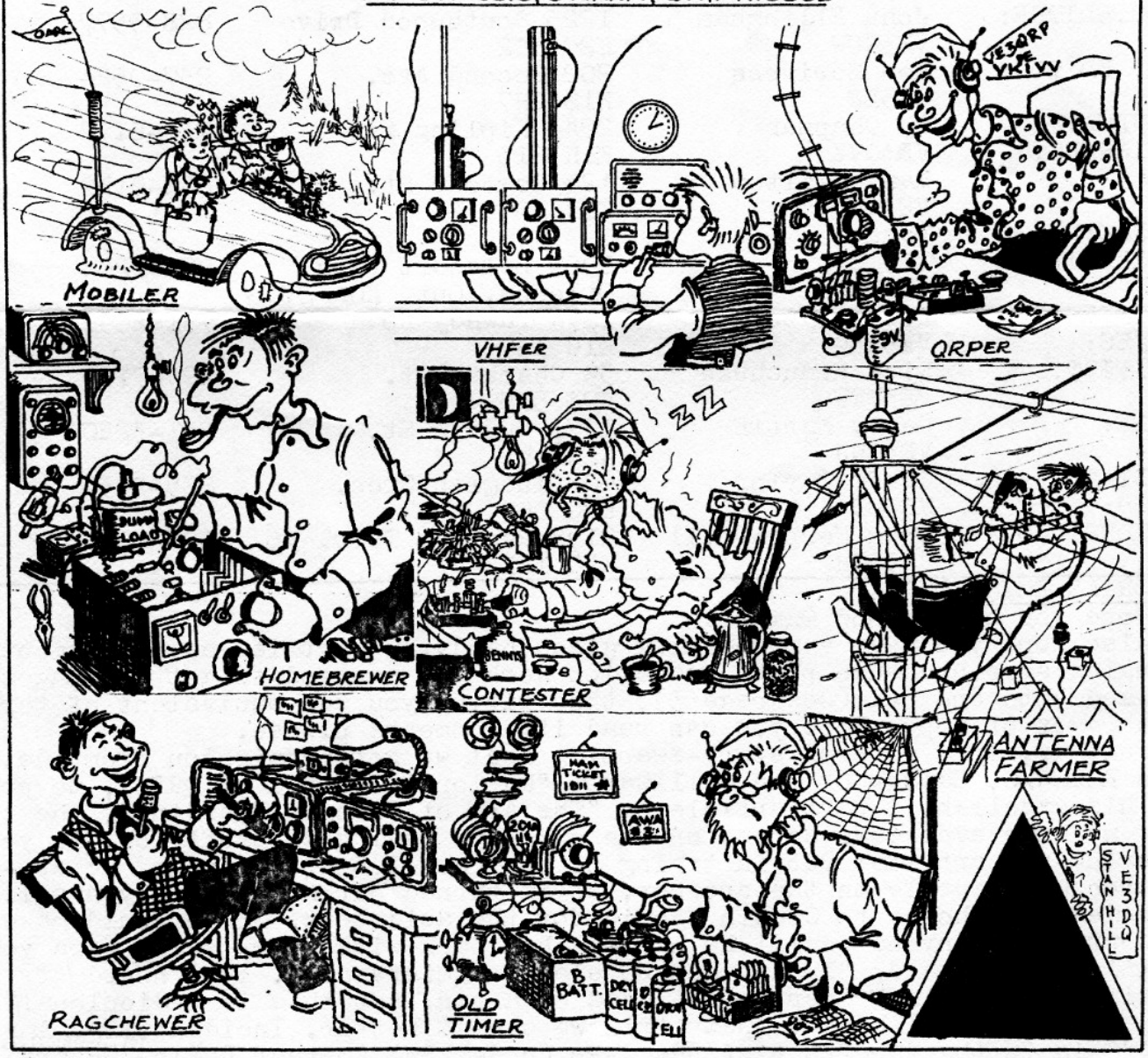


SEP 74



THE GROUNDWAVE

THE OFFICIAL BULLETIN OF THE OTTAWA AMATEUR RADIO CLUB
 P. O. BOX 8873, OTTAWA, ONT. K1G3J2



THE OTTAWA AMATEUR RADIO CLUB, P.O. BOX 8873, OTTAWA, ONTARIO GW SEPT 74 1

PRESIDENT:	Larry O'Brien VE3GRJ	25 Rockway Cres. #9 K2G OM3	828-6727
VICE-PRESIDENT:	Cary Honeywell	164 Clemow Ave.	234-8765
NET MANAGER:	VE3ARS	K1S 2B4	
SECRETARY:	Henry Harley VE3BR	Box 25, Site 1, R.R.2, Orleans, Ont. KOA 2V0	824-3895
TREASURER:	Mike Hughson VE3DVH	60 Norice Street K2G 2X6	224-2876
DIRECTORS:	John Henry VE2DNM	200 Bourgeau St. S. Aylmer, P.Q. J9H 5M1	684-8255
	Bud Punchard VE3UD	3193 Riverside Drive K1V 8H8	733-8384
	George Roach VE3BNO	104 Strathcona Ave. K1S 1X6	234-0885
GROUNDWAVE EDITOR:	Stan Hill VE3DQ	206 Cluny St. K1G OK2	733-9563
ASST. EDITOR:	John Ellis VE3HAT	2984 Hyde St. K1V 8H9	731-4995
ASSOC. EDITOR:	John Ellingham VE3GUW	1225 Southwood Drive K2C 3C2	828-3577
TECH. EDITOR:	Ken Scrivens VE3LJ	202 Second Ave. K1S 2H7	237-0524
GROUNDWAVE PUBLISHERS:	Cy Chapman VE3CVK	2244 Kipling St. K1H 6T5	731-6172
	Ian Hamilton VE3AMK	128 Osgoode St. K1N 6S4	232-9110
PROGRAM: MEMBERSHIP:	Vacant Vic Cyr VE3DEP	1969 Belcourt Blvd. Orleans, Ont. KOA 2V0	824-1204
BEGINNERS' CLASSES:	Bob Clayton VE3HBQ	1174 Tawney Road K1G 1B7	731-2691
ARCHIVIST:	Nick Krauchuke VE3FFW	39 Charkay St. K2E 5N5	224-7179
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CANADIAN ASSETS:	Croft Taylor VE3OR	60 Pineglen Cres. K2G 0G8	825-3434
VISITORS' BOOK:	Greg Heppenstall VE3GIH	2198 Regency Terr. #6 K2C 1H1	825-0821

EDITORIAL EMISSIONS:

* Hope you had a good Summer!

* Also hope you have a magnifying glass handy. - We tried an experiment! Fanangled some buckshee photo reduction work and managed to get 4 pages squeezed onto one page(see page 3), thus giving you the equivalent of three extra pages of copy. Hope you can read it! Comments please.

* Further, in a sort of story-swapping deal we got permission from Ade Weiss K8EEG/O, Editor of the Milliwatt, "National Journal of QRPP", to publish his excellent 4-part article on "The Art of Circuit Boarding", the best thing we have ever come across on the subject. Real good stuff for all you soldering-gun artists! But in trying to pry Part 1 onto one page, we applied too much muscle on the crowbar, so it turned out surprisingly small. We handed the photos to Cousin Myopic for the acid test. If he could make them out, then anyone could! He handed them back with a wry grin. "Are you funnin' me?" he said. "I aint got no electron micrscope. I've heard of printing the Lord's Prayer on the head of a pin, but this is ridiculous!" So the article will have to wait 'til we can do better. Incidentally, Ade K8EEG/O is in the forefront of the QRPP (under 5W) Amateur Radio movement. are called "the lunatic fringe" by some QRO boys, but to all others it is the most refreshing and healthiest development in Amateur Radio in years, breaking new ground in solid-state design and construction, revitalizing the old homebrew tradition, antenna experimenting, and the scientific use of..

M.U.F. predictions and solar flux cyclic patterns. Ade is also the QRP columnist for CQ magazine and excerpts from our May 74 GW article "QRP - The Mouse that ROARS", appear in August 74 CQ.

* How often do you hear a ham proudly proclaim, "Rig hr HB OM", and how long has it been since a contact said, "Entire stn hr HB OM"? Not in a coon's age, I'll wager! Yes, due to the proliferation of appliance rigs, the rapid advance of technology, and the inducements of mfrs' advertising, hams are allowing themselves to be conned out of the most satisfying joys of their favourite hobby;-the old homebrewing art. The big ham mags. are voicing increasing concern over the situation, since some delegates to International radio conferences are reluctant to support Amateur Radio frequency requirements, since they say that hams are no longer innovators, inventors and experimenters, but merely station assemblers and communicators. Though this is true to a degree, we suspect that the delegates are looking in the wrong places;-at the HF bands, where largely the only experimenters and builders are QRPers. It is a wasteland of look-alike mfd. twiddle-box appliances. But, if they take a gander at the specialty work being done, such as in VHF/UHF, Moon Bounce, Satellite, RTTY, Slow and Fast Scan TV, and Fax, they would get an entirely different picture. That is where the Amateur electronic geniuses are hanging out these days...In an editorial in the Milliwatt, W9SCH likens the operations of the average HF ham to that of a game of golf, where the player throws away his clubs, rides the cart to the green, and drops the ball in the cup for a hole-in-one. Instant success! No work, no sweat, in fact, no nothin'! But, asks W9SCH, "Where in the hell is the game?" The average HFER buys the appliance, plugs it in, and proceeds to work WAC the first night and DXCC in 2 weeks! The set and the beam manufacturers and the electric light Co. did all the work and the psuedo-DXer takes all the credit. To be fair, he ought to cut his award certificate into pieces and send them to the real accomplishers - the appliance builders...Another thing that is griping a lot of hams is the tendency for neopytes to get on Repeaters and neglect to do anything further to upgrade their licenses and their knowledge and skill of the game. It is distressing to listen on the repeater to these new additions to our ranks who's idea of Amateur Radio is to chatter inanely into a mic., tweak the controls on a 2 meter rice-burner;- and they think they are world-beaters! They seem to have no idea of the invention and technical accomplishment by hams in years gone by hams in years gone by that has gone into making the whole thing possible. It is sad to ponder that they appear to have no intention of ever designing or building anything! They are content to merely use the repeater. Unless they change their ways, they are "stuck on 2" for life!...Someday we may wake up to find our precious frequencies legislated away for use by "vital" services, and we will have nowhere to go but to (Heaven forbid!) say 10-4 into a "five watt wonder". If that dark day should ever come, we will wonder why we did not do something to prevent such a catastrophe while there was still time..So break out the soldering gun, amigo! There are few joys that can compare with that derived from building something that is a unique product of your own hands, heart and mind. So much for the Sour Grapes Department!

* Much thanks to John Watson VE3CPY, Gord Grant VE3DY, and Steve Cochran VE3DRX for yeoman assistance with this issue.

* Your Executive has decided to move the coinciding Executive Meeting and GROUNDWAVE Deadline back a week to give Ye Ed more lead time. Hence, the Deadline for submission of copy for the OCTOBER GROUNDWAVE will be Tuesday, September 10th, 1974. - * * * -

SEPTEMBER MEETING

Time and Place: Wednesday, September 4th, 1974, 8 P.M.

National Research Council, Sussex Drive

Program: A talk by Larry Bradley VE3CRX, our new area EC, on emergency preparedness and emergency work in the Ottawa area. Come out and get the lowdown on this vital work. Also the Micro-Mem 5 by Brian Crook. Gerry, our virtuoso of the coffeepot, will be on hand to delight your taste buds with the best brew in town! Cookies too! C U there!



AMSAT

CANADIAN NEWSLETTER

July 1974

GW SEPT 1974

3

from the ITU Journal is most interesting as it is a much edited version of what you received many months earlier in the AMSAT Bulletin!

To be fair, the ITU editing did not do our Canadian team justice in that it left out one half of the people. Please give credit to Dick Bonnycastle VE3FUA who was the DC systems designer for our effort and Ron Archer VE3CMM who made the whole program possible by doing the complete mechanical operation on very short notice. I am sending a few pictures which you might care to use should you desire. (See Photo Page - Ed).

Beyond even the team's recognition is a list of over 50 Canadian Amateurs who aided and frequently abetted the whole program. These people were all essential to the total effort to do our small part for the Amateur space program. As the Fall approaches, a new demand is coming - to convert the newest DJ4ZC/DJ5KQ linear repeater design to a flight qualified piece of hardware in less than 18 months. This new linear repeater will be used on the next OSCAR.

73

Larry Kayser VE3QB

The date is close and now is the time to be getting ready to work with amateur radio's biggest and best satellite - AMSAT AOB which after launch will be known as Oscar 7. The launch has been set for the first part of October. Orbit 1 will bring the satellite over the north pole with the repeaters shut down and the beacon on in the CW mode using FSK so be sure to have your 435.1 MHz converter going. Final tests on the Canadian-made beacon were made this spring and VE3QB reports that a final chirp problem was cleared up in May. Oscar 7 will be in a similar orbit to Oscar 6 but there are possibilities that in a few years high performance satellites will be operating in synchronous orbits and now is the time to get the experience necessary to work with these future projects.

Oscar 6

As most will know by now there was a schedule change on July 1 making orbits on Sunday mornings available for general communication. Satellite health continues good and command is being shared by VE3QB and VE2BYG. There is the possibility of some drop in command reliability at the end of this month as Larry, VE3QB moves house (and the command set-up) while Randy, VE2BYG will be in PEI. However command efficiency is expected to increase substantially in September when the Nova computer goes on-line at VE3QB. Orbital predictions are now a routine matter, but we should mention, if only as a matter of record, that those recently published by Ham Radio magazine differ from the AMSAT data by a small amount and require the addition of 9.2 seconds and 0.63 degrees.

Technical

The high level of cooperation with the Australians continues. A set of Programmable Read Only Memories for the basic Mod 8 software built in were sent to VK3ZHD recently. This will get the computer going when it is completed. These PROMS were a donation from VE3BYO, Mike, who has since moved to W4. Other items of terminal equipment are being sent and semi-monthly contact by telephone is being maintained. Work on making the Canadian command operation computer-controlled has been proceeding and an interface panel to the command generator is finished. The Nova 800 Mini computer has a single-user basic language running and it has been generating excellent tapes for the old SMART autocommand system. Roger Mainwright of Data General has been helping with information on the Nova. Planning is also going on for an advanced control system for Oscar 8. RCA have donated two COSMAC central processing units for use in this system. Due to be received in October, these CPUs, which will replace the present experimental control logic, will permit extensive management of Oscar 8, and only require 15 volts at 1.5 ma. Combined with several other new systems, this will make it possible for a full duplex command/control ability complete with automatic handoff to the next command station. A Random Access Memory has also been acquired for this new system and part has already been shipped to VK3ZHD who is also heading a ground control computer program in VK. A different kind of project is underway at VE2BYG where Randy has been working on the conversion of solid-state FM amplifiers to linear service by using forward bias. This holds great promise for solving the mobile SSB ground terminal problem.

Some control operations have been greatly eased by the donation of a number of TDK endless loop tape cassettes by Superior Electronics of Montreal. There is an opportunity for a number of Canadian amateurs to take on a very meaningful project as part of the educational role of the amateur radio satellite program. It involves the development, construction, and operation of a remote terminal for Oscar. This terminal would automatically transmit information about its local environment at specific times to be monitored via the satellite. This is a major project and system design assistance will be available. Please contact VE3QB.

Operational

New stations continue to appear on Oscar and since the last Newsletter more Canadians have been active - VE3EVW (in winter months VP2MJ), VE8YI (the first 8), VOLDI, VESXU, CF3BA, and on Field Day VE3VM/3. A new call sign was VE6UHF, the Edmonton club, operated by VE6AK and VE3EYR showed up with the CF prefix. VE7BMM has been heard running a beacon but apparently not responding to calls. VE3HD was able to use the call XJ3ITU during several orbits on May 16 as part of the Canadian observance of ITU Telecommunications Day (May 17). This was the very first use of the XJ prefix by amateurs and first contacts went to VE2BYG and VE3QB. ARRL President Harry Daniels, W2TUK continues to be active on 29492 cw. VE8YI, after a brief appearance, is now south on vacation. He returns late this month and promises greater activity. From August 1 to September 7 VE2s will be able to use the prefix CY to mark an international francophone youth festival. Regular user VEMWL will be moving to Ottawa soon and will be active as a VE3. Ray's presence at the centre of activity will be welcomed. If you heard some RTTY recently it was really there and it wasn't your preamp oscillating again; VE3QB has been running some RT tests. VE3FJG, who has been using a hand held quad and low power writes about his experiences in an upcoming issue of The Canadian Amateur. Gil, VE3GTP, is at VESRCS (Alert) and is being carried a TX by VE3QB to get him on. His location is such that Oscar never goes overhead or north of him, never gets higher than about 30° and is available for at least 14 minutes on every orbit. CQ Magazine has started an Oscar column and starting a new career as columnist is Randy, VE2BYG - a nice mark of recognition for both the amateur satellite programme and one of its devoted participants.

Social

Canadian AMSAT members have been requested to stage a program at the Radio Society of Ontario convention in Hamilton in October. Members with ideas are asked to contact VE3HD. New QRM at VE3QB on August 1 will be 24 Arundel Street, Ottawa. In May a group of Ottawa amateurs met with Bill Porter, W3AAC, the new US ambassador to Canada. He is expecting to attend the Hamilton convention and there is some possibility that he may operate on Oscar.

Compiled by Ernie Welling, VE3HD, 165 Catalina Drive, Scarborough, Ontario, M1E 1B3

Editor

"Groundwave"
Ottawa

Dear Stan:

Thank you for the publicity about the upcoming launch of AOB which will be known as AMSAT OSCAR VII after launch. Your pickup

IN SEARCH OF DOC

I guess we all look back on some period in our hamming experience when our enjoyment in the game was the most satisfying. In my case, I think I derived the most pleasure from my QSO's with Doc W2DII.

It was right after the war, and we had just got our hands back, so I tangled together a little 6L6 oscillator and, coupled with my prewar TRF receiver and a Window antenna, I got back on the air. I had some problems getting a suitable antenna up, as we lived in an apartment and I had to fox the apartment owner into thinking I was putting up a broadcast antenna on the roof with a single unobtrusive wire running down the side of the building to our poky basement apartment, so the Window was the answer and it worked just fine.

My one and only crystal 7178 KHZ, I had used since I built my first prewar crystal oscillator so I was stuck when rock-crusher QM took over the frequency. One station in particular gave me a lot of trouble. His signal was always 89 with a low melodious tone that was always within the range of my unselective receiver. Sometimes he was above my frequency - sometimes below - and often bang on. The operator had a beautiful fist - smooth, rock-solid, copper-plate mace. I noticed that as soon as this station fired up, the other stations gathered like bees to honey, so I gave a listen and heard some interesting stuff. W2DII had a ribald sense of humour and a racy turn of phrase, and he seemed to always be giving fatherly advice to other ops, couched in his own hilarious patter.

Lucr was scarce, so I was not about to go out and buy another crystal, so figuring that if you can't beat 'em, join 'em, I gave this Doc, whoever he was, a call while he was copying another signal. He answered me at once and invited me to join the party. Well, that was the beginning of my most enjoyable period in Amateur Radio. From then on, for a period of about a year, I QSOed daily with Doc, starting at 9 AM and carrying on throughout the morning in the QSO parties that always gathered. But the most enjoyable times were in the afternoons when I usually had Doc all to myself.

I have no idea what Doc looked like, nor do I possess much info on his history, but he was sure interesting to talk to. He had been a ham since 1925, starting with a 201A, then a 210, then a pair of 45's and then his then current rig, a TFG 204A. In one of his many letters, he enclosed a photo of his station. (See Photo Page) The 204A - a huge bottle if you remember - was mounted on a breadboard horizontally with the tuned grid and plate circuits separated by the length of the tube. The rig sat atop a table-mounted rack which housed the power supply. I don't know what was in that rack - perhaps it was a motor-generator - to produce that distinctive melodious tone, but it sounded lovely to listen to. He normally ran 250W, but he said he could "put the boots to her" and run 400W if he wanted to. He said he didn't need a light in his shack at night as the 204A filament provided enough light to read by!

Doc ran a drug store in Binghamton, N.Y., and his station was in the back. He was an encyclopedia of information on any subject that surfaced. For instance, Binghamton was a fight town in those days and someone told me that Doc was a referee. Anyway, on the morning after a fight, he would regale me with the gory details of the blood-letting. He was also an authority of WWI fighter planes, and he often joked another ham - a blood-and-thunder story writer - about putting the wrong engine in a Spad or the wrong machine-gun in a Fokker; and he went into great detail on the intricacies of such aerial maneuvers as the Immelman, Inside Loop, Barrel Roll, Falling Leaf, etc. For all I know, he may have been a fighter pilot, but all enquiries as to his past drew blank.

Suddenly one morning, Doc's presence was missing on the band. For a month I never heard from him. Then one day I got a letter enclosing a photo of his new station.

"Here is a picture of my new layout," it said. "On my new ENE 45 I have heard you calling and calling into the electronic void. Like the plaintive call of the last of the curlews! But I couldn't answer as I have my new rig tuned up on fone. New rig is Weissner Signal Shifter into rig w/ pr of 813's. Isn't she a beauty? Pull gallons! If you want to work me now, young fella, get yourself a modulator and start beating your gums into an iron turnip! I'm on 75 fone now and having a ball".

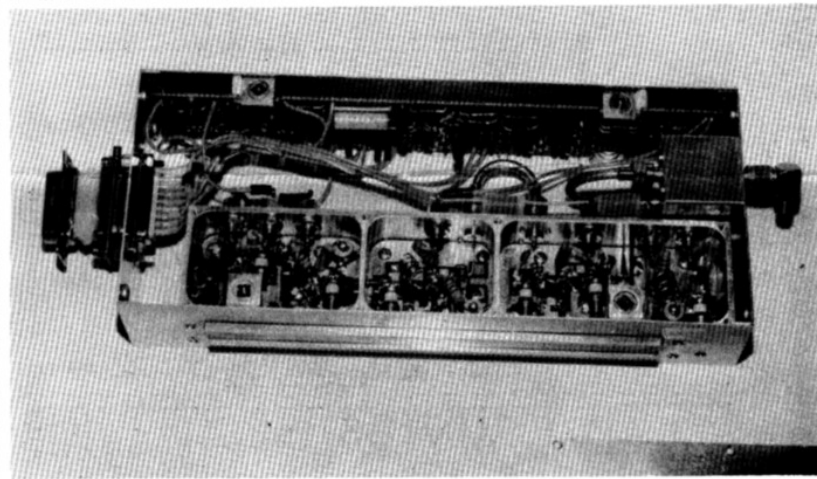
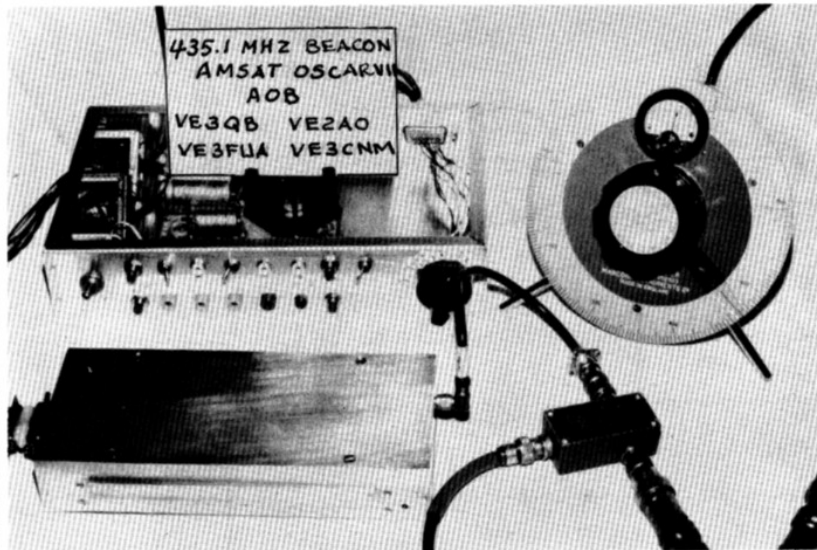
As I read the letter I felt saddened and foreboding for I realized I was not likely to hear Doc's beautiful morse again...and gone forever was the melodious tones from that ancient oscillator. To one like myself who is so addicted to the CW mode, it was a real loss. I was correct in my feelings for I never heard Doc again.

In later years, whenever I was camping with my trailer at Chenango Valley State Park, I would go into Binghamton and try to find Doc. I called at all the drug stores, but no-one seemed to remember him. One pharmacist vaguely remembered an old guy who had a drug store on Bridge Street "opposite the Red Indian station", but he didn't know what became of him. "He was a crazy radio nut," said the druggist. I was never able to find any hams in the town. Whenever I worked hams in the area, I made enquiries, but none seemed to remember him. Until just a while back I QSOed with Carl W2QXX in Binghamton.

"Yes," he said, "I remember Doc very well. In fact, I sat in the back of his drug store and kibitzed while you were chewing the rag with him. I'm using his vibroplex now. Doc became a silent key 8 or 9 years ago."

...CONTINUED PAGE 6

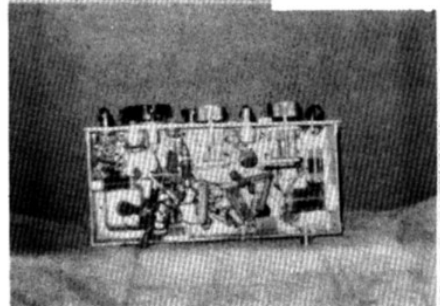
OSCAR VII - STANDARD BEARER OF AMATEUR RADIO
CONSTRUCTION & COMMUNICATIONS



DOC'S RIG
W2D11'S HORIZONTAL 204A
IN T.P.T.G.



THE ZILCH 101

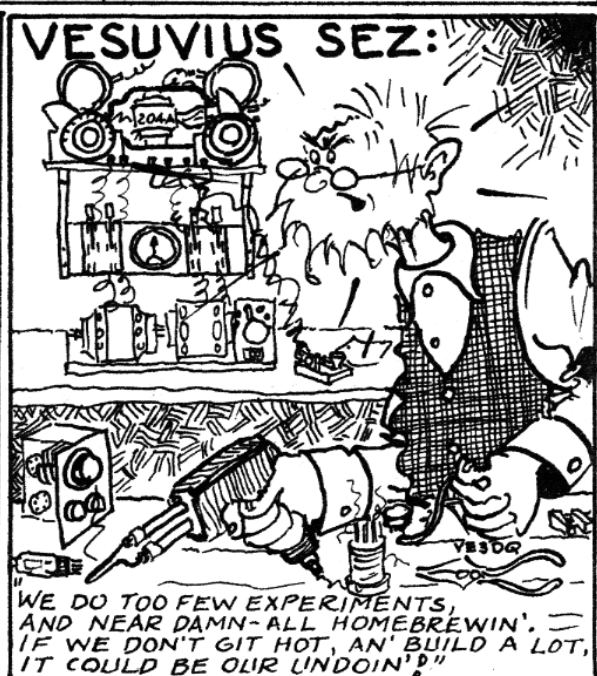
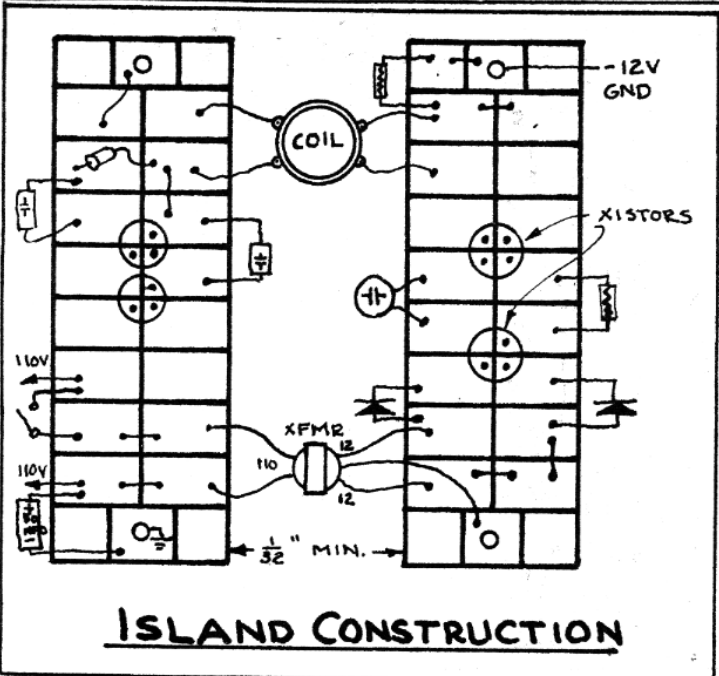
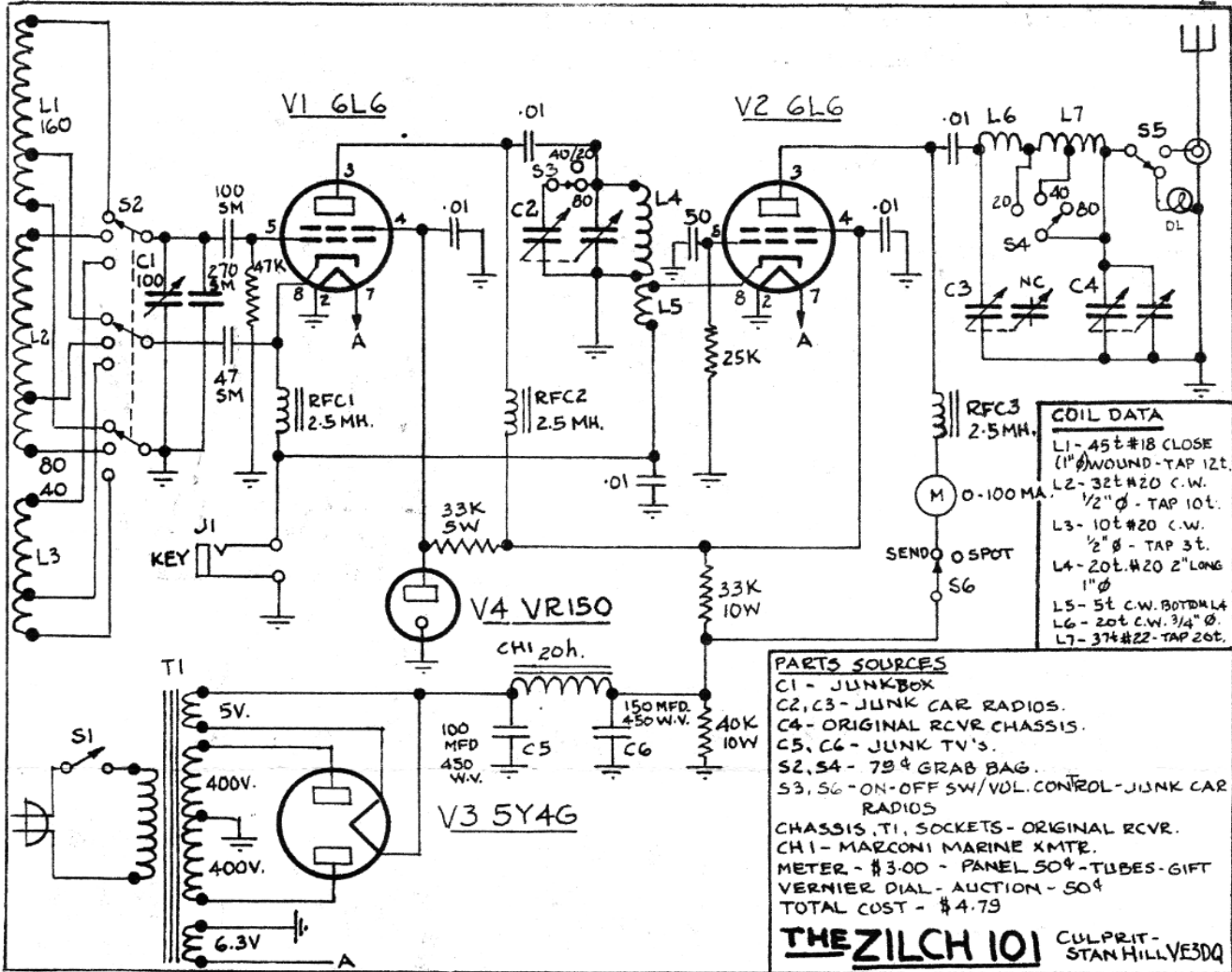


UPPER PHOTO - PANEL L. TO R. VFO DIAL, METER, LOADING DIAL, DUMMY LOAD LIGHT & SWITCH. LOWER SKIRT- VFO BAND SW, OPR/SPOT SW, ON-OFF SW, KEY JACK, VFO PLATE DIAL, VFO PLATE BAND SW, FINAL PLATE DIAL & FINAL BAND SW.

LOWER PHOTO - A PEEK AT THE RAT'S NEST UNDER THE CHASSIS. NOTE ALMOST COMPLETE USE OF JUNK RADIO PARTS.

SOME SPANKING-NEW - SOME OLD - SOME OL' "MAKE-DO"

PHOTO CREDITS:- OSCAR VII-LARRY. VE3QB: DOC'S RIG-SILENT KEY DOC, W2D11 (EX 8D11): ZILCH 101-VE3QQ



.....So Doc, wherever you are - up above or down below - mny tnx fer mny FB QSOs. I never knew you well, but U gave me a lot of pleasure. GL to U OT wx U are slashing a harp or on the business end of a clinker bar or a No. 4 coal scoop. I'll bet you gave St. Peter an earful if you passed through the pearly gates, and if you're down below, I'll wager the Divil knows you're around. Wish I had eyeballed wid U, Doc. Sure wish I had known U better! 73 OT.

Stan VE3DQ

HOW DOES A TRANSISTOR TRANSIST?

Question: What do you mean by the term Beta which is usually designated by the symbol β ?

Answer: Beta refers to the ratio between a changed current flowing into the base and the resulting change or delta (Δ) of current flowing from a transistor's collector and its emitter. In most books you will look at, there is a relationship that will say the same as above but will look quite similar to this: $\beta \approx \frac{\Delta I_c}{\Delta I_b}$

In Fig. 1 the symbol of an NPN transistor indicates which way the currents flow. The base current flows from the base to the emitter and is designated by I_b . The collector current flows from the collector (Natch!) to the emitter. The current paths are quite different and are only related by the magic term β . (Secondary currents are ignored in that statement.) Now we know that if 1 ma of current is flowing from base to emitter, and the β is say 100, then 100 ma of current will flow from the collector to the emitter. Fig. 2 shows by an equivalent diagram of a transistor how the paths are isolated from each other and some terms which are self-explanatory. This gain.....

Question: Hold it Big Mouth! Why didn't you say that β is just the gain of a transistor?

Answer: Well, that wouldn't get across the point that the base emitter path is different from the collector emitter path and then how would we explain how you get useable defined gain for use in transistor circuits? (That's next month).

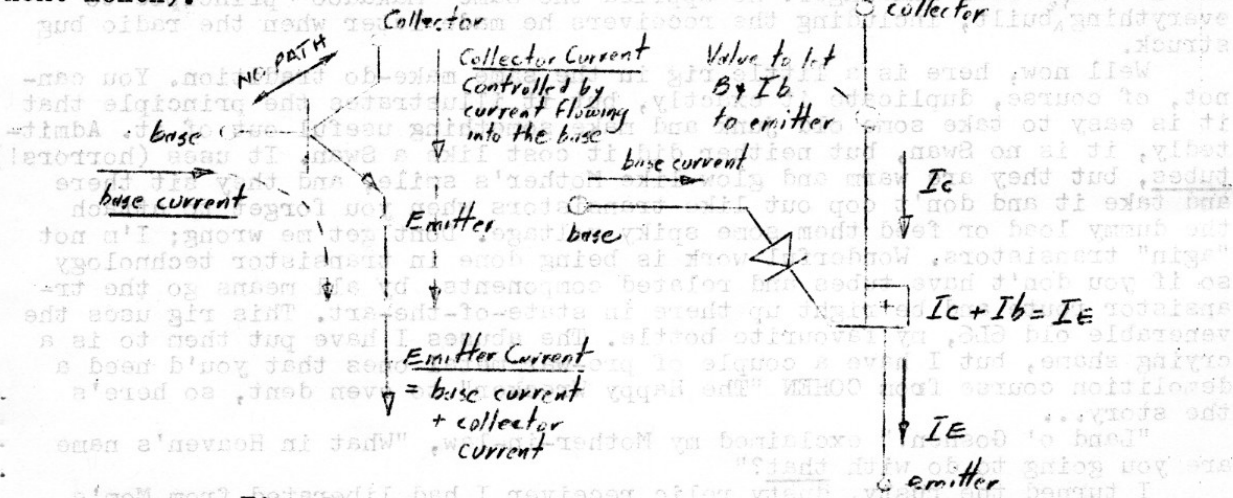


Fig. 1

Fig. 2

STAFF

Press on! Nothing in the world can take the place of persistence. Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb. Education alone will not; the world is full of educated delericts. Persistence and determination alone are..

ISLAND CONSTRUCTION

Dick K3IOE has come up with a neat method of breadboard type experimenting, that is especially good for transistors, using what he calls "Universal PC Terminal Strips" or "Island Construction". (See Page 5) The strips are 1" x 3" G10 glass epoxy strips with 20 insulated copper "islands" plus two mounting "islands" which can be used for grounds. Each strip may be fastened to a wooden base with #4 wood screws or to a metal base with #4 machine screws. You can use any arrangement of the strips your ingenuity can devise--side by side, end to end, or a vertical and horizontal mix--spacing the strips far enough apart to accommodate parts layout, with a minimum spacing of 1/32". You can use any number of strips depending on the size of your project--even 50 strips for a total of 1000 "islands". Parts ~~leads~~ may be mounted on the copper side, bending the leads to solder them to the "island"; or on the epoxy side by drilling holes in the conventional PC manner and pushing the leads through and soldering them on the copper side. A similar type of "island" construction is used in the WICER/WLICP Semiconductor Learner Series in QST. K3IOE has set up a facility for manufacture of all types of PC boards and custom-makes boards to order. He also has available the KH6HKZ HW-7 front-end modification featured in Dec 1973 QST (\$3.50) and the Demaw RF/SWR meter featured in June 1973 QST. (\$3.00). The Universal PC Terminal Strips are \$1.00 each. K3IOE's address is: Richard E. Bondra, RD3, Box 380-A, East Stroudsburg, Pa. 18301. U.S.A.

- * * * -

THE ZILCH 101 --(ZILCH cost--well..almost!--1 VFO--0 Buffer--1 Amplifier)

By Stan Hill VE3DQ

When I was a kid, my Uncle Vern was a wheelsman on the Gt. Lakes, and when he came home from steamboating at season's end, he built furniture in the carpenter shop in a corner of our driving shed back of the barn; that is, when he wasn't chasing the girls or playing stud poker. One day the planing mill horses and dray arrived with a pile of exotic lumber and my father clucked his tongue in disapproval.

"You can't build a bookcase with poor lumber," declared Uncle Vern, defensively.

"Nonsense!" said my father. "It's the man on the smoothing-plane makes all the difference," and to prove his point, he proceeded to fashion, with plane and glueing clamps, a bookcase from boards taken from a big packing case I had lugged home from the alley behind Izzy Topp's Clothing Emporium; and it was a real humdinger! He applied the same "Makadoo" principle to everything built, including the receivers he made later when the radio bug struck.

Well now, here is a little rig in the same make-do tradition. You cannot, of course, duplicate it exactly, but it illustrates the principle that it is easy to take some old junk and make something useful out of it. Admittedly, it is no Swan, but neither did it cost like a Swan. It uses (horrors!) tubes, but they are warm and glow like Mother's smile, and they sit there and take it and don't cop out like transistors when you forget to attach the dummy load or feed them some spiky voltage. Don't get me wrong; I'm not "agin" transistors. Wonderful work is being done in transistor technology so if you don't have tubes and related components, by all means go the transistor route and be right up there in state-of-the-art. This rig uses the venerable old 6L6, my favourite bottle. The abuses I have put them to is a crying shame, but I have a couple of pre-war metal ones that you'd need a demolition course from COHEN "The Happy Wrecker" to even dent, so here's the story...

"Land o' Goshen!" exclaimed my Mother-in-law, "What in Heaven's name are you going to do with that?"

I turned the rusty, dusty relic receiver I had liberated from Mom's garage over and peered inside the chassis. "Just gimme a couple minutes and I'll let you know," I said. "See that tuning condenser there? Make a doozer of a pinet loading condenser. Could use the chassis too - built like a Sherman tank. Those slug-tuned coils in the short-wave section would make good VFO grid coils. Wonder if the power transformer's good? Metal tubes -

must be about 1938 or so vintage. What happened to the cabinet Mom?"

"Dan chopped it up to light the furnace," said Mom. "Shaped like a church window, it was."

"He put the axe to a valuable antique," I said. "I'll just stash this clunker in the trunk. Next time you hear it, Mom, it'll be puttin' out code."

I scoured the chassis with emery cloth, soap and water, and elbow grease. Leaving the transformer, tube sockets and tuning condenser in place, I built a rig "out of my head", then traced out the wiring to produce the circuit diagram illustrated on page 5. Now the design parameters that this thing violates will make an electronics engineer blanch with horror, but the thing radiates like a scintillating blonde at a disclothique, and that is the main consideration. No problems have surfaced like harmonics or other spurious emissions, since no irate neighbours have pounded out the panels of my door. All parts were either on the original chassis, lifted from other junkers, or were in one of my numerous junkboxes. VFO grid and final bandswitches are from a 79¢ grabbag. Other switches and the two plate tuning condensers are on-off/vol. control switches and tuning condensers from junked car radios. Pinet loading condx is original tuning condx in situ. Jerry the Junkman made me a gift of the tubes. I gussied the appearance up a bit with a panel (50¢) and a meter (\$3.00). A 15¢ neon-bulb tuning indicator would work just as well. All dials from junkers except the VFO vernier (Ham auction 50¢). Total cost therefore: about \$4.79!

Referring to the diagram, a Hartley oscillator VFO operates on 160/80/40 meters in the grid circuit and doubles to 80/40/20 in the plate circuit. The plate tank coil is wound for 20 meters and a single section of the double tuning capacitor tunes to 20 and 40 meters. Switching in the second section of the tuning capacitor puts the circuit on 80. Not very efficient on 80, but drive is adequate. The old inverted 6L6 circuit is used in the amplifier stage. "Windy", an irascible, old, know-it-all reprobate in the radio club back home put me wise to this one. You couldn't pick your teeth without he'd give you advice, so the fellows avoided him like the plague. But he knew his onions and he did things with a pair of gassy 210s that gave the boys with the 500W Eimacs catfits! He said that with an inverted amplifier, you don't need neutralizing, and you gain power because the driver RF goes right through the amplifier like water through a sieve. Only he used a much earthier expression. You drive the cathode instead of the grid and put the grid at RF ground potential. The output circuit is a conventional pinet. The plate tuner is one section of a car radio tuning capacitor and the loading capacitor uses both sections of the rcvr's original tuning capacitor. The dummy load circuit is optional.

The rig can be bucked up to 40W, but at this level the skimpy power transformer can't stand the gaff as it heats up like a hotplate and key-down drawdown is from 400 to 240V, causing a "chowpy" signal. Choke input in the power supply or replacing the 5Y4G with a solid-state device might cure this. Otherwise I may tear out the entire power supply and install a solid-state voltage-doubler running right off the AC line instead. The rig as diagrammed is extremely stable at QRP levels.

I will not dazzle you with exotic DX reports as I've been too busy to spend much time on the sending-iron. Had a solid QSO on 80 with Virginia Beach, Va. loading 1W to the eavestrough around the house. 40 is good, but I had trouble zeroeing in the VFO 20 meter grid coil until recently.

I was going to call this piece "The Perfect Mousetrap". My YF peered under the chassis and exclaimed, "My oh my! Men have been searching for centuries for the perfect mousetrap. You play with your radio for a couple of days and come up with the answer. A mouse would die of malnutrition before finding his way out of that maze!"

Stan VE3DQ

REPEATER NEWS

The widespread adoption of the suggested "Canadian Plan" of 5 two-meter repeater channels seems to have met the frequency needs for the moment in most parts of Canada. In some areas, however, such as the West Coast and Southern Ontario, due to the proximity of a large number of repeaters,

a number of additional channels have already been put into use. As new repeaters are proposed for heretofore uncongested areas, it appears that they too will have a need for additional channels...With present requirements and future prospects in mind, CRAG suggests that consideration be given to adding a third series of channels to the current Canadian plan which has 6.34/6.94, 6.46/7.06 as Primary channels and 6.16/6.76, 6.22/6.82 and 6.28/6.88 as Secondary channels...It is hoped that a series of third choice channels can be arrived at by a consensus in order to maintain the original objective of minimizing crystal requirements for Canadian two-meter repeater users and thereby adding to the flexibility and accessibility of repeaters, especially to travellers. In suggesting a third level of channels, it may be well to set a priority for the choices involved so that, again, the minimum number of channels are used across the country. Correspondents could consider high input, low output channels above 147.06 MHz and determine whether it is advantageous or not to go to these or to stay with 146 MHz channels...Where low input and high output channels are still a possibility, the following channels are suggested as a "tertiary" level of channels in order of priority: 1. 6.40/7.00 2. 6.01/6.61 3. 6.10/6.70 4. 6.04/6.64 5. 6.25/6.85 6. 6.37/6.97...These channels and the priority arrangement are presented for discussion purposes and your suggestions and comments received by the Secretary before September 30 will be welcomed and the results will be made known to correspondents as soon as possible after that date

With the good reception accorded the principle of a Canadian channel plan for two meters, it appears that the same principle might be adopted for six meters and the 220 and 450 MHz bands. A selection of a minimum practical number of channels on each band, in order of priority of choice, should effectively fill Canadian needs for some time to come. As a start, and in view of the necessity of co-operation in voluntary frequency assignment in border areas, the band plans developed in the United States by the ARRL for 6 meters, 220 MHz and 450 MHz are attached for information.

N.B.-Above excerpted from CRAG letter to CRAG correspondents dated 13/8/74, J. Lyle Ward VE3CEZ CRAG Secretary..Sorry, no room to include attachments.Ed.

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OTTAWA AREA NEWS

RSO CONVENTION 1975 - No 1 Priority - No 1 Priority - No 1 Priority - No 1 Pr

From here on in this will be our club's first priority project! George VE3BNO advises that the Skyline has been booked for the weekend of October 3rd and 4th, 1975. There is a great deal of work to be done and a number of working committees have to be formed to get on with the project. Brochures and a presentation has to be prepared in time for the 1974 RSO Convention at Hamilton Oct. 25, 26 and 27, so let's get into high gear and get this thing rolling. A great deal of planning and work has already been done by George VE3BNO and Croft VE3OR.

Nomination Committee

The Nominating Committee is being formed and, so far, Dave Parks VE3GSA and Nick Krauchuk VE3FFW are on it with Ralph Hindle VE2BMH (2 hi!) as a possible. More on this later.

Beginners' Classes

Bob Clayton VE3HBQ has agreed to take on this most important responsibility for this year. Classes will start soon and hopefully we will have firm information on dates, times, costs and other data. Meantime you can get the gen. by getting in touch with Bob at 1174 Tawney Road, Ottawa, Ont. K1G 1B7 Telephone 731-2691.

Shinerama 1974 - September 6th - 7th

Cystic Fibrosis "The Great Masquerader" is the most common incurable disease of children. Thick mucous clogs the lungs on the one hand, and on the other, prevents the flow of digestive juices from the pancreas into the small intestine. CF kills more youngsters than polio did in the pre-vaccine days and rivals cancer as a cause of death up to the age of 15.

It is estimated that one in 20 persons carries the CF gene. If both parents are carriers, the risk of having an infected child is one chance in four. A CF child must follow a high protein diet, so the food budget takes quite a beating. He must sleep under a mist tent for his entire life in order to ease his breathing. An antibiotic face mask treatment is given the child for 15 minutes three times daily, followed by clapping. A mother spends at least six hours a day administering the various treatments. The drug costs average over \$2,000.00 per year.

Shinerama was started in 1964 by students from 8 Canadian universities who collected \$10,000.00, one third of which was raised by University of Ottawa students. The 1974 Shinerama Campaign will be held here in Ottawa on September 6th and 7th. The shiners will be covering the Mall, Rideau St., Bank Street, and all major shopping centres in the Ottawa-Hull area.

Our help is needed again this year to provide communications for this very worthy cause. The funds collected go in aid of Cystic Fibrosis research. The operation will be split into 3 periods:

Friday night 5 pm to 9:30 pm

Saturday morning 8:30 am to 1:00 pm

Saturday afternoon 1:00 pm to 6:00 pm

The major need is for 2 meter mobiles, but if you are not on 2 meters, but would like to help, give us a call. In addition, if you are unable to help but could lend equipment (especially portables) please let us know. Call Dave Parks VE3GSA at 733-0053 or Cary Honeywell VE3ARS at 233-2749. See you at Shinerama.

Dave Parks VE3GSA

Montreal Hamfest

Over 700 people attended the 1974 Montreal Hamfest held at MacDonald College on Sunday, August 4. Many prizes were drawn for and there was an excellent flea market and display of new equipment. The schedule included technical talks, childrens' events, a tug-of-war and softball. Faces from Ottawa included Ron VE3AUM (who won an ARRL Handbook) Oscar VE3CRA, Fran, VE3HKG, Heinz VE3GOS, Marg VE3EQE, John VE3HAT, Larry VE3CPG and George, VE3BNO. It was an enjoyable event despite the rain. Congratulations to Eric Methe VE2AG and his Cohorts of the Montreal Amateur Radio Club and VE2RM Inc.

George Roach VE3BNO

Emergency Communications

Recently we sat in a meeting and heard our club called "apathetic" in the field of Emergency preparedness and Emergency Communications. We don't know whether this is true or not, but we do know that there is no doubt that operators and gear would certainly be available should the need arise. The question is, would we know how to go about it; would we be ready? We were reading only yesterday about the great flood of 1936, which became known as the Johnstown Flood in which ALL communications in 14 states in U.S. were wiped out and Amateur Radio stepped in and bridged the gap. It was Amateur Radio's finest hour and the gratitude of a sodden and shaken nation was extended to the Amateurs. We have a new EC in the person of Larry Bradley VE3CRX. Now, anyone who has heard Larry on the air knows that he will do a good job. He is a dedicated Amateur, and the kind of fellow, if you ask him to walk a mile, he will run two, so expect things to happen in EC in the area. Give him your co-operation. As the Boy Scouts say, - "BE PREPARED".

OARC Picnic - Sunday, July 21 - A good time was had by all. Full report later.

Stop the Press News: You saw the Micro-Mem V mentioned in April GW demonstrated at FD by Brian Crook VE3CLF. He will demonstrate it at the upcoming Sept. meeting, so come out and see it. Everyone welcome!

ARCOVERS: Marg VE3HAL es Don VE3CUZ es little Veronica will be out in Alberta by the time this hits your mailbox. QTH Box 1431, Medley, Alta. Swing your beams their way-...-Gord VE3DY will be a PL by now- happy retirement Gord es Marg-...-Larry VE3GRJ has a new IC-22 es is dealing on an HW-7-...-Steve VE3DRX is back on wid his HW12 es looking for EC gear-...-Whew! 73 ...-.-