

QST 

CANADA

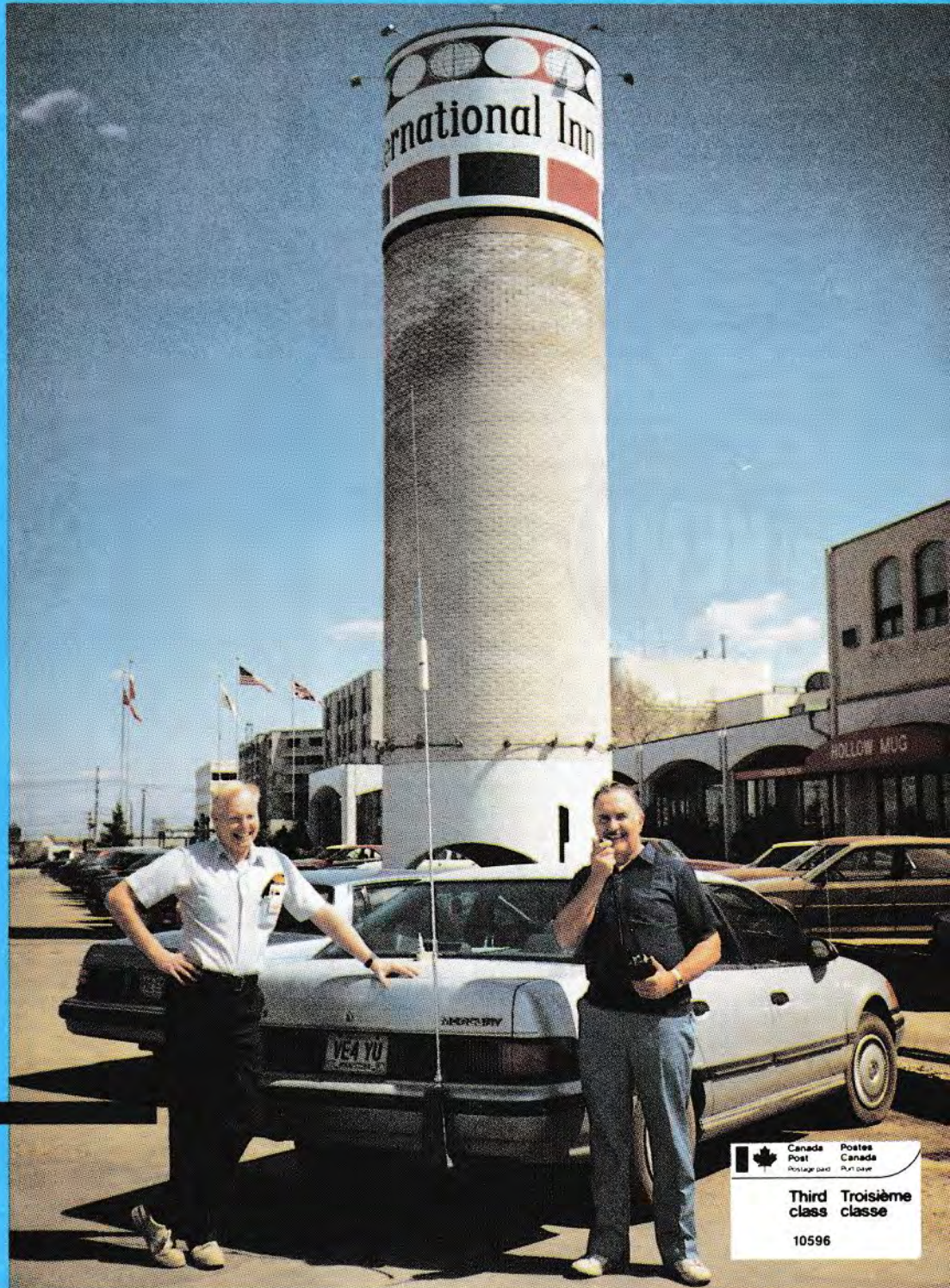
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2m/70cm Dual Band HT

SPECIFICATIONS

GENERAL

Frequency Range	VHF: 144-148 MHz UHF: 440-450 MHz** 430-440 MHz**
Mode	F3E (FM)
Operating Voltage	7.2 VDC (standard), 6.3-16 VDC
Current Drain	Transmit HI: Less than 1.4 A (VHF) 1.5 A (UHF) (P=5 W) LO: Less than 0.6 A (VHF/UHF) Receive (no input signal): 45 mA (VHF) 50 mA (UHF) approx. 12 mA (VHF) 13 mA (UHF) approx. (at automatic battery saving operation) 3 mA approx. (at auto power-off mode)
Grounding	Negative
Operating Temperature	-20°C~+50°C
Microphone Impedance	2 kΩ
Antenna Impedance	50 Ω
Dimensions (Projections not included)	58 (2.28) W x 179 (7.05) H x 29.5 (1.16) D mm (inch)
Weight	520 g (1.15 lbs) (with PB-6, hand strap and antenna)

TRANSMITTER

RF Output Power	HI: More than 5 W (13.8 VDC) 5 W (with PB-8) 3 W (with BT-6) 2.5 W (UHF with BT-6) 1.5 W (with PB-5, 6, 7) approx. LO: 0.5 W approx.
Modulation	Resistance Modulation
Spurious Radiation	Less than -60 dB
Modulation Distortion	Less than 3% (300-3000 Hz)
Frequency Tolerance	Less than ±10 ppm (-10°C~+50°C)
Maximum Frequency Deviation	±5 kHz

RECEIVER

Circuitry	Double Conversion Superheterodyne
Intermediate Frequency	VHF: 1st IF 16.9 MHz, 2nd IF 455 kHz UHF: 1st IF 59.525 MHz, 2nd IF 455 kHz
Sensitivity	12 dB SINAD less than 0.18 μV
Selectivity	More than 12 kHz (-6 dB) Less than 28 kHz (-40 dB)
Squelch Sensitivity	Less than 0.1 μV
Audio Output Power	More than 400 mW (9 VDC at 10% distortion and 8 Ω load)

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BT-6	AA Manganese/alkaline battery case	29.00
DC-1	DC adapter	39.00
HMC-2	Headset with VOX/PTT	72.00
PB-5	7.2VDC 200mAh NiCd battery pack	69.00
PB-7	7.2VDC 1100mAh NiCd battery pack	109.00
PB-8	12VDC 600mAh NiCd battery pack	109.00
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SMC-31	Speaker microphone	79.00
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ABOUT THE COVER



Committee member Adam, VE4SN (at the mike) and Chairman Ed, VE4YU, say "Come to the Convention—the CRRL National Convention, Winnipeg, Manitoba, August 18–20!" (photo courtesy VE4YU)

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

VE1 Callsigns

Separate callsign prefixes for the three Maritime provinces: its a hot topic of discussion in Canada's Atlantic region these days. We've received a lot of mail on the subject and it's running something like this: almost 100% of PEI and 65% of New Brunswick are in favour; about 65% of Nova Scotia is against; and Newfoundland and Labrador says the Maritime provinces can do what they want as long as they don't expect to end up with callsigns that begin with VO.

Recently, DOC introduced some new wrinkles into the discussions. It seems they're prepared to issue a separate prefix for any Maritime province where the majority of amateurs want it, and let the rest stay with VE1. Of course, no one, even in a province where a new prefix might be assigned, would be forced to change. It would be "VE1 forever" if that what an individual amateur wanted.

Where does CRRL stand on all this? CRRL believes that the proposals have merit, but that the issue of their implementation is a regional matter, to be decided by amateurs in the region. CRRL will support the majority wishes of amateurs in the Maritimes—or individual Maritimes provinces if it comes to that—and express those wishes to DOC Ottawa to be translated into action.

For now, keep those cards and letters coming. —Harry MacLean, VE3GRO

IARU BAND PLANS

The following letter was sent to CRRL President Tom Atkins, VE3CDM, by Pedro Seidemann, YV5BPG, President of IARU Region 2. It seems particularly appropriate to reproduce it here, given DOC's stated intention to deregulate the Canadian amateurs bands, technically allowing us to operate any mode in any part of our bands, subject only to maximum permissible bandwidth limits set by DOC, and hopefully, voluntary adherence to IARU band plans.

Caracas, Venezuela, 1989 04 19

Dear Tom:

Some countries regulate Amateur Radio operations in minute detail, specifying modes of operation and channels within our bands, others have relatively broader regulations, and some do not legislate at all how amateurs should subdivide their bands for better communications.

Obviously, a total disregard for the need of segregating certain modes of operation would result in unacceptable chaos, this only becoming worse with the growing number of new methods of transmission available—packet, SSTV, ATV and

satellite communications, to name a few. Recognizing the basic necessity to avoid chaos, IARU is constantly updating its own band plans which regulate the amateur bands on a voluntary basis, while complying with various existing national regulations.

Recently, many countries have been adopting a so-called deregulation policy that includes abandonment of national regulations which try to govern utilization of amateur bands in a detailed way. This constitutes a welcome trend, allowing the Amateur and Amateur Satellite services to demonstrate their ability to progress without imposed government regulations. At the same time, it means that attention to IARU band plans has never before been so important to our welfare.

IARU band plans are coordinated worldwide by the IARU Administrative Council, and within each IARU region by the regional organizations. We expect that the IARU Region 2 Conference in Orlando next September will consider various new proposals related to band planning, which, upon approval by the regional organizations, will be incorporated into our IARU Region 2 band plans. As with all resolutions adopted at IARU conferences, IARU member-organizations like CRRL must strive for proper implementation by all amateurs in their countries. Fortunately, we radio amateurs have a tradition of which we can be proud—a tradition of being self-governing.

With best regards to all directors and members of CRRL, cordially,—Pedro Seidemann, YV5BPG, President, IARU Region 2

WELCOME BACK

This copy of *QST Canada* is being sent to former CRRL members who, for one reason or another, have let their CRRL memberships lapse. According to our intensive research, conducted during late nights after local club meetings, if you're in this category, it's probably not because you were dissatisfied with CRRL. Instead, demands of school, a change in job, a new interest, an important other or just plain life pulled you away from Amateur Radio for a while. We hope that this complementary copy of *QST Canada* will pique your interest again. There's certainly lots going on. We also hope that you'll consider rejoining CRRL—not only to receive *QST Canada*, but also to support the good work that ensures that Amateur Radio in Canada remains strong.

There's a membership blank on page 20. Why not fill it in, now? And welcome back! —Harry MacLean, VE3GRO ■

All letters will be considered carefully. Letters are edited 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.

VE1 CALLSIGNS

Two months ago, we published a letter by Dave Hunter, VE1CIT, calling for individual callsign prefixes for each of the Maritime provinces. Comment has been heavy and opinion is divided, as shown by the letters below.

□ There are several by-products of being around a long time. False teeth, glasses and hearing aids notwithstanding, one also finds that maturity, common sense and knowledge creep in. Having been around Amateur Radio for a quarter of a century, and having been president of the Society of Newfoundland Radio Amateurs (SONRA) for over a decade, one thing I have learned is not to attempt to change the status quo without knowing what you are talking about, and without weighing the effects of your actions on

others. If there is, indeed, a group of hams in Charlottetown who want a new prefix, then, subject to the general agreement of PEI amateurs, someone should pursue this suggestion. But now, to the specific purpose of this letter.

The VO prefix was brought to Canada when Newfoundland joined the nine other provinces in 1949, and had been used by several radio services—including broadcast stations, some of which still use a VO prefix—since 1929. In 1949, it was a specific point of agreement that Newfoundland and Labrador would retain exclusive use of the VO prefix.

There are 462 VO1 amateurs and 28 VO2 amateurs. From time to time, subject to DOC approval, other VO prefixes are used. But it will be a long, hard fight by the president of Charlottetown Amateur Radio Club before he will be using a VO

prefix on Prince Edward Island or anywhere else outside of the Province of Newfoundland and Labrador.

Let's help the Charlottetown amateurs get a new prefix—but not ours!—*John Tessier, VO1FX, President, SONRA*

□ It is the opinion of the Wiltshire (PEI) DX Association that a distinct callsign prefix, as proposed by Charlottetown Amateur Radio Club, is of significant importance to the Amateur radio operators of PEI and to the province as a whole, and is wholeheartedly endorsed by our association.

Each and every province in the USSR, Japan, the UK, and even the rest of Canada recognizes its amateurs through distinctive callsign prefixes. This recognition permits ease of traffic handling during

Continued on page 20

The Canadian Radio Relay League, Inc

La Ligue Canadienne de la Radio Amateur, Inc



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

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

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

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

Membership inquiries and general correspondence should be directed to CRRRL Headquarters, Box 7009, Station E, London, ON N5Y 4J9 (519) 660-1200.

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Calendar



Attention: Deadline for items is the 1st of the second month preceding the month of publication. For example, information would have to reach *QST Canada* by January 1 to be included in a March issue.

Brandon, MB/Dundelin, ND: Annual Hamfest, July 8-9 at the International Peace Gardens on the Manitoba/North Dakota border. A camping weekend. Talk-in on 2 and 75 metres. Contact members Winnipeg Amateur Radio Club for additional information.

Glacier-Waterton Park, AB/MO: International Hamfest, July 14-16, at Three Forks Campground, 16 miles west of East Glacier, Montana. Sponsored by the Canadian amateurs but being held on the US side to offer better accommodations for the large numbers expected to attend. ARRL and CRRRL speakers, demos and seminars, QCWA meeting, dealer displays, fleamarket, auction, transmitter hunts, QLF and best mobile contests, Saturday supper, Sunday breakfast—a real western hamfest. For additional information, contact Don Cole, VE6EY, 923 Whitehill Way NE, Calgary AB, T1Y 3G1.

Maple Ridge, BC: Annual Hamfest, July 8-9 at St Patrick's Centre, 22589 121 Ave. Sponsored by Maple Ridge ARC. Commercial displays, fleamarket and food. Close to shopping and recreational centre. Camper space available, but no hookups. Talk-in on 146.20/.80 and 146.34/.94 MHz. For more information, contact Bob Houghton, VE7BZH, Box 292, Maple Ridge, BC V2X 7G2.

Milton, ON: 15th Annual Ontario Hamfest, July 8 at Milton Fairgrounds. Sponsored by Burlington Amateur Radio Club. Theme: Back to Basics. Giant fleamarket, Hoisters International and QLF contests, 807 garden, good food. Admission: \$3.50. Weekend campsite: \$15. Talk-in on VE3RSB, 147.81-147.21 Mhz. For more information, contact Ontario Hamfest, Box 88, Burlington, ON L7R 3Y7.

Regina, SK: Saskatchewan Hamfest '89, August 11-13 at South Campus, Saskatchewan Institute of Applied Arts and Technology. Sponsored by Regina ARA. Displays, fleamarket, technical and non-technical sessions, ladies' program, contests and fun events. For more information, contact Bill Wood, VE5EE, Box 153, Regina, SK S4P 2Z6.

Summerland, BC: Okanagan Valley Hamfair, July 29-30 at Illahie Beach and RV Park. Opens 8 am. Fleamarket, displays, auction, pancake breakfast. Admission: \$5 per amateur or \$10 per family. Campsites: \$11-15. Local motels available. For more information, contact Illahie Beach RV Park, Box 705, Penticton, BC V2A 6P1, Tel (604) 494-0800. ■

Oil Spill Disaster

Amateurs prove their worth on West Vancouver Island.

By Terry Wedmedyk, VE7CLO
Box 168
Ucluelet, BC V0R 3A0

Tuesday, January 3, 3 pm. I had just joined Dick Nimmo, VE7GAU for a cup of hot coffee when I first learned about the oil. Jim Masyk, Superintendent for Pacific Rim National Park came in, sat down with us and told us about the bunker C oil that had washed ashore on several beaches in the park. The beaches were covered with thick, tarry globs. Hundred of seabirds lay dead or were dying all over the place.

Dick and I both worked for the Coast Guard. We were aware that an oil barge towed by the US tug *Nestucca* had broken open in rough seas along the coast of Oregon a month before and spewed thousands of gallons of bunker C oil onto American shores. Could this oil have come from the same vessel and drifted several hundreds miles up the coast? Dick grabbed his handheld transceiver and headed for the park to see for himself. I headed home.

At approximately 5 pm, Dick advised me of the extent of the spill and that we had better notify the proper authorities. I telephoned the Provincial Emergency Program (PEP) Zone Director, Barry Akehurst who authorized our club's emergency unit to support local authorities in any way we could. Later that evening, Dick and I planned our strategy for the next day. Dick would remain in town at our club station, VE7UEP, making phone calls to various government agencies to bring them up to date. I would take our club's mobile communications van and a few local volunteers to patrol the local beaches and assess the damage. I would radio our findings back to Dick.

As more government agencies began moving into the area, the Coast Guard decided to set up a command centre at their station to coordinate all future activities involving the spill. At this point, a number of problems became apparent. Parks Canada wardens, using their own handhelds were dispatched to various beaches within park boundaries to assess damage and report back to the command centre. But the command centre was equipped only with Coast Guard and marine radios, and could not receive calls from the wardens. Volunteers patrolling outside park boundaries were using CB and marine radios but could not communicate with the command centre because



"They become the primary communications network. Without them, we'd have a lot of problems. They're under-acknowledged": BC Provincial Emergency Program (PEP) spokesman, Charlie Starratt, VE7GCS, copies formal traffic at VE7UEP during the oil spill cleanup.

of the distances involved and the incompatibility of their radio equipment. However, our mobile communications van was equipped with amateur, marine and CB equipment, and could monitor everyone. We could place our van in a strategic location, receive calls and forward information to the Coast Guard command centre.

—This worked well for the several days. Depending on where various work parties were operating, our van could move to a new location where we could communicate with work crews and the command centre. However, as more volunteers flocked into the area to offer their services to the cleanup, we realized that some agency had to take charge of the registering, feeding, clothing and coordinating these people. That task fell to PEP, and since VE7UEP was affiliated with PEP, we were asked to set up a volunteer centre and locate it strategically within the park boundaries, close to where the volunteers would be assigned to work. Dick, our area coordinator, would have handled this task, but he was seconded to the Coast Guard to operate their radios. Our deputy coordinator was at home, sick with the flu.

Thus, I was given the responsibility of setting up the centre.

That night, at a debriefing meeting, I was told that our local golf course was the place we were looking for. It had electricity, running water, washrooms, heating, a telephone and lots of open space for antennas. The golf course was located inside the park, one mile from Long Beach, next door to the airport and midway between Tofino and Ucluelet. After explaining our situation to the president of the golf course, he agreed to loan us the use of the driving-range building. The nearby driving range offered a large open field for HF antennas and no obstructions for our VHF antennas. It was perfect!

Next day, I rounded up club members to set up equipment. An AEA Isopole and a Larsen mobile 5/8 whip would handle our VHF needs. An 80-Metre inverted vee would meet our needs on HF. Inside the building, we installed one of the clubs TS-130s and two IC-28Hs: one for communication with the various amateur groups involved, the other adapted to monitor Parks Canada, Coast Guard and PEP frequencies. This was our initial station. The telephone in the building was on

a party line with the main clubhouse and did not fully meet our needs. Thus, we called BC Tel to request three emergency phone lines as quickly as possible. These lines would provide PEP staff with the ability to communicate with their headquarters in Victoria. Unfortunately, this proved easier said than done. Because of delays in getting the telephone lines installed, Amateur Radio soon became the only effective way to communicate with the outside world.

I was told that the operation would run from 8 am to 4 pm daily, and that it would be necessary to have the radios manned continuously throughout that period. This was my next major obstacle. A two-man watch would be required to handle the massive amount of traffic that was expected. Under no circumstances were the radios to be left unguarded. Two operators would permit one to take a break, while the other was available to monitor. Unfortunately, Ucluelet Amateur Radio Club is small, consisting of only eight members (small, but not a bad size for a town of 1500!). With many club members working regular jobs during the week, we would have problems keeping the station staffed with two operators at all times.

That was when I decided to call for outside help from the neighbouring community of Port Alberni. Dick gave Tom Parkinson, VE7CBL, a call to see if he could line up some amateurs to come to Ucluelet and spend a few days operating VE7UEP. Arrowsmith ARC willingly agreed to help and sent us people to keep the centre operating the following week. They also offered us radio equipment if it was needed. Things were looking up and for the next week, operation ran smoothly. Traffic flowed in and out of the centre on a regular basis, and was handled quickly and efficiently.

Then week two rolled around. There was still no end in sight as far as the cleanup and our operation were concerned. PEP asked that we stay on the scene indefinitely! Staffing became a problem again when the amateurs from Port Alberni had to return to jobs and families. If that wasn't enough, Mother Nature got into the act. On Wednesday evening, a major storm blew in and caused considerable damage. With the high winds and ice, our HF antenna came down, and our centre lost its power. Of course, the HF radios went out. We still had VHF because we were running them off batteries. Our electric heating was lost and people began to freeze. Then, on top of everything else, our repeater went off the air for no apparent reason and more new oil appeared on the beaches.

Once again I sent out a call for assistance from other amateur communities. Courtenay/Comox sent one operator and lined up two others if needed. Port

Alberni was also able to supply some new volunteers and a work crew that would come in on the weekend and repair the antennas.

Saturday rolled around and two carloads of amateurs arrived, equipped with two collinear VHF antennas, 300 feet of hardline coax, an all-mode 2-metre transceiver, scanners and other goodies. Up went the 80-metre antenna and a new 40-metre vee on a guyed mast set up in the driving range. 40 metres was needed because 80 metres dropped out during the daytime when our station was on the air. Of the two VHF antennas, one was tuned to PEP frequencies on 149 MHz and the other to Coast Guard and Parks Canada frequencies on 150-165 Mhz. Our Iso-pole continued to serve on amateur frequencies: 146.52 MHz for simplex and 145.33 MHz for the repeater.

After setting up this "new" station, many of the annoying problems experienced with our initial setup disappeared. These included RF on the phone lines and in our computer. A small crew of amateurs then drove up to Mount Ozzard to repair the ailing repeater.

By the time that day was done, the repeater was back in service, our VHF links with all agencies were improved, packet links were established on both 40 and 80 metres, and situation reports now flowed smoothly to PEP Zone Headquarters in Courtenay. After seeing how well packet radio worked for handling the very long messages, I can't imagine why anyone would still consider using phone to pass traffic, given a choice. What had taken ten minutes to pass on phone was now being sent in less than two minutes. The complete radio station was now operating on battery power. Before long, a telephone computer link was established with the Coast Guard. Situation reports could now be sent directly to the command centre. In return, the Coast Guard was now sending us regular forecasts so the volunteer crews could prepare themselves for the weather. Even staffing stabilized. Things were running like a Swiss watch.

Week three. Things had started to wind down as far as our involvement was concerned. I had to ask myself if a two-man operation was still necessary. I decided to continue until mid-week with two operators, mainly because we had the staff, but after that, we would drop to a one-operator station, staffed by our own club members.

By now, the various government agencies were firmly established and their communications problems had been sorted out. With new phone lines installed, I felt our Amateur Radio commitment was at an end. I consulted my area coordinator and officials at the PEP Volunteer Centre. I explained I could see no further need for our radio station. All

were in agreement. I sent messages to Courtenay, Port Alberni and Victoria advising everyone of our plans to dismantle the station.

That weekend, yet another carload of amateurs arrived from Port Alberni, this time to help dismantle VE7UEP. Saturday January 28. The antennas were down and packed away. The radio equipment and computers were boxed and placed in waiting vehicles. VE7UEP was down to one handheld transceiver. I picked up the transceiver and made an announcement on the repeater that VE7UEP was QRT. The operation was finished.

All agencies expressed their gratitude for our involvement. PEP stated that if it hadn't been for Amateur Radio's being there in the beginning, valuable time would have been lost. It would have taken much longer to have become coordinated.

During our three weeks on the air, VE7UEP handled 342 pieces of formal traffic, two medical air evacuations concerning injured workers, and countless informal messages. We provided a computerized registration of all volunteers involved—2000 who had signed up during the cleanup. We established air-to-ground communications for the Coast Guard helicopters flying up and down the coast. Most important, we learned much about setting up an emergency station and running it for an extended period. To my knowledge, no other incident involving Amateur Radio has lasted as long as our involvement with the cleanup of the oil spill.

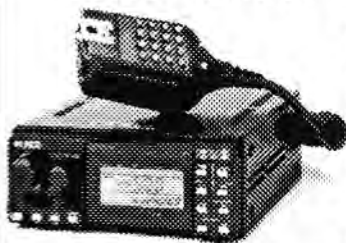
In closing, on behalf of members of Ucluelet Amateur Radio Club, I would like to thank amateurs from the communities of Port Alberni, Bamfield, Courtenay, and Victoria who took the time and travelled many miles to assist when the crisis arose. Special thanks to VE7CBL, VE7DCU and VE7DVB for their contributions throughout the incident.

The author is PEP Communication Coordinator for the Ucluelet Emergency Program.



VE7UCE headquarters and the 80- and 40-metre inverted vees. A 24-foot extension ladder and 10-foot mast became a makeshift 35-foot tower. (All photos by the author) ■

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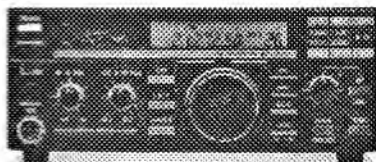
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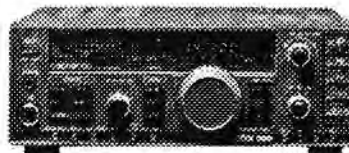
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Important Changes in CRRL

The Board of Directors of the Canadian Radio Relay League, Inc., held its annual meeting in Rexdale, Ontario, on Saturday and Sunday, May 20–21. Major decisions? There were several. In organizational matters, the board approved splitting the present Midwest Region into two regions: an Alberta Region consisting of Alberta and the Northwest Territories, and a new Midwest Region consisting of Manitoba and Saskatchewan. The Board also approved splitting the present Ontario Region into two as-yet-unnamed regions: one to consist of the L, M and N postal code areas and the other to consist of the rest of Ontario. This will increase the number of CRRL regions and elected CRRL regional directors from five to seven.

The CRRL Board also voted to have the CRRL president and vice president elected by the board rather than by the general membership as is done at present. This new method is standard practice in most corporations and is consistent with the concept that, essentially, CRRL senior officers are servants of the board. The board also determined that the CRRL Executive Committee, responsible for making decisions between board meetings, will consist of the CRRL president, vice president, secretary and two regional directors. However only the president and the two regional directors will be voting members. This places the majority vote in CRRL Executive Committee in the hands of people who must first be elected by CRRL members.

In financial matters, the CRRL Board left annual dues for CRRL membership with *QST Canada* at the present rates: \$27 regular and \$24 for seniors. However, the board approved a modest dues increase—\$4 a year—for CRRL membership with *QST Canada* and *QST*. This increase was necessary because of new postage costs and certain provisions in the new federal budget. Effective 1989 September 01, the annual rate for CRRL membership with *QST Canada* and *QST* will be \$49 regular and \$46 for seniors. The board also approved a class of membership with *QST* but without *QST Canada* at an annual rate of \$42 regular and \$39 for seniors. With present exchange rates and the cost of converting to US funds, this compares favourably with what ARRL charges to supply *QST* to amateurs outside of the United States.

Lastly, the CRRL Board approved a skeleton plan which could lead to the creation of a single Canadian Amateur Radio organization. The board instructed its senior officers to present this plan to

6 *QST Canada*



Here's the group that met in Ottawa to discuss Restructuring the Canadian Amateur Service, taking a moment at VY9CC, the DOC employees' Amateur Radio station at DOC Headquarters. From left to right, Jim Cummings, VE3JPC, DOC; Tom Atkins, VE3CDM, CRRL; Hugh Clark, VE3WM, DOC; George Spencer, VE3OZW, CRRL; Bill Wilson, VE3NR, CARF; Andy Cobham, VE2PPP, DOC; Harry MacLean, VE3GRO, CRRL; and John Illiffe, VE3CES, CARF.

CARF, the Canadian Amateur Radio Federation, for its consideration.

Detailed minutes of the 1989 CRRL Board meeting will appear in an early issue of *QST Canada*.

NOTICE OF GENERAL MEETING

Under the Canada Corporation Act, changes to the CRRL By-laws, approved at the 1989 May 20–21 CRRL Board meeting, must be approved at a general meeting of the CRRL membership. This meeting will be held at 1000 CDT, Saturday, 1989 August 19, in conjunction with the CRRL National Convention at the International Hotel, Winnipeg.

DOC UPDATE

□ Representatives of CRRL and CARF met with DOC in Ottawa on Saturday, May 27, to discuss progress on Restructuring the Canadian Amateur Service. Here are the latest developments: 1) CRRL and CARF will continue to carry the major responsibility for technical questions on the new examinations. For many months now, CRRL and CARF have been cooperating in developing questions. Thus, this project is well under way. 2) DOC plans to issue only one certificate for the new Amateur Service: an Amateur Operator's Certificate. However, this certificate—likely wallet-sized—will have four levels of qualification: Basic, 5

WPM Code, 12 WPM Code, and Advanced, which correspond to the A, B, C and D certificates in DOC's earlier proposals. Each time an amateur successfully completes an examination, an updated certificate will be issued. 3) At this time, target date for promulgating the new licensing structure is 1990 March 01. Target date for implementing it is 1990 September 01. This is later than expected, but is realistic since parts of the new regulations may need to be checked out by the Department of Justice or the Treasury Board, and everything must be in English and French.

□ At the Ottawa meeting, the matter of separate callsign prefixes for the three Maritime provinces was thoroughly discussed. DOC made the following points: 1) DOC is prepared to issue separate callsign prefixes for each Maritime province if that is what the majority of amateurs in those provinces want. 2) If a majority of amateurs in a particular Maritime province want a separate prefix, but the majority of amateurs in other Maritime provinces do not, DOC is prepared to grant a separate prefix for the province where the majority of amateurs want it, and leave the other provinces as VE1. 3) No amateur would be forced to accept a new prefix. However, once a new prefix was assigned to a province, all new callsigns in that province would be issued

with the new prefix. 4) If an amateur accepted a callsign with a new prefix, the amateur could keep the suffix of his or her old callsign. 5) DOC will reserve the right to choose the prefix for each Maritime province. They will not begin with VO which is reserved for Newfoundland and Labrador.

□ Still with the Ottawa meeting, DOC is planning to move ahead with Deregulation of Mode Subbands, but no time frame for implementation was given. On the basis of comments from CRRL (and possibly from others), DOC plans to limit bandwidth in the 10.1-10.15 MHz band to 1 kHz to limit potential interference to FIXED services that are primary on that band. DOC also plans to increase the maximum permissible bandwidth on 10 metres to 20 kHz to accommodate FM phone, and on 430-450 MHz to 12 MHz to accommodate the vestigial sidebands of ATV transmissions. The question of separate station licences for concurrent operation of, say, a computer-controlled packet bulletin board station at home, and a mobile station in a car, is still under review.

NOTES FROM ALL OVER

□ Earlier this year, the federal Department of Fisheries applied for two frequencies in the 430-450-MHz band for a low-power position-indicating system for hydrographic surveying. CRRL opposed this application on the basis that the system would gather information using non-radio means and would only use the 430-450-Mhz frequencies to relay the information to a central point. Thus, the system was not RADIOLOCATION and had no business on the band. As a result of the CRRL opposition and subsequent discussions with representatives of the CRRL VHF-UHF Advisory Committee, DOC has assigned the system to frequencies in the LAND MOBILE band.

□ Prefix hunters, take note! To help publicize the CRRL National Convention in Winnipeg, and commemorate the 70th

Anniversary of Winnipeg Amateur Radio Club (WARC), Winnipeg-area amateurs may use special prefix VB4 on August 15-31. In particular, look for special-event station VB4WARC operating from the convention site on August 18-20. And in case you missed it, to celebrate Newfoundland's 40th year as a province, amateurs in Newfoundland and Labrador were able to use the special prefixes VO4 and VO5—respectively—until June 30.

□ CRRL President Tom Atkins, VE3CDM, represented the Amateur Radio community at *Dangerous Goods '89*. This conference, held in Halifax on May 17-18, gave industry an opportunity to share its knowledge on coping with disasters that involve dangerous chemicals. Tom's paper, "The Role of Amateur Radio in an Emergency Response", explained Amateur Radio and how CRRL-sponsored ARES, the Amateur Radio Emergency Service, could assist in these disasters. The paper cited ARES' important role in the 1979 Mississauga train derailment as an example.

□ Geomagnetic activity (disturbances in the earth's geomagnetic field) is related to activity on the sun and to radio propagation. An example: the geomagnetic storms of March 13-14 which blacked out parts of Quebec and caused widespread problems for electric power distribution and radio communications in other parts of Canada. Up-to-the-minute information on such activity is now available from Geophysics Division, Geological Survey of Canada, Telephone (613) 992-1299, 24-hours a day, for information both in English and French.

□ Sunspots are up. In the first four months of this year, the CRRL Outgoing QSL Bureau (free to CRRL members) forwarded 67165 QSL cards to some 200 countries overseas. This compares with 38767 and 55144 cards for the same four-month period in 1987 and 1988.

□ Once again, one of Canada's most ambitious Amateur Radio exhibits will appear at Toronto's Canadian National

Exhibition (CNE), being held this year from August 16 to September 4. The exhibit will be located at the Arts and Crafts Building near the Dufferin Gates at the west end of the CNE grounds. Most Amateur Radio clubs in the Toronto area will take a day to operate VE3CNE, and talk to and handle messages for the general public. Listen for VE3CNE on all HF bands, and work VE3CNE for one of their colourful QSL cards.

□ South of the border, Burt Fisher, K1OIK, has filed a Petition for Rulemaking proposing a special Novice licence which would not require a traditional Morse code exam. Instead, candidates for the proposed licence, dubbed "Novice-V" ("V" for VHF) would simply identify Morse code letters from written dot-dash sequences. Privileges would include all modes above 52 MHz, but no FM on 2 metres. This is similar to privileges recommended by an ARRL committee for a possible US no-code licence.

□ Also south of the border, representatives of ARRL—and a witness speaking for the Secretary of Defence—testified before a congressional subcommittee that the 220-222-MHz subband, reallocated by FCC to the US Land Mobile Service, was essential for the continued good health of the of the US Amateur Service. ARRL stressed Amateur Radio's record in time of emergency and pointed out that FCC had failed to observe proper procedures in making its decision. The hearing gives US amateurs new hope that the FCC decision may be reversed.

□ Those drug traffickers in Latin America use a lot of Amateur Radio gear. Their communications, usually preceded by a whistle callup, can regularly be heard on the low ends of the 20- and 40-metre bands, and on 14350-14500 kHz.

□ Finally, and we're not certain what this might mean, on 1989 April 26, there were probably more radio amateurs at the Dayton (Ohio) Hamvention than in all of the Dominion of Canada. Something to think about, hi.

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The CRRL Field Organization Forum

SECTION MANAGER ELECTION RESULTS

Congratulations to Ernie Savage, VE7FB, who was recently re-elected British Columbia Section Manager for a two-year term beginning on 1990 January 01. Ernie ran unopposed, eliminating the need for a balloted election. As a side note, Ernie is the "longest surviving" Section Manager in either CRRL or ARRL. In fact, he's been a Section Manager for nearly thirty years. Ernie held the post shortly after World War 2, came back to it in 1962, and has held it ever since.

REPORTS FOR APRIL 1989

Alberta: SM/STM/DEC: Bill Gillespie, VE6ABC; ASM: VE6AMM; SEC/TC: VE6AFO; OO: VE6TY. Northern Alberta Amateur Radio Club (NARC) in final plans for Namao Hamfest May 26-28. Plans also under way for Jasper/Banff Relay Race, June 3-4. Band conditions were very poor in April. Daily nets report check-ins very slow. NARC amateur classes are finally completed and we have several new hams in the area. Congratulations!

British Columbia: SM: Ernie Savage, VE7FB. British Columbia Public Service Net (BCPS): Net Manager Jim, VE7JN, reports check-ins high 180, low 80, and total 406—with band conditions just plain horrible all month. British Columbia Emergency Net (BCEN): Net Manager Ferdi, VE7EJU, reports QNI 660, QTC 103. Ferdi says QTCs sure have dropped this month, mostly because of hockey finals and poor band conditions. BCEN manager is off for holidays. We all wish him the best and look forward to his trip report on his return. Herb, VE7ZK, who suffered a stroke, is still in hospital. Thanks to clubs and others for helping us keep up with amateur activity through club newsletters.

Manitoba: SM: Jack Adams, VE4JA; ASM: VE4IX; SEC: VE4TM; ATC: VE4ADP; NMs: VE4LB, VE4IX, VE4TE. First, I would like to thank Terry, VE4VR, for his dedication as Section Emergency Coordinator (SEC) and welcome Rod, VE4TM, as our new SEC. SEC is a worthy leadership position taking much time and effort to organize the DECs and ECs. Once things are in place, the SEC, working with the SM, oversees the activities of the ARES organization in the Section. A word of encouragement to Rod: Go for that Advanced certificate! It makes life much easier, coordinating communications on HF rather than being limited to VHF. Speaking of VHF, yours truly along with Aaron, VE4TWO, Ed, VE4YU, George, VE4AGX, Bill, VE4UX, VE4VR and VE4TM are directors of WRS, Winnipeg Repeater Society. Over the years, this society has continually strived to purchase, install and maintain repeaters in Winnipeg and surrounding areas. At times they are criticized for one thing or another. Believe me, they shouldn't be. It takes many hours of volunteer work to install and maintain the repeaters. We have many individuals throughout the province who use the repeater systems but do not support WRS financially. Remember that it costs dollars to develop and maintain the system. To have an effective system, WRS needs financial resources. Your help through your membership-user fee is needed to link the province in all directions and tie in with repeater systems in the neighbouring provinces and the USA. Contact any of the above-named directors. They will be more than happy to explain the system and take your membership. Also, donations from Amateur Radio clubs are always appreciated. Thanks to Mike, VE4MP, and Dauphin ARC for a recent donation.

Ontario: SM: Larry Thivierge, VE3GT; STM: VE3CYR; SEC: VE3GV; BM: VE3GSA; TC: VE3EGO. I had an enjoyable holiday in Orlando, Florida, in early April and while there, had an opportunity to visit the Orlando Hamvention. It was quite

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.

a show. I also attended the Saturday morning traffic handlers' breakfast which was part of the convention program. Special thanks to VE3SB, VE3CYR, VE3GSO and VE3BB who looked after my skeds while I was away. Congratulations to VE3CVG and his wife, Helen, who recently received the Paul Harris Fellowship Award from the Chatham Rotary Club. VE3KK has become a life member of QCWA. In view of the fact that he was first licensed in 1923—66 years ago—QCWA Chapter 73, Southern Ontario, conferred Honorary Life Membership on him. Chapter 73 has an active membership of 113. The executive director of Red Cross in Windsor gave Windsor ARC an informative talk on Red Cross and where Amateur Radio fits in. Nice to hear VE3DVE back on the nets. Dave is using a new Ten-Tec Corsair II and really likes the rig's full break-in feature for CW. VE3JPR, who was first licensed as VE3BNR in the early sixties, is back on the air. Welland County ARC's president K6GMU/VE3 passed his Canadian amateur exams and is now VE3GMU. Did you know that Scarborough ARC was founded in 1946 and was the first radio club in Canada to affiliate 100 per cent with ARRL? That was in 1964. Lakehead ARC is looking for a new meeting place with the demolition of the EMO building in Thunder Bay. Amateur Radio is scheduled to fly again aboard the space shuttle in March 1990. If you would like to see Canadian Silent Keys in ARRL's *QST*, please make your views known to CRRL's President, VE3CDM. Our bulletin manager, VE3GSA, is working hard to expand the CRRL bulletin service. If you can help, Dave would be glad to hear from you. VE3DSF has earned his Advanced. New amateurs in the Ontario Section are VE3ATC, VE3CJM, VE3JYM, VE3LMK, VE3LRF, VE3TAX, VE3TEK, VE3TIG, VE3VER, VE3YTV, and VE3ZDP who is XYL of VE3DAA. Regretfully, I report that VE3AQO is a Silent Key.

Quebec: SM: Harold Moreau, VE2BP; STM: VE2EDO; SEC: VE2LYC; BM: VE2ALE. Ray, VE2YW, is very active on packet. Le Réseau de Joyeux Copains was sixteen years old on June 23. This net is on the air every day at 0800 UTC on 3765 kHz. Prompt rétablissement à Henri, VE2AGA, et félicitations à Victorien, VE2AAG, qui maintenant la vapeur et fait fonctionner le Petit Train du Matin.

Saskatchewan: Bruce Rattray, VE5RC. I don't feel much like writing a report this month. It's May 8, winter's gone and so is Bill Munday. He was, without a doubt, one of the finest persons I have ever known and worked with in Amateur Radio. Bill, VE5WM (Willy-Mike) joined the ranks of Silent Keys on April 21 at the Plaines Hospital in Regina. Without complaining, he fought a courageous battle against leukemia. Bill was born in Regina in 1922. He was a wireless operator with the Royal Canadian Navy during World War II. Bill retired in 1982 after 35 years with Saskatchewan Tel. He was a very active member of the Telephone Pioneers, ARRL, CRRL, CARF, the Regina Amateur Radio Association and the Saskatchewan Amateur Radio League. He freely offered his time and talent to Meals on Wheels and made over 102 blood donations to the Red Cross. Bill and I worked as a team for the last three years. He had a wonderful way of putting everything into proper perspective and keeping the "fun" in Amateur Radio. Funeral services were held on April 25. The chapel was filled to overflowing with many amateur friends from all over the province. "Mr Public Service". Bill will be sorely missed, not only in Regina, but in the wider Amateur Radio community as well.

Saskatchewan Hamfest arrangements are well in hand under the leadership of Bill, VE5EE. If you

pre-register by June 30, you will have a chance to win a trip for two to anywhere in Canada, courtesy of Air Canada. Pre-registration is \$25. Registration at the door, August 11, 12 and 13, is \$30. Saskatoon is getting ready for the August Summer Games. If you have time to help, contact Percy, VE5RP, or Syl, VE5YK, 73.



In 1978, when Andy Cobham, VE2PPP of DOC Ottawa, was working in the Yukon, his call sign was VE8AS. He even has one car licence plate to prove it. Now he's trying to figure out how Rob, VE3CJX, got the other one for a collection. A photo which included a 1978 VE8AS plate accompanied Rob's article on collecting Amateur Radio licence plates (1989 June *QST Canada*, page 3). Dunno, Rob, but we'd be worried, being as it's a DOC guy and all. Let us know how it turns out... ■

Silent Keys

Conducted By Ray Staines, VE3ZJ

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

VE3AQO, Matthew Reid, Lakefield, ON
VE3FZI, Hans Jacoby, London, ON
VE3MVF, Andrew Elder, Downsview, ON
VE3OGL, David Thiessen, Bolton, ON
VE3ZD, Walter A Garland, Toronto, ON
VE4AEM, Louis Curtis, Winnipeg, MB
VE4BF, Bert Franz, Dugald, MB
VE7FFU, Ron H Banning, North Vancouver, 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*. ■

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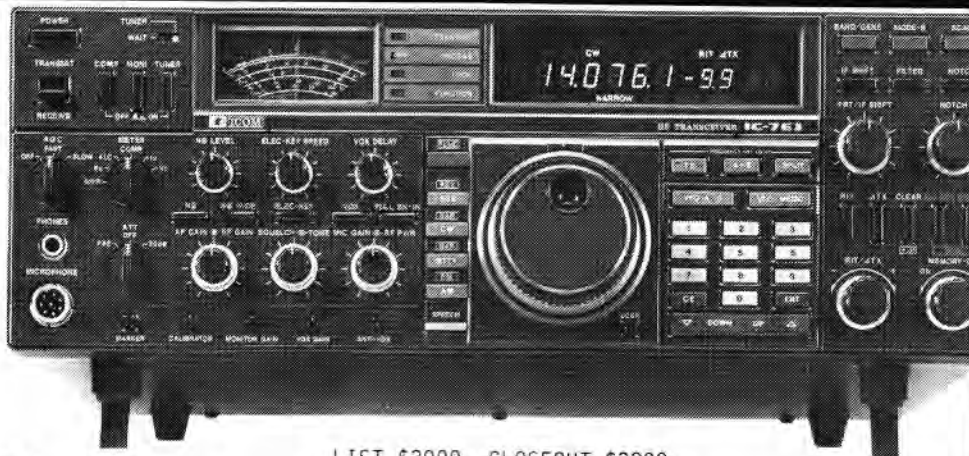
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The R-5000 is a high performance, top-of-the-line receiver, with 100 memory channels, and direct keyboard or main dial tuning—makes station selection



R-2000

The R-2000 is an all band, all mode receiver with 10 memory channels and many deluxe features such as programmable scanning, dual 24-hour clocks with timer, all-mode squelch and noise blankers, a large, front-mounted speaker, 110 volt AC or 12 volt DC operation (with the DCK-1 cable kit), and 118-174 MHz VHF capability with VC-10 option.

Optional Accessories

R-2000:

• VC-10 VHF converter • DCK-1 DC cable kit for 12 volt DC use.

R-5000:

• VC-20 VHF converter • VS-1 Voice module • DCK-2 for 12 volt DC operation • YK-88A-1 AM filter • YK-88SN SSB filter • YK-88C CW filter • MB-430 Mounting bracket.

Other Accessories:

• SP-430 External speaker • SP-41 Compact mobile speaker • SP-50B Mobile speaker • HS-5 Deluxe headphones • HS-6 Lightweight headphones • HS-7 Mini-headphones.

super easy! Other useful features include programmable scanning, large, built-in speaker, 110 volt AC or 12 volt DC operation (with optional DCK-2 cable), VHF capability (108-174 MHz) with the VC-20 option, dual 24-hour clocks with timer, and even voice frequency readout with the VS-1 option.

RZ-1

Wide-band scanning receiver



The RZ-1 wide-band, scanning receiver covers 500 kHz-905 MHz, in AM, and narrow or wideband FM. The automatic mode selection function makes listening

easier. One hundred memory channels with message and band marker, direct keyboard or VFO frequency entry, and versatile scanning functions, such as memory channel and band scan, with four types of scan stop. The RZ-1 is a 12 volt DC operated, compact unit, with built-in speaker, front-mounted phones jack, switchable AGC, squelch for narrow FM, illuminated keys, and a "beeper" to confirm keyboard operation.

Optional Accessory

• PG-2N Extra DC cable

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TOUGH AND POWERFUL

Up to five watts of RF power on the 2m and 70cm amateur bands is made possible with a die-cast rear case/heat-sink, while 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.

ADVANCED CIRCUITRY

Dual independent IF circuits allow simultaneous reception on both bands, with audio balance control. Now you can operate on one band while monitoring for calls or scanning on the other. Operating current drain can be reduced to as little as 7mA to extend battery charge life further than ever before with the programmable-interval power saver (can be turned off for packet operation) and APO (Automatic Power Off) system, which puts the transceiver to sleep after a selectable period of keypad inactivity. A new lock system allows PTT operation while the keypad is locked, if desired, and a top panel detented selector supplements the keypad for easy tuning. The liquid crystal display shows up to 5-1/2 frequency digits on each band (at the same time), memory selection, tuning step selection, repeater offset and a bargraph S/PO meter, plus a variety of icons to indicate the status of the many features.

Operation under difficult conditions is simplified by a lamp button illuminating the display and backlit translucent keypad, and diatonically assigned function-dependent keypad beeps.

FOUR VFOS & 42 MEMORIES

Dual A/B vfos for each band let you keep settings for different subbands and switch easily between them. Twenty multi-function keys provide the ultimate in programmability of 21 freely tunable memories on each band. All memories store repeater shifts or separate tx/rx frequencies. An instant-recall call channel memory is provided for each band, and two special purpose memories for limited subband tuning/scanning.

HIGH PERFORMANCE SCANNER

Fast busy channel band, subband or selective memory scanning (at 14 steps/sec) is provided along with priority channel monitoring for each band, or even on both bands simultaneously. The ARS (automatic repeater shift) feature activates repeater offsets in the proper direction when tuned to standard repeater subbands.

BUILT-IN 10-MEMORY DTMF AUTODIALER

The keypad serves as a DTMF encoder during transmission, and 10 DTMF memories can store 15 digits each for one-key playback of commonly used numbers. DTMF tones and memory sequences also play back through the speaker (so you can play back directly into a telephone).

REMARKABLE BUILT-IN CTCSS FEATURES

A CTCSS (Continuous Tone Controlled Squelch System) is built-in as a standard feature, allowing the FT-470 to be used as a paging receiver, sounding an alerting tone and displaying a blinking icon when a call is received with the correct tone frequency (in addition to standard Tone Squelch functions). CTCSS tone frequency can be displayed, selected from the keypad and stored in the memories.

FT-470 Features:

- 4-VFO's, 42 Memories
- 10 Memory Autodialer DTMF
- CTCSS sub-tone Tx & Rx
- Wide Freq Coverage 430-450 and 140-174MHz
- Power Saver Circuit 7ma Rx
- Both VHF/UHF Freq in Display
- Dual Rx i.e. both UHF/VHF
- Illuminated display
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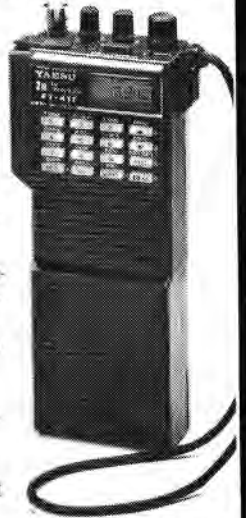
The brains of a base station. "Sophisticated operation" takes on new meaning in the FT-411. You get 49 memories, plus dual VFOs for quick band-hopping. Keyboard frequency entry. Automatic repeater shift. DTMF autodialer with ten memories of up to 15 digits each. optional CTCSS encode/decode. Selectable channel steps: 5/10/12.5/20/25 kHz. Programmable band scan with upper/lower limits. Selectable memory scan. And extended receive coverage of 140-174 MHz (MARS/CAP permit required for transmit on 140-150 MHz).

Not bad for a handheld measuring just 55(w) x 92(d) x 139(h) mm (the same size as our FT-23R Series HTs)!

Friendly operation. For operating convenience, the FT-411's keypad features a "do-re-mi" audible command verification. Both the display and keypad can be backlit (brightly!) for night operation at the push of a button. A rotary channel selector allows fast manual tuning. Or key in the frequency directly. Operate VOX (with YH-2 headset option). Plus you get a battery saver to conserve power while monitoring. And a (defeatable) automatic power-off feature that shuts down your radio if you forget to turn it off!

High power capability. The FT-411 comes equipped with the 2.5-watt, 600-mAh FNB-10 battery pack. Try our optional FNB-12 5-watt, 500mAh pack or tiny FNB-9 2.5-watt, 200-mAh pack. Or get 6 watts output by applying 13.8-volts DC from an external power supply.

Swap options with Yaesu's FT-23R Series. Our rugged best-seller's chargers, batteries, and microphones are fully compatible with the FT-411. The FT-23R is the perfect companion for the FT-411, and at a great price!



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Band Planning? Ugh! The Politics of Hamming...

Under the guidance of the International Amateur Radio Union (IARU), band planning has been an integral part of HF operations since the late 1920's. Yet when we get to the bands above 50 MHz, band planning seems to be something that many amateurs are not familiar with, at least not in an general way.

Most amateurs are familiar with repeater councils and their coordination work. This is actually band planning. However, it is only part of the overall process. Repeater councils look out only for repeater frequencies in the "repeater subbands" designated in the overall band plans.

So who looks after the overall VHF-UHF band plans, establishing subbands for the various modes? It's not an easy question to answer. Years ago when VHF-UHF was just starting, the only people active were experimenters, people interested in DX, ATV and FM. They took the lead by recognizing that subbands had to be set aside for the various modes. Band plans were drawn up and promulgated through IARU and the IARU-member societies, with Europeans taking the lead. Later, activity in North America, particularly on the 144-148-MHz band, mushroomed, and careful band planning became necessary here.

In Canada, band planning has become a major responsibility of CRRL's VHF-UHF Advisory Committee (VUAC), and the CRRL-appointed representatives on ARRL's VUAC (the late VE3AIB, and then VE3DSS) and ARRL's VHF Repeater Advisory Committee (VRAC; VE3GYQ is current rep). The band plans that exist now represent the ongoing work of the dedicated VHFers in these organizations, VHFers that include weak signal enthusiasts, packet radio enthusiasts, FMers and ATVers. These amateurs try to accommodate existing and new technologies and their efforts foster the continued healthy growth of Amateur Radio in an

Canadian Radio Relay League Band Plan: 144 - 148 MHz

STATUS: EXCLUSIVE AMATEUR

MHz	UTILIZATION
144.0 - 144.1	EME AND TERRESTRIAL CW
144.1	CW CALLING FREQUENCY
144.1 - 144.2	CW/SSB WEAK SIGNAL
144.2	SSB CALLING FREQUENCY
144.2 - 144.275	NARROW-BAND MODES (eg: ACSSB, SSB)
144.275 - 144.3	PROPAGATION BEACONS
144.3 - 144.5	EXCLUSIVE OSCAR
144.5 - 144.6	FM REPEATER INPUTS PRIMARY, LINEAR TRANSLATOR OUTPUTS SECONDARY
144.6 - 144.9	FM REPEATER INPUTS
144.9 - 145.1	PACKET (See footnote 1)
145.1 - 145.2	FM REPEATER OUTPUTS PRIMARY, LINEAR TRANSLATOR INPUTS SECONDARY
145.2 - 145.5	FM REPEATER OUTPUTS
145.5 - 145.8	EXPERIMENTAL MODES (See footnote 2)
145.8 - 146.0	EXCLUSIVE OSCAR
146.0 - 146.4	FM REPEATER INPUTS
146.4 - 146.6	FM SIMPLEX (See footnote 3)
146.6 - 146.52	NATIONAL FM SIMPLEX CALLING FREQUENCY
146.6 - 147.3	FM REPEATER OUTPUTS
147.3 - 147.6	FM SIMPLEX
147.6 - 148.0	FM REPEATER INPUTS

Footnotes:

- (1) Digital (packet) operation on ten channels, 20 kHz apart, 144.91 - 145.09 MHz.
- (2) Operation here on a temporary basis for developmental work. Keep 144.5-MHz area clear for Space Shuttle and MIR communications.
- (3) 146.40, 146.43, 146.46 and 146.49 MHz continue to be used as repeater inputs in some areas.

Band plans for other VHF-UHF bands are available. Send an SASE to VE3DSS or ask for a download on packet @ VE3NUU.

atmosphere of "gentlemanly conduct".

In Canada, band plans are structured not only to give Canadians a set of guidelines for operating without interference, but also to provide a degree of compatibility with amateur operation in the three ITU/IARU regions. The band plans ensure that international communications including moonbounce, satellite communication and packet will occur on common frequencies, enabling all of us to contact each other and avoid the trap of a

parochial or provincial viewpoint in our complex global village. Remember that our VHF signals can and do go far beyond the line of sight!

Without CRRL's leadership in this area, confusion and chaos would certainly result. As a bonus, band planning demonstrates to DOC and others that we do use our spectrum in a responsible and efficient manner. Believe me, DOC monitors our VHF-UHF operations closely, even in remote areas of the country! ■

BIGGEST AURORA OF THE CENTURY!

It's been 19 years since I chased K2RTH of Long Island, NY, up and down the 144-MHz band, trying to work him with my first 10-watt rig! Since then I've worked a lot of what our Ukrainian and Russian friends call *radioaurora*, not only on 144 MHz but on all bands up to 432 MHz. But I've never experienced an aurora like the one that lit up the heavens in early March!

Between March 12 and 14, K indices climbed to an unheard-of level of K9 at 0400 EST. The sky over Toronto was lit up with a complex and ever changing pattern of light, from horizon to horizon, with an unbelievable array of greens, reds, blue and whitish green. According to Ontario Hydro's *Morning Report*, "...several

phenomena [were] observed on the Ontario system [on March 13 that could be] attributed to the continuing solar magnetic disturbance (SMD). These [included] neutral overcurrent trips and/or annunciation, unexplained voltage fluctuations and erratic changes in primary demand." A US National Weather Summary indicated that the northern lights associated with this disturbance were clearly visible as far as Brownsville, Texas and Bermuda. It also further noted that this was a once-in-a-lifetime occurrence." Hydro Quebec suffered the loss of 1300 Mw of power due to the effects of the SMD. Ask Stu, VE2FUT, about it!

Interestingly enough, it was Barry VE4MA who identified the source of the disturbance to a group of Hydro Quebec people at the CEA conference in Toronto. It took good old ham know-

how to tell the experts what was going on. Who says Amateur Radio has lost its educational side?

An article in the March 25 *New Scientist* indicated that the earth was broadsided by flares from 75-100 sunspots, the likes of which NOAA scientists had never seen. In the southern hemisphere, the southern lights were seen as far north as Queensland, Australia.

During the frenzy of amateur activity, VHFers did without sleep to maximize the communications potential of the *buzz* session. VE3DSS contacts on 50 MHz included VE1BPY (FN66), VE4UD (EN19) who was pinning my S-meter, VE4ART (EN19), VE4CW (EN19), KB5PX (EL49), WA5OLT (EM12), WD5K (EM12), and VE1ASJ. Also, the VE2STL beacon on 50.085 MHz was loud and T9 into Toronto for many

hours on March 13. At the same time, VE1YX was heard in England, and the Greenland beacon, OX3VHF on 50.045 MHz, was audible on the east coast. If you worked anyone on this aurora, on any band, please forward a copy of your log, with comments, and observations of signals heard and extraordinary propagation, to Emil Pocock, VE3P, RR 3, Box 70, Lebanon CT, 06249.

More information about the big aurora will appear in a forthcoming article.

ACTIVITY REPORTS

50 MHz: I received a long letter from Gord VE3KLL, outlining his experiences on 50 MHz from February onwards. Gord noted aurora on February 16, March 8, 13 and 20, and April 5 and 14. On the F-layer DX scene he worked some spectacular DX: CX8BE (GF15) on March 20 at 1346 UTC, J52US at 0311 on March 26, HC1BI (FI09) at 1858 on March 27, and LU9AEA (GF05) at 1650 on March 30 for a new country. Gord also heard CX4HS running 57.

The March 13 aurora was probably the biggest news on 50 MHz so far this year. Don VE2DFO worked a multitude of stations on the west coast via transauroral E. Gord VE3KLL worked 64 stations including VE5LY (DO70).

Peter, VE3EMS, called to report working three new countries via F2 including 8R1AH, FY5, and PZ1 on Good Friday, March 24.

Unfortunately this time of year is not particularly fruitful for F-layer DX in the Great White North. However, the sporadic E season usually gets going in May and runs through mid-July, so keep that rig on and tuned to 50.125 MHz.

Speaking of DX, here is a sampling of 50-MHz activity to get everyone in the mood for the solar maxima this fall. Easter Island is now active on 50 MHz. Look for CEOGHO. Also look for TF3MM in Iceland, and for Dave Heil (J52US) next year, operating as 9L1US. I had a chance to talk to Dave at Dayton. His experiences with 50 MHz have made him a dedicated VHFer, who now takes a 50-MHz rig wherever he goes!

According to Richard VE3FAC, VE7CDX is planning a big array of four six-element yagis for 50-MHz DX. That should help make a dent in the ionosphere this fall! Look for VE7CDX and the gang at VE7VHF during the contests.

2227 UTC on May 4 brought eastern Ontario and Rochester, NY, amateurs a brief opening to the south with CO2KK, ZF1RC and KG4SM worked by K2SPO and others. Signals were weak and probably the result of Sporadic E.

May 5 brought more DX into Toronto starting at 2106 UTC, with loud Es signals from Florida. At 2300, numerous Ontario stations worked HH7PV (FK28) and KG4SM (FK 29). VE3EVW (EN 93) made the most of Es and Transequatorial (TE) propagation, by working CP3AD at 2258 UTC. At the same time, Miami-area hams were working Australia on 50.110 MHz.

May 6 solar activity remained moderate, with numbers of 194/12/4, and a satellite proton-event in progress. No aurora was heard, although the band did open briefly to western Florida (K8XF, EL88) at 1443 UTC. The aurora did finally make a weak appearance on the evening of May 7 at 1918. Solar activity was 200/25/4 and the satellite proton event continued.

Speaking of 50.110 MHz, I still hear a lot of Canadians calling CQ there. Hey fellas and gals, this is the DX frequency! Listen for DX there only. If you want to call CQ, use 50.125 MHz! Believe me, next year, if we don't follow this practice, QRM is going to be so bad that rare DX signals will be missed! Personally I think we should use 50.2 MHz for SSB ragchewing, designate a QRP frequency and generally spread out up the band as the Europeans do. Maybe we can lead the way and get the rest of North America on the bandwagon. What do you think?

144 MHz: During the March 13 aurora, Ray VE3FN, experienced a transauroral E skip into Minnesota and Iowa. Graham, VE3FHM (FN03), in Georgetown reported hearing W0ISK, and

NA50, likely via transauroral mode. VE1ASJ reported working WBSLUA (Dallas) on transauroral and Richard, VE3FAC, worked 37 stations including K4QIF (FM16), W0IZ (EN42), W0FY (EM48), KCOP (EN34), and N4VC (EM66).

The ARRL spring sprints started on schedule with high activity on the 2-metre band. Among stations active: VE3EMS (FN02), VE3OZB (FN03), VE3WCB (FN03), VE3FAC (FN03), and VE3BHG (FN03). Thanks to John, VE3OZB, for sending a copy of his log! Welcome to 144-MHz SSB: VE3FHM, VE3AQH, VE3CVL, VE3PFC (FN03), VE3CKU/W8 (EN83), VE3CF (FN02), VE3ATG (FN03), and VE3CAA (FN14).

VE3BQN called in to report making a successful meteor scatter contact with WB0QMN in Colorado, on the morning of May 5. Ted continues with work on his monster EME array of eight Cushcraft Boomers.

Running mobile on 144 MHz SSB? If so, use 144.25 MHz as the mobile SSB Calling and Ragchew Frequency. You should find "SSB Simplex" a lot of fun even with a vertical antenna. This will help keep 144.2 MHz clear for long haul contacts.

220 MHz: Conditions were highly variable on my favourite band with VE3ASO (FN25), VE3EMS (FN02), and VE3LNX and VE3DSS (FN03) all romping around. Contacts were made into FM08, FM29, FM19, FM18 to the south, and to VE3CKU/W8 (EN83) in the west.

Peter VE3EMS worked as far south as FM17 during the contest with only 25 watts. The 220 MHz band is a real gem. Too bad there aren't more Canadian stations using SSB and FM there!

432 MHz: Ken VE6AFO is working on a new 432-MHz EME array, consisting of eight 25-element K1FO's. Each yagi will be mounted on a bearing and linked mechanically to the others to switch polarity. Definitely a smart way to keep from getting locked out due to Faraday rotation.

903 MHz: Recently, the future of our newest band has been threatened by DOC and certain business interests. These challenges have been faced by CRRL, both directly and through our representation on the Radio Advisory Board of Canada (RABC). CRRL has urged DOC to assign spread-spectrum systems to an exclusive allocation at 942 MHz. Other groups like the RCMP have urged DOC to consider the RABC recommendations. Let's hope DOC takes these suggestions to heart.

Canadian Amateurs like Hans, VE3CRU, Vic VE3LNX, and Barry, VE4MA, continue to pioneer the band and have proven it to be a real gem, not only for DX, but for FM linking and other point-to-point communications. In fact there is a growing group of ATV enthusiasts both in Western Canada, and around Buffalo, NY, who are on A5 there.

Activity is on the increase. Vic, VE3LNX (FN03), completed a QSO with K3HZO (FM18) on the evening of March 27. KD5RO and N2WK in the Rochester area also contacted HZO.

Scarborough Radio Club, VE3WE, was the recent recipient of my VHF-UHF presentation. Everyone was very interested in getting on 33 cm as a club project. I thought it would be great if they and other clubs got together and helped popularize our newest band. Transverter kits are available at modest cost from "Transverters Unlimited", and loop yagis are easy to build. How about it?

1296 MHz: This year at Dayton I picked up a 15-watt power module for this band. This device is a linear on a chip, and produces 15 watts of power with 500 milliwatts of drive. Several devices can be combined to produce power up to 100 watts! However, they cost \$75 each, and it's much cheaper using 2C39's to get the big power. But just think: 1240-1296-MHz SSB, ATV, and FM from a chip that operates on 12 volts. The convenience just may outweigh the cost!

2304 MHz: Tony VE3DIR is QRV on the band, as is VE4MA and VE3LNX. VE4KQ is

busy building a 2304-MHz transverter kit purchased from Down East Microwave. These kits are an inexpensive route for anyone interested in operating our 13-cm "S" band—ideal for point-to-point control links as well as for SSB, CW and satellite. Try it!

Recent proposals by the RABC regarding channeling this band for commercial use (the band is AMATEUR secondary) has been challenged by CRRL's Ray Perrin, VE3FN, who voted against the proposal. On behalf of the amateurs Ray has requested that RABC and DOC consult with CRRL regarding this channeling in order to avoid our weak signal and satellite frequencies (2304 and 2401 MHz). Barry VE4MA, VUAC's man in Winnipeg had expressed surprise that DOC ignored our presence on the band. We will certainly ensure this will not continue.

Incidentally, CRRL's proposed band plan for 2304-2450 MHz has been circulated to RABC and DOC, and is available on packet. If you want a copy, ask for it!

3456 MHz: Ever the pioneer, Barry VE4MA is putting the finishing touches on a 3456 rig which he hopes will give him moonbounce capability on yet another of our bands.

10 gHz: Dennis VE3ASO (FN25), Ray, VE3FN, and company recently acquired some surplus range-determining gear (Telurometer's) that operates with 25 mW at 3 cm. The units are calibrated out to 90 miles, and provide a full duplex voice channel to boot. So far, contacts have been on the order of a few kilometres with greater range planned for warm weather outings and higher ground. Dennis comments that he hears lots of "other" signals warbling around the band, probably radiation from burglar alarms.

Meanwhile, Hans, VE3CRU, has a set of SSB Electronics 3-cm SSB transverters, and plans some serious DX efforts this summer using the rigs and some big three-foot dishes.

MEET YOUR VUAC MEMBER



Here's another member of the VUAC team. Lionel Edwards, VE7BQH, of North Vancouver, BC, (shown here holding the Mel Wilson, W2BDC, Award presented to him at the 1988 Central States VHF Conference) is an avid 2-metre moonbouncer. He runs the 14.345-MHz EME Net on Saturdays and Sundays at 1700 UTC. First licensed in 1965, Lionel's first EME contact was with W1FZJ/KP4, in 1969. He used 600 watts, an 80-element collinear and a 416B tube preamp. Since then, Lionel has helped hundreds of amateurs around the world get on EME. Lionel works for BC Telephone, primarily in Microwave, Television and Data Services. To date he has worked 612 different stations, 71 countries and 46 grid squares—all on EME. He holds EME WAC and WAS. CRRL is fortunate to have Lionel as a strong supporter and member of VUAC. (VE3DSS photo) ■

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GENERAL INFORMATION AND REGISTRATION FORM

Friday - August 18, 1989

REGISTRATION FROM 2PM INTO THE EVENING AT THE HOTEL.

Saturday - August 19, 1989

INFORMAL RECEPTION FROM ABOUT 7PM ON IN THE AGASSIZ ROOM. DISPLAY AREA, FORUMS, FLEAMARKET AND OTHER EVENTS IN THE DAYWOOD ROOM, MANITOBA ROOM, AGASSIZ ROOM AND THE PARKING LOT FROM 9AM TO 4PM.

Sunday - August 20, 1989

COCKTAILS, BANQUET, KEYNOTE SPEAKERS, DANCING AND MOUFF HONG CEREMONY IN THE CENTENNIAL BALLROOM FROM 630 PM TO MIDNITE. BREAKFAST BUFFET, ENTERTAINMENT AND CLOSING CEREMONIES FROM ABOUT 830AM TO 11AM.

THERE WILL BE A SPECIAL EVENTS RADIO STATION OPERATING FROM THE CONVENTION SITE ON SATURDAY AND SUNDAY USING THE SPECIAL CALLSIGN V64MARC TO CELEBRATE THE 70TH ANNIVERSARY OF THE WINNIPEG AMATEUR RADIO CLUB. WINNIPEG AREA HAMS WILL ALSO BE ALLOWED TO USE THE SPECIAL V84 PREFIX FROM AUGUST 15 - AUGUST 31, 1989.

Note the special Convention Rate at the hotel and special Airline Rates when using Canadian Airlines International. Be sure and mention the name 'Canadian Radio Relay League' Convention when booking your flights or reserving rooms at the International Inn.

Some main attractions in Winnipeg at this time are: World renowned Folklorama Festival and the Giant Pandas on loan from China at the Assiniboine Zoo.

CRRL NATIONAL CONVENTION REGISTRATION (AUG 18-20) 1989

Send Registration Form To: The Winnipeg Amateur Radio Club Inc. c/o Ed Henderson, VE4YU, CONVENTION 89, P. O. Box 352, Winnipeg MB R3C 2H6

Enclose Cheque or Money Order Payable to: The Winnipeg Amateur Radio Club

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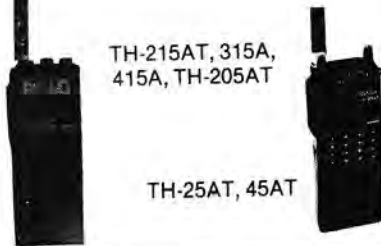
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42-MONTH LEASE—\$127.76 PER MONTH

(B) WITH ICOM IC-735 AND PS-55 POWER SUPPLY

TOTAL PRICE—\$4200, CASH PRICE—\$3950

36-MONTH LEASE—\$153.55 PER MONTH

42-MONTH LEASE—\$137.54 PER MONTH

2. TRYLON 48' TOWER, 12' MAST AND MAST BEARING, HYGAIN HAM IV ROTOR PLUS 100' 8-WIRE CABLE, HYGAIN EXPLORER-14 10, 15, 20-METRE ANTENNA, BN-86 BALUN, SIX PL259 CONNECTORS, 200' RG 213u ANTENNA WIRE...

(A) WITH ICOM IC-761 TRANSCEIVER AND ICOM IC-275H ALL-MODE

TOTAL PRICE—\$8778, CASH PRICE—\$8550

36-MONTH LEASE—\$311.71 PER MONTH

42-MONTH LEASE—\$278.00 PER MONTH

(B) WITH ICOM IC-751A, PS-30 POWER SUPPLY AND ICOM IC-275H

TOTAL PRICE—\$7784, CASH PRICE—\$7500

36-MONTH LEASE—\$277.27 PER MONTH

42-MONTH LEASE—\$243.56 PER MONTH

PRICES, LEASE RATES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

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MFJ 1270B, 1274, 1278

Amateur Radio in the Soviet Union

Part 2: Part 1 told the history. Now a close look at the present.

By Yury Zolotov, UA3HR
Box 345
Moscow, USSR 125502

In the USSR, licences to operate individual and collective Amateur Radio stations, regardless of their purpose (communications, fox hunting, radio models, etc) are issued by state inspectorates of electrical communications in each republic, region or territory.

Collective Amateur Radio stations are divided into three categories, individual stations into four. The right to install and run an individual station of the first, second or third category may be granted to radio amateurs who are 16 years of age. Permission to operate individual stations of the fourth category is given to those age 14, while the right to operate collective stations can be granted even 12-year olds who have observer call signs.

Licences to operate an Amateur Radio station are issued in two steps. The first includes an examination on electrical and radio engineering, safety, rules of communications and sending and receiving the telegraphic code. Fourth category permission needs only an interview without a test in Morse code. Examinations and interviews are arranged by qualifications commissions of local radiosport federations or clubs of the Volunteer Society for Assisting the Armed Forces. Each category has set wave bands, specific types of communications and a set transmitter output power allocated to it. (See Table 1)

Radio amateurs pay nothing for examinations, formalities and licences. Every amateur pays three rubles to his club annually—his membership dues. There are no taxes on radio activities.

The development of glasnost and democratisation has brought some changes to the rules of operating amateur stations. Now the operator can give his home address; stations of all categories are allowed to contact all countries including Israel; and QSL cards can be received at a home address as well as through the QSL Bureau of the USSR Central Radio Club. Radio amateurs are allowed to experiment with new forms of communications such as packet radio, and even organize computer-based information networks.

There are approximately 51,000 Amateur Radio call signs (including 4000 collective) in the USSR. For a country with

Category	Power	Bands and Privileges
CATEGORY 4 individual	5 watts	CW: 1830-1930 SSB: 1860-1930 AM: 1900-1930
CATEGORY 3 individual and collective; as for Category 4 plus ...	10 watts	CW: 3500-3650 CW: 21000-21150 CW: 28000-29700 SSB: 28200-29700 AM: 28800-29200 VHF-UHF bands
CATEGORY 2 individual and collective; as for Category 4 plus ...	50 watts	CW: 3500-3650 SSB: 3600-3650 CW: 7000-7100 SSB: 7040-7100 CW: 1400-14350 CW: 21000-21450 SSB: 21150-21450 CW: 28000-29700 SSB: 28200-29700 AM: 28800-29200 VHF-UHF bands
CATEGORY 1 individual and collective	10 watts	CW: 1830-1930 SSB: 1860-1930 AM: 1900-1930
	200 watts	CW: 3500-3650 SSB: 3600-3650 CW: 7000-7100 SSB: 7040-7100 CW: 10100-10150 CW: 1400-14350 SSB: 14100-14350 CW: 21000-21450 SSB: 21150-21450 CW: 28000-29700 SSB: 28200-29700 AM: 28800-29200 VHF-UHF bands
	5 watts	VHF-UHF bands

Soviet VHF-UHF bands are 144-146, 430-440, 1260-1300, and 5650-5670 Mhz; and 10-10.5, 47-47.2, 75.5-76, 119.98-120.02, 142-149, and 241-250 GHz.

as many people as in the Soviet Union, this is too few, and the reason is the almost total absence in the shops of selling amateur communications equipment.

It is safe to say that 99 per cent of all Soviet amateurs use homemade transmitters or transceivers. Only a few groups use professional industrial-type equipment, a poor substitute for amateurs sets. As for imported transceivers, there are only a few in the country. For aerials, it is extremely difficult to buy thin-walled aluminum tubing. This explains the wide use of quads. Wooden poles and the wire

to make these aerials are easily available.

Lack of Amateur Radio equipment hampers radio activities in the schools. School stations are few and far between, although schoolboys of all grades are eager to take up radio as a hobby. Progress, if any, is due to enthusiastic individual amateurs who work in schools on a voluntary basis.

Even so, the radio movement is very popular and is not confined to Amateur Radio. Nationwide exhibitions of homemade radio devices are held regularly, once every two years. These exhibits

Public Service/Service Public

Conducted By Jack Strangleman, VE3GV
and Bob Boyd, VE3SV

Field Organization Reports April 1989

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 807:

Reporting	ARES Members
VE3GV (VE3s EFX, FOB, FUN, GMU, GNW, HNH, HSF, IIT, JJA, KBU, LJV, LKI, LPM, LYW, MB, SV and TNL)	572
VE6AFO (VE6s AMM, CBJ)	235

National Traffic System

Net (Mgr)	Sess	QNI	QTC
APN (VE1VX)	11	31	80
KTN (VE3AJN)	12	101	10
OLN (VE3POJ)	29	530	33
OPN (VE3IN)	30	576	128
OQN-1 (VE3GSQ)	26	25	11
OQN-D (VE3ORN)	28	74	7
OQN-E (VE3CYR)	30	161	121
OQN-L (VE3GSQ)	20	50	32
MMN (VE4TE)	30	393	20
SATN (VE5AGM)	30	105	4
SPN (VE5AE)	27	1077	7
APSN (VE6AKY)	30	928	8
ATN (VE6CPP)	30	183	58
BCEN (VE7EJU)	30	660	103

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

CRRL Section Traffic Manager Reports

Call	Orig	Rcvd	Sent	Divd	Total
VE1DLC	1	17	5	17	30
VE1IH	2	8	5	8	17
VE1ALU	2	6	6	1	17
VE1BYV	0	5	5	0	10
VE1CRS	0	3	3	0	6
VE1ADJ	0	1	1	0	2
VE2EDO	4	14	25	6	49
VE2BP	4	14	12	18	48
VE2WH	0	12	14	17	43
VE2JN	2	14	14	3	34
VE2EC	6	8	4	8	26
VE2ALE	0	2	2	0	4
VE3ORN	4	82	17	18	176
VE3GSQ	0	74	64	0	138
VE3SD	3	44	79	3	129
VE3CYR	0	64	35	0	99
VE3GNW	0	24	34	0	58
VE3SB	1	21	24	1	47
VE3EAM	6	16	6	16	44
VE3IN	0	35	3	4	42
VE3NVJ	2	10	13	2	27
VE3KXB	1	3	12	0	16
VE3FGU	0	6	7	1	14
VE3EWD	0	6	8	0	14
VE3GT	0	2	10	0	12
VE3BDM	0	2	8	1	11
VE3AJN	0	7	3	1	11
VE3KCZ	0	3	2	1	6
VE3BAJ	0	0	3	0	3
VE3DVE	0	1	1	0	2
VE4JA	12	20	5	15	52
VE4TE	0	23	12	0	35
VE6CHK	-	-	-	-	215
VE6CPP	-	-	-	-	23
VE6ABC	-	-	-	-	9
VE6AMM	-	-	-	-	6
VE7EJU	2	52	61	1	116
VE7ANG	1	20	42	1	64
VE7FB	1	26	16	7	50
VE7CBL	0	16	9	7	32
VE7CCJ	2	12	11	0	25
VE7XA	0	2	13	1	16
VE7FME	0	4	8	3	15
VE7BZI	2	3	3	2	10

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: VE6CHK (215), VE4LB (112), VE3ORN (107), VE4STU (81), VE7EJU (79), VE4IX (72), VE3CYR (66), VE7FB (43)

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)	5	85	1
ARES ONTARIO (VE3GV)	1	4	0
CRRL ONTARS (VE3BC)	30	10488	0
ARG (VE5EE)	29	618	0
MJARC (VE5MML)	27	340	0
STNARC (VE5HG)	26	526	0
SWX (VE5EX)	30	628	0
AARES (VE6AMM)	5	137	4

Special Note: Bob Boyd, VE3SV, is taking a holiday. His regular ARES column will return to this space next month.

show ingenuity in many fields: radio communications, computer technology, and instruments for industry, science, medicine, municipal economy, farming and so on. Many exhibits are related to studies at school, college or university. There are domestic radio sets as well as control and measuring instruments. Special juries award the best exhibits diplomas and valuable prizes.

Operating Awards

Soviet and foreign radio amateurs are eligible for the following diplomas issued by the USSR Central Radio Club:

RAEM, in memory of Krenkle the hero of the Soviet Union, Krenkle, an outstanding shortwave operator and first Chairman of the USSR Radiosport Federation;

W-100-U for contacts with 100 Soviet stations; endorsement stickers recognize contact with 300, 500 and 1000 Soviet radio stations;

P-100-O for contacts with 100 USSR regions; stickers for 150 and all regions;

P-150-C for contact with 150 countries and territories; stickers for 200, 250, 300 and 325 countries and territories;

P-15-P for contacts with 15 USSR countries and territories;

P-6-K for contact with radio stations in six continents; and

KOSMOS for contacts in the VHF bands and via satellite.

To obtain any diplomas of the USSR Radiosport Federation and the USSR Central Radio Club, foreign amateurs, should send applications and QSL cards to the Central Radio Club, Box 88, Moscow. Amateurs in countries whose Amateur Radio organizations have an agreement with the Soviet Union on mutual free exchange of diplomas without QSLs, need send only an application form certified by an official of the organization.

Satellite Communications

Last year was the tenth anniversary of the launching of the first Soviet Amateur Radio satellites. On October 26, 1978, one booster rocket carrying a KOSMOS-1045 satellite also put the Radio-1 and Radio-2 satellites into orbit. The number of Soviet Amateur Radio satellites keeps growing, with their characteristics improving and their potential increasing.

The latest Amateur Radio satellite carrying RS-10/RS-11 was launched on June 23, 1987. Specifications appear below.

RS-10

Uplinks: 145.86-145.90 and 21.16-21.20 MHz for two-way communications; 145.82 and 21.12 MHz for automatic answer-back device.

Downlinks: 29.36-29.40 and 145.86-145.90 MHz for two-way communications; 29.402 MHz for automatic answer-back device; 29.357 MHz (alternate 29.4 MHz) for telemetry.

RS-11

Uplinks: 145.91-145.95 and 21.21-21.25 MHz for two-way communications; 145.83 and 21.13 MHz for automatic answer-back device.

Downlinks: 29.41-29.45 MHz and 145.91-145.95 MHz for two-way communications; 29.453 MHz for automatic answer-back device; 29.407 MHz (alternate 29.453 MHz) for telemetry.

Orbital parameters: circular orbit; angle of inclination: 83.9296 degrees; period: 105.0245 minutes; daily precession: 361.73 degrees; apogee: 200 km; and perigee: 200 km.

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100, and 200kHz for each side of the frequency you're listening to. Vertical range indicates relative signal strengths. A contesteer's dream!



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