

LAST MINUTE ADDITIONS for the SWAP SHOP

SALE:

VE3JY2 Frank -Yaesu FT23R 2m handle with 12V batt pack, battery case for 6AA cells, cig lighter adapter \$450
 389 0114
 VE3JTE John -Yaesu FT208R handle with wall charger, speaker mike, 753 0536 (Branford) dc-dc converter, extra battery, manual \$225
 VE3HOD Bill -TR3 80 III computer with 2 disk drives, manuals and several programs \$250
 578 0432 -Radio Shack VM4 Video monitor (green) \$75

WANT:

VE3EET Les -three 6SG7 tubes
 547 2717

HAMILTON AMATEUR RADIO CLUB
 FINANCIAL REPORT
 September 26, 1989

Bank balance \$1,251.54

TOTAL EXPENDITURES TO DATE \$2,410.52
 FOR 1989

Total deposits made in 1989 \$2,195.75
 to the bank

Note: The above deposit figure represents only those deposits made to the bank between the period January 01 to September 25 inclusive. RICHARD LEMAN - VE3SRK

Hands on Electronic Course

At the September meeting Don Graziano proposed a hands on electronic course on soldering, buying parts, use of test equipment, testing components, etc. To be built at home are sample PC boards, variable power supply of 2 to 15 volts, 1 amp, a crowbar protective circuit and an item of your own choosing. He expects it to cost \$40 for materials and room cost. The course will be limited to 10 people. If interested call Don at 560-1960.

The
 Hamilton
 Amateur
 October 1989
 (Established 1932)

CLUB MEETING
 18 October 1989
 Hamilton-Wentworth
 Emergency
 Preparedness

Gay Ostfi, the Emergency Preparedness Officer for Hamilton-Wentworth Region will tell us something about his organization and its purpose. He will also have their communications van here for our inspection. (Subject to confirmation)

HARC EXECUTIVE FOR 1989:

PRESIDENT:	VE3HTC	Dave Rypma	689-3014
PAST PRESIDENT:	VE3ODX	Everett Englen	578-2458
1st VICE PRESIDENT:	VE3JTO	Michael Spenuk	389-1760
2nd VICE PRESIDENT:	VE3HTF	Paul Fleck	Auto Dial 80
SECRETARY:	VE3LMS	Giant Sewell	547-0711
THEASURER:	VE3SRK	Richard Leah	547-8192
MEMBERSHIP:	VE3JSS	Gordon Murray	573-3647

HARC COMMITTEE CHAIRPERSONS FOR 1989:

AWARDS & CONTESTS:	VE3AAH	Gordon Barber	383-9161
HISTORIAN:	VE3BLG	George Olenick	383-7338
PROPERTY:	VE3ARX	Bill McCaslin	634-5190
BULLETIN EDITOR:	VE3SON	Jim Walsh	689-6839
EDUCATION:	VE3FHQ	Glen Gibson	385-2786
EMERG. COMMUNICATIONS:	VE3NYC	Paul Hazen	664-5247
EMERG. PREPAREDNESS:	VE3ANW	Robert Clarke	574-3554
FLEA MARKET:	VE3LMS	Giant Sewell	547-0711
HEALTH & WELFARE:	VE3GFE	Stan Boldruch	528-4002
PROGRAMS:	VE3JTO	Michael Spenuk	389-1760
PUBLIC SERVICE:	VE3GCP	Fred Robinson	575-5197
PUBLICITY:	VE3GCP	Fred Robinson	575-5197
REFRESHMENTS:	VE3DSP	Volunteers needed!	
REPEATER:	VE3BYM	Mike Spenuk	389-1760
SWAP NET CONTROL:	VE3MWN	Ralph Tutts	388-6146
TECHNICAL:	VE3HTF	Marr Gibson	389-4308
VE3DNC LICENSEE:	VE3FHQ	Paul Fleck	Auto Dial 80
VE3NCB LICENSEE:	VE3DSP	Glen Gibson	385-2786
VE3RCH LICENSEE:	VE3FDB	Glenn Simpson	385-8478
CODE TESTING:	VE3CIB	John Kassey	385-0422
	VE3BK	Bob Wilson	383-2054
		Norm Smith	385-5661

The President's Message - October 1989

It's election time! The Hamilton Amateur Radio Club will hold its elections for 1990 Board of Directors positions at the November general membership meeting. If you are interested in helping to run the club in an official capacity, please let Fred, VE3GCP or Don, VE3OCY (the election committee) know. If you would like to nominate someone for a position, please check with the person and then submit his name to Fred or Don. We'll be looking for a minimum of six names to put on the ballot and hopefully several more. If you have any ideas for running the club, standing for election is the best way to see them through. Also, if you currently hold an appointed position as a committee chairperson or committee member, I'm sure the new executive committee would like to have you continue in your duties.

By the time you receive this bulletin (and read these words) the 1989 HARC Flea Market will be history. I hope you enjoyed it. This year's Flea Market Committee has made a number of suggestions for next year. Among them are: move the event to early in September; have an outdoor table section. If you have any ideas (or would you like to run the Flea Market next year?), please let the committee know, give Grant or Paul or Gordon or Stan a call.

This time last year, the club treasury was flat broke! I'm happy to report that we currently have sufficient funds in the bag to finish off the year without debt. That means we made it without use of the Flea Market receipts. To me, that's important; until now, we haven't had sufficient involvement from the general membership in running the Flea Market. Every year we come close to abandoning it because we don't have a LARGE group of people prepared to work at making it a success. With a sufficiently large ongoing committee, we may be able to start depending on the Flea Market for regular club revenue. Until that time comes, we just have to manage our affairs as if we might not have a Flea Market next year!

If you're interested in amateur radio classes or know of someone who is, you might contact Wayne Lockie, VE3FMN at 639-0106 for location and details on classes (in Burlington, I believe). Classes start 26 September and will run for 20 weeks from 1900 to 2200.

While I still have the floor, I'll put in a commercial for the editor of the Hamilton Amateur. We need articles to make this the best bulletin in the area. If you have a special interest in some area of amateur radio, please take a few minutes to write down the details and pass on to Jim Walsh, VE5SON for inclusion in the Bulletin. You may uncover other people with a similar interest.

The October meeting will hopefully have the Hamilton-Wentworth Emergency Communications van at the Chedoke Hospital meeting site. The Emergency Preparedness Officer for Hamilton-Wentworth should be there as well to tell us something of their activities in our area.

See you at the Nash Auditorium on 18 October 1989...

73... Dave Fyppma, VE3HTC

THE ART FERGUSON AWARD

The Art Ferguson Trophy is awarded annually by the Hamilton Amateur Radio Club in recognition of meritorious service to the public through amateur radio communication.

To be eligible for this award the person shall be a member, or past member of the Hamilton Amateur Radio Club. Nominations for this award shall be submitted to the club executive not later than the November 31. The club executive committee will make a decision for this award based on the information received. For more information on these club contests call Norm Smith, VE3BK.

ART FERGUSON TROPHY

Presented annually to a member of the Hamilton Amateur Radio Club for meritorious service to the public through Amateur Radio communications.

I nominate _____ (name & call sign) _____
as my candidate for the Art Ferguson Trophy for the following reasons:

Dated this _____ of _____ Signed _____ (my name & call)

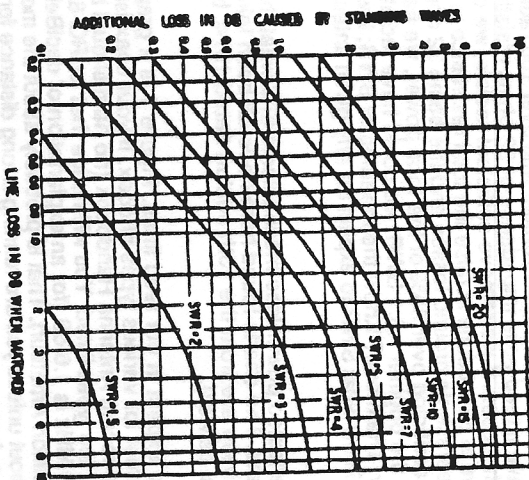


Figure 2 - Increase in line loss as a result of standing waves (SWR measured at the load).

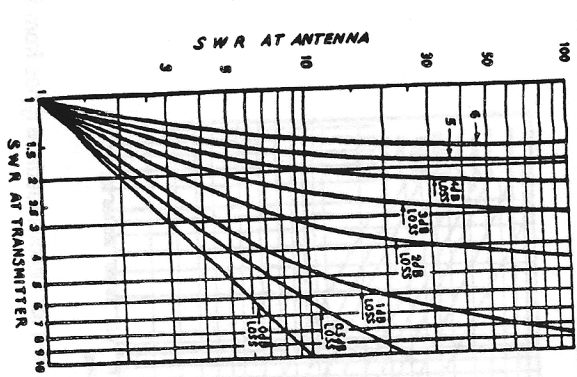


Figure 3 - SWR at input end of transmission line vs. SWR at load end for various values of matched line loss.

But, you may say, the voltage or current in the coax will become too high if I run such a high SWR! What is the effect of SWR on voltage and current? Not as much as you might expect. Current and voltage varies as the square root of the SWR. Thus, looking at the graph in Figure 4, we see that our line with a 5:1 SWR will have the voltage and current maxima about 2.2 times the voltage and current which only occur at 1:1. Now, the flat line values (which only occur at 1:1). Now, the voltage on a perfectly matched 50 ohm line handling 1000 watts of (output) power is less than 250 Volts. That means our 5:1 line will still only have maximum voltage values under 600 Volts, well below the capability of RG-8 coax (over 4 KV for 8U, about 2 KV for foam dielectric coax). Not to worry, even with a more-than-legal power level, coax in good repair will easily handle the 5:1 SWR! And with our intermittent transmission nature, the current will never heat the coax line.

As many as 10,000 calls per month were being generated by the hackers who formed a club called *Scannerville*. Another group of hackers calling itself *Pagerville* has been known to tie up paging terminals with messages sent by modem. Strangely there was a gang-style rivalry between these two groups. Many involved in the hacking used the facilities for social or dating purposes.

7. FLEAMARKET, HAMILTON Ontario ARC, 8 October, 0800 hrs. Mohawk College, Fennell Campus, Hamilton.
 8. (there appears to be no item 8 - DTR)
 9. MORE SURPLUS BELL CANADA RIXON T212A Data Sets (Modems) available. Full duplex, switchable, 300 or 1200 bits/sec. Easy hook-up to IBM(sic) RS232C interface or equivalent. Instructions included. 5 year warranty. Thanks to VE3CT, Croft Taylor. Price post-paid a steal at \$47. Mail your orders to VE3AOY, Will Melhuish, Manager, CNIB Amateur Radio Program, 1929 Bayview Avenue, TORONTO, Ont, M4G 3E8, or call (416) 480-7438 - All proceeds to C.N.I.B.
 10. Club radio course instructors, order your CARF Certificate Study Guides now - don't wait until classes start. We have a good supply ready to ship out to you at discount prices. There is a high success rate by students using CARF Study Guides. Don't Delay. Call Today.
 11. Going to Israel? Need a licence and help with equipment? The 2 metre repeaters there require a 91.5 Hz sub tone to get access. Info on licence cost (20 shekels) and an application form for an Israeli reciprocal licence will be handled by the extremely helpful IARC. Write 4X1AT, Ahron Kirschner, IARC, Box 4099, TEL-AVIV, ISRAEL. 61040
 12. CARF-D.O.C. Symposium, 21 October 1989, The Wexford Collegiate, 1176 Pharmacy Road, Scarborough, Ontario. 0830-1630 hrs, sponsored by the Scarborough Amateur Radio Club. If you are unable to attend you may submit written comment on the following topics:
 - o Frequency Co-ordination on Shared Bands
 - o Restructuring
 - o Amateur Exams
 - o Should the Clubs Run Them?
 - o Who Should Set and Mark Them?
 - o A National UHF/VHF Co-ordinating Committee for Canada
 - o Callsigns - Where Do We Go from Here? VE3 Near End of Block
 - o Basic/Advanced Certification in Restructuring.
- Please mail your submissions to the CARF office for forwarding.
13. Interested in antique radio - an excellent book, *Radio Manufacturers of the 1920's, Volume 2* will be reviewed in a future issue of *The Canadian Amateur*.

REFLECTIONS - PART II

Last month I started out by stating a series of untruths that many have taken as unshakable facts for years. This month I'll start explaining SWR and reflections and show that the transmitter, feed line and antenna are all parts of a SYSTEM. When we work on any one of these, the others are somewhat affected.

Engineering is the process of making workable compromises in design goals where the theory guiding different aspects of the design are in conflict, making it impossible to optimize all the goals at the same time. GOOD engineering is simply recognizing the correct choices in the compromises and relaxing the right goals. We amateurs should make sure we correctly understand the design trade-offs so that we spend our time optimizing the right items instead of letting SWR dictate the design.

We need to better understand reflection mechanisms and transmission line propagation to know:

- 1) why reflected power by itself is an unimportant factor in determining how efficiently power is being delivered to the antenna.
- 2) the effect of line attenuation (to discover why it is the KEY factor which will tell us when and how much to be concerned with reflected power and when to ignore it).
- 3) why *all* power fed into the line, minus the amount lost in line attenuation, is absorbed in the load *regardless of the mismatch at the antenna terminals*.
- 4) why the reflection loss (mismatch loss) is cancelled at the line input by *reflection gain*.
- 5) why a low SWR reading by itself is no more a guarantee that power is being radiated efficiently than a high SWR guarantees it is being wasted.
- 6) why SWR is not the culprit in transmitter-loading problems (why the real culprit is the change in line-input impedance resulting from the SWR and why we have complete control over the impedance without necessarily being concerned with the SWR).
- 7) the importance of thinking in terms of *resistive and reactive* components of impedance instead of SWR alone, and why SWR by itself is ambiguous, especially from the viewpoint of the selection and adjustment of coupling and matching circuitry.

We also need to become aware that with moderate lengths of low-loss coax, such as amateurs commonly use for their feedlines, loss of power due to reflections in the HF bands tends to be insignificant no matter how high the SWR. With SWRs of up to 5 to 1, if the attenuation is low enough to ignore reflected power loss, all the power being fed into the line is also being absorbed by the load (the antenna). This point is especially significant for a center-loaded mobile whip where the attenuation of the extremely short feedline is trivial (in other words, put the tuner where the operator can tune it - NOT in the trunk!).

We should become more familiar with the behaviour (always predictable) of off-resonance antenna terminal impedance and its correlation with SWR. This knowledge will provide a proper basis for evaluating the reading of an SWR indicator to determine whether the behaviour of the *system* is normal or abnormal. We must not blindly assume that low SWR is good and high SWR bad. The behaviour of a

FROM THE BULLETIN BOARDS - 4

4. ALL LOBBYISTS NOW HAVE TO REGISTER Effective 24th August 1989, all those persons wishing to influence the Federal Government by presenting the views of organization must be registered according to the requirements of "Lobbyists Registration Act". Lobbyists are being grouped into two categories or "tiers": those who are employees of an organizational wishing to influence the government and those employed by a professional lobbying organization working on behalf of an organization wishing to influence the government. There is no indication that private individuals wishing to influence government need register. Full details are available from the Lobbyists Registration Branch, Consumer and Corporate Affairs, Hull, Quebec, K1A 0C9.
5. The 1989 Canada-Japan Communications Industry Technical Seminar will be held in Ottawa/Hull, 9:00 a.m., Monday 23 October and Tuesday 24 October '89 at the Canadian Museum of Civilization. This second edition of the technical seminar series brings together Canadian and Japanese communications industry representatives to promote trade, technical and research collaboration. Interested journalists should contact: Andrea Debbane, Technical Marketing Operations, Department of Communications, (613) 990-4266
6. From U.B.A. The Unier Belgischen Amateurfunkers news of their Armistice Day commemorative station ON4UVW which again will be active on 11 November 1989. Preferred frequencies SSB 3,789; 7,089; 14,189; 21,289; 28,589 CW 10 kHz from band edge. Special QSL card via bureau or direct to ON4ACB. Danny Commeyne, Renhan 38, B-8656 DADIZELE, Belgium
7. CARF's new up-to-date Callsign and Address book will be ready soon. Look for them on 8 October at the Hamilton, Ontario, Fleamarket. Clubs or Provincial Societies wishing to advertise in it at reasonable rates, contact CARF at P.O. Box 356, Kingston, Ontario, K7L 4W2.

Nobody is sicker than the person who is sick on his/her day off.

de VE3VCA

Nominations

Nominations are required for the election of next years executive. Nominations may be submitted over the signature of two members at least 5 days before the November meeting or submitted from the floor at that meeting. The person nominated must accept in writing if not at the meeting or in person at the meeting. The Nominating Committee Chairman is Fred Robinson, VE3GCP. He would appreciate submissions by the October meeting.

BULLETIN 25 CRRL, 1989 SEPTEMBER 24

1. Ninety-seven delegates and observers representing 24 countries participated in the Triennial Conference of International Amateur Radio Union (IARU) Region 2, held in Orlando, Florida, on September 4-8. Canada was represented by George Spencer, VE3OZW, CRRL Quebec Director Bruce Baila, VE2QO, Malcom Hasmon, VE3KXH, and Clark Campbell, VE3KSO. There was an extremely full agenda with over 100 documents under discussion. These documents dealt with a wide range of topics: preparations for WARC'92 (including a special WARC budget of \$US 150,000, monies to be raised by Region 2 member societies) and the customary band-planning and operational matters. Region 2 officers elected to serve for the next three years included Alberto Shalo, HK3DEU, president; Fabian Zarrabe, YS1FI, vice president; Tom Atkins, VE3CDM, secretary; and Steve Dunkerly, VP9IM, treasurer.
2. The Jack Ravenscroft Susceptibility (JRSD) Fund has been closed off. This fund was created to help the late Jack Ravenscroft, VE3SR, fight a conviction under nuisance law for allegedly interfering with appliances in a neighbour's home. A complete accounting appears in September QST Canada.
3. British Columbia amateurs will no longer have to have Amateur Radio equipment installed in their vehicles to qualify for an Amateur Radio licence plate. BC Section Manager Ernie Savage, on behalf of CRRL, took the initiative and wrote to the BC Ministry of the Solicitor General, pointing out that BC was the only province in Canada where this was a requirement. The Solicitor General's office did a survey, concluded they were behind the times and dropped the requirement immediately.
4. South of the border, the ARRL Board met on July 21-22. Of interest to Canadian amateurs, the Board, in a split decision, approved a proposal for an entry-level no-code licence in the US which would give holder 250 watts, all modes, on 220 MHz and above. The Board also approved holding a joint ARRL/CRRL Computer Networking Conference in London, Ontario, on 1990 September 22. This year's conference will be held in Colorado Springs, Colorado, on October 7.
5. Congratulations to John Belrose, VE2CV, who was recently reappointed ARRL Technical Advisor specializing in antennas, propagation and radio technology, and to Ken Pyke, VE3OGM, who was the only Canadian amateur chosen to join the Yaesu Design Team.

COMING EVENTS:

- October 11-12 London (ON) ARC Fleamarket
- October 15 CARF-DOC Symposium (Scarborough, ON)
- October 21 Scouts International Jamboree on-the-Air
- October 21-22 CRRL QST QSO Party - CW
- November 4-5 CRRL QST QSO Party - phone

HR BULLETIN 24 (PACKET CRLE0024) FROM CRRL LONDON, ONTARIO, 1989 SEPTEMBER 17, TO ALL RADIO AMATEURS BT

1. ITU, the International Telecommunications Union, has announced its intention to hold a WARC in the first quarter of 1992, a WARC with authority to reallocate frequencies in the following bands: 3-30 MHz, 500 MHz-3 GHz, and 12.7 GHz and above. The WARC will be held in Spain and is expected to last four weeks. (In contrast, WARC '79, a general WARC dealing with all radio frequencies, lasted ten weeks.) A precise agenda has not yet been set but IARU, the International Amateur Radio Union, is making preparations to defend our amateur frequencies.
2. The Defence of Amateur Radio Fund initiated by CRRL will soon be independently administered. Purpose of this fund is to raise money to help IARU protect our amateur frequencies at WARC '92. The fund now stands at over \$1000. For background on the fund, see the editorial in September QST Canada.
3. A CRRL General Meeting was held at the CRRL National Convention in Winnipeg. At that meeting, CRRL members approved changes to the CRRL By-laws that will result in:
 - 1) election of the CRRL president and vice president by the CRRL board instead of directly by the members.
 - 2) prohibition of any CRRL officer, including the president and vice president, from holding a directorship while serving as an officer.
 - 3) creation of two new CRRL regions (Midwest to be divided into Alberta and Midwest, Ontario into Ontario North and Ontario South) and regional directorships.
 - 4) two-year terms of office for all CRRL officers.
 - 5) automatic succession of the CRRL vice president to CRRL president in event of the president's resignation.
 - 6) elimination of the requirement that the CRRL secretary be a director.
 - 7) permission to create elected vice directors at a later date.
 - 8) designating QST Canada instead of QST as CRRL official journal.
 - 9) opening CRRL membership to amateurs outside of Canada.
4. CARF, the Canadian Amateur Radio Federation, has responded favourably to a CRRL request to resume discussions which could lead to the creation of a single Canadian Amateur Radio organization. No timetable has yet been set, but talks are expected to begin in October.
5. Prefix hunters, take note. To celebrate the 125th Anniversary of the Charlottetown Conference which led to Confederation, Canadian amateurs may use the following special prefixes until October 15: C11-C18 for VE1-VE8, and VO8-VO9 for VO1-VO2. (Notification from DOC was late. No special prefix was indicated for VY1.) In connection with the anniversary, Charlottetown ARC is given permission to use special prefix CF1 throughout September and October.

FROM THE BULLETIN BOARDS - 3

14. DX on 10 GHz. Contact was made last July with VE3ASO/W2 on Whiteface Mountain by VE3BBM at Lancaster, Ontario, a distance of about 65 miles. No X mod up there.

15. My XYL says it is an impossible wish - perhaps it is but I would like to see *Metre* and *Meter* used correctly, no more Center and License. Let us get away from foreign spelling. Wot(sic) say bulletin Editors?

Some interesting statistics from World Radio magazine

o US licences as of May '89.

- Extra 48,471
- Advanced 100,572
- General 115,404
- Technician 108,156
- Novice 84,266
- TOTAL 456,871 up 3,952 from April '89.

CARF BULLETIN 15-89 1 OCTOBER 1989

1. This is it! Effective 30 October 1989, Prince Edward Island Amateurs will have a new prefix. It is VY2 and all Amateur Radio Callsigns assigned after that date will have the new prefix. Existing P.E.I. licence holders have the option of retaining the existing VE1 call or changing to the new prefix. P.E.I. Amateurs, please contact your local D.O.C. office for further information.

2. The Amateurs of New Brunswick did not express an opinion on changing their prefix. However, Nova Scotia Amateurs were overwhelmingly against any change of prefix. Canada now has VY1 - Yukon, VY2 - Prince Edward Island, and VY9 - D.O.C. Experimental.

3. D.O.C. STARTS PREPARING FOR WARC '92. The first meeting of the Canadian Preparatory Committee for the 1992 World Administrative Radio Conference will be held in Ottawa on 3rd October 1989. In its invitation to take part in the meeting D.O.C. advises that this conference is expected to deal with frequency allocations in certain parts of the spectrum, taking into account resolutions and recommendations of the H.F. Broadcasting and the Mobile Services Conferences, both held in 1987, and the Space Services Conference held in 1988. The ranges of the spectrum which D.O.C. says "could be considered" by WARC '92 are 2-30 MHz, 500 MHz-3 GHz and WARC '92. As recommended in CARF's last bulletin, Canadian Amateurs should start now to organize their views and get them to CARF and CRRL for presentation to Preparatory Committee. Dr. Bruce Gracie, Head of WARC/CCI Affairs in the International Relations Branch of D.O.C., will be heading up the preparatory work. CARF will keep you informed regarding the progress made in this area.

REFLECTIONS - PART II

ground-plane vertical is a good example: a well-grounded vertical with over 100 radials will, when shortened to resonance, have a feed-point impedance of 32 ohms resistive, thus providing a 1.6:1 SWR with 50 ohm coax. If we remove sufficient radials, we can improve the SWR to 1:1. What we have in effect done is raise the total resistance to 50 ohms from the original 32; 18 ohms represents ground losses and the same 32 ohms represents radiation resistance. By sacrificing over 35% of the total power, we have provided a better SWR! By accepting the original 1.6:1 SWR, we could have radiated 100% (or nearly so) of the total power. The moral? Know the meaning of SWR; lower SWR is not always better! You should know what SWR to expect for any given antenna system design.

I'll now start with an explanation of reflected power loss mechanisms and what they mean to you and your antenna systems. The charts found here have all been taken from the ARRL Antenna Handbook (these are from the 13th edition dated 1974, but later versions all include this information as well).

First we need to know what losses to expect in our feed lines. Figure 1 is a graph depicting nominal line losses per 100 feet for various types of coax. If your coax isn't listed here, either get a copy of a more recent Antenna Handbook (no ham should be without one!) or guesstimate from one of the types listed. You will notice that for RG-8/U (also RG-213), the loss for 100 ft at 30 MHz is 1.0 dB (for an explanation of decibels, see an earlier article of mine in the Hamilton Amateur). That is probably about the most loss any normal amateur need worry about unless you are running a long distance for 2 meters or higher, a subject I will not cover here now.

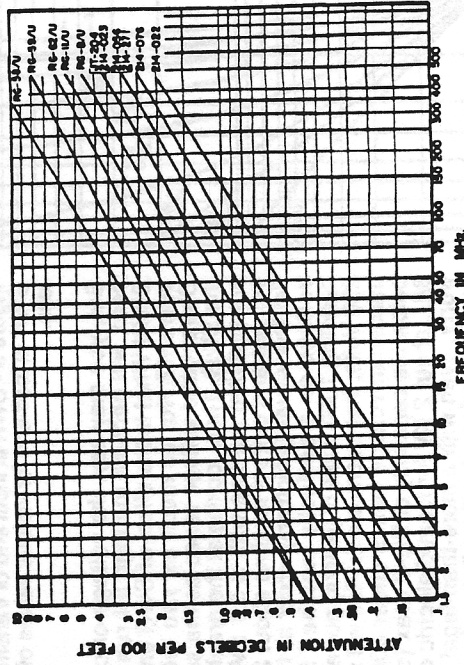


Figure 1 - Nominal Attenuation in decibels per 100 feet for various feedline types from 1 to 500 MHz.

FROM THE BULLETIN BOARDS - 1

CARF NEWS SERVICE BULLETIN, 15 September 1989

Editor: Bernie Burdsall, VE3NB
P.O. Box 356
Kingston, Ontario
K7L 4W2
tel. 613-545-9100

1. (Item deleted - out of date)
2. CARF is in the process of updating the CARF Repeater Directory for 1990. Please send changes, additions or corrections before 15 November 1989 to: Pierre Mainville, VE3LPM, 23 Chatsworth Drive, BRAMPTON, Ontario, L6X 2L8 or to CARF, P.O. Box 356, KINGSTON, Ontario, K7L 4W2
3. The prefix CF1 has been assigned to P.E.I. Amateurs for the period 1 September to 31 October 1989. This commemorates the 125th Anniversary of the Fathers of Confederation Charlottetown Conference in 1864. Thanks to Charlottetown ARC.
4. General Motors has issued a guide entitled *Radio Telephone/Mobile Radio Installation Guidelines* for late model GM vehicles. It includes recommended installation for equipment. Coax and cable recommendations, and troubleshooting. This useful guide for Radio Amateurs may be obtained from: Electromagnetic Compatibility Dept, EMC Building 40, GM Proving Ground, MILFORD, MI, U.S.A., 40824-2001. Thanks to Charlottetown ARC.

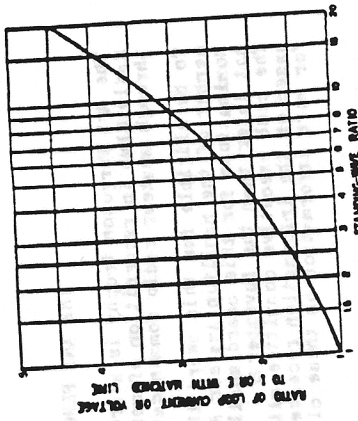
5. ITU WORLD ADMINISTRATIVE RADIO CONFERENCE TO BE HELD IN 1992. The decision was made by the ITU in June and is of great importance for Amateurs world-wide. The conference agenda has not been finalized but there is every likelihood that it will include a complete review of the frequency allocation table just as was done at WARC '79. Of greatest concern to Amateurs world wide will be the expected demands of broadcasters for more HF spectrum, especially at 40 metres.

Communications Canada will be setting up a Government/Industry Working Group in late September which will have the task of preparing for WARC '92. Arrangements have already been made to have Amateurs represented on this group and CARF will be consulting CRRL to find a suitable Amateur for this job. The first job of the Group will be to prepare proposals for the agenda which will be decided by the ITU Council next spring. Amateurs are asked to put their heads together and tell CARF and/or CRRL as soon as possible the things they feel should be discussed at WARC '92

6. TORONTO POLICE CHARGE SEVEN WITH STEALING COMMUNICATIONS. The charges were laid after so many calls were made to a pager company's voice mailbox automated message service that normal business was sometimes brought to a halt, according to *BULLETIN*, the newsletter of the RadioComm Association of Canada.

REFLECTIONS - PART II

Figure 4 - Increase in maximum value of line Voltage or Current with standing waves as compared to a flat (matched) line.



Another point: unbalanced antenna current flowing on the outside of a coax line (causing it to radiate) has no relationship to SWR on the line. If the antenna current is unbalanced, it will be so no matter the value of SWR caused by a line/load mismatch. This problem has another cause and another cure; it will not be discussed further in this series of articles.

This month I have discussed the practical effects of SWR on transmission lines and the impact on your antenna system of high SWR. It is apparent that for practical power levels and line lengths the SWR measured at the operating position can be as high as 3, 4 or 5:1 and still be of no concern to amateur operators; matter of fact, a high SWR at the extremes of a band may indicate that the antenna is operating at top efficiency!

Next month I will address the means of handling the high SWR at the operating position and how we can match the transmitter to the antenna system in the face of widely varying SWR. I will introduce the concept of the *conjugate* match and how we can achieve it.

Dave Rypma, VE3HTC

Guelph-Kitchener ARC's Gala Evening

The Guelph-Kitchener ARC invites all district amateurs, wives and friends to attend a gala evening in Guelph on Saturday 04 November 1989 at the Desert Inn 61 Woodlawn Road West, Guelph starting at 1830 hrs. The cost is \$35.00 per couple, \$18.00 single. For further info, please contact:

Guelph Amateur Radio Club
P.O. Box 1305
Guelph, Ontario
N1H 6H9

or call: Harry VE3PTS 673-2478
Gord VE3ISB 836-5783
Ken VE3CHN 823-1020
Les VE3BLD 822-1975

Take the Hanlon Expressway or Hwy 401 North to Woodlawn (the Desert in is between these two roads).

THE HAMILTON AMATEUR RADIO CLUB

BOX 253 Hamilton Ontario Canada L8N 3C8.

CLUB MEETINGS:
8:00pm on the 3rd Wednesday of each month except for July & August, in the Nash Auditorium, Chedoke Hospital. Non-members & friends are welcome - coffee and donuts on the house!

EXECUTIVE:
Meets on the fourth Wednesday of the month, except June & July, in the Radio Room, Red Cross, 400 King Street East.

STATION:
An emergency radio station is maintained in the RED CROSS, HAMILTON BRANCH (400 King East).

MEMBERSHIP:
An emergency radio station is maintained in the RED CROSS, HAMILTON BRANCH (400 King East).
\$25.00 per year with a common renewal date of January 1. Included is a subscription to the club bulletin. Additional Family Memberships (no bulletin) \$1.

EDUCATION:
Informal meetings are being held in the Radio Room, Red Cross Building 400 King St East on Thursday evenings at 7:00 to help those who want to take their Amateur Licencing tests. Call Bob, VE3CIB (416-383-2054 in Hamilton) or Glen, VE3FHQ (416-385-2786 in Hamilton) for more information.

REPEATER:
VE3NCF, Located on the Hamilton escarpment it is available for use by any amateur. Input: 146.16 Mhz. Output: 146.76 MHz. Part of the VE3RPT Link system. Contact a member of the Club Executive for information concerning Emergency use, Autopatch, Mail-boxes, Links etc.

FIELD-DAY:
HARC operates a multi-station site during Field-Day. Contact Paul, VE3HTF for information.

SWAP-NET:
Every Tuesday at 8.00 pm on VE3NCF (146.76/16) except during July & August. Contact Ralph, VE3BYM (388-6146) if you have items to buy or sell.

FLEA-MARKET:
Held during October each year (Thanksgiving Day Weekend).

BULLETIN:
"The Hamilton Amateur", the official news bulletin of the club, is published 10 times a year and sent to all full club members (family members share a bulletin) during the first 2 weeks of the month (except July and August). Most bulletin material is also available on the club's packet bulletin board station, VE3DC operated by VE3JSJ, on 145.030 FM.



The Swap Shop

by Ralph VE3BYM

SAL'S:

VE3CZY Don
560 1960

VE3ITA Larry
549 7393

VE3ATW Robert
574 3554

VE3JWG Rolly
547 0946

VE3JTC Paul
664 5247

VE3BYM Ralph
388 6146

VE3JTC Ralph
664 5618 or
packet 145.05

TRADE:
VE3RHR Dave
689 6671

WANTS:
VE3ITA Larry
549 7393

VE3JMI Hal
575 4396

Jerry
544 7770

-Kenwood 3500 handheld, with charger, manual, 3125
a.c. p.s. \$265
-Power supply 20A/13.8v crowbar protected

-Kenwood TR7500 2m mobile, manual \$275
-Asden PR53000 2m mobile, with never used IIT, remote cable, service manual, 10A/25A \$375

-Atari 65K computer with KX801 dot matrix printer, 1050 disk drive, 12" hi-res amber monitor, p.s., cassette, software, patchcords, word processing program \$500
-Svan 350 transceiver, built in p.s., 80-10 meters, C.W. filter, manual, tubes \$150

-VucStar tuner 300W \$neg
-Tokyo HL32B 2m linear amp 2w in/30w out or 500mw/3w \$75
-102 speaker with filter, mint condition \$95

-102 Antenna tuner, remote ant select, 1200W, 3 ranges, 2 inputs, 5 outputs \$275

-Kenwood AT230 ant tuner swz/pwr meter with new bands \$325
-Kenwood PC1A phone patch controller \$150
-RCA AR88LP SW receiver (HCAF GRI7) \$65

-Radio Shack Pro2011 20ch dir entry prog scanner \$190
-Lightwave transmitter and receiver \$15
-Boom mike and headset with footswitch \$25
-Slapson panel meter 0-1ma DC \$5

-Kenwood TM721A dual bander 2m-450 with mike, manual, 454 on 2m, 30W on 450 MHz \$750

-have rotator, will trade for regulated 5A power supply

-Yaesu charger NCI8B for FHB-4 battery
-TVC for packet radio

-old collector-type radios, Stromberg Carlson, GE, Admiral

-2 meter yagi