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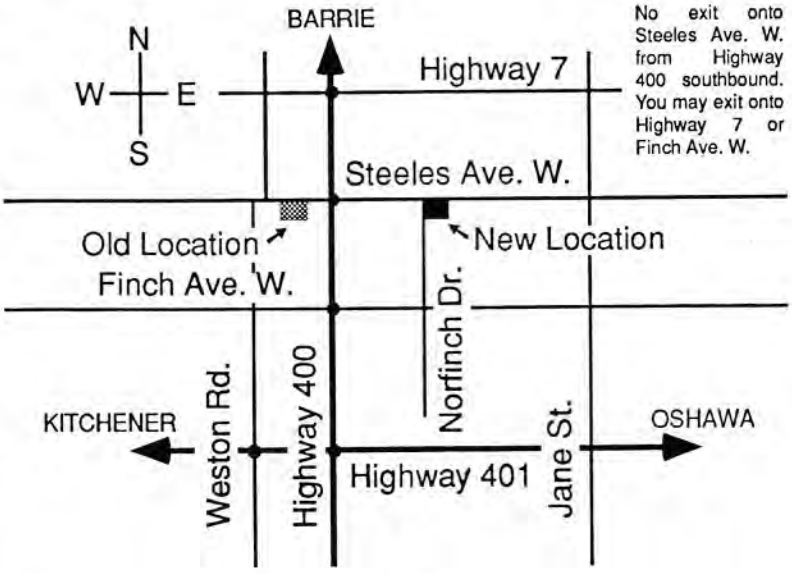

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QST CANADA

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ABOUT THE COVER

Don Wilcox, VE6CG/VE6QST (standing) gets a packet radio demonstration from Steve Miller, VE6SWM, at the Calgary Amateur Radio Association display last year. *(VE6CID photo)* ■

It Seems to Us.../Il nous semble...

A Reason for Merger

There was supposed to be an official representative of the Canadian Amateur Radio community on the DOC delegation headed for WARC-92, but unless something unexpected happened between the time we finished this editorial (mid-January) and the start of WARC-92 (early February), that isn't going be any. What went wrong? Basically, the two national organizations, CRRL and CARF, were unable to agree on a representative. They placed DOC in the awkward position of having to choose an amateur nominated by CRRL alone. Understandably, DOC refused to do this, and now no Canadian amateur is going to WARC-92.

Those who read the minutes of the 1991 CRRL Board Meeting will know that the CRRL nominee was Tom Atkins, VE3CDM. Tom was a founding director of both CARF and CRRL. For many years, he was president of CRRL. In recent years, Tom has been involved with IARU which will be carrying the Amateur Radio banner at WARC-92. At present, he serves as Secretary of IARU Region 2 (North and South America), and on the IARU World Administrative Council.

Tom has participated in IARU conferences all over the world and he knows the international scene well. He is highly respected for his expertise, good judgement and ability to work with others, particularly in IARU. For these reasons, CRRL felt he was the ideal person to serve as Amateur Radio representative on the DOC delegation. But CARF did not agree. CARF felt it was improper for someone so closely associated with IARU to be on the delegation. There would be a conflict of interest. A more neutral person was required.

We must admit that this conflict of interest concern continues to puzzle us. IARU has no official status at WARC-92—only observer status. Thus, at WARC-92, IARU will basically be a lobby group, working with and from within delegations sent to WARC-92 by the various national telecommunications administrations. There is no secret about this. Everyone knows that the Amateur Radio representative on each national delegation will be promoting the IARU position, and that the same representative will be informing IARU how a particular proposal might fare if it were brought to a vote. The whole idea has always been to have feet solidly in both camps.

Did CARF have a nominee? Yes, but to the best of our knowledge, his name was never officially placed before DOC. The CARF nominee was a former DOC official, a very fine person who was and continues to be respected by both CARF and CRRL. He was not, however, what most of us would call an "active amateur". Because of this and because he had no IARU contacts or experience, CRRL felt he was not an appropriate choice.

Were efforts made to resolve the problem? Yes, many times. At one point, CRRL agreed to a CARF request to drop CRRL's unilateral nomination of Tom Atkins to allow for a joint nomination by CRRL and CARF. Conditions included equal access to Tom, and to information coming out of WARC-92. Unfortunately, the CARF Executive was unable to approve this plan.

So what does it all mean? Perhaps in real terms, not so much. IARU will continue to carry the banner for Amateur Radio, whether or not there is an official amateur representative on the Canadian delegation. DOC has indicated it is onside regarding the realignment of 40-metres, and that it will be working closely with the US FCC and can be apprised of current IARU positions through them. But Canada is a major user of radio, and the absence of Canadian amateurs on the DOC delegation is an embarrassment. It will create a poor perception of Canadian Amateurs Radio worldwide. Now, Canadian amateurs will have no direct way of addressing new issues that might emerge at the conference, and they will have to rely on outside sources for up-to-date information on conference developments.

It's been a two weeks since we retired as vice-president of CRRL and already a certain objectivity has set in. Who is to blame for all this? We think there was fault on both sides. We know of some CARF people who feel strongly that CRRL was "trying to push CARF around". On the other hand, CARF did not seem to appreciate the importance of IARU or its role at WARC-92. Much more sensitivity was needed.

WARC-92 will not be like WARC-79. It will last for weeks, not for months. There will be other WARCs throughout the decade and we will have other chances to do it right. The greatest danger now is that present differences will throw CRRL-CARF merger off track. Canadian amateurs must not allow this to happen. The inability of CRRL and CARF to agree on an official amateur representative for the DOC delegation is no reason for CRRL and CARF to drop merger. Instead, it illustrates the absolute need for merger, for the creation of a single Canadian Amateur Radio organization. Some good may yet come out of this. *—Harry MacLean, VE3GRO* ■

Letters/Lettres

Conducted By Harry MacLean, VE3GRO

All letters are considered carefully. Letters are edited for clarity and may be condensed in order to have more information and readers' views presented. The publishers of *QST Canada* assume no responsibility for statements made by correspondents.

FELTON TUNING UP

❒ I couldn't let this go by without some comment. While I didn't know LAC Felton, I was at No. 4 Wireless School and we had quite a few Tigerschmidts fitted with the radio gear shown in the photo in December *QST Canada*: an R1082 receiver and a T1083 transmitter. The receiver was a superregenerative, not a superhet, and it was quite sensitive. In an emergency, it could be used as a transmitter. It was low power and covered a good portion of the band.

The lever with the round knob, protruding between the two units, was the on-off switch for the transmitter. It controlled the 500-volt generator and disconnected the antenna from the receiver during transmit.

In top condition with new tubes, the transmitter put out about 30 watts. The power supply was not regulated, so the note from the transmitter had a pronounced chirp as the voltage dropped slightly under load. There was never any doubt that you were listening to a T1083.

The outboard meter read RF current to the antenna. The antenna was either fixed between the wing tips and the tail, or a trailing antenna which normally was reeled in before landing. The transmitters covered the distance from Birch, Ontario, to England quite nicely, so we all had to change frequencies to avoid QRMing stations in England. Our screwball practice messages—used to confuse the enemy—caused RAF operators considerable emotional stress until they finally twigged to where the messages were coming from.

This equipment was designed and built during World War 2 and except for the AT1–AR2, was the only thing available for training until we received the T1154–R1155s. I don't know if any of this equipment ever got into a museum. It certainly should have. —*G. E. Parkinson, VE6AII, Calgary, AB*

SERVICING EQUIPMENT

❒ I share VE3AHY's concerns (January *QST Canada* "It Seems to Us..."). In this day of recession, recycling and overall reassessing our traditional values and lifestyles, it is completely unacceptable for any manufacturer to engage in the "slash and burn" marketing policy so aptly described by Roy.

Alternatives do exist. First, when shopping for a rig, go beyond mere comparison of specs and price, and make direct written inquiries to the manufacturers and ask about the availability of parts and what customer services they offer. What is their policy on warranty work? What does their warranty cover? Must you return your ailing rig to the exact same dealer you purchased it from? What if you bought your rig in the US? What are some of the experiences with manufacturers and dealers—both good and

Letters—continued on page 20

Calendar

Attention: Deadline for items is the 20th of the second month preceding month of publication. For example, information should reach *QST Canada* by January 20 to be included in a March issue.

New Westminister, BC: Annual Fleamarket, 1992 February 23, at Westminister Armouries, 6 St and Queens. Sponsored by Burnaby Amateur Radio Club (BARC). Opens 0900, 0800 for vendors. Admission $2, tables $7.50. Talk-in on VE7RBY, 145.35 MHz (–) and 442.85 MHz (+). For more information, check into VE7RBY, 145.35 MHz (–) on Monday nights, 2000 PST, or contact BARC, Box 80083, Postal Station South, Burnaby, BC V5H 3X1.

St Catharines, ON: 14th Annual Big Event, 1992 February 1, at the CAW Hall, 124 Bunting Rd. Sponsored by Niagara Peninsula Amateur Radio Club (NPARC). Hamfest in the morning: Admission $4, commercial tables $12, non-commercial tables $5 Dinner-dance in the evening: tickets must be ordered in advance. Talk-in on VE3NRS, 147.24 MHz (+). For more information, contact NPARC, Box 692, St Catharines, ON L2R 6Y3, Tel (416) 934-3231, or VE3KLM @ VE3SNP. ■

ATV—Ottawa Style

A repeater with a view to the future...

By Wayne Getchall, VE3CZO
18 Gervin St
Nepean, ON K2G 0J8

The Television Repeater Committee of Pioneer Amateur Radio Club, Ottawa, recently received authorization to place a fast-scan television transmitter in the amateur 33-cm band. The transmitter, part of a community repeater, is being designed to use F5 emissions and will have a maximum bandwidth of 10 MHz. This mode of emission and bandwidth was not previously permitted in the 902–928-MHz amateur allocation.

Proposed FM Television Repeater

Transmitter Specifications

Callsign: VE3TVA
Location: Ottawa Service Region
Carrier frequency: 914.00 MHz
Emission: frequency modulated (F5)
NTSC format fast-scan television
Modulation index: 0.75
Occupied bandwidth: <10 MHZ
Output power: less than 1000 W
Antenna: omnidirectional, 6–10 dB gain
Antenna polarization: horizontal

70-cm Receiver Specifications

Frequency: 439.25 MHz
Receive mode: vestigal sideband AM
Bandwidth: <6 MHz

23-cm Receiver Specifications

Frequency: 1285.0 MHz*
Receive mode: Frequency Modulated
Bandwidth: <10 MHz

Antennas

70 cm: Sinclair SV440H-6
33-cm: modified Lindsay LPRT/MATV 4SZZsq
23 cm: modified Lindsay LPRT/MATV 4SZZsq

*Tentative frequency. Exact frequency to be determined later. Repeater frequencies, emissions and bandwidths have been coordinated through the St. Lawrence Valley Repeater Council.

Background

Pioneer Amateur Radio Club (PARC) is a voluntary group of amateurs affiliated with the Telephone Pioneers of America. Formed in 1951, the club seeks to further the technical knowledge of its members and provide service to the local community. PARC meets monthly except during July and August, and it provides its members with a regular technical and social forum, publishes a newsletter, sponsors two local FM voice repeaters (VHF and UHF), and provides communication for a variety of public service events.

Last year a video television committee was formed with the purpose of promoting this exciting form of communication in the National Capital Region. Through its efforts, eight amateurs now have fast-scan stations on the air, and many more are interested. The club sponsors an amateur television (ATV) net which meets each Wednesday at 2000 EST. The net is coordinated through the club's FM voice repeater, VE3TEL.

As fast-scan activity and interest grew, it became clear that a repeater would make a significant contribution in fostering experimentation and personal growth, and augmenting the public service aspects of our group. A repeater allows many to share and participate simultaneously. Currently, all of our communications are still conducted using highly directional beam antennas. This restricts the number of receiving stations to those directly in the path of the transmitting station. With a repeater using an omnidirectional antenna, all amateurs in the area will be able to view a transmitting station at the same time.

Proposed activities include TV experimentation, telecasts of club meetings to shut-ins, live telecasts of public service events, and "visits" with the North Pole at Christmas time. PARC fully supports the establishment of a video repeater, and to this end has established a video repeater committee to see the project through to completion. The repeater facility will be open to all amateurs in the National Capital Region.

Rationale for 33-cm FM Operation

33-cm FM was chosen after examining repeater configurations in North America and Europe for best coverage, signal quality, technical feasibility, and cost.

An all-in-one-band 70-cm repeater is not possible in Canada. Removal of the 420–430 MHz segment of this band, and current subband allocations limit ATV to a single channel at 439.25 MHz. This frequency is used as the ATV simplex channel in the Ottawa area. A split-band repeater, using an output on 33 cm and an input on 70 or 24 cm is considered best. Using this cross band configuration, a station can transmit to the repeater while simultaneously watching the transmission on the repeater output. This allows greater flexibility when adjusting equipment. The Ottawa repeater will use a 70-cm vestigial sideband (VSB) input initially, as all amateurs now transmitting TV are using the 70-cm band. As repeater use increases, an FM input on 24 cm will be established. The 24-cm FM input will eventually replace the 70-cm VSB input, leaving the frequency in the 70-cm band exclusively for simplex use. By doing it this way, all amateurs now engaged in ATV will have low-cost access, needing only a low cost receiver to copy the repeater. In the future, by adding a 24-cm FM transmitter to their stations, amateurs can use a high quality all-FM repeater and still maintain the full duplex capabilities provided by the split-band repeater configuration.

33-cm offers lower path loss than 24 cm, and higher power 33-cm transmitting equipment is more readily available at lower cost than 24-cm equipment. A 70-cm–24-cm split-band repeater is possible. However this configuration would preclude simplex operation on the 70 cm band. An all-in-one-band 24-cm repeater is also possible, but technically less desirable. It is much more difficult and expensive to construct as it requires wideband isolation filtering between transmitter and receiver, or split site operation.

Transmitter Modes

The 33-cm transmitter will be frequency modulated using medium deviation. Frequency Modulated Television (FMTV) is used almost exclusively throughout the amateur community in Europe and is gaining popularity in North America. It eliminates many shortcomings of the using AM for television. It allows the use of transmitters having low linearity. It eliminates sound subcarrier distortion experienced because of linearity compression at sync tips. It offers a marginal improvement in signal-to-noise ration when compared to AM.

The repeater transmitter will use a modulation index of 0.75. By using this medium deviation, bandwidth can be restricted to less than 10 MHz, effectively

equivalent to a double sideband amplitude modulated (DSB) television transmission. This will provide a 3 dB signal-to noise improvement over AM.

A summary of the repeater's specifications appears in the sidebar above. ■

IPARN Returns to Service

IPARN returned to operational status on 1991 October 30 after a lengthy period of downtime. The operation on Anik E2 resumed after a progressive handover from Anik C2 was completed. The process began in mid-September when a transparent handover to Anik C1 was made. This change of the operational satellite for IPARN was done in the "wee" hours and in such a way that it would not have been obvious, even if you were actually on the system at the time.

The changeover took place as Anik C1, a soon-to-expire satellite, was temporarily moved in behind Anik C2. The Anik C2 satellite was powered down simultaneously with Anik C1 being powered up. The result of this electronic ballet was a very short, if any, handover outage.

The entire exercise was instigated because Anik C2 had been sold and was due to be delivered to its new owners. Our present geostationary satellite, Anik E2, was not ready for service at the time due to deployment difficulties affecting the C-band high-gain antenna which was covering the "earth sensors" on board the satellite. The problems were eventually worked out clearing the way for full operational status on the new satellite.

As soon as we were given the go-ahead for the next phase of the transfer, IPARN removed the ST1 and ST2 terminals from service. The terminal in Calgary was sent to Vancouver and modifications to the electronics were begun. The IDUs were realigned on our new frequencies, audio levels were recalibrated, and the local "end-to-end" tests were completed. A simulation of operation was approved and we made on air tests actually using the new satellite. A-B comparisons using the satellite spectrum analyzer and IFR Model 1500 analyzer showed that all audio and signal levels through the forward and return paths were right on spec. The equipment was cleared for return to service.

The installation of the cross-polar antenna feed assembly in Calgary was the only obstacle that needed clearing before a window could be arranged with Telesat to let IPARN return to operational status. By the time we were ready to conduct the tests, the World Series was in full swing with the Toronto Blue Jays threatening the eastern championship, an election was under way in BC and a myriad of other facilities were vying for time slots from Telesat. IPARN was no different than the others, and we just had to wait for our slot to come up in the schedule. When it finally did, another problem surfaced. A carrier had moved onto our assigned satellite frequency. It took about 13 days to track down the source of this carrier, but with the help of Infosat in Burnaby and Telesat we eventually did. This did clear the way and we returned to operation, almost without notice, on 1991 October 30 at about 1920 hours PST. One day sooner and we could have held a timely IPARN Net on the last Wednesday of the month. IPARN missed two such nets as a result of the satellite changes.

With return to normal status on the new Anik E2 satellite, IPARN has now cleared the path for expansion to eastern Canada. This expansion has been in the planning stages for some time. Expected date of implementation is 1992 May 30. Achieving this target date will be directly controlled by the rate at which the memberships in IPARN are received from Ontario over the next three months. For membership information, write to IPARN, Box 3156, Langley, BC V3A 4R5. —*Bill Blake, VE7CQ* ■

Amateur Radio in Slovenia

In the not too distant future, Slovenia will be recognized as a sovereign and independent state. As such, the worldwide Amateur Radio fraternity will become enriched by this new DXCC country and its group of very dedicated Amateur Radio operators. It may therefore be in order to take an advance look at what will be in store.

The Republic of Slovenia which proclaimed its independence on 1991 June 25, is located in the northern part of what, until recently, was Yugoslavia. Geographically, Slovenia borders on Italy, Austria, Hungary and Croatia. Mainly a mountainous country, there are many beautiful valleys, lakes and rivers, and the towns and cities are full of historical treasures collected throughout the centuries, some from as far back as Roman times.

There are about 2,000,000 hard working, well educated Slovenes in Slovenia. With respect to Amateur Radio, there is one licensed operator for each 400 inhabitants, a ratio that corresponds to what is found in other developed countries. The first Slovenian amateurs began to operate around 1930, mainly in Ljubljana, the capital city of Slovenia.

During World War 2, many Slovenians went underground, working in their homeland for political factions affiliated with the Allied forces. After the war, the real upswing began. Slovenian radio amateurs formed their own organization which, of course, was part of the Yugoslav Amateur Radio League. This in turn was controlled by the Yugoslav communist government, following the pattern found in other eastern European countries. Because of this and because at the time it was practically impossible to buy transmitting equipment, most activities were conducted in radio clubs. There, classes were held and equipment was built or rebuilt from parts and stations left by the Italian and German occupation forces, or parachuted in by Allied forces. From these clubs, large groups of excellent operators emerged.

Until recently, Slovenian operators represented 30% of all operators in Yugoslavia. They participated in national, European and world contests and were often rated among the best operators in the world. In true amateur spirit, they were ready to help when a natural disaster struck their country, or when lives were in danger. Only months ago, when the Yugoslav army moved into Slovenia, Slovenian Amateur Radio operators contributed towards the defeat of the Yugoslav army by the Slovenian Territorial Defense Forces.

In the spring of 1991, the 19th Conference of the Slovenian Amateur Radio League (Zveza Radioamaterjev Slovenije, or ZRS) was held. A new constitution was accepted and a board of directors was elected for 1991–1994: President—Stipanic Anton, YU3BH; Vice presidents—Blenkus Gojmir, YU3AW, Kuselj Janko, YU3RW, and Vehovc Joze, YU3EJ. The Control Branch and Legal Section consists of experts in their respective feilds. For the present time, Slovenian amateurs are using the old Yugoslav prefixes: YT3, YU3, YZ3 and 4N3— the number "3" being Slovenia. A new prefix reflecting Slovenia's independence should be available soon.

Out of 4,759 Slovenian amateurs, 3,324 have home stations. The remaining 1,435 amateurs are active through the 88 radio clubs across the country. ZRS publishes the bi-monthly *CQ YU3* magazine, which was recently renamed *CQ ZRS*. This is a highly technical publication, put together by Slovenian experts like Matjaz Vidmar, YT3MV, a Fulbright Scholarship recipient at the University of Colorado. In the past, Mr. Vidmar designed and built highly efficient transmitters for NASA spacecraft (see 1989 May *QST*).

The Slovenian Amateur Radio League is striving to spread the amateur spirit throughout Slovenia in accordance with guidelines established by IARU. For more information, contact Zveza Radioamaterjev Slovenjie, Lepi pot 6, YU-61000 Ljubljana, Slovenjia. —*Mate Leonard, VE3TJA* ■

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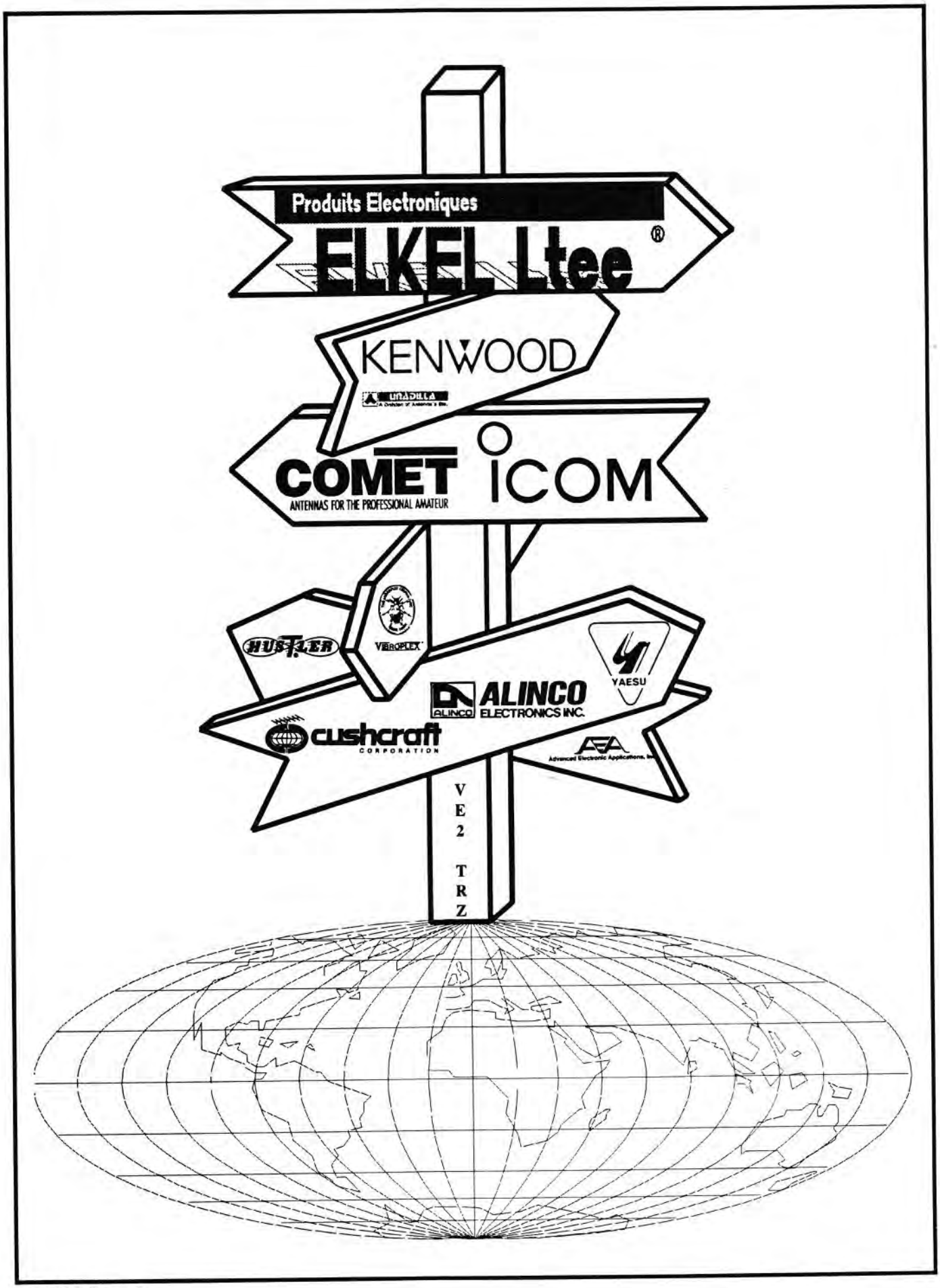
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V E 2 T R Z

Conducted By Harry MacLean, VE3GRO

WARC-92: No Amateurs with DOC

At press time, it appeared there would be no Amateur Radio representative on the DOC delegation attending WARC-92, scheduled to open in Torremolinos, Spain, on February 3. Basically, CRRL and CARF were unable to agree on whom to send, and DOC was unwilling to accept a nominee endorsed by only one national Amateur Radio organization. The CRRL nominee was Tom Atkins, VE3CDM, a past president of CRRL and a member of the IARU World Administrative Council.

Amateur Radio representation on national delegations was a cornerstone of the IARU strategy for WARC-92. This development leaves Canadian amateurs with no means to directly influence the DOC delegation on issues of an emergent nature. However, DOC has indicated that it is basically in agreement with IARU, particularly regarding the realignment of the 40-metre band. This realignment is intended to provide amateurs with 300 kHz of spectrum, exclusive worldwide, in the 7-MHz range.

The Canadian Emergency Preparedness College at Arnprior, Ontario, was the site of week-long courses in emergency communications planning and exercise design. Stated intent of these courses: to provide non-technical trainees with the knowledge and understanding needed to carry out the duties of municipal emergency communications officer. More than any other group, radio amateurs understand the importance of backup communications in time of emergency. Of the approximately 50 students enrolled, 13 were radio amateurs. Clustered around the college coat of arms: back row (l–r): Gilles Bedard, VE2CDK; Kim Olfert, VE7DZV; Bruce Taylor, VE4ABY; Nigel Bell, VE7NRB, and Walter Tucker, VO1QM; middle row (l–r): Fred Engel, staff, VE7EE; Dave Place, VE4PN; Max Geras, VE4IX, and Bill Sullivan, VO1AI/VK0AI; front row, kneeling (l–r): Marcel Cadieux, staff, VE2BCG; Bill Crowe, VE4CRO; Clay Doty, VE5AAA, and Archie Maclellan, VE1CEL. —*Clay Doty, VE5AAA*

SPECIAL PREFIXES

❒ To commemorate the 500th Anniversary of the Discovery of America by Christopher Columbus, Canadian amateurs may use the following special prefixes until the end of February: VC1–VC8 in VE1–VE8, CY1 and CY2 in VO1 and VO2, and CZ1 and CZ2 in VY1 and VY2. DOC club stations may use CZ9.

❒ To publicize CIDA Development Day, Canadian amateurs may use the following special prefixes on February 5 UTC: CI1–CI8 in VE1–VE8; VOØ and VO9 in VO1 and VO2; and CH1 and CH2 in VY1 and VY2. DOC club stations may use CH9.

❒ To commemorate the 150th Anniversary of the Geological Survey of Canada, Canadian amateurs may use the following special prefixes throughout March and April: VG1–VG8 in VE1–VE8; XJ1 and XJ2 in VO1 and VO2; and CG1 and CG2 in VY1 and VY2. DOC club stations may use CG9.

❒ To commemorate the 125th Anniversary of Confederation, Canadian amateurs may use the following special prefixes throughout 1992 July and August: CJ1–CJ8 in VE1–VE8; XL1 and XL2 in VO1 and VO2; and VY5 and VY6 in VY1 and VY2. DOC club stations may use VY7.

SOUTH OF THE BORDER

❒ ARRL has proposed new guidelines which should clarify a grey area in the FCC rules: so-called "business communications" conducted by radio amateurs. The ARRL rewording of FCC Section 97.113 is based on four premises: 1) communications in exchange for compensation are prohibited, 2) communications for the benefit of one's employer are prohibited, 3) communications in which the control operator or licensee have a pecuniary interest are prohibited, and 4) the Amateur Radio Service will not be regularly substituted for other licensed radio services. Some exceptions are clearly spelled out. These include 1) "notifying other amateurs of the availability for sale or trade of apparatus normally used in a radio station, provided that such activity is not conducted on a regular basis", 2) accepting "compensation as incident of a teaching position when an amateur station is used as part of classroom instruction", and 3) accepting "compensation for periods of time when a club station is transmitting telegraphy practice or information bulletins for at least 40 hours per week on at least six Amateur Service MF and HF bands, where the schedule of normal operating times and frequencies is published at least 30 days in advance of the actual transmissions". W1AW?

❒ The FCC has rejected two petitions by neighbours demanding protection from Amateur Radio emissions. In one case, neighbours filed a *Petition for Rulemaking*, hoping to prohibit amateur "broadcasting" in areas of dense population. Amateurs would have to use "remote, multi-user broadcast facilities" instead. In the other case, a neighbour argued that the advent of communications satellites had rendered the Amateur Service obsolete. FCC stated: "It is not reasonable to place the burden for resolving all interference problems on Amateur Service licensees. Electronic equipment manufacturers also have a responsibility to design their equipment to prevent interference."

INTERNATIONAL NOTES

❒ The 11th IARU Region 2 (North and South America) General Assembly will be held in Curaco, Netherlands Antilles on 1992 August 31–September 4. Host

society is VERONA, Vereniging voor Experimenteel Radio Onderzoek in de Nederlandse Antillen. CRRL, the Canadian member-society of IARU, is expected to send a delegation.

❒ The Japanese Ministry of Posts and Telecommunications has set up radio stations for "radio wave control" in both Tokyo and Osaka. The stations are used by surveillance operators to tell illegal stations to get off the air. A typical warning message is as follows: "This is the Kinki Telecommunications Administrations Bureau. The radio waves you are now emitting are violating the Wireless Telegraphy Act and causing trouble to many people. Please stop this immediately. If this warning is not heeded, you will be punished with a fine not exceeding ¥200,000. Once again, we must ask you to please stop this emission at once."

❒ The newly formed Albanian Amateur Radio Association (AARA)—with 12 members on board—has formally applied for IARU membership. Albania returned to air waves last October.

❒ Lithuania, Latvia and Estonia now have their own QSL bureaus. Addresses are as follows: LY prefix—LRMD, Box 1000, Vilnius, 2001 Lithuania; YL prefix—LRAL, Box 164, Riga-Center, 226098 Latvia; and ES prefix—ERAU, Box 125, Tallinn, 200090 Estonia.

❒ To celebrate the 75th Anniversary of Finnish Independence, the Telecommunication Administration Centre of Finland will allow Finnish amateurs to use the special prefix OG throughout 1992. The Finnish Amateur Radio League (SRAL) is issuing a special Suomi 75 vuotta Award for contacting 75 Finnish amateurs, OG or OH prefix, during 1992. For more information, contact Jukka Kovanen, Varuskunta Rak 47 as 11, SF-11310 Riihamäki, Suomi-Finland.

❒ Kuwait Amateur Radio Society (KARS) is offering a Kuwait National and Liberation Day Award for contacting 9K2RA-NL and one other 9K2-NL station on February 25 UTC. To receive this award, send a certified copy of your logbook and $3 US or five IRCs to KARS, Box 5240, Safat, 13053 Kuwait.

NOTES FROM ALL OVER

❒ During 1991, the CRRL Outgoing QSL Bureau in Arva, Ontario, processed 168,000 cards—approximately 14,000 a month. The Outgoing Bureau is a free service for CRRL members.

❒ Once again, special-event station VE7NOR will operate from the Vernon Winter Carnival, February 7–16. Look for VE7NOR on 3.775, 7.175, 14.275 and 28.575 MHz. To receive a special Winter Carnival certificate, send log data and $1 or two IRCs to Winter Carnival Award, Box 1706, Vernon, BC V1T 8C3

❒ Bill Carter, KM5R of San Antonio, Texas, died on November 10, two weeks after falling from his 60-foot tower. Bill climbed the tower without the protection of a safety belt.

❒ The Hamilton District office of DOC has informed CRRL that Canada Fisheries and Oceans will operate its Syledis positioning system in Ontario on 435.029 MHz as follows: Lake Huron (44 00'–45 15'N, 81 00'–82 00'W) from May 1 until September 15. Interference to amateur operation is expected to be minimal.

❒ You can help local Girl Guides earn their Amateur Radio badges by inviting them to visit your shack on the weekend of February 22–23—Girl Guides' annual equivalent to the October Boy Scouts' Jamboree-on-the-Air. For more information, contact your local Guide office. ■

Ham-Ads

Advertisements must pertain to Amateur Radio. For individuals or firms offering products or services for sale, the rate is $0.50 a word + GST. This is reduced to $0.25 per word + GST for those seeking to dispose of or acquire personal station equipment. Telephone numbers count as one word. No charge for postal codes. Unless specified, a *QST Canada* Ham-Ad will appear in the next available issue. Send Ham-Ads to CRRL, Box 56, Arva, ON N0M 1C0.

WANTED: 500-watt swinging link assembly as used with old-style Class C finals and antenna tuners. Prefer B & W, others OK. Coils also required. Eric Smith, VE4MK, 237 Hartford Ave, Winnipeg, MB R2V 0V9, Tel (204) 339-4637.

JEHOVAH'S WITNESSES: Amateurs, SWLs: please send full details and telephone number to Bob Ellis, Box 7349, Winter Haven, FL 33883-7349.

YAESU FT-890
New HF from Yaesu!
Another First From *Atlantic Ham Radio!*

The FT-890 is a high-performance transceiver providing up to 100 watts on all HF amateur radio bands in CW, SSB and FM modes, and up to 25 watts carrier in AM mode. The receiver tunes all frequencies between 100Khz and 30Mhz in 10 Hertz steps.

This is the world's smallest premium high-performance mobile which includes Yaesu's exclusive DDS, IF notch, IF shift, built-in iambic keyer, general coverage receiver and built-in high-speed antenna tuner with memories. Outstanding receiver front end with IPO (Intercept Point Optimization), selectable AGC and all-mode squelch. DFCS (Duct Flow Cooling System) for 100% duty cycle at 100 watts output for up to 30 minutes. A great Field Day or DX-pedition rig!

For serious voice contesting, the same DVS-2 digital voice recorder option introduced with th FT-1000 can also be used with the FT-890, providing continuous-loop receiver recording and pushbutton transmission of multiple voice messages to help keep you at your peak QSO-rate throughout the contest.

Other options available are the FP-800 AC Power Supply with Loudspeaker, the SP-6 External Loudspeaker with audio filters and optional LL-5 Phone Patch: the MMB-20 Mobile Mounting Bracket; the YH-77ST Headset *(with independant speakers for VFOA/B)*; and the MD-1C8 Desktop and MH-1B8 Hand Microphones.

KENWOOD TM-732A
New VHF/UHF from Kenwood!

Kenwood has come up with yet another NEW full featured dual-band radio! The TM-732A is the latest in UHF/VHF mobiles with a detachable front panel. The TM-732A has CTCSS, DTMF, DTSS (digital paging), and a host of other features. With the UxU or the VxV features, you can even do dual receive on the same band.

At the time of writing, this radio was so new, that we didn't even have the complete specifications yet, therefore, they are subject to change.

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- with Nicad, Charger, Belt Clip

Another First From *A*

ICOM
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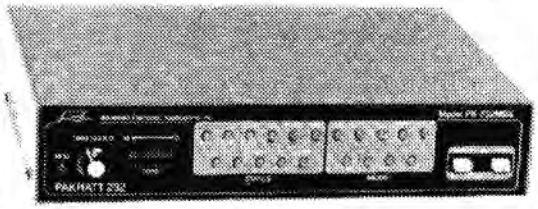
AEA PK232MBX All Mode TNC

With the PK-232MBX, you get on of the most popular all mode controllers available on the market today. The PK-232MBX offers Morse Code, Baudot, ASCII, AMTOR/SITOR 476 & 625, HF and VHF packet, WEFAX receive and transmit, as well as NAVTEX. The real strength of the PK-232MBX is its superior design. It's a no-compromise data controller specifically designed for multi-mode operation, not just a packet controller with supplemental firmware.



The PK-232MBX has a no-compromise VHF/HF/CW modem with an eight-pole Chebyshev bandpass filter followed by a limiter-discriminator with automatic threshold correction. The PK-232MBX automatically identifies Baudot, ASCII, AMTOR/SITOR and TDM (Time Division Multiplex) signals. A simple OK command automatically switches the PK-232MBX to the recognized mode. and starts the data display. With the 18K byte PakMail, your friends can now leave you messages around the clock!

Special Promotion!	PK-232MBX	$429.00
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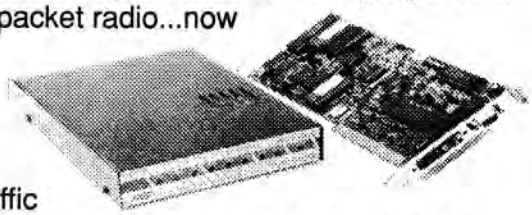
AEA's PK-88 and PCB-88 are one of the most popular and lowest price Packet TNC's. The PK-88 (desktop model) and the PC-88B (plug-in IBM PC card), are your best values in packet radio...now with MailDrop (personal mailbox), When your PK-88 or PCB-88 MailDrop is active, other stations can connect to you and exchange personal messages, traffic or bulletins. MailDrop also accepts inbound mail forwarding and supports reverse forwarding with your local W0RLI/WA7MBL/AA4RE/MSYS auto-forwarding packet BBSs.



The PCB88 differs from the PK-88 in that the PCB has a true DCD circuit built-in, as well as a standard modem disconnect header. Also, the PC-Pakratt-88 program is included with the PCB-88. The PCB-88 will even respond to packets with the computer turned off.

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Section News/Nouvelles des Sections

Conducted By Ken Oelke, VE6AFO

The CRRL Field Organization Forum

Reports invited: CRRL Section Managers (SMs) and their Section-level assistants coordinate traffic handling, emergency communications and bulletin service across Canada. Your SM (name and address appears on page 2 of this *QST Canada*) welcomes reports of individual and club activities for publication in this column. Activities do not have to be related to the CRRL Field Organization or to CRRL.

SECTION MANAGER ELECTION RESULTS

Congratulations to Larry Thivierge, VE3GT, who was recently re-elected Ontario Section Manager. Larry ran unopposed, eliminating the need for a balloted election. His new two-year term of office begins on April 1.

SECTION MANAGER ELECTION NOTICE

To all CRRL members in the Manitoba Section: You are hereby solicited for nominating petitions pursuant to an election for Section Manager. Nominating petitions will be received at CRRL Headquarters until 1600 EST 1992 March 6. Because of space limitations, the full election notice is not reproduced here. For more information, see 1992 January *QST Canada* or contact CRRL. —*Ken Oelke, VE6AFO, Field Services Manager*

REPORTS FOR OCTOBER 1991

Ontario: SM: Larry Thivierge, VE3GT @ VE3WQ; BM: VE3GSA @ VE3JF; SEC: VE3GV; STM: VE3CYR @ VE3INF; TC: VE3EGO. Happy New Year to all! The Ontario Phone Net, on 3742 kHz daily and currently managed by VE3AJN, has been in operation for some 44 years. One of the founding fathers was VE3CP. BBS VE3JF, located in the National Capital Region of Ottawa, has just passed the 100,000-message milestone since its startup in February, 1987. The Albanian cards are coming through quickly. I received mine from ZA1DX in only three weeks. New members of the Professional Loafers Club include VE3APC and VE3KUF. VE3IN is enjoying his new FT-1000. Hottest words on the bands, replacing "we": "that's a QSL" instead of "Roger", and "sir". There must be a lot of knights out there! Regretfully, I report that VE3BWT and VE3DGG have become Silent Keys. Many will remember Jean, VE3DGG, who was so active with the VE3 QSL Bureau. Band openings on 10 metres have been very good lately with lots of DX coming through.

REPORTS FOR NOVEMBER 1991

British Columbia: SM/SEC: Ernie Savage, VE7FB. British Columbia Public Service Net (BCPS, 3729 kHz) Manager Jim, VE7JN, reports November check-ins: high–209, low–121, total 5043. British Columbia Emergency Net (BCEN, 3652 kHz) Manager Ray, VE7BCL, reports 1090 November check-ins. Another great month for the BCEN with Tom, VE7BNI, qualifying for BPL with 600 points. Fifty Members of BCEN are being awarded Section Net Certificates starting with 365 QNIs down to 104, with another 50 from 94 down to one. Who said CW is dead and gone like the dodo bird? Once again, the Dogwood Chapter QCWA and Breakfast Club's Christmas party was a great success. Good food, nice prizes. We were mystified by our guest, the magician. Last month, we reported that Ralph, VE7FHB, had suffered a stroke. We were pleased to see him at the party in the care of Jackie, VE7FGG. Kirby, VE7WT, a former BC Phone Net NCS, is recovering from throat problems.

Manitoba: SM: Bill Crooks, VE4JR; ASM: VE4IX; STM: VE4STU, SEC: VE4PN; NMs: VE4AGH, VE4FP, VE4LB and VE4TE. I received a note from Dave, VE4AGH of Portage la Prairie, who mentioned that John, VE4HL, Bud, VE4CP, and Mac, VE4TE, are using solar-powered VHF. Jim, VE4NC of Flin Flon advises that the Flin Flon ARC ranks have increased with the addition of VE4s AMW, AR, JWM, KRM, RGM, SMC, TW, WJS and WO, and VE5s EA and OAD. Welcome! A note from Peter, VE4PD: the new Dauphin ARC executive is President—Tony, VE4TY, Vice President—Tim, VE4TIM, Treasurer—Ester, VE4OW, and Secretary—Peter, VE4PD. He also mentions that Jack, VE4JA, conducted exams for Joe, VE4JOE, and Darryl, VE4DL. A note from Malcolm, VE4MG of McCreary, who mentions that 2 metres helped Keith, VE4KK, when he had car trouble. Keith called in on the Baldy Mountain repeater to get help from Ester, VE4OW, and Malcolm VE4MG, on a very cold winter night. On Monday, December 9, Winnipeg ARC (WARC) held a special night recognizing long-time amateur Bert Anderson, VE4AP. Bert, who has held the same call since he was first licensed in 1930, was asked to recount his early experiences in radio. Bert was presented with a Radio Pioneers of Manitoba Certificate No. 1. WARC President Judy, VE4JBN, presented Bert's wife, Francis, with a lovely poinsettia. About 65 WARC members and friends were in attendance.

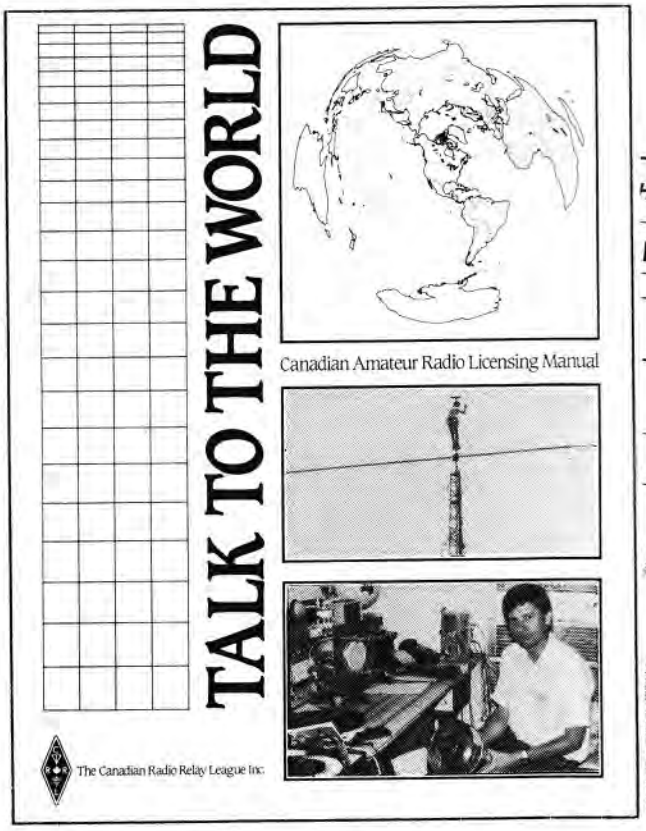
Maritimes-Newfoundland: Acting SM: Carl Anderson, VE1UU; STM: Mel Lever, VE1VX; BM: Brent Taylor, VE1JH. No report available. The Maritimes-Newfoundland Section needs a Section Manager. Contact the Acting Section Manager or CRRL for details.

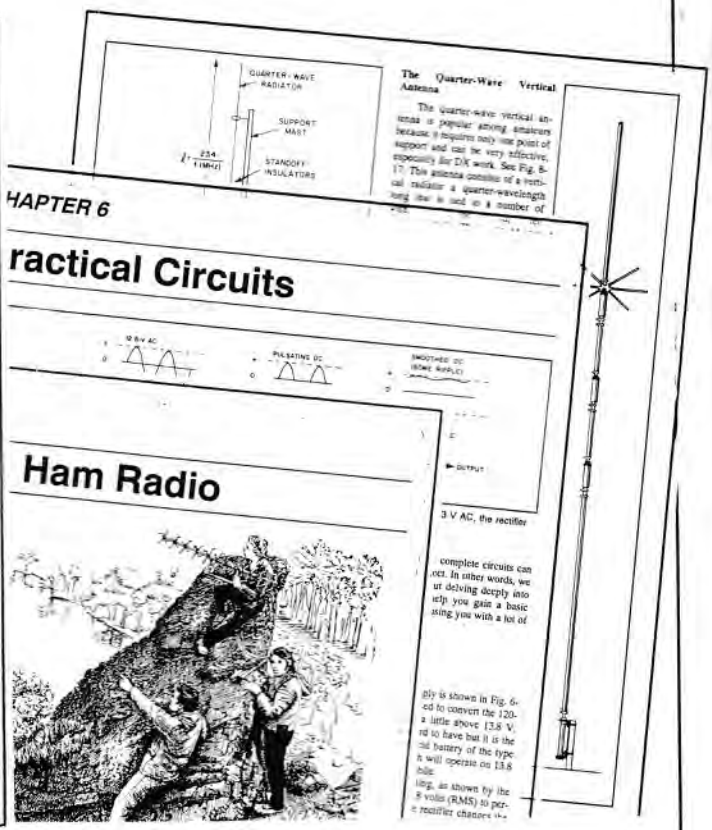
Ontario: SM: Larry Thivierge, VE3GT @ VE3WQ; BM: VE3GSA @ VE3JF; SEC: VE3GV; STM: VE3CYR @ VE3INF; TC: VE3EGO. Congratulations are to Tom Atkins, VE3CDM, who was named 1991 CRRL Amateur of the Year. Tom has served in a number of positions within the amateur fraternity and is well known to amateurs in many countries. He is presently Secretary of IARU Region 2 and member of the IARU World Administrative Council. I don't believe there is anyone who has worked harder on behalf of Amateur Radio. The award is well deserved and long overdue. For those whose DXCC certificate was dated before June 1, 1990 and who have an IBM PC or compatible computer, write to ARRL in Newington for a copy of the DXCC Record Conversion Program. This will make it easier to submit your DXCC endorsement applications on diskette. Be sure to indicate the type of endorsement you are seeking (band, mode), and the date of your last endorsement. Also, specify 5.25- or 3.5-inch diskettes. VE3KOF, who has a new TS-950, reports that meetings for this year's Friendship Games between the Soo and Saginaw, Michigan, are already under way. This is the 15th anniversary of the games. Thanks to VE3NHP, Espanola has a new repeater, VE3YSB on 147.390 MHz (+). This system is a Micor 100-watt repeater set at about 30 watts into a Sinclair 224 antenna at about 1,400 feet above sea level. Mobile coverage is fantastic, extending from downtown Sudbury along Highway 17 to Blind River in the west. Most parts of Manitoulin Island and all points in between are covered. With thanks to VE3CPD, VE3ZLB, VE3FJH, VE3AC and several other non hams, VE3SGK has a new 48-foot self-supporting tower carrying a TH6 Thunderbird beam. VE3GKB was recently elected president of the Sun Parlour Retirees Amateur Radio Club, succeeding VE3ZP. Regretfully I report that VE3BJL, VE3BTB, VE3CBH, VE3MQR and VE3NGO have become Silent Keys. VE3OSQ is stepping down as an OBS due to other commitments. Thanks, Kieran, and keep that BBS running. The new executive of Lakehead ARC consists of President—VE3VUK, Vice President—VE3KRH, Secretary—VE3TEI, Treasurer—VE3BBS. New board members are VE3ILV, VE3XRC, VE3ICY, VE3IDM. VE3SNW and soon-to-be amateur Jim are bulletin editors. VE3CWE has finally qualified for the DXCC Honour Roll, while VE3ADP has reached the elusive plateau of 300 countries confirmed. A recent DXCC Honour Roll listing showed 21 members from Ontario including nine from the Toronto area. VE3XJ has reached the 221 countries confirmed plateau.

Saskatchewan: SM: Joan Lloyd, VE5JML. Hello from snowbound VE5 land where my vertical antenna went into hibernation for several weeks and its almost cold enough outside to fix it, hi. Thanks to Rick, VE5RJR, Bruce, VE5RC, Sam, VE5SF, and Bart, VE5CPU, for operating the VE5QST call during the November 3 QST QSO Party. The planned bus trip to the '92 Dayton Hamvention, arranged by Swift Current amateurs, was cancelled as not enough people signed up. (I was looking forward to being part of a mobile hamfest!) On November 16, Saskatoon amateurs VE5s YK, RPH, and crew provided communications for the Santa Claus parade. Also on the same day, Regina amateurs VE5s AEO, AGM, CPU, CS, EE, ELJ, GW, NX, RC, TH and UK provided communications for their Santa Claus parade. Still on November 16, Saskatchewan Amateur Radio League met in Saskatoon to formulate plans for 1992. Best wishes to Bob, VE5FY, as he recovers from bypass surgery. Happy New Year and Good DX in 1992 from Joan, VE5JML, and Walter, VE5WWW. ■

Talk to the World!

For your fall licensing classes! Designed for the requirements of the Restructured Amateur Service!





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Order from the CRRL Bookshelf in this month's QST Canada, or from your local Amateur Radio dealer.

The Canadian Radio Relay League

Box 56, Arva, ON N0M 1C0

Conducted By Garry Hammond, VE3XN
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Tel (519) 291-4813

Your CRRL QSL Bureaus

CRRL INCOMING QSL BUREAUS

Member-societies of the International Radio Union (IARU) operate a worldwide system of QSL bureaus. CRRL, as Canadian member-society of IARU, operates a Central Incoming QSL Bureau, and the incoming QSL bureaus for the 12 Canadian call areas.

How do the bureaus work? IARU member-societies send cards to the CRRL Central QSL Bureau. Cards are then sorted and forwarded to the incoming bureau for each call area. These bureaus use one of three methods—envelopes, credits or a combination of the two—to get the cards to you (see below). Even though CRRL sponsors the bureaus, you do not have to be a CRRL member to use them. However, we hope that users will recognize that a benefit like the CRRL incoming QSL bureaus should be supported by CRRL membership.

The name and address of your CRRL incoming QSL bureau appear in the sidebar on the right. The letter A, B or C indicates the method your bureau uses to get cards to you.

Method A: Envelopes. Send your bureau a small quantity of 5- by 7.5-inch envelopes addressed to yourself. On the top left corner of each envelope, print your call sign. On the top right corner of each envelope, place enough postage to permit the bureau to mail 50 grams of cards

Method B: Credits. Send your bureau $5.00, and your name, call sign and address. The bureau will send you cards, charging the cost of envelopes and postage against your $5.00 credit. You will be informed when you should send more money.

Method C: Combination. Send your bureau $5.00 as in Method B *and* addressed envelopes as in Method A. Do not place postage on your envelopes. You will be informed when you should send more money and/or envelopes.

No matter what method is used, please inform your bureau if your call sign or address changes.

Please remember that bureaus are operated by dedicated amateurs who volunteer their time to provide a service for you. Also remember that it often takes a long time to receive cards through the bureau system. With the high cost of postage, foreign amateurs and Amateur Radio societies tend to ship in bulk, often only once or twice a year. If a much-needed card is slow in coming, it is unlikely that the holdup is because of a volunteer at a CRRL bureau. Please be patient...

Finally, *do not send outgoing cards to an incoming bureau.* For information on the CRRL Outgoing QSL Bureau, see below.

CRRL INCOMING QSL BUREAUS

VO Incoming QSL Bureau (C), Roly Peddle, VO1BD, Box 6, St John's, NF A1C 5H5
VEØ/VE1/VY2 Incoming QSL Bureau (B), KVARC, Box 141, Petitcodiac, NB E0A 2H0
VE2 Incoming QSL Bureau (A), A G Daemen, VE2IJ, 2960 Douglas Ave, Montreal, PQ H3R 2E3
VE3 Incoming QSL Bureau (A), The Ontario Trilliums, Box 157, Downsview, ON M3M 3A3
VE4 Incoming QSL Bureau (A), Adam Romanchuck, VE4SN, 26 Morrison St, Winnipeg, MB R2B 3V4
VE5 Incoming QSL Bureau (B), Bjarni Madsen, VE5FX, 739 Washington Dr, Weyburn, SK S4H 3C7
VE6 Incoming QSL Bureau (B), Norm Waltho, VE6VW, Box 1890, Morinville, AB T0G 1P0
VE7 Incoming QSL Bureau (A), Dennis Livesay, VE7DK, 8309 112th St, Delta, BC V4C 4W7
VE8 Incoming QSL Bureau (A or B), Rolf Zieman, VE8RZ, 2 Taylor Rd, Yellowknife, NT X1A 2K9
VY1 Incoming QSL Bureau (A), William Champagne, VY1AU, Box 4569, Whitehorse, YT Y1A 2R8

CRRL Central Incoming QSL Bureau, Don Welling, VE1WF, Box 51, Saint John, NB E2L 3X1

CRRL OUTGOING QSL BUREAU

The CRRL Outgoing QSL Bureau accepts cards for the countries listed below. Countries that are not listed here may not provide a QSL service for their amateurs. Cards sent for these countries cannot be processed and will be returned.

Algeria
Antigua
Argentina
Aruba
Ascension Island
Australia
Austria
Azores
Bahama Islands
Bahrain
Barbados
Belgium
Bermuda
Bolivia
Brazil
Brunei
Bulgaria
Canada
Cape Verde Islands
Cayman Island
Chile
China
Colombia
Commonwealth of Independent States
Cook Islands
Costa Rica
Cuba
Cyprus
Czechoslovakia
Denmark
Dominica
Dominican Republic
Ecuador
El Salvador
Estonia
Falkland Islands
Faroe Islands
Fiji Islands
Finland
France
French Guiana
French Oceania
Germany
Gibraltar
Greece
Greenland
Guadaloupe
Guam
Guantanamo Bay
Guatemala
Guyana
Haiti
Honduras
Hong Kong
Hungary
Iceland
India
Indonesia
Ireland
Israel
Italy
ITU (Geneva)
Ivory Coast
Jamaica
Japan
Jordan
Kenya
Korea (South)
Latvia
Lesotho
Liechtenstein
Lithuania
Luxembourg
Madeira Islands
Malagasy Republic
Malaysia
Malta
Marshall Islands
Mauritius
Mexico
Monaco
Mongolia
Morocco
Nauru
Netherlands
New Caledonia
New Zealand
Nicaragua
Nigeria
Norway (inc. Jan Mayen and Svalbard
Oman
Pakistan
Panama
Papua New Guinea
Paraguay
Peru
Phillipines
Poland
Portugal
Puerto Rico
Roumania
Rwanda
Samoa (Western)
San Marino
Senegal
Seychelles
Sierra Leone
Singapore
South Africa
Spain
Sri Lanka
St Lucia
St Vincent
Suriname
Swaziland
Sweden
Switzerland
Syria
Thailand
Togo
Tonga
Transkei
Trinidad and Tobago
Turkey
United Kingdom (England, Scotland, Wales, N. Ireland)
United States (inc. Alaska, Hawaii)
Uruguay
Vatican
Venezuela
Virgin Islands
Yugoslavia
Zambia
Zimbabwe

CRRL Outgoing QSL Bureau, Box 56, Arva, ON N0M 1C0

Bureau Staff:
Bob Browning, VE3EEM
John Henderson, VE3HFT

CRRL OUTGOING QSL BUREAU

The CRRL Outgoing QSL Bureau allows CRRL members to send QSL cards to other parts of Canada, the US and overseas, with a minimum of cost and effort.

Why use the CRRL Outgoing QSL Bureau? QSLing direct may be fast, but it is also tedious. Time spent searching for addresses, and addressing and mailing envelopes, can be better spent chasing DX. Cost of postage, envelopes and IRCs can become prohibitive.

Here's how to use the outgoing service:

1. Sort your cards *by countries.*
2. Within each country, sort *by number in prefix.* For example, A2, K2, N2 and W2 are all for the same US call area and should be grouped together.
3. Cards can be damaged in transit to the bureau. Package cards *tightly and well.*
4. Use of the CRRL Outgoing QSL Bureau is *free* to CRRL members. CRRL members: do not send any payment. Enclose a photocopy of your CRRL membership card, or the address label from a current *QST* or *QST Canada* as proof of CRRL membership.
5. Non-CRRL members may use the outgoing bureau by sending $1 with every 50 cards.
6. Affiliated clubs: cards from your club station are eligible. QSL managers: please write for details.
7. Send cards to CRRL Outgoing QSL Bureau, Box 56, Arva, ON N0M 1C0. ■

VHF-UHF/THF-UHF

Conducted By Dana Shtun, VE3DSS
500 Willard Ave, Toronto, ON M6S 3R6
Tel (416) 763-1761

CANADIAN RESULTS: 1991 ARRL VHF QSO PARTY

50 MHz

Category	Call	Grid	QSO	Points	Mult	Score
East	VE2DUB	FN35	24	24	12	* 288
	VE2FUT	FN25	17	17	9	153
	VE2LC	FN35	7	7	3	21
Central	VE3KDH	FN03	71	71	26	1846
	VE3ASO	FN25	60	60	26	1560
	VE3SMA	EN93	31	31	12	372
	VE3RPS	FN03	25	25	12	300
	VE3WCB	FN03	23	23	11	253
	VE3EVW	EN93	11	11	9	99
	VE3BFM	FN04	9	9	4	36
	VE3DSS	FN03	5	5	4	20
	VE3SQD	FN03	4	4	1	4
West	VE6BOJ	DO31	12	12	6	72
	VE6AFO	DO31	9	9	5	45
	VE7FQM	DN19	6	6	4	24
Multiop	VE3SAU	FN25	34	34	14	476
	VE2UMS	FN45	27	27	12	324
	VE6NOV	DO20	17	17	10	170
	VE7PRC	DN09	13	13	6	78
	VE6MTR	D021	9	9	6	54
	VE6TA	DO40	7	7	5	35
	VE7KPB	DN29	3	3	3	9
	VE6TA	DO31	2	2	2	4

144 MHz

Category	Call	Grid	QSO	Points	Mult	Score
East	VE2DUB	FN35	116	116	24	2784
	VE2FUT	FN25	102	102	22	2244
	VE2LC	FN35	11	11	5	55
Central	VE3ASO	FN25	226	226	41	9266
	VE3KDH	FN03	185	185	42	7770
	VE3EZP	EN93	98	98	29	2842
	VE3HJK	FN03	92	92	26	2392
	VE3RPS	FN03	82	82	23	1886
	VE3WCB	FN03	72	72	25	1800
	VE3SMA	EN93	71	71	21	1491
	VE3BFM	FN04	44	44	22	968
	VE3DJ	FN03	37	37	15	555
	VE3SQD	FN03	38	38	14	532
	VE3MNA	EN93	26	26	11	286
	VE3SXE	FN25	22	22	13	286
	VE3DSS	FN03	15	15	8	120
	VE3SQD	FN04	10	10	5	50
West	VE6BOJ	DO31	53	53	10	530
	VE6AFO	DO31	19	19	9	171
	VE7FQM	DN19	5	5	4	20
Multiop	VE2UMS	FN45	154	154	22	3380
	VE3QST	EN92	98	98	34	3332
	VE3SAU	FN25	71	71	19	1349
	VE6NOV	DO20	69	69	13	897
	VE7PRC	DN09	67	67	10	670
	VE6MTR	DO21	31	31	11	341
	VE6TA	DO40	13	13	8	104
	VE7KPB	DN29	9	9	6	54
	VE6TA	DO31	5	5	3	15
	VE6TA	DO30	4	4	3	12
	VE6TA	DO21	3	3	2	6

222 MHz

Category	Call	Grid	QSO	Points	Mult	Score
East	VE2FUT	FN25	16	32	10	320
	VE2LC	FN35	2	4	14	222
Central	VE3KDH	FN03	36	72	22	1584
	VE3ASO	FN25	38	76	19	1444
	VE3BFM	FN04	8	16	6	96
	VE3DSS	FN03	3	6	2	12
	VE3RPS	FN03	3	6	1	6
Multiop	VE3SAU	FN25	5	10	3	30

432 MHz

Category	Call	Grid	QSO	Points	Mult	Score
East	VE2DUB	FN35	32	64	15	960
	VE2FUT	FN25	24	48	10	480
	VE2LC	FN35	5	10	2	20
Central	VE3KDH	FN03	67	134	29	3886
	VE3ASO	FN25	57	114	24	2736
	VE3HJK	FN03	34	68	16	1088
	VE3SMA	EN93	33	66	14	924
	VE3BFM	FN04	19	38	11	418
	VE3EVW	EN93	12	24	7	168
	VE3DJ	FN03	11	22	6	132
	VE3DSS	FN03	6	12	4	48
	VE3RPS	FN03	1	2	1	2
West	VE6BOJ	DO31	18	36	7	252
	VE6AFO	DO31	9	18	6	108
	VE6MTR	D021	10	20	7	140
Multiop	VE3QST	EN92	31	62	17	1054
	VE6NOV	DO20	25	50	8	400
	VE2UMS	FN45	31	62	5	310
	VE3SAU	FN25	19	38	8	304
	VE6TA	DO40	7	14	5	70
	VE7KPB	DN29	6	12	4	48
	VE6TA	DO30	3	6	3	18
	VE7FQM	DN19	4	8	2	16

902 MHz

Category	Call	Grid	QSO	Points	Mult	Score
Central	VE3ASO	FN25	10	30	8	240
West	VE6AFO	DO31	4	12	4	48
	VE6BOJ	DO31	4	12	3	36
Multiop	VE6NOV	DO20	6	18	4	72

1296 MHz

Category	Call	Grid	QSO	Points	Mult	Score
East	VE2FUT	FN25	4	12	4	48
	VE2DUB	FN35	3	9	1	9
Central	VE3ASO	FN25	18	54	14	756
	VE3KDH	FN03	17	51	11	561
	VE3WCB	FN03	18	54	10	540
	VE3SMA	EN93	3	9	2	18
	VE3DJ	FN03	3	9	2	18
	VE3DSS	FN03	1	4	1	4
Multiop	VE6NOV	DO20	4	12	4	48

2.3 GHz

Category	Call	Grid	QSO	Points	Mult	Score
Central	VE3ASO	FN25	1	4	1	4

3.4 GHz

Category	Call	Grid	QSO	Points	Mult	Score
Central	VE3SMA	EN93	1	4	1	4

10 GHz

Category	Call	Grid	QSO	Points	Mult	Score
East	VE2DUB	FN35	1	4	1	4
Central	VE3ASO	FN25	8	32	2	64
	VE3KDH	FN03	1	4	1	4
	VE3HJK	Rover	1	4	1	4

24 GHz

Category	Call	Grid	QSO	Points	Mult	Score
East	VE2DUB	FN35	1	4	1	4

All Bands Summary

Category	Call	Grid	QSO	Points	Mult	Score
East	VE2FUT	FN25	168	226	60	13560
	VE2DUB	FN35	177	221	54	11934
	VE2LC	FN35	25	32	11	352
Central	VE3ASO	FN25	418	596	135	80460
	VE3KDH	FN03	377	517	131	67727
	VE3SMA	EN93	139	181	50	9050
	VE3WCB	FN03	113	149	46	6854
	VE3HJK	FN03	126	160	42	6720
	VE3BFM	FN04	80	107	43	4601
	VE3RPS	FN03	111	115	37	4255
	VE3EZP	EN93	98	98	29	2842
	VE3DJ	FN03	51	68	23	1564
	VE3DSS	FN03	30	42	19	798
	VE3SQD	FN03	42	42	15	630
	VE3EVW	EN93	23	35	16	560
	VE3SXE	FN25	22	22	13	286
	VE3MNA	EN93	26	26	11	286
	VE3SQD	FN04	10	10	5	50
	VE3HJK	Rover	1	4	1	4
West	VE6BOJ	DO31	87	113	26	2938
	VE6AFO	DO31	41	58	24	1392
	VE7FQM	DN19	15	19	10	190
Multiop	VE2UMS	FN45	212	243	39	9477
	VE3QST	EN92	129	160	51	8160
	VE6NOV	DO20	121	166	39	6474
	VE3SAU	FN25	129	153	44	6732
	VE6MTR	D021	50	66	24	1440
	VE7PRC	DN09	80	80	16	1280
	VE6TA	DO40	27	34	18	612
	VE7KPB	DN29	18	24	13	312
	VE6TA	DO30	7	10	6	60
	VE6TA	DO31	10	10	5	50
	VE6TA	DO21	3	3	2	6

Silent Keys

Conducted By Ray Staines, VE3ZJ

It is with deep regret that we record the passing of these amateurs:

VE3CBH, Keith Douglas, Tecumseh, ON
VE3DGG, Jean Evans, Downsview, ON
VE3DKN, Stan Turner, Oakville, ON
VE3GV, Jack Strangleman, London, ON
VE3HH, Merv Hemsworth, Listowel, ON
VE3HNF, Carm Drewry, Wellington, ON
VE3IQJ, Bill Antle, London, ON
VE3IQQ, Kurt Maschlin, Scarborough, ON
VE3KSA, J. "Bud" Freedy, Dorchester, ON
VE3MAG, John Banks, Kenilworth, ON
VE3NGO, Jim Newman, Windsor, ON
VE3NKD, Jow Bowman, Brantford, ON
VE5EO, Ernest Oakman, Stewart Valley, SK
VE5MD, Bob Wright, Tisdale, SK
VE5OL, Phil Lederhose, Prince Albert, SK
VE5NV, Vic Ireland, Regina, SK
VE7BIL, Bill Beaton, Victoria, BC
VE7KL, Gord Smith, Victoria, BC
VE7ZK, Herbert Trapp, Richmond, BC

Note: Silent Key reports sent to *QST Canada* must include name, address and callsign of the reporter. To avoid unfortunate errors, reports are confirmed only through acknowledgement from the family of the deceased. Thus, those who report a Silent Key may not receive an acknowledgement from *QST Canada*. ■

CLARA

25th ANNIVERSARY CONTEST
1992 MARCH 17

KENWOOD

Compact Champion!

TH-27A/47A

2 m and 70 cm Super Compact HTs

Here is a great new addition to Kenwood's HT family – the all new TH-27A for 2 meters and TH-47A for 70 cm! Super compact and beautifully designed, these pocket-sized twins give you full-size performance.

- **Large capacity NiCd battery pack supplied.** The standard battery pack is 7.2 volts, 700 mAh, providing extended transmit time with 2.5 watts. (TH-47A: 1.5 W.)
- **Extended receive coverage.** TH-27A: 118–165 MHz; TH-47A: 438-449,995 MHz. TX on Amateur bands only, (TH-27A modifiable for MARS/CAP. Permits required. Specifications guaranteed for Amateur bands only.)
- **Multi-function scanning.** Band and memory channels can be scanned, with time operated or carrier operated scan stop.
- **Frequency step selectable for quick QSY.** Choose from 5, 10, 12.5, 15, 20, or 25 kHz steps.
- **Built-in digital clock** with programmable timer.
- **Dual Tone Squelch System (DTSS).** Compatible with the TH-26AT Series and the TM-941A Triple bander, as well as other Kenwood series transceivers, this selective calling system uses standard DTMF to open squelch.
- **Five watts output** when operated with PB-14 battery pack or 13.8 volts.
- **T-Alert for quiet monitoring.** Tone Alert beeps when squelch is opened.
- **Auto battery saver, auto power off function, and economy power mode extends battery life.**
- **DTMF memory.** The DTMF memory function can be used as an auto-dialer. All characters from the 16-key pad can be stored, allowing repeater control codes to be stored!

- **41 memories.** All channels store receive and transmit separately for "odd split."
- **DC direct in operation.** Allows external DC to be used (7.2 – 16 volts). When external power is used, the batteries are being charged. (PB-13 only.)

Optional accessories:
- **BC-14:** Wall charger for PB-13, 14
- **BC-15:** Rapid charger for PB-13, 14
- **BH-6:** Swivel mount
- **BT-8:** Six cell AA Alkaline battery case
- **HMC-2:** Headset with VOX and PTT
- **PB-13:** 7.2 V, 700 mAh NiCd pack
- **PB-14:** 12 V, 300 mAh NiCd pack
- **PG-3F:** DC cable with filter and cigarette lighter plug
- **PG-2W:** DC cable
- **SC-30:** Soft case
- **SMC-31:** Standard speaker mic
- **SMC-32:** Compact speaker mic
- **SMC-33:** Compact speaker mic with controls
- **WR-2:** Water resistant bag.

- **Automatic offset selection (TH-27A).**
- **Direct keyboard frequency entry.** The rotary dial can also be used to select memory, frequency, frequency step, CTCSS, and scan direction.
- **CTCSS encode/decode built-in.**
- **Supplied accessories:** Rubber flex antenna, battery pack, wall charger, belt hook, wrist strap, dust caps.

KENWOOD U.S.A. CORPORATION
COMMUNICATIONS & TEST EQUIPMENT GROUP
P.O. BOX 22745, 2201 E. Dominguez Street
Long Beach, CA 90801-5745
KENWOOD ELECTRONICS CANADA INC.
P.O. BOX 1075, 959 Gana Court
Mississauga, Ontario, Canada L4T 4C2

KENWOOD

...pacesetter in Amateur Radio

Specifications and features are subject to change without notice or obligation.
Complete service manuals are available for all Kenwood transceivers and most accessories.

Update: Defence of Amateur Radio Fund

The Defence of Amateur Radio Fund (DARF) was established to help IARU defend our amateur frequencies at WARC-92, scheduled to open in Torremolinos, Spain, on February 3.

DARF thanks the following for their recent contributions: Amateur Radio Club of Central Newfoundland; Darrel Norstrom, VE7EME; Fort George Amateur Radio Club; Weldon Cromwell, VE3ILN; George McIver, VE3AMM; Margaret McIver, VE6AMN; Rose City Amateur Radio Club; Gordon MacDuff, VE3AMQ; Réal Bronsard, VE2GM; David Millyard, VE3OYW; William Scholey, VE7QC; William Monuh, VE3BDK; Dean Provins, VE6CTA; John Provins, VE7GTZ; Walter Scott, VE7BZ; Bernd Oehlke, VE7PHD; Frederick Dudley, VE3EAU; James Dean, VE3IQ; and Paul Kovac, VE3HFM.

As of January 8, the fund stood at $23,789.12. If you have not yet contributed, please mail your cheque to DARF c/o Tim Ellam, VE6SH, 107 Strathearn Rise SW, Calgary, AB T3H 1R5. ■

Moving? For uninterrupted delivery of *QST* and *QST Canada*, please notify CRRL eight weeks in advance. ■

Conducted By Bob Boyd, VE3SV
and Ken Oelke, VE6AFO

A Multitude of Great Exercises

The second best way of testing the operating and equipment capabilities of an ARES group is through an emergency exercise (We'll tell you the very best way later!). The exercise may be designed for ARES participation only, or be a larger one in which ARES plays a part alongside other emergency response organizations.

1991 was notable for emergency exercises involving ARES groups. In addition to the exercises described in previous columns, the following have come to my attention:

On February 13, under Ken Oelke, VE6AFO, Red Cross stations in Lethbridge, Medicine Hat, Calgary, Red Deer, Grand Prairie and Edmonton came together on 3740 kHz to pass simulated emergency traffic originated by Edmonton Red Cross. The objective was to test the system and to demonstrate to Red Cross what ARES could do for them. Some 25 formal radiograms were received in Calgary and replies were sent out using VHF packet radio from Calgary Red Cross Headquarters via the VE6PAX repeater. As Ken says in his report, "Red Cross houses in Alberta now know that communications can be maintained across the province. Amateur Radio impressed their managers far beyond their expectations."

On February 20, Ken's group went to work again, this time to test communications between six Calgary hospitals, the 911 Centre and the Calgary Stampede Emergency Operations Centre. All communications was on VHF using the VE6NRC repeater.

In preparation for the major exercise, "Operation Redbird" described in last month's *QST Canada*, the Thousand Islands Amateur Radio Association held an exercise in August. Purpose of this exercise was to test 2-metre links between the various high schools and the school board office. The schools were to be used as evacuation centres for Operation Redbird. Clarence, VE3LBU, the EC, designed this exercise which fully met all objectives.

On September 12, the VO gang at Lewisport assisted with an exercise involving a simulated explosion on the Atlantic Marine ferry, Sir Robert Bond. This was a large-scale exercise designed by Emergency Preparedness Canada, Emergency Measures for Newfoundland Marine Atlantic, and the Department of National Defence. Eight on-shore organizations including ARES took part. The ARES groups were comprised of 15 amateurs from the region. Over 200 individuals were involved in this exercise in one capacity or another.

On October 5, the Dufferin County and Area (Ontario) ARES group conducted an exercise based on Kingston's "Operation Sierra", described in 1991 June *QST Canada*. Fourteen amateurs took part. The exercise was reported to be an outstanding success and led to the identification of a number of areas for

Field Organization Reports November 1991

CRRL Section Emergency Coordinator Reports

Reports were received from the following SECs (DECs and ECs reporting to SECs are listed in brackets) denoting a total ARES membership of 1140.

Reporting	ARES Members
VE3GV	622
VE4JR	56
VE6AFO	306
VE7FB	156

CRRL Section Traffic Manager Reports

Call	Orig	Rcvd	Sent	Dlvd	Total
VE3ORN	2	88	71	17	178
VE3GSQ	0	65	52	0	117
VE3CYR	2	53	37	3	95
VE3GNW	0	43	51	0	94
VE3DVE	2	31	43	6	82
VE3GT	0	28	38	1	67
VE3AJN	0	42	20	0	62
VE3WV	0	44	4	2	50
VE3SB	0	15	14	4	33
VE3AWE	0	12	16	0	28
VE3LPM	0	12	14	2	28
VE3FGU	0	10	12	0	22
VE3FS	4	7	9	1	21
VE3DBG	0	6	10	1	17
VE3BDM	0	4	10	2	13
VE3KCZ	1	5	2	4	16
VE3NVJ	2	4	10	0	16
VE3GKB	0	6	3	0	9
VE3BAJ	1	1	5	1	8
VE3MNI	0	0	5	0	5
VE4JR	0	31	28	5	64
VE4RO	0	24	4	4	32
VE4STU	0	22	1	4	27
VE5KZ	8	76	72	4	160
VE5JML	0	5	0	0	5
VE6CPP (Oct)	0	0	34	34	68
VE6GIL (Oct)	0	8	8	0	16
VE6AKY (Oct)	5	3	5	2	15
VE6ABC (Oct)	0	6	6	0	12
VE6XG	10	40	25	19	94
VE6CE	9	12	12	0	33
VE6CPP	0	10	10	3	23
VE6GUS	0	8	8	0	16
VE6ABC	0	5	5	0	10
VE6AKY	0	4	4	0	8
VE7BNI	56	226	300	18	600
VE7ANG	1	102	104	3	210
VE7FAZ	0	95	96	4	195
VE7BCL	1	68	39	23	131
VE7XA	0	37	55	8	100
VE7CCJ	4	50	38	2	94
VE7BZI	8	16	8	16	48
VE7OM	0	17	19	0	36
VE7DV	0	27	4	0	31
VE7FB	1	15	10	5	31
VE7EGM	2	14	5	4	25
VE7FRZ	3	17	4	1	25
VE7FLY	0	3	20	0	23
VE7VO	0	17	6	0	23
VE7BCF	1	14	4	0	19
VE7WI	0	9	5	1	15
VE7GKA	0	9	4	0	13
VE7DJ	0	10	1	0	11
VE7ALV	1	9	1	0	11
VE7SR	0	5	3	0	8
VE7KDR	0	3	2	0	5

National Traffic System

Net (Mgr)	Sess	QNI	QTC
ATN (VE1YS)	26	120	54
KTN (VE3AJN)	13	110	14
NPN (VE3NDI)	30	522	13
OLN (VE3POJ)	29	675	31
OPN (VE3AJN)	30	595	152
OQN-D (VE3ORN)	29	100	40
OQN-E (VE3CYR)	30	100	75
OQN-L (VE3GSQ)	24	29	29
MEPN (VE4LB)	30	1276	25
MMWX (VE4IX)	30	310	14
PATB (VE5NX)	21	267	11
APSN (VE6AKY, Oct)	31	806	5
ATN (VE6CPP, Oct)	62	407	156
APSN (VE6AKY)	30	858	6
ATN (VE6CPP)	30	151	50
BCEN (VE7CBL)	30	1090	548

Brass Pounders' League

This listing is available to amateurs who report to their SM a traffic total of 500 or a sum of originations and delivery points of 100 or more for any calendar month. All messages must be handled on amateur frequencies, using standard ARRL-CRRL form, within 48 hours of receipt.

BPL: None this month.

Public Service Honour Roll

(1991 Revision) This listing is available to amateurs whose public service performance during the month indicated qualifies for 70 or more points in the following eight categories (as reported to their SM). Please note maximum points for each category: (1) Checking into a public service net using any mode, 1 point each, maximum 60; (2) Acting as a Net Control Station (NCS) for a public service net using any mode, 3 points each time, maximum 24; (3) Performing assigned liaison between public service nets, 3 points each time, maximum 24; (4) delivering a formal message to a third party, 1 point each, no maximum; (5) Originating a formal message from a third party, 1 point each, no maximum; (6) Serving as a CRRL SM or field appointee, 10 points for each office or appointment, maximum 30; (7) Participating in a communications network for a public service event, 10 points each event, no maximum; and (8) Providing and maintaining an automated digital system that handles messages in standard ARRL-CRRL format, 30 points. Amateurs who qualify for Public Service Honour Roll 12 consecutive months, or 18 months out of a 24-month period, will be awarded a special certificate from CRRL Headquarters.

PSHR: VE3ORN (207), VE3GSQ (128), VE3FS (126), VE3CYR (118), VE3GT (105), VE3BDM (97), VE4LB (89), VE4STU (77), VE3GNW (70), VE3LPM (70)

Service and Specialized Nets

Independent Net Managers: Your monthly reports are welcomed. Send to CRRL, Box 7009, Station E, London, ON N5Y 4J9.

Net (Mgr)	Sess	QNI	QTC
ARES Canada (VE3GV)	4	78	0
CRRL ONTARS (VE3FQV)	30	9987	0
Grey-Bruce (VE3WV)	30	99	11
Grey-Bruce SS (VE3WV)	30	111	43
Trans-Provincial (VE3EUI)	30	270	0
Aurora 1 (VE4AHG)	27	1348	8
Aurora 2 (VE4FP)	29	1770	4
Sask 2-Metre (VE5HG)	28	733	0
Prairie WX (VE5EX)	30	703	0
Alberta ARES (VE6AKY, Oct)	8	190	8
Alberta ARES (VE6AKY)	8	140	4

improvement.

On October 9, the Calgary and Edmonton groups assisted in the Red Cross exercise, "Generic Disaster". Planning was a joint effort of municipal emergency officials in the two cities, assisted by ARES. Thirty formal messages were passed using standard radiogram format. Six operators in Calgary and nine in Edmonton made use of 75-metre SSB, and 2-metre FM and packet. A 40-metre SSB link was available as backup in this most interesting test. I was particularly impressed with the following recommendation in the debriefing, as reported by John Marles, VE6BIW. It echoes our own experience in Kingston: "Amateur Radio volunteers are needed to help Red Cross volunteers generate brief, focussed and appropriate messages, and to fill out the radiogram preambles."

On October 16, the Town of Orangeville (Ontario) Emergency Planning Committee held a mock disaster, and the Dufferin and Area ARES group turned out once more to assist. Nine members provided communications for the mayor and other members of the Emergency Operations Control group. This was a major exercise. The scenario was a crash between a highway gasoline tanker and another vehicle. The fire, public works and social services departments, police, ambulance, Red Cross and hospitals were all involved.

At the debriefing, the amateurs were complimented on their contribution. To achieve maximum ARES participation in an actual emergency, the town's emergency plan is being revised so that ARES members will be called in at the same time as the Emergency Operations Control group. This is to provide the group with communications, at the earliest possible moment, to and from points not served by other radio-equipped emergency response teams. As EC Bill Bissell, VE3FS, said, "The exercise went a long way towards making the amateurs more a part of the emergency plan, and provided us with exposure to many groups that did not know what could do."

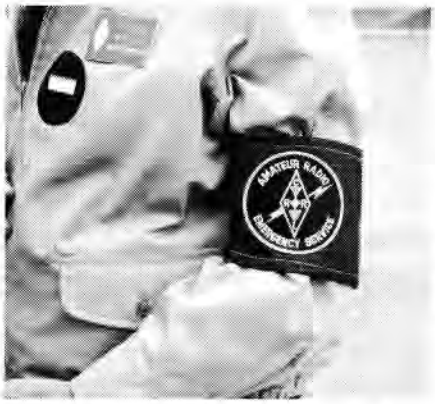
On November 6, the Moncton (New Brunswick) group participated in a simulated aircraft crash. The exercise involved airport police and fire departments, red Cross and ambulance services. Thirteen operators established emergency stations at seven locations. Gilles Gaudet, VE1NW, reported that delays were encountered with triage of simulated casualties, with the result that some simulated patients arrived at the hospitals with actual hypothermia! Otherwise, all went well, and the emergency services were very pleased with the ARES contribution.

Finally, on November 9, our own Kingston ARES carried out a communications exercise. It was designed and directed by Larry McGuire, VE3LDM, who had previously designed the successful Exercise Sierra mentioned above. An important objective of this test was to gain experience in relaying 2-metre traffic between various Kingston emergency locations and the remotely-located disaster area. It also gave us another test of our portable emergency repeater which worked flawlessly. Some 20 ARES members manned the five emergency locations, two agency stations, two relay stations, and the net control stations for the Kingston area and the disaster area. An interesting feature was our decision to involve some Venturers—teenage members of the scouting movement. Three Venturers arrived at the assembly area and were assigned to net control and relay stations to assist with log keeping. Two of these Venturers have since joined the Kingston ARES group as associate members. They are highly interested in Amateur Radio and intend to get their Amateur licences this year.

While this is only a sampling, it does demonstrate ways that ARES groups across Canada are testing their capabilities. Well, you may ask, if this is the second best way, what is the best? The best is providing effective communications in an actual emergency. And it will be effective if your group's capabilities have been developed in exercises like these.

IDENTIFIERS

In several past columns, I have commented on the need for ready identification of ARES members to police, fire and other personnel in an emergency. Different approaches have been used by different groups. Some have purchased emergency communications armbands from the US. Others wear suitably marked fluorescent vests or distinctive aprons available from Red Cross. The accompanying photo shows the approach we have taken in Kingston. Thanks to the expertise of Bill Butterill, VE3MNW, on his XYL's sewing machine, each of our ARES members now has, in his emergency kit, a red canvas armband that holds in place with Velcro. Sewed to each armband is the standard ARES cloth patch, available from CRRL for $4 plus shipping and taxes. It's simple and inexpensive, and it sure makes us stand out! *—Bob Boyd, VE3SV* ■



Arm bands: they're simple and stand out!

Letters—continued from page 2

bad—of amateurs in your local radio club? When buying a radio, the answers to these questions can be just as important as the number of knobs on the front panel.

Some of my happiest experiences come from my early years as an amateur, when for reasons of economy, I was forced to use vintage equipment. While nothing can surpass the feeling that comes from making contacts with homebrew equipment, making contacts with equipment that you trouble-shot, repaired and restored must come close.

It does sadden me to see many of our newer amateurs write off vintage equipment as "boat anchors". Despite their mass, many of these bastions of past technology can still give the typical "rice box" a good run for its money—cheaply. And they are serviceable with an older ARRL *Handbook*, a bit of common sense and a minimum of test equipment.

Think about it. Will the amateur at the other end know or even care if your are listening on a '90s Yaesu FT-1000 or a '50s vintage Collins 75A-4? Hardly. But it will make a difference to you if *you are the one who* brought that old "boat anchor" back to life! *—Edward Swynar, VE3CUI, Newcastle, ON*

❒ I read with interest "Can Amateurs Still Service Equipment?" in January *QST Canada*. I do not consider myself an old timer, although my involvement with Amateur Radio started in the early 1950s. Those of us who are still active today should be excited to be living through an electronics revolution.

In the tube era, it was easier to construct and service equipment. With the advent of the semiconductor, many of us were left behind. Not only is new gear more complex, but its construction makes repairs almost impossible without supporting hardware, extender boards, special cables and special equipment.

I do, however, take great exception to the fourth paragraph of Roy's article referring to the availability of parts. In the 40 years that I have been associated with Electro Sonic Inc., our doors have always been open to individual, the experimenter and the Amateur Radio operator. Never in our history have we had quantity or purchase dollar minimums. Our telephone and fax lines are always open for inquiries. *—Martin Rosenthal, VE3MR, Executive Director, Electro Sonic Inc., Willowdale, ON* ■

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