THE SYRACUSE VHF GROUP

Don't forget the very popular VHF party held each year at the 3 Rivers Inn on Route 57 10 miles north of Syracuse, N.Y. This party will be held on October 10. The registration will be at noon with the official program starting at 1 p.m. and ending with the banquet and floor show from 6 p.m. on. Tickets $8.00. Contact Charles Sellwood, 902 First North Street, Syracuse, New York, 13208. Phone: 422-4448.

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OARC ANNUAL AUCTION

The OARC will be holding its annual auction on the 7th of November in the Wallace House on the corner of Rideau and Charlotte streets.

The listing of items for sale will commence at 9 a.m. and the auction will commence at 1 p.m. and continue until 5 p.m. or until all items have been sold.

Don't forget fellows we expect everyone to come and bring all your stored valuables and make yourself a bunch of money.

The arrangement is that the Club gets 5% of the money received for any item sold at the auction.

The Club will also appreciate anything which can be donated to the Club in order to support our coffers.

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NOTICE

The Ottawa Valley Mobile Radio Club Incorporated invites hams to participate in the Pot Hole Net on 3760 kHz on Saturday and Sunday each week at 10 a.m.

The Saturday net features the very popular Swap Net where you may list equipment which you wish to sell or trade. All equipment will be listed for a period of 1 month and persons wanting to take advantage of this service should get in touch with Ed Morgan, VE3GX, telephone 733-1721 or for those who live out of town, via either 3760 kHz or 146.940 MHz.

The net also provides a "wanted" service where you can list equipment you wish to purchase.

The Swap Net is also featured on the Capital City 2 Meter Net on Monday evening at 2000 hours via the VE2CRA Repeater.

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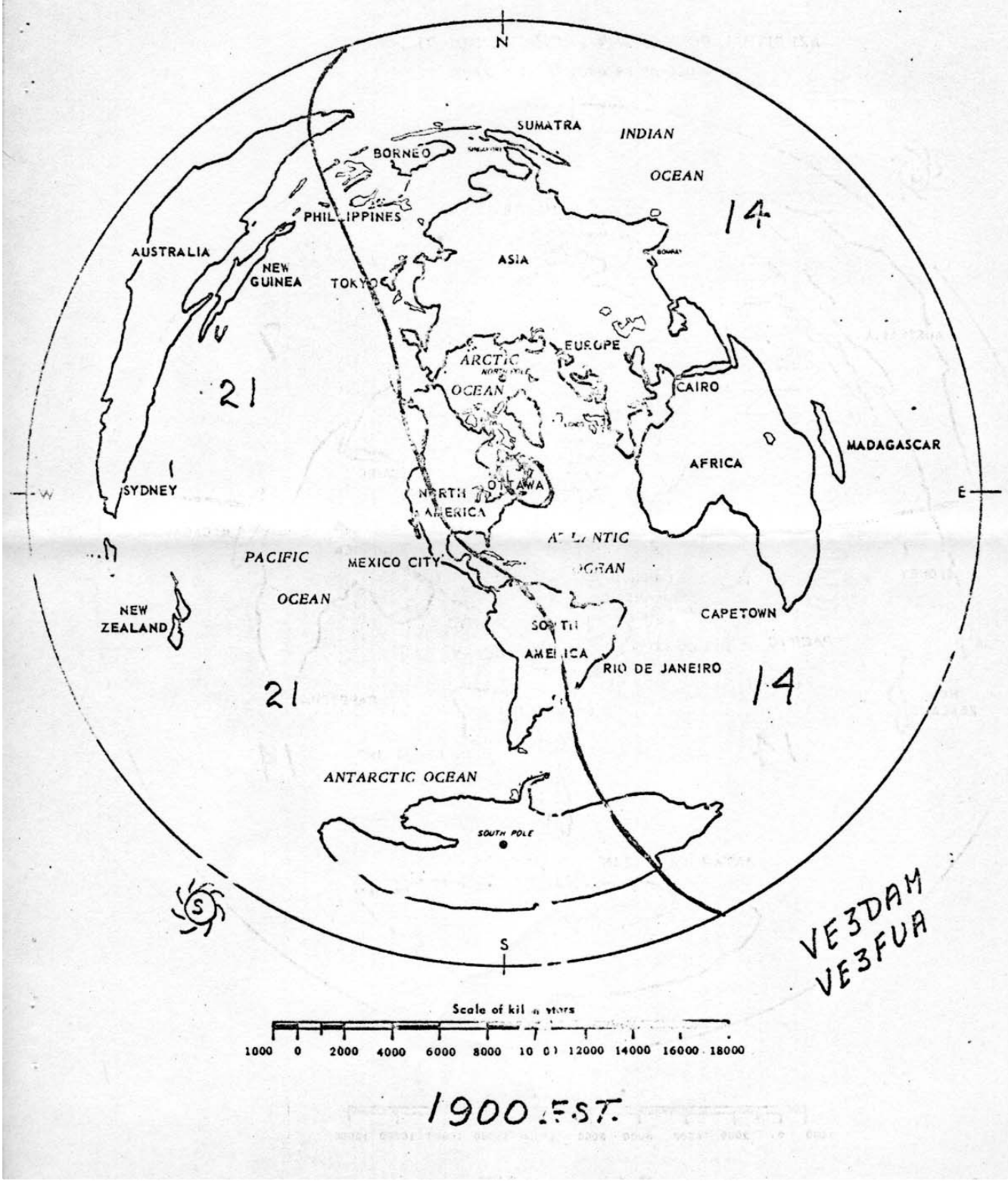
AZIMUTHAL EQUIDISTANT PROJECTION OF THE WORLD

(POLE OF PROJECTION AT OTTAWA)



Scale of kilometers

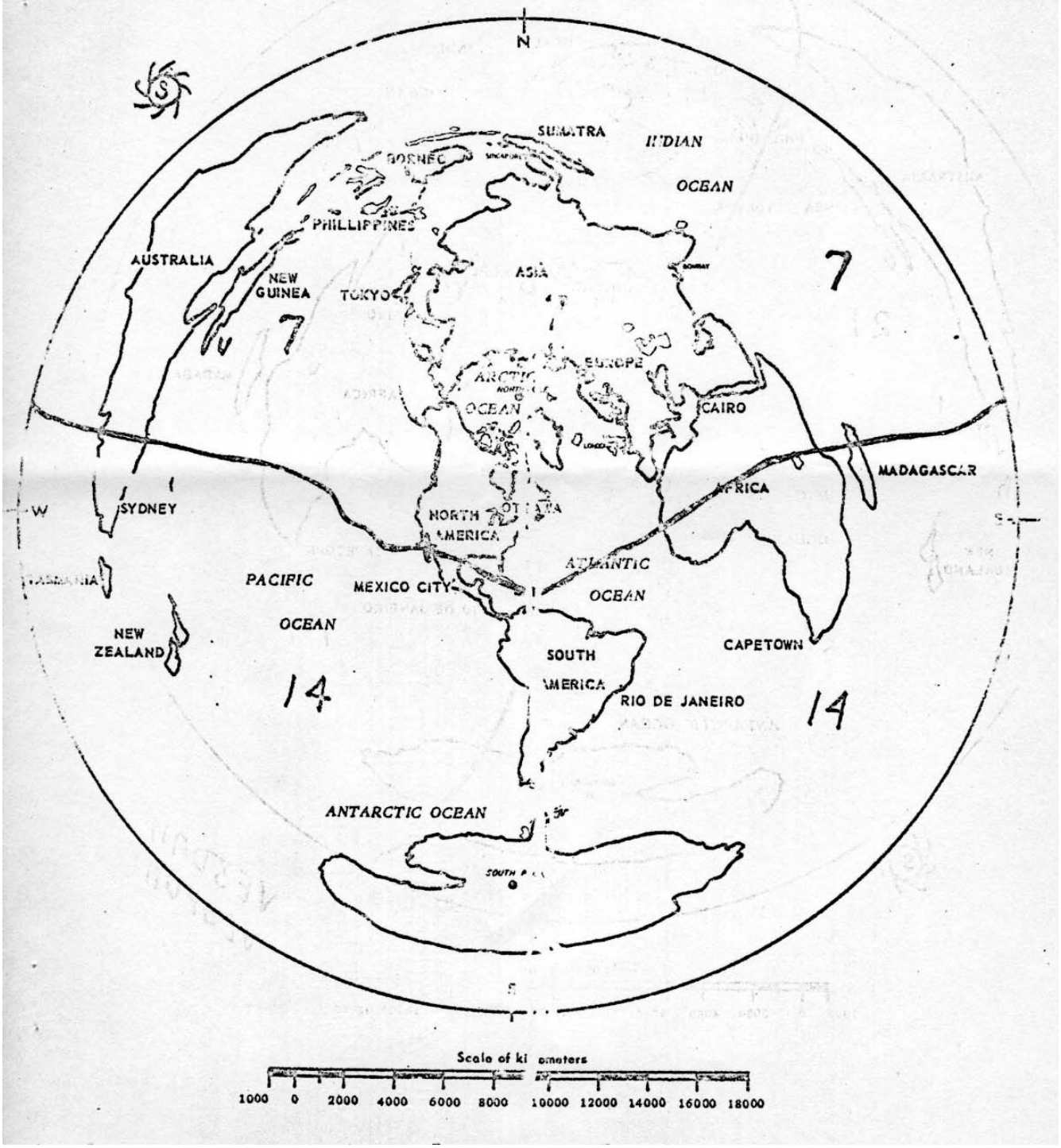
1000 0 2000 4000 6000 8000 10000 12000 14000 16000 18000

1900 E.S.T.

0600 GMT - OCT. 1970

AZIMUTHAL EQUIDISTANT PROJECTION OF THE WORLD

(POLE OF PROJECTION AT OTTAWA)



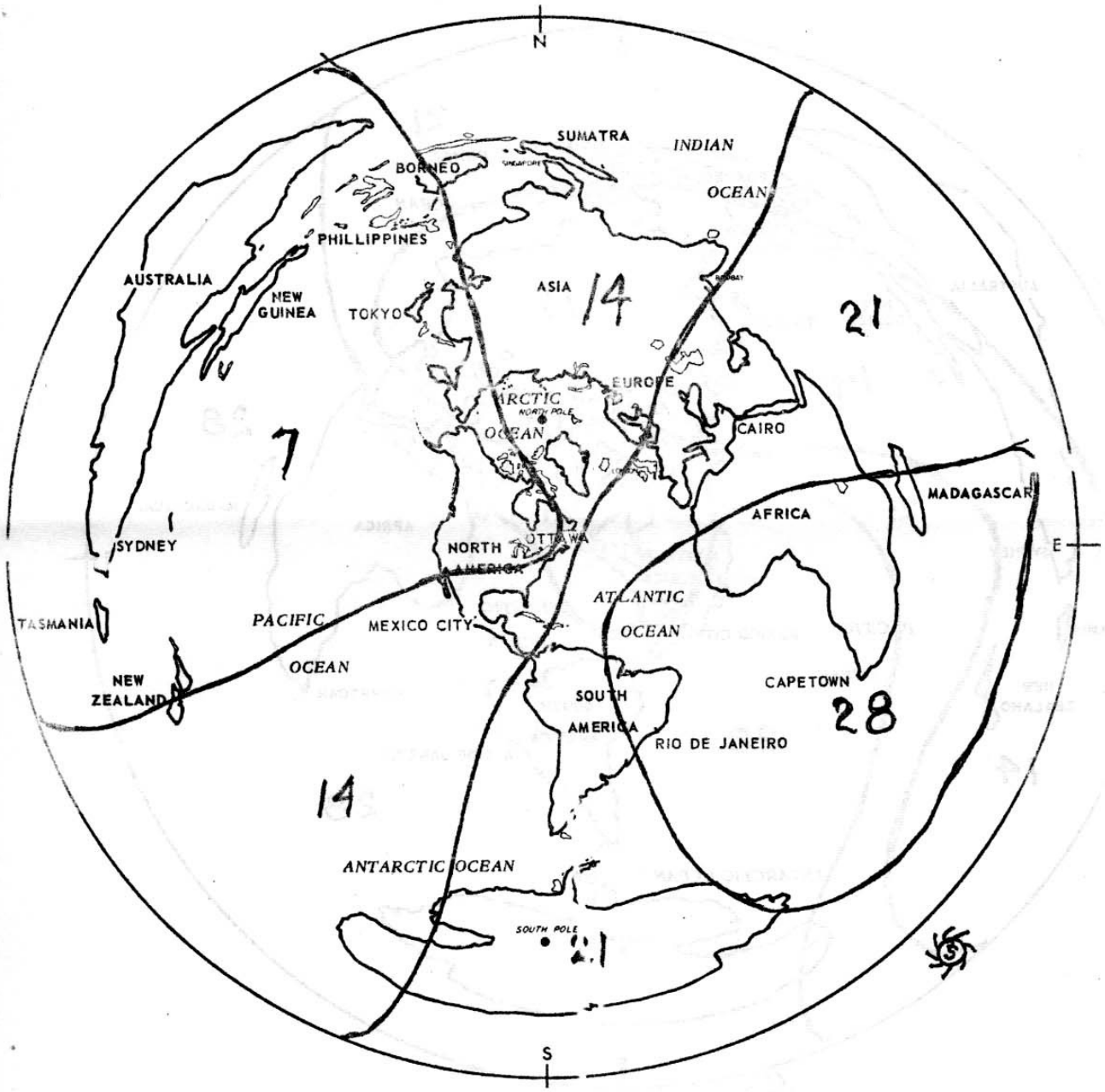
Scale of kilometers

1000 0 2000 4000 6000 8000 10000 12000 14000 16000 18000

1200 GMT - OCT. 1970

AZIMUTHAL EQUIDISTANT PROJECTION OF THE WORLD

(POLE OF PROJECTION AT OTTAWA)



Scale of kilometers

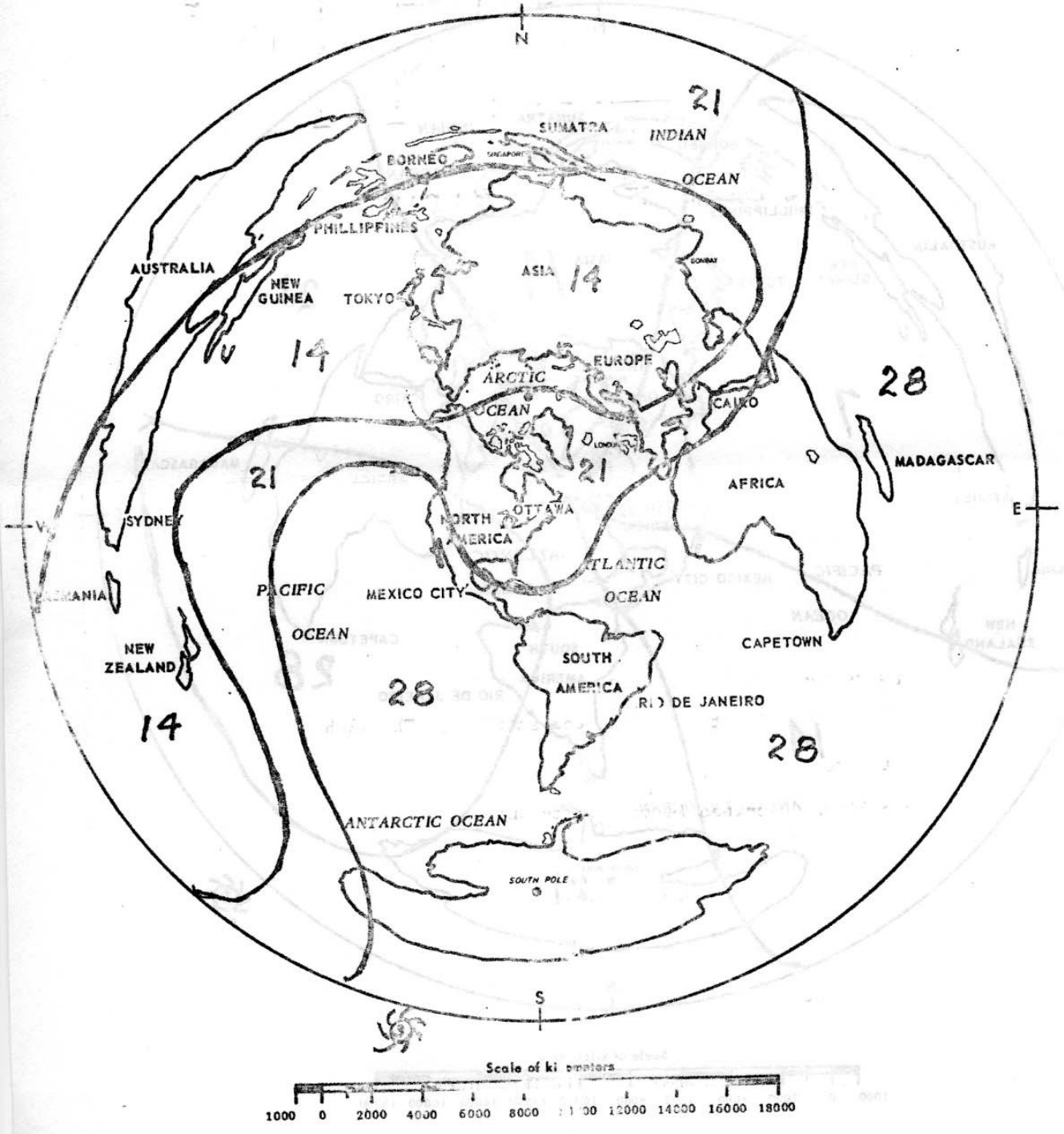
1000 0 2000 4000 6000 8000 10000 12000 14000 16000 18000

0700 E.S.T.

1800 GMT - OCT. 1970

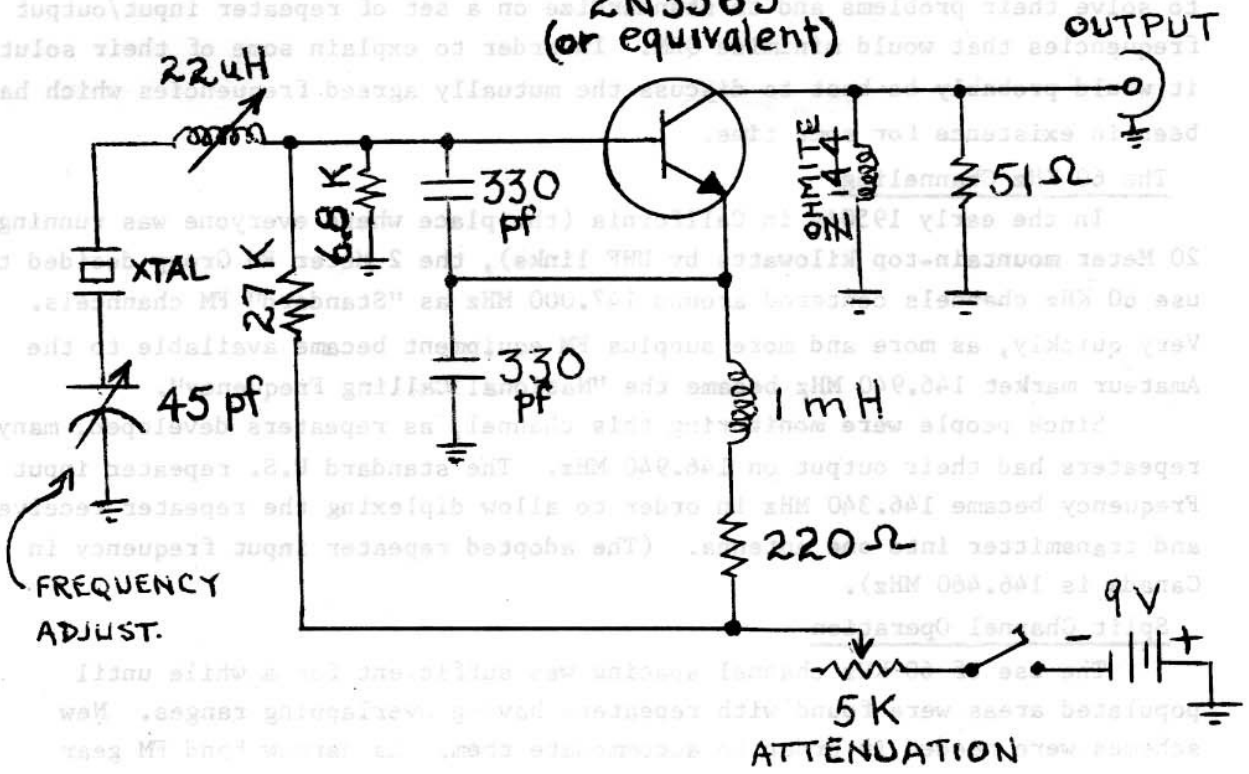
AZIMUTHAL EQUIDISTANT PROJECTION OF THE WORLD

(POLE OF PROJECTION AT OTTAWA)



1300 EST

T W E A K E R P E A K E R



Here is a jim-dandy transistor oscillator circuit useful for testing crystal harmonic activity right down to the Two Meter region.

It is quite stable over the full range of the 5K attenuator potentiometer and will oscillate with any crystal in the range 3-12 MHz. It can be used as a signal generator for obtaining maximum sensitivity in your 2 meter rig or just for checking a 75 Meter crystal for activity. The 22uH inductor is for extending the range of the crystal and can be omitted if desired. This circuit was first described in the now defunct FM magazine.

Try it - it really works! Colin VE3AZY.

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Western New York and Southern Ontario Repeater Advisory Council Meeting - Sept.26, 1970

Colin Rowe VE3AZY

I had the opportunity recently to attend the Western New York and Southern Ontario Repeater Advisory Council Meeting held at the Casa Blanca Motor Hotel in Grimsby, Ontario. The purpose of the meeting was to discuss

the various repeaters in operation primarily around the Niagara Frontier with respect to their QRM problems and the duplication on coverage.

This Group was co-ordinated about a year ago and got together in an attempt to solve their problems and to standardize on a set of repeater input/output frequencies that would minimize QRM. In order to explain some of their solutions it would probably be best to discuss the mutually agreed frequencies which have been in existence for some time.

The 60 KHz Channeling

In the early 1950's in California (the place where everyone was running 20 Meter mountain-top kilowatts by UHF links), the 2 Meter FM Group decided to use 60 KHz channels centered around 147.000 MHz as "Standard" FM channcels. Very quickly, as more and more surplus FM equipment became available to the Amateur market 146.940 MHz became the "National Calling Frequency".

Since people were monitoring this channel, as repeaters developed, many repeaters had their output on 146.940 MHz. The standard U.S. repeater input Frequency became 146.340 MHz in order to allow diplexing the repeater receiver and transmitter into one antenna. (The adopted repeater input frequency in Canada is 146.460 MHz).

Split Channel Operation

The use of 60 KHz channel spacing was sufficient for a while until populated areas were found with repeaters having overlapping ranges. New schemes were needed in order to accommodate them. As narrow band FM gear became available two systems were available to the ham: (a) Tone access repeaters such as tone burst and continuous tone squelched systems and (b) splitting the existing 60 KHz channels. The latter one was the approach taken by the Toronto/Buffalo region in order to overcome the QRM problems, i.e. use 30 KHz channels rather than tone-access systems. The Southern Ontario/Western New York Repeater Advisory Council made a study and found that there were 19 repeaters operating within a 100 mile radius of Niagara Falls and 35 repeaters within a 200 mile radius. They proposed using 146.070 MHz through 146.670 MHz as repeater input frequencies (in 30 KHz steps) and 146.700 MHz through 147.120 MHz as repeater output frequencies. Most of the repeaters groups involved are prepared to accept the philosophy and a movement is now under way to implement these changes. Most of their repeaters will probably have two frequencies on transmit - initially out-putting on 146.940 MHz and then switching to some operating channel. This allows one to monitor '94 to see who comes on frequency and then follow to the specific output frequency in order to have a QSO. For this reason anyone using the Toronto Repeater, VE3RPT, should idenfity themselves as VE3 --- listening '94 and then a control station in Toronto can switch the repeater back on '94 if you cannot follow the repeater to its other frequency.