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QST CANADA

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ABOUT THE COVER

Special event station XL3IG operates from Point Edward (Sarnia), Ontario, to mark the 50th Anniversary of the Bluewater Bridge. For details, see this month's "Happenings" column. *(VE3DGR photo)*

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

The Ken Mangaroo Tower Case

Over the past three years, so much attention has been focussed on the Jack Ravenscroft case that it has become easy to overlook another case with important implications for all of us: the Ken Mangaroo, VE3NCM, tower case in Burlington, Ontario.

Ken lives in a subdivision. He first planned his tower in 1986. Because it would be 72-feet high, he sought and received DOC permission to install it. Shortly after beginning work, he received a visit from a by-law officer. Burlington has no antenna or antenna tower by-laws, but building permits are required for towers over 55 feet. Burlington recognizes that antenna towers come under federal jurisdiction and permits are given automatically. Ken took out a permit.

Ken then took other measures to head off trouble. He had already chosen a brand of tower that was CSA-approved. Now he had an engineer verify the integrity his proposed installation. He had his soil tested. He even had the hole for the tower base inspected by municipal authorities before pouring the concrete.

On July 27, Ken received an order to appear in court — the following morning. Apparently eighteen of Ken's neighbours were seeking a stop-work order, claiming that the tower would lower their property values and cause TVI. Unprepared for this sudden turn of events, Ken called on Burlington club officials and CRRL.

CRRL advised Ken to stall for time and get legal counsel. The hearing was postponed for ten days but not every lawyer was prepared to take Ken's case. Eventually, Ken chose a lawyer recommended by CRRL, one whose firm had successfully appealed the conviction of an amateur taken off the air under a municipal antinoise by-law.

At the hearing, the judge refused to grant any kind of injunction. He did allow counsel for Ken's neighbours ten additional days to prepare a case. When that case was finally presented, however, Ken's lawyers demonstrated that Ken was in total compliance with all laws, federal and municipal, and Amateur Radio won the day.

We've related all this in some detail because we want you to realize that there was nothing unique about Ken's case. It could just as easily have been you or I, particularly if we live in an urban area. But because Ken did not back down and because Ken won, if it ever is you or I, things should go fairly smoothly. Ken's case has set a strong and favourable precedent.

Unfortunately, as with the Jack Ravenscroft case, Ken's victory was not without cost. Ken is still $1000 out-of-pocket for his legal expenses. That's why Burlington Amateur Radio Club has established a Ken Mangaroo Tower Defence Fund, with Jack Bouchard, VE3LJQ, president of the Burlington Amateur Radio Club, as contact person.

We feel strongly that Ken's case merits your support and we hope you will donate to his fund. As with the Jack Ravenscroft fund, there will be a public accounting of all monies collected. Unlike the Jack Ravenscroft fund, the need is modest and finite. Given the demonstrated generosity of Canadian amateurs, there could be money left over. What would happen then?

Fund organizers are considering three possibilities: 1) turn the excess over to the Jack Ravenscroft fund to pay for any final or unexpected expenses, 2) use the monies for a Canadian Amateur Radio Defence Fund to assist with future cases like Jack's or Ken's, or 3) keep the money in trust to help IARU defend amateur frequencies at the World Administrative Radio Conference expected to be convened in 1992. CRRL has already started its own fund for this. More on this later. —*Harry MacLean, VE3GRO*

Donations may be sent to the Ken Mangaroo Tower Defence Fund c/o Burlington Amateur Radio Club, Box 836, Burlington, ON L7R 3Y7.

Commercial Transmitting Equipment Only

Only hours before this issue of *QST Canada* went to print, we received a letter from DOC commenting on our December editorial, "Commercial Transmitting Equipment Only".

What does DOC say about our concerns? Basically, they do not believe they are discouraging the building of Amateur Radio transmitters. They believe they are simply making it necessary for builders of transmitters to be "...examined on equipment design and construction in one of the optional parts of the amateur examination program" before they begin. DOC says this illustrates an underlying philosophy of their Restructured Amateur Service: Let the prospective amateur choose his or her area of interest, whether it be VHF operation, code, or building transmitters, and then be tested on it.

We'll publish the full text of the DOC letter next month. — *Harry MacLean, VE3GRO*

Letters/Lettres

Conducted By Harry MacLean, VE3GRO

All letters will be considered carefully. We reserve the right to edit letters and to shorten letters in order to have more views and information presented. The publishers of *QST Canada* assume no responsibility for statements made by correspondents.

THE COST OF AMATEUR RADIO

After fifteen years off the air, I am back. I want to comment on "The Cost of Amateur Radio" in the November issue. Ray Perrin's analysis is quite valid and supports his contention that cost of equipment should not discourage new amateurs. If he had taken it one step farther and compared income levels then and now, his illustrations would have been even more dramatic.

One point he did not cover in detail is the availability of used equipment at a fraction of the original cost. I got back on the air for less than $600. That equipped two stations, one at home and one at the cottage. The fact that the Swan 350 I use at the cottage doesn't have any " bells and whistles" didn't make any difference to the two ZSs I worked the other night.

Ray's final comment sums it up: "...it's never been cheaper!" That's the way it was for me. —*Warwick Wakeman, VE7SA*

COMMERCIAL TRANSMITTING EQUIPMENT ONLY

☐ I run a commercially-built transceiver. My "peripherals", however, include a "constructed-from-scratch" 600-watt linear amplifier, a 1900-volt power supply, a transmatch and a Monimatch SWR indicator. This gear is all fully functional and receives daily use.

I suppose I could replace these items with commercial gear, but I derive great satisfaction from cracking pileups and working DX with at least some equipment of my own making. It's the greatest way I know to attain and retain technical proficiency. Perhaps this fact alone is reason enough for Communications Canada to rescind the provision requiring "commercial transmitting equipment only". —*Edward Peter Swynar, VE3CUI*

☐ I have been licensed since 1958. My first equipment was totally "homebrew". It was a real challenge to build and use but it gave me a great deal of satisfaction. Although I presently operate commercial gear, I feel it would be a real tragedy if future generations of amateurs were deprived of the experience I had.

I believe Communications Canada is restricting use of homebrew equipment because of the possibility of interference. In my view, there are only two types of interference: 1) that caused by overloading of poorly designed receiving equipment, and 2) that caused by improperly adjusted transmitting equipment — which can happen when an operator is not knowledgeable. I would suggest that the person who designs and builds his or her own equipment is better qualified to operate it than someone who only sets up commercial equipment by the book. — *Hal Whaley, VE3MUX*

Calendar

St Catharines, ON: February 4, 11th Annual Big Event, hamfest and dinner dance, at CAW Hall, 125 Bunting Road. Sponsored by Niagara Peninsula Amateur Radio Club (NPARC). Hamfest opens at 8 AM. Hamfest admission: $3, tables: $5, dealer tables: $12. Dinner Dance at 7 PM. Tickets: first come, first served, $20 per person. Talk-in on VE3NRS, 147.84-.24 MHz. For additional information, contact George Spencer, VE3OZW, at R R 1, Jordan, ON L0R 1S0 (416-562-4891).

Silent Keys

Administered By Ray Staines, VE3ZJ

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

VE3ATR, Rueben Lautenslager, Kincardine, ON
VE3BDB, Arthur Lavery, Chatham, ON
VE3BHN, Louis Hajas, Brantford, ON
VE3BR, Henry Harley, Tillsonburg, ON
VE3DZF, William Bentley, Niagara-on-the-Lake, ON
VE3EJ, Roland Suran, Toronto, ON
VE3NGF, Jim G McKee, Mississaiga, ON
VE3NOL, Ben E Franklin, Stroud, ON
VE3QEH, Dorothy Aldridge, Toronto, ON
VE7AKO, George C Dingwall, Victoria, BC
VE7CND, William F Phillips, Ganges, BC
VE7EZN, Norman S Harrison, Sardis, BC
VE7GI, Frank Taylor, Aldersgrove, BC
VE7IC, Ellison Queale, Victoria, BC
VE7ZD, Donald S Lotzer, Victoria, BC.

Note: Silent Key reports sent to *QST Canada* must include name, address and call sign of *reporter* in order to be listed. 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*.

Jamaica— After Gilbert

Part 2: What it was like to operate in Jamaica — and what was learned from the experience.

By Gordon Murray, VE3JSJ
136 Wendover Dr
Hamilton, ON L9C 5X5

Over the next couple of days we tried to get as much information as possible from hams in Kingston, Montego Bay, and Mandeville. Traffic about medical supplies had priority. Many amateurs from Canada, the US and the Caribbean assisted us by relaying during times when the QRM was bad. Once, Sam, AX2BVS, in Sydney, Australia, even relayed traffic to a station in Long Island who in turn relayed it to Canada. During those days, we were the only link with the outside world. Even airline schedule information was passed to us from the US and Canada, since the phone links between the Jamaica Jamaica Hotel and the airport were down.

Jim managed to travel quite a bit along the north shore, from near Lucea in the west to Port Maria in the east. We tried to pass as much information as possible about what he saw back to Canada. It wasn't until our third day of operating that we organized a 40-metre net for communications within the island. There were only seven Amateur Radio stations functioning on the entire island: Bob, N4MHV in Sandy Bay; Graham, W4PJS and Al, W9ELR (Salvation Army), and Gerald, 6Y5AG, in Kingston; Ralph, N4HTU and Dave, K2BPP, in Montego Bay; Riaz, 6Y5NR, in Linstead; an unidentified station in Mandeville; and, of course, Jim, VE3FBU, and myself, in Runaway Bay.

Almost all our traffic had to be handled on HF. We did have a scratchy 2-meter link to Montego Bay, some 50 miles away. All other in-island traffic was handled on 40 metres. Trying to copy Montego Bay 50 miles away on 20-meter backscatter in the American phone band was just too difficult!

The biggest problem was not the outbound traffic but what to do with the hundreds of incoming health and welfare inquiries piling up on our desks. Eventually we decided that unless there was a telephone number, there was little point in accepting the inquiry. Of course, even when we had a telephone number, there was little chance of completing the phone call since the lines were down. It was a difficult situation, and must have been extremely frustrating to those waiting for information on their friends and relatives. But we just didn't have the time, manpower, vehicles or fuel to drive around personally and make contact.

Eventually, all health and welfare inquiries received at Runaway Bay were passed to Riaz, 6Y5NR, in Linstead about 50 miles north of Kingston. Riaz did a magnificent job, handling traffic with a speed and expertise that was a delight to hear, while still finding time to continue with his medical practice and relief work in his own community.

We usually started our day at 6 AM. On the hour, we had schedules with Canadian stations. Among the many VE3 operators who helped were Gerry, ACA; Ron, AUM; Dick, COO; Frank, DPC; Julius, FYY; Ross, GRM; Garth, HO; Harvey, LLO; Roy, LSE; Fergie, LVO; Paul, NYC; Bob, OCQ; and Ken, OIN. Many US, Caribbean and Mexican amateurs also assisted with phone calls and relays. Whenever possible, we tried to get away from the 20-metre QRM. During the first two minutes of each hour, I would call on 28.170 MHz. If no contact, I would try the next two minutes on 21.170 MHz. If still no contact, I moved to 14.125, 14.135 or 14.145 MHz. When all else failed, I would check in on the 14.275-MHz International Emergency Frequency. Usually, the first Canadian station to contact us would then inform other Canadian operators of our frequency using the VE3TWR repeater or the Ontario Amateur Radio Service (ONTARS) Net on 80 metres.

This schedule sounds complicated and was confusing to some who were not aware of the it. However, it did enable us to take advantage of some excellent band conditions. About halfway through the week, there was even a 10-metre opening to Toronto during which I was able to access the VE3TFM repeater on 29.62/.52 FM. Gord, VE3HSF, linked me to VE3NCF, a repeater in Hamilton, and I had a short contact with VE3DPC and VE3NYC. Later, VE3OIP built a "black-box" which enabled amateurs on the VE3TFM repeater to talk to us directly on 10, 15 and 20 metres. That was Amateur Radio at its best!

On most days, the traffic handling ended at 2 AM. Before turning in, I usually had

No one took photographs of the VE3JSJ/6Y5 operation in Runaway Bay, Jamaica, but VE3JSJ made a videotape and was able to get these photographs — and the ones we used last month — from that. Above: VE3FBU (left) and VE3JSJ operate VE3JSJ/6Y5 in the Jamaica Jamaica Hotel only days after Hurricane Gilbert had devastated Jamaica.

an opportunity to discuss the day's accomplishments with Sam, AX2BVS, in Sydney. Sam is heavily involved in coordinating international emergency nets and I hadn't had many contacts into Australia before. It was enjoyable talking with Sam — until the need for sleep became overpowering! I remember telling him that I felt much closer to Australia now that I had seen the Southern Cross.

Wednesday, September 21. We were anxiously keeping our radio "eyes" on tropical storm Helen. Would Helen strike Jamaica? We were all a bit paranoid about hurricanes! I remember talking to Ron, VE3AUM, up in Ottawa about that. He used to be part of a group which used to track them. But on Thursday night he radioed that Helen was moving north over the cooler waters of the Atlantic. It would pose a hazard only to shipping in its vicinity. "The Caribbean can sleep easy," were Ron's last words before we closed for the night.

Reflections

Assembling the 2-metre beam: 40 metres might have worked better.

In terms of equipment, we were adequately prepared — except that we did forgot the tape measure. While a beam and a linear would have been useful, the five-band trapped dipole performed adequately with the 80-100 watts RF from the FT-757GX. We are indebted to VE3NYC who advised us to crank up the microphone gain and speech compression to the maximum. To avoid FMing, I doubled the leads from the power supply to the rig. The sides and top of the FT-757GX sometimes got too hot to touch, but a small fan soon solved that problem. The ability to switch frequencies between any portion of any HF band was very useful, and I was able to set the antenna tuner so no resetting was required from 80-10 metres. It could have been an advantage to have a transceiver with general-coverage transmit and receive. While we used only amateur frequencies, it was conceivable that our amateur station might have been asked to pass traffic on a non-amateur frequency. On VHF, a handheld which covered the marine VHF band might have become valuable.

We are now aware of some deficiencies, especially in our message handling techniques. We used looseleaf message forms. It was hot down there and the hotel was designed to let the air circulate. As the air circulated, so did our message forms! With more than one person involved, we needed a foolproof system for keeping track of messages and their status. We didn't bring a logbook. The loose pieces of paper we used for a log tended to get lost, especially when the need for sleep became overwhelming. Another time, we would use message forms and log sheets bound into a book. An HF bulletin board running AMTOR would have been a marvelous way to handle messages. I suggest development of such a bulletin board be given high priority.

We are also aware of some deficiencies at the other end. We found that our Hamilton Amateur Radio Club station located in the Red Cross Building, Hamilton, was inadequate on HF. While we would not minimize the importance of operators using home stations, some operators who are willing to help during an emergency do not have access to a first-class station. For them, such a station in a central location would be the answer. Our Hamilton club has already done a commendable job of upgrading its station. A telephone has been installed. Lists of emergency operators are available. We still need a solid-state transceiver with general coverage transmit and receive capability and we need a better antenna for 10, 15 and 20 metres. We need a beam.

There is a world of difference between handling emergency traffic on a distant country, and handling such traffic on our own continent. For a local disaster such as the Barrie tornado or the Mississauga evacuation, VHF radio is indispensable. There are usually a sufficient number of trained individuals who can be sent to the affected areas. Cellular telephone service is now available. There will be a central registry of casualties.

To put the Jamaica disaster in perspective, imagine an area the size of Central Ontario in which the hydro is down. There are no telephones and there is no central registry of casualties. You have perhaps six radio amateurs in that area. There are no repeaters. All communications must be carried out on HF. Car batteries are the usual power supply. Once the gas tank is empty there is no way to recharge the battery because there is no electricity to pump gas. Or there is no gas.

Could we have flown in a dozen or so VHF repeaters, linked on UHF, completely self-sufficient and able to operate under their own power for a week? Where could we have found the manpower to install and maintain them? What do you do about health and welfare inquiries which pile up because there is no way to deliver them?

It would have been very useful to have had a couple of mobiles equipped for operation on 20 and 40 metres. They could have accessed and given us first-hand accounts of damage in some of the more remote parts of the country, and helped pass some of the traffic. From the excellent communications between stations on 40 metres, I am confident a mobile station on 40 would easily have been heard across the island.

I have a multitude of memories of Jamaica — memories of meeting Ben Johnson's father and linking him by radio to his son at the Seoul Olympics. Memories of Ron, VE3AUM, in Russell, Ontario, relaying to us that ill-fated race as it took place. Memories of the international community of Amateur Radio operators without whose support our journey would have been pointless. Memories of phone-patches home to my wife, Linda. Memories of people breaking into tears by the radio because they had contacted their families and loved ones in the Caribbean, Canada, the US, or Europe. Memories of homes wrecked, churches with windows blown out and crops destroyed. Memories of hundreds of Jamaican people lining up for food, water and shelter.

I also have memories of Jamaican hospitality and a beautiful country with warm balmy ocean breezes and fantastic sunsets. I love our northern country of Canada, but I have never seen the sun ride so high in the sky at noon as in that tropical land, or drop so quickly to reveal the moon lying near the horizon. I have never seen seas so clear. I now understand why a northerner like me can fall in love with a Caribbean island. These are the strongest memories of all.

A final note: We would like to recognize the many amateurs in Hamilton, Burlington, Oakville, Toronto and elsewhere areas who were on the scene well before and Jim, VE3FBU, and I became involved. For example, Frank Gue, VE3DPC, handled emergency traffic regarding conditions at Kingston (Jamaica) Airport on behalf of amateurs in Mandeville, Jamaica. He and other amateurs had already set up schedules which greatly facilitated VE3HSF's role in coordinating operations in the Toronto-Hamilton area. Thanks to all.
—Gordon Murray, VE3JSJ

Try a Bobtail Curtain

Here's an inexpensive antenna that really gets results. It's a natural for the 18-MHz band.

By Greg Hollinger, VE3NXB
270A Northlake Drive
Waterloo, ON N2V 1A9

Last summer, I needed a a simple HF antenna that could be erected without the need for high supports. I needed an antenna that had

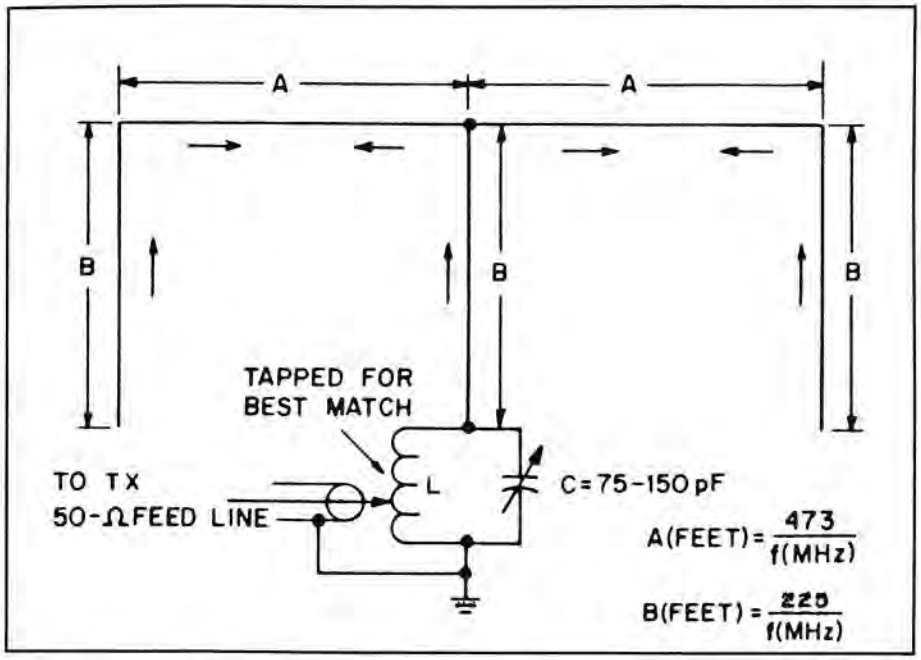
—low angle of radiation for DX
—efficient performance over poor soil
—low sensitivity to noise, and
—gain when compared to the simple ground plane verticals and low dipoles I had used in the past.

After studying the *ARRL Antenna Book* and *All About Vertical Antennas* (by Orr and Cowan), I decided a bobtail curtain would satisfy these needs.

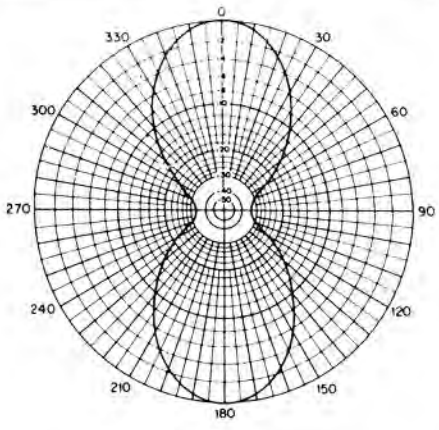
As you can see from the drawing, a bobtail curtain uses three vertical wires, each a quarter wavelength long, spaced one half wavelength apart. They're placed in a single plane. The two horizontal wires feed the verticals in phase and provide a current distribution of 1:2:1. Fed from the centre wire, the currents on the two horizontal wires end out of phase. Radiation from these wires tends to cancel. In a bobtail curtain, the vertical wires do most of the radiating.

What's the radiation pattern like? Basically, it's a broad figure eight, perpendicular to the plane of the antenna. Maximum radiation is broadside to the antenna, minimum is off the ends.

The antenna is fed at a high-impedance point. To use coax transmission line, a parallel resonant circuit with a tapped inductor will provide a suitable match. To tune the system, put an SWR ridge in the feedline as close to the antenna as possible. Start with the feed tap a couple of turns up from the ground end. Apply a bit of power and adjust the variable capacitor and feed tap for minimum SWR.



The bobtail curtain is an excellent low-angle radiator with a bidirectional pattern. Dimensions can be calculated from the equations. For the 18-Mhz band, L should be about 12 h (17 turns on a 2.5-inch diameter form). *(Tnx* ARRL Antenna Book*)*



Calculated horizontal directivity of a bobtail curtain. The antenna lies along the 90-270-degree axis. *(Tnx* ARRL Antenna Book*)*

I designed my bobtail curtain for 18.08 MHz in the new 17-metre band. It seemed like a good choice for three reasons: only low supports would be needed; there was an international shortwave broadcast band only 100 kHz away, a dependable source of signals for tests; and the band was uncrowded. Even now, all you'll hear are VEs and DX.

My antenna was aligned to provide major lobes at 75 and 225 degrees, that is to produce a northeast-southwest pattern. A coax switch allowed instant comparison with a second antenna, a quarter-wave groundplane. The results were impressive for such a simple antenna.

A bobtail curtain has a theoretical gain of about 5 db over a groundplane antenna when the signal path exceeds 4000 km (2500 miles). Using my IC-735 transceiver with its 10-db preamplifier and 20-db attenuator, I found the S-meter accurate for measurements referenced to the S-9 level. I confirmed this by comparing with an FT-757. With some confidence in my measuring technique, I found a broadside gain of 6-9 db over signals that were S-9 on the groundplane and 12-25 db nulls off the ends of the wires. In the direction of the major lobes, the bobtail curtain made my 100-watt signal sound like about 500 watts. Numerous QSOs with European stations indicated the curtain offered a 1- 2 S-unit improvement over the groundplane. As an added bonus, the curtain was quieter (less QRN) and signal fading (QSB) was not as deep.

This simple antenna has allowed me to contact FT5ZB on Amsterdam Island and many other weak stations that would have been impossible to contact with my groundplane. Why not try a bobtail curtain? It will work for you too!

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*CTCSS tone features require optional FTS-17 Tone Squelch Unit.

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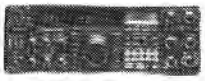

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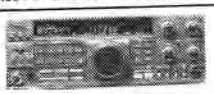

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Happenings/Evénements

Conducted By Harry MacLean, VE3GRO

XL3IG: "International Gateway"

How do you celebrate the fiftieth anniversary of the Bluewater Bridge, a bridge that has become an international gateway and a symbol of friendship between residents of Point Edward and Sarnia, Ontario, and Port Huron, Michigan? Eastern Michigan Amateur Radio Club and the Lambton County (Ontario) Amateur Radio Club had the answer: special event station XL3IG.

Both clubs appointed committees a year ago — to plan the project, meet with the Bluewater Bridge Commission and get permission to operate the station from bridge property. The Commission enthusiastically supported the project. They provided a 20-foot square tent, 110-volt power and a snow fence. Amateurs provided the rest: a TS-520, a TS-820, a 400-foot long wire and a multiband dipole (both of which were supported at one end by the bridge), a Gem quad on a 40-foot tower, and a trailer so from time to time, operators could sneak away for some quiet and a cup of coffee.

Anniversary celebrations were held a week early so as not to interfere with a fair in a neighbouring village. Events on September 30-October 2 — included the RCMP Musical Ride; a parade and a hands-across-the-bridge ceremony involving the Girl Scouts, Girl Guides, Port Huron's Big Red Marching Band, the Ontario Provincial Police Band, the Shriners' Band, barbershop quartets, the Canadian and American Legions, antique cars and the Budweiser Clydesdales; a Sarnia Yacht Club sailpast; a concert by the Port Huron-Sarnia, Bluewater Symphonic Band, and a giant fireworks display. When a visit by the Canadian Forces' Snowbirds was cancelled because of an accident which took the life of one of its members, the Skyhawks sky diving team filled in.

As traffic on the Bluewater Bridge rumbles overheard, members of East Michigan Amateur Radio Club and Lambton (Ontario) Amateur Radio Club welcome visitors to XL3IG.

The banner, the work of Dave, VE3DGL, and YL Jackie, says it all. Operating the station (l-r): Larry, VE3EDY, Stan, AC8W, and (back only — sorry, Doug!) VE3BGK. *(VE3DGR photos)*

For the amateurs, of course, all this was peripheral. On Friday, September 30, amateurs from the two radio clubs were busy erecting antennas. Operation using the long wire and the dipole began before noon. The quad was added later that day. Murphy was nowhere in sight and all of the antennas performed as predicted. Getting people to help might have been a problem. However, it turned out, as, there never was a shortage of willing hands to help set up, operate, on take things down on Sunday, October 2.

XL3IG operated on 80-10 metres on both phone and CW. (There was packet operation as well, but it was found to cause RFI and the TNC did not like the "XL" prefix. It was moved to VE3CKU's QTH where the problems were corrected.) Band conditions were excellent — especially on 10 metres — and contacts came quickly. In all, XL3IG made 1031 contacts, working seven provinces, 30 states and 54 countries in 55 hours of operation.

As an international event, the XL3IG operation was judged outstanding. It effectively publicized the fiftieth anniversary of the Bluewater Bridge. It also caught the attention of a public that was able to visit and learn about Amateur Radio firsthand. And it strengthened the friendship of 45 amateurs in two radio clubs on different sides of the Canada-US border. Don't be surprised if they come together again — in an international Field Day effort later this year! *—Tnx Gil Finley, VE3DFU*

WHERE'S MY QST?

Many of you have been receiving *QST* in the same plastic wrapper as *QST Canada*. Just a note to say that, beginning with this issue, *QST Canada* is being sent to all readers separate from *QST*, directly from London, Ontario, by third-class mail.

SASKATCHEWAN MERGER SURVEY

According to a recent survey, a majority Saskatchewan amateurs feel that CRRL and CARF should be moving towards a single Canadian Amateur Radio organization. Of 784 questionnaires sent out by VE5RC, VE3WM and others, 154 or 19.5 % were returned. Fifteen questions were asked on the topic of which organization better served Canadian amateurs. Results were: CARF—25%, CRRL—26%, same—25% and no opinion—24%. On the question, "Would one national organization founded on CRRL and CARF better serve the interests of Canadian Amateur Radio operators?", 97% said *yes* and 3% said *no*. In the survey group, 27% were members of local clubs, 23% of SARL (Saskatchewan Amateur Radio League), 23% of CRRL, and 20% of CARF. Seven percent belonged to no club or organization.

In the soapbox section, no one came away unscathed. Here's a sampling:

"I think what we have here is a prime example of 'United we stand, divided we fall.' Whatever we have in the way of resources and support would be better utilized in promotion of one organization rather than two."

"I am upset about the apparent jealousy and lack of communication between CARF and CRRL. It appears from my somewhat limited information that CRRL has seized upon a rather flimsy excuse to withdraw from amalgamation talks."

"I am of the opinion that CARF does not carry much influence. Evidence of this is the continual band expansion in favour of American operators".

"I feel we should be members of ARRL. ARRL has served North American amateurs for 65 years or more and does a professional job of it. Our little strength should add to and support them."

"I think Canadian identity (real or imagined) is very important."

"If these ham organizations merge and produce a good publication, it is possible I may subscribe to it."

The full report on the Saskatchewan survey has been forwarded to the executives of CRRL and CARF.

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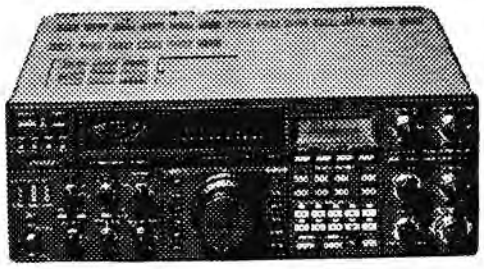

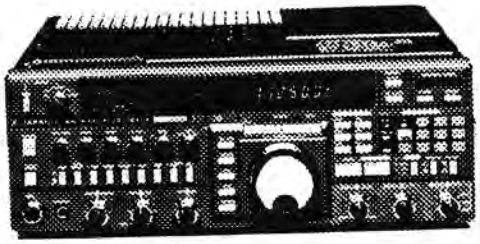

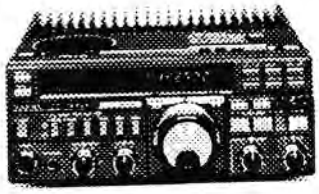

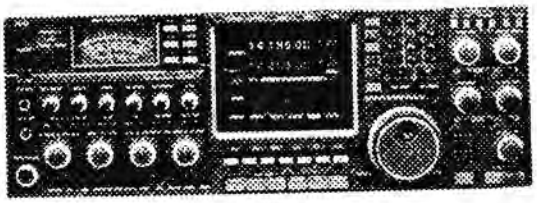

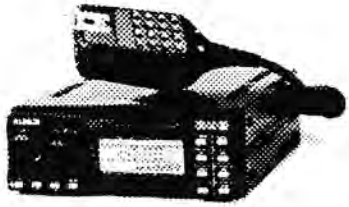

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END OF CW AT SEA?

The following bulletin was distributed by the Associated Press (AP) wire service on November 13 and comes to us courtesy of Fred Maia of the *W5YI Report*. Basically, it signals the end of radio operators and aural telegraphy aboard ocean-going vessels. The change was fiercely opposed by members of the Maritime Radio Officers Union:

London (AP) World shipping leaders have given the go-ahead for the introduction of new automatic communications that will mean the end of Morse code for ships at sea.

The Global Maritime Distress and Safety System transmits and receives automatically, so Morse will no longer be a requirement for ships. Shipowners are expected to phase out radio operators when the new equipment is installed, starting in 1993.

Some parts of the of the new technology, which includes satellite communications, are already in use on British ships and, from 1999, they will be compulsory on ships worldwide.

The decision was taken Friday, November 11, during a two-week London conference of the International Maritime Organization, a United Nations agency for safety of shipping and preventing ships polluting the seas.

The 66 countries represented at the meeting accounted for about 97 percent of the world's ships, said spokesman Roger Kohn. A statement afterwards called the decision "one of the biggest advances in maritime communications since the introduction of radio."

The new system allows the crew to send a distress signal by pushing a button which should prevent ships disappearing without a trace when messages cannot be sent in time. Ships will also carry a radio beacon which will give the ship's position and must be able to float free if the ship sinks suddenly.

Kohn said: "Morse has great romantic connotations with the gallant radio operator sending off distress calls as the ship sinks. But we are bringing in something that will be much better and which should save more lives."

VE2QO NEW QUEBEC DIRECTOR

Congratulations to Bruce Balla, VE2QO, who was recently nominated and elected CRRL Quebec Region Director.

Bruce was first licensed in 1968. Over the years, he has developed an interest in many facets of Amateur Radio: DX and awards, 2-metre repeater operation and frequency coordination, satellite work, and UHF fast-scan television. He holds DXCC in Mixed Mode (over 250 countries confirmed), CW, SSB and RTTY (first RTTY DXCC in Canada and No 12 worldwide).

Bruce Balla, VE2QO: new CRRL Quebec Region Director.

Bruce has served as president of the Montreal-area Westminster Amateur Radio School, and two terms as president of the West Island Amateur Radio Club. He is a life member of ARRL, CRRL and AMSAT.

Bruce works for the Gemini Group, a company that provides communications services for several major airlines. He lives in St-Eustache, Quebec. His new two-year term of office began on January 1.

NOTES FROM ALL OVER

☐ Congratulations to South Pickering Amateur Radio Club, winner of the Keith Russel Memorial Trophy for the highest score of any Canadian station in this year's Field Day. Members of the South Pickering club (South Pickering is located just east of Toronto) had a total of 9158 points in the 6A transmitter class. Congratulations also to Halifax Amateur Radio Club (VE1FO) who accepted a Field Day challenge from Cowichan Valley Amateur Radio Club (VE7CVA) and won. They're now looking forward to their feast of Pacific salmon...

☐ As reported last month, in the November 21 Federal Elections, Communications Minister Flora Macdonald (PC, Kingston and the Islands) was not reelected. Prime Minister Mulroney has named Lowell Murray, Government Leader in the Senate, to serve as Acting Minister of Communications. The change is not expected to delay current Communications Canada projects. Restructuring of the Amateur Service, for instance, should still be in place by September of this year.

☐ The ARRL Awards Committee has unanimously accepted the ARRL DX Advisory Committee's majority-decision recommendation to add Malyj Vysotskij Island to the DXCC Countries List. Malyj Vysotskij, leased by Finland from the Soviet Union, was first found to qualify as a separate DXCC country in 1970. However, it was not activated until the 4J1FS operation last year. DXCC credit will now be given for contacts with Malyj Vysotskij made after 1988 July 01. Credit for such contacts will be given beginning on 1989 March 01. *Do not send 4J1FS cards to ARRL before this date. They will be returned without credit.*

CRRL National Convention in Winnipeg

CQ... CQ... CQ... The face of Amateur Radio is changing. "Amateur Radio at the Crossroads" is the theme. Join us at the crossroads of the Red and Assiniboine Rivers for the CRRL National Convention in Winnipeg. A stellar cast of speakers will lead us in discussion of changes taking place and how we will cope with them. Come to Winnipeg on the weekend of 1989 August 18-20 and share in the forums, activities and fun of great Western hospitality. Displays, discussions, demonstrations combined with great food, prizes and keynote speaker await you this summer. Winnipeg Amateur Radio Club is the host and you will be our honoured guests. For more information, write to CRRL Convention '89 Committee, Box 352, Winnipeg, MB R3C 2H6. *—Ed Henderson, VE4YU*

Convention nationale CRRL á Winnipeg

CQ... CQ... CQ... Le visage de la radio amateur est en train de changer. "Nouvelles voies de la radio amateur" en est le thème. Soyez des nôtres à la Convention nationale CRRL qui se tiendra au carrefour des rivières Rouge et Assiniboine à Winnipeg. Une pléiade de conférenciers conduiront la discussion sur les prochains changements et comment y faire face. Venez à Winnipeg la fin de semaine du 18 du 20 août 1989 et partagez sous forme d'activités et de distractions la formidable hospitalité de l'ouest. Expositions, discussions, démonstrations, associées à une délicieuse nourriture, à la camaraderie, à des prix et à un éminent conférencier, vous attendent pendant l'été 1989. Le Club Radio Amateur de Winnipeg est votre hôte et vous serez nos invités d'honneur. Au plaisir de vous y rencontrer! Pour plus d'information, écrivez à CRRL Comité de la convention '89, CP 352, Winnipeg, MB R3C 2H6. *—Ed Henderson, VE4YU*

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Section News/Nouvelles des Sections

Conducted By Jack Strangleman, VE3GV

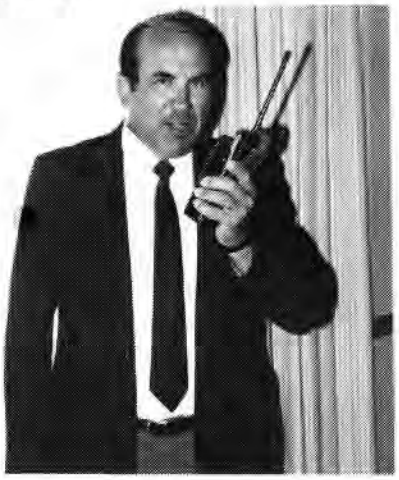
The CRRL Field Organization Forum

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 Alberta Section: you are hereby solicited for nominating petitions pursuant to an election for Section Manager. Nominations will be received at CRRL Headquarters until 1600 EST 1988 March 10. For further details, see this column in last month's *QST Canada* or contact CRRL Headquarters.

SECTION MANAGER ELECTION RESULTS



Ontario Section Manager Larry Thivierge, VE3GT: reelected. You'll usually find Larry on the Ontario Phone Net, evenings on 3742 kHz.

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

REPORTS FOR 1988 NOVEMBER

Alberta:SM, STM, DEC: Bill Gillespie, VE6ABC. ASM: VE6AMM. SEC/TC: VE6AFO. OO: VE6TY. Congratulations to Ken Oelke, VE6AFO, of Calgary who was successful in the election for CRRL Midwest Director. On January 1, Ken takes over from VE6ABC who will now concentrate on other areas of Amateur Radio. The New Horizon Committee of Rose City ARC in Camrose received a sizable grant to set up a station at the Camrose Fair Grounds. The station will have a tower and beam, HF and 2-metre equipment, and capability on packet. The City of Camrose will have access to the station in case of emergency. The station should be up and ready by Christmas.

British Columbia: SM: Ernie Savage, VE7FB. British Columbia Public Service Net Manager Jim, VE7JN, reports that the net is very active with checkins high: 179, low: 114 and total: 4380. British Columbia Emergency Net Manager Fergie, VE7EJU, reports that we have finished a good year and have awarded forty-nine Section Net Certificates (SNC) for those that had checked in fifty or more times during the past year. Our top people are VE7EJU (349), VE7EJW (349) and VE7BZI (337). In the forty-nine are members that represented BCEN on RN-7. To all, thanks for your support. We are waiting for the honour roll from the British Columbia Phone Net. Thanks to all clubs that have supported us by sending us their newsletters, and to others who phoned or wrote in with news for this column.

Manitoba:SM: Jack Adams, VE4JA. It's hard to believe that today is December 5 as the temperature is nine degrees C. For those who never finished antenna work, it's just what the doctor ordered. A big thank you to Stu Martin, VE4STU, who has been a great help with our Amateur Radio class in Dauphin. Stu got his Amateur ticket in the fall of 1987 and his Advanced ticket this fall. Stu claims he never got anything for nothing and he didn't plan on waiting for Restructuring of the Amateur Service to get freebie Advanced privileges. Good thinking, Stu, and enough said. Yours truly finally purchased a four-element monobander and got it up on a 55-foot tower with the help of VE4STU. Sincere thanks.

Maritimes-Newfoundland:SM: Carl Anderson, VE1BQO. I recently got on 2-metre packet radio so news for this space can now be forwarded to me through the PBBS (Packet Radio Bulletin Board System) at VE1EI (VE1BQO @ VE1EI). If you aren't familiar with the MARCAN packet radio network, you may be surprised to learn how sophisticated it is. It can be accessed twenty-four hours a day on 145.010 MHz or on HF. It automatically uses HF and VHF to forward PBBS and NTS messages from the network to the rest of North America. The network's nodes also allow individual packet stations to connect to each other over a large parts of NS, NB, PEI and beyond for keyboard-to-keyboard QSOs or for leaving messages. You can find CRRL, ARRL and CARF bulletins posted on PBBSs along with network maps and information, general Amateur Radio information and even computer software. VO1BD reports that several Newfoundland amateurs are active on packet, so look for Newfoundland to "get connected" to the network soon. Newly elected radio club officers: Westcum (West Cumberland-County, NS) ARC are President: VE1BFB, Vice President: VE1CCL, Secretary: VE1BK, and Treasurer; VE1CZD; Halifax ARC: President: VE1PQ, Vice Presidents: VE1CHI and VE1MR, Secretary: VE1BLM and Treasurer: VE1VX. I would appreciate all clubs sending me their current list of officers and correct mailing address.

Ontario:SM: Larry Thivierge, VE3GT. STM: VE3CYR, SEC: VE3GV, BM: VE3GSA, TC: VE3EGO. Unfortunately, because of Canada Post, our STM's September report was not received in London in time for publication in December. As a result, individual traffic reports for that month were not published. VE3CNE earned its third BPL during that month as well. ONTARS commenced operation on 1972 January 08. With the dissolution of the Radio Society of Ontario (RSO), sponsorship of ONTARS has been transferred to the CRRL Field Organization, Ontario Section. The operation, policies and net frequency as established by RSO in 1972 will continue. Gabrielle, VE3LVE is net manager and Bruce, VE3BC, the net's founder, will be CRRL liaison and coordinator. If you have an hour to spare at any time, VE3LVE would appreciate your help as net control station for ONTARS. Congratulations to VE3FN on his recent reelection as our CRRL Ontario Region Director. After twenty-two years, *Early Days of Amateur Radio in the Niagara Peninsula* has become a reality. It is the history of Amateur Radio in the Niagara District up to World War II. It was researched by VE3DTW and VE3TW and arrived just in time to celebrate the 40th Anniversary of NPARC. Special thanks to VE3DSW, VE3NCD, VE3TRH and VE3LVH for their assistance with this project. VE3ATI's most entertaining presentation on "Camp X" was well received at a recent Peel ARC meeting. VE3IJT and VE3FIO have been working a lot of ATV — P5. The Tek-Net is another weekly net on repeater VE3RPT. It will be a technical net geared towards sharing the inner secrets of radio, repeaters, computers, linking, antennas and the like. VE3GBK is NCS on Thursdays at 1900. VE3KBU is new EC for Sudbury. Thanks to VE3FAC and VE3OZB, there will be a quantity of K2RIW kW-level amplifiers built in Canada. These will use 4CX250Bs, 8874s or the equivalent on 144, 220 and 432 MHz. Contact VE3FAC for information. Best wishes to VE3APC who is leaving DOC Windsor for the London office.

Quebec:SM: Harold Moreau, VE2BP. STM: VE2EDO. SEC: VE2LYC. BM: VE2ALE. Input from clubs for this Section News is solicited. Please contact your SM. Des nouvelles des clubs pour Section News seraient apprécié. Faire parvenir à votre SM. Rev Charles, VE2 EC, a célébré son 87eme anniversaire en novembre at toujours actif sur les ondes. Gervais, 6W7 PE, est maintenant VE2 PES.

Saskatchewan:SM: Bruce Rattray, VE5RC. Saskatchewan Amateur Radio League (SARL) is alive and well as Glen, VE5GG, is out of the hospital and feeling fine. Send SARL membership renewals to Alex, VE5OI. 1989 Hamfest coming to Regina on August 11-13. Kudos to VE5KZ who represented Saskatchewan 100% on DTEN during November. Bill, VE5WM, needs volunteers for the Klondike Derby in February. Syl, VE5YK, has amateurs ready for the Briar communications on March 3. ARES Net remains on 3.780 MHz Sundays at 1500 UTC. Thanks for fine on-the-air discussions. RARA's Amateur Radio course has bonuses. EMO will refund cost of course plus cost of first year license fee upon passing the Communications Canada exam. New amateur must sign up on the RECOMMS team. Also, RARA offers students free associate membership for one year. RECOMMS team led by Tom, VE5TH, and Bill, VE5WM, took part in November 26 EMO Exercise: "Operation Spinning Top", a mock disaster which consisted of a school bus and auto crash chain reaction with five vehicles and two cars burning, and an overturned truck spilling dangerous goods. Drill involved fire departments of Pilot Butte and Balgonie, the RCMP, and RAMRAD ambulances. At the scene: VE5s AGM, BW, KF, RN, TH, UU, WM; and standing by on HF, two metres and packet: VE5s AAA, AFQ, AGA, AHW, IG, IQ, JMI, LA, RC. Did you know that Saskatoon ARC's VE5AA was first licensed in 1923? That Vic Neal, VE5HU, was first licensed in 1928? 73.

Public Service/Service Public

Conducted By Jack Strangleman, VE3GV
and Bob Boyd, VE3SV

An Aircraft is Down! Sort of...

On October 31, in what may have been a "first", Amateur Radio operators, police and civil defence directors in Canada and the US cooperated in a simulated search and rescue operation.

Location was a wilderness area west of Lake-of-the-Woods on the Ontario-Minnesota border. Aircraft from Kenora and Roseau, Minnesota, some twenty amateurs from both sides of the border, sheriff's officers and civil defence directors from Roseau and Lake-of-the-Woods counties in Minnesota, and Ontario Provincial Police (OPP) from Kenora participated. All communications were by Amateur Radio.

The scenario involved an aircraft from Fargo, North Dakota, en route to Kenora with seven people aboard, down on the Canada-US border west of the airport at Pinecreek, Minnesota. Word of the "crash" was flashed to area amateurs by Woody Linton, VE3JJA, EC for Kenora.

Within half an hour, aircraft carrying Amateur Radio operators were in the air and a network of three two-metre repeaters, a base station and two control stations was in operation to coordinate communications. Airborne amateurs spotted the downed aircraft and landed to set up a base station at the crash site. It was reported that the pilot and a female passenger were dead, another man was seriously burned and in shock, a younger man had wandered into the bush to seek help, an elderly man had suffered severe back injuries and yet another man had suffered minor injuries but was uncontrollably hysterical.

Handheld transceivers and repeaters were used to relay the information to Kenora, to alert the OPP and call in an air ambulance. OPP were requested to videotape the scene for investigators who had been notified by local authorities. Imaginary ground personnel were pressed into service by the Roseau County Sheriff's Department.

In this make-believe emergency, Amateur Radio handled all the communications for the search and rescue operations, ambulance and police. When conditions deteriorated on the two-metre band, communications continued using the two control stations, one in Roseau and one in Kenora, on 75 metres. The exercise was the culmination of a two-year effort by Canadian and US amateurs to put together a combined search and rescue and emergency communications test for the huge wilderness area surrounding and including Lake-of-the-Woods.

Woody Linton, VE3JJA, who is also an OPP officer, directed the exercise from Kenora. Dale, VE3EFY, served as control operator. Other Kenora amateurs participating: John, VE3JJH, Andy, VE3JJX, Art, VE3LMB, Reg, VE3NNF, and Nick, VE3ZAN. Paul, VE3SNO and Dick, VE3VGU, operated the Sioux Narrows repeater. Minnesota amateurs involved: Bill, W0DCM, base operator, and Ken, W0HQL and Bill, W0WJK. Roy, K0DID, Roland K0OTE and Jerry, WB0QCY, served as relay stations. —*VE3SV*

The tradition continues: the CRRL BPL Award.

Field Organization Reports 1988 November

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 786:

Reporting	ARES Members
VE3GV (VE3s EFX, FOB, JPP, LPM, LFV, LKI, MB, SV)	555
VE6AFO (VE6AGH, AMM, XD)	231

CRRL Section Traffic Manager Reports

Call	Orig	Rcvd	Sent	Dlvd	Total
VE1BKM	0	26	25	0	51
VE1ALU	2	9	11	0	22
VE1DLC	3	4	8	4	19
VE1VX	0	0	3	0	3
VE2EDO	5	20	32	9	66
VE2BP	4	14	12	14	44
VE2WH	2	11	11	16	40
VE2JN	2	9	8	7	26
VE2EC	4	2	6	4	16
VE2GEJ	5	3	5	3	16
VE3ORN	6	73	74	8	161
VE3GSQ	0	86	69	2	157
VE3CYR	3	92	48	3	146
VE3BCZ	18	53	50	3	124
VE3GT	1	26	52	0	79
VE3BAJ	1	1	55	0	57
VE3EAM	11	17	11	17	56
VE3GNW	0	17	30	0	47
VE3IN	0	33	2	2	37
VE3NVJ	2	11	7	8	28
VE3KXB	0	3	14	2	19
VE3FGU	0	4	8	0	12
VE3KCZ	0	5	3	3	11
VE3MCO	0	4	3	4	11
VE3SB	0	4	6	0	10
VE3AJN	0	2	4	0	6
VE3BDM	0	0	5	0	5
VE4FT	0	50	40	19	109
VE4JA	15	10	35	20	80
VE4LB	0	25	11	5	41
VE4TE	0	25	2	0	27
VE4KE	0	10	10	4	24
VE6CHK	-	-	-	-	114
VE6XV	-	-	-	-	30
VE6GUS	-	-	-	-	14
VE6CPP	-	-	-	-	6
VE6ABC	-	-	-	-	4
VE6MJ	-	-	-	-	1
VE7EJU	6	96	65	0	167
VE7ANG	3	48	68	2	121
VE7CJJ	8	34	28	3	73
VE7XA	0	18	27	3	48
VE7FB	5	21	11	8	45
VE7FRZ	3	9	12	1	25
VE7BCF	0	1	15	0	16
VE7BZI	1	6	2	6	15
VE7FME	0	3	4	0	7
VE7EIR	0	1	3	0	4

National Traffic System

Net (Mgr)	Sess	QNI	QTC
KTN (VE3AJN)	13	107	22
OLN (VE3POJ)	25	427	31
OPN (VE3IN)	30	644	103
OQN-1 (VE3GSQ)	29	55	85
OQN-D (VE3ORN)	30	196	51
OQN-E (VE3CYR)	30	208	94
OQN-L (VE3GSQ)	29	95	36
MEPN (VE4LB)	30	1270	24
MTN (VE4IX)	29	228	42
MWXN (VE4TE)	30	577	22
WRIN (VE4HK)	-	-	-
SATN (VE5AGM)	24	129	7
MJARC (VE5MML)	29	375	0
ARG (VE5EE)	30	666	0
SWXN (VE5EX)	30	834	0
APSN (VE6AKY)	30	1442	10
ATN (VE6XV)	30	252	66
BCEN (VE7EJU)	30	100	183

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. September: VE3CNE

Public Service Honour Roll

This listing is available to amateurs whose public service performance during the month indicated qualifies for 60 or more points in the following nine categories (as reported to their SM). Please note maximum points for each category: (1) Checking into CW nets, 1 point each, max 30; (2) Checking into phone/RTTY nets, 1 point each, max 30; (3) NCS CW nets, 3 points each, max 12; (4) NCS phone/RTTY nets, 3 points each, max 12; (5) Performing assigned NTS liaison, 3 points each, max 12; (6) Delivering a formal message to a third party, 1 point each, no max; (7) Handling an emergency message, 5 points each, no max; (8) Serving as an EC or NM for an entire month, 5 points max; (9) Participating in a public-service event, 5 points each, no max. Amateurs who qualify for Public Service Honour Roll 12 consecutive months, or 18 months out of a 24-month period, will be awarded a special certificate from CRRL Headquarters.

PSHR: VE7EJU (255), VE4JA (125), VE4LB (111), VE3ORN (107), VE7ANG (104), VE3BCZ (74), VE4FT (74), VE4STW (74), VE3CYR (72), VE7FB (67), VE3GT (66), VE3GSQ (61), VE2EDO (54)

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	104	0
ARES ONTARIO (VE3GV)	4	8	0
CRRL ONTARS (VE3LVE)	30	14147	0

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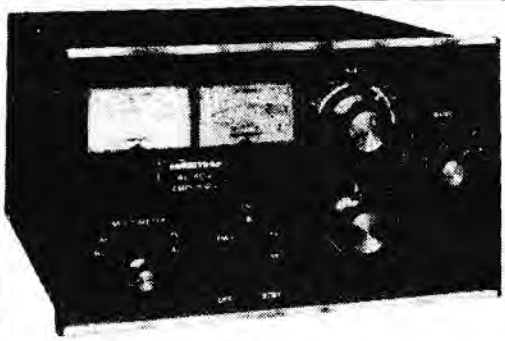

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AL-1500 with 8877 tube - full legal output with 65 watts drive.

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Learning About Harmonics

Harmonics are sometimes defined as children of an amateur. (That's a joke. We'll cover operating and short forms in another column.) Let me tell you how I demonstrate harmonics as they relate to amateur operation. We'll begin with some audio equipment and then haul out an old transmitter and receiver for an interesting demonstration.

Beginning with an audio generator and a loudspeaker, I run through the audible frequency range. Usually, I stick to 30 Hz-15 kHz because those are the maximum limits at which audio will be experienced. Above 15 kHz is too high and irritating in a classroom anyway. If you're lucky enough to have an old scope, let your students take a look at the audio waveform as the frequency is changed. If you connect the scope directly across the speaker may see a very distorted waveform. This is caused by the reactive load of the speaker. To show a nice sine wave at all frequencies, here's a suggestion. Connect a small audio transformer to the output of the generator, connect the speaker to the low-impedance winding of the transformer, and leave the scope connected across the high-impedance primary. In most cases you will now have a reasonably clean waveform to look at, while the speaker is nice and loud. A 6- or 12-volt transformer could also be used, with the 110-volt primary connected to the generator and the speaker connected to the 6- or 12-volt winding.

If you're lucky and the generator has a square wave function, it is useful to switch between sine and square waves while listening and watching the scope. The students can hear the distinctive fuzzy sound of the square wave. Point out that the frequency has not changed, but the signal now has additional information or components that distort it. It is important to stress "distortion" and "additional information". Students might consider the sound of a musical note produced by a violin, trumpet, piano or flute. Each of the notes may be at the same frequency but each has its own components or additional information that makes the individual instrument recognizable.

Then it's on to the transmitter. I use an old homebrew two-tube crystal- controlled rig running on exactly 3.5 MHz and a 7-watt Christmas light as a load. The light serves as a great output indicator for tune-up practice. Across the room, I use an inexpensive receiver that can be tuned to 3.5 MHz. A few feet of wire serve as an antenna. I "transmit" on 80 meters, but I have tuned the receiver to somewhere else so the student has to find 80. Remember, any chance to allow the student to have hands on equipment is a useful exercise. The student finds my signal on 3.5 MHz. With this accomplished, we listen, noting bandwidth and key clicks. Now, the student tunes the receiver to 7 MHz and still a very strong signal is heard. Then it's on to 14 MHz and that is probably enough, though you could go to 21 or 28 Mhz if you wish.

While listening to the signal on the various frequencies, we note the S-meter readings. I even adjust the transmitter for maximum S-Meter reading on, say, the 7-MHz second harmonic. Thus I am able to demonstrate several important points about the transmitter and harmonics. The transmitter appears to be on 3.5 MHz and a strong signal is found there. But obviously there is also energy at each of the harmonics (2nd, 3rd, 4th and so on). We can all hear the signals there. In fact, by adjusting the transmitter, I can show that it is possible to increase the RF output of the transmitter at a harmonic frequency.

At this point, talk about QRP operation. Show some *QST* articles or contest scores for QRP operation. Let them know it is possible to work the world with five watts. Discuss how 100 watts of power on the fundamental can sometimes mean five watts of power on a second harmonic and then talk some more about QRP. The students will soon realize that operation on one band does not necessarily mean that all the RF energy is confined to that band. It is useful at this time to have the student do some mathematics, showing the 2nd harmonic of 28-MHz operation and the 2nd harmonic operation of 50-MHz operation. Get the spectrum charts out again. Check out the TV channels. They'll soon get the message.

Harmonics, created by distortion of a sine wave or by the addition of other frequencies, is an important concept. It can be shown on the scope, using an audio generator as discussed above, or you can draw a sine wave of a specific length on the blackboard. Then draw three sine waves on top of the original, fitting them into same length. Now combine the voltages. If they are both positive, add them. If one is positive and the other is negative, subtract them. Graph the result. You will end up with a funny-looking squarish wave. Now try five sine waves together. Add and subtract as required and again, graph the result. A square wave will begin to appear. In other words, a square wave is actually a sine wave that includes harmonics. Ask the students to remember this for when you cover transmitters, modulation, clipping and all that good stuff. If they're going to transmit a distorted or clipped (almost square) wave, it definitely will be loaded with harmonics.

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THE "HAPN-T" — A 4800-BAUD MODEM FOR PACKET

Hamilton and area Packet Network (HAPN) has designed a plug-in 4800-baud modem for the TAPR TNC-1 and TNC-2 and many of its clones. The installation of this modem will allow normal packet operation to take place at four times the speed of the standard 1200-baud now commonly in use. Additional speed performance is achieved by a fast-acting modem squelch (about 15 milliseconds).

Many 1200-baud modems require the radio to do the squelching for the audio. The radio's squelch, which is optimized for voice operation, is often very slow and a major cause of missed packets. The volume control and squelch setting of the radio do not affect the operation of this modem and could be completely turned down if desired.

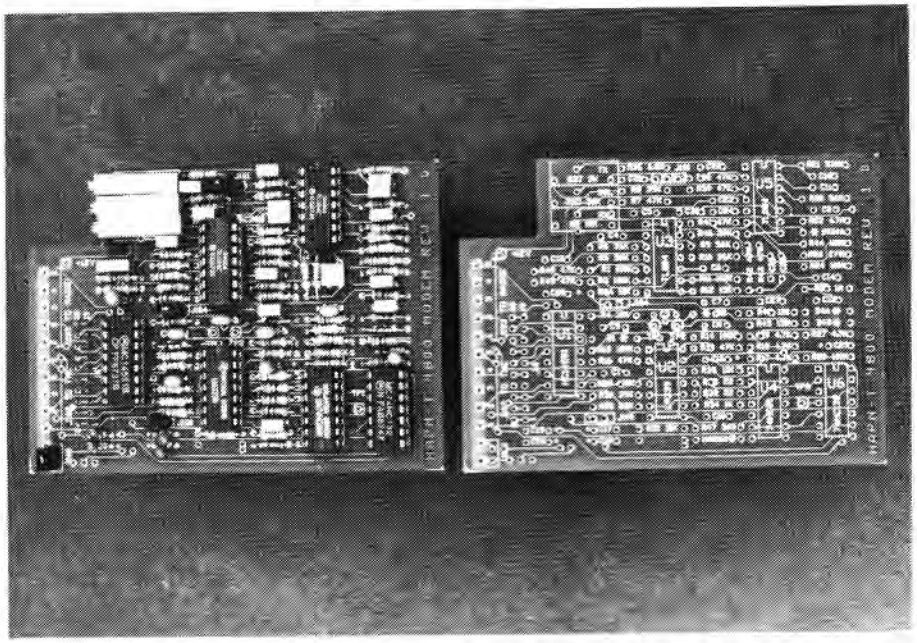
Modulation is direct FM biphase modulation and does not require a randomizer or synchronization burst. There is no DC component in the encoded data making it possible to use regular FM or PM synthesized or crystal-controlled voice radios. Required bandwidth is the same as for voice. Using a simple hookup to the radio's discriminator and modulator, distortion, normally caused by the microphone preamplifier, limiter, emphasis and de-emphasis networks, and receive audio amplifier is avoided. Result: reliability is better than with many 1200-baud modems hooked up to the radio's microphone and speaker connections.

Voice operation is not affected with the new interface installed. A similar modem has been used with the HAPN-1 plug-in packet adapter for IBM PCs for several years now, with excellent results.

The HAPN-T daughterboard simply plugs into the external modem connector of the TNC. Its small size, 9.5 x 7 cm (3.75 x 2.75 inches), usually allows it to be mounted inside. Power for the modem is taken from the TNC 12-volt buss.

The modem contains a multiplexer that easily switches between the 4800-baud HAPN- T and the 1200-baud modem on the TNC's motherboard. Detailed instructions are included for assembly and installation onto the TNC-1, TNC-2 and true clones like the MFJs.

The modem is available only in kit form from HAPN. Price for bare board is $18. Kit including board and all components is $60. Shipping is $8. A 10% discount is available on orders of five or more. Contact HAPN, Box 4466, Station D, Hamilton, ON L8V 4S7.



The HAPN-T 4800-baud modem: More speed for your packet system. *(VE3LNY photo)*

Tech Topics

Conducted By George Murphy, VE3ERP
103-1095 Mississauga St, Orillia, ON L3V 6W7
Tel 705-326-9612

Some Hints and Kinks

The following are courtesy of John Gowron, VE4ADS, of Winnipeg.

☐ Some time back, my IC-730 was giving me no end of trouble. The preamp would no longer switch in and I was getting reports that my transmit frequency was shifting, sometimes as much as 300 Hz.

I started to ask questions. Some of the answers were not good: "It might be your PLL." One answer gave me hope: Wib, VE4CJ, mentioned that his Kenwood had shifted in frequency and the problem was corrected with a star washer to improve the grounding of the VFO unit.

I removed the top and bottom covers of my rig and found that all the screws that held circuit boards to the chassis were loose, some by as much as one turn. Once these were tightened, the rig worked fine.

Next time your rig acts up, tighten all the screws that serve as circuit board grounds.

☐ Are you looking for an inexpensive source of material for a vertical antenna? They may not be so inexpensive now that the MUF is up.

Try getting hold of old half- or five-eighths-wavelength CB verticals. These are self-supporting and can withstand some fairly high winds. The base mounting hardware is usually excellent and the tubing sections can often be assembled to make antennas as high as thirty feet. Use half- and three-eighths-inch tubing, available in many hardware stores, to get the height you need.

One thing you must do is open up the base and remove the matching transformer. Then attach a wire from the element to the coax feedpoint in the base. For DC grounding, wire an RF choke from the element to coax ground. Enjoy!

☐ This winter, you can get out on 75 or 80 metres, even from a small yard. Cut two lengths of wire, #18 or better, each one-quarter wavelength for the frequency you want to use. Make a feed block out of some plexiglass and a chassis-mount SO-239. Stretch one wire, the one that will be connected to the ground side of your feedline, along the top of a wooden fence. Stretch the other wire out as far and high as you can to anything non-metallic that is handy. Hook up your coax and you'll be on the air. — *John Gowron, VE4ADS*

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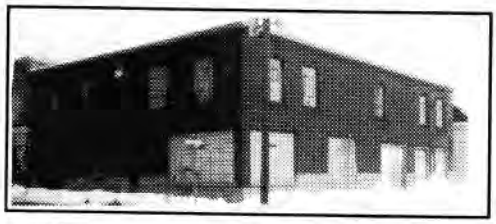

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We are always happy to answer queries by phone or mail. Don't hesitate to phone us any time at home or warehouse. If by mail, a postage stamp to defray the cost of a reply would be appreciated. Due to the nature of surplus very few items are stocked in depth and as a result it is impossible to prepare a catalogue or listing which would remain valid for even a short period of time.

New items for February include: (1) Digital RX02 dual floppy drive $30.00. (2) Diablo printer Hi Type II Model 1345A (daisy wheel). Friction feed with power supply. (3) Henry Electronics 130A02 VHF amplifier, 1-5W in with 130W out. Now tuned to 141.15MHz, solid state. $85.00. (4) Avantek type AWC4215N LNA's, 3.7-4.2GHz. $50.00. (5) Military pack sets PRC502 with whip antenna, loading coil, dipole kit, rechargeable battery pack & AC charger, handset & canvas case. $150.00. (6) Sony dual speaker cabinets approx. 9x5x14 18w at 8 ohms Model SS170A. $15.00. (7) Double shaft AC motors 1/35 HP, 1625RPM, 115V60Hz. $2.00 each. (8) Aircraft vertical gyros. $15.00. (9) H.P. plug ins, 1908A, 1910A and 1921A priced at $40.00 each. (10) HP 8054A real time audio spectrum analyzer. $600.00. (11) Portable "Fast Fold" projection screen made by Commercial Picture Equipment complete with aluminum folding frame and stand, portable carrying case with instructions. This is a professional screen for slides or film projection. Size 10 1/2 ft. x 14ft. Priced at $100.00

VE7OF HONOURED

VE7OF and medallion: Codemaster of the Wrong Button Club *(VE7GBT photo)*

Last October, members of a unique net, the Wrong Button Club, honored Steve Pocock, VE7OF, with a birthday cake (it was Steve's 82nd birthday) and an oversized Olympic-style medallion. The medallion carried the citation: "Wrong Button Club Order of Merit, to Steve Pocock, Codemaster, for helping so many join the ham fraternity." It was signed, "The Lucky 13 Group", a reference to the club's objective of securing a minimum of thirteen checkins for its daily code practice net on 3.744 MHz.

Familiarly know as the Old Fox, a more appropriate phonetic would be Old Friend. During his 52 years as an amateur, Steve has helped 125 people get on the air.

It was thanks to Steve that the Wrong Button Club began twenty years ago. At that time, Steve was instructing an evening course in Amateur Radio. A sightless student who met all other requirements was having difficulty with the code. Steve went to bat for the student, offering to put his own license on the line if the radio inspector would just permit some *two-way on-the-air code practice.* Permission granted, Steve spent every day working with his student. The student quickly became proficient and a license was obtained.

Soon after the idea caught on among newly licensed amateurs who wanted a chance to practice sending and receiving code in controlled operating conditions. Later on, established amateurs, some with their Advanced tickets, joined in to brush up on their skills. Today, the group is a healthy mix of old and new amateurs.

Several years ago, Steve was laid low with a stroke. It was this group that rallied to his side. They drove nurses to distraction as they crowded into his hospital room to visit and encourage him to get back on the air. As a result of his slow and fumbling manner following the stroke, Steve wryly named himself Codemaster of the Wrong Button Club. The name stuck and the club grew to its present 225 from all over the province.

Steve still tires easily, but he has made a remarkable recovery. He still sends code once or twice a week, but when the going gets tough, he now has a corp of graduates ready to take over, carrying on the tradition he established as Codemaster of the Wrong Button Club. *—Les Saul, VE7GBT*

TALK TO THE WORLD

"Talk to the World" was the theme at the CRRL exhibit at North America's largest hobby show, held in November at the International Centre in Mississauga, Ontario. This was CRRL's first invitation to participate. Unfortunately, there wasn't time to set up a working station. Next year! Special thanks to VE3s AND, CDM, FQJ, HBF, ORN and POJ who set up this attractive display, and passed out pamphlets and magazines to the hundreds of visitors who stopped by. *(VE3AND photo)*

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