

THE OVMRC RAMBLER

Volume 37, Number 2 - February 1994

Filter Building Party A Leader All The Way

Written by Jacques Choquette, VE3TSC
On a bright sunny Saturday, January 15th, 1994, with the temperature hovering at -25C, -50C when you add the wind chill factor, car owners throughout the greater Ottawa area were frustrated when their cars rebelled and refused to start. However, for a group of 36 radio amateurs not ice, snow nor frigid weather was going to keep them away from a planned 2 metre/70 cm bandpass filter building party.

It had been well over a year that the designer and developer of the filter, Wil Warren, VE3XMT, had been talking about and demonstrating to his friends the effectiveness of his filter. Interest in the filter grew to such a pitch that Wil agreed to what was called an "intermod filter building party". Several local amateurs joined forces to help register amateurs, promote and generally organize the party.

Wil has been quoted as saying one of the reasons he agreed to the party was to remedy a problem which had 'bugged' him for a long time. "I'm fed up," he said, "with people saying they couldn't hear me on 2 metres because of the intermod. With these bandpass filters they won't have any more excuses," he laughed.

Wil organized the filters component parts by ordering, cutting, assembling and packaging into



Wil Warren
VE3XMT



Mike Kelly
VE3FFK

envelopes 50 complete kits. Mike Kelly, VE3FFK, had made arrangements for the party to be held in an electronic work room at Carleton University which was an excellent facility. Wil and Mike shared their expertise throughout the day by providing guidance and assistance to the entire group of eager builders ensuring completed filters met "quality standards".

The day started with Wil providing an explanation of the theory on how the filter works. The group was then divided into two teams; those who wanted to build the filter themselves and a second team which worked as an assembly line. The construction process involved making coils, soldering components, gluing components together, etc.

The first filters started coming off the assembly line at about 2.30pm and
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Coming Soon - Home Brew Night !

The Ottawa Valley Mobile Radio Club

RAMBLER

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Amateur radio training: Bob Shaw, VE3SUY, 737-9443
Field day: Allan Barnes, VE2TYJ, 746-5994
Flea market: Lorraine Boulay, VE3VAT, 228-7111
Historical: Mike Beausoleil, VE3BGP, 739-8871
Hysterical: Neil Herber, VE3PUE, 829-4668
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Newsletter: Dan Doctor, VE3XDD, 745-9214
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Radio operations: Steve Middleton, VE3RUU, 731-6749
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Ramblerites

Contributors to this issue:

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OVMRC Code Phone: 746-2065

Mark Your Calendar!

Next general meeting:

Thursday, February 17, 1994, at 1930 hours in the auditorium at the National Museum of Science & Technology. Gerry King will be our guest speaker - his topic "Amateur Radio".

Next executive meeting:

Thursday, February 24, 1994, at 1900 hours in the Volunteer Room at the National Museum of Science & Technology.

Deadline for the next issue of the Rambler:

Thursday, February 24, 1994.

Affiliated clubs

The OVMRC exchanges bulletins with the following organizations:

Augusta Amateur Radio Association, Augusta, ME
Border City Radio Club, Windsor, ON
Chatham-Kent Amateur Radio Club Inc., Ridgetown, ON
Calgary Amateur Radio Association, Calgary, AB
Halifax Amateur Radio Club, Halifax, NS
Heritage Amateur Radio Club, Cobourg, ON
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London Amateur Radio Club, London, ON
Ottawa Amateur Radio Club, Ottawa, ON
Pioneer Amateur Radio Club, Nepean, ON
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Sudbury Amateur Radio Club, Sudbury, ON
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Thousand Islands Amateur Radio Association, Prescott, ON
West Island Amateur Radio Club Inc., Dorval, PQ

Sponsors

The OVMRC provides bulletins to the following organizations for their past support of our activities:
Bytown Marine, Ottawa, ON
Kenwood Electronics Canada Inc., Mississauga, ON
Seaway Communications Co., Cornwall, ON

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Ramblings

Wise words from our President, Jerry Wells, VE3CDS



January 1994, right in the middle of a deep freeze! I can't recall so much cold weather so early in the winter. Let's hope that spring comes early and we see an end to these biting winter winds. What about amateur radio? During the past few weeks I have been reading some rather interesting books about the early days of radio. The most interesting one being a copy of the third edition of the Radio Amateurs Handbook published by the American Radio Relay League. We are all familiar with the handbook as it is the most widely used reference guide for new and old amateurs.

This third edition was printed in 1928, the first printing of the handbook was done in 1926. The book is comprised of approximately 200 pages and covers the same general format as the current issues of the handbook. There is a chapter on the subject of getting started in amateur radio. All of the basics are the same today as they were in 1928. There is a lot of interesting circuits on how to build simple receivers and transmitters. Many of the circuits are built on wooden chassis and are the ultimate in simplicity by today's standards. Reading this old handbook makes one realize how far technology has come in the past 65 years. There have been changes that were inconceivable 40 and 50 years ago. Looking at the list of frequencies

used by amateurs in 1927 are a far cry from those we use today. The bands at that time were the 150 to 200 metre band, 1.5 Mhz to 2 Mhz; the 75 to 85.7 metre band, 3.5 to 4.0 Mhz; the 37.5 to 42.8 metre band, 7 to 8 Mhz; 18.7 to 21.4 metre band, 14 to 16 Mhz; the 4.69 to 5.35 metre band, 56 to 64 Mhz; and the .7477 to .7496 metre band, 400 to 401 Mhz. We can see from these frequencies that ham radio was quite a different technology from today. There were no sophisticated components with which we are all familiar. No semi-conductors, no integrated circuits - nothing of what we today look upon as standard electronic components. The only type of tubes used in all of the circuits in the handbook are diodes and triodes. Most components for the simple receivers and transmitters were hand made and in many cases wood was used for both chassis and coil forms. Come to think of it I recall building several transmitters on wooden chassis in the early 50's. They all worked after a fashion but harmonic radiation and interference was not a major problem. We didn't have TV and all of the radios and home entertainment equipment was not that prone to RF interference.

It is overwhelming when we consider where we are today. We have computers that can control sophisticated communications all over the world. Many of our members in the club have equipment with such capabilities. The ability to do things unheard of only a few short years ago and yet the magic of radio is still there for those that choose to pursue it. We are able to buy wonderful transceivers that operate in all bands. Amateur radio has something for every ham. Talk to your fellow hams and learn from the experience of others. Above all, remember that our hobby is a hobby and never forget it.

Minutes

OVMRC Regular Meeting
20 January, 1994.

Call to Order

The meeting was called to order by President Jerry, VE3CDS, at 1945 hours. Jerry welcomed the visitors to the meeting - Lillian, VE3ZDK, Sidney Moorcroft, VE3GVI, Barry Bennet and Michael, both prospective amateurs.

Problems

Russ Lowe, VE3LOW, is looking for missing cables for an FT501. He was referred to Mike Kelly, VE3FFK, who may be able to help him.

Paul Cooper, VE3JLP, brought some old magazines which he offered to anyone who wanted them. Larry, VE3WEH, welcomed Nelson Laporte to the meeting. Nelson is a member of the radio course who has recently passed the 5 wpm cw test.

Guest Speaker

Larry, VE3WEH, introduced the guest speaker for the evening, Patty Nicholls, VE3DZZ & VA3PN. Patty obtained his first amateur licence in 1952 in Great Britain, operating as GW3JZZ. He has since operated

as an amateur in many countries including Libya, Malta, Kenya, the Maldiv Islands, Malaya, USA and Canada. Patty has contacted about 200 countries with some 140 confirmed cw contacts. He regaled the meeting with tales of his early misadventures in amateur radio which included a crystal set receiver and an elementary spark gap transmitter. His first permissible transmitter had a used 6V6 final. Although Patty prefers to operate in morse code, he feels that present licencing requirements should make the code test optional. Larry thanked Patty for a most enjoyable, informative and well illustrated presentation.

Hans Van Den Berg, VE3REL, showed a WW1 vintage battery operated key/buzzer set used by officer cadets to learn the morse code. The President encouraged other members that have "antique" keys, bugs, etc. to present them to future meetings as historic pieces for the younger members and as nostalgia for the older members.

The President, VE3CDS, outlined a proposed program for future

meetings :

- a talk on lightning by Bill Wilson.
- a talk on TRC86, the proposed new radio regulations.
- a home brew night.
- a mobile rig demonstration night in the parking lot when we return to daylight saving time.
- a meet the new amateur night on completion of this year's radio class.
- a summer time club picnic, at the Rideau River Park in Smiths Falls.

Announcements

Al Barnes, VE2TYJ, indicated that there would be a bunny hunt on Saturday, January 29, 1994. Further information will be forthcoming on the club nets.

A request has been received from the Girl Guides On-The-Air for access to an HF amateur station in the west-end of the city on 19-20 February. Contact Jerry, VE3CDS, at 225-7374.

Len Chodat, VE3LPH, requested retired amateurs in Ottawa South to form a radio watch group to work in conjunction with the police in paedophile surveillance around schools. Len can be reached at 733-5122.

Richard Hagemeyer, VE3UNW, made a request for amateur radio communicators for the
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Minutes

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annual Lachute-Gatineau ski marathon, February 12 and 13. Contact Harrie Jones, VE3HYS, at 739-9365.

Committee Reports

Lorraine Boulay, VE3VAT, reported that the Club Flea Market will be held on Saturday, May 14th at the St. Laurent Arena, 716 Morin Avenue in Ottawa. Some 20 volunteers will be needed to set up about 100 tables early on the morning of 14 May, and a similar number to take them down immediately after the event. Contact Ken Barry, VE3KJB, 746-4823 to volunteer. There will also be a need for about twelve 50 foot electrical extension cords as we will not have access to the arena's kitchen facilities. In

addition, coffee pots/urns will be needed. Lorraine wants to advertise the event on local bulletin boards and packet, and asked those who can provide this service to contact her. Volunteers will be required to operate the flea market talk-in. Bytown Marine will donate a Kenwood TH-22AT handheld for the main draw prize. Jerry, VE3CDS, commented that if needed a telephone press gang would be formed to get the r e q u i r e d setup/takedown "volunteers".

John Pope, VE3ACI, reported that the 70 cm repeater is progressing, and that he needs a Mocom 35 manual to complete the setup exercise.

Al Barnes, VE2TYJ, reported that field day preparations are quiet just now.

Cy Webster, VE3SIY, reported that the museum expects to commission the new amateur radio station display in February, 1995.

Door Prizes

The guest speaker drew the names of the door prize winners. Bill Balke, VE3NPG, won a copy of the ARRL Handbook, which was donated by Steve, VE3RUU. Ed LeBlanc, VE3VLF, won a copy of the ARRL Antenna Handbook.

Adjournment

The meeting was adjourned by the President at 2100 hours and was followed by coffee, tea and cookies.

RAC Convention In Calgary

The Club's executive is attempting to ascertain if any OVMRC members are planning to attend RAC's first national convention at Calgary, July 29-31, 1994. If you are thinking of attending the convention please advise Jerry, VE3CDS, so that information, registration forms, etc., already received by the Club can be made available to you.

Motion To Be Considered

The following motion will be proposed at the Club's February 17th meeting : It has been moved by Dan, VE3XDD, seconded by Larry, VE3WEH, that the 1993-1994 budget allocation for Rambler Supplies be augmented by the sum of five hundred dollars(\$500.)

Filter Building Party

Continued from page 1
were ready for their quality control inspection by Wil and Mike. Wil inspected each filter to ensure they had been constructed properly and to submit them to an electrical and RF test. The filters were then passed on to Mike who inserted them into an analyser for a characterization test. This latter test showed the shape of the filters curve and was set for optimum performance.

The majority of the amateurs who attended the party were building an electronic device for the first time. However, with the guidance and assistance of Wil and Mike, everyone was gaining experience and confidence and it showed as work sped up along the assembly line. It is interesting to note that of the first group of filters to come off of the assembly line, a minimal number required some small adjustment to meet quality control standards.



Anne, VE3TSB

A good example of a novice who put her mind to the task at hand was Anne, VE3TSB. Anne is an eager, earnest amateur whose biggest clue to the world of electronics was the use of her Kenwood handheld. Yet with diligent work and a willingness to learn, Anne had a very professional looking working bandpass filter at the end of the day. Anne, by the way, was the only female participant at the party.

The afternoon ended with about 20 of the filters completed. A couple of hours of work the next day was used to complete the remaining filters.

The new filter owners report outstanding effectiveness of the device they built. Almost without exception, each of the participants is anxiously awaiting an announcement of the next "building party". The success of the first building project has led some of the more experienced local amateurs to planning a second such party. They are scouring catalogues and contacting various distributors and suppliers to ascertain what kits are available and at what cost. They hope to have a second building party before summer.

The objective of the filter building party was to instill motivation and initiative in amateurs to become involved in constructing various devices associated with amateur radio. The filter building project demonstrates that non-technically minded amateurs can build these devices and that they work.

The amateur community owes a hearty vote of thanks to Wil Warren, VE3XMT, for sharing his device, at no financial gain to himself. Both Wil and Mike Kelly, VE3FFK, did an outstanding job in getting this project organized and operating. They have established a precedent which other dedicated amateurs will now attempt to emulate. On behalf of the 36 participants, and the amateur community as a whole, thank you Wil and Mike !

(Editors Note: The remaining filter kits have all been grabbed up by amateurs who could not attend the party. However, copies of the filter schematic are available from Jacques Choquette, VE3TSC.)

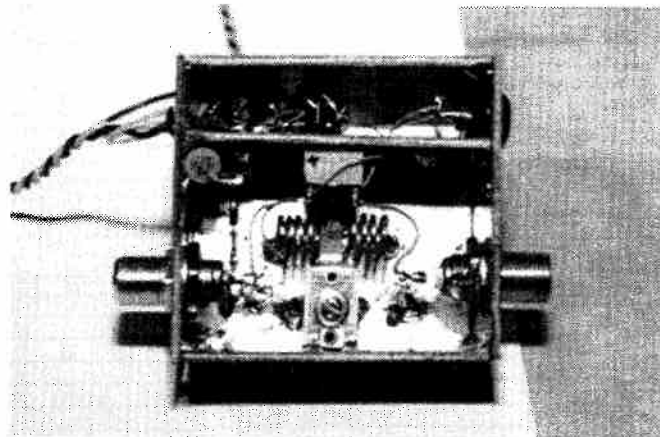
The Filter Building Party



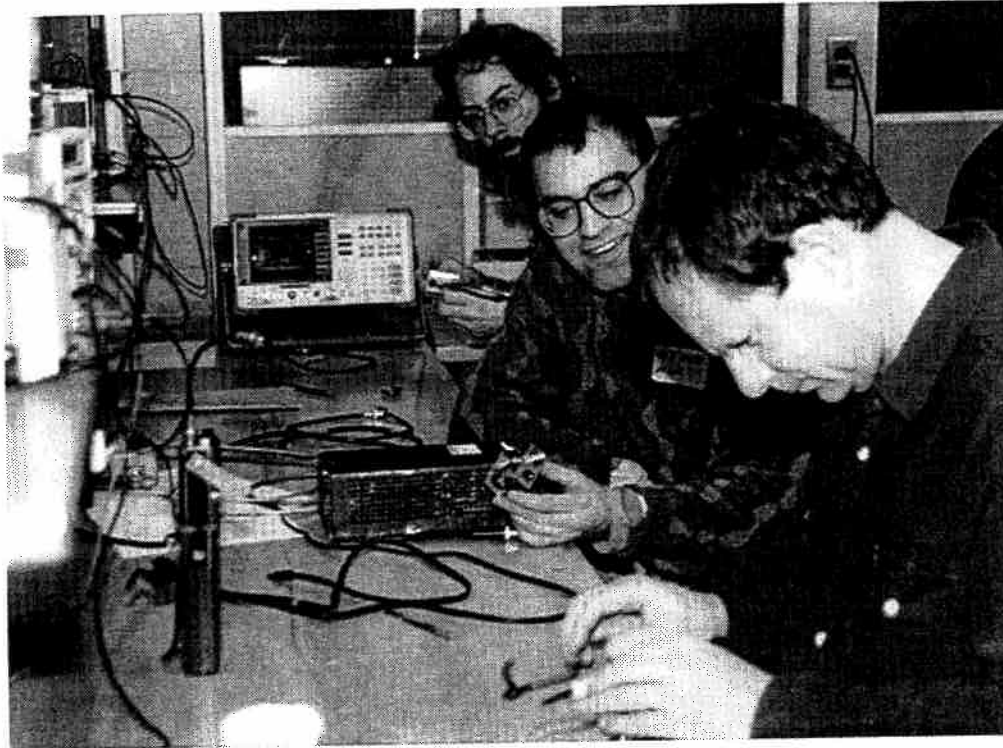
There's a party going on - a filter building party and the gangs all here getting instructions on how to put all of the parts together.



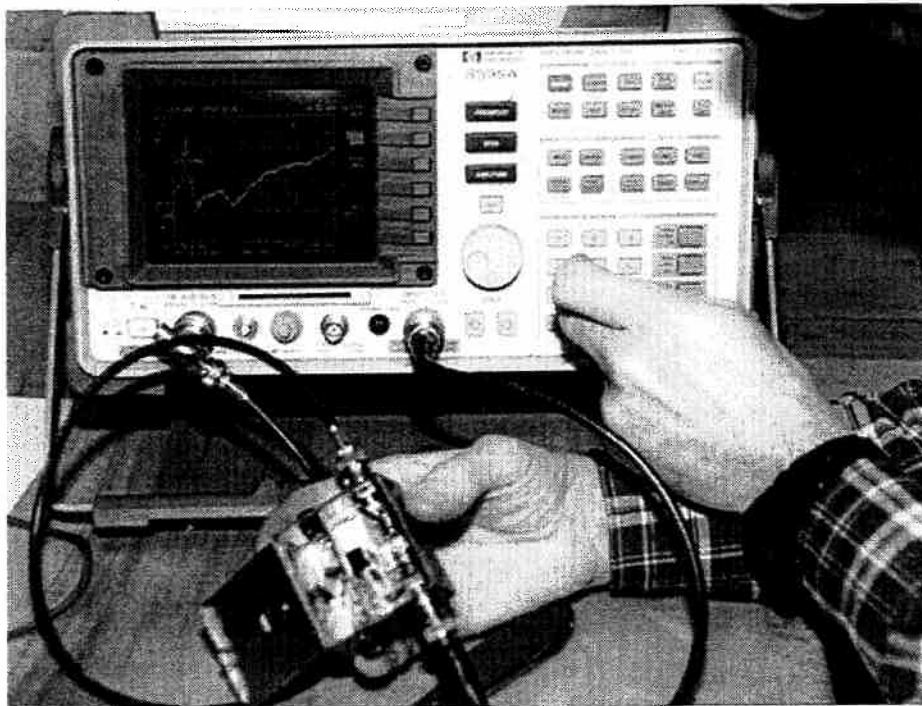
Looking down one of the assembly lines at work putting the bandpass filters together.



A completed filter with the top removed.



The final stage of the assembly process - a quality control check and setting for peak performance.



This is the analyser which was used to give each completed filter its final check and to set them for peak efficiency.

Photographs by Jacques, VE3TSC and Larry, VE3WEH

How An Examiner Does It

Written by Mike Kelly, VE3FFK

If you already have full radio privileges, and you don't know anyone who doesn't, then skip this article. This article is all about what a delegated examiner does (at least what I do).

It usually starts with a phone call - "I hear you know about how to get a ham radio licence". So I tell my callers, in a general sort of a way, about what's needed, what type of licence is needed for what they want to do, about Basic, Advanced, 5 and 12 wpm, about RIC 24 and 25. Sometimes it's on the air, and I'm asked, "How do I get onto HF?" I let them know about code practice computer programs, W1AW, any upcoming courses I know about and things of that nature. After a few weeks of silence comes the second call: "What is the test like and when and where can I take it?"

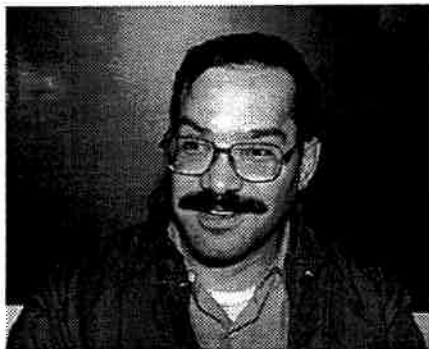
When and Where: Since I'm around Carleton University most Tuesdays for the Advanced course, I try to schedule tests between 4.30 and 7.00pm. I once arranged a test for Easter Sunday. Anytime I'm not scheduled to be doing something else is an ok time for me, but I find it more convenient to conduct the exams at my workplace than at home. We're much better equipped to do things like exams at the university.

If the candidate is not familiar with the campus, I'll send a map if there is enough lead time. Once the candidate arrives I explain the rules, check for any questions they might have since I sometimes forget some little detail. The most often asked question is, "What does it cost to take a test?" My standard reply is, "nothing unless you ask for so may retests that you start to bother

me". It has not happened yet! Once all the detail have been taken care of they are directed to a table or desk and are handed a stack of papers consisting of a blank answer form, formula sheet, schematic or block diagram book, and finally a book of questions - 100 questions for Basic or 50 questions for an Advanced licence. I then go to another part of the room and leave them alone for awhile. I check on their progress from time to time but really can't answer any of their questions. From the time they get the question book, they are on their own. Once they are finished and have checked their answers for errors and unanswered questions, I take their answer sheet and check it against a "swiss cheese" form with the correct (according to the department) answer spots cut out of it. If, at first glance, it looks like they will pass, I give them an examination report and certificate application form. They complete the form while I check the answer sheet and total their score. I then check their application to make sure it has been completed properly. If it was a Basic exam, I give them a station licence application form and some advice about picking a call sign suffix.

If they are doing a code test, we go over to a computer where the test software, written by Richard, VE3UNW, is loaded. This software is used for the sending test. It carefully sets up the timing and unlike other software we have tested, keeps the speed and spacing constant throughout the duration of the test. The candidate has the option of doing the receive or transmit test first, but must do both of them before they are qualified. In the receiving test, the characters are sent at a 12 wpm rate, but extra space is inserted between
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Potpourri



Kingston - Wireless communications of the future include over 100 satellites, computers, beepers, faxes and wrist telephones. The USA has allocated 160 Mhz of which 120 Mhz once auctioned expects to bring \$10 billion to the government.

Sudbury - Antenna connector letters are from the originators of the designs. Thus : N=Paul Neill; C=Carl Concelman. Later they collaborated to form the BNC (bayonet Neill-Concelman) and TNC (threaded Neill-Concelman). Subminiature connectors are A, B, or C (SMA=subminiature A).

Augusta, Maine - Do you enjoy chasing DX? If you do, tune to "International Amateur Radio Network" on 3975, 14275, 28475 at 0100, 0300, 1100, 1200, 1400, 1800, 2200 hours UTC.

Toronto Star, November 26, 1993 - A group (RadioComm Canada) representing the wireless communications industry (cellular/cordless telephones) are suggesting an immediate ban on the manufacture, importation and distribution of scanners. Only a restricted class of users such as police/firefighters would be eligible for scanner licences.

Windsor - (W5YI report) Terry Van Sickle WB5WXI and a ham friend were caught by the FBI broadcasting rude

and offensive remarks to customers over the speaker of a drive-thru MacDonalds in Dallas, Texas. He is a video television journalist who had a vehicle adorned with 7 antennas and full of radio scanners, frequency lists and transmitting equipment.

Fort Worth, Texas - A group of amateurs successfully launched their fifth balloon with ATV and TNC equipment connected to a GPS on board. It climbed to an altitude of 101,000 feet for 2 hours and travelled a distance of 135 miles. Hams collected data such as altitude, speed, rate-of-climb and position.

Calgary - N70LQ did an extensive test on a new product called Super Charger which claims to charge ordinary and alkaline batteries. This product is not related to Rayovac's new rechargeable alkaline system. Basically, the tests showed that the charging process does nothing more than the recovery time of the batteries won't do themselves.

To assist you, here is a listing of BBS's with amateur oriented messages and/or files:

Wil, VE3XMT, - 836-5889

John, VE3KYT, - 747-7783(packet

- 747-2022(Internet)

Al, VE2TYJ, - 246-7389

Gord, VE3XGD, - 526-0702

How An Examiner Does It

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characters to bring the total speed back down to 5 wpm. For the 12 wpm test, the characters and spacing are set up for 12 wpm, as you would expect. The text is usually something that I have carefully constructed to make sure it has most of the letters and numbers and all of the punctuation marks in it. For the receiving test, candidates can use a computer as an electronic typewriter, or copy with a pencil and paper. The sending test is more low tech than the receiving test. I ask candidates to send by hand key, bug or keyer (in one case the candidate didn't have a key but, nonetheless, sent at around 15 wpm by touching two wires together). This part of the test is three minutes long. The text for the sending test is a block of text out of some book and will include numbers and punctuation. The candidate sends, and after three minutes I stop them and count the number of characters I have copied and the number of errors.

Some people don't seem to realise that numbers and punctuation are counted as two characters each, because they are so much longer than the average letter. If they do not pass the test but are close I will automatically give them another test right away. A person can get up to five characters wrong (for this purpose a number is still only one character) and still pass the test.

Once all of the foregoing is done, the much happier amateur gets to go home and start formulating excuses to tell their boss why they won't be in the next morning. Sometime the next day Richard, VE3UNW, takes the documentation into the department so that it is there, waiting for the new ham to get there. When the amateur walks into the office and out a few minutes later, they have a shiny new station licence with their very own callsign.

Membership Dues

The annual confusion among Club members as to the calendar period covered by membership dues was recently clarified by Membership Chairman Neil Herber, VE3PUE.

Neil referred to Club Bylaw 2.3.2 which states: "Annual membership dues shall be payable by the first day of each fiscal year." The Club's fiscal year is 1 July to 30 June, which is the twelve month period covered by our membership dues.

Neil has commented that it would be appreciated if membership renewals were mailed to the Club's postal box which is listed on page 2.

A Good Idea

A constructive suggestion has been made by Fred, VE3BAJ, which should be of interest to Club members.

If your spouse has been complaining to you about the pile(s) of old amateur radio magazines cluttering up the house, here is the answer. Fred has suggested an alternative to your magazines serving as a dust catcher. He suggests the Club organize a MAGAZINE EXCHANGE in which you can trade, loan or give away your magazines.

Does the Club have any volunteers to get a magazine exchange started ?

Part 1

Let's talk CW

Written by Ed LeBlanc, VE3VLF

CW or Continuous Wave is the oldest and simplest form or mode of radio communication. CW consists of generating an RF carrier wave at a power level and on a frequency necessary to achieve the desired propagation effects. The intelligence or message to be transmitted is imbedded in the carrier wave by breaking it up into pulses. By establishing a set of rules in sending and grouping these carrier pulses, intelligent messages can be transmitted.

This set of rules existed before the advent of radio and is commonly known as Morse Code. This code was invented by Samuel Findley Breese Morse and was used for wire communication systems that flourished during the last half of the 19th century. Morse was a portrait painter by trade but developed an interest in the newly invented electromagnet. He toyed with the idea of using the device as a means of communication and in 1835 developed his first working electric telegraph prototype. In 1838 he developed Morse Code.

The first telegraph line in the U.S. was established between Washington and Baltimore in 1844 after much effort on the part of morse. It was here that the first long distance communication, "What hath God wrought", was sent.

In 1851 a modified code was devised by a special conference of European nations. The code was called Continental or International Morse Code, the format that is used today by radio amateurs.

The Morse format consists of two types of pulses, one short and one long or, more commonly known as, a dit and a dah. A dah is roughly three times as long in duration as a dit. By grouping these dits and dahs into clusters, single characters such as letters, numbers or punctuation marks can be formed. With appropriate spacing, words, sentences and complete text can be transmitted by hand and received by ear.

Because of its simplicity, the CW mode requires radio equipment of only a modest design, at least as far as the transmitter is concerned. A CW transmitter need only produce the RF carrier wave. No modulation of the wave, which would require additional circuitry, is required. All that is needed is a switch for the operator to turn the carrier on and off.

Although making and breaking the contact with the ends of two pieces of wire could do the trick, a mechanical device called a straight key is more efficient. By pressing and releasing the end of the metal arm, an operator can comfortably send CW at speeds up to 10 to 15 wpm. One advantage of CW is that it uses a very narrow bandwidth or space in the RF spectrum. As a result, a receiver can use a narrowband filter to receive the signal giving good selectivity in crowded band conditions. Another characteristic of CW is that it is excellent for weak signal work. This makes CW a favourite mode for low power operations, mediocre antennas, poor propagation conditions, etc. In part 2 of this series we'll look at operating CW.