

Newscaster

The Official Publication of the
Winnipeg Amateur Radio Club
The Winnipeg Seniors Citizen's Radio Club

mailing address
Newsletter Editor
W.A.R.C.
C/O VE4WSC
598 St. Mary's Road
Winnipeg, MB
R2M 3L5

April 1995

Home Brew Night

Date: April 10, 1995
Time: 7:30 p.m.
Place: Sturgeon Creek Regional Secondary School

Notes from your Editor: by Derek, VE4HAY

Another short column this month as the newsletter is full of all kinds of info. Please remember you can submit articles to me via the internet as derek@facsb.mb.ca or derek@mbnet.mb.ca or via packet ve4hay@ve4kv.#wpg.mb.ca.noam. I can also be reached on MWCS or at my home number 257-1420.

Winnipeg Senior Citizen's Radio Club. released by Adam, VE4SN (President - 95)

Keep this date in mind (you can mark your calendars NOW!) THE VE4WSC CHRISTMAS PARTY will be held on DECEMBER 14/95 at the ST. JAMES CIVIC CENTRE on Ness Ave., from 12 noon until 5 p.m. The premises and facilities are entirely wheel-chair accessible, so many more can come out for this function and we have room now to handle all who show up.

The St. John's Ambulance Brigade is arranging for a visit by their senior members to VE4WSC, on Monday, May 15th; their visit to start at 1:45 pm, and last not later than 3:00 pm. 20-30 visitors are expected.

WARC-sponsored FIELD DAY at Falcon Lake will be enhanced by the presence of a few of our members, together with a club transceiver and 2400-watt generator.

The ATV station is being prepared for a trial run, as soon as we obtain the experienced hams to conduct this first test.

Sandy, VE4SZ, the club's Training & Education committee head has now obtained his 'papers' from I.C., and can now conduct examinations for the Basic ham licence. Sandy expects the exam to be held April 11th. Regards eligibility of anyone to avail themselves of the Ham courses at VE4WSC, priority is given to seniors, and if there is any space left, others are considered, regardless of age. Of course, since classes are held in the day-time, this precludes anyone with a day-time job from attending. Members do not pay a fee, but

Other Important Dates:

Articles: Apr 24 deadline - May newsletter
May 29 deadline - June newsletter
WARC: Apr 23 - Flea Market
May 8 - Meeting
June 12 - Meeting
June 24-25 - Field Day
WSC: Dec 14 - Xmas party
ARES: Apr 18 - Meeting
May 16 - Meeting
June 10-11 - Air Show
Other: June 18 - Marathon
Apr 23 MRS Meeting
Sep 10 - Austin Ham Fest
Sep 10 - MRS General Meeting @ Austin

WARC: Executive for 1994/95
President: Barret Filbert - VE4ABA
Vice-Pres: Richard Kazuk - VE4KAZ
Secretary: Dick Maguire - VE4HK
Treasurer: Gary Smith - VE4YH
Past Pres: Dave Panting - VE4EF
Program Chairman: Rob Kaufman - VE4GV
Members at Large: Jeff Dovyak - VE4MBQ
Appointed Positions:
Membership/Newscaster: Keri Kazuk - VE4KER
Flea Market: Alan McIlwain - VE4AKM

non-members are asked to make a donation to the Club. Course material is supplied at cost.

A mailing is being prepared by Arch, VE4AAI, Membership chairman, and Gil, VE4AG, Public Relations - which will be mailed to all members of record, early next week. When you get this mailing, please fill out the questionnaire enclosed, and return it promptly.

One of our founding members, Jim Riddle, VE7WPG, (ex-VE4JC) is ill, and is in hospital in serious condition, with cancer, under heavy sedation for severe pain. If you wish to send Jim a card, (his wife and family would appreciate it too), here is his address:

Albert E. Riddle, VE7WPG
7695 Grieve Cresc.

SAANICHTON, BC V8M 1L6

Jim (this is the name he used and was known by), his wife and daughter, were very active members of the Winnipeg Amateur Radio Club - they could generally be found as a team looking after registrations at various ham functions, selling tickets at flea markets, etc. We have located Johnny Mack, VE4AF. He is living in Grand Forks, BC.

SCIP is now up-and-running, and is accessible from either InterNet or FreeNet. In fact, FreeNet has VE4WSC as a 'home page' on the BBS.

There is a Net on 2m called TLC (totally lost and confused!), and you are invited to join this group most evenings at 9 p.m. Frequency is 147.480 Simplex. NCS is usually John, VE4CCW. Most check-ins are those in the ham course at the Seniors' Club... but everyone is welcome. Try it... you'll like it!

Members who wish to obtain club badges are now asked to contact Gil, 4AG. Cost is \$5.00 per badge. According to Tom, 4TSM, about 70% of members, and about 50% of XYLs, have badges. Sure makes knowing who you are talking to easier, especially at the club picnic and Christmas party. These can be ordered anytime. I ordered 5 on Friday, and picked them up Saturday... so our service is F-A-S-T!

ARES Committee Report by Jeff, VE4MBQ

Our March meeting was almost on overload of information. David VE4DAR gave an excellent presentation on 2m net procedures (which I'm sure he would present at a WARC or MRS meeting if asked or even at one of OV's classes). We discussed the draft Bylaw # 1 that is a requirement on the road to incorporation as a not for profit company. The amended version will be voted on at our next meeting Tuesday April 18, 1995 at St. John Ambulance. Once the Bylaw is approved we will elect a slate of officers. Only registered Winnipeg ARES members will be able to vote or speak to these issues (registered means that you are on the

Winnipeg ARES roster as of April 10). The tentative topic for our next meeting, April 18, is rail accidents. The meeting will begin at 7 PM sharp.

We also had a short presentation from the Manitoba Team Handball Federation. They are hosting the Canadian finals over two weekends in May and require amateur radio assistance. Volunteer operators are needed for separate five hour day shifts May 12-14 and May 19-21 inclusive. This is hopefully the last call for volunteer operators for the Winnipeg Air Show June 10 & 11. The time commitment is approximately two days of 9-10 hours each day.

A telephone fanout and on the air check-in drill for Winnipeg ARES members as held Thursday March 23. Twelve members checked in as available for duty while ten members checked in as monitoring only. Three non-members also checked into the net.

Our May 16 meeting will include a "show & tell" session for Winnipeg ARES members to demonstrate to each other their various ideas for their emergency kits.

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Garage Door #24 A & B, Winnipeg, MB

Specialized Welding Repairs of
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Custom Built Aluminium Cabinets
for Repeaters or Ham Shacks

MINUTES FOR W.A.R.C. - Mar 13, 1995

Meeting began 7:40 pm VE4ABA presiding
Introductions. Approximately 75 in attendance
Minutes of February general meeting approved as printed in Newscaster. moved VE4MUD, seconded VE4MBQ, CARRIED

Correspondence

- memberships
- bank statements
- VE4BB and VE4TTU licences
- thank you letter from VE4MBQ for \$750.00 grant to ARES

Treasurer's Report -no report due VE4YH absent

Standing Committee Reports

Education - VE4OV reported that the next amateur radio classes will begin Thursday April 20, at Sturgeon Creek High School. The classes will last 10 weeks, and

cost \$190.00 per person. Rick was proud to note that he worked ten Manitoba hams, including VE4MP, during the 160 meter CQ World Wide contest in late February.

Flea Market - VE4WTS spoke on behalf of VE4AKM. Contact VE4WTS to book tables.

-Date April 23

-set up 9:00 am to 10:00 am

-flea market 10:00 am to 12:30 pm

-rates \$5.00 for members of WARC, WSCARC,

MRS

-rates \$10.00 for all others

-\$1.00 per person admission at the door

-need 6 volunteers at 8:45 to help set up

-need volunteers to "man" the door from 10:00 am in one half hour shifts, in two people teams

-volunteers for canteen see VE4YF

-30 tables available

-6 already booked

-there will be a table for brochures from various suppliers

Field Day - VE4YU stated that Field Day will be June 23/24, at Falcon Lake. He and VE4HAY investigated the location on the weekend, and feel that it will be ideal. The Field Day Committee intends to have a fun, family event. There will be one serious contest station and some "fun" stations. More details to follow next month.

RFI Committee - VE4JS did not have a report. The membership was advised to call VE4JS or VE4ACX if they had any RFI problems

Newscaster - VE4HAY made another plea for articles for the Newscaster

ARES - VE4MBQ, DEC for Winnipeg, had nothing to report

RAC - VE4EF noted that he has been active behind the scenes, working with Industry Canada re having the amateurs taking over regulating hams. The RAC Annual General Meeting will be in Ottawa April 23. Dave thanked the Flea Market Committee for planning our Flea Market on the same date. If anyone has any concerns, please call VE4EF before April 23. VE4OV asked if another National Convention was in the works. VE4EF replied that another will be held in 1996

Notices for the Good and Welfare of the Club

April meeting will be Homebrew Night. Fire up your soldering irons. MRS Membership - VE4EN, MRS Membership Chairman, noted that he would accept MRS memberships. MRS Annual General Meeting - VE4HK spoke re the MRS AGM, to be held Sunday, April 23, at Chalmers Community Club, beginning at 1:30 pm

Adjournment 8:17 - VE4EN

After a half hour coffee break, the meeting resumed, with a most interesting program on amateur related computer programs, hosted by Chris VE4SET

RAC NEWS - March 18, 1995

Received via E-mail

RAC NEWS BULLETIN 03-95 INTERNET EDITION

HOW AMATEURS ARE TREATED IN CANADA

Early days of wireless. Here's a contribution by 'A Canadian Amateur' to the pages of Modern Electrics, January, 1913. Thanks to VE4AG for this item which was recently found on packet.

The American Government has at last passed a law governing amateur installations. Previous issues of this magazine contain the particulars which need not be repeated here. In short, they are few, simple, fair to all, and very lenient as compared with those across the line.

The Canadian Government regards the amateur in a very different manner. His restrictions are numerous, and he is not recognized unless he has paid his license fee, which is, at the present time, one dollar. In obtaining the license, he submits himself to many petty rules and regulations, several of which are nothing less than the proverbial "red tape". After the license comes a "declaration of secrecy", which must be filled out. The notary's charge for this is usually a dollar.

Now let us consider the amateurs' treatment prior to 1912, when licenses were not granted. Any amateur, wishing the protection of the law, had to apply to the Superintendent of the Government Wireless for permission. In answer to his application came a lengthy form requiring a detailed account of his station, to whom he had intentions of speaking, the object of the installation, and numerous other questions along the same line. Upon return of the blanks, permission to install and operate the station was granted. It restricted the wavelength to fifty meters and the power absorbed by the primary of the transmitter to 1/4 kw. On hearing the signal STP from a commercial or ship station, he was required to suspend operations until advice came to cancel the signal. Referring to this signal, I may say that from 1909 to 1912 there was not one operator on the trans-Atlantic liners which docked at Montreal who was aware that such a signal existed, nor was the operator at the Marconi station any wiser.

We shall now take up the terms of a Canadian Amateur License.

1)He is not to establish, install or operate any wireless station except that which comes under his license;

2)The apparatus must be used solely for experimental purposes;

- 3)The power absorbed by the primary of the coil or transformer must not exceed 1/2 kw;
- 4)His wave-length must not exceed fifty meters;
- 5)His apparatus must not interfere with the operation of any station in Canada or ship station in Canadian or neighbouring waters;
- 6)The Minister of the Naval Service may, at any time, cancel his license; this cancellation comes into force one calendar month after notification;
- 7)He must stop all transmitting if he perceives by his instruments that ship stations are operating, and not start again until the signalling has ceased;
- 8)If an amateur station is found to interfere with the operation of commercial stations, the license may be at any time cancelled. (At the present time there is receiving apparatus in Canadian Marconi stations, by means of which it is absolutely impossible to tell the difference between a 200 and a 600 meter wave. I refer particularly to the 5 kw. Marconi station at Montreal. This being the case, it is very easy for an amateur to "jam" a station of a similar type and thus lose his license if complained of by the operator at the station.)
- 9)Then there is a clause relating to the secrecy of intercepted messages;
- 10)Stations, at reasonable times, shall be open for government inspection;
- 11)The licensed apparatus must not interfere with the operation of telegraph lines;
- 12)Upon the Minister's approval, the license may be assigned or sublet;
- 13)If necessary, as might be in the case of war, the Minister may take possession of the licensed apparatus in the name of the King, and use it as may seem fit. Authorized persons may enter the station and remove or operate the apparatus;
- 14)As a concluding clause, the breach, non-observance or non-performance of any of the rules and regulations may result in the permanent loss of the license.

IARU REGION 2 DIRECTORS MEETING HELD IN FEBRUARY

Directors from Bermuda, Cayman Islands, Haiti, Jamaica, Mexico, Panama, Trinidad, US, Venezuela and

Canada met in Miami in early February. The meeting was chaired by Canada's Tom Atkins VE3CDM, Region 2 VP. Farrell Hopwood VE7RD, RAC's President and IARU representative, also attended.

Matters relating to the overall administration of IARU were reported as proceeding satisfactorily. It was also reported that the Region 2 International Amateur Radio Permit is moving along at a good pace and that a vote is expected at the General Assembly of the OAG in Haiti this May which is expected to result in success for Region 2.

Farrell Hopwood reported to the group on the explosive growth of licensed Amateurs in Canada and on the growing strength and stability of RAC.

IARU President Dick Baldwin W1RU, reported on the Region 3 conference in Singapore. The IARU Secretariat's Administrative Council met while in Singapore and firmed up the goal of obtaining a full 3 Mhz of band for 40 metres on a world-wide allocation. According to Mr. Hopwood this will require a lot of lobbying with ITU member societies to make this happen.

Tom Atkins gave a comprehensive report on preparations for Niagara 95 meeting of the IARU. The committee for this conference is headed by George Spencer VE3AGS. Mr. Hopwood extended a warm invitation to all Region 2 member societies to come to Niagara Falls and enjoy the fellowship and preparations of the host society.

IARU Secretary Larry Price W4RA, said that with ITU WRC meetings now occurring every two years rather than every 10 to 15 years as had been the past experience, a very heavy burden is being placed on IARU volunteer resources and it is costing more to fund. He warned that IARU will have to examine the provision of full time employees to meet these new demands, if it ever hopes to keep on top of events which have a bearing on Amateur radio frequencies and privileges. He said, "IARU is dealing with professionals in government and industry around the world, and there is a need to compete effectively in the management of international radio communication affairs if Amateur radio is to survive."

RAC ANNUAL GENERAL MEETING APRIL 23

The RAC Annual General Meeting will be held in Ottawa on April 23, 1995 at 1:30 p.m. at the Talisman Hotel on Carling Avenue, just off the Queensway. All RAC members are invited to attend and meet with the Board of Directors and Executive.

ITS TIME TO GET A NEW HOBBY, WHEN ...

From the August '94 IBM ARC of Boca Raton, Florida

You're talking on the phone with a ham buddy, and you end the conversation with, "KD1HZ clear." - Michael Deigan KD1HZ

You end a face-to-face conversation with "dit." - Paul Flaherty N9FZX

You spend two hours trying to crack a pile-up on 20 meters to work a KJ2 station who is portable in Manhattan.

Your spouse points out that all of your children were born during sunspot minimums. - Paul Valko WB8ZJL

You're enjoying a Saturday breakfast when, to interrupt conversation and ask for the salt, you say, "call please." - Dave Bushong KZ1O

The minute a caller on the phone identifies himself, you say, "You're 5 and 9 in Virginia." - Ben Cline AC4XO

You say things like "QSO" and "73" in casual, face-to-face conversations. - Mike White N4PDY

At the check-out counter you endorse your cheque with your call sign. - James Proctor KE3HO

Your spouse starts talking to you while you're on the phone, and you tell the person on the other end you're getting intermod. - Dave Bushong KZ1O

You tell people over the phone, "I'm at my work QTH." - Fred Davis VA3FD

You name your boat "Sea Cue." - W3OTC

ALARM SYSTEM FOR REPEATER SHACK

The Algoma ARC bulletin reports that their club has approved the installation of an alarm system at their repeater site. The system consists of a smoke and burglar alarm with a 24-hour monitoring to a central dispatch office. With the system, the club expects to see a small reduction in their insurance rates. The system was made possible thanks to the generosity of a club member who happens to be in the alarm business.

TRIVIA

What country has the greatest number of hams? According to IARU figures, Japan has the most with 1,300,000 licensed operators. The US is second with an estimated 632,000 operators. Canada has more than

41,000, and world-wide there are an estimated 2,600,000 hams.

THE UPCOMING G7 SUMMIT

During the month of June, the Halifax and Dartmouth ARC will operate special event stations CG7H and CG7D to commemorate the G7 Conference in Halifax. The stations will operate around the clock during the conference June 15, 16 and 17. The stations will be on the air on a daily basis throughout the month of June.

All HF bands, CW and SSB will be covered. A special QSL and Certificate will be issued. QSL to VE1FO, P.O. Box 663, Halifax, NS, B3J 2T3. Include postage, IRC or equivalent.

Get out your running shoes, it's time for the Manitoba Marathon.

This year the Manitoba Marathon will be held on June 18th, 1995. As this date is fast approaching, volunteers are now needed to help with the communication.

If you would like more information please contact Kay, VE4YF or Roxanne, VE4ZF

HMCS Haida, By Jerry, VE3FAB

I am the radio restoration volunteer aboard HMCS Haida, a World War 2 Tribal Class destroyer moored in Toronto. You may be familiar with my work as documented by the annual articles appearing in The Canadian Amateur Magazine. Since 1992, I have been successful in locating and acquiring much of Haida's missing radio gear and manuals, and much of the assistance has come from the amateur community. Since many operators do not belong to Radio Amateurs of Canada, there are potentially 34,000 amateurs who are unaware of the on-going radio restoration project aboard the ship. Some of these non-members may be in possession of the type of equipment that I am trying to locate.

I would therefore appreciate if you could include a List of Missing Equipment in your next club bulletin and encourage your club members to relay the word to amateurs who do not belong to any formal organization. Somewhere out in that vast wonderful country of ours are pieces of vintage gear which will help restore pride and dignity to the only Tribal Class destroyer left on this earth.

Here is an opportunity for amateurs to participate in a very worthwhile cause. Thank you for your anticipated co-operation.

HMCS HAIDA - LIST OF MISSING RADIO EQUIPMENT - March 20, 1995

QTY	MODEL	DESCRIPTION	RCN PART#
1	AN/SRC501	H.F. Trans/Rcvr 2-4 Mhz; 12watts	5820-000-0029
1	AN/UPD501	X-band D/F Receiver	
5840-040-7971			
1	SSC(FSC)107	Frequency Shift Converter 850 Hz shift	5820-000-0038
1	XFK(FSK)107	Frequency Shift Keyer 850 Hz shift	5820-000-0047
1	T-164D	Antenna Multicoupler	
5820-400-2110			
1	FM12	Marconi HF/DF Receiver	?
2		35 ft. 5 section whip	
5985-21-041-6294			
antenna with base insulators			
5985-21-041-6295			
2	AT-150/SRC	UHF weatherproof Antenna	
5985-401-2019			
2	AS-390/SRC	UHF Antenna	5985-401-2020
2	TED3	UHF Xmitter (225-400 Mhz) (URT502)	5820-000-0067
1	CPRC26	Walkie Talkie (47-52 Mhz) 300 mw	

The 107 Frequency Shift Keyer and Converters were just like the ones used by hams to get into RTTY in the 1970's.

World War 2 Vintage

DAS2	Loran Receiver
FH4	D/F Receiver - General coverage
B19	Receiver - 40 to 13,000 kcs
B28	Receiver - 60 to 420 kcs
B29	Receiver - 15 to 1500 kcs
MSL5	Marconi Receiver (only require manual)
HT11	Hallicrafters Marine Transmitter - 1942
PV500	Marconi Transmitter (3-28 Mhz; 500 watts)- manual only
TBS-6	VHF Receiver/Transmitter
86M	British Admiralty VHF Transmitter
53	British Admiralty transmitter/Receiver

E-mail: jproc@worldlinx.com
Radio Restoration Volunteer
HMCS Haida Toronto, Ontario

**RAC Director Midwest Region Report
by Dave, VE4EF**

I was elected to the position of RAC Midwest Director effective January 1, 1995 and have spent the past three months trying to acquaint myself with the structure of RAC and to determine how to be most effective on your behalf. Thanks to all the members who have contacted me with their concerns and suggestions about the role of our national organization. Your continued input is necessary for me to be able to effectively work towards our joint vision of the future.

During the last short while I have been in contact with the national executive and the other regional directors as we prepare for the annual board of directors meeting being held in conjunction with the annual general meeting from April 20 - 23 in Ottawa. Some of the issues that will be raised are: the progress of the ADWG (the Amateur Delegation Working Group which is holding discussions with Industry Canada about the future administration of amateur radio), the progress and future of RAC's magazine TCA, the finances and performance of RAC, and the election of a new executive. If you have any comments on any of these issues please forward them to me. I hope that we will make significant progress on these issues at the meeting and I shall communicate with you after my return.

I am looking for the best way to communicate with you all. If you have read this message on packet please distribute this to other members in your area who are not on packet. If you are a member of a club or know of a club in your area, please forward this message to the club secretary and ask them to please send me their mailing address. I would especially like to know about upcoming flea markets and club events so that I can try to arrange for RAC to be represented.

You can contact me as follows:
H(204) 257-8525 W(204) 452-8244 F (204) 452-2153
packet: VE4EF@VE4KV.#WPG.MB.CAN.NA
e-mail: dave.panting@mwcs.mb.ca
snail mail: 63 Gosford Ave., Winnipeg, MB R2M 4N8

**Looking for Contacts
by Derek, VE4HAY**

This little message was sent to my packet address, in hope (I think) that I would publish it in the news letter. (ed. sure doesn't take long for your packet address to get around does it?)

From : DL0HSL
Title : contact
Hello amateur-radio-friends!

We are members of a German School Amateur Radio Station. We are just testing our packet-station and we are very interested to get an answer. Every Thursday evening we meet, here in Lueneburg, a small town near Hamburg. Some of us are just preparing for license.

73 de DL0HSL (Stephanie, Madlen, Hartmut, Markus, Björn, Christoph DG5XC, Jochen DH2HAI).

RECHARGEABLE BATTERIES **by Doug , VE3SPF**

.... Continued from last month

DISCHARGE CHARACTERISTICS OF BATTERIES

Battery manufacturers have chosen to rate their products by the quantity of charge which they are capable of delivering from a fully charged state. This is known as the battery capacity, abbreviated C. The expression:

$$C = I \times t$$

where : C is the charge in ampere-hours.

I is the current in amperes

t is the time in hours

Gives us the charge moved by a current of I amperes in t hours.

We have already seen from the basic descriptions above that it is necessary, during charging to deliver 15% to 30% more ampere-hours than have been previously exhausted from the battery in order to fully recharge it. When we go to USE the energy which we have stored in the battery however, we find that the number of ampere-hours available to us declines with increasing current.

For example:

Take a battery rated for 5.0 A-hr: It might deliver 0.25 amperes for 20 hours (total 5.0 A-hr) or 0.50 amperes for 9 hours (total 4.5 A-hr) or 1.0 amperes for 3 hours (total 3.0 A-hr)

The reason that we cannot extract as much energy from the battery at the higher discharge rates is a physical (chemical) one. The chemical reactions which take place at the plates in a battery require time to go to completion. If we try to "rush" the reactions by discharging at a high rate, the reactions do not take place throughout the entire volume of the plates and tend to restrict themselves to the plate surfaces...with a consequent reduction in battery capacity.

As a result, battery manufacturers also specify a discharge rate when they specify a battery's capacity. These rates are normally specified as a fraction of the capacity C. Let's look at a couple of examples:

1) A battery is specified at 5.0 Amp-hours at the 20 hour rate. This means that it will provide us a total of 5.0 Amp-hours over a discharge period of 20 hours.

The constant discharge current over this time must be:

$$I = 5.0/20 = 0.25 \text{ Amperes}$$

Note that we can state the same specification for this battery in another way:

Rated for 5.0 Amp-hours at C/20.

or

Rated for 5.0 Amp-hours at 0.05C

Remember that the discharge rate is specified as a fraction of the battery capacity C, and is in amperes.

2) A battery is rated for 35 amp-hours at 0.2 C. Now 0.2C just means the same as the 5 hour rate, or C/5.

To completely discharge the battery in 5 hours would therefore require a current of :

$$I = 35/5 = 7.0 \text{ Amperes}$$

or

$$I = 35 \times 0.2 = 7.0 \text{ Amperes}$$

Regardless of whether the battery is NiCd or lead acid the same rules apply. If you require a certain number of Amp-hours for an activity such as field day for example, if you are to obtain the rated battery capacity then you must not exceed the discharge rate specified by the manufacturer. If you do intend to exceed the recommended discharge rate, the manufacturer will be able to give you an estimate of the number of amp-hours you may expect to obtain.

As a general rule, when you see an A-hr rating on the side of an NiCd battery, it is given for the 5 hour rate (0.2C). For a lead-acid battery, the most common rate is the 20 hour rate (0.05C) although an increasing number

WARC Spring Flea Market
Sunday April 23rd
10:00 AM to 12:30 PM

West Kildonan Arena
Perth and Powers

Entrance Fee \$1.00

Tables \$5.00 for MRS, WARC and Seniors
Club members - \$10.00 for Everyone Else

Info contact Wayne VE4WTS 255-6314
Alan VE4AKM 663-9456

Door Prizes, Good Fun, Great Deals
Clean Out your Basement , Restock the Junk Box

of sealed lead-acids are specified at the 10 hour rate (0.1C).

HOW FAR TO DISCHARGE A BATTERIES

If NiCd and lead acid batteries are well taken care of, their lifetimes are measured in years and in excess of 1000 charge/discharge cycles. As the depth of discharge is increased however, the number of cycles obtained before the battery has reached its end of life decreases markedly. Although NiCds are fairly resistant to the effects of "deep-cycling", lead-acids are not, and we need to take a few precautions:

1) Avoid "deep-cycling" a lead acid battery, by buying a battery with double the amp-hour capacity which you will need:

Reason: The battery which is discharged 100% each time it is used will reach its end of life in 80 to 100 discharge/charge cycles. A battery discharged to 50% capacity each time will last 400-1000 cycles. It's obvious that the cost of ownership is far less for this larger battery. Its cost will be well under double the cost of the smaller battery and it will last at least 4 times (and maybe 10 times) as long.

2) Watch the terminal voltage (under load) of your battery as you discharge it. Unfortunately we have no accurate "fuel gauge" to tell us when our batteries are nearly exhausted. The best we can get from battery manufacturers is as follows:

a) Avoid discharging NiCd batteries below 1.0 volts/cell (7.0 Volts for an 8.4 volt or 7 cell pack). When a cell is discharged below this voltage, there is a good chance that if it is in series with other cells in a pack, it or one of the other cells in the pack will become reverse-charged. Reverse charging shortens the life of the cell and reduces its capacity.

b) Lead-acid batteries must NEVER be discharged below a terminal voltage of 1.75 Volts/cell or 10.5 Volts for a 12 volt battery. To discharge below this voltage causes serious, irreversible damage to the battery.

continued next month

Appointments:

Chris VE4SET, current President of WARP (Winnipeg Amateur Radio Packet) and sysop of the VE4SET bbs and Satgate has recently been appointed as Pacsat Gateway Coordinator. As such he is now responsible for the day to day operations of the world wide network of Satgates that fwd personal packet msgs via Satellite.

W.A.R.C. - Door Prizes

Word has it that there will be a new door prize at the April WARC meeting. The rumour mill says that it is bigger than a handheld, smaller than a 2KL. Some say it may or may not be HAM related, but definitely worth having. So why not attend the meeting and try your luck.

Looking for a Manual for that Old Rig? by Gary, VE4YH

The Winnipeg Amateur Radio Club is looking for members to list their manuals and schematics for ham related items in the new WARC MANUAL BANK. How this will work is that you list the manuals that you have on hand to lend to fellow members to photocopy. When you need a schematic or manual just give me a phone call, tell me what you are looking for, I'll check the database and tell you who to call. At that time you can make the arrangements and get the help you need from your fellow amateur. This is strictly a voluntary contribution, however the more manuals that we have on file the better it will be for all. Thank you for your participation.

NAME _____
CALL _____
ARE YOU ON PACKET _____

BRAND MODEL # MANUAL SCHEMATIC

Send replies to WARC

c/o VE4WSC

598 St. Mary's Rd.

Winnipeg, MB

R2M 3L5

or via packet VE4YH@ve4kv.#wpg,mb.can.noam

The G4ZU Mini Beam by Tom, VE4AKI

Modern H.F. transceivers are sure impressive examples of modern technology. Multi band, multi mode, general coverage with bell and whistles galore. the convenience of these modern rigs would astound the old timers of days gone by. But all is not rosy. The problem many hams encounter is the need for a directional antenna that offers good performance, compact size, multi band capability along with modest expense.

Multi band trap type antennas have the disadvantage of trap losses. Log periodics can be large and require a great deal of material resulting in significant weight and cost. The following beam design features:

light weight, reasonable size, simplicity of construction, multi band capability and good performance.

Similar needs for a multi band beam in the 1950's lead Capt. G.A. Bird, G4ZU to develop the following design. It features compact size, easy to duplicate construction and the ability to operate on all five bands from 14MHz. to 28MHz. with good performance. It can also operate on 10MHz. with fair results. An antenna matching unit capable of operating with balanced feedline is required.

The G4ZU mini beam consists of a driven element, a director and a reflector with traditional spacing of 5ft (1.5m) and 7ft (2.1m) on a 12ft (3.6m) boom. It operates as a 3 element yagi on both the 10M and 15M bands, and as a 2 element yagi on 20M. The driven element which is fed with balanced line operates as a rotatable dipole on the 12m, 17m and 30m bands. It produces approximately 6db gain on 10m and 15m and 3db on 20m. Front to back ratio should be on the order of 15db. On 12m and 17m it offers significant front to side attenuation and if mounted high enough should offer similar performance on the 20m band.

Multi band capability is achieved by the use of loading coils mounted in the centre of both the reflector and director. These coils are switched in and out automatically by the use of open ended stubs. The director element is self resonant near 29.5 MHz. when its loading coil is switched out by the 10m stub. On 21MHz. the coil is active and resonance occurs at 21.55 MHz. The reflector operates in a similar fashion. It is self resonant at 20.95MHz with the stub switched closed and is loaded to resonate at 13.99 MHz. by loading its coil with the switch open. This switching occurs automatically in actual operation.

Construction Details

Unfortunately this design does not lend itself to "Plumbers Delight" or grounded element construction. I used wooden arms to support the elements. Other insulating material could be used but wood, if weather proofed is durable and inexpensive. These arms are u-bolted to a 2" (50mm) diameter aluminium tubing is the preferred material to use for the elements to achieve light weight. I obtained the tubing necessary for the elements from salvaged C.B. beams and TV antennas. Other material such as electricians conduit (E.M.T.) could also be used but with a significant penalty in weight.

The driven element was fabricated from 1" (24.5mm) aluminium tubing (old TV antenna booms) to give the greatest bandwidth possible. The reflector and director used 3/4" (19mm) and 5/8" (16mm) telescoped together for 6" (150mm) and clamped by stainless steel hose clamps.

The elements are clamped to the wooden arms using rubber lined clamps obtained from a local hydraulic supply (or aircraft hardware supply) house. Similar clamps can be fabricated from galvanized plumber's strapping and rubber or plastic sleeves to prevent metal to metal abrasion. The wooden arms are made from knot free 1x3 spruce. They were given two coats of good outdoor enamel (industrial grey) before assembly. Galvanized plates were used where the U-bolts clamp to the arms to avoid crushing the wood. An appropriate size of plastic pipe or varnished wooden dowel is mounted between the element halves of the reflector and director. This is used as a coil form for the loading coils. This coil form is fastened in place with #10 plated hardware. The coil windings end in ring terminals which are fastened to the screws as well as the end of the switching stub.

The switching stubs can be fabricated from a variety of materials. My prototype used 200ohm. twin lead but they were awkward to mount. A more convenient approach used #14 insulated wire made into a twisted pair using a slow speed electric drill. These were then wound into a 4" (100mm) diameter coil. One end is shorted and resonant frequency is checked with calibrated dip meter. Trim the unshorted end a bit at a time until the 10m stub resonates at 29.5 MHz. The 15m stub should be trimmed for 20.95MHz. They can then be taped with plastic tape and fastened to the crossarms near the elements.

The loading coils are also wound with #14 stranded plastic insulated wire. The size and number of turns will vary with the size of the coil form which depends on the element diameter. The director with loading coil (stub removed) should dip at 21.55MHz. and the reflector with the loading coil (stub removed) should resonate at 13.99MHz.

My beam is mounted at 32' (10m) using a short mast mounted in a 3' (1m) tripod on the roof of a two storey house. The driven element is fed with heavy duty 200 ohm twin lead to the bottom of the tripod. Homebrew open wire line at 2" - 3" (50mm - 75mm) spacing is run from there to a basement window where it changes back to 300ohm twinlead to a tuner in the shack. Use proper installation techniques for balanced line, ie: avoid metal objects, support securely to control flexing in the wind etc..

Final tuning should be done at the working height if possible using a calibrated dip meter. Once tuning is complete, weather proof all connections and check tightness of all hardware. Using a noise bridge or S.W.R. meter and low power find and log the tuner setting for all

the bands you plan to operate. Once tuner settings are found you will find that a band change can be accomplished quite quickly with only slight adjustment of the tuner settings.

My experience with this antenna design has been very positive. It replaced a liner loaded 2 element mono bander for 20m (see A.R.R.L. handbook). The performance of this antenna on 20m has been found equal to its predecessor. Additional coverage of 15m, 10m and the WARC bands is also appreciated. An experience that occurred shortly after erecting this beam may serve to illustrate its potential.

A CQ call in the middle of a Sunday afternoon on 10< (with the beam pointed South) brought a weak reply. I indicated in my reply that I had a very weak signal and my beam was pointed South. The calling station instructed me to point my beam to 30degrees East. I did and VQ9FM on Diego Garcia came up to a readable strength. A very enjoyable chat was carried on for about 15 minutes. This has been one of my most enjoyable DX contacts and the "mini beam" played a part in its success.

I highly recommend this design and will assist anyone who wishes to try their hand at constructing one.

Words From the President
by Barrett, VE4ABA

Impressive computer display last meeting. I would like to thank Chris VE4SET, Wayne VE4WTS & Alan VE4YZ for the very interesting & informative presentations on ham radio related software. I am sure much was learnt by all.

Our next meeting for the club is "Home Brew Nite". Please try to come down Monday evening and check out the projects that our club members have brewed up this year. I myself will show off my latest antenna project. Also Vern VE4VQ has arranged to bring out a group of scouts with the help of Caroline VE4CAR to show us the radio projects they have built. So bring your coffee cup and join in.

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**Contact Gary Smith VE4YH
Ph: 661-4158**

**Field Day
June 24-25
Falcon Lake MB**

There will be rigs set-up for CW, & SSB for the serious DX'er. As well as a station for those who are a little leery or who have been out of H.F. for a while. We also hope to have ATV, 2m. & 70cm. WARC will have it's tri-band beam, and a G5RV antenna, as well as some inverted V antenna for 40 & 80. Maybe even a 160m.

There are still 9 room left at the hotel, contact Derek, VE4HAY for bookings. Otherwise there will be the campground

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It looks like spring is here so the Flea Market is just around the corner. get all of your junque together from spring cleaning and bring it down. Anyone needing tables come out to the meeting and arrange for one with Wayne VE4WTS or get in touch with him as soon as you can, if you want one for sure.