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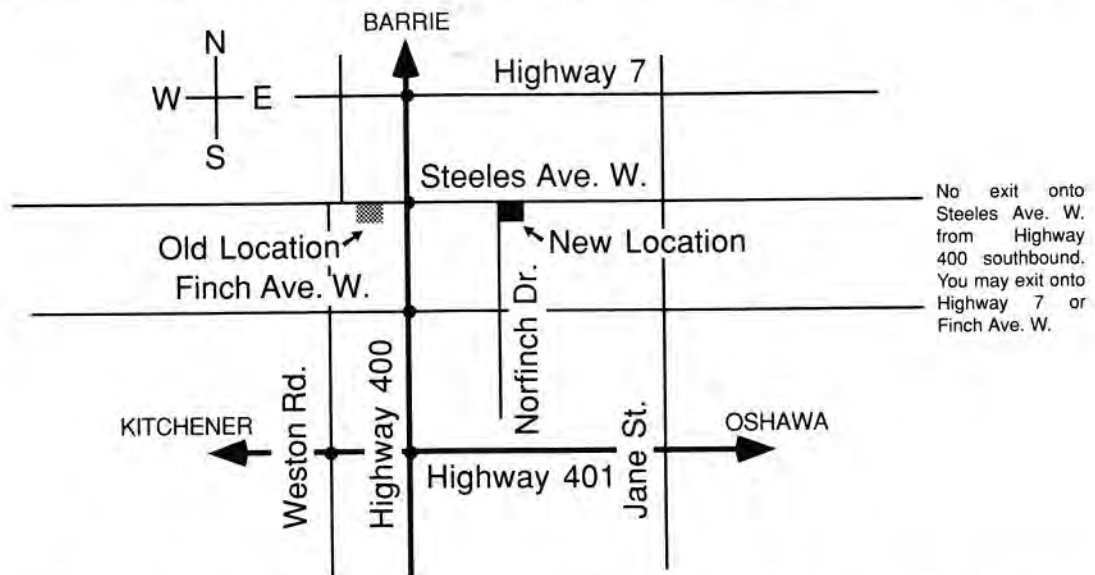
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## Staff

Harry MacLean, VE3GRO  
Editor

Bob Boyd, VE3SV, Garry Hammond, VE3XN, David McCarter, VE3GSO, Ray Perrin, VE3FN, Dana Shtun, VE3DSS, William Skidmore, VE3AUI, Ray Staines, VE3ZJ, Ken Oelke, VE6AFO

## Contributing Editors

Ray Staines, VE3ZJ  
General Manager

Keith Bentley, VE3DHL  
148 Donhill Cr, Box 96  
Kleinburg, ON L0J 1C0 (416) 893-1984  
Advertising Manager

LaserGraphics  
Linotronic Output  
WEBCO Division of Bowes Publishers, Ltd  
Printing and Distribution

## CRRL Office

2025 Richmond Street  
Box 56  
Arva, ON N0M 1C0  
(519) 660-1200, Fax (519) 660-8244

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## ABOUT THE COVER



Members of Calgary Amateur Radio Association guide a crate being lowered by a helicopter. Contents of the crate: Canada's highest solar-powered repeater, VE6HWY in Banff National Park. (VE6AFO photo) ■

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

## Some Parting Thoughts

The writer of Ecclesiastes said that for every thing there was a season, and of course he (or perhaps it was a she) was right. For us, there was a season to begin this little magazine, and now, after forty-nine issues (fifty if you count the original mockup—now there's a collector's item for you), it is the season to bow out.

Working on *QST Canada* continues to be good fun, but a number of changes in our personal and professional life—plus the fact that an excellent person is ready to take over—have dictated our decision. Since this is the last time we'll be occupying this space, we're going to indulge ourselves and ramble on a bit.

What's so good about Amateur Radio? Lots. There's the Restructured Amateur Service that has brought several thousand new amateurs into the fold. Solid-state equipment that never seems to quit. Older equipment that you can actually fix. Wire antennas that work as well as the commercial ones. Linked repeater systems. OSCAR satellites you can work with just a few watts. EME communications with just a single yagi and 100 watts. No-tune rigs. The reliability of packet radio. The traditions of Amateur Radio. The three new WARC bands. Not losing any of 40 metres at WARC-92. New countries on the air. Issues of *QST* with 200 pages. *Handbooks* that get bigger every year. QSL cards. Field Day. Deregulation. A DOC that trusts our judgement and basically leaves us alone. Amateur Radio fleamarkets. The coming merger of CRRL and CARF.

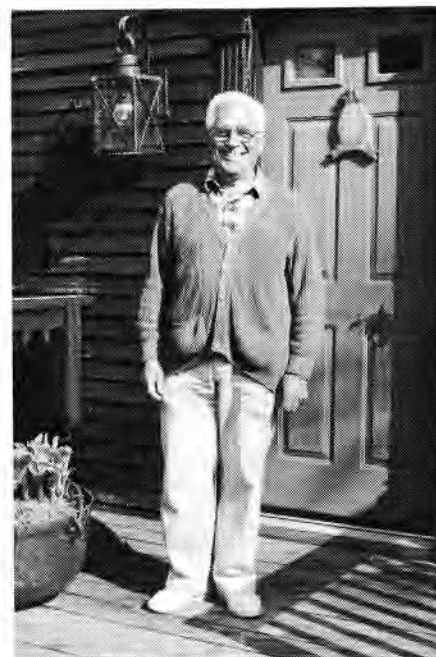
What don't we like about Amateur Radio? Just a few things. The proliferation of gadgets on that otherwise great equipment. Equipment so complicated that few of us can really hope to service it. The tendency to go out and buy something when, really, we should just make it for ourselves. The impersonality of packet radio. A lack of knowledge of the traditions of Amateur Radio, especially among our newer amateurs. The deterioration of language on the air. Repeaters with PL that no one seems to use. DX lists. Amateurs who don't QSL. DOC ambiguity on antenna matters. Pockets of resistance to merger that can be found in both CRRL and CARF (but fortunately, not within the leadership of CRRL and CARF).

Some of our complaints can be chalked up to middle age. Amateur Radio does seem to have been a bit more fun when we first got started, back in 1973. But perhaps that's because we've been spending too much time in front of the Macintosh computer, so much time that

we don't get around much any more. Our perspective has been skewed.

Now that we've retired, we'll be able to fix that. The antennas are up and the rig is sounding good. Thanks to all who worked with us on *QST Canada* for the past four years. We'll look for you on the air!  
—Harry MacLean, VE3GRO

## OUR NEW EDITOR



David Adams, VE3HBF, was born in Egypt. After living in the UK, he came to Canada in 1939. He joined the Royal Canadian Air Force in 1941. David was first licensed in 1973. He has been involved in the literary side of Amateur Radio for some time. He is editor of the York Region Amateur Radio Club's *Splatter*, and has been published in *QST*.

David's operating interests include DXing—particularly island hunting—and some packet radio. Other interests include work for Amnesty International and hiking. David, now retired from BBM, the Bureau of Broadcast Measurement, is married and has three children and twelve grandchildren.

How can you help David? Unlike your former editor, he is not "just around the corner" from the CRRL Headquarters office in Arva, Ontario. Send him lots of news and lots of articles, send them on diskette, and send them directly to his home. His address is R. R. 1, Sutton West, ON L0E 1R0, Tel (416) 478-2131.  
—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.

## THAT DC CONNECTOR

□ In April *QST Canada*, you requested comments re a standard DC connector. I think this is a very good idea and the suggested connector is good, but I think your readers should be cautioned about its power-handling capabilities. A quick check of my 1992 Radio Shack catalogue shows a rating of 8 amps. My FT-757GX, a 100-watt radio, draws about 19 amps on transmit. I note in another catalogue that the Molex 1545 connector recommended by ARRL as a standard connector is rated at only 12 amps. For use with lower-power equipment, radios up to 25 watts, these connectors are good choices, but

they are not capable of handling the current required for a 100-watt radio. —Mike Watts, VE6ER, Edmonton, AB

## CONTACT!

□ Some amateurs on our traffic nets are using "Contact!" on the air. Some of these amateurs are being asked to use "Contact!" when checking into a net. "Contact!" was originally used by the air force when starting the propeller motor. If you look up your Q-signals and standard abbreviations, you won't find "Contact!". We have Q-signals and standard abbreviations, so let's use them. The next time you hear "Contact!", tell the person on the

other end, "This is a traffic net, not a propeller net!" —Jim Nazar, VE4NC ("No Contact"), Flin Flon, MB

## 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.

**Bangor, ME:** Bangor Hamfest, 1992 June 13, at Hermon Elementary School, Billings Road. Sponsored by Pine State ARC. Opens at 0800. Admission: \$2. Talk-in on 146.94 MHz (-). For more information, contact Roger Dole, KA1TKS, Box 730, Route 2, Bangor, ME 04401, Tel (207) 848-3846.

**Burbank, AB:** 21st Annual Picnic, June 19-21, at Burbank Campground. Sponsored by Central Alberta Amateur Radio League. Fleamarket, bunny hunt, barbecue, golf tournament, dance, Sunday breakfast, children's and ladies' programs. Camping: \$10 per single unit, \$15 per family. Registration: \$6. Talk-in on VE6UK, 147.150 MHz (+) or 146.52-MHz simplex. For more information, contact Pat Wright, VE6ALD, Tel (403) 346-3013.

**Cornwall, PE:** 6th Annual Fleamarket, 1992 July 25, at the United Church Hall. Sponsored by Charlottetown ARC. Opens at 0900, 0700 for vendors. Admission: \$2. Tables: \$4. Talk-in on 146.94 MHz (-). For more information, contact Brian Corveatt, Box 167, Cornwall, PEI C0A 1H0, Tel (902) 628-6208.

**Essex, MT:** Glacier-Waterton International Peace Park Hamfest, 1992 July 17-19, at Three Forks Campground. Sponsored by Calgary ARA and other clubs. Fleamarket, dealers, seminars, demos, bunny hunts, ladies' and children's programs. Saturday barbecue, Sunday breakfast. For more information, contact Sheila Devitte, VE6NOW, 2423-26 Ave NW, Calgary, AB T2M 2H1, Tel (403) 282-2171.

**Kitchener, ON:** 18th Annual Central Ontario Amateur Radio Fleamarket, 1992 June 6, at Bingham Park, 1380 Victoria St N. Sponsored by Guelph and Kitchener-Waterloo ARCs. Opens at 0800, 0600 for vendors. Admission: \$5. Tables: \$8. Talk-in on VE3KSR, 146.97 MHz (-); VE3ZMG, 144.21 MHz (-), and 146.52-MHz simplex. For more information, contact Ray Jennings, VE3CZE, Tel (519) 822-8342.

**Marmora, ON:** Eastern Ontario Hamfest, 1992 June 13, at Marmora Curling Club, Crawford Dr. Sponsored by Marmora ARC. Opens at 0900, 0700 for vendors. Admission: \$3. Indoor tables: \$5. Outdoor tailgate: \$2. Talk-in on VE3TZW, 146.655 MHz (-). For more information, contact Bill Best, VE3SVI, (613) 472-5867 or (613) 472-6008.

**Milton, ON:** 18th Annual Ontario Hamfest, 1992 July 4, at Milton Fairgrounds. Sponsored by Burlington ARC. Fleamarket, dealers, food, Jimbo the clown for kids, camping available. Opens 0900, 0700 for commercial vendors, 0800 for fleamarket vendors. Admission: \$5. Fleamarket space: free. For more information, contact Ferg Kyle, VE3LVO, 3037 South Dr., Burlington, ON L7N 1H3, Tel (416) 634-4156.

**Saint John, NB:** Amateur Radio Fleamarket, 1992 June 20, at Denis Morris Community Centre, 330 Greenhead Rd. Sponsored by Loyalist City ARC. Opens at 0900, 0700 for vendors. Admission: \$2. Tables: \$4. Talk-in on VE1EE, 147.27 MHz (+). For more information, contact Allison Smith, VE1LAS, Tel (506) 696-6374.

**Saskatoon, SK:** Saskatchewan Mini-Hamfest, 1992 July 24-25, at Kelsey Campus of Saskatchewan Institute of Arts, Science and Technology (SIAS). Sponsored by Saskatchewan Amateur Radio League (SARL). Friday-night eyeball, licensing exams, ARES, packet and SARL meetings, dealers, fleamarket. For more information, contact Eric Quiring, 101 McGee Cr, Saskatoon, SK S7L 4M6, Tel (306) 382-8585.

## The Canadian Radio Relay League, Inc La Ligue Canadienne de la Radio Amateur, Inc



The Canadian Radio Relay League (CRRL) is a noncommercial association of radio amateurs organized for the promotion of Amateur Radio communications and experimentation, for the establishment of networks to provide communications in the event of disasters or other emergencies, for the advancement of the radio art and the public welfare, for the representation of radio amateurs in legislative and other matters, and for the maintenance of fraternalism and a high standard of conduct.

CRRL is incorporated under the Canada Corporations Act. Its affairs are governed by a seven-member Board of Directors elected every two years by the CRRL general membership. CRRL is noncommercial, and no one who could gain financially by the shaping of its affairs is eligible for membership on its Board.

CRRL is the Canadian member-society of the International Amateur Radio Union (IARU). "Of, by and for the Canadian Radio Amateur", CRRL numbers within its ranks the vast majority of active amateurs in the nation and has a proud history of achievement in amateur affairs.

A bona fide interest in Amateur Radio is the only essential requirement for membership. An Amateur Radio licence is not required, although full voting membership is granted only to licensed amateurs in Canada.

Membership inquiries and general correspondence should be directed to CRRL Headquarters, Box 56, Arva, ON N0M 1C0 Tel (519) 660-1200.

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### Section Managers

**Alberta:** Don Wilcox, VE6CG  
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**British Columbia:** Ernest Savage, VE7FB  
4553 West 12th Ave, Vancouver, BC V6R 2R4  
(604) 224-5226

**Manitoba:** William G Crooks, VE4JR  
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(902) 469-9756

**Ontario:** Larry Thivierge, VE3GT  
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(613) 432-5967

**Quebec:** Joe Unsworth, VE2ALE  
163 Mgr Bourget, Vaudreuil, PQ J7V 2W4  
(514) 455-2448

**Saskatchewan:** Joan Lloyd, VE5JML  
1655 Garnet Street, Regina, SK S4T 2Z1  
(306) 525-2605

### Staff

**General Manager:** Raymond Staines, VE3ZJ  
**Field Services Manager:** Ken Oelke, VE6AFO  
7136 Temple Dr NE, Calgary, AB T1Y 4E7  
(403) 280-5340

**Awards Manager:** David Noon, VE3IAE  
19 Honeysuckle Cr, London, ON N5Y 4P3  
(519) 453-2292

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

**Outgoing QSL Bureau Manager:**  
John Henderson, VE3HFT  
Box 56, Arva, ON N0M 1C0

**General Counsel:** Timothy S Ellam, VE6SH  
Suite 3300, 421 7 Avenue SW, Calgary, AB T2P 3S8  
(403) 260-3533

**Honorary Counsel:** B Robert Benson, QC, VE2VV

\*Voting member, CRRL Board of Directors

# Solar Flares

Predicting their impact on radio communications...

By Paul M. Dunphy, VE1PMD  
3351 Highway 7  
Lake Echo, NS B0J 2S0

Most amateurs are aware of the solar terrestrial indices broadcast by radio station WWV at 18 minutes past the hour. Following these numbers, there is a prediction of solar and geomagnetic activity for the next 24 hours. Most of us, at one time or another, have listened to the WWV computerized voice say something like this: "Solar terrestrial indices for 16 March: The solar flux was 169 and the K index was 10. The estimated Boulder A index at 1818 UTC was 3. Conditions for the next 24 hours: The solar flux will be low. The geomagnetic field will be quiet to unsettled..."

These short-term predictions, with a few exceptions, are fairly accurate. The 2800-MHz solar flux is by far the easiest to predict. This is a measure of slowly varying background radiation generated by the thermal processes that occur within sunspots. It is directly related to the number of sunspot groups on the earthward side of the sun. The sun has a rotation period of about 28 days. Sunspot groups pass across this region of the sun in about 14 days. This rotation allows scientists to forecast with reasonable certainty where the more active sunspot regions will be, and thus, the intensity of the solar flux.

Geomagnetic activity is more difficult to predict. Terrestrial magnetic storms are caused by solar flares. Solar flares are massive explosions in the sun's atmosphere over active sunspot groups. Certain sunspot groups have characteristics that make flaring likely, but it is difficult to predict if and when a flare will occur. Researchers use the location and types of radio emissions from the sunspot groups to make fairly accurate estimates of the probability of flare activity. Then, if a flare occurs, accurate judgments of its impact on radio propagation and ionospheric conditions become possible.

## Flare Emissions

When the flare does take place, it can be detected on earth in about 8.3 minutes because the resultant electromagnetic radiation travels at near the speed of light. While flares do not normally produce enough light to be visible, there is a rapid increase in X-ray and ultraviolet radiation. A large flare may cause a short-term HF blackout due to abnormally high levels of ionization on the sunlit side of the earth. Usually, conditions return to nor-

mal within a few minutes. Somewhere between 15 minutes and several hours later, flare-ejected, high-energy, protons and alpha particles reach the earth. These particles typically attenuate signals, but sometimes there is short-term propagation enhancement 12-18 hours after a flare.

Really serious geomagnetic impact is not seen on earth until 24-48 hours later. This is when the slower-moving solar particles arrive. The quantity of solar material expelled during a flare and how much of this material reaches earth are the reasons for the various effects on the earth's magnetic field. Geomagnetic storms induced by a single flare usually only last 24-36 hours.

## Location

One of the observations that scientists use to predict how severe the effect of a flare will be is the flare's location on the sun's surface in relation to the earth-sun trajectory. If the flare is produced by a sunspot region near the edges of the solar disk, that is, the portion of the sun visible from the earth, it is unlikely that significant quantities of solar matter will reach the earth. For the most part, the ejected particles will be propelled into space and have little or no effect on terrestrial conditions. On the other hand, if the flare occurs near the center of the solar disk, a large number of particles will reach the earth and upset its geomagnetic field.

Scientists can predict the potential impact of a flare by calculating the angle at which it occurs relative to earth. They can often determine low, moderate or high particle interaction simply from the flare's location. This prediction can be made soon after the flare has been detected.

## Intensity and Duration

Equally as important as the flare's location is the duration and intensity of the explosion. Typical flares last for only a few minutes, and usually not longer than 30 minutes. Devastating rogue flares identified as a class-X proton types may last for many hours. The amount of energy contained in the solar particles from these flares determine the kind of effect on earth.

Stations worldwide continually monitor the number of particles that enter the earth's atmosphere, how deeply they penetrate, and how quickly the ionosphere is

disturbed. Particles that travel from the sun to the earth in 24 hours or less are capable of producing substantial terrestrial effects, but a flare that lasts only a few minutes will not likely cause much change in the earth's magnetic field. If solar particles are not detected until 36 or more hours after the flare, they are also unlikely to cause significant geomagnetic effects. But a flare that lasts an hour or more and generates strong particle activity at earth within 24 hours is likely to result in magnetic disturbances, auroras, sporadic-E propagation and polar cap absorptions. This, then, is how scientists are able to judge how conditions will progress, by observing the duration of the flare and monitoring how long it takes solar particles to reach the earth.

## Solar Radio Emissions

Another way that scientists predict the intensity of solar flares and their potential impact on earth is by monitoring solar radio waves. Solar particles may take up to two days to reach earth, but changes in certain solar radio emissions are observed before, during and shortly after a flare.

The sun emits radio waves across the entire spectrum. Certain emissions are associated only with flares. Observing when these emissions occur, how long they last, and how they change with time is one of the better ways to predict the effect of flare activity.

Two classes of emission are particularly significant: sweep-frequency events and noise bursts. A sweep-frequency event is a broadband radio emission that drifts from higher to lower frequencies. A strong correlation exists between certain types of sweep-frequency events, noise bursts and post flare geomagnetic activity. By calculating the rate of sweep-frequency events and the strength of related noise bursts, the severity of terrestrial effects of a solar flare can be predicted. Lag times between radio emissions and magnetic storms allow scientists to make their forecasts two to three days in advance.

## Computer Analysis

We live in an age of computers with their essentially unlimited ability to store and analyze data. With computers, researchers are able to save and analyze solar data, including flare characteristics and the conditions that preceded and fol-

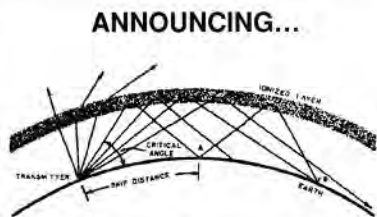
lowed them. Scientists continue to improve computerized models of flare morphology by using data from previous flares to predict their hypothetical terrestrial impact. These results are compared with the actual observations. Computer software is enhanced accordingly.

As software and computer technology improve, so will the accuracy of our predictions. Statistical comparisons of the behavior of complex sunspot groups with historical data will become the forecaster's most valuable technique in predicting if and when a solar flare will occur. Similarly, mathematical modeling of post-flare solar radio emissions and related observations will improve the accuracy of magnetic storm predictions.

### Conclusions

The methods mentioned above imply that solar-flare-induced terrestrial magnetic activity can be predicted with a great accuracy. This would be the case if flare occurrences were infrequent. This is not so, particularly in the years around the solar maximum. We sometimes see ongoing sequences of flares with few or no quiet periods in between. Frequently, there are several magnetically complex sunspot regions on the solar disk at the same time. These regions all have potential for major flare production.

When several flares occur within a short time, prediction of their terrestrial effects becomes more difficult. Nonetheless, the reliability of the predictions broadcast by WWV is quite high. As we have discussed, they are the result of thorough observation and analysis. ■



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## CKARC Honours VE3IJF

During the regular February meeting of the Chatham-Kent Amateur Radio Club (CKARC) one of our most dedicated members was honoured with a life membership. Alf Howard, VE3IJF, who is our club treasurer and has held this position for many years. The award was presented by CKARC Chairperson Dorothy Ivison, VE3TAX, and Cec Bowers, VE3CMC.

Although Alf goes out of his way to keep the CKARC financial records up-to-date and to make sure that club funds are kept under close scrutiny, he does much, much more. Alf is present at nearly all the club-sponsored bingos, held about once each week. He maintains our club membership lists and keeps track of those delinquent in paying their dues. He also

acts as contact person for new amateurs joining the club. He makes sure that our new members get all the information concerning our club and its repeater systems.

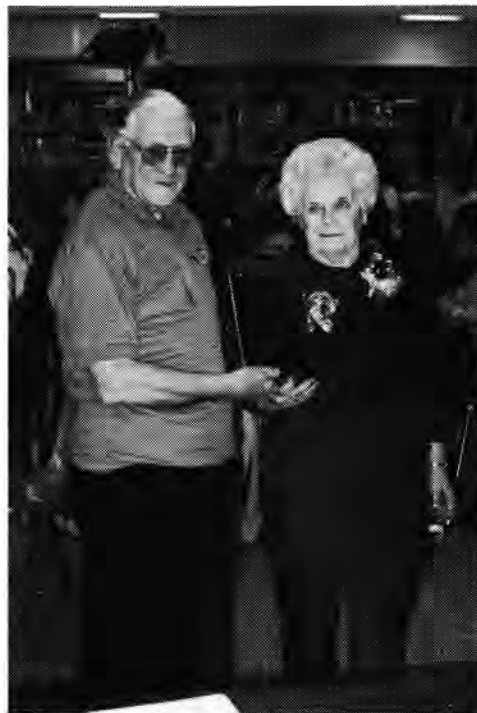
Alf is the keeper of the club's callbooks and makes sure that new ones are purchased every year. He is the person who not only picks up the key to open the school for our monthly meeting, but looks after the coffee and doughnuts for the meeting. He assists Val, VE3VAL, with mailing the club bulletin every month. Not only does he drive out to Val's home, a 60-km round trip, but he hand delivers all the bulletins are destined for members in the City of Chatham. We have finally

convinced him to use the postal service for all the bulletins going out of town.

What would we do without you Alf? Alf first received his license on 1977 June 16 and has never felt the need to upgrade to Advanced. Despite the grandfather clause which gave Alf full phone privileges on all amateur bands, he has never strayed very far from 10 metres. There are few countries that Alf has not worked on 10 metres. He has a confirmed country total of over 200.

Fifty-seven years have passed since Alf married his wife May and despite his involvement with Amateur Radio they still find time to go square dancing each week. He is also active at the Maple City Centre for Older Adults. In the summer Alf and May even find time to keep a 27-foot Airstream trailer on the road or parked at a local campground.

This was only the fourth time CKARC has honoured someone with life membership. Previous recipients were Len Nettleton, VE3BYP, Hank Bruhlman, VE3CGV, and Stan Moir, VE3SM. Stan just happens to be Alf's brother-in-law and was probably the catalyst in getting Alf to obtain his license in the first place. I am sure that other clubs have their ALFIES also but I would bet that none are as well liked as ours. Not only is it an honour to have him as a member of CKARC, but also to be able to count him as a good friend. —Dorothy Ivison, VE3TAX ■



Alf Howard, VE3IJF, and his XYL May show off the life membership plaque Alf received at a recent meeting of Chatham-Kent Amateur Radio Club. Alf was honoured for his many years of dedicated service to the club. (Photo courtesy VE3TAX)

### DON'T FORGET THESE IMPORTANT EVENTS...

- ☐ The ARRL June VHF QSO Party on June 13-15. Rules appear in 1992 May QST. Be sure to send an additional copy of your log to VE3DSS to qualify for the Canadian awards.
- ☐ ARRL Field Day, June 27-28. Rules appear in 1992 May QST. Field day packages including rules and log and dupe sheets to photocopy are available from CRRL. Club station with the highest number of points in Canada wins the CRRL plaque. ■

**New**

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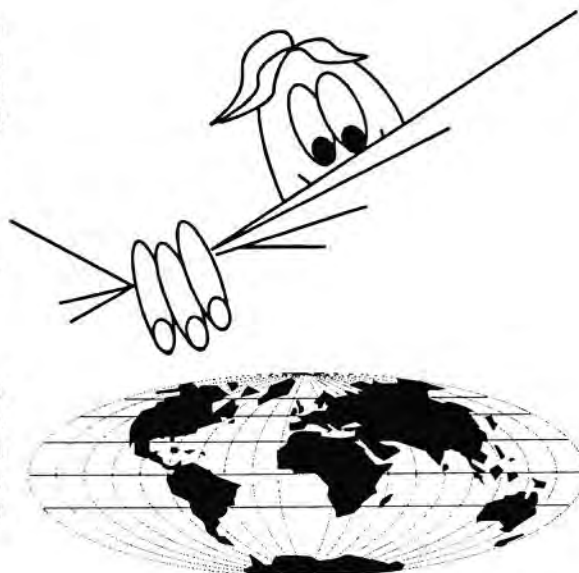
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# Canada's Highest Solar-Powered Repeater



By Ken Oelke, VE6AFO  
7136 Temple Dr NE  
Calgary, AB T1Y 4E7

Members of Calgary Amateur Radio Association (CARA) have every reason to be proud. VE6HWY, a CARA project, is Canada's highest solar-powered repeater.

## The Installation

Forty-two amateurs and several years of planning were involved. Once the system was built, a suitable mountain location had to be found in Banff National Park. Fortunately, CFCN television, 2 and 7 Television, CJ92-FM and the Lake Louise Television Association agreed that if we helped with the removal of an obsolete antenna system from the top of Protection Mountain near Lake Louise, altitude 9700 feet (2942 metres) above sea level, we could share a corner of their building.

There were several tasks to be done on the mountain: relocating existing radio and television systems to a new building, dismantling a massive (20-ft by 40-ft) antenna structure, and the installation of VE6HWY itself. These tasks involved some 20 helicopter trips over a two-day period.

The repeater now serves as an emergency communications link for users in Banff and other national parks and in some of the more remote mountain areas. It has certainly been a success. It has operated on 147,33 MHz (+) without failure since 1991 July 17, the day it was installed.

## Coverage

The repeater provides mobile coverage within Banff, Jasper, Yoho and Kootenay National Parks. Trans-Canada Highway coverage extends from Field, British Columbia, to Canmore, Alberta. Northbound on Alberta Highway 93 to Jasper, there is excellent coverage to Bow Summit, and mobiles have been worked as far north as Jasper itself. Southbound on Alberta Highway 97 to Radium, there is excellent coverage to the top of Sinclair Pass. Once past Radium travelling south, the repeater can be worked from the Invermere, British Columbia, area.

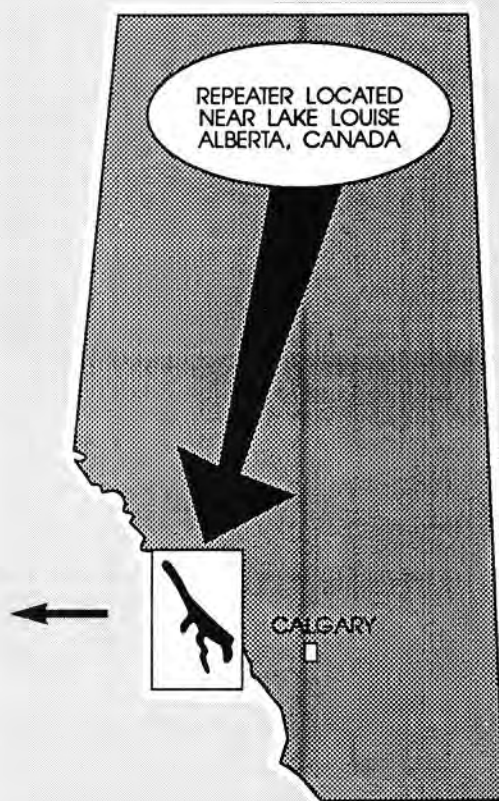
## Power and Operation

One of the many problems associated with operating a repeater from a remote



Above: Members of Calgary Amateur Radio Association display the VE6HWY repeater just before the helicopter takes it to its permanent site on Mount Protection near Lake Louise, 9700 feet above sea level.

Below: Location and coverage area of the VE6HWY repeater.



Repeater —continued on page 17

## Meetings, Meetings...

□ The CRRL Board of Directors met in Mississauga, Ontario, on the weekend of May 2-3. Treasurer Bill Loucks, VE3AR, reported that the 1991 consolidated income of CRRL and CRRL Publications was \$74,271, resulting in a members' equity of \$109,730 and total assets of \$314,077 of which \$255,955 was in cash. CRRL was in a healthy financial position. ARRL President Larry Price, W4RA, speaking for IARU, expressed thanks for the outstanding support given to the Amateur and Amateur-Satellite services by the Canadian delegation at WARC-92. David Adams, VE3HBF, was appointed editor of *QST Canada*, replacing Harry MacLean, VE3GRO. During the course of the meeting, the CRRL Board spent considerable time "in camera" working out details of the proposed merger agreement with CARF. It was expected that merger—or more precisely, creation of a new, single Canadian Amateur Radio organization—would take place at the end of the year. President Bruce Balla, VE2QO, who had planned to retire at that time, indicated that he would step down at the end of the meeting. This would give his successor experience in the president's role and ensure continuity with the new organization. The CRRL Board then elected Vice President Dana Shtun, VE3DSS, as President, and General Counsel Tim Ellam, VE6SH, as Vice President. Complete minutes of this CRRL Board meeting will appear in July *QST Canada*.

□ On May 21, representative of CRRL and CARF met with senior DOC officials in Ottawa to discuss a variety of topics including the growth of the Canadian Amateur Service stemming from restructuring, a DOC Quebec Region study on possible privatization of administration of the Canadian Amateur Service, the new environmental assessment process outlined CPC-02-03, RF susceptibility of consumer electronic products, and possible future WARC's. The meeting was useful in developing greater understanding between DOC and representatives of the the Canadian Amateur Service.

□ On May 24, the CRRL-CARF Implementation Team met in Toronto to continue merger discussions. A legal contract between the two organizations was signed by presidents Shtun and Hopwood and secretaries Ilott and Loucks. This contract will allow the legal process of creating Radio Amateurs of Canada/Radio Amateur du Canada (RAC)—and the dissolution of CARF and CRRL—to begin. A vote by members of the two organizations will take place in the coming months, as



A busy moment at the recent CRRL Board meeting: back, from left to right: Secretary-Treasurer Bill Loucks, VE3AR; President (now Past President) Bruce Balla, VE2QO; and Vice President (now President) Dana Shtun, VE3DSS. In the foreground, CRRL International Affairs Vice President George Spencer, VE3AGS. (VE3GRO photo)

will the incorporation of RAC by the legal representatives of CRRL and CARF. Names of those who will serve on the first RAC Board of Directors will be released after the vote. Actual date of merger is dependent on governmental and Revenue Canada requirements, and is not available at this time.

### NOTES FROM ALL OVER

□ CRRL and CARF have responded jointly to the new environmental assessment document, CPC-02-03. Major points made to DOC: no other country places field-strength limits on its radio amateurs; DOC needs to clarify how it calculates maximum permissible exposure to RF; and DOC needs to standardize how it will implement this new document across the country.

□ To celebrate the 125th Anniversary of Confederation, Canadian amateurs may use the following special prefixes from 1992 July 1 until 1992 August 31: CJ1-CJ8 in VE1-VE8; XL1 and XL2 in VO1 and VO2; and VY5 and VY6 in VY1 and VY2. Special DOC club stations may use VY7 instead of VY9.

□ Amateurs everywhere will be saddened to learn of the death of Father Marshall Moran, 9N1MM. A legendary figure to DXers around the world, Father Moran was virtually the sole active radio amateur in Nepal for many decades. At the time of his death, he was 85 years old.

□ In 1991 April, DOC reported 28,100 amateur licensees. In 1992 April, DOC reported 33,624—an increase of about 20%. The breakdown by DOC region is: Atlantic—3623, Quebec—6911, Ontario—12,064, Central—5028, and Pacific—5998. Restructuring is working.

□ Plans are well under way for the Eleventh General Assembly of IARU Region 2, to be held in Curaçao, Netherlands Antilles, on August 31-September 4. The General Assembly, hosted by VERONA, will review the outcome of WARC-92 and determine Region 2 priorities for the next three years. ■

## Ham-Ads



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## 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, and at other WARC's which will be held throughout the 1990s.

DARF thanks the following for their recent contributions: Yvon Fournier, VE1AFW; Don Armstrong, VE3DBA; H. Vollick, VE3FFJ; Fundy (Nova Scotia) Amateur Radio Club; Central Alberta Amateur Radio League; and those who donated in memory of G. W. Stanley, VE7TR.

As of 1992 May 1, DARF stood at \$25,008.65. Contributions are still welcome. If you have not yet contributed, please consider doing so now. Mail your cheque to Defence of Amateur Radio Fund, Tim Ellam, VE6SH, 107 Strathearn Rise SW, Calgary, AB T3H 1R5. ■

### MOVING?

For interrupted delivery of *QST* and *QST Canada*, please send your change of address notice to CRRL, Box 56, Arva, ON NOM 1C0 eight weeks before you move. Don't forget to quote your callsign or the seven-digit number on your mailing label. —Ray Staines, VE3ZJ ■



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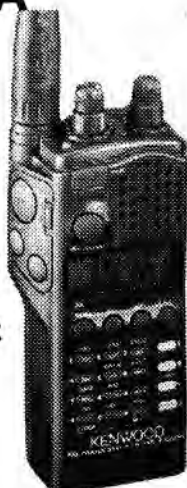
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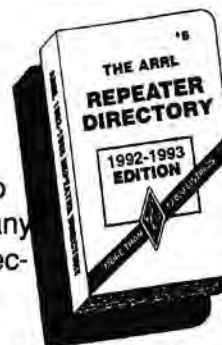
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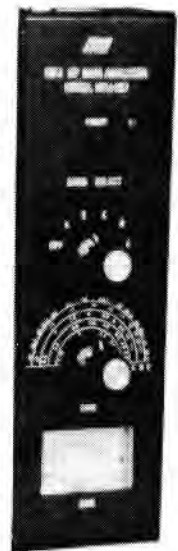
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## The CRRL Field Organization Forum

## REPORTS FOR MARCH 1992

**Alberta:** SM: Don Wilcox, VE6CG; STM: VE6AKY; SEC/TC: VE6AFO; OO: VE6TY. On March 14, Calgary Amateur Radio Association (CARA) held its annual banquet. There were 90 people present for an evening emceed by Steve Miller, VE6SWM. After a meal of *cog au vin* and all the trimmings, merit awards and letters of appreciation were presented to members of the club for their help over the past year. The awards and letters of merit covered all areas, from helping with theory classes to participating in special events. The CARA Ham of the Year Award went to Dale Coultts, VE6DRC, for his outstanding efforts and assistance throughout the year. This included his creativity in producing and editing the video production that gave us a record of our Mountain Top repeater project last July. A very special award went to Max Farmer, VE6SL, for his contribution and assistance to the repeater group. This award was presented by Ken Oelke, VE6AFO. Doug Howard, VE6CID, and Tony Mountjoy, VE6MX. Ken, Doug and Tony had a dream of placing a repeater on one of the highest points in Canada. Major help to make that dream come true came from Max who made sure that all the necessary paper work was in the right place at the right time. A crew of 35 club members complete the work at hand, and on 1991 July 17, VE6HWY went on the air from 9700 feet above sea level, from the top of Protection Mountain near Lake Louise in Banff National Park. Out-of-town visitors who attended the banquet included Gary and Sandy Jacobs, VE6CIA and VE6SND from Red Deer. Sandy was a new operator, a graduate of the theory class held in the weeks just before the banquet. A recent letter from Bill Savage, VE6EO of Lethbridge, provided information on the Southern Alberta Amateur Radio Club (SAARC) which will mark its 60th anniversary in 1992. Bill started the club, then known as the Lethbridge Amateur Radio Club, back in 1932-33. He was its first president. Club membership is now about 60. At the club's Christmas banquet, the club surprised Bill by presenting him with a life membership plaque. The club has been holding theory classes. The most recent class had 22 students, most of whom passed their exam. Club members also maintain repeater VE6CAM which has been on the air for many years. Congratulations to Bill for 62 years of very active work as a radio amateur. At times it must have seemed more like a job than a hobby!

**British Columbia:** SM/SEC: Ernie Savage, VE7FB. British Columbia Public Service Net (BCPS, 3729 kHz 0130 UTC daily) Manager Jim, VE7JN, reports March check-ins: high-196, low-110, total 5073. Net signals were much improved compared to last month's. British Columbia Emergency Net (BCEN, 3652 kHz, 1900 UTC daily) Manager Ray, VE7BCL, reports 1215 March check-ins with a traffic count of 582. BCEN is healthy and growing all the time, with 74 stations participating in March. Tom, VE7BNI, made Brass Pounder's League again this month with a total of 591. Peter, VE7JT, has been in Langley Hospital since March, and is welcoming visitors. The new Basic licence has resulted in many new call signs appearing on two metres. It's especially nice to hear so many YLs on the air. We would like to hear from them by mail about joining CRRL and ARES.

**Manitoba:** SM: Bill Crooks, VE4JR; ASM: VE4IX; STM: VE4STU; SEC: VE4PN; NMs: VE4AGH, VE4FP, VE4LB and VE4TE. I received a note from Paul, VE4AEY, about Interlake ARC and its ARES activities, including use of net control stations and passing traffic. They have 31 licensed amateurs as members, and more are coming up. Also, they have a two-metre repeater at Arbourg, and one

**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.

coming up near Teulon. We heard from Roland, VE4ROL, about special-event station VE4LFWC at Leaf Rapids Winter Carnival. They had about 85 contacts. Winnipeg Seniors' Amateur Radio Club helped eight new amateurs pass their tests. The following have now joined our ranks: VE4s ALS, ASK, BH, JKM, JSR, NRO, PEG, and YH. Nice work! The Manitoba Repeater Society recently met and elected its new executive which includes VE4s ACX, AGX, AY, CY, EN, HAY, HK, KE, SN, TEG and WF. At this meeting, Bob, VE5FY, the CARF regional director, spoke briefly on the proposed merger of CARF and CRRL. Bill, VE4AAZ, spoke about the various AMSAT satellites and his experiences with uplinking and downlinking, computer tracking, and windows of time for accessing the satellites. These windows vary from three minutes to several hours long, depending on the type of satellite being tracked. Dave, VE4XN, recently announced that the Manitoba Amateur Radio Museum—Canada's only Amateur Radio museum, according to Dave—will be opening for the season on the Victoria Day weekend in May. It will close for the season on the Thanksgiving Day weekend in October. The official opening, with all the dignitaries and speeches, will be held on 1992 July 23.

**Maritimes-Newfoundland:** Acting SM: Carl Anderson, VE1UU; STM: Mel Lever, VE1VX; BM: Brent Taylor, VE1JH. No report available. The Maritimes-Newfoundland Section does need a Section Manager. Please 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. Back in 1982 April, Scarborough Amateur Radio Club, under the leadership of Reg Parsons, VE3RG, formed the Scarborough Bluffs Chapter of Ten-Ten International. Now, Reg is chapter head and Thelma Woodhouse, VE3CLT, is certificate manager. Of their 41 charter members, five have become Silent Keys. The active 36 include VE3s FC, FP, FS and HC. There are 484 DX members for a grand total of 520. Of these, 134 have qualified as VIPs, 46 for the City Hall Award, 34 for the CN Tower Award and 29 for the Casa Loma Award. ECLs reporting this month include VE3AFP, VE3LPM and VE3OVV. VE3AFP's group conducted two Ontario Red Cross test transmissions, sending messages via packet radio from Peterborough to the Emergency Operations Centre in Durham College, Oshawa. This test was performed in connection with the emergency plan being developed for the Ontario Hydro nuclear plants in Darlington and Pickering. Peterborough and Lindsay are designated as evacuee reception centres. Regrettably, I report that VE3HY and VE3JKM have become Silent Keys. Unless you live on 13 acres of land, just when you think you've cured every RFI problem, another one pops up! There is hope! ARRL's all-new book, *Radio-Frequency Interference: How to Find it and Fix It*. It's a much different ARRL book, much of it written by outside experts in various fields. The book includes a lot of new information on interference elimination techniques. During Field Day, don't forget that you can earn bonus points by sending your Section Manager or Section Emergency Coordinator a message, as outlined in the Field Day rules. Good luck to all participating, and have fun.

**Quebec:** SM: Joe Unsworth, VE2ALE; STM: Jean, VE2ED; OBS: Garnett, VE2GOP. The VE2RM Inc. Club recently held its annual general meeting, with presentation of financial and technical reports, election of new directors for 1992, and a demonstration of VE3DGD's CQing coffee pot which nobody could copy. Guest speaker Marc de Payreburn, VE2MDP, program manager of SPAR Aerospace, gave a video and slide presentation on "Repeaters in Space", detailing what is involved in manufacturing of space hardware, and sharing interesting facts about the latest advances in satellite technology. Much of his presentation concentrated on low-noise amplifiers used in Digital Variable Transmission Repeater Satellites in the 2-GHz range. He had a unit on display. The unit had been turned down by the company's strict quality control department. Costs are high, and there can be no failures in space! Section appointments remain the same as for last year. Al Daemen, VE2IJ, continues as manager of the CRRL VE2 Incoming QSL Bureau. If others in the VE2 amateur community who would like to volunteer for a field organization appointment, please contact VE2ALE. A reminder that this is your column. Let us know what is happening in the Section. On January 19, VE2RM Inc. celebrated its 25th anniversary. Charter members include Joe Unsworth, VE2ALE, Dave McFall, VE2AUD, Ray Anders, VE2AXY, Steve Pepler, VE2BOP, Bruce Hermiston, VE2BU, Joe Ship, VE2BWS, Mort Sadegur, VE2BXS, Tom Cunningham, VE2CK, Joe Duncan, VE2DB, Al Smardon, VE2JO, Jim Ibey, VE2OJ, Cam Campbell, VE2OK, Don Dashney, VE2SH, Rae Petley, VE2TT, and Robert Weir, VE2ZH. Visitors to the Montreal area in early March included Rafael, HK1JXP, VE6ROM from West d'Edmonton, and Don, VE7GMB from Alert Bay, British Columbia. The VE2RMP 1992 Sugar Party Supper awards went to the following: Miss Piggy Award—Anik, VE2KOR; Terra Poo-Poo Award—Marty, VE2MH; and the "Enough E" on Gas Gauge Award (Jerry Can Award)—Claude, VE2YI. Gerry, VE2GFO, retains his Taxi Light Award from last year.

**Saskatchewan:** SM: Joan Lloyd, VE5JML. Saskatchewan amateurs will be pleased to learn that a mini-hamfest will be held in Saskatoon at the Kelsey Institute on July 24-25. The evening of July 24 will be a hospitality evening hosted by Saskatoon Amateur Radio Club. Activities on July 25 will include a Saskatchewan Amateur Radio League annual meeting, ARES and packet radio meetings, licensing exams, eyeball QSOs, flea-market and dealer displays. Moose Jaw amateurs continue building Wireless Room No. 2 at their Western Development Museum. Saskatoon amateurs set up and staffed an Amateur Radio display at the Western Development Museum in that city. Congratulations on a job well done. On March 21-April 5, Regina amateurs used the special prefix XM5 to commemorate the 100th anniversary of their Regina police force. Congratulations to the following new VE5s who recently obtained their licences: ABC, ALM, CDR, CJW, DAP, DSS, ECV, ENS, ESL, HCG, LAH, LSE, MAH, MEM, SHK, SMS, SWO and TYE. At time of writing, the Dayton Hamvention beckons. I feel I should check out the action first hand, and so OM VE5WWW, VE5HG, VE5ND and myself are off to stimulate the Ohio economy! 73. ■

# Radio Amateur du Canada



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IC-765.....	\$ 2 939.00
IC-751A.....	\$ 1 519.00
IC-735.....	\$ 1 119.00
IC-726.....	\$ 1 319.00
IC-725.....	\$ 949.00

## BASE STATION

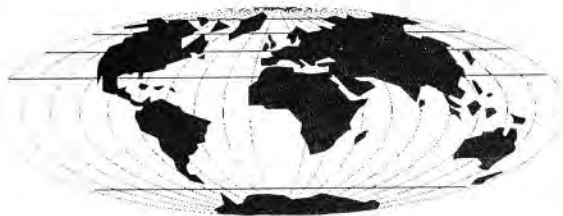
IC-275H.....	\$ 1 529.00
IC-475H.....	\$ 1 749.00
IC-575A.....	\$ 1 529.00
IC-575H.....	\$ 1 639.00
IC-970A.....	\$ 2 529.00
IC-970H.....	\$ 2 699.00
IC-1275A.....	\$ 2 029.00

## VHF/UHF MOBILES

IC-229A.....	\$ 419.00
IC-229H.....	\$ 449.00
IC-449A.....	\$ 499.00
IC-901A.....	\$ 1 099.00
IC-2410A.....w/CTCSS.....	\$ 939.00
IC-2410H.....w/CTCSS.....	\$ 979.00
IC-3220H.....	\$ 769.00

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IC-W2A.....	\$ 659.00
IC-2GAT.....	\$ 399.00
IC-2SAT.....	\$ 399.00
IC-2SRA.....w/BP-84.....	\$ 634.00
IC-4SAT.....	\$ 379.00
IC-4SRA.....w/BP-84.....	\$ 639.00
IC-12GAT.....	\$ 409.00
IC-24AT.....	\$ 519.00



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## WARC-92 Wrapup

The following summary of decisions made at WARC-92, held in Torremolinos, Spain, earlier this year, was provided by IARU.

### WARC-92 ACCOMMODATES NEW SERVICES WITH MINIMAL IMPACT ON AMATEUR RADIO

The 1992 ITU World Administrative Radio Conference (WARC-92) finished its work on March 3. The conference found room in the radio spectrum for a variety of new and expanded services, with very little impact on the Amateur and Amateur-Satellite services. The major decisions of WARC-92 are:

1. *HF Broadcasting Expansion:* An additional 790 kHz of spectrum, including 200 kHz below 10 MHz, was allocated to HF broadcasting worldwide:

18900-19020 kHz  
17480-17550 kHz  
15600-15800 kHz  
13570-13600 and 13800-13870 kHz  
11600-11650 and 12050-12100 kHz  
9400-9500 kHz  
7300-7350 kHz  
5900-5950 kHz

The expansion bands are to be available beginning 2007 April 01, and only for SSB (with reduced carrier) emission. The Fixed Service, and in some cases the Mobile Services, will be able to continue using the bands on a secondary basis for communication within national borders. A conference is to be convened in the future to the purpose of planning the use of the HF broadcasting bands.

A number of administrations had proposed realignments of the 7-MHz band to eliminate or reduce the incompatibility between the Amateur Service in ITU Region 2 (North and South America) and broadcasting in Regions 1 (Europe and Africa) and 3 (Asia and Oceania). However, most of the proposals were contingent on a significant expansion of the 7-MHz broadcasting allocation. When this expansion did not materialize, the conference was unable to pursue realignment. Instead, the conference adopted a recommendation that a future conference "...should consider the possibility of aligning the allocations to the Amateur Service around 7 MHz, with due regard for the requirements of other services". This will permit the issue to be addressed on its own merits, without the precondition of broadcasting expansion.

2. *Mobile Satellites, including Low-Earth-Orbit Satellites (LEOs):* Coordination procedures were adopted for non-geostationary satellite networks, and new allocations were established for such net-

works. So-called "little LEOs", low-cost, low-rate data satellites operating below 1 GHz, gained a primary uplink allocation at 148-150.5 MHz with downlink allocations at 137 and 400.15 MHz, and secondary allocations at 312-315 and 387-390 MHz. So-called "big LEOs", capable of providing voice-grade service to handheld equipment, gained access to spectrum near 1.6 and 2.5 GHz, but subject to procedures and limitations designed to protect global navigation systems with which they will share spectrum. Other Mobile-Satellite allocations near 1.6 and 2.0 GHz were also expanded. However, a US proposal for a Mobile-Satellite uplink band at 2390-2430 MHz was not adopted. Thus, the issue of possible impact on the Amateur and Amateur-Satellite services was avoided.

3. *Aeronautical Public Correspondence:* Two separate systems were sanctioned, one using bands near 1.67 and 1.8 GHz, and a North American system which is already in operation using bands near 849 and 894 MHz. If the two separate systems are implemented, aircraft flying between North America and other continents will have to carry equipment for both if passengers are to have the service.

4. *Satellite Sound Broadcasting (and a Complementary terrestrial Service):* A worldwide band was established at 1452-1492 MHz for digital sound broadcasting, but several countries do not plan to implement the service in this band. The US and India are looking at 2310-2360 MHz. Other countries are looking at 2535-2655 MHz.

5. *High-definition Television:* No worldwide band could be found for this service. In ITU Regions 1 and 3, 21.4-22 GHz will be made available. In Region 2, the band will be 17.3-17.8 GHz.

6. *Future Public Land Mobile Telecommunications Systems (FPLMTS):* Bands near 2 GHz were identified for implementation of FPLMTS, but were not actually allocated for this purpose because an allocation was regarded as premature for a system which was still largely undefined.

7. *Other Mobile Services:* In ITU Region 1, the Mobile Service was upgraded from secondary to primary status in a broad range of spectrum from 1.7-2.45 GHz, including the amateur allocation at 2.3-2.45 GHz. Mobile was already primary at 2.3-2.45 GHz in Regions 2 and 3. Now there is a worldwide primary allocation for the Mobile Service at 1.7-2.69 MHz. Depending on how administrations

in ITU Region 1 decide to implement new mobile services in this range, there could be implications for the continued use of 2.3-2.45 GHz by their radio amateurs. IARU Region 1 is urging its member societies to take appropriate steps to see that the continuing needs of the Amateur and Amateur-Satellite services are taken into account when their telecommunications administrations do their planning.

8. *Other Issues Affecting Amateur Radio:* A US proposal for the interim designation of 449 MHz for wind profiler radars was not adopted. A recommendation was adopted calling for urgent study of the frequency requirements of wind profilers, in preparation for a future allocations conference. A Russian proposal for a secondary allocation at 74-84 GHz for space research downlinking was adopted after a working group concluded it would impose no constraints on the Amateur and Amateur-satellite services at 75.5-81 GHz.

The Final Acts of the Conference are scheduled to come into force at 0000 UTC 1993 October 12. However, many provisions have much later effective dates.

More than 1400 delegates representing 127 countries (124 in person and three by proxy) were present at WARC-92. The IARU, as the only recognized representative body for the Amateur and Amateur-Satellite services, was among the 31 international and regional organizations invited by ITU to participate as observers. The IARU observer team consisted of Richard Baldwin, W1RU; John Allaway, G3FKM; Tom Atkins, VE3CDM; Dan Bergeron, KB4IYK; Wojciech Nietyksza, SP5FM; Larry Price, W4RA; David Rankin, 9V1RH; and David Sumner, K1ZZ. Alberto Shaio, HK3DEU, and Michael Owens, VK3KI, were also present for part of WARC-92 for special assignments.

Several IARU-member societies succeeded in placing Amateur Radio representatives on their national delegations: ARI (Mario Miceli, I4SN), ARRL (Paul Rinaldo, W4RI), JARL (Shozo Hara, JA1AN, and Masayoshi Fujioka, JM1UXU), KARL (Y. S. Park, HL1IFM, and Young Ho Lee, HL1AKF), MARTS (D. D. Devan, 9M2DD), NARS (Oyekunle Ajayi, 5N0OBA), NZART (Fred Johnson, ZL2AMJ), ORARI (Ben Samsu, YB0EBS), RSGB (David Evans, G3OUF), SRJ (Mirko Mandrino, YT7MM), SSA (Peter Hall, SM0FSK, and Sigge Skarsfjall, SM5KUX), and WIA (Ron Hendersson, VK1RH, and David Wardlaw, VK3ADW). ■

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- **Supplied accessories.** Mounting bracket, DC cable, fuses, MC-44DM multi-function DTMF mic.

### Optional accessories

- **DRU-1** Digital Recording Unit
- **DTU-2** DTSS unit
- **IF-20** Interface unit, used with the RC-20, allows more than two transceivers to be remotely controlled
- **MA-700** 2m/70cm dual band antenna with duplexer (mount not supplied)
- **MB-201** Extra mounting bracket
- **MC-44** Multi-function hand microphone
- **MC-55** (8-pin) Mobile mic. with time-out timer
- **MC-60A, MC-80, MC-85** Base station mics.
- **PG-2N** Extra DC cable
- **PG-3B** DC line noise filter
- **PG-4G** Extra control cable
- **PG-4H** Interface connecting cable
- **PG-4J** Extension cable kit
- **PS-50/PS-430** DC power supplies
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- **RC-20** Remote control head
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- **SP-50B** Mobile speaker
- **TSU-6** Programmable CTCSS decoder

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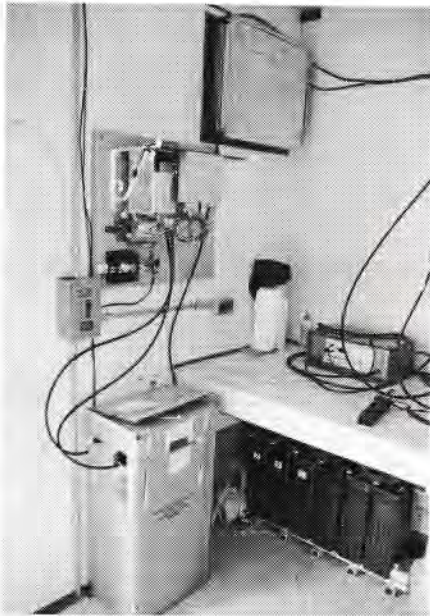
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mountain site is the power system. You have a choice of wind generators, thermal-electric generators and solar energy. Solar energy—with rechargeable batteries—was the choice for VE6HWY.

Operating procedures are a big concern when using solar power and batteries. Conservation of power is of the utmost concern, especially at night. How do users determine the status of the batteries? During normal operation, VE6HWY responds with a Morse-code "K"—the "go-ahead" signal. If power in the batteries becomes marginal, the "K" changes to a "BAT". This alerts users to limit themselves to essential communications. If battery power falls below a safe level, the repeater shuts off. Once the batteries are properly charged, VE6HWY automatically returns to the air. It works!

*A half-hour video on the building and installation of VE6HWY is available from CARA. It would make an excellent program for your next club meeting. Cost is \$15 plus \$5 for shipping. Contact VE6AFO, Tel (403) 280-5430, for details.*



The VE6HWY repeater. That's the duplexer in the cardboard box. A bank of rechargeable batteries is located under the counter.



The building that houses the VE6HWY repeater. Note the solar panels on the roof. That's the helicopter in the background. ■



**CALGARY AMATEUR RADIO ASSOCIATION  
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- ✓ **Bronze Award**  
Contact at least 25 other Canadian radio amateurs using frequencies above 30 MHz. Each contact must last at least 10 minutes. Total contact time must be at least 300 minutes.
- ✓ **Silver Award**  
Contact Canadian radio amateurs in at least six Canadian provinces or territories other than one's own. Each contact must last at least 10 minutes. Total contact time must be at least 125 minutes.
- ✓ **Gold Award**  
Contact Canadian radio amateurs in all Canadian provinces or territories other than one's own. Each contact must last at least 10 minutes. Total contact time must be at least 125 minutes.
- ✓ For these awards, contacts may be made at any time in 1992 using any mode or frequency except that Bronze-Award contacts must be made above 30 MHz. Contacts using repeaters or satellites will not be counted. Applications, supported by log extracts and certified by two other licensed radio amateurs, should be sent to Calgary Amateur Radio Association Award 125, Box 592, Calgary, AB T2P 2P2, by 1993 January 31. ■



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FT-990DC.....	\$ 1 999.00
FT-890AT.....	\$ 1 559.00
FT-890.....	\$ 1 359.00
FT-767GX.....	\$ 2 099.00
FT-757GX/II.....	\$ 1 099.00
FT-747GX.....	\$ 849.00

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FT-650.....	\$ 1 599.00
FT-736R.....	\$ 1 999.00

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FT-690R/II.....	\$ 769.00
FT-790R/II.....	\$ 699.00
FT-912RH.....	\$ 599.00
FT-2400H.....	\$ 439.00
FT-5200/B8.....	\$ 769.00
FT-6200/B8.....	\$ 899.00

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FT-470.....	\$ 479.00
FT-811.....	\$ 419.00
FT-815/25.....	\$ 439.00



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## Quebec Emergency Net: Part 1

Recently I asked Jacques Pamerleau, VE2AB, to send me some notes on the emergency communications arrangements in *la belle province*. Jacques is a past president of Radio Amateur du Quebec Inc. (RAQI), the provincial Amateur Radio organization. He is also current provincial coordinator of the highly successful Réseau d'urgence RAQI (RAQI Emergency Net). Jacques very kindly responded with complete notes on all aspects of his organization. This report is based on these notes.

The Quebec Provincial Emergency Net was organized back in 1978 June, following the signing of an agreement between RAQI and the Quebec Justice Minister who, at the time, was responsible for public safety. That responsibility is now with the Minister of Public Safety. His ministry oversees emergency planning at the municipal level, carries out all activities required to assure the safety of Quebec citizens, makes damage assessments, sponsors and carries out emergency training by means of exercises and training courses, and assures that emergency installations are well maintained and ready for operation when needed.

In 1991 September, RAQI signed an agreement with the Quebec Branch of the Canadian Red Cross Society. This agreement sets out what assistance will be provided to Red Cross throughout the province by the Quebec Emergency Net.

The primary objective of the net is to provide communications for the Ministry of Public Safety, for municipalities that require it. Overall responsibility for the net is borne by the provincial coordinator who is appointed by RAQI. The net is very well organized. It is structured at three distinct levels, municipal, regional and provincial. The municipal level is handled by local Amateur Radio clubs. At the regional level, there are nine geographic regions, each under the direction of a regional coordinator and a regional committee. These committees operate VE2RUB, and VE2RUC-RUJ. Provincial coordination is provided by a provincial coordinator and the management committee which operates VE2RUA. An important feature of this three-level structure is the heavy stress on participation by the local radio clubs and their members.

The Net is well equipped. VE2RUA, the headquarters station, is located in the Public Safety office in St-Foy. It is equipped with HF, VHF, UHF, packet, RTTY and most other modes. This is also true of the regional stations, VE2RUB-RUJ. They also have portable

facilities comprising VHF repeater VE2RUK, VHF station VE2RUI, and HF station VE2RUM.

The Ministry of Public Safety provides station sites in its offices at no cost to the net, RAQI picks up the tab for administrative expenses (stationery, stamps, and so

on), but everything else is provided by clubs and net members.

Back in 1981 May, Jacques Rousseau, VE2AZA, organized the Quebec VHF Net and developed it to the point where it was the envy of many outsiders. This net now provides Quebec with province-wide

### Field Organization Reports March 1992

#### 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 1146.

Reporting	ARES Members
VE3GT	626
VE4JR	56
VE6AFO	306
VE7HJS	158

#### CRRL Section Traffic Manager Reports

Call	Orig	Rcvd	Sent	Divd	Total
VE1BTV	0	29	31	0	60
VE1YS	0	14	13	2	29
VE1VAR	3	12	7	2	24
VE1DLC	1	12	3	7	23
VE1ALU	1	3	3	1	8
VE1NB	1	3	3	1	8
VE2ALE	3	13	42	0	48
VE2ED	0	9	4	3	16
VE3GNW	1	77	86	0	164
VE3GSO	2	88	66	4	160
VE3DVE	1	59	86	6	152
VE3AAU	0	41	40	41	122
VE3SB	1	28	33	2	64
VE3BDM	0	22	39	2	63
VE3LPM	1	23	21	9	54
VE3GT	0	39	13	1	53
VE3AJN	0	34	12	2	48
VE3CYR	0	28	11	0	39
VE3NVJ	2	10	18	3	33
VE3WV	1	28	3	1	33
VE3EUI	0	10	22	0	32
VE3FS	6	6	10	2	24
VE3DBG	0	4	11	2	17
VE3BAJ	0	3	8	1	12
VE3GKB	3	3	3	3	12
VE3MNI	1	1	5	1	8
VE4JR	0	45	57	12	114
VE6CE	10	22	21	12	65
VE6XG	13	13	16	3	48
VE6AKY	4	5	5	1	15
VE6ABC	0	5	5	0	10
VE6CPP	0	5	5	0	10
VE7BNI	35	251	287	18	591
VE7ANG	2	83	79	5	169
VE7FLY	6	27	53	3	89
VE7CCJ	5	40	39	4	88
VE7OM	0	35	41	2	78
VE7XA	1	24	40	9	74
VE7BZI	12	15	13	5	45
VE7EJU	0	13	22	0	35
VE7FB	0	10	15	3	28
VE7FRZ	6	11	9	1	27
VE7DFX	1	10	9	0	20
VE7WI	2	5	7	2	16
VE7EGM	2	7	4	2	15
VE7DWZ	0	10	5	0	15
VE7BCF	1	10	2	0	13
VE7FME	0	5	5	1	11
VE7DJ	3	4	3	0	10
VE7GKA	0	6	4	0	10
VE7ALV	1	4	1	1	7
VE7CZW	0	3	1	0	4

#### National Traffic System

Net (Mgr)	Sess	QNI	QTC
APN (VE1YS)	27	207	133
QSN (VE2ED)	19	74	7
KTN (VE3AJN)	13	96	13
NPN (VE3NDI)	31	382	16
OLN (VE3POJ)	30	800	44
OPN (VE3AJN)	31	662	189
QQN-D (VE3ORN)	29	77	72
QQN-E (VE3CYR)	31	135	80
QQN-L (VE3GSO)	23	39	18
MEPN (VE4LB)	31	1327	25
MMWX (VE4TE)	31	511	21
SEPN (VE5NX)	31	1690	9
APSN (VE6AKY)	31	1121	4
ATN (VE6CPP)	31	157	0
BCEN (VE7BCL)	31	1215	582

#### 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 format, within 48 hours of receipt.

BPL: VE7BNI

#### 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.

PSHR: VE3AAU (149), VE3GSO (134), VE2ED (121), VE3BDM (120), VE3GNW (114), VE4LB (106), VE3CYR (84), VE3FS (83), VE4STU (77), VE3LPM (75)

#### Service and Specialized Nets

Independent Net Managers: Your monthly reports are welcomed. Send to CRRL, Box 56, Arva, ON NOM 1C0.

Net (Mgr)	Sess	QNI	QTC
CRRL ONTARS (VE3GRM)	31	8229	0
Trans-Provincial (VE3EUI)	31	10558	8
Aurora 1 (VE4AHG)	30	1458	11
Aurora 2 (VE4FP)	31	1739	2
Manitoba Repeater (VE4HK)	95	717	0
Prairie WS (VE5EX)	31	940	0
Saskatchewan ARES (VE5FY)	5	259	0
Saskatchewan 2-Metre (VE5HG)	31	820	0
Alberta ARES (VE6AKY)	8	286	4

coverage through handheld transceivers, with more than 3500 kilometres of radio links between 25 different repeater sites. In 1990 March, responsibility for management of the VHF Net was transferred to RAQI. RAQI has since set up a management structure similar to that of the Emergency Net, and arrangements are in place for the priority use of this net by Quebec Emergency Net in time of emergency.

Our Quebec colleagues have created a very interesting training exercise: TELECOM. These one-hour exercises simulate emergency situations and involve the handling of a series of messages with conflicting priorities under unfavourable transmission conditions. A big advantage of these exercise are that they can be staged anywhere, such as in an office building, as long as there is no visual contacts between operators. The exercises simulate operations between a typical regional station and three HF or VHF stations, each of which is in contact with two VHF emergency stations at simulated disaster sites. Messages carry one of the four standard precedences: emergency, priority, welfare or routine. After each TELECOM exercise, a debriefing session is held at which message handling techniques are discussed. The goal is to have each operator participate in a TELECOM exercise once each year.

The Quebec Emergency Net meets once each month. Each month, to gain experience in the net's operation, a different regional station acts as net control. The provincial coordinator also makes use of the net to forward news and information. The net meets at 1945 UTC on the first Tuesday of each month except during July and August. It meets on 3780 kHz from October through May, and on 7060 kHz in June and September.

An interesting feature of the Quebec Emergency Net is that it awards certificates to active members. The first is awarded to any licensed amateur who submits an application to join the net. This certificate officially indicates that the holder is a certified member of the net. The second certificate, with a red seal, is awarded to those who have been active members for at least one year, who have participated in a real emergency or in an emergency exercise recognized by the net and who have actively taken part in a TELECOM exercise. The third certificate, with a gold seal, is awarded only to net managers. To receive this certificate, the operator must have previously received the red certificate. In addition, he or she must have been a regional net manager for at least two years and must have participated in at least two exercises or real emergencies.

The Quebec Emergency Net works

with SERABEC, the Quebec Civil Air Search and Rescue Association. To date, the net has not considered it necessary to join the National Traffic System (NTS). However, since the Quebec Safety Office expects to develop cooperative arrangements with the neighbouring provinces of Ontario, New Brunswick and Newfoundland, it is possible that an NTS link will be established.

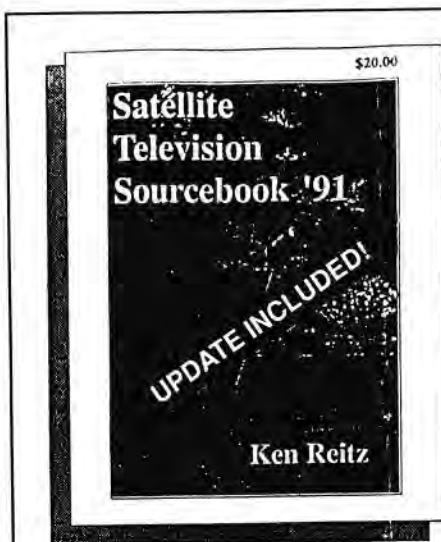
These are the key features of RAQI's Quebec Emergency Net. How has it worked in a real emergency? Stay tuned. Next month, I'll review its performance in a number of emergencies that have affected the province. I think you'll be impressed!

#### HELP!

J. R. Sandercock, VE5CS, asks for information on how to conduct a search for a lost person in a city setting. He mentions that they have good information on conducting wilderness searches but, "...when it comes to a city the rules appear to change." We'd like to know the answer to this question too. Can you help? We'll forward any information you send along. —Bob Boyd, VE3SV

*This column appears in both The Canadian Amateur and in QST Canada. We hope that it serves as an ongoing source of news and information about ARES for members of both CRRL and CARF.*

*A reminder that ARES is part of the CRRL Field Organization, although you do not have to be a CRRL member to take part. For more information about how to set up an ARES group, contact your CRRL Section Manager (address appears on page 3 of this QST Canada) or your CRRL Section Emergency Coordinator. —Editor*



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## Silent Keys

Conducted By Ray Staines, VE3ZJ

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

VE1BUE, Larry Brisee, Riverview, NB  
VE3EPR, Harold Roe, Kanata, ON  
VE3HY, Hugh Watt, Brockville, ON  
VE3XG, Stan Thompson, Chatham, ON  
VE3ZLS, Larry Stacey, London, ON  
VE4FG, Charlie Harvey, Winnipeg, MB  
VE6BMK, Orville Fifield, Edmonton, AB  
VE6XK, George Rice, Edmonton, AB  
VE7AEP, George Henderson, Celista, BC  
VE7BKC, Wolfgang Klemm, Nanaimo, BC  
VE7ENH, Bernard Moore, Prince George, BC

**Note:** Silent Key reports sent to *QST Canada* must include name, address and call sign 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*.

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