FEEDBACK

THE OFFICIAL NEWSLETTER OF THE

GEORGIAN BAY AMATEUR RADIO CLUB

Sponsoring

VE3OSR FM REPEATER 146.940- Mhz WOODFORD

VE3OST FM REPEATER 145.290- Mhz OWEN SOUND

VE3GBT FM REPEATER 146.895- Mhz BARROW BAY

MAR 1993

GEORGIAN BAY AMATEUR RADIO CLUB VE3OSR

GBARC 20th ANNIVERSARY

GBARC

The Georgian Bay Amateur Radio Club ,founded in 1973, is based in Grey and Bruce counties. The club meets at 7:30 P.M. sharp on the second Tuesday of each month, except July and August, at the Billy Bishop Airport.

NET SCHEDULE

Sunday 09:30 hrs 3.783 Mhz SSB

WEDNESDAY 20:30 HRS 3.670 Mhz CW

CLUB OFFICERS

President_____VE3XOX Bob Vary

Vice-President_____VE3IJD Gene McDonald

Sec-Treasurer_____VE3HIP Ian Trenholm

Technical-Director_____Vacant

Program-Director____ Vacant

Bulletin Editor_____VE3TSA Tom St.Amand

FEEDBACK

The official bulletin of the Georgian Bay Amateur radio club, published monthly, except July and August. Contributions of articles/letters are encouraged and should be sent to

Tom St.Amand, VE3TSA,

1232 3rd Ave. East, Owen Sound, Ont.

N4K2L5

DUES

$25.00 per year

MEMBERSHIP

VE3AEO TED	VE3MWU NICK
VE3BFV JIM	VE3NEM TOM
VE3BIS DICK	VE3RHJ BRAD
VE3BZC ROSS	VE3RLW ROB
VE3CC CY	VE3RVG GERRY
VE3CRV JIM	VE3TDF PAT
VE3CUV ROSS	VE3TFQ JIM
VE3DIQ BILL	VE3TFV KEN
VE3DKF JIM	VE3TSA TOM
VE3DQC DAN	VE3TTV HENRY
VE3DTS JACK	VE3TUM RICK
VE3DXO DAVE	VE3TUP KLAAS
VE3EBM ROY	VE3TUQ AUBREY
VE3FFN WALTER	VE3TUS BARRIE
VE3GDH DEREK	VE3TWI OKKE
VE3HIO RICK	VE3TWJ DAVE
VE3HIP IAN	VE3TWK JACK
VE3HMZ BILL	VE3TWL CATHY
VE3HXX IAN	VE3TXB JOHN
VE3IJD GENE	VE3TYL JIM
VE3ILO BERT	VE3UIC JASON
VE3INP JOHN	VE3UUL JOHN
VE3IOD GARY	VE3UWD HENRY
VE3IXG DOUG	VE3UWW JERRINE
VE3IXR MURRAY	VE3UWX MORRIS
VE3JLZ JACK	VE3VTO DON
VE3LKD BOB	VE3WNW BILL
VE3LPD LAVERNE	VE3WWS VIHLO
VE3LPT MOE	VE3XOX BOB
VE3MTG LARRY	SWL STAN
VE3MTV NORM	N5ZIK JACK
VE3MVS MERV	

This Issue:

UPCOMING EVENTS

NEXT GBARC MEETING

MARCH 9th 1993

APRIL 13th 1993

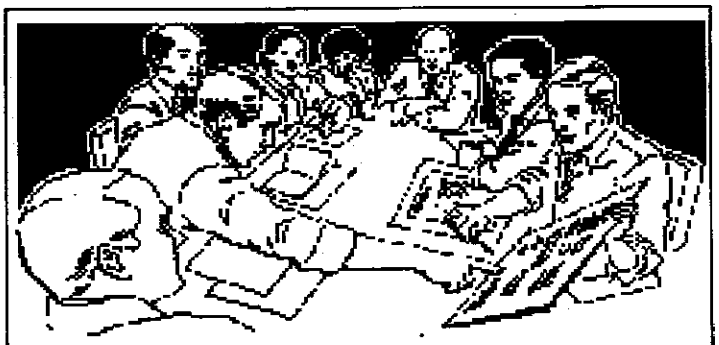
MAY 11th 1993

BREAKFAST MEETINGS:

MARCH 13th & 27th 1993

APRIL 10th & 24th 1993

MAY 8th & 29th 1993



MINUTES OF THE LAST GBARC MEETING

MINUTES OF MEETING OF THE GEORGIAN BAY AMATEUR RADIO CLUB -- FEBRUARY 9th 1993 The meeting opened at 7:45 p.m. with 20 members and guests present. Guests were Carol Ann Losee VE3CAH, Doug Bovell VE3TDV and Jerry, VE3UWZ. Carol is planning to relocate in Owen Sound from Kenora. President Bob extended a warm welcome to all. Minutes of previous meeting approved on motion of Bill HMZ and seconded by Cy,CC. Treasurers report indicates a balance of $832.36 in GBARC account and $453.17 in the student account. The packet radio course recently completed resulted in a net profit of $283.17. This amount to be used for packet radio use in the area. Correspondence from the CNIB reviewed and filed.

OLD BUSINESS

Noted that Ross CUV, now home from the hospital in London and recovering nicely. Nice to hear him on the air again. Reported by Bob XOX, that our lawyer, Ted Stevens had agreed that the $1000.00 held in trust will cover all costs of the Club becoming incorporated. As Gene IJD, was ill during the Scout Winter Camp Out, Bob XOX and Jerry FYA set up an HF station on Saturday afternoon. Several scouts visiting from USA enjoyed making contact with their home states. One contact was with an editor of CQ magazine in Ohio, and Jerry sent $5.00 down to him for material that will be shipped up to our club. Two chrome plated keys will also be included for Bob and Jerry, for their particular interest in the scouts station set-up. Tom TSA, gave a report on progress of OST repeater. DTMF problems to iron out. GBT repeater still at Rick HIO QTH and on the air for testing. Operators are encouraged to use each as much as possible before final installation on the CKCO and Maclean Hunter Towers. As Henry TTV was not present, we did not have any update plans for the club anniversary station setup.

NEW BUSINESS

A copy of the CLUB CONSTITUTION must be forwarded to Middlebro,Stevens and Marsh. Bob XOX will look after this. Insurance will be taken out after club incorporation on the different repeater sites. Tom TSA, asked members to send any hints,kinks or little dittys to him for insertion into FEEDBACK. Ted AEO had a page of these little goodies very handy when kit building, mobile antenna etc. Tom suggested "TED'S TIDBITS" could be the title of this column. Instructors of the Packet radio Course asked students for suggestions on how future courses could be improved. Ideas put forward were 1) Divide classes into 2 groups, one for beginners and the other for those with some packet experience. 2) Run course for longer period of time, possibly 3 or 4 weeks. 3) Try to improve the video viewing for whole class. Some coupling problems were found with the monitors. these suggestions will be considered for the next class. Information for club members, local packet radio is sent and received on the frequency of 145.630 Mhz simplex. The new location for the club breakfasts will be at the Marine View Restaurant on the west shore of Owen Sound. This is near the Yatch Club, close to where we held our flea market. Address is 2501 3RD AVE WEST. Bob XOX spoke to the owner while the meeting was in progress, and they suggested we call a day or two ahead for reservations. Concerns were expressed about radiation from handhelds and cellular phones. Members are encouraged to inquire and pass on results published etc. Meeting adjourned by Bob LKD,Seconded by Henry UWD. Winner of the 50/50 draw was Merv MVS.

Minutes recorded by Ian VE3HIP

NOTE: BREAKFAST LOCATION HAS BEEN MOVED TO THE ESSO STATION AT ROCKFORD - N.E. CORNER OF BYPASS- AS OF FEBRUARY 27th.....EDITOR

TEDS TIDBITS

QUOTABLE QUOTES:

I SKATE WHERE THE PUCK IS GOING, NOT WHERE ITS BEEN. .....WAYNE GRETZKY

CANADIAN LOVE, CANADIAN LOVE, ITS FORTY BELOW OR NINETY ABOVE. .....MARIE HAMMOND

DON'T TRY TO MAKE OTHERS HAPPY. BE HAPPY YOURSELF AND PERHAPS OTHERS WILL CATCH IT FROM YOU ..... RICHARD NEEDHAM

LAUGHTER IS A TRANQUILIZER WITH NO SIDE EFFECTS. .....ARNOLD GLASGOW

STRESS IS WHAT YOU FEEL WHEN YOU READ BOOKS THAT TELL YOU WHY YOU ARE SUFFERING FROM STRESS. .....LYNNE GORDON

WITH THANKS TO THE AUTHORS LISTED..... VE3HIP

HENRY HZ

THANKS TO ALL WHO CONTRIBUTED TO THIS MONTHS FEEDBACK..

ROY VE3EBM, IAN VE3HIP, BILL VE3EFX, CARF, QST AND QST CANADA AND TO HENRY FOR THE CARTOON YOU SEE ABOVE.....EDITOR

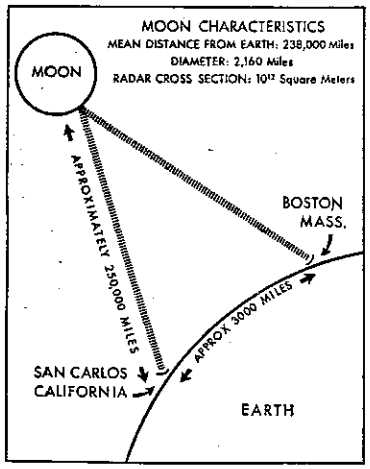
W1BU and W6HB Make First Amateur Lunar QSO

Coast to Coast Via the Moon on 1296 Mc.!

A LONG-CHERISHED amateur objective was achieved early in the morning of July 17, when Sam Harris, W1FZJ, Medfield, Mass., first heard a signal other than his own, reflected from the moon. Four days later the second hurdle was cleared, and the first lunar QSO by amateurs was on the record. It had been a long, hard pull for Sam and other members of the Rhododendron Swamp V.H.F. Society (W1BU), and a shorter but no less spectacular crash effort by the Eimac Radio Club of San Carlos, Cal. (W6HB).

Sam had been at it for years. Several tremendous arrays had been erected above and amid the pines at Medfield in an attempt to make a moon-bounce contact on 144 Mc. Echoes of a sort were recorded several times, but even with a huge 128-element array rigged with an ingenious system for tracking the moon the returns were discouragingly weak, and few and far between. After endless hours of back-breaking labor and patient testing, the gang at W1BU sadly came to the conclusion that if a lunar QSO was to be made the work would have to be done all over again, on a higher frequency.

The logical frequency for the new effort appeared to be 1296 Mc. Here it is now possible to achieve truly low-noise receiver performance, and efficient operation of a 1-kw. transmitter is practical. With a parabolic reflector of reasonable size a beam sharp enough for moon-reflection work is within the realm of practicality for amateurs.



Path of 1296 Mc. Signal of W1BU/W1FZJ — W6HB

Work toward this end was begun by W1BU about a year ago.

The problems were many, all revolving around the need for high stability and accuracy in several fields. If you are to have more than a few minutes in which to conduct tests, the antenna array must track the moon. You don't just aim in the general direction of the moon and blast away, hoping for the best; you rig up some kind of automatic system that will put your beam squarely on the moon and keep it there, for hours. To get the needed sensitivity in the receiver you go to a bandwidth of 100 cycles or less. This means a high order of precision in several departments, and it imposes stability problems most amateurs have never dreamed of. Before you dash out to your corner radio store for the necessary parts, you first solve a whole batch of thorny mechanical and electrical problems. Then you work, work, work — and work some more.

There are probably few amateurs with the financial resources needed to build and operate a 1296-Mc. moon-bounce station, and if there are those who could afford it they would need help to perform the physical labor involved. Thus, moon bounce becomes an ideal project for an ambitious radio club group, and the first lunar QSO resulted from two such cooperative efforts. The Rhododendron Swamp V.h.f. Society had a backlog of experience with big antennas. They also had access to considerable scientific equipment and know-how. The 18-foot parabolic reflector (D. S. Kennedy Co.), the 1296-Mc. parametric amplifier (Microwave Associates), and the kilowatt klystron amplifier (Eimac) were "promoted." But that still left a vast amount of construction of typical ham make-do style, and plenty of man-hours and foot-pounds of labor. A high-stability exciter and the necessary moon-tracking antenna mount and drive had to be designed and built, as did the 1296-Mc. converter and 1000-cycle and 100-cycle filters for the receiver.

Somehow this was finally done, with results somewhat as shown in our pictures, and by the end of May, Sam was able to announce that the W1BU moon-bounce station was working — and receiving its own echoes consistently for hours on end. Now, who would match the effort so that actual communicating could be tried?

The challenge was picked up by O. H. "Hank" Brown, W6HB, of Eitel-McCullough, Inc., San Carlos, Cal. Rallying members of the Eimac Radio Club, Hank put them to work on a crash program aimed at making the first amateur moonbounce QSO, and incidentally a new 1296-Mc. DX record.

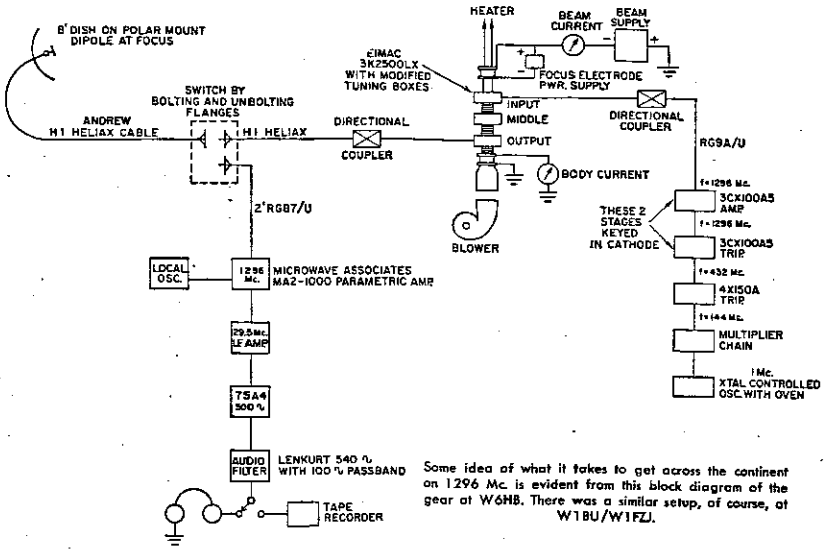
The Eimac group were ready for their first test July 17. Moonrise was at a most inconvenient time, but that didn't hold the gang at W6HB back. Tests were started as soon as the moon was above trees and power wires, or about 0200 PST. Almost at once, Sam heard the signal from W6HB, weak and barely discernible in the noise, but a signal other than his own, at last! Then followed three hours of testing both ways, with the telephone line across the continent busy all the while.

Reception at W1BU was considerably better than at W6HB, due at least in part to the use of a 100-cycle filter at W1BU. When Sam switched to 1000-cycle bandwidth there was little or nothing to be heard of W6HB. Communication was only partially successful for two reasons: the signal at W6HB was just too weak to copy, and keying of the transmitter at the western end moved the frequency just enough so that it slipped out of the passband at W1BU. With 100-cycle selectivity, that can happen even when little or no frequency shift is audible on the beatnote.

Several weak spots were turned up by the first test. The dish at W6HB was scrounged from surplus; it was rusty and in none too good condition otherwise. Before the next test it was coated with aluminum foil obtained from a nearby grocery store. Perhaps more important, the 100-cycle filter was added in the receiving setup. Tests were set for July 21, beginning at 0600 PST.

The moon had been clear before, so the simple sighting-tube method had been quite satisfactory for lining up the W6HB dish. This time there was fog, and furthermore the moon rose close to the sun, making visual sighting extremely difficult. Finally they were lined up, and transmissions began at W6HB. The signal came through immediately at W1BU, peaking some 8 db. above the noise level, though with a rapid flutter fade which made copy extremely difficult.

Using a 3-letter code for "no signal, some signal or good signal," reports and calls were exchanged, and the first two-way amateur communication via the moon was history. —*E. P. T.*



Some idea of what it takes to get across the continent on 1296 Mc. is evident from this block diagram of the gear at W6HB. There was a similar setup, of course, at W1BU/W1FZJ.

QST for September 1960

REASONS FOR BELONGING

As the number of Amateur Radio Operators in Canada rapidly approaches 36,000. our national organization which represents us in the International Amateur Radio Union (IARU), is not being supported by equivalent numbers.

The Canadian Radio Relay League (CRRL) is presently supported by a little more than 6,000 amateurs. When the amateur population was around 15,000 we had about 5,000 members. The CRRL is obliged to pay dues to the IARU based on the number of licenced amateurs in Canada, not the number of CRRL members. This means that a few years ago each member was carrying two freeloaders, and today the numbers show that each CRRL member is carrying five freeloaders.

This situation cannot continue as clubs churn out new amateurs by the thousands each year, and do not give them reasons for belonging to our national organization. Clubs do a pretty good job of getting these people to become club members but it has to be pointed out that it is necessary to have strong support for the organization that attends frequently held World Administrative Radio Conferences (WARC), in order to fight for the frequencies we now have. As the demand for more frequencies by third world countries increases, it is essential that we are able to maintain a strong presence at each WARC in order to prevent loss of some of our bands.

It seems a reasonable expectation that amateurs would be prepared to spend a few dollars to protect their bands, when you look at the money that they have invested in equipment to operate in these bands.

Membership in CRRL costs $61 per year. For that money you get two monthly magazines, QST and QST Canada. You also get free use of the outgoing QSL bureau plus support for problems you may have with local government concerning your operation, interference problems, antenna restrictions etc. The $61 dues breaks down to $1.20 per week and if you only send out one QSL card to a foreign country per week it would cost about the same as your annual dues to CRRL.

Membership in CRRL will be transferred automatically to the Radio Amateurs of Canada (RAC) organization when it is formed later this year. RAC will be the result of the amalgamation of the Canadian Amateur Radio Federation (CARF) and CRRL.

As a member of your national organization you will have a voice in the running of that organization and you can hold office in the many field positions that are available to members.

Amateur radio is not just a hobby. When you get your licence you are part of the Amateur Radio Service and subject to National as well as International regulations. This means that you are obliged to operate within these regulations and provide a service if required. Services we provide are traffic handling and emergency communications when required, and it is your obligation to become familiar with requirements to take part in these activities.

I have never heard a good reason for not belonging but I've heard many poor excuses over the years.

Think about it, if you pay your licence, club dues and national organization dues, your annual expenditure will translate to about $2 per week. What other activity costs so little ? Don't say you can't afford to join....you can't afford not to.

VE3EFX.

Antennas Threatened by Policy Problems

Local governments seek to usurp federal jurisdiction. Presidents of our two national organizations speak out...

CARF and CRRL are working behind the scenes, attempting to stop some cities and municipalities from restricting the installation of antennas and antenna structures. DOC's Client Procedures Circular 2-0-03 (CPC-2-0-03) governing antenna installations and environmental issues is not working. It is generally misunderstood and even rejected by some municipal officials. Some local DOC people are very slow or appear reluctant to correct municipal actions which override federal powers.

In some cases local DOC people are unfamiliar with the distribution of powers under the Radiocommunication Act, causing further difficulties for municipalities and amateurs.

Your national organizations are talking to DOC at national and regional levels to try and resolve this serious threat to Amateur Radio and other licensed radio services. CRRL and CARF, as members of the Radio Advisory Board of Canada (RABC), are seeking RABC support in this threatening situation.

People like Bill Wilson, VE3NR, Jim Munsey, VE6BKW, Tim Ellam, VE6SH, René Poitras, VE1CB, Dave Fancy VE7EWI, and others across the country, are helping amateurs who must deal with restrictive by-laws and unsympathetic officials. Places like Calgary, Edmonton, Kamloops, Vancouver, New Westminster and Madawaska, New Brunswick, have instituted by-laws or procedures to control the erection of antenna structures. Antenna heights are being limited, in Edmonton to 32 feet, in Madawaska to 13 feet, in Vancouver to "1.9 metres above existing grade". New Westminster defines antenna structures as "accessory buildings" subject to local land use restrictions. Calgary requires a "development review permit" costing $142, and Madawaska demands that an amateur must follow a "variance" procedure costing $55. These are but a few examples of current challenges to federal jurisdiction.

The federal Radiocommunication Act clearly states under Section 5(f) that the Minister... may "approve each site on which radio apparatus, including antenna systems, may be located, and approve the erection of all masts, towers and other antenna supporting structures...." The 1987 Townsend Report, commissioned by the federal government, dealt with the constitutional claims of various powers, and backed up federal authority over free-standing antenna structures. Still, some municipal officials challenge this.

A Calgary official stated in a letter to CRRL counsel that, "I'm not prepared to concede, as you are, that support structures are the exclusive domain of the federal government. Clearly, this issue would be dependent on the facts of the case. For example, whether what was of prime importance was the impact of the structure on the neighbourhood versus its suitability to transmit or receive radio signals". New Westminster ignored the pleas of radio amateurs at council meetings, and renamed antennas and support structures "buildings" to get around federal control. There are many more examples. Such opinions and actions seriously threaten federal jurisdiction over the Amateur Service and other licensed radio services in Canada. Policies seem to be misunderstood.

Some regional and local DOC people seem to be out of step with the national policy coming out of Ottawa. Vancouver DOC states in a letter to city officials that "Municipalities make by-laws concerning safety, aesthetics and similar issues pertaining to antenna towers". Saint John DOC instructs an amateur that "...it is my recommendation that you make application... for a variance to the municipality of Clair by-law pertaining to accessory structures". Unfortunately, both statements unwittingly support *ultra vires* actions which undermine federal jurisdiction and control of radiocommunication matters. It is unclear what DOC intends to to about all of this.

Other matters seem to be working against DOC's Client Procedures Circular, CPC-2-0-03, as an effective process in the management of the issues. First, the CPC is not well written. It causes confusion over the distinction between commercial and amateur licensees in the process. It combines antenna appearance matters and radio frequency power concerns and threats them like similar issues. DOC officials wished to keep the CPC's language general in nature. However, the lack of specifics leaves details of obligation and procedure too much to chance. This causes costly misunderstandings for all concerned.

Second, some DOC regions appear to have neglected to work closely with city officials and municipal associations to ensure that federal jurisdiction, policy and procedures are clearly understood and accepted. We are told that Ottawa DOC cannot always influence the operational actions of regional managers in such matters.

Both CRRL and CARF take the position that municipalities should not be able to enact by-laws or legislation wherein individual amateurs have to ask permission to site antenna structures. While DOC has stated that amateurs are not obliged to request permission, we advise amateurs to follow DOC policy and consult with neighbours and municipal officials. Let those concerned know your intention. Be open, courteous and co-operative. Follow siting practices which protect you and your neighbour's property. Err on the side of caution over matters of structural integrity and safety. Keep structure and apparatus appearance consistent with current practice: for instance, a regular tower—Delhi, Hy-Gain, Rohn, Trylon, etc—with a triband-er—will function adequately in an urban setting, and is not out of step with similar structures in use around the world.

We recommend that club executives engage in meetings and friendly discussions with municipal planners and elected officials, pointing out the many ways that Amateur Radio enhances the life of a community.

Meanwhile, your national organizations will work in co-operation with DOC and RABC, and with provincial and local governments, to ensure that current law and reasonable policies are clearly understood, and that effective procedures are followed. We will keep you informed on this potentially dangerous and disruptive matter as actions and issues unfold.

—Dana Shtun, VE3DSS, President, CRRL

—Farrell Hopwood, VE7RD, President, CARF ■

SHORT BITS

SPECIAL PREFIXES FOR THE NATIONAL LIBRARY'S 40th ANNIVERSARY - DOC has authorized all Canadian Amateurs to use special prefixes to mark the 40th anniversary of the creation of the National Library of Canada. The following prefixes are authorized for all Canadian Amateurs for a two-month period from 0000 UTC 16 April, 1993 through 2359z 16 June, 1993:

VO1s may use VO3
VO2s may use VO4
VE1s may use VB1
VE2s may use VB2
VE3s may use VB3
VE4s may use VB4
VE5s may use VB5
VE6s may use VB6
VE7s may use VB7
VE8s may use VB8
VY1s may use VY7
VY2s may use VY8

from VE2ZP Dave Goodwin

TO COMMEMORATE THE 25th ANNIVERSARY OF THE SEAWAY VALLEY AMATEUR RADIO CLUB, the Department of Communications will be authorizing amateur radio stations in the Municipality of Cornwall, in the Province of Ontario, to use the prefix CY3 replacing VE3 on a voluntary basis from March 11, 1993 until March 14, 1993.

100th ANNIVERSARY - The callsign prefix XJ4 has been authorized for use by all Canadian amateurs within the city of Winnipeg, Manitoba boundaries, from March 26 to April 9, 1993 inclusive to commemorate the 100th anniversary of the Winnipeg Parks Board.

TWELFTH ANNUAL DURHAM REGION AMATEUR RADIO AND COMPUTER FLEA MARKET will be held on Saturday, April 3, 1993 from 9 a.m. to 2 p.m. at the Pickering High School on Church St. North, Pickering Village, Town of Ajax, Ontario. General Admission $5. Vendor Tables $12 plus general admissions for vendor and staff. Advance registration for vendors only should be made to: South Pickering Amateur Radio Club Inc., P.O. Box 53, Pickering, Ontario, L1V 2R2. All cheques should be made payable to the South Pickering Amateur Radio Club Inc. Info: Ron Brown VE3WZ, (416) 839-3711; Kim Becker VE3SVZ, (416) 571-6883; Garry Brisbane VE3REP, (416) 683-4335; Bob Partridge VE3RD, (416) 839-7850. (Be sure to visit the CARF table.)

THE DXCC DESK ANNOUNCED TODAY THAT THE START DATE FOR 5-BAND DXCC HAS BEEN CHANGED FROM JANUARY 1, 1969 TO NOVEMBER 15, 1945. THIS CHANGE IS EFFECTIVE IMMEDIATELY.

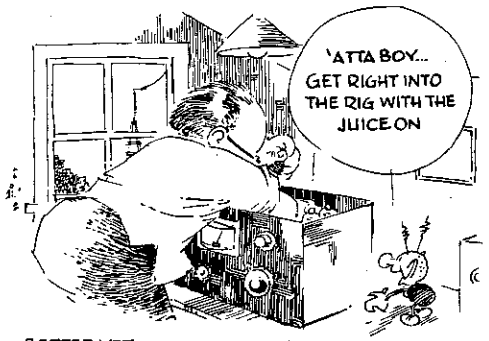
ARRL MANAGEMENT MADE THIS DECISION, IN CONSULTATION WITH THE MEMBERSHIP SERVICES COMMITTEE, IN ORDER TO SIMPLIFY THE PROGRAM. NOW THAT ALL DXCC BAND AWARDS HAVE THE SAME REQUIREMENTS, ANYONE WHO HAS A 10, 40 OR 80-M DXCC WILL AUTOMATICALLY BE GRANTED CREDIT TOWARD 5BDXCC. LIKEWISE, A 160, 6 OR 2-M DXCC IS SUFFICIENT FOR A BAND ENDORSEMENT TO 5BDXCC.

A CHANGE IN THE START DATE OF CW DXCC IS NOT PLANNED FOR THE FORSEEABLE FUTURE.

A LITTLE STORY

This ia a story abt four people named, Everybody, Somebody, Anybody, and Nobody.

There was an important job to be done and Everybody was sure that somebody would do it. Anybody could have done it, but Nobody did it. Somebody got angry about that, Because it was Everybody's job. Everybody thought Anybody could do it. It ended up that Everybody blamed Somebody when Nobody did what Anybody could have done!



A PANICKY PRESENT OFTEN STEMS FROM A PLANLESS PAST

The following story is a case in point.

Iam writing in response to your request for additional information. In block number 3 of the accident. reporting form, I put, quote - poor planning - unquote as the cause of my accident. You said in your letter that I should expllain more and I trust that the following details will be sufficient.

I am a bricklayer by trade. On the day of the accident, I was working alone on the roof of a new six story building. When I completed my work, I discovered that I had about 500 pounds of brick left over. Rather than carry the bricks down by hand, I decided to lower them in a barrel by using a pulley which fortunately was attached to the side of the building at the sixth floor.

Securing the rope at ground level, I went up to the roof, swung the barrel out, and loaded the bricks into it. Then I went back to the ground and untied the rope, holding it tightly to insure a slow descent of the 500 pounds of bricks. You will note in block number 11 of the accident reporting form that I weigh 135 pounds.

Due to my surprise to being jerked off the ground so suddenly, I lost my presence of mind and forgot to let go of the rope. Needless to say, I proceeded at a rather rapid rate up the side of the building.

In the vicinity of the third floor, I met the barrel coming Down. This explains the fractured skull and broken collarbone.

Slowed only slightly, I continued my rapid acsent, not stopping until the fingers of my right hand were two-knuckles deep into the pulley.

Fortunately by this time I had regained my presence of mind and was able to hold tightly to the rope in spite of my pain.

At approximately the same time, however, the barrel of bricks hit the ground and the bottom fell out of the barrel. Devoid of the weight of the bricks, the barrel now weighed approximately 50 pounds.

I refer you again to my weight in block number 11. As you might imagine, I began a repid descent down the side of the building.

In the vicinity of the third floor, I met the barrel coming up. This accounts for the two fractured ankles and the lacerations of my legs and lower body.

The encounter with the barrel slowed me enough to lessen my injuries when I fell onto the pile of bricks and, fortunately, only three vertebrae were cracked.

I am sorry to report, however, that as I lay there on the bricks, in pain, unable to move, and watching the empty barrel six stories above me-I again lost my presence of mind-

I let go of the rope...

I WON'T QRT

My hair is white and I'm almost blind.
The days of youth are far behind.
My neck is stiff and I can't turn my head.
Can't hear one half of what's being said.

My legs are wobbly, can hardly walk,
But,Glory be, I can surely talk.
This is my message as I want it to be.
I'm still a 'kicking' and I won't QRT!

The rig is ancient, tubes rusting in the sockets.
And nary a dime is left in my pockets,
So you think my shack's a total wreck?
To tell you the truth, it does look like heck!

My dipole is rusty and sagging on the vine,
The neighbors' TVI is at least 20 over 9!
But it's a wounderful world of ours,
Shade and sunshine and beautiful flowers

So, you can talk it from me.
I'm glad I'm living and I won't QRT!
When I reach the end of my row,
I hope to the lovely home I'll go.

And then when I leave this house of clay,
If you'll listen closely, I'm abt to say,
Well, folks, don't worry 'bout me,
I've just passed on, and I won't QRT!!!

73 by: Don Raduziner, W6BDD

AO-21 RUDAK-2 now 1200 Baud AFSK! RUDAK-2 is now transmitting with 1200 Baud AFSK modulation RUDAdata in 1200 Baud AFSK modulation AX.25. Any TNC for terrestrial Packet Radio can be used to decode and receive the Data in the Monitor Mode. Downlink signals are very strong and even a HT can be used. on 145.987 MHz.

UPDATING ELEMENT SETS

N3FKV Provides His Recomendations On How Often To Update Element Sets

One of the most common questions asked by newcomers to the world of amateur radio satellites is how often does one need to update one's keplerian element sets for the various OSCARs. This question was recently posed to Dick Campbell (N3FKV), AMSAT-NA's Orbital Data Manager. Dick has held this position for over two years and has archived all of the OSCAR and Weather satellite element sets, Mir Space station and the Space Shuttle element sets during that time. Based on his observations, with the exceptions being the Mir Space station and Shuttle missions, orbital elements stay remarkably accurate for at least 30 days.

In order to prove this, Dick went back into his archives and studied the Aquisition-of-Signal (AOS) and Loss-of-Signal (LOS) times using the elements of AO-13 and AO-16. He used element sets that were 30 days old and 6 months old. What he discovered for AO-13 was that using a 6 month old element set showed a 46-50 minute difference in AOS and LOS times. But using an element set only 30 days old generated error of only 31-56 SECONDS! Dick points out that the errors in using the 30 day old elements for AO-13 are entirely satisfactory for amateur radio purposes. Also, James Miller (G3RUH), one of the AO-13 Ground Controllers, generates his own elements for AO-13 by "massaging" and "smoothing" past element sets. What Dick found was that G3RUH's elements are only off by 5 minutes after 6 months! Again, a 5 minute error in AOS or LOS is acceptable for AO-13 and amateur radio purposes. Most AO-13 users have antennas with wide beam-widths and this error presents few problems. If you don't have a G3RUH AO-13 element set, then Dick suggests that you set the Decay Rate, also sometimes referred to as the Drag Factor, equal to zero. By doing so you will see an error of 4-5 minutes after 30 days.

Now turning to the case of AO-16 and other Low-Earth-Orbit (LEO) satellites, the question of when to update element sets is quite a different matter. Because LEO passes can be 20 minutes or less, antenna pointing is very critical and thus an error of 5 minutes in the AOS or LOS time is significant. Dick's investigation has shown him that one can be off by 5 minutes with a 6 month old element set for a LEO bird. For example, in the case of AO-16, Dick found that a 6 month old element set was 4 minutes off on the AOS time but the bigger problem was his antenna azimuth pointing angle was 50 deg in error! However, using a 30 day old element set for AO-16, he observed it was only a few seconds off in the AOS time and this equated to a 10 deg error in the antenna azimuth angle.

Recomendations: An AO-13 element set can be used up to 6 months but you need to set the Drag Factor or Decay Rate equal to zero. If you would like use a single AO-13 element set for 6 months or more, use one of G3RUH's "smoothed" sets. For LEOs like AO-16, AO-21, DOVE, etc., their element sets are good for at lest 30 days, BUT NOT 6 MONTHS!

Dick points out that more study is need on this topic and he encourages OSCAR users to look into this for themselves. His final comments about this issue concern an orbital parameter mentioned above called the Decay Rate or Drag Factor. Dick feels that the Drag Factor should be thought of as a "fudge-factor." In the body of mathematical theory known as Orbital Mechanics, there are many assumptions made to simplify the computer algorithms used in tracking programs. For instance, the satellite is considered to be a "point-mass" and the only force acting on the satellite is the earth's gravitional pull. In truth, there is atmospheric drag and other "perturb-ations" to the orbit caused by the sun and moon. Because of the large "number-crunching" capability needed to inlcude all these additional effects, their cumulative affect is "lumped" into a single parameter known as the Drag Factor. But the problem with using the Drag Factor for long term prediction it does not adequately handle these perturbations due to its simplistic design. Consequently, the Drag Factor is only good for a short period of time. That is why Dick recommends that users set the Drag Factor to zero in order to obtain the best results for long term use of AO-13 keplerian sets. For LEO satellites, which includes most of the OSCARs, Dick recommends leaving the Drag Factor alone for tracking purposes when using element sets with epoch dates that are 30 days old.

So the next time you feel the urge to update your element sets, try following Dick Campbell's suggetions and there is a good possiblity that will not have to update all of your element sets.

[The AMSAT News Service (ANS) would like to thank Dick Campbell (N3FKV) for the information which went into this bulletin.

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