

QST 

CANADA

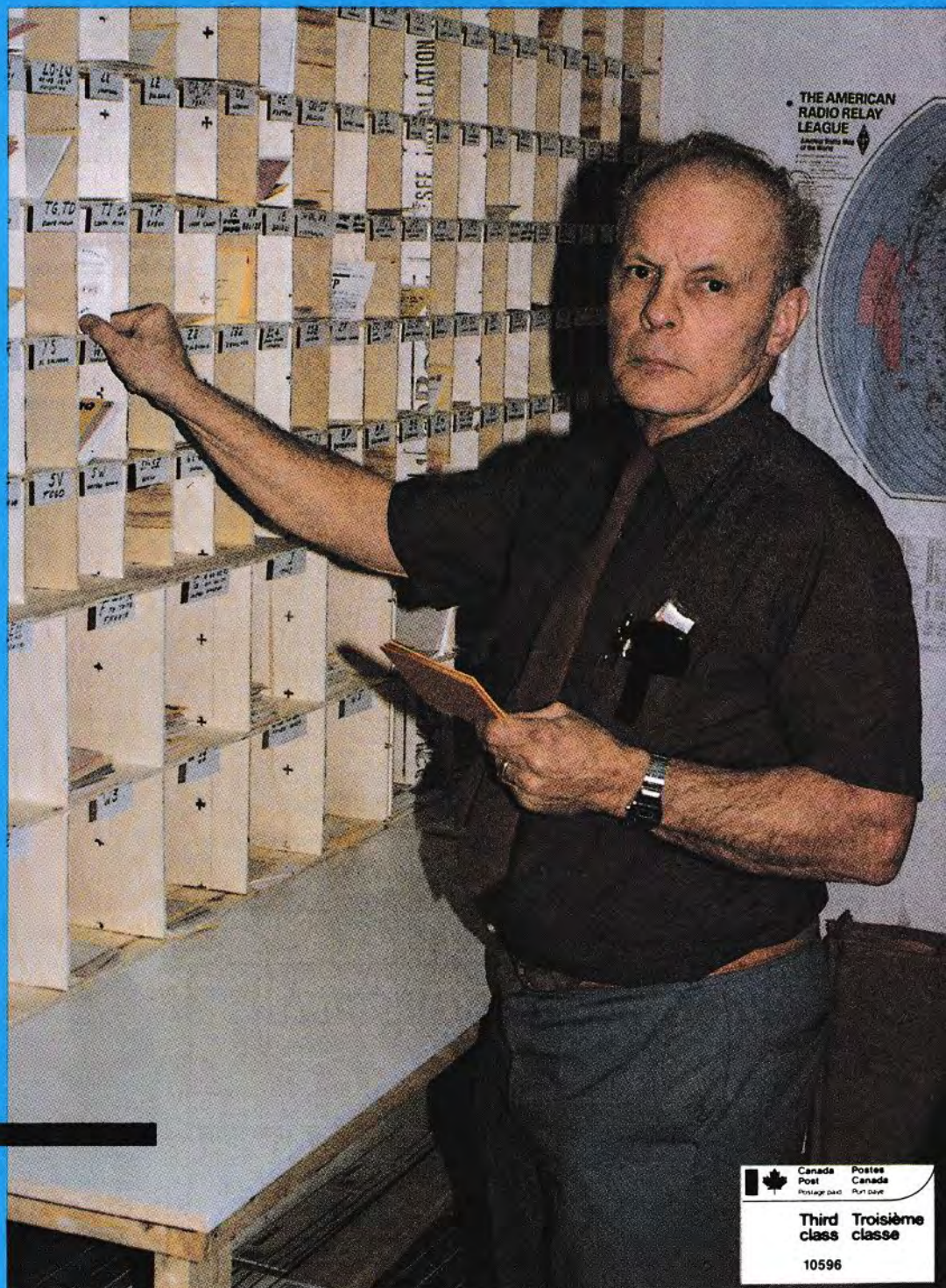
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Entièrement consacré à la radio amateur canadienne


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Island**

**Geomagnetic
Connection**

**QSL
Bureaus**

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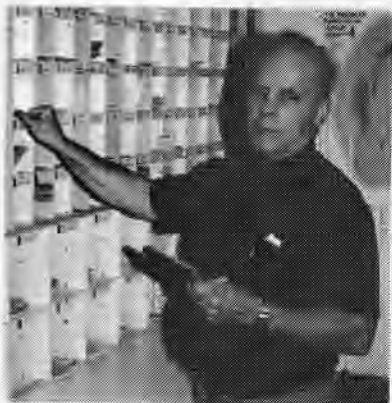
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ABOUT THE COVER



John Henderson, VE3HFT, sorts cards at the CRRL Outgoing QSL Bureau in Arva, Ontario. Use of the bureau is free to CRRL members—just one great reason for joining CRRL! ■

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

A Good Organization

This special issue of *QST Canada* being sent to every amateur in Canada. In this issue, we've temporarily dropped a number of our regular columns so we can concentrate on telling you about CRRL. Our agenda is simple. If you're not yet a member, we want to convince you that you should be. We want to sign you up.

Why should you support CRRL? Partly because it's one of the cheapest forms of insurance that money can buy. Think of the enjoyment you get from Amateur Radio. Think of the investment you have in your equipment. That enjoyment and that investment would disappear in an instant if we were not for the RF spectrum that we have.

We wish it weren't so, but RF spectrum is limited. There's only so much of it to go around. Others would like to take the spectrum that we have. What's kept them back in the past? What's keeping them back now? Organized Amateur Radio.

In Canada, there are several good organizations working for Amateur Radio. Their people are our friends and fellow amateurs and we know they work hard for all of us. But only CRRL is the IARU member-society for Canada, and we think that makes a difference.

IARU is the International Amateur Radio Union. It's made up of some 125 national Amateur Radio societies like CRRL. Don't confuse it with ITU. ITU is the International Telecommunications Union. It's the branch of the United Nations that meets from time to time to allocate RF spectrum to the various radio services around the world.

How can amateurs affect ITU decisions? Certainly not individually. Not even through most Amateur Radio organizations. Only through IARU with its vast network of contacts and its years of experience in lobbying for Amateur Radio interests.

At the World Administrative Radio Conference (WARC) in 1979, IARU preparations and follow-up resulted in many ITU decisions favourable to Amateur Radio. We retained our traditional amateur bands, and gained new bands at 10, 18 and 24 MHz. Now we are facing another WARC, this one to be held in the first quarter of 1992. Delegates to that WARC will be examining use of 3-30 MHz, 500 MHz-3 GHz, and 12.7 GHz and above. Who will be on hand to protect our interests? IARU. How can you, as a Canadian amateur, support IARU so it has the credibility and resources necessary to do the job? Easy. By joining and supporting CRRL, the IARU-member

society for Canada.

Of course, there's more than that. Your support of CRRL makes it easier for CRRL representatives to be effective in defending our interests right here at home. Did you know that in many parts of Canada, there are no new commercial frequencies available between 30 and 900 MHz, and that the only way that new stations can be placed on the air is by sharing frequencies and using tone or digitally-encoded squelch? That despite everyone's best efforts, American amateurs are likely to lose 220-222 MHz? That it will probably be only a matter of time before Canadian VHF-UHF bands come under similar pressure?

Your support is needed to give Canadian Amateur Radio the credibility it deserves, and to help pay for the phone calls, letter writing and trips to Ottawa that will ensure that our politicians and civil servants know our side of the story.

We hope you're getting the idea that your support might be vital. But there are other reasons to belong to CRRL. CRRL has a proven track record that goes back to the earliest days of Amateur Radio. It has a tradition of stressing the positive. It has good people, right across Canada, working in QSL bureaus, in branches of the CRRL Field Organization (NTS, the National Traffic System, ARES, the Amateur Radio Emergency Service, and the bulletin service), and at the CRRL Headquarters office in London, Ontario. CRRL provides services like *QST Canada* (and if you choose, *QST*), the incoming and outgoing QSL bureaus, and support for the field organization. CRRL is an open organization. As a member, you can influence CRRL actions by nominating and voting for those who run for CRRL office. You can also run for office.

We've been involved with CRRL for eleven years. We never cease to be amazed at the good people—really, all volunteers—that CRRL has been able to attract to carry out its work. We marvel at the pride those people have in the organization, and how that pride has been carried over to the CRRL membership. What has been accomplished so far is the direct result of support by CRRL's over 5000 members. But now it's a new decade and there's a WARC on the horizon and potential threats to our frequencies at home. Much needs to be done and your support will make it all possible.

Can we sign you up? There's a coupon on page eight. Please fill it in and join CRRL. Thanks for your support. —Harry MacLean, VE3GRO ■

All letters are 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.

CANADIANS?

The following letter, dated 1990 January 01, was received by CRRL Past President Tom Atkins, VE3CDM.

I'm sorry I have to write you this letter. For the past week I have been listening to 14.145 MHz. You can not imagine the way the group is behaving. They constantly insult anyone who might call in. I'm sure the new operators need help and sometimes they may not be on the right frequency, but to yell and swear at them and use filthy language is disgraceful. I have not once heard them give their calls. They refuse to if they are asked. I know

they are in Canada, "policing the frequency". It seems more like gestapo tactics.

I've only been an amateur for six years, I've met many wonderful operators from Canada. But these operators even insult Canadians. It doesn't matter who comes into contact with them. They are a disgrace to your country.

My OM was born in Canada and each year we have a family reunion in your wonderful country. You have such good people in Canada. It really is sad that these operators should be allowed to continue. —Patricia Murray, NW21, East Aurora, NY

Here is Tom's reply:

Thank you for your recent letter. I understand completely your frustration and anger that this shameful behavior should be taking place on the amateur bands, specifically on 14.145 MHz as a result of the Bouvet Island DXpedition. Unfortunately, while this type of behavior is totally unacceptable to the responsible amateur community, in very practical terms there is not a great deal that can be done. There is no doubt that both the FCC and DOC know what is going on. But given their resources and other responsibilities, the likelihood of much action, in my view, is very slender.

Without attempting in any way to excuse the behavior of any Canadian operators on 14.145 Mhz, let me say that 14.145 MHz is completely out of bounds to any type of US phone operation. Yet, that frequency, plus or minus 10 kHz, is full of US amateurs who are blatantly defying FCC rules by being there at all.

I appreciate you taking time to write. It occurs to me that tape recordings of this type of "amateur activity" presented at ITU's WARC-92 frequency allocations conference by an administration covetous of amateur frequencies, would not do much to justify our continuing occupancy of large portions of valuable spectrum. —Tom Atkins, VE3CDM

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



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

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

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

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

Membership inquiries and general correspondence should be directed to CRRL Headquarters, Box 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.

Ajax, ON: Durham Region Amateur Radio and Computer Fleamarket, Saturday, April 7, at Pickering High School, Church St, Pickering Village, Ajax. Sponsored by South Pickering ARC and North Shore ARC. Opens 9 a.m., vendor setup at 7:30 a.m. Admission \$4. Tables \$10 plus admission. Contact Ron Brown, VE3WZ, Box 53, Pickering, ON L1V 2R2, Tel (416) 675-7314.

Bramalea, ON: Fleamarket, Saturday, March 3, at North Peel Secondary School, 1305 Williams Pkwy. Sponsored by Peel ARC. Opens 9 a.m., vendor setup at 7:30 a.m. Admission: \$3. Tables: \$5 plus admission. Commercial tables: \$10 plus admission. Contact James McMurray, VE3BDI, 20 Hillbank Trail, Bramalea, ON L6S 1P6, Tel (416) 458-0505.

St Catharines, ON: Twelfth Annual Big Event, Saturday, February 3, at Canadian Auto Workers Hall, 124 Bunting Rd. Sponsored by Niagara Peninsula ARC. Hamfest: 8 a.m.-2 p.m. Admission: \$3, 12 and under free. Tables: \$5. Dealer tables: \$12. Dinner Dance 7 p.m.-?. Tickets must be paid for by January 27: \$20 each. Contact George Spencer, VE3OZW, RR1, Jordan, ON L0R 1S0, Tel (416) 562-4891.

1989 Bermuda Contest: 0001 UTC March 18 to 2400 UTC March 19. Actual operation not to exceed 36 hours. Open to amateurs in Canada, the US, West Germany and Bermuda. Winners are brought to Bermuda to receive their trophies. Full details will appear in next month's *QST Canada*.

The Geomagnetic Connection

A scientific look at geomagnetic activity and propagation conditions on a North Atlantic HF radio circuit

By Richard W Miller, VE3CIE
R R 1
Hillsburgh, ON N0B 1Z0

Since 1982, when the propagation program MINIMUMF developed by the US Naval Ocean Systems Center was introduced to the Amateur Radio world, Amateur Radio operators have had the capability of predicting the maximum usable frequency (MUF) on their home computers. To obtain the best available radio circuit, operators could select the amateur band nearest the MUF calculated for the time when communications were desired. However, MINIMUMF does not account for the effects of geomagnetic activity on propagation conditions. Consequently, amateur frequencies near the MUF can prove to be unsuitable for communications during periods of high geomagnetic activity.

Forecasts of geomagnetic activity are available from the Geophysics Division, Geological Survey of Canada, Energy Mines and Resources Canada (GSC). These forecasts can be received by telephone voice recording or dial-up computer link. Unfortunately, many amateurs lack a clear understanding of how various levels of geomagnetic activity affect propagation conditions.

To gain an appreciation of this relationship, this article will examine the correlation between the Daily Range Index (DRX) of geomagnetic activity, as calculated by GSC, and the Propagation Quality Index (PQX), as issued by West Germany's Forschungsinstitut der Deutschen Bundespost (FDB) for the HF circuit New York to Norddeich, West Germany.

Geomagnetic Activity

The DRX provides a measure of the daily geomagnetic activity. It is defined as the average of the 24 hourly ranges in the X (north) component of the earth's magnetic field. It is determined from representative observations for each of the three magnetic zones in Canada (see Fig 1, Table 1). Each zone (sub-auroral, auroral and polar cap) has different magnetic behavior defined by the physical features of the earth's magnetosphere.

The New York to Norddeich great circle path has its mid-point near the boundary of the auroral and sub-auroral zones. Magnetic data for both Ottawa (OTT on the map) and Fort Churchill (FCC on the map) were obtained from GSC to investigate the correlation of propagation quality

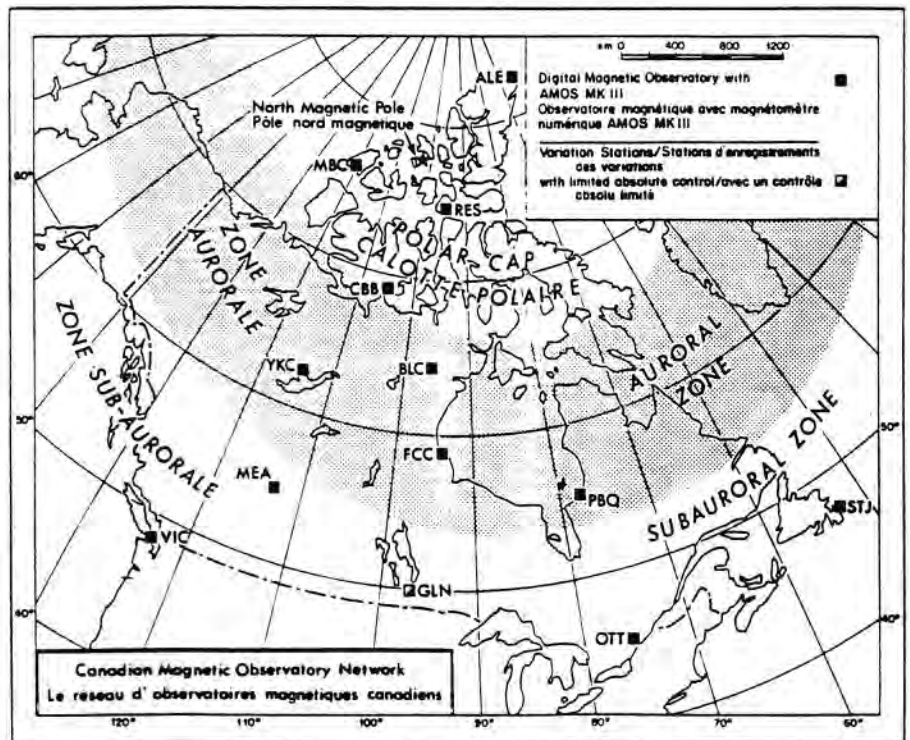


Fig 1: Geomagnetic zones and Canadian Magnetic Observatory Network

Table 1: Auroral Zones in Canada

Zone and Geomagnetic Latitude	Representative Station	DRX Indices (nT)			
		Quiet	Unsettled	Active	Major Storm
sub-auroral 50-60°N	Ottawa	0-20	21-40	41-80	over 80
auroral 60-75°N	Fort Churchill	0-60	61-160	161-240	over 240
polar cap 75-90°N	Resolute Bay	0-40	41-100	101-160	over 160

with geomagnetic measurements taken in each zone. All data selected are from the rising portion of sunspot cycle 22, October 1986 to April 1989.

Propagation Data

West Germany's FDB measures hourly field strength at Norddeich (53.6°N, 7.1°E) in dB above 1 μV for a 1 kW transmitter and an isotropic antenna. Frequencies monitored on the New York to Norddeich circuit are 4331, 6376, 8630, 13033 and 16792 kHz. These frequencies cover

a range near the amateur bands 80-20 metres. From all 24 hourly field strength values, and from all frequencies on the circuit, a median field strength (FD) is calculated. This daily value is then compared with the average value (FA) of the preceding 27 days—approximately one solar rotation. The propagation quality index (PQX) can then be calculated:

$$PQX = 6.0 + 20 \log (FD/FA)/3.0$$

The PQX varies from 0.1 to 9.9 where 6.0 is "normal" (see Table 2). Conditions are

Table 2: Scale for propagation Quality Index PQX

Condition	PQX
very good	9.1-9.9
good	7.1-9.0
normal	5.1-7.0
fair	3.1-5.0
poor	1.1-3.0
very poor	0.1-1.0

considered normal if they correspond to the average of the preceding 27 days.

Analysis of Data

During the period of study, there were 942 days of observations. The data was sorted according to the DRX classes in Table 1 and the propagation quality levels in Table 2. Table 3 shows the results for the sub-auroral and auroral zones. Fig 2, which is based on Table 3, shows the distribution of propagation conditions when compared to different levels of geomagnetic activity. Note that the auroral zone is mostly unsettled while the sub-auroral zone is mostly quiet. This reflects the different magnetic characters of these zones.

The propagation levels that had the two highest frequencies of occurrence in each activity class (see Table 3) were then selected for a categorical analysis of propagation conditions compared to various levels of geomagnetic activity. The category was determined by selecting the highest frequency of occurrence first. For example, in the auroral zone, quiet conditions, the "normal" propagation condition, had the highest frequency (209) and was selected as the first part of the category name, and "good" had the second highest frequency (114) and was selected as the second part of the category name. The category, therefore, was "normal-good" (N-G). This result—and others—are given in Table 4 below.

All this analysis can be used in a categorical forecast scheme. Overall, the auroral zone data gives the best forecast with 82.2% of the days falling into the correct category of propagation conditions. The sub-auroral zone has a higher percentage, but fewer days than the auroral zone in each activity class in a selected forecast category. Exception: the quiet class. The implication is that when the auroral zone is quiet, there is a better chance of having N-G propagation than when the sub-auroral zone is quiet. On the other hand, if the sub-auroral zone is at major storm levels, there is a better chance of having poor-very poor (P-VP) conditions than if the auroral zone is at major storm levels. By selecting the auroral zone (Churchill) as the basis for the categorical forecasts, the best overall forecasts can be achieved. Of all days,

Table 3: Frequency of Occurrence of Propagation Quality by Geomagnetic Classes

Propagation Quality	Sub-Auroral Zone (Ottawa)				Auroral Zone (Fort Churchill)				per cent
	Q	U	A	MS	Q	U	A	MS	
very good	9	1	0	0	7	3	0	0	1.1
good	168	4	0	0	114	56	2	0	18.3
normal	431	64	2	0	209	263	24	1	52.7
fair	151	56	19	0	40	142	37	7	24.0
poor	9	10	10	5	0	17	10	7	3.6
very poor	0	0	0	3	0	0	0	3	0.3
total	768	135	31	8	370	481	73	18	
per cent	81.5	14.3	3.3	0.9	39.3	51.0	7.8	1.9	

Q = quiet, U = unsettled, A = active, MS = major storm, per cent = percentage of each activity level or propagation quality level.

85.2% fall into the correct category, and for each activity class, 77.8-88.3% of the days fall into the correct category.

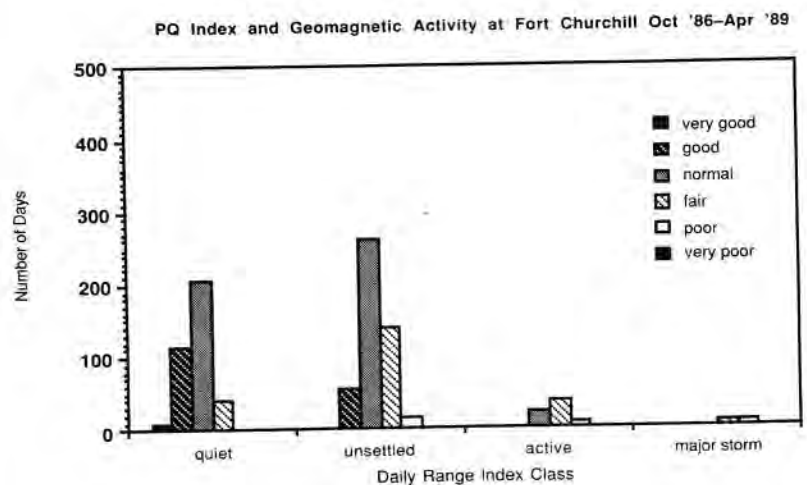
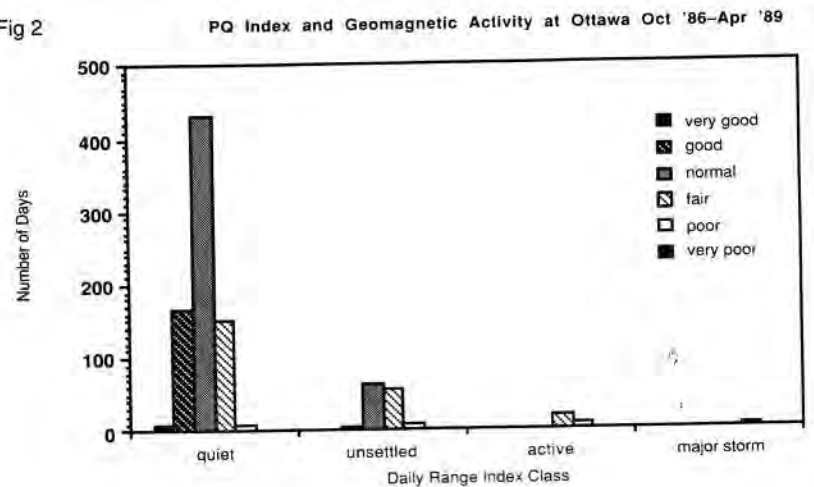
propagation quality on a North Atlantic HF radio circuit can be characterized—to a limited extent—by levels of geomagnetic activity. Although the auroral zone data

Discussion and Conclusions

This investigation has shown that the

Geomagnetic—continued on page 6

Fig 2



Green Island Expedition

CI7GRN puts Green Island on the IOTA map

By Reg Beck, VE7IG
Box 16, R R 2 Glen Drive
Williams Lake, BC V2G 2P2

It was back in the fall of 1988 that Frank Toplak, VE7DP, and I started talking about an island DXpedition. I had been doing some organizing work on the west coast for the Islands on the Air (IOTA) awards manager and he agreed to accept three new island groups for IOTA if they were activated.

Frank was interested in using a new prefix as he was involved in the WPX award program. I was interested in putting a new island group on the air. We both knew that a distinctive prefix would attract attention and increase our QSO total. We applied to DOC, and as a result of letters of support showing that our operation would be of international significance, DOC granted us the CI7 prefix. It would be the first-ever use of CI7.

We chose the Dundas Island group, about 35 miles northwest of Prince Rupert, as our destination. At first we planned to land on Dundas Island itself. We knew of no habitation on the islands. But Frank went to Prince Rupert to scout out the situation, and met Wally Mansz, VE7HQ, who works at the Coast Guard office. Wally pointed out that the Green Island light station was two miles east of Dundas Island and would certainly be included in the group. The light station was manned and Wally thought we could get permission to visit. This was achieved through telephone calls to the light station and an application to the Coast Guard asking for permission to land.

Meanwhile, I had been taking with Mike Syrjala, VE7DX, a commercial fisherman who would be in the Prince Rupert area in early July. He agreed to take us to the island, but warned of complications because of possible changes in the opening dates of the fishing seasons. As a precaution, Frank lined up alternate transportation in Prince Rupert.

Frank and I met in Prince Rupert on Thursday, July 13. We had all our equipment, Mike was there to take us to the island, and we had assurances from Walter and Donna Stubbe, VE7EGR and VE7EHO, that they would come to Green Island and pick us up on July 16.

We left in rain and fog (it was Prince Rupert, after all) early Thursday morning and arrived at Green Island at 10 a.m. The seas were a bit rough and we had to land our dinghy on the rocks just below the light station. Mike proved to be an expert



The CI7GRN operating tent with the TA33JR, looking north towards Alaska on the left, over Grey Isle and Portland Inlet just over the tent. (VE7IG photo)

with the dinghy and soon the two of us and all our gear were ashore. Then it was up a 30-foot flight of stairs to the light station. With the able help of the light keepers, we soon had our equipment at the top. We went in for tea.

The population of Green Island is six. It consists of Dave and Louise Edgington, Andrew and Cathy Hill, and their two children, Melissa and Raymond. We thoroughly enjoyed our visit with the Edgingtons and the Hills. Their hospitality was exceptional and they were constantly offering help. Dave even provided us with a room in one of the buildings, giving us a real kitchen and sleeping quarters!

We set up operations in a tent in front of the light station, right on the edge of the light station lawn. The light station generator would supply us with 120 volts ac, and our location was one of the few flat spots we could find near a power outlet. It also gave us a clear shot at the horizon in most directions. We placed a borrowed sheet of plywood on the floor, and the FT-102 and FT-747 on a table borrowed from the light station. Our setup was the source of much interest—and the cause of much photo-taking—by the local population.

I believe it is vital to take a beam on expeditions like these. Earlier, I had lined

up a TH33JR and Frank even engineered a tower. It worked so well that I will describe it here for other amateurs planning DXpeditions.

The tower used two ten-foot sections and a ten-foot pipe mounted in the top of one section. The ten-foot pipe could be telescoped into the tower for storage. A two-foot pipe was inserted into the ten-foot pipe and taped to keep it from slipping inside. The tower was initially erected without the beam and guyed with lengths of plastic rope. Then it was lowered and the beam was installed on the two-foot pipe. This pipe was then dropped into the ten-foot pipe. When everything was ready, we put the tower back up and telescoped the ten-foot pipe out of the tower section. Now we had the beam at 28 feet. The two-foot pipe swivelled inside the ten-foot pipe and the beam rotated nicely by pulling it around with a rope. With the base of the tower 25 feet above salt water in all directions, we soon had a good signal.

Most of our equipment was set up shortly after 2000 UTC, the time at which I had arranged to sked the IOTA gang on 14.260 MHz. I turned on the FT-102 and there they were, calling me. I didn't have logbooks ready, so I simply let them know I was there. Chris, ON5GT, was

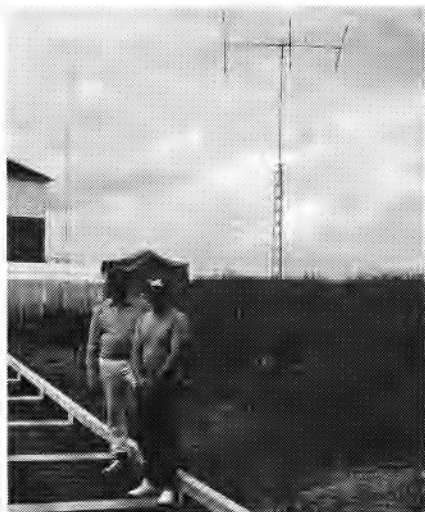
first to hear me and wanted to be the first to work NA114, the new island group of Dundas Islands. I assured him he would be first in the log and asked him to stand by. Chris went into the log at 2024 UTC—the first station to work NA114.

Frank and I—and often the both of us—kept the station active throughout our three days on Green Island. Band conditions were only average, but still we made 3700 QSOs—on 40, 20 and 15 metres. There were no openings on 10 metres and we hadn't taken antennas for the lower bands. Summer conditions on the lower bands would have made operating there most non-productive.

Sunday morning, July 16. I was running a big pileup on 15 metres when Frank stuck his head into the tent to announce that our transportation back to the mainland had left early and was almost at the island. We closed down at 1820 UTC, and a frantic hour and one-half later, left the island. Loading equipment went smoothly. Seas on the north side of the island were calm and Dave Edgington quickly ferried our gear to the boat via rubber dinghy—a zodiac. We picked up the final load and said our goodbyes. Altogether it had been an enjoyable experience.

Are there any budding DXpeditioners out there? IOTA provides a reason for a relatively inexpensive expedition. You don't have to travel to a DXCC country to be rare and wanted. Write to me for information. There are still many other island groups in Canada waiting to be activated as IOTA "new ones".

Interested in learning more about Green Island and other British Columbia light stations? Check your public library for two excellent books by Donald Graham: Inside Passage, with its chapter on Green Island, and Keepers of the Light.



Frank, VE7DP, in front, and Reg, VE7IG, behind, standing on the Green Island heli-pad loading ramp on the east side of the light station. Another IOTA—Island on the Air! ■

Geomagnetic—continued from page 4

appears more useful for this particular circuit, it is only slightly better overall (about 5%) than for the sub-auroral zone. This may be due to the circuit mid-point being near the boundary of the auroral and sub-auroral zones. Comparison of geomagnetic zonal data with propagation quality for circuits entirely within one zone would probably give more definitive results. As might be expected, when the auroral zone is quiet, propagation conditions are good most of the time, and when the sub-auroral zone is at major storm levels, propagation conditions are bad most of the time. Auroral zone data should be used for the circuit we studied because the data is more evenly distributed over the geomagnetic activity classes.

The Geophysics Division, Geological Survey of Canada, Energy, Mines and Resources prepares forecasts of geomagnetic activity for each of Canada's three zones: sub-auroral, auroral and the polar cap. Magnetic conditions for each zone are forecast according to the level of activity: quiet, unsettled, active and major storm levels. If a frequency near the MUF is selected and the forecast is correct, propagation quality on HF radio circuits from eastern Canada to western Europe may be characterized as in Table 5 below.

Acknowledgments

I would like to thank Dr J Hruska of Geophysics Division, Geological Survey of Canada, Energy Mines and Resources, for supplying the data for this study, and for reviewing this paper and offering helpful comments and suggestions. I would also like to thank my wife, Suzanne St Amour, who assisted with the organization of the data and who provided encouragement.

Amateurs may obtain forecasts of geomagnetic activity from Geophysics Division, Geologic Survey of Canada, A 72-hour forecast is produced every working day and is available by telephone 24 hours a day. Telephone (613) 992-1299. Amateurs wishing dial-up access to the geomagnetic forecast and review, which contains a computerized summary of geomagnetic activity for two days before, a forecast for the day and the following two days, should contact Dr J Hruska, Geophysics Division, GSC, 1 Observatory Cr, Ottawa, ON K1A 0Y3.

A more detailed version of this article was presented as a paper for the Solar-Terrestrial Workshop, sponsored by International Urisgram and World Days Service, and held in Sydney, Australia, last October. Richard Miller, an avid VHFer, is author of numerous propagation articles in QST. His most recent article: "Sunspots, Flares and HF Propagation" appears in The ARRL Antenna Compendium, Volume 2.

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Table 4: Categories of Propagation Conditions for Various Levels of Geomagnetic Activity

Propagation Quality	Sub-Auroral Zone (Ottawa)					Auroral Zone (Fort Churchill)				
	Q	U	A	MS	total	Q	U	A	MS	total
	N-G	N-F	F-P	P-VP		N-G	N-F	F-N	F-P	
category number	599	120	29	8	756	323	405	61	14	803
other	169	15	2	0	186	47	76	12	4	139
% in category	78.0	88.9	93.5	100	80.3	87.3	84.2	83.6	77.8	85.2

Table 5: Categorical Forecast of Propagation Quality for HF Radio Circuits from Eastern Canada to Western Europe

If Auroral Zone is...	Propagation Quality is...	Per Cent of Time Correct
quiet	N-G	87.3
unsettled	N-F	84.2
active	F-N	83.6
major storm	F-P	77.8

Q = quiet, U = unsettled, A = active, MS = major storm; VG = very good, G = good, N = normal, F = fair, p = poor, VP = very poor.

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Restructuring is on Track

Promulgation date for Restructuring of the Amateur Service has moved from March 01 to April 01, but implementation date is still set at 1990 September 01. At that time there will be a new Amateur Radio licence with four levels of qualification. The Basic level will allow all modes, 250 watts on amateur bands 30 MHz and above, commercial transmitting equipment only, 5-wpm code will add all modes, 1.8-2 and 3.5-4 MHz. 12-wpm code will add all modes in the remaining amateur bands. The Advanced level will allow homebrew transmitting equipment, maximum legal power, and the right to own and operate a remote base or repeater station. All Canadian amateurs who have the present Amateur Certificate by 1990 September 01 will be deemed to have the 12-wpm and Advanced level qualifications. They will automatically receive "full Advanced Amateur privileges".

OTHER DOC NOTES

- Prefix hunters, take note. To commemorate the Centennial of the City of Moncton, New Brunswick, DOC has authorized members of Moncton Amateur Radio Club to use the special prefix XM1 throughout April.
- A CRRL Bulletin 38 circulated by packet radio stations just after Christmas did not originate with CRRL. The bulletin, which announced that on April 1 DOC planned to limit Canadian phone operation on 20 metres, was a hoax.
- Just at press time, CRRL learned that DOC was planning to remove licensing requirements for GRS operation in the 27-MHz band, and that DOC was implementing a 10% increase in licensing fees. This will include Amateur Radio station

licences. Expect to pay \$22 when your licence renewal comes up in March. We'll have details next month.

CRRL NOTES

- Bob Benson, Q.C., VE2VW, will soon be retiring as CRRL General Counsel. Bob has served CRRL—and ARRL before that—for some sixteen years. During those years, Bob did much effective behind-the-scenes work for individual amateurs and their counsels, often helping with RFI and antenna tower cases. New CRRL General Counsel will be Tim Ellam, VE6SH, of Calgary. Tim's appointment will become official at the 1990 May CRRL Board meeting.
- Many thanks to Larry Lazar, VE4SL, for his work as manager of the CRRL VE4 Incoming QSL Bureau. Best wishes to new bureau manager Adam Romanchuck, VE4SN. Address for the VE4 bureau is 26 Morrison Street, Winnipeg, Manitoba R2B 3V4.

SOUTH OF THE BORDER

- Despite two court challenges, FCC is going ahead with developing service rules for Land Mobile operation on the 220-222-MHz band. FCC reallocated the this portion of the US 220-225-MHz amateur band to the US Land Mobile service last summer.
- In other US news, ARRL has filed a Petition for Rulemaking asking FCC to permit limited HF RTTY and data communications under automatic control. The petition asks FCC to designate 10-kHz in each of the 80-15 metre bands and 20 kHz of the 10-metre band for the automatic of operation. Of special interest to non-US amateurs: in accordance with IARU

recommendations, ARRL has asked that the 20-metre segment be 14.090-14.100 MHz and not in the "international phone band" where much of 20-metre packet operation currently takes place.

NOTES FROM ALL OVER

- Ralph Cameron, VE3BBM, is new chairman of the Defence of Amateur Radio Fund. Ralph, a supporter of both CRRL and CARF, is well known for his work in the Jack Ravenscroft case. The fund, which now stands at over \$5000, is being developed to help IARU defend Amateur Radio frequencies at the upcoming WARC (World Administrative Radio Conference) to be held in Spain in the first quarter of 1992. At that conference, delegates will review present use of 3-30 MHz, 500 MHz-3 GHz, and 12.7 GHz and above. There is no doubt that our amateur frequencies will be scrutinized carefully. Please do your part. Send your cheque to the Defence of Amateur Radio Fund, Box 56, Arva, Ontario N0M 1C0.
- The ARRL Awards Committee has accepted the recommendation of the ARRL DX Advisory Committee to add Conway Reef, 3D2, and Banaba (formerly known as Ocean Island), T33, to the ARRL DXCC countries list. QSL cards for both countries may be submitted to ARRL on or after 1990 March 1. (Cards submitted before that date will be returned with no action being taken.)
- Because of difficulties at the launch pad, launch of AMSAT's four MICRO-SATS, scheduled for January 11, was delayed to January 23-26. Launch of the new Japanese amateur satellite, JAS-1b, was scheduled for February 1. Listen for telemetry on 435.795 MHz. ■

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The CRRL Field Organization Forum

SECTION MANAGER ELECTION NOTICE

To all CRRL members in the Manitoba Section: You are hereby solicited for nominating petitions pursuant to an election for Section Manager. Nominations will be received at CRRL Headquarters until 1200 EST, 1990 March 09. For full details, see 1990 January *QST Canada* or contact CRRL Headquarters. —*Jack Strangleman, VE3GV, Field Services Manager*

REPORTS FOR 1989 NOVEMBER

Alberta: SM/STM/DEC: Bill Gillespie, VE6ABC; ASM: VE6AMM; SEC/TC: VE6AFO; OO: VE6TY. Alberta Public Safety Services held its Site Managers' Course on November 16 and 17. Amateur Radio provided emergency communications for the simulated tests. Participating: Ed, VE6FET, Milt, VE6ER, Graham, VE6GRA, along with myself, VE6ABC. Thanks to all. Amateur classes in Edmonton are still going well. Looks as if we'll have a new bunch of amateurs in the spring.

British Columbia: SM: Ernie Savage, VE7FB. British Columbia Public Service (BCPS) Net Manager Jim, VE7JM, reports a low of 129, a high of 221 and as total of 5053. British Columbia Emergency Net (BCEN) Manager Ferdi, VE7EJU, reported total check-ins of 688. BCEN will have a new net manager in 1990. We all send our thanks to Ferdi for his four years plus of service. Tom, VE7BNI, and Joseph, VE7ESA, are back on BCEN. Nice to hear them on the traffic report list. Vancouver ARC officers include Mike Crowe, VE7MCC, president; Mike Larden, VE7CIP, vice president; and Tal Hunt, VE7CVD, secretary.

Manitoba: SM: Jack Adams, VE4JA; ASM: VE4IX; SEC: VE4TM; ATC: VE4ADP; NMs: VE4LB, VE4IX, VE4TE. Hopefully, your Christmas was a very enjoyable event. As Section Manager for Manitoba, my very best wishes to you and yours for 1990. Congratulations to Con Impey who is now VE4CON, and to Orville Harris who is now VE4OAH. These two fellows never gave up, even though they found CW a brute to master. Just shows you what a little determination will do! Con and Orville both live in Dauphin, so our amateur population is growing, thanks to a dedicated few who take time to instruct and help prospective radio amateurs. A reminder: there are many individuals out there who would like to become radio amateurs but need coaching. Sorry to hear that Tom, VE3CDM, has decided to step aside and let someone else take over the reins as CRRL president. Tom, you're going to be missed. Bruce Balla, VE2QO, has a job ahead of him! What say, Bruce!

Maritimes-Newfoundland: SM: Carl Anderson, VE1UU; ASM: Ned Mulrooney, VO1MN; STM: Mel Lever, VE1VX; BM: Brent Taylor, VE1APG; EC (NB) Brian Upton, VE1ZJ. Section Traffic Manager (STM) VE1VX has awarded Official Relay Station (ORS) appointments to the following stations (L = liaison station endorsement, NC = net control endorsement): VE1ADJ (L, NC), VE1ALU (L), VE1BTV (L, NC), VE1IH (L, NC), VE1IU (L), VE1NB (L), and VE1VAU. The Society of Newfoundland Radio Amateurs (SONRA) executive has been re-elected. Members include John Tessier, VO1FX, president; Everett Price, VO1DK, vice president; Michelle Mercer, VO1RL, secretary; John Norman, VO1JN, treasurer; William Coffin, VO1KM, Warren Penny, VO1WP, and Doug Sellar, VO1SD, directors; and Clarence Englebrecht, VO1BL, honorary registrar. I have appointed Roly Peddle, VO1BD/VO1QST as CRRL Assistant Director for Newfoundland and Labrador. VO1s and VO2s can

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.

contact either Roly or myself regarding CRRL affairs—or any other Amateur Radio concerns you might have. SONRA will soon publish its new VO1/VO2 Callbook. New officers in Halifax Amateur Radio Club (HARC) include Kevin Galaugher, VE1KWG, president; Bill Elliott, VE1MR, 1st vice president; Jack Kiuru, VE1ZK, 2nd vice president; Pearson Friars, secretary; Mel Lever, VE1VX, treasurer; Jeff Harvey, VE1BLL, activities director; George Baker, VE1MGT, assistant activities director; Shirley Traitte, membership director, and Bob Swinwood, VE1PQ, past president who will represent HARC in the Halifax-Dartmouth Fleamarket organization.

Ontario: SM: Larry Thivierge, VE3GT; BM: VE3GSA; SEC: VE3GV; STM: VE3CYR; TC: VE3EGO. The Remembrance Day operation of special-event station VG3G from the Col John McCrae Memorial Home in Guelph was very successful. Col McCrae was author of the well known poem, "In Flanders Fields". The station made 400 contacts and originated 55 messages on 20-metre SSB and 40-metre CW. VE3CHN was in charge. Others who participated included VE3BB, VE3BEC, VE3BLD, VE3BXN, VE3CCZ, VE3FIC, VE3KK, VE3NQI, VE3OUV and VE3PTS. VE3CUR, VE3IMH, VE3MZY and VE3TO are new assistant net managers on the Transprovincial Net. VE3AVC is busy getting set up on 1296 MHz to work the satellite on Mode L. VE3ILX has moved to Fort Francis. New executive of Lakehead ARC (Thunder Bay) includes VE3JAU, president; VE3KRH, vice president; VE3TRE, secretary; VE3EBL, treasurer; and VE3AVS, VE3AJ, VE3ILV, VE3SNW, directors. Sault Ste-Marie has been designated the "Forest Capital of Canada" and this year is the 25th anniversary of the Great Lakes Forestry Centre—the largest forest research centre in Canada. To publicize this, Algoma ARC members will be using a special prefix this spring and summer. Regrettably, I report that VE3AJL, VE3AJR, VE3AOH, VE3BQO, VE3CGC, VE3FDE, and VE3FIY have become Silent Keys. VE3KGW and VE3NGL have set up a technical committee for Windsor ARC. Congratulations to hard-working VE3JPP who was recipient of the Don Green Memorial Award honouring Pickering ARC's amateur of the year. Recently retired, VE3AGN, is off to Princeton University for one year. Niagara Peninsula ARC is staging its "Big Event 12" on February 3 with a hamfest-fleamarket during the day and a dinner dance in the evening. VE3ERT has earned her Advanced. Bulletin Manager VE3GSA has increased the Section's OBS to 18 with the addition of VE3TSA covering Grey-Bruce and Owen Sound-area nets, and VE3OTH covering Sudbury-area nets. Circle March 3 on your calendar for the Peel ARC Fleamarket in Bramalea.

Quebec: SM: Harold Moreau, VE2BP; STM: VE2EDO; SEC: VE2LYC; BM: VE2ALE. Ninety-two copies of *QST* on cassettes were sent to white-caners by VE2WH in 1989. Congratulations to the following new DXCC members: VE2HAR (mixed), VE2HBE (mixed) and VE2DLV (phone). Prompt rétablissement à Marcel, VE2OO, qui est à l'hôpital de Sherbrooke. Ainsi que Leon, VE2VL, qui est absent au réseau de Joyeux Copains. Miguel, ex-VE5DM, est maintenant VE2MAT.

Saskatchewan: Bruce Rattray, VE5RC. It's December 9 and we're headed into the deep freeze with highs of -20°C and lows of -29°C and wind chills of 1700. Looks like a good day for Christmas cards.

The ARRL 10-Metre Contest is in full swing and it sounds as if everyone is having a good time. We're putting up the lights and Christmas tree for the holiday season. Bill, VE5EE, as usual, has been volunteering his time for tower work. Recently, he spent one Saturday doing tower work for the high school satellite station, repairing the beam on VE5RC's tower, and adjusting another installation at the 50-foot level for Fred, VE5FMW. Bill will be rising to new heights in the .28/.88 repeater when he installs the antenna at the 230-foot level. It's all very much appreciated, Bill. You're a fine example of what Amateur Radio is all about—people helping people. Dave, VE5IQ, and Gord, VE5GHC, are running a very successful construction class on the same evenings as the regular radio class. Projects being built and learned about include toroidal baluns, field-strength meters, 12-volt dc power supplies, and power line filters. Class members include VE5AAA, VE5BCU, VE5DSC, VE5FAR, VE5GHC, VE5IQ, VE5LV, VE5RC, VE5RJR, VE5SAW, Bill and Adrian. Clay, VE5AAA, once again did a fine job organizing the annual Regina Santa Claus Parade. Providing communications were VE5AAA, VE5AHW, VE5BW, VE5EP, VE5RC and VE5RN. Four sections with 66 floats travelled the one-hour parade route. 73! ■

Strays



□ The 9th Annual ARRL Computer Networking Conference, co-sponsored by ARRL and CRRL, will be held in London, Ontario, on September 22 of this year. Expect a call for papers soon.

□ John Flemming, VE3XJF, is looking for a schematic for a KW Atlanta. If you can help, call John at (416) 465-7104. ■

Silent Keys

Conducted By Ray Staines, VE3ZJ

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

VE3AJL, Bob Lawrence, Shanty Bay, ON
VE3BQO, Wally Bennet, Essex, ON
VE5HF, Herbert Jacobs, Shellbrook, SK
VE6BOX, Jack Chislett, Edmonton, AB

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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The CRRL Outgoing QSL Bureau

If you work a lot of DX—and who doesn't these days with the sunspot cycle up—you know that the cost of sending QSL cards overseas can really mount up. The CRRL Outgoing QSL Bureau is a cost-effective alternative for routine and even special QSLing. You have to be a CRRL member to use the bureau, but even if you send only 80–100 cards a year, you'll quickly pay for the cost of your \$27 membership. (You'll receive QST Canada in the bargain, and have helped CRRL and Canadian Amateur Radio as well.) Try the bureau. You'll like it. Bureau Manager John Henderson, VE3HFT, at CRRL Headquarters provides excellent service. —Garry Hammond, VE3XN

Purpose

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

Advantages

QSLing direct may be fast but it is also tedious. Time spent searching for addresses—and addressing and mailing envelopes—can be better spent chasing DX. Cost of postage, envelopes and IRCs can quickly become prohibitive.

Using the Service

1. Presort your cards into alphanumerical order by call sign prefix. For example, A3, AP, C6, CE, G2, G3, GI, GM, 3A2, 4X4, 6Y5, and so on.
2. Group cards by country if that country uses more than one prefix. For example, group A, K, N and W for the US.
3. Package cards tightly and well. For larger shipments use a small carton and lots of tape.
4. Use of the CRRL Outgoing QSL Bureau is free to CRRL members. (Others may also use the bureau. Cost is \$1 for every 50 cards.) CRRL members: do not send any payment. Simply enclose an address label (a photocopy is fine) from a current QST or QST Canada to show that you are a CRRL member.
5. Send cards to:

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

6. Family members should include their cards with those of the member who receives QST or QST Canada. Blind members: Print "BLIND MEMBER" on your package. CRRL affiliated clubs: Cards from your club station are eligible. QSL managers: please write for details.

Countries Served

The CRRL Outgoing QSL Bureau will accept cards for the countries listed below. Countries which are not listed here do not provide a QSL service for their amateurs. Cards sent to a country where cards cannot be processed will be returned.

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

THE INCOMING QSL SYSTEM

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

How do the bureaus work? IARU member-societies send cards to the CRRL Central QSL Bureau. Cards are then sort-

ed and forwarded to the incoming bureau in each call area. These bureaus use one of three methods—envelopes, credits, or a combination of the two—to get the cards to you. Even though CRRL sponsors the bureaus, you do not have to be a CRRL member to use them. However, CRRL hopes that users will recognize that a benefit like the QSL bureaus should be supported by membership. We'll give you a full rundown on how to use incoming bureaus in a later column. ■

KENWOOD



TS-940, TS-680S, TS-440, TS-140



TM-721A, TM-231A
TR-751A

TH-205AT, TH-215A
TH-415A, TH-75A



TH-25AT, TH-45AT

LEASE TO OWN

1. TRYLON 48' TOWER, 12-FOOT MAST AND MAST BEARING, HYGAIN HAM IV ROTOR PLUS 100' 8-WIRE CABLE, HYGAIN TH3JR 10, 15, 20-METRE ANTENNA, BN-86 BALUN, FOUR PL259 CONNECTORS AND 100' RG 213u ANTENNA WIRE...

(A) WITH KENWOOD TS-140S TRANSCEIVER AND PS-430 POWER SUPPLY

TOTAL PRICE—\$3900, CASH PRICE—\$3650

36-MONTH LEASE—\$142.58 PER MONTH

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

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42-MONTH LEASE—\$243.56 PER MONTH

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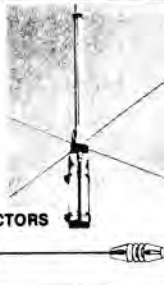
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MIRAGE
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ALNCO

PACKET Kantronics

AEA PK-232, PK-87



MFJ 1278
1270B, 1274, 1278

Super Nova '89

Ken Oelke, VE6AFO, Emergency Coordinator for Calgary reports as follows:

"At 1830 local time, 1989 October 03, Disaster Services received a call from Transport Canada indicating that a light aircraft had crashed. Two minutes later, a second call reported that a wide-body jet had crashed as well, at the south end of the airport near McKnight Boulevard and 12 Street NE. It was then established that 'Fantasy Airlines Flight 182' had collided with a Cessna light aircraft. Fire, police, ambulance and ARES operators were dispatched to the scene.

"The above scenario really did take place. Fortunately for all of us, it was entirely simulated. In fact, it was the largest simulated air disaster ever staged at an international airport in Canada. It was also the first time that Calgary ARES members were used by Disaster Services for on-site assistance. ARES members were dispatched to the disaster area, 911 Centre, Emergency Operation Centre (EOC), Peter Lougheed Hospital, Rocky View Hospital and the Red Cross. We also had HF liaison with the Alberta Public Safety Service via VE6ACD in Edmonton, to which a message was sent.

"All in all, we came through with flying colours, but not without a few hiccups. One of the biggest problems was trying to activate ARES members for an already known scenario with preplanned locations and predetermined times. The reason for having to do this was to meet identification requirements. All major players had to be notified and given orange Calgary Disaster Services arm bands. Without these, nobody would be allowed to move, as the fellows quickly found out. With the arm bands, they were able to breeze past police, fire department and other services without problem.

"We set up two nets, a 'primary net' for the emergency communications, and a 'secondary net' for standby ARES members checking in with their resources. Confusion started when the 'primary net' was waiting for instructions from the Emergency Coordinator (EC) to activate ARES members. The EC thought everyone knew the date, time and place of the activation and that everything would be routine. Not so.

"This particular confusion was no one's fault. It was just an example of what can happen with a preplanned exercise when too many things are assumed. The real thing would be easier as the objectives would be clearer.

"Fortunately, the confusion did not cause any major problem. A few of the

major players were inadvertently sent to the secondary net. A couple of operators, placed on this net rather than on the 'primary net' were left wondering what to do. However, this did not affect our overall communications capabilities with the hospitals or with EOC. We did learn that the 'primary net' flow structure needed a couple of modifications. We also learned that the EOC needed direct communications

with hospitals and the triage area rather than communications through a 'primary net'. These problems have now been sorted out.

"On the other side of the fence, police, fire department and ambulance had their own problems. ARES communications saved the day when the command post at the disaster site lost all contact because of a power plant failure. This single incident

Field Organization Reports November 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 865.

Reporting	ARES Members
VE3GV (VE3s DAN, EFX, FOB, GMU, GNW, ITT, JJA, LJV, LKI, LPM, LYW, KBU, KXB, MB, OZT, TNL)	570
VE6AFO (VE6AMM)	245
VE7FB	50

CRRL Section Traffic Manager Reports

Call	Orig	Rcvd	Sent	Divd	Total
VE1BKM	0	15	15	0	30
VE1ALU	7	5	6	0	18
VE1DLC	0	11	4	3	18
VE1ADJ	2	5	8	0	15
VE1BTU	0	5	6	0	11
VE1CRS	0	4	0	0	4
VE2BP	4	14	14	11	43
VE2WH	1	11	6	11	29
VE2ALE	0	7	7	1	15
VE3GSQ	1	127	85	1	214
VE3ORN	1	107	94	12	214
VE3CYR	2	75	45	2	124
VE3GT	0	44	73	2	119
VE3EAM	10	40	10	38	98
VE3SB	0	43	42	5	90
VE3GNW	0	32	46	1	79
VE3BDM	0	13	35	3	51
VE3IN	0	39	3	9	51
VE3EUI	7	21	13	5	46
VE3NVJ	2	15	12	5	34
VE3FGU	0	8	17	0	25
VE3DVE	0	6	16	0	22
VE3AJN	0	8	11	0	19
VE3KCZ	2	5	2	3	12
VE3WV	0	4	5	2	11
VE3BAJ	0	2	3	2	7
VE4JA	15	45	31	29	120
VE4LB	0	20	10	1	31
VE4IX	2	18	9	0	29
VE4STU	1	10	11	4	25
VE6CPP	-	-	-	-	23
VE6GUS	-	-	-	-	14
VE6MGS	-	-	-	-	8
VE6AKY	-	-	-	-	6
VE6AUZ	-	-	-	-	2
VE6DWB	-	-	-	-	2
VE7EJU	2	91	150	2	245
VE7ANG	3	66	75	5	149
VE7BNI	7	39	34	19	99
VE7XA	1	7	26	2	36
VE7FRZ	3	14	17	0	34
VE7FB	1	12	10	6	29
VE7BZI	1	8	1	8	18
VE7BCF	7	3	7	0	17
VE7OM	4	4	5	3	16
VE7CCJ	2	5	3	0	10
VE7ESA	0	0	4	0	4

National Traffic System

Net (Mgr)	Sess	QNI	QTC
APN (VE1BKM)	25	82	80
KTN (VE3AJN)	13	78	6
OLN (VE3POJ)	30	526	54
OPN (VE3IN)	30	737	173
OQN-1 (VE3GSQ)	30	55	25
OQN-D (VE3ORN)	29	137	74
OQN-E (VE3CYR)	30	157	129
OQN-L (VE3GSQ)	23	61	30
MTN (VE4IX)	27	252	47
MEPN (VE4LB)	30	1278	16
MWX (VE4TE)	31	413	17
APSN (VE6AKY)	30	1461	28
ATN (VE6CPP)	30	265	60
BCEN (VE7EJU)	30	688	228

Brass Pounders' League

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

BPL: None this month

Public Service Honour Roll

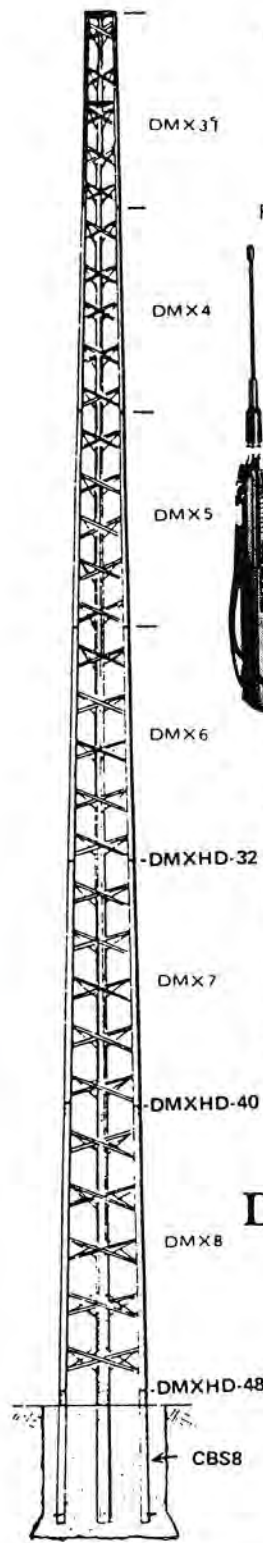
This listing is available to amateurs whose public service performance during the month indicated qualifies for 60 or more points in the following nine categories (as reported to their SM). Please note maximum points for each category: (1) Checking into CW nets, 1 point each, max 30; (2) Checking into 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: VE4JA (135), VE4LB (109), VE3ORN (106), VE3BDM (94), VE3GNW (93), VE4IX (77), VE4STU (74), VE3GT (72), VE4YU (72), VE4JR (69), VE3CYR (68), VE3EAM (68), VE3GSQ (60)

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	111	0
ARES ONTARIO (VE3GV)	1	10	0
CRRL ONTARS (VE3FQV)	30	11292	0
TRANS-PROVINCIAL (VE3EUI)	30	7692	0
ARG (VE5EE)	29	661	3
MJARC (VE5MML)	28	347	0
SWX (VE5EX)	30	795	0
SPN (VE5AE)	14	723	0
SATN (VE5AGM)	22	126	2



YAESU



FT-767



FT-767GX, 757GX, 747GX



FT-23R, 33R, 73R



FT-727R
DUAL BAND HT

KENWOOD



TS-940, 440, 140



TM-721

TM-721A FM DUAL BANDER
TM-221A, 321A, 421A



TH-215AT, 315A,
415A, TH-205AT



TH-25AT, 45AT

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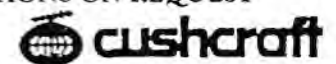
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- AL-1500 with 8877 tube - full legal output with 65 watts drive.

SPECIFICATIONS ON REQUEST



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SPECIFICATIONS AND PRICES
SUBJECT TO CHANGE

proved Amateur Radio's value as a back-up. The fire chief was particularly pleased to find that when he had lost his own communications with his command post, ARES was still able to provide communications—right from the disaster site.

"This exercise was a tremendous experience. We learned much, and ARES members are now anxious to participate in similar exercises in the future."

FIXED EMERGENCY ANTENNAS

In our September column, we discussed the importance of installing fixed antennas on key buildings that might need communications in time of emergency. The Amateur Radio Society of Dryden has done a fine job on this, as we learned from the society's club bulletin. Gary McNally, VE3MOR, EC for the Dryden area, reports as follows:

"On September 20, the Amateur Radio Society of Dryden installed the first of its four antennas on the roof of the fire hall in downtown Dryden. Dryden had requested the Society to install emergency antennas throughout the town. These would help provide voice links for town officials in time of emergency.

"Ron, VE3RHT, Jim, VE3JLN, and Gary, VE3MOR, assisted with the first installation. The entire installation was completed in approximately three hours. Dave, VE3LMU, made the final test using a handheld at the airport. All went well. The cable was concealed above the ceiling tile in the fire hall. This antenna will eventually be moved to the top of the town hall once an emergency response room is established in that structure.

"A week later, Dave, VE3LMU, and Gary, VE3MOR, completed the second installation, at Dryden Municipal Airport. The third installation, at Dryden District Hospital, was completed the following week by Rob, SWL, Roy, VE3BJD, and Gary, VE3MOR. This installation went off like clockwork with the antenna cable now accessible in a corner of the hospital administrator's office. A fourth antenna was installed at the Ontario Provincial Police building.

"All installations were equipped with BNC adapters to allow direct connection to most handhelds. These adapters can be removed, leaving a PL-259 connector for direct connection to a mobile or base station. A small log book is attached to each connector. Once a month, the EC or his designate will conduct a test of the four antennas and record the results in the log-books. This will allow us to keep a close eye on the working state of each antenna, ensure accessibility to antenna cables and maintain good rapport with people at each antenna location."

LINE LOAD CONTROL

In a disaster, citizens reach for the telephone to call for help, inquire about the

safety of a friend or relative, or report on their own safety. This overloads the telephone system to the point where it becomes useless—as happened during both the Mississauga train disaster and the San Francisco earthquake.

To provide continuity of service for essential uses, Bell Canada has developed what they call Line Load Control. This enables previously designated users to make outgoing calls while blocking out other callers. Incoming service is not affected. Essential users are identified by provincial government emergency organizations and include doctors, hospitals, police, fire departments and local government officials.

Line Load Control is a partial solution to the telephone overload problem in time

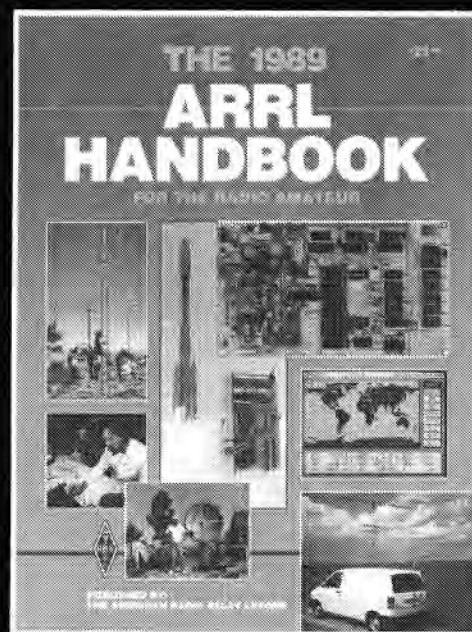
of emergency. It does not, however, significantly reduce the need for the kind of backup communications that ARES can provide.—Bob Boyd, VE3SV

ARES is a branch of the CRRL Field Organization, although you do not have to be a CRRL member to take part. It is hoped that this column, which also appears in The Canadian Amateur, will serve as an ongoing source of news and information about ARES activities across Canada. ARES members, particularly ECs, are invited to send information on what they are doing and developments they would like to share. We will pull this together for future columns with the objective of increasing our ability to serve, should disaster strike. ■

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Feature Highlights!

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TS950S. The base model includes the electronic keyer, antenna tuner and power supply. **\$3995.**

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SPECIFICATIONS

GENERAL

Frequency Range	VHF: 144-148 MHz UHF: 440-450 MHz** 430-440 MHz** * UHF High Band Territory ** UHF Low Band Territory
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 to +50°C
Microphone Impedance	2 kΩ
Antenna Impedance	50 Ω
Dimensions	58 (2.29) W x 179 (7.05) H x 29.5 (1.16) D mm (inch)
(Projections not included)	
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 (VHF 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	Reactance Modulation
Spurious Radiation	Less than -60 dB
Modulation Distortion	Less than 3% (300-3000 Hz)
Frequency Tolerance	Less than ±10 ppm (-10°C to +50°C)
Maximum Frequency Deviation	±15 kHz

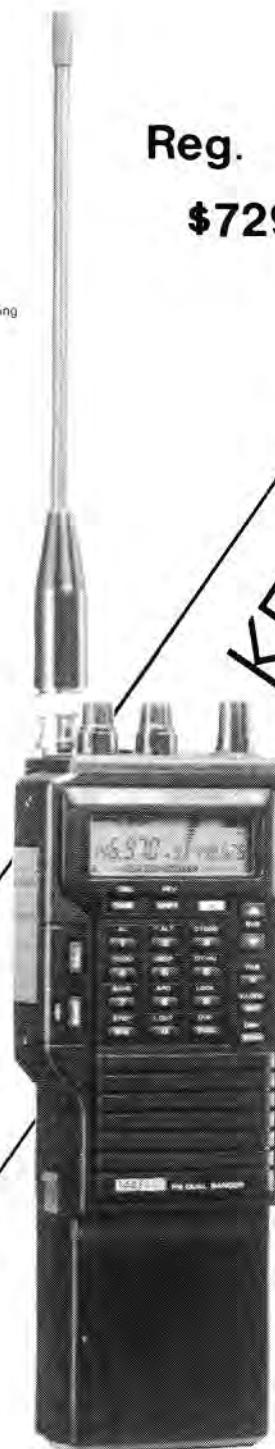
RECEIVER

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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SC-23	Soft case for PB-7, PB-8, PB-9	29.00
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Unique Spectrum Scope. Continuously indicates all signal activities and DX pileups with your operating frequency in the center. Selectable horizontal frequency spans of 50,

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



Dual Width Noise Blanker includes MCF filter plus level and width controls to eliminate pulse and woodpecker noise with minimum adjacent-signal interference.

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Dual Watch. Simultaneously receives two frequencies in the same band! Balance control adjusts VFO A/B receive strength levels. You can check additional band activity, even tune in your next contact, while in QSO without missing a single word!

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