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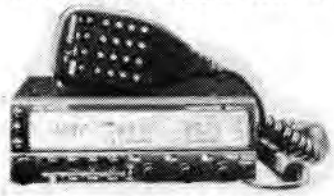

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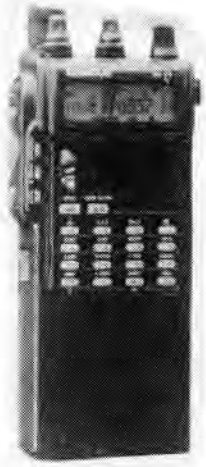

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QST CANADA

QST Canada (ISSN 0840-1670) is published monthly by CRRL Publishing, Inc., to provide radio amateurs, others interested in radio communications and electronics, and the general public with information related to the science of Amateur Radio communications.

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Subscription rates: CRRL membership with QST Canada: $15 + $12 + $0.84 GST = $27.84 per year. CRRL membership with QST and QST Canada: $15 + $43 + $3.01 GST = $61.01 per year. Two- and three-year subscriptions are available at multiples of the yearly rates.

ABOUT THE COVER

Winnipeg-area amateurs take a break at the Simulated Emergency Test (SET) held recently in Oakbank, Manitoba. That's some communications van they have there! *(VE4ADS photo)* ■

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

Can Amateurs Still Service Equipment?

Can amateurs still service their own equipment? In the early days of Amateur Radio, they could. Amateurs did all of their own building, sometimes right down to making their own crystal detectors and coils. I know of one amateur who built his own tuning condenser, and it was a good one, too. Then came vacuum tubes. We really built with those, basking in the purple-blue glow of the mercury vapour rectifier tubes and the pink glow of the finals' plates. In the 25-cycle island of southern Ontario, we even built our own transformers, as 60-cycle transformers did not have enough iron in them, and had too few turns of wire for the lower frequency. Back then, our 100-watt AM and CW transmitters stood about 4-feet tall, 1½-feet wide and 1¼-feet deep, and they weighed plenty. A companion receiver needed two people to lift it! Plate voltages in this kind of equipment sometimes ranged into the thousands, and one made sure the power was off and filter condensers were shorted before poking around. Everyone's motto was, "Keep one hand behind your back!"

After World War 2, surplus military equipment led amateurs to higher frequencies. Long-persistence cathode-ray tubes from old radar sets led to slow-scan television. Radios taken out of service from taxis and public service vehicles opened up two-metre FM. Converting discarded equipment was a must, and parts to do the job and any follow-up service were readily available.

But then came the transistor which reduced power levels and size. Initially, transistors were not as rugged as tubes. Many of us learned that even the improper use of an volt-ohmmeter could "prang" a transistor. As a result, many of us brought up on the old tube rigs threw up our hands and bought commercial transistorized rigs. These rigs operated on lower voltages, did not get hot like the tube rigs. They were lighter in weight. A 100-watt rig could now sit on a desk.

Some of us still like to do a little building, but parts are no longer readily available. The retail radio parts store has all but vanished, and too often, wholesale houses want to sell only to dealers and service persons. Your one-of-a kind item is usually too small for them to be bothered with. As a result, you're almost forced into using commercial gear.

What happens when something goes wrong with this gear? Many amateurs, particularly those who have been around for a few years and have kept up with developments, are still capable of servicing amateur equipment—even the newer equipment. Most of that equipment does come with circuit diagrams. But getting special parts for newer equipment can be tricky and even impossible. I once wrote to a manufacturer asking about parts for one of their transceivers. I enclosed a self-addressed stamped envelope. No reply. I wrote two more letters, but I still never heard from them.

In my experience, most manufacturers want you to send the equipment to them or to an authorized dealer so *they* can do the service. One manufacturer I've dealt with—not a manufacturer of amateur equipment—will not sell parts for their equipment even to service persons. One *must* send the equipment to them.

Is this the trend? If so, it supports the throw-away society. At current wage rates, the unit that cost $500 ten years ago may now be prohibitively expensive to repair by the manufacturer. You may just decide to junk it. So when equipment needs servicing and you are capable of doing the work yourself, what *are* the alternatives when you can't even get the parts? —*Roy Taylor, VE3AHY*

JACK STRANGLEMAN, VE3GV

Sundays aren't going to be the same. Every Sunday for the past five years, we've headed over to Jack's place to read the CRRL bulletins on the ARES Canada Net. Jack started that net in the early 80s, to bring together amateurs who were interested in emergency communications.

There was much more to Jack than the ARES Canada Net. The emergency plans he developed for London, Ontario, were copied across Canada. He was CRRL's Field Service Manager, Ontario's SEC, and a regular on the Ontario Phone Net, the International Assistance and Traffic Net and CFARS. Jack believed in service, and he lived that belief to the fullest.

Jack passed away on 1991 December 15. He will be remembered for what he did and for what he was—a fine amateur and a gentleman. And he'll be particularly missed on the ARES Canada Net. Sundays aren't going to be the same without him. —*Harry MacLean, VE3GRO* ■

SPECIAL NOTE

This issue of *QST Canada* is being sent to all CRRL members in the Manitoba Section. It contains a legal notice pertaining to Section Manager elections. —*Ray Staines, VE3ZJ*

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.

DXCC FIELD CHECKING

In a 1991 September *QST* article, ARRL indicated it would be field checking QSL cards for first-time DXCC applicants. Although not mentioned in the article, the Canadian DX Association (CANAD-X) has heard via the rumour circuit that field checking may be extended outside the US through IARU member-societies. The CANAD-X executive feels strongly that when field checking begins in Canada, qualified CANAD-X members should do it. Among our members, we have many amateurs who meet and surpass the criteria set forth by ARRL, required to maintain the high standards of the DXCC program. *—John Scott, VE3EZU, CANAD-X*

The CRRL reply:

I contacted Chuck Hutchinson, K8CH, at ARRL Headquarters. Chuck is author of the 1991 September *QST* article: "A New Era for DXCC". Chuck replied that DXCC field representatives are approved by the Director of the ARRL Division in which they reside, and are appointed by the President of the ARRL. He advised that ARRL would need experience with the program in the US before it could be expanded to other countries. At this time, the rumour that field checking may be extended to outside the US is really only a rumour and has not yet been discussed at ARRL Headquarters. *—Bruce Balla, VE2QO, CRRL President*

DARF CHALLENGE

We are pleased to provide financial assistance for the IARU WARC-92 effort through DARF, the Defence of Amateur Radio Fund. Our records show that our latest contribution will bring our total to $1100. Our club, the South Pickering Amateur Radio Club, (SPARC) would like to challenge and encourage others to donate to this fund, even with a small contribution. Our greatest enjoyment would be for another club to match or surpass our contribution to such a worthy cause. *—Randy Wallace, VE3INS, SPARC Treasurer, Box 53, Pickering, ON L1V 2R2*

MEDICAL NET

In response to VE3SLX's letter in 1991 November *QST Canada*, there is a net for people with a medical background. It has been meeting informally on 3.727 MHz since 1990 November, at 1900 EST on Tuesday nights. So far we have two family physicians, a surgeon, a gynecologist, and an opthamologist. Topics of discussion are not limited to, but often focus on, medical practice. Ned and any other interested persons are welcome to join in. *—Mark Diotallevi, VE3SDA, Box 370, Mitchell, ON N0K 1N0*

CLARIFICATION

On page 6 of 1991 April *QST Canada*, the "black unit on top of the monitor" was not owned by Calgary ARA, but by Roy Hookham, VE6RH, and Jens Jacobsen, VE6CDU. The unit, a repeater, is active and open to all radio amateurs. It is widely used by members of Calgary ARA. Also, photos should have been credited to Doug Howard, VE6CID, rather than to Ken Oelke, VE6AFO. *QST Canada* apologizes for the errors. *—Editor* ■

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.

St Catharines, ON: 14th Annual Big Event, 1991 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. ■

Solar Terrestrial Indices and HF Radio Propagation

What those numbers mean, and more...

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

HF radio waves are propagated over long distances by ionospheric bending of those waves back toward the earth. The degree to which this happens depends on geomagnetic and solar activity. This activity is continually changing. HF radio is still an integral part of commercial and military communication systems. Amateur communication, especially with DX stations, depends largely on HF skywave refraction. To help predict and understand propagation conditions, measurements are provided in the form of solar terrestrial indices. These are the solar flux and the A and K geomagnetic indices. They are broadcast over radio station WWV at 18 minutes past each hour, and also distributed over various telephone and computer networks. These numbers are routinely quoted by amateurs, especially DXers, in an attempt to forecast and explain propagation conditions. I've long been intrigued by these numbers and related terminology: geomagnetic storms, polar cap absorption events, and the like.

The Sun

To understand these measurements, we begin with the largest object in our solar system, the sun. It is a complex ever-changing object that only during this century we have begun to understand. For example, we now know that the sun has regular, consistent cycles. We know that the sun goes through cycles of activity that last about 11 years. We know that it has a 22-year cycle where the magnetic polarity of the solar poles reverses signs. We know it is a rotating sphere that completes one revolution approximately once every 27.5 days. We know that the areas near the solar poles rotate more slowly and take longer to complete one revolution than do the areas near the equator.

We also know that there are dark regions on the sun's surface called sunspots. The number of sunspots seen on the sun vary in cyclic patterns. Sunspots are cool regions of the sun, approximately 2000° Kelvin cooler that the surrounding surface. They are regions of strong magnetic fields. These magnetic fields originate deep inside the sun and move outward. When they reach the surface, they cool the gases within the core of the magnetic fields. These fields often curve around and re-enter the sun at a nearby location. At each point where the magnetic field enters or exits the sun, a sunspot is formed. Researchers have determined that sunspots are sources of enhanced radiation emissions. This radiation varies in wavelength from gamma rays down to radio waves. And this radiation is responsible for the ionization of our atmosphere, which, of course, results in the refraction of radio signals and gives us long-distance propagation.

The sun exhibits a periodic cycle that has a direct result on the population of sunspots over the entire surface of the sun. This is the well-known 11-year sunspot cycle. Observations over many years have shown us the number of sunspots decrease to a minimum over a period of six to eight years, then rapidly increase to a peak lasting three to five years.

There is yet another cycle with a period of about 22 years. This cycle is primarily magnetic in nature and can be seen by observing the polarity of the solar poles. Near the minimum of each 11-year sunspot cycle, the solar magnetic poles reverse sign. This is a rather slow process and often the solar poles have the same polarity before the full reversal takes place. This 22-year cycle affects the polarity of the sunspots that are formed in the northern and southern solar hemispheres. Since sunspots are areas of strong magnetic activity, this solar polarity reversal has the effect of minimizing the number and intensity of sunspots until the reversal has completed.

Solar Flares

If it were just the various solar cycles that affected ionization and propagation, prediction of HF communication conditions would be fairly simple. Unfortunately we have another phenomena that is equally important and much less predictable. These are solar flares. As we shall see, flares are the nemesis of long distance HF radio communication. Solar flares are powerful explosions in the sun's atmosphere. They occur over complex sunspot groups. It has been estimated that a large solar flare can release as much energy as a 10-billion megaton nuclear device.

The most disruptive class of flare is a proton flare. These flares send out large numbers of high energy protons that penetrate our earth's atmosphere. They have completely knocked out long distance radio communications and caused disruptions to ground-to-satellite and satellite-to-ground communications. Other effects include lack of compass accuracy, and induction of heavy currents in pipelines, railway tracks, telecommunications cables and electrical power transmission lines. Flares also produce sudden changes in the velocity, density and pressure of the solar wind. This has occasionally caused satellites to begin tumbling out of control.

The energy released by solar flares comes from the magnetic energy which has been accumulating over time in an active sunspot region. Just as terrestrial meteorological storms usually require pressure gradients, solar flares require strong magnetic gradients. This is especially true of the more powerful proton flares. As an active sunspot region develops, the associated magnetic fields intensify. Gradients between opposite poles of the magnetic fields increase. At some point, the gradients collapse, releasing all of the stored energy in a very short time. This sudden release of energy causes intensive explosions in the sun's atmosphere, called the chromosphere. Particles are propelled outward from the sun, being accelerated to near light speed within milliseconds. About eight minutes later, x-ray and ultraviolet radiation reaches the earth, and high levels of ionization occur in the upper atmosphere.

Some time later, the high-energy solar protons reach the earth. Many of these particles are directed to the polar regions by the Earth's magnetic field. Here, they can penetrate to ground levels. High numbers of protons at satellite altitudes are called satellite proton events. These are sometimes mentioned in WWV's solar-terrestrial report. Proton events can cause disruptions to satellite communications and damage satellite systems.

Flares may last from only a few minutes to many hours. The huge flare of

1989 March 6 lasted for ten hours. Compared to the more typical 30 minutes, this was an unusually powerful flare, the largest ever recorded.

Polar Cap Absorption Events

Polar cap absorption events (PCAs) occur shortly after a proton flare. We mentioned that these flares produce large numbers of solar protons. Within a few hours, these high energy particles arrive at earth. They have an electrical charge and are subject to earth's magnetic field. This field deflects them to the north and south geomagnetic poles. Here, the particles are drawn into the ionosphere at very high speeds. Their energy permits them to penetrate into the deeper levels of the earth's atmosphere. As they do this, they collide with various molecules causing high levels ionization, and radio signals are absorbed instead of being refracted.

Long distance radio communications are severely blocked during PCA events over the polar regions. This attenuation of signals is usually confined to the polar regions, but major PCAs have caused radio blackouts as close to the equator as 50 degrees. Most reach a peak level soon after a flare. After a PCA, it may require several days for radio communications to return to normal.

Geomagnetic Storms

The Earth's magnetic field has two poles. The lines of force radiate outward from each pole and connect over the equator. The pattern is similar to that illustrated by a bar magnet and iron filings. The solar wind has a strong affect on the shape of the earth's magnetic field. The solar wind is similar to winds on earth, except that it is created by energy from the sun. Just like the earth's winds, solar winds gust and fluctuate in speed. The earth's magnetic field is flexible and reacts to increased pressure by compressing inward and to decreased pressure by expanding outward. When the characteristics of the solar wind change rapidly, the geomagnetic field becomes disturbed. This often results in the generation of electrical currents in the ionosphere. The greatest effect on the ionosphere is over the higher latitudes, in the auroral zone. Here, HF radio signals can become so garbled that they become completely unintelligible. Rapid fading of HF signals caused by auroral activity is called auroral flutter. The amount of ionization in the ionosphere in the auroral zone is often strong enough to absorb all radio signals which pass through that region. These events are called polar blackouts.

Lower latitudes are generally better off during geomagnetic storms. They experience less absorption, less fading and less flutter. However, they do not escape all the effects. The maximum usable frequency (MUF) of the F2 layer of the ionosphere decreases everywhere. Also, the lowest usable frequency (LUF) almost always increases. The combined effects of decreased MUF and increased LUF narrow the usable HF spectrum. At times the F-layer becomes almost unusable for HF communications. For those willing to try, the best chances are via CW. Voice communications are very unreliable. Signals will suffer severe distortion and fading, and be unintelligible by the time they reach their destination.

Solar Flux

One of the wavelengths of the sun's radiation which penetrates the atmosphere down to ground level is at 2800 MHz (10.7 cm). The solar flux—the intensity of noise from the sun at this wavelength—is measured daily at 1700 UTC at the Algonquin Radio Observatory in Ottawa. The solar flux, used as an indicator of solar activity, is measured in solar flux units. One solar flux unit is equivalent to 10^{-22} watts per square meter per Hertz. This number can vary from values below 50 to values greater than 300. Values in excess of 200 occur during the peak of the 11-year solar cycle. Of course, the solar flux is closely related to the amount of ionization taking place in the F2 layer. High solar flux values generally provide good ionization for long distance communications at higher than normal frequencies. The MUF during periods of high solar flux can easily exceed 50 MHz, providing long-distance communications for 6-metre operators.

"Astronomers and geophysicists continue to improve the quality of propagation forecasting. However, like weather forecasting, predicting HF radio conditions is likely to remain an inexact science."

The solar flux is dependent on the number of sunspots on the surface of the sun. Increases in solar flux indicate the growth of sunspot areas, while decreases in solar flux indicate the disappearance of sunspots. Since the sun rotates with a period of 27.5 days, the number of sunspots visible on the sun fluctuate at about the same period. They rotate out of view and reappear on the opposite side of the sun about 14 days later. This cyclic pattern is easily correlated to the solar flux.

Magnetic A-Index

The geomagnetic A-index represents the severity of magnetic fluctuations occurring at local magnetic observatories. The A-index varies from observatory to observatory, since magnetic fluctuations can be very local in nature. The estimated A-index reported by WWV is derived from magnetometers in Alaska, Canada, Colorado and England. It is calculated from the eight daily K-index readings (see below). During magnetic storms, the A-index may reach levels as high as 100, and during severe storms, the A-index may exceed 200. Great storms may produce an A-index of over 300.

Magnetic K-index

The geomagnetic K-index is related to the A-index. Intermediate numbers are generated by comparing the H and D magnetometer traces—representing the horizontal and declination magnetic components—to reference quiet day curves for H and D. Each UTC day is divided into eight three-hour intervals, starting at 0000 UTC. In each three-hour period, the maximum deviation from the quiet day curve is measured for both traces. These results are put into a quasi-logarithmic function which yields a K-index in the range of 0–9. The K-index is useful in determining the state of the geomagnetic field, the quality of radio signal propagation, and the condition of the ionosphere. K-index values of 0 and 1 represent quiet magnetic conditions and imply good radio signal propagation. Values between 2 and 4 represent unsettled to active magnetic conditions and correspond to less impressive propagation. Values of 5 represent minor storm conditions and are usually associated with fair to poor propagation. Values of 6 generally represent major storm conditions and poor radio propagation. Values of 7 represent severe storm conditions and are often accompanied by radio blackout conditions. K indices of 8 or 9 represent very severe storm conditions and are rarely encountered.

Conclusion

How the sun affects radio communication is a complex topic. We still do not know how all the forces interact. In spite of what we know, we often have good propagation when the solar flux and geomagnetic indices indicate it should be bad, or good propagation when the solar flux and geomagnetic indices indicate it should be bad. Astronomers and geophysicists continue to improve the quality of propagation forecasting. However, like weather forecasting, predicting HF radio conditions is likely to remain an inexact science. ■

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Conducted By Harry MacLean, VE3GRO

Notes from All Over

ACROSS THE COUNTRY

❒ As of 1991 October 1, the number of Amateur Radio station licences issued in Canada was 29,987. This figure includes 688 repeater licences and an undetermined number of club licences. The figure also represents 11-per cent growth in the Canadian Amateur Service over the past year, much of which can be attributed to restructuring of the Canadian Amateur Service and the new Basic qualification amateur licence.

❒ Amateurs everywhere will be saddened to learn of the passing of Jean Evans, VE3DGG. For many years, Jean was president of the Ontario Trilliums, manager of the CRRL VE3 Incoming QSL Bureau and manager of the CARF Outgoing QSL Bureau. In 1986, she was named CRRL Amateur of the Year.

❒ DOC recently announced completion of reciprocal licensing agreements with Argentina, Bolivia, Mexico, Spain and Surinam. Surinam is an interesting addition, since the name of that country still appears on the "banned countries list". The answer (as we have stated before) is that the "banned countries list" issued by ITU is often inaccurate or out of date. If you hear a station in a so-called "banned country", our advice is to use common sense. There is no harm done in trying to work the station. If Amateur Radio communications with the outside world is truly banned, the station will not come back to you.

❒ Dave Noon, VE3IAE, is CRRL's new Awards Manager. He replaces Garry Hammond, VE3XN, who retired from the post earlier this year. Dave, well known on the HF bands, will be issuing the Worked All QST awards and acting as checkpoint for the IARU Worked All Continents (WAC) awards and certain awards issued by IARU member-societies. He'll also be distributing awards sent to CRRL by other IARU member-societies. Dave can be contacted through the CRRL Headquarters office at Box 56, Arva, ON N0M 1C0.

❒ CRRL Headquarters now has a fax number: (519) 660-8244. This number may be used to direct information or inquiries to CRRL, but not for orders of books and other materials which need to be accompanied by a payment. CRRL's voice telephone number remains the same: (519) 660-1200.

❒ CLARA, the Canadian Ladies' Amateur Radio Association, is celebrating its 25th anniversary this year. To help celebrate, a special CLARA contest will be held on March 17. Look for complete rules in February *QST Canada*.

Remember summer? Here's Michael Johl, VE2APT, at the Lac Adair Girl Guide Camp in Quebec last July. The girls in the photo are all Pathfinders—Girl Guides 12–15 years old. In their emergency exercise, a total of 38 Pathfinders searched the camp for five "victims" lost in the woods. The victims—really their Pathfinder leaders—had injuries that included hypothermia, nose bleeds and broken bones. All communication was handled by the Pathfinders, using Amateur Radio under the supervision of seven licensed amateurs. *(VE2APT photo)*

❒ To help publicize the 32nd Winter Carnival, held annually in Vernon, BC, special event station VE7NOR will operate from the carnival on February 7–16. Look for VE7NOR on 3.775, 7.175, 14.275 and 28.575 MHz. A special Winter Carnival Certificate is available. Send QSL or log information and $1 or two IRCs to VE7NOR, North Okanagan Radio Amateur Club (NORAC), Box 1706, Vernon, BC V1T 8C3

❒ A reminder that to commemorate the 500th Anniversary of the Discovery of America by Columbus (actually, that should be "rediscovery"—the native people were here first and there were many European contacts with North America before Columbus, notably the Vikings who settled in Newfoundland for a short period around 1000 A.D.), Canadian amateurs may use the following special prefixes from 1992 January 1 until 1992 February 29: VC1–8 in VE1–8, CY1–2 in VO1–2, and CZ1–2 in VY1–2. CZ9 may be used by VY9, special DOC club stations. And a reminder that, to commemorate the 150th Anniversary of the Geological Survey of Canada, Canadian amateurs may use the following special prefixes from 1992 March 1 until 1992 April 30: VG1–8 in VE1–8, XJ1–2 in VO1–2, and CG1–2 in VY1–2. CG9 may be used by VY9, special DOC club stations.

❒ WARC-92 is now only three months away. Canada's Defense of Amateur Radio Fund (DARF), established to assist IARU, the International Amateur Radio Union, with its work at WARC-92, now stands at $22,445.87. If you have not yet contributed to this fund, please consider doing so now. Send your cheque to DARF, c/o Tim Ellam, VE6SH, 107 Strathearn Rise, SW, Calgary, AB T3H 1R5.

SOUTH OF THE BORDER

❒ The US Technician licence—available with and without Morse code—has become the licence of choice for those entering the US Amateur Service. Last September was typical: the number of first-time Novice licences was only 679, while the number of first-time Technician licenses was 1680.

❒ Predictably, the US television industry has reacted negatively to ARRL's proposal that US amateurs be given access to 216–220 MHz on a shared secondary basis, to make up for the recent loss of 220–222 MHz. In the ARRL proposal, 216–220 MHz would mainly be used for packet network links. The television industry is concerned that amateur operation, no matter how carefully coordinated,

would result in interference to television channel 13 on 210–216 MHz. The ARRL proposal has received support from the National Communications System (NCS), the US government agency set up to manage telecommunications during national emergencies, and conditional support from Watercom, a company representing the automated maritime telecommunications systems that currently operate on 216–220 MHz.

❒ In a separate petition, ARRL is asking FCC to disallow US repeater and auxiliary operations on 222–222.150 MHz, to protect this subband for moonbounce and other weak-signal work. Should this proposal go through, CRRL would likely ask Canadian amateurs to follow suit on a voluntary basis. At present, Canadian amateurs still have access to the entire 220–225-MHz band on an exclusive basis.

❒ The US FCC is seeking a digital audio broadcasting band at 2310–2160 MHz. In ITU Regions 2 and 3 (this includes the US and Canada), amateur stations are assigned to the nearby 2300–2310-MHz and 2390–2450-MHz bands on a shared basis.

❒ 149 members of the US House of Representatives are now co-sponsors of H. R. 73, the Amateur Radio Spectrum Protection Act of 1991. 19 US senators are co-sponsors of a companion Senate bill.

❒ ARRL has named 110 DXCC field representatives who will be available to check QSLs for 250 core DXCC countries. All are in the US. No word yet on if field checking might be extended to Canada or any other countries.

AROUND THE WORLD

❒ Here are some recently noted intruders in our more popular amateur bands: 1800–1823 kHz—daily CW, unknown origin; 7008 kHz—CW, FSK from Murmansk, USSR; 7039 kHz—CW beacon "K", USSR; 14024 kHz—FSK, Moscow, USSR; and 14171 kHz—FSK idling and data, origin unknown. Five intruders have also been noted in the 18-MHz band. Origin of these intruding signals: Cuba, Argentina and the USSR.

❒ Japanese call signs usually begin with "J", but last April, all "J" call signs in the Kanto area were used up and the Japanese Ministry of Posts and Telecommunications had to issue 7K1–7N1 call signs. By August, these were also used up, and now the Japanese Ministry of Posts and Telecommunications is issuing 7K2–7N4 call signs in the Kanto area. All of which testifies to the remarkable growth of Amateur Radio in Japan—1,101,431 amateurs in all as of last March. ■

MOVING?

For interrupted delivery of *QST* and *QST Canada*, please send your change of address notice to CRRL, Box 56, Arva, ON N0M 1C0 eight weeks before you move. Don't forget to quote your call sign or the seven-digit number on your mailing label. ■

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.

FOR SALE: Kenwood TS-440S, one-year old. Complete with power supply: $1260. Transceiver separately: $1175. OBO. Keld Frederiksen, Surrey, BC, Tel (604) 596-0035.

WANTED: New or slightly used PL-172/8295 pentode tube. George Nemcsok, VE3SMR, 12 Summit Ave, Kirkland Lake, ON P2N 1M5, Tel (705) 567-3814, Fax (705) 567-7326.

WANTED: Yeasu FTV-700 V/UHF transverter. Jim Bailey, VE7HXR, Box 837, Penticton, BC V2A 6Z4, Tel (604) 493-4163).

FOR SALE: Trylon 56-foot tower, Garant GB-33DX beam, Emotator 105SX rotor and 70 metres Andres LDF2-50 heliax and rotor cable. Complete package new cost over $3500. Sell for $2000, you disassemble and remove, or $2500 ready for pick up in Belleville, Ontario. Emil Adamyk, VE3DLS, Tel (613) 969-1465, (813) 756-9081 after December 1.

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

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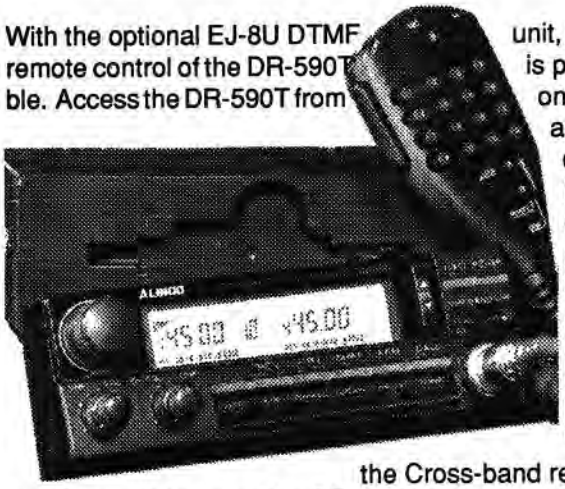
Separatable Type Twin Band Mobile DR-590T is a high power FM dual band transceiver, mobile or base station. It has high output capabilities and two low power settings. In addition, full duplex cross band operation and repeater functions come standard with this unit.

Front Control Panel detachability is the special feature of the DR-590T. This allows you to remove the main body and install it under your car seat or hide in your trunk for added security with the optional separating kit.



With the optional EJ-8U DTMF unit, full remote control of the DR-590T is possible. Access the DR-590T from one band and change frequency, power, offset, etc on the other band. With the Cross-band repeat function enabled, and the DR-590T placed in a high location, you have full control of a Remote Base operation.

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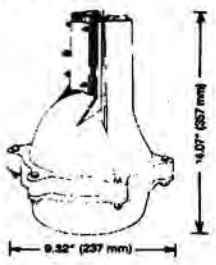

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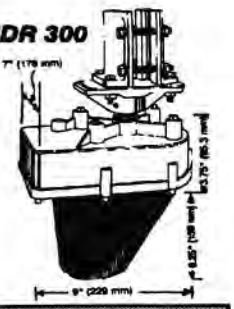

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JAN-6 TO FEB 1 1992

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The FT-415 is a deluxe compact FM hand-held for the 2 meter band, providing all of the latest capabilities of dual-microprocessor control. Transmitter power output is user-selectable in four levels, up to five watts (when used with a 12 volt battery pack or DC supply). The FT-415 offers a whole new range of battery preserving features, 41 freely tunable memories, a 10 memory-15 digit DTMF autodialler, CTCSS scanner and a wealth of selective calling/paging features designed to revolutionize FM communications.

The sculpted die-cast alloy rear case/heatsink and thick high-impact polycorbonate plastic front panel and battery cases provide professional-grade ruggedness ideal for demanding applications. Rubber gasket seals around all external controls and connectors keep out dust and rain or spray, assuring years of reliable operation even in harsh environments, The LCD display and translucent keypad have selectable lighting modes, and the display show six frequency digits and most programmable functions, plus relative signal strength and power output on a bargraph meter. A DC supply jack is provided on the top panel for powering the transceiver from an external 12 volt DC source and will also charge a Ni-Cad battery pack connected to the transceiver. VOX circuitry is included for hands-free transmit/receive control with the optional YH-2 headset.

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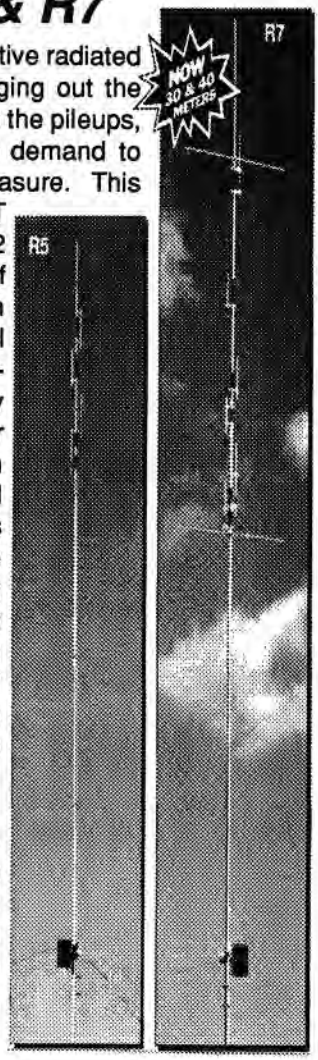

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R5 operation is available from even tighter locations because the R5 is a full 5 feet shorter than the R7. Tapered counterpoise rods and improved traps make the R5 a hot performer on 10, 12, 15, 17, & 20 meters!

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Section News/Nouvelles des Sections

Conducted By Jack Strangleman, VE3GV

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 NOTICE

To all CRRL members in the Manitoba Section: You are hereby solicited for nominating petitions pursuant to an election for Section Manager. Name of the incumbent appears on page 2 of this *QST Canada*. A petition, to be valid, must carry the signatures of five or more CRRL Full members residing in the Manitoba Section. It is advisable to have more than five signatures. Photocopied signatures are not acceptable and signatures must be on the petition. Petition forms, FSD-129-C, are available from CRRL Headquarters in London, Ontario, but are not required. The following form is acceptable:

..... (place and date)
CRRL Field Services Manager
Box 7009, Station E
London, Ontario N5Y 4J9

We, the undersigned CRRL Full members residing in the Manitoba Section, hereby nominate ..... (name and call sign) as Section Manager for this Section for the next two-year term of office: .....(signatures and call signs) ..... (addresses with postal codes)

A Section Manager must be a resident of his or her Section, a licensed radio amateur holding a Canadian Advanced Amateur Certificate or equivalent, and have been a CRRL Full member for a continuous term of two years at time of nomination.

Petitions will be received at the CRRL Headquarters office until 1600 EST 1992 March 6. If only one valid petition is received, the person nominated will be declared elected. If more than one valid petition is received, a balloted election will take place. Ballots will be mailed from CRRL Headquarters by 1992 April 1. Returns will be counted after 1992 May 20. A Section Manager elected as a result of these procedures will serve for a two-year term of office beginning on 1992 July 01.

If no valid petition is received, the Section will be resolicited in 1992 July and May *QST Canada*. You are urged to take the initiative and file a nominating petition immediately. —*Jack Strangleman, VE3GV, Field Services Manager*

REPORTS FOR OCTOBER 1991

British Columbia: SM/SEC: Ernie Savage, VE7FB. British Columbia Public Service Net (BCPS, 3729 kHz): Net Manager Jim, VE7JN, reports October check-ins: high—209, low—136, total—5228. The net is now on PST and meets at 0130 UTC, one-half hour early. British Columbia Emergency Net (BCEN, 3652 kHz) Net Manager Ray, VE7BCL, reports 959 October check-ins. Both QNIs and QTCs were up. Thanks to all net members for this. November starts another new year for BCEN, and many members will be receiving a Section Net Certificate for their high attendance during the past year.

Manitoba: SM: Bill Crooks, VE4JR; A/SM: VE4IX; STM: VE4JA, SEC: VE4PN; NMs: VE4AHG, VE4LB, VE4IX, VE4TE. A bicycle tour, the MS150 in aid of victims of multiple sclerosis, was held on the weekend of August 24–25. Thirteen amateurs provided communications between Winnipeg and Portage la Prairie, and from checkpoints in between, using fixed, mobile and even a bicycle mobile on 2 metres. Our thanks go out to VE4s AEZ, AHG, AJR, ALW, BBB, CP, DDC, HL, PLG, SE, UX, XB and ZU (he was the bicycle mobile) for the time and effort spent on this worthwhile cause. I received a note from Paul, VE4AEY of Teulon, about the Interlake Amateur Radio Club which started last winter. They have 19 active members. Eleven already have their licences, and the others are now taking classes. Members are from Teulon, Arbourg, Fisher Branch, Riverton and Inwood. This fall, both Winnipeg ARC and Winnipeg Seniors' ARC are conducting Basic study classes. I am certain other clubs will be doing the same to develop more future amateurs. At this time, I would like to thank Jack Adams, VE4JR, for all the work he has done in the past, most lately, as your STM. He has requested that someone else take over this appointment. Accordingly, I would like to announce that Stu Martin, VE4STU of Dauphin, has kindly accepted this job. Jack has volunteered to help Stu get started.

Saskatchewan: SM: Joan Lloyd, VE5JML. Regrettably, I announce that Vic Ireland, VE5NV, and Ernie Oakman, VE5EO, have become Silent Keys. The Saskatchewan Amateur Traffic Net (SATN) is back on the air. SATN is a CW net. In November, SATN will merge with the Manitoba CW net to form the Prairie Amateur Traffic Net (PATN). Operation will be on 3696 kHz. The Regina Emergency Communications Team met in October to view a video on fires and how to get out of burning buildings. Upcoming courses include winter survival, search and rescue, first aid, handling dangerous goods and fighting small fires. Team member Clay Doty, VE5AAA, recently attended a course at the Emergency Preparedness College in Arnprior, Ontario. Moose Jaw amateurs provided communications, relaying results between polling stations and city hall during recent civic elections. Hallowe'en saw Moose Jaw amateurs out in full force for the annual Halloween Patrol. Thanks to Regina VE5s for providing communications for the Girl Guide-Boy Scout food drive. Happy New Year from VE5JML and OM Walter, VE5WW. ■

VHF-UHF/THF-UHF

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

Transverters

In my last column, I commented on the utility and quality of VHF/UHF radios being marketed in Canada. I hope that those who design and build these radios will heed what I said. I hope that Canadian amateurs will write to manufacturers and ask for a basic high-quality VHF/UHF multimode radio. In the meantime, there are other ways of getting on VHF/UHF. Most HF rigs can fulfill the basic requirements of serious VHF/UHF operating: high selectivity, high third-order intercept point, good image rejection and so on, and are able to form the basis of a high quality VHF/UHF setup. But you will need a transverter.

What is a transverter? *Transverter* stands for *transmit and receive converter.* A transverter takes your HF signal and hetrodynes it, in a linear way, to another band like 50-54 MHz, 144–148 MHz, 220–225 MHz or even 2300–2305 MHz. With modern designs, a stack of transverters covering all VHF/UHF bands is not that difficult to arrange and manage. Because transverters are simple to design and build they can be excellent club construction projects. US clubs like the Rochester (New York) VHF Group have sponsored transverter-building projects to get their members active on 902 and 1296 MHz. I think it would be great if someone in Canada were to design a printed circuit board and get a club transverter-building project going on this side of the border.

If you don't want to build, you can buy transverters off the shelf. You won't have to go far to get one. Transverters for many popular bands are available from Sinclabs in Aurora, Ontario, and from Down East Microwave, and Spectrum International in the US. You'll find that a transverter is a simple, economical alternative to a multimode rig for getting on VHF/UHF SSB and CW. And because the transverter is a linear device, it will convert FM, digital voice and packet signals, too! According to Bob, VE3BFM of Sinclabs, packeteers have been recently been buying 220-MHz transverters by the bushel. It is a good way to go. Consider giving it a try.

The Toronto VHF Society offers special certificates for Canadian high scores in all ARRL VHF-UHF contests. This certificate was won by VE3AUI, VE3GBM and VE3GRO, operating VE3QST in the September VHF QSO Party.

WARC-92

The 2400-MHz 13-cm band may be under fire at WARC-92, which will open in Spain in only a few weeks time. I have received information from the International Amateur Radio Union (IARU) that indicates possible changes to this band because industry wants to find a home for digital stereo broadcasting! Fortunately, at least in early December, some administrations were still looking at the options. However, the American broadcasting industry is eyeing our band. In contrast, the British are looking at spectrum around 1800 MHz. We hope that whatever happens, amateurs will continue to have access to 13 cm worldwide for SSB, moonbounce, ATV and satellite work. Let's hope that US commercial interests don't create a problem for us. Just thank your lucky stars that IARU has planned well ahead of time to place amateurs in positions of influence on the delegations of various governments, and that IARU has developed internationally agreed-to positions. IARU has worked on behalf of all radio amateurs for many decades. IARU, participating in WARC-92, will be acting in a coordinated way to preserve the 13-cm band for radio amateurs in all ITU regions.

ACTIVITY REPORTS

50 MHz: Was Cycle 22 the best ever for 6-metre DX? There certainly were many Canadian milestones. While many 6-metre operators expected DX openings during the fall of 1991, I don't think anyone was quite prepared for the quality and quantity of the openings we actually experienced! It made blood boil, evoked cries of ecstacy and wild delirium, and resulted in loss of ability to concentrate on anything else! Yes, this fall, F2 fever stalked the Canadian 6-metre landscape, thanks to old Sol's magnetic activity in the closing phases of Cycle 22. To quote a well-known 6-metre DXer, Monty, VE3EVW, "I am surprised to realize, on looking over my logs of last year, that conditions are better this year on six." From Nova Scotia, a happy and excited Mike, VE1XDX, wrote of his experience: "October 10 brought signals from PZ1EL and the FY7THF beacon at 1407 UTC. PY0FF was heard at 1314 October 11." Mike noted that on both days openings were short and weak. Things stayed quiet until October 22 when 9J2HN was worked at 1656 UTC. His was the only signal on the band, and it hung in until 1730. October 23 brought 9Y4VU, FY3FV, TI2NP. FY3FV was a new country for Mike. October 24 brought DX in the form of P4/K4PI, LU8AHW, LU9AEA, LU8EEM, and LU2DEK. All stations were loud. On that day, the band closed with an opening to California. More from VE1XDX later. Back in Ontario, Monty, VE3EVW netted 9Y4VU on the October 23 and LU8AHW on the October 24.

October 27–28 was a spectacular weekend for 6 metres. The band opened strongly to Africa from Eastern Ontario and Quebec. Among stations worked by VE3ASO (FN 25) and company: A22BW in Botswana and 7Q7RM in Malawi. The really big scoop was the first 6-metre QSO between Albania and Canada. Don, VE2DFO, heard ZA1ZDB while the Albanian was working a V51 station. Don called the V51 and asked him to relay a request to run a sked on CW. Via a skewed path beaming over the South Atlantic, VE2DFO managed to squeak a 229 CW QSO with the Albanian. In addition to that treat, other stations worked by the gang included G4SMC/8R1, 9L1US, PY0FF, HC5K, CO2KK, YV4DDK, V51E, V51KC, TI2HL, TI2NA and VP25EE. Dennis, VE3ASO, commented that V51E's signal was literally pinning his S-meter. In Ontario, October 29 brought super-strong DX signals from G4SMC/8R1 in Georgetown, Guyana (GJ06). G4SMC/8R1 was worked by VE3DSS and others in the VE3 gang as well as

by VE1BVL and many others around 1258 UTC. Incidentally, QSL information for G4SMC/8R1 is K. R. Diamond, SMC Radio Club, School Close, Chandler's Ford Industrial Estate, Eastleigh, Hants, England, S05 3BY. Later, between 2130 and 2200 UTC, VE3ASO, who had taken a day off work in anticipation of DX, worked VK4BRG and FK8EB. Dennis commented that VK4BRGs signal was S9 during much of the time, and that FK8EB was running only ten watts to a mobile antenna. VK4BRG was also worked by VE3KKL and VE3FIT, and heard through the QRN by VE3FGU. Congratulations to all those who made a QSO. As the band slowly faded in the west, HC5K was very loud into Toronto at 2233 UTC via TE.

Meanwhile on the east coast, Mike, VE1XDX, heard the 3D2FJ beacon 519–529 on 50.110 MHz, and for about 20 minutes at about 2125 UTC, Mike also heard FK8EL 339. October 30 found the band open at 1319 UTC to PZ1AP. Now, according to the DOC's RIC-3, PZ is on the banned countries list. However, PZ is also on the list of countries granting reciprocal licences to Canadians! PZ1AP is very active on 6 metres, and we will be asking DOC to clarify this little discrepancy. Also down east, VE1XDX worked FY3FV at 1313 UTC, and V51KC and V51E at 1436 UTC. All had loud signals.

November 2 brought a recurrence of the widespread South American openings of the previous week, with the band opening at 1230 UTC to Brazil—not just to one small region, but to all of Brazil. By 1329 UTC, signals were so strong, that my own IC-551D started to overload. Not only SSB signals, but a number of South American FM repeaters were easily accessible! By 1401 UTC, the opening had spread to Argentina, Chile, Paraguay, Columbia and the Caribbean. In particular, Jean-Louis, FM3AG, was kept busy knocking off QSOs from Martinique. By the time the band shut down after 1500 UTC, many Canadians had added new countries to their DXCC totals. Incidentally, if you worked XQ3SIX, QSL via NI6V. VE1XDX wrote that it was also quite a day out his way. He noted that the band opened to South America with signals running 15 to 20 over S9. He also noted that the Caribbean and South America gang had Europeans in 10 db over S9 to add to the North American QRM. The competition for QSOs and QRM must have been awesome, probably worse than on 20 metres during a contest. In the midst of all this, Mike did work ZBØT in Gibraltar, and CN8ST, on 50.094-MHz CW. That was after an hour of working every PY station that owned 6-metre gear!

If that wasn't enough, the following day brought a repeat performance. Around 1500 UTC, CU3EZ on Santa Maria Island in the Azores was working into Ontario. Sensing that something was happening out that way, yours truly fired up the kilowatt and Boomer and started looking. The move paid off, as A22BW was worked on 50.102 MHz with a 599 report at 1530 UTC. Then, while tuning around, I heard a mini-pileup on 50.115 MHz. The DX station had a French accent, and said his that name was Michel and that his QTH was Reunion. The funny thing about working DX is that after a while, QSB and adrenaline combine to make you hear things. However, he said Reunion twice. I thought I had better call him. Unfortunately, QSB took out his call. Not taking any chances I called anyways and stood by. Michel came back with a 5X5 report on a fast break. I hesitated as I had not received my call from him, but shortly thereafter he called me and asked for his signal report, which I of course shot back with a "Quick, I need your call, OM!" That's when my ticker almost stopped, for the call was FR5EL! That contact was 9425 miles, with Reunion in darkness at the time. Probable propagation mode was F2 and TE. Ah, only one hop short of the west coast of Australia, long path.

Among the others to snag FR5EL were VE3ASO and VE2DFO. Meanwhile, VE1XDX snagged ZS9A at 1435 UTC. Strangely, the band had been relatively quiet for him that day.

November 5 brought PJ7/W6JKV from the Island of St. Maarten, and KP2A from the US Virgin Islands to Monty, VE3EVW. November 6 brought Monty CO2KK at 1340 UTC, YN1CC at 1540 and TI2NA at 1550. On November 8, Monty went on to work CN2JP at 1350 UTC and CT1BH at 1400. VE1XDX notes that on November 9 the band opened strongly to South America with the big pileups concentrated on ZP6CW, CX8BE and CX4HS at 1600–1700 UTC.

November 9 was also a good night for 6-metre aurora. Andy, VE3EKF (FN04), was out for a walk with his XYL when he noticed streamers. Quickly, he went inside and got on the air. He made many contacts on 6 that night. Andy now thinks it's a fine band. Let's hope that Andy gets some high power going soon, kilowatt style. Later that evening, at 0200 UTC, Mike, VE3FGU (FN04), followed by Don, VE2DFO (FN25), made a historic auroral contact with Shel, NI6E in Hawaii. Shel, who lives on the east coast of Hawaii in the city of Hilo, was copying and trying to work KM1H on 6, and was using, the 6-metre coordination frequency, 28.885 MHz, to monitor progress. The east coast station was not hearing Shel, but Mike was. A quick call on 10 and a sked was set up for 50.095 MHz. The rest is history, Shel's signal peaked an S6 and was in solid for 15 minutes. This contact represents an auroral DX record that is unlikely to be broken for many many years. As a bonus for Mike, NI6E was his 50th state! Incidentally, Mike also reported that W5FF in New Mexico was in on aurora for over one hour on the same night.

November 10 found the band open on F2 to South and Central America. While the opening was not as extensive as others, stations including HK4EB and TI2NA were way over S9 and busy working Europeans. Mike, VE3FGU, managed a QSO with a station in CX bringing his claimed country total to 71. Mike, VE1XDX, mentioned that he was able to contact HK4EB and HK4BHA that morning. Mike also noted hearing ZL2CD at 2025 UTC just as an S9 solar noise burst occurred. After it receded, he worked ZL4AAA 559 on CW and ZL1ANJ 5X2 on SSB, for his first Pacific QSOs and another notch on his DXCC totem pole. VE1XDX racked up another new one on November 12 with 7Q7RM and 7Q7CM both 569–579 at 1345 and 1430 UTC, bringing him to 62 countries worked. November 13 brought a full scale F-opening to Europe from the east coast. The following day, VE1XDX worked YU3XW at 1445 and YU3ES at 1455, and on the November 15, worked five South African stations in a row.

November 17 brought more European DX to VE1XDX who worked SV1EN, SV1DH, SV1OE, SV1AHP and SV1UN at 1530–1630 UTC. Mike's DXCC total now stands at 64 worked in just 12 months of activity—not too shabby! November 18 brought CU1EZ, CN2JP, and CN8ST to VE1XDX. November 19 was a good day for VE3ASO and VE3KKL. High geomagnetic activity bounced the band open to New Zealand for the afternoon! Among the contacts were ZL3ADC, ZL3TIC, ZL3AAU and a smattering of stations from Fiji and Hawaii. VE1XDX commented that the band was dead from 2035 until 2050 when, unexpectedly, he worked ZL3AAU, ZL3ADT, ZL3TLG, ZL2AQR and ZL3TIC. Then he says that the band went away twice as fast as it came, except that 3D2PO came in from nowhere at 2156 UTC, calling CQ on 50.110 for about one minute. Ouch!

November 23 brought more solar flares and more F2, with TI2HL working Europe at 1500 UTC, and CU3EZ in at 1500–1550 UTC, running 20 over 9 at times. It's unfortunate that some DX stations still don't specifically call for VEs during band openings. This can make life difficult for those of us who don't run a kilowatt or big antennas. If you work DX on 6 metres, please mention that many VEs are active, and ask the station to listen periodically for Canadians, eh?

144 MHz: Kevin, VE3KDH (FN03), sends along a report of his 2-metre activity: On September 21, he caught a band opening to WA8MZQ (EM88) and worked him on 222 and 432 MHz as well. October 29 brought aurora and Kevin worked KB8JI (EN64), VE3FOD (EN76), W8WA (EN75), and VE2BKL (EN48). November 2 brought aurora and Kevin contacted VE1ALQ (FN65). Six days later, more flares and aurora brought Kevin KD9OT (EM58) and KEØYG/4 (FM16). The following day, again on aurora, Kevin worked KG7Z (EN66) and N9JF (EM49). He is now up to 37 states and 11 call areas with a VUCC standing of 135 grid squares. Kevin also has 15 states on 220 MHz, and 17 on 432 MHz. Nice going!

1296 MHz: Dick, VE3FAC, and Bob, VE3FVW, have completed their 1296-MHz drivers. Designs are based on those in the *ARRL Handbook*, using NEC transistors. Final output is 14–18 watts. Look for more power from these two soon. They're building N6CA amplifiers using water-cooled 2C39 cavities.

ARRL VHF QSO PARTY RESULTS

Results will be listed in the next issue of *QST Canada*. I am indebted to Kevin, VE3KDH, for assembling the results of each VHF contest. We also would like to express our appreciation both to him and Peter, VE3VD, for producing and distributing Canadian VHF contest certificates sponsored by the Toronto VHF Society. I urge everyone across Canada to enter the VHF contests using whatever mode you have, and to send a copy of your results both to ARRL, 225 Main Street, Newington, CT 06111, and to Kevin, VE3KDH, c/o Cimtek Automation, 2526 Speers Road, Oakville, ON L6L 5M2, for listing here and in *QST*. By the way, Canadian June VHF results looked pretty impressive in 1991 December *QST* with listings from the Maritimes, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia in the multiop, single op, maritime mobile, QRP and rover categories. We are starting to crowd out the US listings, but we still need entries from Newfoundland, Labrador, Yukon and the Northwest Territories.

ARRL VHF SWEEPSTAKES

Don't forget that the January ARRL VHF Sweepstakes runs from 1900 UTC Saturday January 18 until 0400 UTC January 20. Thanks to Bob, VE3BFM of Sinclabs, we have sent out a contest bulletin to the amateurs across Canada who are on our mailing list. If you want to be on this list for future mailings, please drop me a note. Hope to see you in the pileups!

That's it for now. I hope everyone has a happy and DX-filled 1992. I also hope to hear from you throughout the New Year. Please remember that this is your VHF-UHF column. Keep those cards and letters coming! ■

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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, now only one month away.

DARF thanks the following for their recent contributions: South Pickering Amateur Radio Club; Pioneer Amateur Radio Club (London); Brandon Amateur Radio Club; Winston Ainslie, VE7WIN; J. R. Horahan, VE7HDA; Archie McKenzie, VE3NJY; A. N. Oldfield, VE3ANO; Ralph Barnes, VE3PBR; Peter McIntyre, VE7JT, and Harry Zimmer.

As of mid-November, the fund stood at $22,445. 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. ■

Conducted By Bob Boyd, VE3SV
and Jack Strangleman, VE3GV

Exercise Redbird

It was a mild Indian summer morning in late October. A school bus with 25 grade twelve theatre arts students from South Grenville District High School was approaching Cardinal Elementary School where they were to perform a play. The students were laughing and joking. Also approaching the intersection was a truckload of hydrochloric acid from the DuPont Canada plant in Maitland, Ontario. The acid was destined for the Canada Starch Company in the centre of Cardinal.

Another highway tanker carrying oleum (fuming sulphuric acid) bound for Brockville had made a wrong turn and the driver found himself heading for Cardinal. With no place to turn around, he entered the village. As he approached the other two vehicles, he felt a tightness in his chest and gasped for breath. As he slumped over the wheel, his foot pressed on the accelerator and his vehicle rammed the other two at full speed. The laughter in the bus turned to screams.

So began "Exercise Redbird", sponsored by the Leeds and Grenville Emergency Planning Coordinating Committee. Following the collision, the scenario assumed that because of a possible leak, the nearby elementary school, only a few hundred metres away, would be evacuated. Simulated casualties were heavy, with most of the children in the bus badly injured. There were even two fatalities. After rescue operations were complete and while the vehicles were being separated, the vehicles' tanks began to leak gasoline and diesel fuel into the village's sewer system. This resulted in simulated pollution of the St Lawrence River. This would require the participation of the Canadian Coast Guard and the Ontario Ministry of the Environment.

Response from the many well trained agencies in eastern Ontario was prompt and professional. Including several fire departments and police forces, help was forthcoming from no less than twenty-six agencies. These included Red Cross, Salvation Army, St John Ambulance, Ontario Regional Ambulance Service, three Brockville hospitals, three major eastern Ontario industries, the local board of education, and of course, ARES.

As one of the many official observers, I was greatly impressed by the speed and efficiency of those handling the casualties, and the effective work done to plug the simulated leaks, work performed by the CERT team, a specially trained chemical industry group from DuPont Canada fully dressed in protective clothing.

As is always the case, communications was the key to effective management of this mock disaster. Police, fire, ambulance and school bus radio communications were very much in evidence. The Kitley Fire Department Command Vehicle and the Brockville Mobile Command Centre arrived promptly and were both put to good use. Each was equipped with mobile FAX machines using cellular telephone links—a good contribution. I was particularly impressed with the communications room in the Brockville vehicle. Among others, it had two Motorola MCX-1000 multichannel programmable VHF rigs. I noted that the amateur repeater channels were programmed into both units, along with the frequencies of all other participating services.

ARES provided strong support, with emergency communications provided by members of Thousand Islands ARC, with help from members of the Iroquois and Kemptville clubs. Under the direction of EC Clarence, VE3LBU, three nets were set up and kept busy. Hospital communications were handled on the Brockville repeater, VE3BAT. Wilf VE3MNJ, and

Field Organization Reports October 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 1137.

Reporting	ARES Members
VE3GV (VE3LPM)	622
VE4JR	56
VE6AFO	306
VE7FB	153

CRRL Section Traffic Manager Reports

Call	Orig	Rcvd	Sent	Dlvd	Total
VE3ORN	4	65	53	18	140
VE3GSQ	3	75	48	128	102
VE3DVE	0	24	51	1	76
VE3GT	1	28	31	0	60
VE3CYR	1	47	7	1	56
VE3WV	1	41	11	1	53
VE3GNW	1	23	28	0	51
VE3AJN	0	34	13	0	47
VE3EUI	0	10	25	0	35
VE3KXB	2	10	15	0	27
VE3BDM	0	10	14	0	24
VE3NVJ	0	7	14	0	21
VE3LPM	0	7	10	2	19
VE3DBG	5	2	5	1	13
VE3SB	4	7	2	0	13
VE3KCZ	1	5	2	4	12
VE3AWE	0	2	9	0	11
VE3BAJ	0	6	1	1	8
VE3MNI	0	1	6	1	8
VE3FS	1	2	2	0	5
VE4FP	0	61	78	8	147
VE5JML	0	6	0	1	7
VE6XG	0	29	6	8	43
VE6CE	6	18	15	1	40
VE7BNI	29	176	278	16	478
VE7FAZ	0	64	77	2	143
VE7ANG	2	73	48	0	123
VE7BCL	1	69	28	24	122
VE7CCJ	5	44	27	8	84
VE7BZI	15	19	15	18	67
VE7XA	0	21	37	6	64
VE7GKA	5	23	8	2	38
VE7EGM	5	20	8	2	35
VE7OM	0	16	14	1	31
VE7DV	0	25	5	0	30
VE7FMF	0	14	10	0	24
VE7VO	0	13	5	0	18
VE7CZW	0	13	3	0	16
VE7FB	1	3	7	1	12
VE7WI	0	6	3	0	9
VE7BCF	0	7	2	0	9
VE7SR	0	5	3	0	8
VE7WI	0	4	1	0	5

National Traffic System

Net (Mgr)	Sess	QNI	QTC
ATN (VE1YS)	31	151	0
KTN (VE3AJN)	13	121	9
NPN (VE3NDI)	31	311	4
OLN (VE3POJ)	29	713	37
OPN (VE3AJN)	30	575	91
OQN-D (VE3ORN)	29	110	42
OQN-E (VE3CYR)	30	95	61
OQN-L (VE3GSQ)	25	32	17
SEPN (VE5CJ)	30	1618	13
SATN (VE5NX)	14	97	12
BCEN (VE7CBL)	31	959	430

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.

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	132	0
CRRL ONTARS (VE3FOV)	31	10081	0
Grey-Bruce (VE3WV)	30	96	30
Grey-Bruce SS (VE3WV)	29	92	5

***Special note:** This month's report is incomplete. Remaining October information will appear next month.

Right: Clarence Angst, VE3LBU is EC for Thousands Islands ARC. His 14-person team used three 2-metre repeaters to conduct communications for "Operation Redbird". Left: John Lesprance, VE3PSG, left, provided communications at the disaster site for Assistant Exercise Director, Nader Teflissi, right. *(Photos courtesy VE3SV)*

Gord, VE3GBG, worked at Brockville General Hospital. Fay, VE3YAF, was at th St Vincent de Paul Hospital, and Olive, VE3OMW, was at Brockville Psychiatric Hospital, prepared to handle any overflow. Communications needed to handle the school evacuation were conducted on N2MD, the Russel, New York, repeater. Clarence, VE3LBU, Art, VE3KBJ, Doug, VE3KMU, and Mary, VE3SYR were stationed at various schools and at the school board offices.

For an emergency exercise to be successful, there must be excellent communications among those in charge—the Exercise Director at the Emergency Control Centre and his or her assistants at the various action sites. These communications were carried out on the VE3IRO repeater, located in Iroquois just east of Cardinal. Tim, VE3TAM, was placed with the Exercise Director. John, VE3PSG, was at the disaster site with the Assistant Director. Ray, VE3CIF, was stationed at the vehicle holding area. Ed, VE3HCA, worked with the video crew to assist them in their work of taping the key activities.

With one exception, all communications was carried out on two metres. The exception was the use of HF to pass a message from Brockville General Hospital to Canadian Red Cross in Ottawa requesting immediate supplies of blood for much-needed transfusions. This message was passed to Tom, VE3FKY on two metres, who relayed it to Henry, VE3OMU in Ottawa, on 7-MHz SSB.

The only equipment problem took place just as the exercise was getting started. VE3BAT, the Brockville repeater that was to carry communications for the hospital net, failed! Fortunately, Nand, VE3IWJ, was available to fix it. He had the repeater back on the air within half an hour, just in time to allow it to make a important contribution to the exercise.

At the end of Exercise Redbird, the Exercise Director held a preliminary debriefing with representatives of the various agencies involved and with the press. I was privileged to attend. A few problem areas were identified (after all, that's what an exercise like this is all about), but all agreed that it had been highly successful. The Ontario Provincial Police (OPP) mentioned that they had deliberately introduced an unplanned problem by shutting down the transmitter at one of their towers. This seriously affected communications between the disaster site and OPP regional headquarters, but they were still able to function effectively, in spite of some mutual interference to and from the ambulance radios.

I was particularly delighted to hear the sincere tributes directed to members of Thousand Islands ARC and the other clubs, by the Exercise Director and representatives of several of the participating agencies. These agencies viewed Amateur Radio communications as an essential part of the emergency operation, and they felt the gang had done a great job. My congratulations to EC Clarence, and to his team of competent communicators. —*Bob Boyd, VE3SV*

We welcome submissions for this column. 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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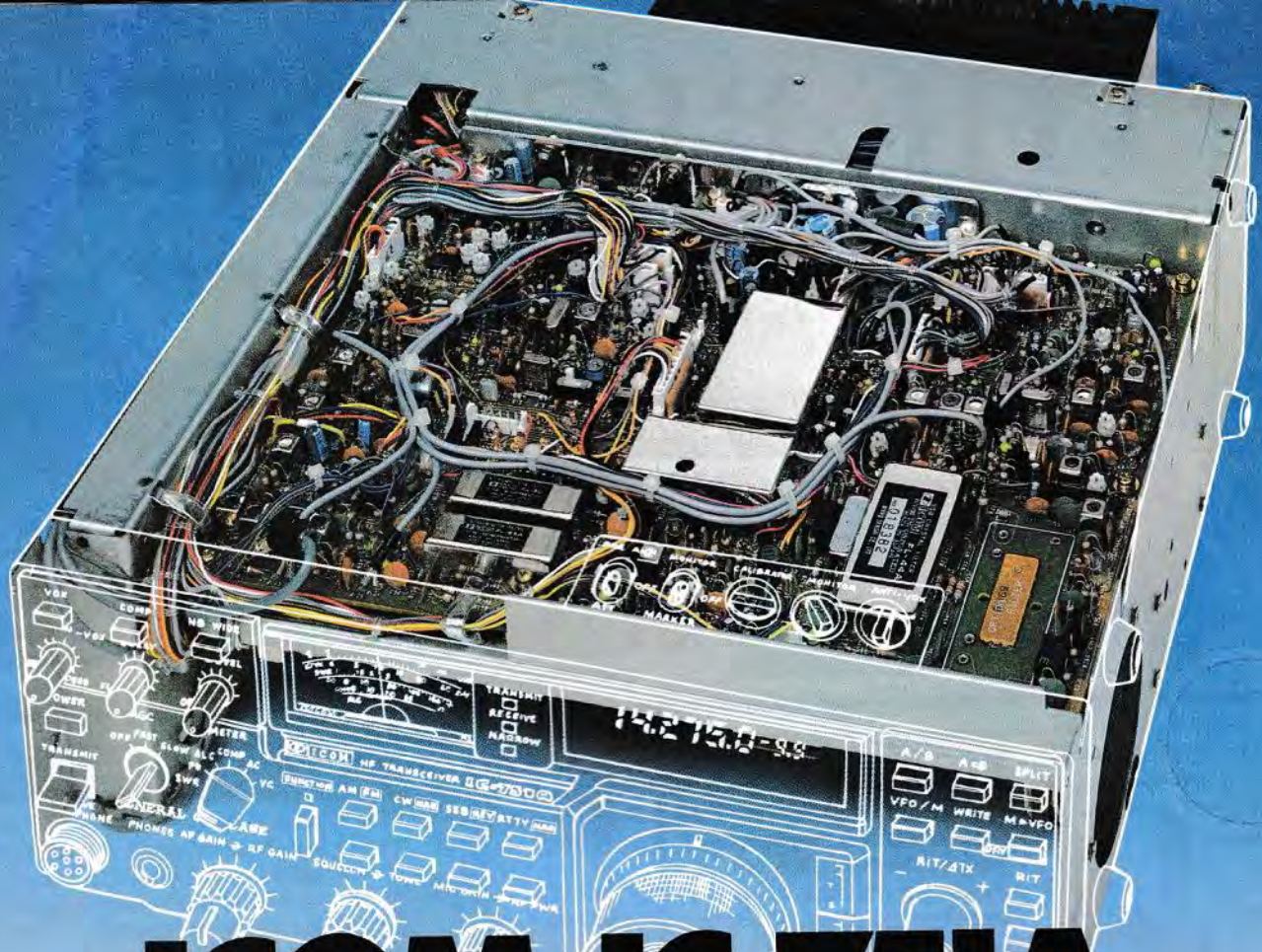

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Midsize Masterpiece! The deluxe IC-751A includes more high performance features and professional circuitry per cubic inch than any other HF transceiver. Its smooth-as-silk operation and long-term reliability produce the ideal contesting, DX'ing, mobiling and portable rig. Owning an IC-751A truly means "Going First Class!"

Unsurpassed Quality and Reliability. Quality and Reliability is important to you and it's important to ICOM. ICOM now covers you and your investment with its exclusive

one year warranty. There's more! The IC-751A's receiver boasts 105dB dynamic range for superb listening. The 100% duty cycle transmitter defies abuse and delivers 100 watts of exceptionally stable and clean RF output. Reliability. Quality. One year warranty. That's ICOM.

All Bands, All Modes Included. Operates 160 through 10 meters, it's easily modified for MARS operation, plus it includes general coverage reception from 100kHz to 30MHz. No compromise, no comparison!

32 Tunable Memories. Store both frequency and mode information. Use them to quick-access your favorite spots or as 32 preferred frequency-remembering VFOs.

A Modern Amateur's Delight! Special attractions include an electronic keyer, semi or full break-in rated to 40 WPM, panel selectable 500Hz/FL-32A CW filter, and volume control-tracking sidetone. SSB transmissions are enhanced with an RF speech processor and tone control to produce sparkling clear audio. PLUS there's a new rubberized tuning knob for velvet-smooth tuning and a full line of accessories and filters.

RF Power Control. Varies output independent of mic gain, ALC and speech processor action. Enjoy maximum "talk power" at any drive level!

To see the IC-751A, contact your local ICOM dealer.

For a brochure on this or any other ICOM product, call our Toll-Free Literature Request Hotline 1-800-999-9877.

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