

Ottawa Amateur Radio Club

Groundwave

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Check out our Web Page: www.oarc.net

Feb 2004

I'm a basement type of guy. Almost all of my Amateur radio stations, workshops and computer systems have been installed in a basement, cellar or something similar. Mostly on orders from a significant other, that being a parent or spouse. Even though most of these basements have been cold and damp, the external connection to other Amateurs in like situations provides a sort of kinship that is hard to describe. I guess you can get used to just about anything if properly motivated. Especially if you have company.

That being said, my present situation has necessitated moving both my computer and my Amateur station for the main floor living room. I'm not used to the luxury of being able to answer email, talk on the repeater and watch TV all at the same time and in comfort as well. Thusly setup I ventured into the realm of the net control station for the Capital City Net this past Monday night. The first comment I got was "Speak up! We can barely hear you!". I'm also not used to talking loudly in the living room. It was frowned upon in all cases unless you were hollering for 911, and that hasn't happened yet. So there I sat, the mike jammed into the space vacated by my tonsils, and my ears soldered to the speaker. I don't think I did too badly but there is room for improvement. In every area it seems.

If you missed last month's meeting you missed a treat. The video presentation on antennas was a real eye opener. Now I know why my perverted "V" antenna resonated on a frequency haunted by the DOC monitoring station. Pays to attend meeting.

Don't miss this one.

VE3EV



FEB MEETING 7:30, Feb 11th in the Honeywell room at Ottawa City Hall

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Ottawa Amateur Radio Club

Groundwave

Feb 2004

Articles may be submitted for use in this publication provided that they portray events or activities that promote Amateur Radio. Letters and comments are also welcome. Submissions may be made by mail addressed to the Editor care of the OARC, or by e-mail to "ve3ev@rac.ca". Deadline for submissions occurs on the last Monday of the month preceding any regular meeting of the OARC.

Please support your local radio organisations. They support you!

Club Information

The Ottawa Amateur Radio Club Inc. is an association of Radio Amateurs devoted to the promotion of interest in Amateur Radio communications in the National Capital Area and to the advancement and achievement of club members.

Regular Meetings of the OARC Inc. are held on the second Wednesday of each month (except July and August) in the Richmond Room (2nd floor of the Old Teacher's College) of Ottawa City Hall (formerly Regional Municipality of Ottawa Carleton Headquarters) on Lisgar Street. Meetings commence at approximately 19:30 hours. Further details about each meeting is elsewhere in this publication.

Executive Meetings of the OARC Inc. are normally held on the first Wednesday of each month at 19:30 hours. Contact the President to confirm the date, time and place of the next meeting.

The CAPITAL CITY FM Net meets every Monday at 20:00 hours on the club repeater **VE2CRA** to pass traffic and to make announcements of interest to Amateurs in the National Capital Region.

The SWAP Net is a service provided and conducted by Dan Reardon, VE3GUU. This feature appears on the Capital City FM Net. To list items and make inquiries, call Dan Reardon at 721-3339 or e-mail him at ve3guu@igs.net. Also available on the web: <http://www.igs.net/~swap>

The POT-HOLE Net is a SSB/HF net sponsored by the Ottawa Valley Mobile Radio Club and is conducted every Sunday at 10:00 hours on **3.760 MHz**. All amateurs are welcome to check in.

The POT-LID CW Net is an informal slow-speed CW net sponsored and conducted by Ed Morgan, VE3GX, and meets every Sunday, except during July and August, at 11:00 hours on **3.620 MHz**, to promote interest in CW and CW procedures.

The QCWA CHAPTER 70 Net meets every Thursday evening at 20:00 hours on repeater VE3TEL, **147.03** You do not have to be a QCWA member to participate.

The Ottawa Valley VHF/UHF SSB Net is sponsored by the West Carleton ARC. Look for it every Tuesday night (except the first Tuesday of the month) around 21:00 on **144.250**, (listening on 50.150, 432.150, 222.150 and 1296.100 as well.) Horizontal polarization is encouraged although vertical will work

The Ottawa Amateur Radio Club bulletin "Groundwave" is published and distributed to club members by mail. Publication dates may vary but it is hoped that the bulletin arrives at its destination before the events listed in it have expired. The bulletin is not published for July and August when meetings do not occur. Every effort is made to provide accurate information in the bulletin, however we are all human and mistakes can be made. The OARC accepts no responsibility for any damages that may result from this. The opinions expressed in this bulletin are only those of the author.

Voice (VHF) 146.94/146.34 100Hz output tone
(UHF) 443.300/448.300

VE3ATV Amateur Fast Scan Television Repeater
Video/audio beacon & input 439.25 MHz (audio sub. 443.75)
Video/Audio output 914 MHz (FM)

IRLP Node 2040 146.94/146.34 (VE2CRA/VE3RC)
(Code 411 for info) (Code 204 for activity)
(Code 88 for time)

For further information please contact the Repeater Chair.

Note: The IRLP link not connected to ECHOLINK. Please do not try to connect using the alpha keys on your keypad. It just confuses the operator.

Note: The IRLP link is disabled during the Capital City Net each Monday. It is disabled from 2000 to 2145 Mondays except for May to August when the link is disabled from 2000 to 2020.

VE3TEN

Tuning in the beacon so that it makes sense requires you tune to **28.175** on cw and read the tone that is there . The spaces between the elements are the higher tone. If that doesn't work, tune to **28.175.28** on lower sideband for better results.



Minutes of the January General Meeting

January 14, 2004 19:30

The meeting was called to order at 7:33 by President Ben Price (VE3CDA). There were two guests, Dinko (T95MUP) and his brother Igor (T95L1G). The guests hail from Bosnia but they have recently become Canadian citizens. They hope to qualify for their Canadian ham licenses.

Ben announced a silent key, Stuart Glen (VE3MHX), who passed away at the age of 82 on January 8, 2004. There was show of hands from members who had known Stuart. He will be missed.

Cary Honeywell (VE3EV) moved that the minutes of the December meeting be adopted without amendment. Mike Kelly (VE3FFK) seconded the motion.

The issue of finding a new home for our ATV repeater was raised. It was announced that a plan for CJOH to take it over had fallen through. The Club has obtained a quote from a professional who could take it down, and Diane Bruce (VA3DB) said she would look for an additional quote. Diane mentioned that the Club might want to weigh the benefit of waiting 3 more months for warmer weather, when quotes for antenna work may be cheaper, against the ongoing cost of insurance coverage. It was mentioned that when The Pioneer Club gave our Club the repeater, they also apparently set aside funds to cover the eventual decommissioning of the repeater. Wayne Getchell (VE3CZO) said that in the meantime the repeater is broadcasting some good stuff from Mars.

The treasurer, Janice Neelands (VA3PAX) reported that all was fine with the Club's treasury. The Groundwave Editor, VE3EV, reported that this had been a zero-cost month.

Clare Fowler (VE3NPC) reported that LEO 40 has come back for the past 10 days.

Ben announced that on Saturday, January 31, the Club would be manning the new presentation booth at the Rideau Centre Mall. Anyone who would like to assist with the presentation, and anyone with any ideas for future venues for our booth may contact Ben directly. (Editor: Since the meeting took place, the date and venue have changed to Sunday, February 1 at Bayshore.)

Ben congratulated Mike Kelly for his article on "portable dipoles" which recently appeared in *The Canadian Amateur*. On the subject of the TCA, it was mentioned that there is an ad in the recent issue for our Club's Hamfest that shows an incorrect date.

Peter Gamble (VE3BQP) announced that EMERG will be holding a meeting on the morning of January 31 from 9-12 at the Fire Training Centre on Industrial Avenue. EMERG is working at using packet as an emergency radio. Peter said all were welcome to attend.

The review of the OARC Club Questionnaire will be postponed until next month in the hopes that more members will fill out the forms, telling the executive what they would like from the Club.

The awarding of the Joe Norton Award has been delayed until the February meeting.

Richard Hagemeyer (VE3UNW) gave an update on the Club's participation in the upcoming Canadian Ski Marathon, the weekend of February 7-8. The Marathon runs from Buckingham to Lachute this year. He needs 38 volunteer ham operators to assist, and passed around a list for volunteers to sign up. He reminded us how important we are to the Marathon—they have tried in the past to substitute other methods of communication but none have been as successful as amateur radio, given the hilly terrain. Interested members may go to a new website radio.admin2.ca to sign up and obtain information.

Ben reminded members that he is arranging for a group trip to the Dayton Hamvention on the Victoria Day weekend in the spring. Cost will be approximately \$500 per person to cover transportation and accommodation. Those members who are interested in going should let him know. The trip will probably run from Thursday to Monday inclusive. The Air Museum in Dayton is a must-see for the Sunday.

Ben announced that before the February meeting, everyone should have received a copy of the OARC bylaws attached to your copy of the Groundwave. Club members should read them over before the meeting and we will treat them in the same way we treat minutes, i.e. there will be a call for changes, with motions to carry and second.

In the "Neat Contacts" category, Doug Leach (VE3XK) talked about the excellent conditions during the RAC Christmas contest, and how, with 100 watts, he was able to reach places like Ukraine, Hungary, Italy, Spain, Germany and the Canary Islands on 40 metres CW.

After coffee, we enjoyed one of the RAC movies detailing everything you need to know about antennas.

The 50/50 draw netted a haul of \$31, and a lucky Clayton Jenkins (VE3CBI) went home \$15.50 richer.

The next meeting will be held February 11 at City Hall in the Honeywell Room.

Janice Neelands, VA3PAX (for Ian Jeffrey VE3IGJ)

Introducing a new service for Canadian Hams

A **new service** has been developed for Canadian Hams. "hfradio.net" is an information service geared to HF Radio in Canada

Goals:

- 1) To provide information about nets across Canada, times, freq., locations and website information.
- 2) To bring Canadian Hams the latest in Amateur Radio News on a weekly basis.
- 3) Provide web services for Amateur Radio Groups: Clubs, Net information Pages, or any Amateur Radio Group in need of

Internet presence.

Full Details about this service can be found at: <http://www.hfradio.net>



Mk's Words

One more kick at '03 before I leave it alone.

A few days ago, I was wondering where last year went. I didn't think I had done much radio in the year. Soccer matches, the air show, the plowing match/rural expo all fell off my 2003 calendar. When the great power blackout of '03 happened, I was in a rural bed and breakfast place in VY2 land watching Peter Mansbridge in his holiday beard saying "this is big" and "we don't know" from the roof of CBC Toronto, with the buzz of generators in the background.

So I went through my notes and found: 13 radio related meetings, other than the OARC monthly ones 9 public service events, including the CSM 7 transmitter hunts, sometimes hiding sometimes hunting 7 build sessions (anyone want to do more of them this spring?) 5 work parties, mostly dealing with VE3TWO 5 exam sessions, usually for one candidate, occasionally a few at a time.

Add in a few elmering sessions, a couple of contests, a few nets controlled, field day and fleamarket. There were a few hours of messing about with antennas, and a few more tuning up toys for the Emergency Measures Radio Group somewhere through the year. Incidentally, a few regular, normal QSOs (not as many as I would like) found their way into the log too.

Time for a new years resolution (better late than never?): I will try to get on the HF bands for a few non-contest QSOs every week. I'm going to shoot for an average of one per week. Better to aim low than set an impossible target, like last years plan to clean up the shack enough to allow space for a second op. The contacts may not all be candidates for President Ben's "Most Interesting QSO" segment, but they will blow the dust off the paddles again.

I've been working for a while on a dual band (2m-70cm) antenna for emergency portable use. It has to be light and fit in the pack. It has to be effective on both bands. It should be something not too hard to make, to duplicate and to tune up. I've tried dual groundplanes, like scanner antennas, and the dual band J-Pole from the Feb '03 QST, with its "feedback" corrections as late as December. The dual groundplanes seem to send too much 70cm energy into the 2m element. (It looks like a 3/4 wave antenna, and sends the signal skyward instead of at the horizon) The J-Pole is still pretty fussy, never a good sign. I'm thinking of making a take-apart discone instead. Does anybody have any better ideas? I could use some about now.

I got an email request this week, looking for an elmer. The candidate is a YL, 13 years Y, in the Greenbank/Hunt Club area. I can help out by email, but a little one to one assistance could go a long way to help. Any takers in that part of town?

By the way, in December, there was a similar request from a 10 year old in Bleakburn Hamlet, which I forgot to mention earlier. We could use a stock of willing elmers in various parts of town. Is anyone willing to help out? Is anyone at least willing to maintain a list? If we don't replace those silent keys we all mourn, we aren't going to have to worry about losing 220 MHz, or anything else before long.

I expect that by the time you are reading this, the Ski Marathon has come

and gone again, so I hope we all had fun at "Field Day North" - see ya there.

mk

VE3FFK

(Editor's note: I never found this area to be "bleak". I think Mike meant "Blackburn Hamlet". Mind you I could be wrong.)

Radio beats cell phones

By Stephanie Coombs

I always thought having a cellphone in the car was a great safety precaution — after all, if I were to get into an accident, the police or tow truck would only be a quick call away. Turns out my cellphone doesn't work on the winding rural road between Poland and Lavant Station west of Ottawa, where on a very cold night at the end of January, my friend Kris Constable (VE3URL) and I came across a father and daughter whose vehicle had slid off the snowy road.

A man in a pickup and a snowplow operator had already stopped to help the pair by the time Kris and I showed up, but neither of them had what would ultimately save the day — a radio. Kris and I had been driving to his father's cottage near Plevna — about a 90-minute drive from Ottawa — and had turned on the radio at the beginning of our trip. We were tuned into the Ottawa repeater, but turned off the radio as we got out of range, since Kris had forgotten the frequency for the Lavant one. As a non-radio person, I admit I wasn't upset. To be honest, I thought it was a little weird to be just listening to see if anyone else was out there. When we came across the accident, we hopped out of our car to see if everyone was OK, and if we could lend a hand pushing their car out of the snow bank. It soon became apparent that the car did not want to start, or move at all from its position at the foot of a large tree.

Since the driver was a member of the Canadian Automobile Association, I offered to use my cellphone to call for help. When I tried, all I got was a blinking "no service" message on my phone's screen. So Kris returned to the car, hoping he'd be able to track someone down on the radio. In a stroke of luck, the frequency for the Lavant repeater popped into his head just as he got back to the car. He picked up the radio, tuned in, and asked for help. Within seconds, two people jumped in, one of whom, Earl Holmes (VE3HEG) from Westport, would become our CAA point man for the next 20 minutes. Together, Kris and Earl figured out where we were, tracked down CAA and dispatched a tow truck to the scene. Without their help, the father and daughter would likely have been forced to walk in the cold to find a telephone.

I still think the huge antenna on Kris' car is a bit strange, but I no longer think his radio hobby is something to laugh at — it apparently beats my cellphone any day.

Stephanie



Amateur Radio Emergency Communications

Amateur radio is known around the world for its role in providing communications in times of disaster. What many amateurs don't know is that the groups, who were effective providing communications, prepared and trained to be able to provide that high level of service.

In Ottawa, the Emergency Measures Radio Group (EMRG) is the local Amateur radio emergency communications group. EMRG has partnerships with the City of Ottawa, Ottawa Red Cross and the Hospitals, to provide communications if required in an emergency or disaster.

EMRG is part of the RAC Amateur Radio Emergency Service (ARES) program. ARES provides a common structure, which can be used to promote ARES Federally and Provincially, as well as providing guidance to help new groups get started. EMRG is Ottawa ARES, two names, one group, one purpose.

There are no special requirements to participate in EMRG, other than an interest to help and a valid Amateur radio license. One of the purposes of EMRG is to provide training and an opportunity for Amateurs to share information, so new amateurs can participate effectively alongside long time operators.

Each EMRG member brings the equipment they can share in an emergency. However some sites have permanent equipment installed and EMRG is building a small supply of radios, so even Amateurs with a license but no equipment can still play an important role.

Some Amateurs believe that in an emergency, "lots" or amateurs will come forward to help and good things will happen. It takes more than a group of individuals who own radios to be useful in an emergency. It takes an organized team. Like any team activity, practice ensures that everyone is playing the game together and is working from the same game plan.

Knowing whom to call, who is in charge, where to go, what to take and which frequency to use, are some of the reasons why it is important to prepare before a disaster strikes.

For more information about EMRG, check out the web site www.emrg.ca, or contact Peter Gamble the EMRG Team Leader, ve3bqp@rac.ca 613-523-4572.

THE OKANAGAN AMATEUR RADIO CLUB —RAGCHEW—
FEBRUARY 2004

RABC recommends 220-222 MHz be transferred to the Mobile service

Canadian Amateur Radio Bulletin (Week of Jan.04 2004)



Use it or lose it! We have all heard that story. Canadian Radio Amateurs make very little use of the two MHz at the bottom of the 220-225 MHz band. Industry Canada can monitor usage and is well aware of this fact. US Amateurs were forced to give up this spectrum in the early 1990s. Spectrum in the VHF range is very congested outside the amateur bands,

and mobile service users such as the RCMP and the Railway Association of Canada have well documented needs for this spectrum. Their justification is based on harmonization with the USA, with increased demands for public security communications, and on the unique propagation characteristics of the 220 MHz band. Other public safety bands in the 700-800 MHz range have entirely different propagation characteristics.

The Radio Advisory Board of Canada (RABC) has been studying the needs of various services over the past 18 months, and has decided to recommend to Industry Canada that:

1. The 220-222 MHz band be transferred from the amateur to the mobile service.
2. Amateur repeaters in this portion of the band be grandfathered to continue operation for a number of years, with the number to be decided by Industry Canada.
3. 150 kHz of spectrum in the 220-222 MHz band be designated as public service spectrum to be shared by amateur and mobile services for special public safety and disaster communications applications.
4. The band 219-220 MHz be allocated on a secondary basis to the Amateur service in Canada, which would be in harmony with similar allocation in the USA.
5. The band from 222-225 MHz remain as a primary exclusive amateur allocation.

Following consultation with Canadian amateurs in a survey conducted in July 2002, RAC as a member of the RABC, has vigorously opposed these proposed changes without success. In a recent RABC ballot, RAC was the only dissenting voice.

Here are RAC's comments to Industry Canada.

Radio Amateurs of Canada (RAC) does not approve the response of the RABC in this ballot. RAC understands the increased spectrum requirements of the services represented by the other RABC sponsor members in the VHF portion of the spectrum. However, the Amateur Service also has spectrum requirements for expansion, and its 220 - 225 MHz band is the only primary allocation available to the amateur service between 148 MHz and 24 GHz. In addition to relieving the pressures on the congested 144-148 MHz (Primary) and 430-450 MHz (Secondary) amateur bands, the 220-225 MHz band would be used for amateur service emergency communications, particularly as its propagation characteristics bridge those provided by the 144 and 430 MHz bands. Development of the 220 MHz band is growing as equipment for the amateur service at 220 MHz increasingly is becoming available. Industry Canada must now take this advice, decide on a course of action, and in all likelihood conduct a public consultation before issuing a decision. The prospects do not look good.

This could be the first loss of amateur spectrum in Canada for many years. Canadian amateurs cannot complain. The spectrum is valuable, and we do not make good use of it. Those are the facts. In spite of all the good work we do in emergency and disaster communications, our case for retention is weak.

You've heard it before. **USE it or LOSE it!**

Maybe this RABC recommendation will make us take the saying more seriously.



RAC Bulletin 03-035E Section Manager steps down January 17, 2004

Robert McKenzie, VE3SJQ stepped down as Section Manager for Ontario Rose Scholtyssek, VE3RIS kindly offered to complete his term. Rose's information is as follows:



Rose Scholtyssek, VE3RIS Phone: (613) 258-0363 E-mail: rose@igs.net

What has RAC done for me lately? Canadian Amateur Radio Bulletin (Week of Feb.01 2004)

Did you know that....Amateur Radio exists as a frequency spectrum user because it qualifies as a service. Its continued existence depends to a great degree not on the service it has performed in the past, or on its simple potential for service, but on what service it is performing now and will continue to perform in the future. Recognizing this principle, American Radio Relay League in 1935 organized what is known now as the Amateur Radio Emergency Service (ARES). In 1949, ARRL created the National Traffic System (NTS). These two organizations are sponsored throughout Canada by RAC. The emergency-preparedness program of ARES combines with the daily traffic-handling program of the NTS to produce a single strong facility for rendering continuous service to the public. The emergency-preparedness program of ARES is kept up to date by frequent drills and tests.

In an emergency, the NTS serves as the vehicle for relay of traffic over medium and long distances while local ARES nets take care of local communications and deliveries. Close liaison is maintained between these two divisions at a national and local level.

You can play an important role: volunteer your time to ARES and NTS, to find out more visit the RAC Info Centre www.rac.ca

(Week of Jan.25 2004)

Did you know that....Assistant Director Mark Richardson, VA3OBO, continues to work actively to promote the RAC Youth Education Program. He currently boasts a total of 30 high school students who have become radio amateurs and many of the students are now working on code. Sue, VE3SUH, successfully recruited Patrick Fogarty High School in Orillia with teacher Jason Janisse currently enrolled in the Basic Course hosted by the Orillia Amateur Radio Club. To date, approval has been given to six school applications. Clubs such as the Bruce Amateur Radio Club have generously met the club challenge to donate \$100 towards the YEP project. ...You can help this fine RAC project too!
Find out how: www.bbqbob.net/ractest

(Week of Jan.18 2004)

Did you know that...RAC last paid the IARU \$4,438.74 (Canadian funds) for one year. This breaks down to about 7 U.S. cents per Canadian Amateur. The actual amount paid varies with the movement of the Canadian dollar VS the US dollar. This is based upon the number of actual Amateurs, not clubs or repeaters or duplicates. Of course, it is entirely possible

that some silent keys slip through and are counted, simply because family, Amateur Radio friends of the deceased or members of his/her club failed to advise I.C. This is definitely a problem but only the Amateur Radio community can fix it. RAC also pays each year, on behalf of ALL Radio Amateurs in Canada, an amount at last count of \$3,450 Canadian, to the Radio Advisory Board of Canada (RABC). So, it can be fairly stated that those who are members of RAC pay out about \$8,000 yearly to pay not only for RAC members but for non-members as well, for the good of Amateur Radio in this country...LET'S DO OUR PART! by becoming part of the team TODAY .

(Week of Jan.11 2004)

Did you know that James Dean (VE3IQ) vice-president of Regulatory Affairs puts in between 30 and 35 hours a week involved with RAC duties, thanks Jim. Another great service from our RAC executive for about 10 cents a day! With a great magazine thrown in to boot! ...ARE YOU DOING YOUR PART? Become part of the team

(Week of Jan.04 2004)

The oldest working satellite, AO-7, will mark its 30th year in space during 2004. The satellite, which came back to life in mid-2002, was launched November 15, 1974, and it remained operational until 1981, when it went dark due to battery failure. It remained dormant--and largely forgotten--until it suddenly and unexpectedly sprang back to life. AO-7 is in a 1460 km orbit, and AMSAT-NA considers the satellite "semi-operational." Jan King, W3GEY reports AO-7 is running solely off its solar panels, so it will only work when in sunlight. It has a Mode A uplink passband at 145.850 to 145.950 MHz and a downlink passband at 29.400 to 29.500 MHz (CW/USB). Beacons are at 29.502, 145.972, 435.1 and 2304.1 MHz. Ground controllers have only been able to activate some command functions. It also contains a Mode B transponder. To mark the satellite's 30th anniversary, AMSAT-NA will make available a special commemorative QSL card. AMSAT-NA Board Member and Awards Manager Bruce Paige, KK5DO, reports additional information will be available on the AMSAT-NA Web site: www.amsat.org/amsat/news/wsr.htmlTODAY by becoming a member or renewing your RAC membership.

(Week of Jan.04 2004)

AMSAT-NA President Robin Haighton, VE3FRH, says he's looking forward to the 2004 launches of AMSAT-NA's ECHO satellite and AMSAT-India's VUsat (also known as "HAMSAT"). In his last President's Letter for 2003, Haighton reported that ECHO is passing final integration and testing with flying colors. "I am looking forward to the end of March, when we expect the ECHO launch to take place," he said. He also noted that with just over three months to launch, AMSAT-NA still needs to raise more than \$70,000 for the launch campaign. Haighton said that VUsat experienced some problems in testing but these are being resolved. A VUsat launch could come as soon as late next summer. "An exciting year is ahead," said Haighton, who's already announced that he does not intend to seek another term at the AMSAT-NA helm when his current term expires next October. By then, he said, ECHO should be in orbit, but, paraphrasing Yogi Berra, he added, "It ain't up and working till it's up and working."

www.amsat-india.org/official/vusat.htm

MEMBERSHIP APPLICATION / RENEWAL

Ottawa Amateur Radio Club, Inc.

Box 8873 Ottawa, Ontario K1G 3J2

Renewal New New Ham (FREE if licensed in current membership year)

Single (\$25 (\$20 after 1 Feb) Family (\$30) Junior (\$15)

Add \$5.00 if you wish to have your Groundwave mailed to you.

(Please note: membership year is 1 September to 31 August)

Family Name: _____ First Name/Initials: _____

Address: _____

City: _____ Prov: _____ Postal Code: _____

Home Phone: _____ Work Phone: _____ ext _____

E-mail address: _____@_____ *(For Groundwave mailing)*

Callsign(s): | _____ | | _____ | | _____ | Fax: _____

Qualifications: Basic Advanced Grandfathered
 5 wpm 12 wpm Year Licenced: _____

Other Family Members

Name: _____ Callsign(s): | _____ | | _____ | | _____ |

Qualifications: Basic Advanced Grandfathered
 5 wpm 12 wpm Year Licenced: _____

Name: _____ Callsign(s): | _____ | | _____ | | _____ |

Qualifications: Basic Advanced Grandfathered
 5 wpm 12 wpm Year Licenced: _____

Name: _____ Callsign(s): | _____ | | _____ | | _____ |

Qualifications: Basic Advanced Grandfathered
 5 wpm 12 wpm Year Licenced: _____

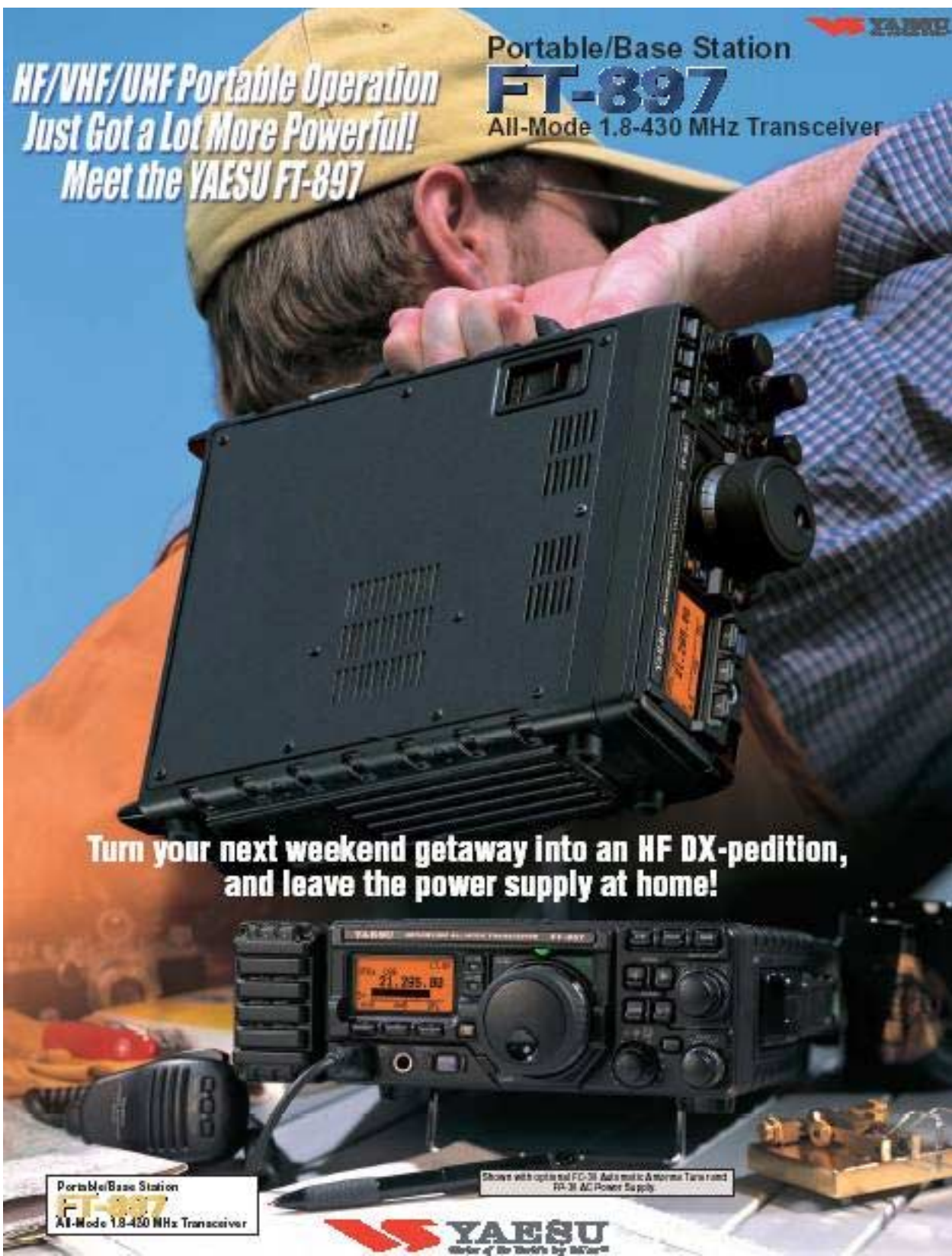
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Comments/Suggestions: _____

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