



# B.A.R.C.'s Bark

*The Boulder Amateur Radio Club Newsletter*

Volume 44 - Issue 3

March, 2001



*A C-130 Leaving Propwash Contrails in the Antarctic Sky*



*Top picture is the Volvo ski team racing across the South Pole with the assistance of the wind and chutes to pull them and their supply sleds on their skis. Picture to the right is of the South Pole station as seen from the C-130 on takeoff. Nikolai is headed back to Moscow and will set up his local radio club as a sister club to BARC.*



*Photos by Nikolai, ABØKG and courtesy of Jim, W8ERI*

*Nikolai Makarov, ABØKG/UA3YH a BARC member and his associate brought down to the South Pole some of Jim Widlar's, W8ERI famous home made chocolates from his factory in Breckenridge. Nikolai was at the South Pole performing wind measurement experiments by bouncing microwaves off of meteor trails.*

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***---- Serving the Boulder Amateur Radio Community ----***

**Boulder Amateur Radio Club**  
**P.O. Box 17362**  
**Boulder, CO 80308-0362**

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**BARC Repeater - WØDK**  
 146.700 (-) 100 Hz PL

**BARC 24 Hour Phone Number**  
 303-380-6540

**BARC E-Mail Address**  
 [BARC50@arrrl.net](mailto:BARC50@arrrl.net)

**BARC Website**  
<http://www.thisistrue.com/barc.html>

**Monthly Meetings are held on the**  
**Third Tuesday of every month**  
**at NIST @ 7:00 PM (unless notified)**

## President's Notes

### "The Football"



Inauguration Day! It has been exhilarating and exhausting. There were speeches, parades, and parties galore. But now, in the quiet confines of the Oval Office, a more serious, somber ritual is about to take place. A grim-faced aide from the Joint Chiefs approaches my desk and reverently places upon it "the Football". It looks like an ordinary briefcase, but within it are the seeds of Armageddon - the codes and protocols to be used only in the event of the unthinkable - nuclear war! My hands tremble as I reach out to unlatch the clasp...but it will not open... I cannot fathom how to operate this simplest of mechanisms... how can this be? ...

As I come to in the pre-dawn light, my dream collapses, and the latch on "the Football" reveals itself to be - my alarm clock! Thank goodness; being President of BARC is much less burdensome a job than that of which I dreamed. But believe it or not, I did get a "Football" of my very own when I took this office!

At the BARC Board Meeting in January the outgoing President Gary, WØQN, presented me with an aging portable file box containing mysteries and memorabilia of BARC down through the years. I had not known such a file existed. As I drove home that night with the enigmatic archive beside me I thought "the Truth...is IN there"! When at last I found the time to explore this trove of arcanum my curiosity was rewarded in unexpected ways. Certainly there were bits of flotsam and minutiae of only passing interest:

- the menu for the BARC banquet in 1993 at the Broker Inn ("Prime Rib of Beef or Breast of Chicken Oscar" - what, no vegetarian choice?)
- the club results from Field Day 1984 (total QSO's: 1132 CW, 418 phone)
- an early attendance form, hand-drawn and manually typed (no computers back then!)
- the "master" BARCFEST flyer from 1981, constructed with a scissors and Scotch tape, advertising the location for same as the Boulder Armory ... you get the picture.

There were also many other items of equal

antiquity but far greater significance:

- a letter from Colorado Secretary of State Victoria Buckley, dated 1995, affirming that articles of incorporation for BARC, file #871135873, were filed in her office on May 14, 1957 (three months after I was born!), and that said club "on this date is in good standing...to conduct its affairs within this state".

- material describing the Glenn Johnson (WØFQK - SK) Award, which is named in honor of one of our club's most revered members, and which is awarded only by vote of previous recipients

- a BARC membership application form, probably from the early '60s (full membership price: \$3.50!).

- a letter dated April 17, 1961 to the FCC requesting that BARC be given the club call sign WØDK in honor of deceased member Mr. Hurlburt Anderson.

- a mimeographed copy of BARC's BARK dated September 1961, which contained an appeal for donations to enable the construction of a "traveling trophy" consisting of a boulder sawn in half and polished with a bronze plaque affixed to it honoring the Colorado Section amateur radio club that attained the highest score on Field Day. The trophy was to be passed from club to club with each successive winning club's name engraved upon it. The trophy was to be retired in the event that one club won it three times in a row. (I wonder if this ever came to be, and if so whether it still exists!)

- a classic Cold War piece from the Daily Camera describing a fallout shelter "in the west wing basement of the Boulder County courthouse". It shows a photo of the "EOC" (Emergency Operations Center) wherein ham radio gear is prominently displayed. There is no date on the article, but I can see a new-looking pair of Drake twins as well as a 2B receiver, and on the back of the clipping is part of an ad for a Fisher hi-fi system including a fine looking turntable (ask your folks - if they are over 30!). Part

*(see "Football" cont. on Page 4)*

**To submit items for the BARC's Bark newsletter send them to: Jack Ciaccia at PO Box 21362 - Boulder, CO 80308 - 4362 or Fax them to: 303-666-8613 or Email them to: [WMØG@arrrl.net](mailto:WMØG@arrrl.net)**  
**Articles need to be there by the first of the month. Any format accepted.**



# Yap Yap

## **BARC Junior Officers July 2000 - March 2001**

**President - Sarah, KBØZRV**  
**Vice President - Walt, KCØBPC**  
**Secretary - Amory, KCØBPB**  
**Co-Treasurers - Tony, KCØHVW &  
 Kristin, KCØINX**

## **Young Hams Net**

**Every Sunday at 7:00 PM on 146.70 (-)**

## **BARC Junior and Me**

*By Walt, KCØBPC*

I joined BARC Jr. at the age of 13, just after finishing another bout of activities in which I excelled but which at the same time held no interest for me. Swim team, soccer, fencing, basketball, tennis, gymnastics, piano practice, trombone practice, the formation of a small band and school. These had been the activities I had tried before entering BARC Jr. In many, I had excelled, placing me into nationally ranked (fencing) or important positions in the respective activity. Each one was capable of capturing my interest for a time, but every one had some element which eventually pushed me away.

My mother has always believed that a "well rounded" person has the key to success and that success requires physical exertion and competitive stress, and so every free ounce of time allotted to me was devoted to practicing music, fencing or participating in some other activity she had recently taken an interest in. It may have been fun for her to watch as her young son went through hour after hour of activity of activity which didn't interest him, but I (the young son) felt unanchored. I had very little time to myself, was constantly tired, and felt that nothing I was doing would ever really be what I wanted to do. Eventually my mother began to understand that my interests didn't lie in glamorous sporting ventures, or in the flashy spotlights of the music industry, and disappointed, began to look for some activity I wouldn't turn away from.

It just so happened that one day a friend came over to my house to wait for his dad and when his dad arrived, a conversation ensued within our entry way about a little group of kids who built and operated radios. I listened politely and promptly forgot about the conversation, knowing that my schedule was already full of activities, and realizing

that there was no way my mother would ever condone such an activity when, to my great surprise, my mother brought up the topic of amateur radio at the dinner table. My father wholeheartedly took up the thread of conversation, and began to tell me about his old amateur radio days. He told me about building kits, talking to stations located in far-off lands, and about setting up antennas in his back yard. By the end of the evening I was hooked, I had to be in BARC Jr.

I joined BARC Jr. and quickly began learning. I had always been interested in

levels of licensing, acquiring a general. The general class license gave me the ability to use HF and VHF stations, and given my experimental nature, sparked an interest in communications which still is part of me today.

As I progressed within the club, I learned more and more, and eventually was given the position of presidency within the club. I developed circuits, leadership skills, knowledge about complex electrical and mechanical principles, and made connections which give me help with my projects to this day. I was sent to Dayton Ohio in 1999. As part of the trip to Dayton I was to give a speech in the Dayton Youth and Amateur Radio Forum. In order to give a quality speech, the club brought in a speaking coach, and I went through several months of training.

I eventually reached a point within the club, when I was asked to begin teaching. As a BARC Jr. I brought understanding of the other BARC Jrs, a real interest in projects and engineering, and a set of skills in the field of computing which most other Elmers (teachers) lacked. I created lessons, helped BARC Jrs understand complex electrical principles, helped them create Linux (A computer Operating System) machines, and tried to impress them with demo after demo of my latest escapades into the field of technology.

Time flies, and I am still learning, having fun, teaching, growing, and creating.

Going to Dayton, participating in Field Day, having fun with my friends while learning; these are the things which set BARC Jr. apart from any other group I have been involved with, and while BARC Jr. held mystery for me at first, it now holds friendship, knowledge, and kindness for me as I continue to learn and grow.



*Walt, KCØBPC giving one on one instruction to Danny, age 6*

electronics, and had studied computers and computer science since the age of 8. I had never, however, been in a group which offered so much to me. I could learn how to build circuits, could play with antennas, could always learn about some new principle of nature if I would only take the time to listen, could work on projects, and could have fun without poisonous competition or too much emphasis towards licensing. I quickly made my way through the first

## **BARC Jrs. Looking for Donations of Equipment to be Sold at LARCFest on 4/7/01**

The primary funding for the BARC Jrs. program is realized from the sale of good, used working ham radio and computer gear at LARCFest and BARCFest each year. **BARC Jr. is a 501c3 organization** and your donations may be tax deductible. A receipt may be obtained for your records.

Please contact Ellie, NØQCX for more info at 303-494-5578.

## **Newest BARC Jr. Callsigns**

The three newest callsigns in the BARC Junior's club belong to: Maria/KCØJWI, Kathryn/KCØJWZ and Ryan/KCØJXW.

CONGRATULATIONS to all three of you! We look forward to hearing all of you on the "70" repeater too.

## **Tracy Shelton, KBØUBX Recipient of the First Ever BARC Junior Scholarship Award**



**Tracy Shelton, KBØUBX**

Tracy Shelton (KBØUBX) first became involved in BARC Jr's in the 6th grade. She had watched and listened to her father (Don - NØKGU) for years on the radio and was charmed by the idea of talking to someone on the other side of the world. Her intrigue with the idea of making contact with other lands and peoples only continued to grow. Her favorite ham activity besides BARC Jr. Saturdays was definitely the BARC Jr. Field Day Activities. Tracy and Don would pull out their camping trailer to stay all night at the site. The time she enjoyed most was very late (early) at night after only the few die-hards remained awake when she would team up with her dad and other elmers to make contacts on all bands throughout the night.

While in 5th grade, Tracy won a trip for herself and her teacher from Ball Aerospace to watch a shuttle launch from the Cape. For a long time after that, she wanted to be an astronaut, and knew that ham radio would help her reach that goal.

In the summer of '97, Tracy became a student ambassador with People to People and traveled to Australia for 3 weeks. Her intense love for traveling continued to intensify and has also taken her on several mission trips with various churches to Mexico and Honduras. During this time she decided to change her career plans to do something to help people everywhere, and

set her sights on nursing. She also volunteered at a local hospital for two summers and completed classes to be a Certified Nursing Assistant at a local junior college during High School. Six years of Spanish also enhanced her desire and ability to help in situations where others could only watch in amazement as she excelled in helping others, regardless of language barriers.

She was a 2000 graduate of Niwot High School, and ranked 6th in her class graduating with highest honors. Tracy was a member of the National Honor Society and played volleyball for 3 years receiving three academic letters and one varsity sports letters. She is currently attending Seattle University in a four-year nursing curriculum, and was awarded a Navy ROTC scholarship at the University of Washington also in Seattle. She is on the Dean's list at SU and was recently selected to represent her UW ROTC unit as a member of their Color Guard for the Northwest Navy Competition in February at Bangor. Her first Navy cruise will be her summer cruise in June/July 2001.

Tracy and her parents would like to thank BARC for the gracious award of their college scholarship. As parents and elmers we are all proud of her accomplishments and look forward with great anticipation to her future contributions.



*Tracy with Navy Rear Admiral Vinson E. Smith, Commander, Naval Region Northwest and Naval Surface Group Pacific Northwest during her Swearing-In ceremony at University of Washington at the completion of her Unit's Battalion Orientation exercises at Bangor, Washington.*

## **("Football" cont. from Page 2)**

of another article contains quotes from President Carter, regarding the hostages in Iran, so it had to be from the late '70s.

- a fascinating counterpoint to the above piece; a letter from Dale Scott, KAØQPV, from about 1987, discussing ideas for how BARC could establish ties with hams in Dushanbe, Tajikistan, then part of the Soviet Union.

Besides nostalgia, what does all this have to do with us and our club today? For my part it made me acutely aware of how many folks have put in a lot of just plain hard work over the years in order to ensure that BARC did not simply wither and die. I feel a greater responsibility than ever to do my part to make sure there is a club here for many years to come. I would urge any of our members who may not have previously considered doing so to volunteer in any way they can and help out with one of our club's functions. In doing so you will put your personal mark on our club's history just as surely as any of those whose names adorn the fading pages found in "the Football", and I bet you'll have a great time doing it as well!

73,

Steve - WØSGC

## **Winegard Antenna Causes RFI**

Oscillating preamps generate rash of interference complaints: The FCC reports it's gotten word of a rash of interference problems created by oscillating preamplifiers built into Winegard TV antennas used primarily on RVs, campers and motor homes. The oscillations generally appear in the 400-500 MHz range--and sometimes elsewhere--and have caused interference problems to public safety and Amateur Radio operation at distances of several miles away. The FCC says Winegard has acknowledged the problem and estimates there are as many as 40,000 defective units in the field, which it has agreed to replace at no charge.

Winegard has proposed a proactive program in which service technicians will visit the larger campgrounds, rallies and dealers around the country, looking for defective/radiating units in operation or on the dealer's shelves, and replace them at no charge to the customer, regardless of the age of the unit. Dealers should call the factory in Burlington, IA.

Gary Hendrickson  
FCC



## COLORADO CONNECTION REPEATERS

*"Connecting Colorado's Amateur Community"*

In the next few months, we at The Connection would like to use this article to put forth a series of more technical discussions on how the system works. Look for some very helpful hints and details on linking methods used by our system designers. There will be plenty of information both for the casual user and those who are more technically curious. Details on the type of equipment we use and why as well as details about each repeater site will be covered. If you have any specific questions about The Connection please Email them to kb0vj@colcon.org and I will make every effort to respond either in this article or via return Email.

For the remainder of today's article I would like to conclude last month's discussion regarding the growth of The Connection.

During the past five or so years there have been many volunteers whom have made a great contribution not only in time but in equipment and in some cases cash. We would like to thank you all for your help in making YOUR Connection what it is today.

As you may know there have been some individuals who have done exceptional work for The Connection over the years. In the last article I mentioned some of them. Here are a few others, who deserve honorable mention. These people have put in countless hours and dollars to keep things running.

I will list them in an order of those who have been with The Connection the longest.

Dave Andrews KAØYDW is our head technician and built and continues to build all of our repeaters and links.

The extremely reliable state and quality of our repeaters is directly due to Dave's hard work and many donations of new and used equipment. I often think of Dave when the wind is blowing 60 miles per hour and the snow is flying everywhere in the mountains yet the system just keeps on ticking. We can't thank you enough Dave.

John Thomson N5EHP is well known to many of you. He worked with George KDØRW on the beginnings of The Connection and is still in charge of our technical operations. He is our most recent addition to The Board Of Directors. I do not think any of us can name any one person that has put in more hours for The Connection. Without John I truly think there would be no Connection. You the man John!

Kerri Driggers NØURK who is a REAL rocket scientist has been invaluable as an

advisor and site technician. His many contributions in time, equipment and cash have had a profound effect on The Connection over the years. I hope you know how much we appreciate you Kerri.

Tony Ferris NAØUS served on The Board Of Directors for many years. He along with all of the members of his family put in countless hours working on equipment and repeater sites. There were many times that a site was totally down and Tony either alone or with one of his sons traveled many miles under adverse conditions to get it back on line at his own expense. He and Dave KAØYDW built, financed and installed the link in Laramie Wyoming. Tony's wife Emily KBØOVK is THE VOICE of The Connection. She is the one who recorded the "KBØVJJ repeaters 123 hertz tone" station identification message I am sure you have all heard. Tony also designed and started our much praised web site. Tony has retired from The Connection and we miss him very much. Thanks again Tony and family.

Jim Patton NØWGQ has been our advisor to The Board of Directors from Southern Colorado for many years. He along with Ted NØNKG maintain the Colorado Springs repeater and have been the guiding force in moving it up on to Cheyenne Mt. Jim has made many visits to many of our repeater sites as a technician and his help has been extremely valuable. Jim also maintains our email distribution system on his system of computers. Thanks Jim.

Linda Hill NØUQF is our Treasurer and Secretary. Linda has been on The Board from the beginning and has spent many hours keeping our finances and paper work in order. She put in more work than you can imagine working with our C.P.A. to get our I.R.S. 501C3 tax exempt status. She accounts for all donations and expenditures. Linda does a job not many of us would like to do in a very professional manner. Thanks for your hard work Linda.

Dave Blaylock NØPEO is one of our Board Of Directors and has made many visits to repeater sites to help with repairs. His many contributions of time, money and equipment have kept The Connection solvent during the times when all was not looking so good. Dave has also been a key figure in many of the decisions that got us to where we are today. Dave was also the voice of the Travelers Net. Thank you Dave.

Bill Jacobson KBØNWM is our Vice President and long time volunteer and member of the Board. Bill is one of our MAIN tower climbers and has also spent many

Summer hours at repeater sites or at board meetings.

Bill located a C.P.A. that would work with us on getting our 501c3 tax exempt status and handled all of the 2 years of document transfers between Linda, the C.P.A. and the I.R.S. Without Bill's prodding we probably would still be waiting for the exempt letter. Thanks Bill.

There have been many others who have made important contributions to The Connection and I am sorry I am unable to mention them all here. Please know that all of them are greatly appreciated by all who use the system.

*73 From The Colorado Connection*

## Editor's Corner

Dear BARC's Barkers ~

Once again it is time to get the latest issue of BARC's Bark out and this time I have to say, it was a snap!



Thanks to some prolific writers in our club such as Yardley Beers, WØJF who provided us with a wonderful look back into what ham radio was like in the 1930's. I'm sure you will find his experiences and memories most interesting along with some great photographs too.

Our BARC Juniors certainly never fail us and there is a wonderful article by Walt, KBØBCP who has been with the BARC Jrs. for about 5 years now and is getting ready to 'graduate'. Also a very nice story about our very first BARC Junior Scholarship recipient, Tracy Shelton, KBØUBX. There was so much to print this month that I didn't have room enough in this issue for our good friend Frank Harris' technical article! We will definitely have his article in next month's issue again. Frank always enlightens us on the many aspects of building receivers, transmitters and amplifiers in a way that we all can understand. I also received those wonderful pictures taken at the South Pole by our new honorary BARC member, Nikolai Makarov, ABØKG/UA3YH. Thanks to all the contributors and hope I have the same problem next month!

Look forward to seeing all of you at the BARC meeting on 3/20 where we will have a program on DXing put on by the president of the Mile High DX Association, Bill Leahy, KØMP. Don't miss it! I'm sure he'll bring along a great DXpedition video too.

73 DE JACK WMØG

## ***BCARES Fire Exercise Set for April 1st with Colorado Wildfire Fighters and District 23 ARES Members***



The Colorado Fire Mitigation Conference will take place on March 30 and 31 and a joint fire fighters exercise will take place on April

1st with a controlled burn in progress.

BCARES has been asked to join and demo our capabilities of providing communications from rough terrain as well as packet messaging onto the scene and the ability of broadcasting live fast scan ATV pictures from the fire scene to the mobile and base command posts miles apart.

There will be a full scale BCARES callout to enlist our volunteers for the exercise on April 1. On March 30 a small contingent of BCARES members will be at the Raintree Plaza with an informational booth. On March 31 there will be a group of BCARES volunteers who will demonstrate the ATV capability to the Sheriff's Comm Van.

The exercise on the 1st of April will also be attended by ARES members from District 23 who will jointly be participating in this fire scenario.

Please plan to make this exercise as there will be plenty to do and lots of our new equipment to set up and learn about including cameras, xcvrs and packet gear.

### ***Upcoming BCARES Activities***

**April 1:** Fire Mitigation Exercise

**April 2:** Table Top Flood exercise

**Date TBD:** Packet exercise

**October:** National SET

### ***CU Home Football Games***

8/25 - Fresno State

9/8 - San Jose State

9/22 - Kansas

10/3 - Texas A&M

11/3 - Missouri

11/23 - Nebraska

### ***BCARES NCS Stations***

BOULDER COUNTY D 11 ARES NCS Schedule and Monday Night VHF Net Information. Net Time 20:00 hours local time, Net Frequency 146.760- (optional tone:100Hz) NCS Volunteers Contact KCØGDO at [KCØGDO@QSL.NET](mailto:KCØGDO@QSL.NET)

#### ***March 2001***

3/19 - KAØQPV

3/26 - NØXCX

#### ***April 2001***

4/2 - WB8VQI

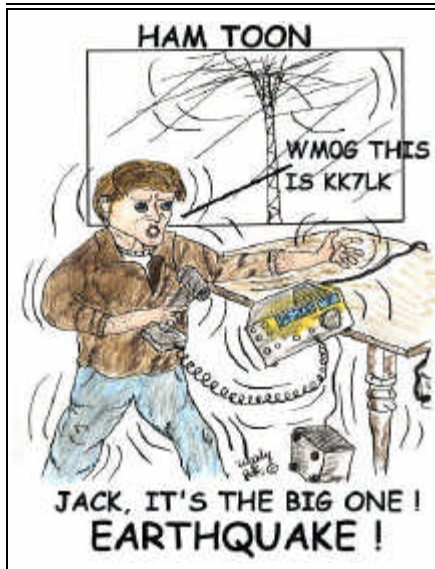
4/9 - KCØGDO

4/16 - KØHEH

4/23 - WBØSUT

### ***BCARES to Demo ATV Capabilities for City Wide Flood Exercise on April 2***

On Monday, April 2 BCARES representatives will activate their position at the EOC and broadcast live ATV pictures from our portable ATV equipment from locations along South Boulder Creek for the Boulder Public Works Dept., The Office of Emergency Management and the Boulder City Council plus other Emergency responders for flood scenarios. This exercise will provide an excellent demo of the use of BCARES ATV equipment to monitor flood scenes and how this capability can provide flood management personnel with real time information at critical areas.



## ***Colorado Amateur Radio License Exam Information***

### ***Testing in Northern Colorado***

**Boulder** - The Boulder VE Team holds exams the **2nd Monday of each month** at 7 PM at Ball Aerospace, Bldg. # RA5 -- Range St. in Boulder. Non-Citizens please register 7 days in advance. Contact Rich Weingarten, NØSH 303-828-3661 or email him at [n0sh@arrl.net](mailto:n0sh@arrl.net) for details.

**Ft. Collins** - Exams are held the **second Saturday of odd months** at 9 AM at Colorado State University, Lory Student Center, Room 206, Ft. Collins, CO. Contact Michael Hickerson at 970-988-0344. [WOMBH@hotmail.com](mailto:WOMBH@hotmail.com)

**Longmont** - The Longmont Amateur Radio Club VE Team holds exams the **fourth Saturday of every month** at 10 AM at the Boulder County Fairgrounds, Admin. Bldg., Longmont, CO. Contact Earle Cate, NØISB at 303-776-9158 or Ray at 303-776-2954.

**Greeley** - The Greeley VE Team holds exams on the **second Saturday of even months** at the University of Northern Colorado, 11th Ave. and 21st St., Ross Hall, Room 36, Greeley, CO 80631. Contact Andy Loomis at 970-351-2269.

### ***Denver Metro Testing***

The South Metro VE Team holds test sessions the **first Saturday of every month** at the Castlewood Public Library, 6739 S. Uinta St., the SW corner of Arapahoe Rd. and Uinta, 1/2 mile West of I-25. Amateur Exams are held at 9 AM, Commercial Exams are held at 1 PM. For more info call David Avery, NØHEQ at: 303 - 795-5718.

The Mile High VE Team holds exams the **second Saturday of every month** at 9 AM at St. Luke's Episcopal Church, 1270 Poplar St. Enter from the parking lot at 13th Ave. and Quebec St. For details call Glenn or Karen Schultz at 303-366-0155.

The Denver Radio Club VE Team tests the **third Saturday of each month** at 1 PM at the Belmar Library, SW corner of Wadsworth and Alameda. Contact Wally Gamble, ACØT 303-202-0339 or Email: [wgamble@staped.com](mailto:wgamble@staped.com).

The W5YI VE Team holds periodic testing in Aurora on the **last Sunday of every month** at 10 AM. For more info call Lee Tingle, KØLT at 303-364-6783.



## BARC BOD Meeting - 2/13/01

**Present:** Greg/NDØV, Gary/WØQN, Jack/WMØG, Steve/WØSGC, Rip/NVØM, Ellie/NØQCX, and George/NØRUX.

**Treasurer:** Balance of \$4361.28.

**Repeater:** Working as expected.

**Membership:** 124 paid members and 73 have not renewed and we have 11 life members. A e-mail will be sent to those who have not renewed.

**VE:** 12 were at the testing session. There needs to be developed some information about the club to be handed out at the test sessions.

**BARC Jrs:** Three members will be going to Dayton. The cost will be \$328.50 for air fare plus other expenses for each student. They will be giving four talks to different groups before leaving for Dayton.

**BCARES:** Jack/WMØG is chairman, Len/KDØRC is vice chairman, Randy/KØRCC is secretary and Larry Sterns will be the treasurer for this year. The equipment which was purchased by the Sheriff's department is beginning to arrive and work on the ICV is underway. New badges have been issued.

**Field Day:** The club site will be at the American Legion Post and the Jr.'s site will be at 75th and Arapahoe.

**BARC Fest:** Riley Hollingsworth will be speaking at the event. Working on putting together forums, getting manufactures to attend and starting advertising are the major activities which are underway. The table length will be standardized to six feet. A flier will be made up for July distribution and also can be put in VE packets.

### Meeting Schedule:

March	Dxing
April	BARC Jr. talk
May	Open Forum
June	2 M antenna testing
July	Picnic
August	Tower Construction
September	Digital Modes
October	Home Brew night
November	Computers and ham radio
December	EOSS
January	Dinner

### Old Business:

The rules, scoring and entry forms for the 2 meter contest have been completed by Jack/WMØG.

The Club received 'Honorable Mention' in the ARRL Club 2000 award program.

### New Business:

Scholarship committee needs to set the criteria for this year. There is a need to raise additional funds for the scholarship

program.

There was a discussion about forming an adult General class. Will need to find an instructor and a location

The next board meeting will be 13 March 2001 at Rip and Ellie's.

*Respectfully Submitted,  
George Kretke, NØRUX  
BARC Secretary*

## BARC Meeting - 2/20/01

**Present:** Gary/WØQN, Randy/KØRCC, Greg/NDØV, C. Worrell, Chuck/NØJMO, Jack/KØHEH, Frank/KØIYE, George/NØRUX, Doshia/KBØNAS, Jane/KCØFGE, Andy/KCØCWK, Gary/KCØHQW, Al/WØLMQ, Blair/ALØG, Steve/KCØGBK, Tad/WØMPG, Chuck/KIØAG, John/NØLGL, Jim/W8ERI, Nicolai/ABØKG/UA3YH, Ray/KCØIUN, Jack/WMØG, Ellie/NØQCX, Rip/NVØM and Steve/WØSGC

**Membership:** The club has 141 paid members and 69 who have not paid this year's dues.

**BARC JR:** There have been 134 people, including a few adults, who have been trained in the BARC Jr. program and been licensed. The new forms of the exams seem to be more challenging for the younger students. The Juniors are working on getting ready for both Dayton and field day. If you have any equipment that you would like to donate to the group for them to use or sell, please give Ellie a call.

**BCARES:** Jack /WMØG will be the chair for this year. New ID cards have been issued. The new equipment which has been purchased for the group by the sheriff's department is starting to arrive. A new ICV (communications van) is being wired for TV by Jim Andrews.

**Treasurer:** The club has about \$4500 in its three account. An analysis of the expenditures along with a proposal for this year's expenditures was distributed.

**VE:** The Rocky Mountain School has been identified as a location for future testing. At the last testing session there were about 11 examinees.

**Field Day:** Plans are underway and the site this year will be at the American Legion site. In preparation, there will be a training session on contesting techniques.

**BARC Fest:** The event will be September 23 and will include the state convention. There will likely be some help for the event from the ARRL. The chairmanship for the event

is being handled by the Board.

**Old Business:** The 2 meter FM simplex contest has been designed and will occur 14 July 2001. Thank you to Jack/WMØG for all your work.

### New Business:

Nikolai Makarov (ABØKG/UA3YH) was voted into Honorary BARC Membership.

Chuck/KIØAG has an article in the current QST.

Yardley/WØJF brought up a topic for future study related to the interaction of the Internet and cell telephones with ham radio voice, packet and repeaters.

### Program:

Nikolai Makarov(ABØKG/UA3YH) gave a talk about his ham radio and scientific (atmospheric winds) work from the south pole and other areas around the world.

*Respectfully Submitted,  
George Kretke, NØRUX  
BARC Secretary*

## 2000/2001 BARC Meetings, Programs and Activities

*All programs subject to change  
based on speaker's availability*

**Mar. 20 - DXing Program** presented by Bill Leahy, KØMP President of the Mile High DX Association. Bill will present a video this evening of the A52 DXpedition and then be available for questions regarding DX operations, procedures, equipment and programs.

**Apr. 17 - BARC Jr. Dayton Presentations** presented by the three BARC Juniors who are going to represent BARC at The Youth in Amateur Radio Forum at the National Convention.

**May 15 - Ex FCC Bureau Manager**

**Jun 19 - 2M Antenna Testing Night**

**Jul 17 - Annual BARC Picnic**

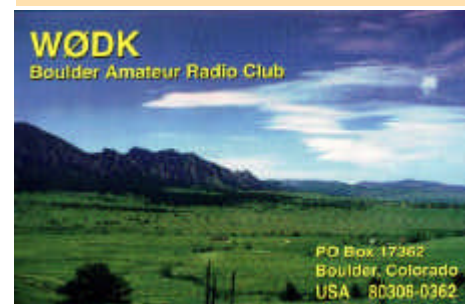
**Aug 21 - Tower Safety Program**

**Sep. 18 - Digital Modes Program**

**Oct. 16 - Homebrew Night**

**Nov. 20 - Computer/Internet/Ham Radio**

**Dec 18 - EOSS Program**



## ***My First Years on the Air (1930-1932)***

***By Yardley Beers, W0JF***

In my articles, "Crystle Radio" in the January issue and "Lunch Box "Radio" in the February issue, I have told of my earliest experiences in radio. My original intention for the present article was to recall my personal experiences on the air using my own station, which went on the air during my summer vacation of 1930. Indeed, eventually I shall get around to talking about those experiences. However, I have decided that it is more interesting to first give a general discussion of the amateur radio world at that time and then tell how I fitted into it. That amateur community was in the later stages of recovering from three nearly simultaneous crises: (1) the most comprehensive restructuring it has ever experienced because of the implementation on January 1, 1929 of an international treaty, (2) first solar sunspot minimum to occur since high frequency operation started, and (3) the financial depression that started in 1929. This situation involved legal, technical, and operational aspects that are very different than the present ones.

### ***Legal Aspects***

Until the pioneering transatlantic contacts using 3 MHz in November 1923, amateur operation had been close to 1.5 MHz. There was the general belief that frequencies above 1.5 MHz were useless. Therefore there was little or no occupancy of these frequencies, and in the immediately following years, governments were generous in their allocations to amateurs. For example, the U.S. 40 meter band extended from 7 to 8 MHz. Furthermore, there was little or no coordination between governments, so that each nation had its own amateur bands. If my memory is correct, a USA station on 7 MHz looking for a contact with Great Britain listened on 6 MHz but listened for New Zealand on about 10 MHz.

Not only was there diversity in the frequency allocations, but also there was diversity in the philosophies of amateur radio. When the ARRL was established in 1914, the ranges of amateur stations were only a few hundred of miles. Message could be sent large distances by relay. The second 'R' in 'A.R.R.L.' represents 'relay'. Amateur radio in the US originally was an organization of communicators. As I shall mention below, the 'relay' tradition was still strong in 1930.

However, this philosophy was in conflict with that of many foreign governments who operated the telephones and telegraphs in

their countries. They viewed any independent organization that relayed messages as a dangerous potential competitor. Also governments that had traditions of censorship were very nervous about such organizations.

Therefore in these countries amateur radio needed other justifications, and it was subjected to all sorts of restrictions in power, antennas, and operating procedures. In many countries transmitting "third party" messages was strictly forbidden. There were



***Gerald Marcuse, G2NM ca. 1935  
Founded The Overseas Service  
of the BBC***

prohibitions against having visitors, even licensed ones, operating a station. At one time Japanese amateurs were allowed to operate only 15 minutes out of each hour.

Because of trips to Great Britain in 1932 and 1935, I know more about amateurs there than in any other country outside the USA. There amateur stations were officially "private experimental stations". They went on the air to "experiment" and not to "communicate". Therefore when they wanted to make contact with another station, they were not allowed to call 'CQ' but sent 'TEST' instead. At the time the British Empire was intact, but the authorities wanted to strengthen its cultural ties. In 1927 and 1928 the government authorized Gerald Marcuse, G2NM, to transmit music and

other entertainment to see how well such could be heard throughout the Empire. The success of those experiments led to the establishment of the Overseas Service of the BBC (In 1935 I had lunch at G2NM's home). Some other nations considered amateur stations mainly as private broadcast stations, and amateurs there spent much time transmitting phonograph music and other entertainment that they devised.

Incidentally I have 65 QSL cards confirming contacts with the British Isles between 1931 and 1937 giving the transmitter power input. The average is 49 watts with the highest one (G6WY) being 250 watts. Several list 10 watts, which was the power authorized for the entry grade license.

### ***1929 Allocations***

The principal effect of the treaty, which resulted from an international conference in 1927, was to establish bands at 1.8, 3.5, 7, 14, and 28 MHz. that approximately coincide with those today. Most of these were assigned exclusively to amateurs. These bands were to be used by amateurs in all nations.. The conference also established the call letter prefix system that we have today. The individual nations received great freedom in the implementation of the treaty in accordance with their diverse philosophies.

In one respect the treaty was a triumph for amateur radio because it established a legal basis for its existence. However, in consideration of the technology then in use, some people thought crowding amateurs of all nations into the same bands was a disaster. At any rate, the situation clearly indicated the technological innovation was in order, and at least existing equipment needed improvement. Because of the current economic depression money for improving equipment was in short supply.

### ***Technology***

Most amateur stations used equipment consisting of receiver with a regenerative detector and one stage of audio amplification powered by batteries, a transmitter using a keyed oscillator, and a single wire antenna, which often doubled as an antenna for a broadcast receiver. A few amateurs used commercially manufactured receivers, but almost entirely they used home made transmitters. The feedback of a regenerative detector was controlled so that it oscillated at the very edge of oscillation. This caused the detector to add negative resistance to the L-C input circuit giving it a high Q, high selectivity against unwanted signals, and

***(see "First Years" cont. on Page 9)***



*("First Years" cont. from Page 8)*

good sensitivity for weak signals. Unfortunately, a strong signal, such as produced by an amateur a mile or two away on a frequency within 50 or 100 KHz, knocked the detector out of oscillation with the result that the receiver was useless in receiving signals within a considerable frequency range. This situation was the principal basis for the unhappiness with the 1929 regulations.

The immediate effect of the regulations on receiver design was merely to add a second small 'band spread' tuning capacitor in parallel with the original larger 'band set' one to make it easier to tune over the narrower bands. The frequency stability of such receivers left something to be desired. As the antenna blew in the wind, the frequency drifted back and forth. One had to use the left hand to keep the receiver in tune with the signal while copying the code message with the right hand.

The principal solution to the problem of 'blocking' is the use of superhetrodyne receivers, whose oscillators are on very different frequencies from the signal frequencies and are somewhat decoupled from them by the mixer circuits. By 1930 some superhetrodynes for the broadcast band were on the market, but for reasons I never learned, it was alleged that the superhetrodynes had poorer sensitivity for weak signals than simple regenerative ones. When amateurs adopted superhetrodynes a few years later, I never understood how this alleged problem was solved.

Another technical innovation which can help and which also was adopted a few years later was the use of radio frequency amplifiers, which introduce second tuned input circuits to improve the selectivity. If they have RF gain controls, the amplifiers can be converted into variable attenuators for very strong signals.

At that time radio frequency amplifiers generally were not used at amateur frequencies either in receivers or transmitters. The only tubes that had been available were triodes, which had relative high grid-plate capacitances. These caused feedback, at high frequencies giving rise to instability and even oscillation. By 1930 Hazeltine had just invented 'neutralization', a scheme for introducing feedback of opposite phase which could be adjusted to annul the feedback caused by the grid-plate capacitance. Amateurs would soon use this in multi-stage transmitters. In 1930 screen grid tubes, with



*G6WY Transmitter - ca. 1935*

much lower grid-plate capacitances than triodes, had just come on the market, and soon they were used in RF amplifiers in amateur receivers.

Spark transmitters had been banned some time ago, but before 1929 there were no regulations governing the use of tube transmitters. Some amateurs, for economy, ran their transmitters from raw AC, causing the signals to be broadened and making them easier to copy by receivers with frequency drifts. There was little phone operation. Most of such operation that existed used modulated oscillators. Since the oscillator frequency is partially voltage dependent, there was a combination of amplitude and frequency modulation. The US government

***"Get your transmitter off the  
air immediately and fix it.  
It has a back wave!"***

then made a regulation prohibiting frequency modulation, with the result that simple keyed CW oscillators had to be operated from well filtered dc power supplies, and phone transmitters had to be multi-stage ones with amplitude modulation of one of the amplifiers, usually the last one.

January 1927 issue of QST (by coincidence, the first issue of my subscription which has continued until the present) contained an article on simple crystal controlled transmitters. Since then crystal control was to be come increasingly popular. A few amateurs substituted VFO's for crystal oscillators, but these did not become popular until after World War II.

Many amateurs depended only upon absorption wave meters to tell whether their transmitters were in a band. These were inductors in parallel variable capacitors whose dials were calibrated in wavelength or frequency. Because of blocking, it was impossible to directly determine what point on the dial of a regenerative receiver corresponded to the transmitter frequency. To

transfer the frequency precisely needed the intermediate help of a shielded receiver known as a 'monitor', a cumbersome process that I discussed in my 'Lunch Box' article. Out of band citations were common.

A large minority of the signals on CW bands were unlike those heard today. Crystal controlled transmitters emitted 'back waves'. Faint signals radiated with the key up, which personally, I like very much. A couple of decades ago I built a transmitter according to the 1927 design cited above. Whenever I worked an old timer, the comment was, "I enjoyed listening to your beautiful back wave," but if I worked a more recently licensed amateur, the comment was, "Get your transmitter off the air immediately and fix it. It has a back wave." While the regulations prohibited frequency modulation, at that time they did not prohibit amplitude modulation on telegraph signals. Some amateurs deliberately introduced it by using power supplies without filters for their final transmitter amplifiers, giving a modulation of twice the power line frequency. This practice was common among amateurs in most of California, who then had 50 Hertz power instead of the 60 Hertz used elsewhere in the USA. This practice gave them an advantage in competing with eastern stations in working Europe. The Yale Radio Club, which I joined later, was located in the Electrical Engineering building, where three-phase power was available. Our final amplifier power supply used three-phase power with half wave rectification, which gave us distinctive 180 Hz modulation.

#### *The Ionosphere*

When I became an amateur in 1930, DX conditions were poor because of a sunspot minimum. By accidental coincidence, the pioneering DX contacts of the 1920's were at times near a sun spot maximum. Conditions remained good for several years, and probably many people thought they would remain so indefinitely. Few people, if any, had recognized that there was any connection with sunspots until this minimum occurred. These bad conditions added to the general gloom associated with the 1929 regulations and the financial depression. One of my fascinations with radio is trying to guess what the ionosphere is going to do.

#### *Awards, Operating and Contests*

The only DX award certificate available in 1930 was the WAC (worked all continents) one. (WAS was announced in January 1936

*(see "First Years" cont. on Page 10)*

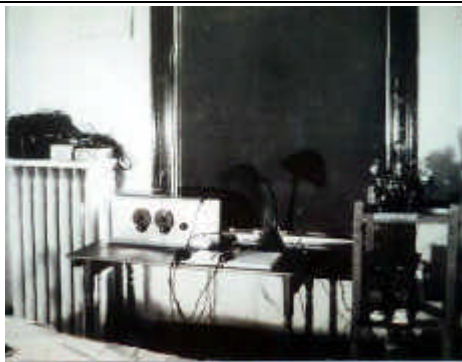
*(First Years" cont. from Page9)*

QST, and DXCC in September 1937.) In the current picture, WAC seems silly. For the past two or three decades, on nearly every contest weekend I have worked at least two or three stations on each of the six inhabited continents. In 1930 working them all was not a trivial matter. With the low gain antennas and low transmitter powers then used in Europe, it was hard for the west coast to work it. On the east coast it was hard to work Asia because there were hardly any Asiatic amateurs on the air. I never heard of any one ever having heard or worked any station in Asiatic USSR, and there were practically no Japanese amateurs on the air until the late 1930's. In an ARRL DX Relay Contest in the early 1930's, not a single W/ VE station worked all continents, and that contest lasted for two weekends and the whole week in between! My first Asiatic contact, on January 16, 1936, was with VU7FY, and I had not heard any Asiatic previously. Thus for most amateurs, WAC was a dream that they did not expect to become realized the next time they went on the air.

However amateurs often spoke of the number of countries they had worked, but no such information was published regularly. There was no published official list of countries. By common understanding a 'country' was a geographical entity with a permanent population that a person had read about in history and geography books in school, one that had a government which issued stamps and currency. Any QSL card received was a true souvenir of the country, one that had been printed, filled out, and mailed there.

Operation was leisurely and probably would seem frustrating to modern amateurs. For reasons that are probably obvious, in looking for answers to CQ's, you tuned over a range of 50 or 100 KHz, and, in answering a CQ, you usually called for about five minutes with quick interruptions for listening. Thus generally it took at least five minutes to establish a new contact. If you took so long to make a contact, you would be reluctant to let it end. Since there were fewer amateurs on the air, it was more probable that any one you worked was some one you had worked before. If in an earlier QSO you had told about your rig, you had to find something new to talk about. Incidentally my 'Elmer', John Murray, liked to use 14 MHz CW to play chess with British amateurs.

The 'relay' tradition still had a great



*My First Station - W3AWH  
Trenton, NJ ca. 1930*

influence. The main interest of some amateurs was handling messages. The first pages of the Section News part of QST each month had a list of those who had qualified for 'BPL' (Brass Pounders' League), those who had handled a specified minimum number of messages (250, if I remember correctly). People took pride in the number of times they had made BPL. In the years preceding 1929 amateurs had provided communications for explorations, notably for the sailing ship "Bowdoin", which explored Arctic waters.

The first four ARRL DX contests were 'relay' contests. To participate in the first several ones, (QST, October 1927 had the announcement of the first one.) W/VE contestants had to apply in advance to the ARRL, which assigned them individual test messages about ten words long. In their first contest contacts the W/ VE's transmitted these to DX stations, who then retransmitted

***"I remember the state of shock I had the first time I heard an amateur end a DX contact without saying '73'!"***

the messages back to other W/ VE's stations, and so on. The fifth contest (QST, January 1933) ended the pre-registration requirement. It introduced the six-digit serial number but retained the relay concept. In their first contacts both W/VE and DX stations started with numbers consisting of three digits of their own choosing followed by three zeros. In the following QSO's they replaced the zeros by the first three digits received in the previous contacts. (Incidentally, the first field day was in 1933.)

I did not participate in any contests until a few years later. At that time amateurs, even in a contest QSO, had the good manners to say 'GE', 'TKS FOR QSO,' and '73'. I

remember the state of shock I had the first time I heard an amateur end a DX contact without saying '73'!

*My Activities*

There remains the telling of how I fitted into the picture I have described. Although I frequently rebuilt my station, generally it conformed with the typical picture I have described: a two tube regenerative receiver, a keyed self-excited CW transmitter with about 25 watts input, and wire antenna. Until my second year at Yale, my operating was confined to college vacations. Because of the sun spot minimum, conditions were very poor in the summer of 1930, and I worked only a half dozen DX stations. But I acquired the friendship of a number of local amateurs. As a result, I attended some of the first meetings of the Delaware Valley Radio Association (W2ZQ), now one of the oldest clubs in the country. I am now an honorary life member. In the summer of 1931 conditions were very good, and I worked 16 countries on four continents.

In my first year at Yale (1930-1931) I met a number of other students who were amateurs. In my second year those who majored in electrical engineering persuaded their professors to sponsor an amateur radio club and to provide the facilities for a state of the art station. Thus W1YU came on the air. Some members became active operators, but I never found operating a club station as interesting as operating my own station. And I was very interested in my studies. So I operated W1YU rarely. However, I remember that a few times Bert Nelson, W1AYR, (whom I still work on the air once in a while) and I got up at dawn and worked VK's on 7 MHz. Instead of doing much operating, I brought in my own parts to the club and used its facilities to build equipment to take back home.

One unusual activity of the Yale Radio Club was to hold some open meetings to which all the local amateurs in New Haven were invited. These meetings had as speakers H.P. Maxim, John Rienartz, and James Lamb from ARRL Headquarters. Thus I heard first hand some of the important pioneers. Also once or twice a student with a car took some of us to visit Headquarters. On one of these visits, Ross Hull took us to visit his pioneering VHF station in Canton, Connecticut.

In the summer of 1932 my parents and I made a quick rip to Europe. I was fortunate to spend a day with the late 'Ham' Whyte,

*(see "First Years" cont. on Page 11)*



### *("First years" cont. from page 10)*

then G6WY (after World War II, VE-3BWY). First he took me to make brief calls on other amateurs I had worked. Then I sat with him for an hour or two while he operated his station. I discovered how he



**H.A. Maxwell "Ham" Whyte**  
G6WY ca. 1935

managed the six or eight calls he usually received in response to his 'TEST'. Before deciding which one to answer, he tuned though the band and logged the dial setting of each of the stations who answered him! (After DXCC was established in 1937, for a while he had the largest listing of worked countries of any amateur in the world. I had other personal contacts with Ham, but these are outside the scope of this article.)

On my return from this trip, my view of amateur radio was changed. I felt I was no longer a beginner. Thus I bring this article to an end. My later experiences as an amateur are reported in John Troster's biography of me in Worldradio of November and December 1997 and was reprinted in B.A.R.C.'s Bark of November 1999.

#### **Addendum: The Restructuring after World War II**

I have now completed my description of amateur radio, as it was when I first knew it. I started this article with a discussion of the

restructuring of 1929, which provided the basis for its gradual evolution until World War II shut it down. To provide the answers to some logical questions, I jump ahead to speak briefly of the less drastic restructuring that took place after the War. During it amateurs demonstrated great usefulness as operators and technicians. Governments expressed their gratitude by greatly relaxing their regulations. One result was that amateurs became more numerous, notably in Japan and in the USSR. In many countries the maximum allowed power was raised. British amateurs were now allowed to call 'CQ'. Amateurs acquired the 21 MHz band but gave up small portions of the 1.8, 14, and 28 MHz bands.

After the War many amateurs used military surplus equipment that came on the market at low prices. In many cases it was superior to that they had used previously. Many of the transmitters had VFO's with frequency

***"On my return from this trip, my view of amateur radio was changed. I felt I was no longer a beginner."***

calibrations. Soon the practice of zero beating the station to be called became adopted. The use of commercially manufactured equipment became popular.

As far as I know, the first amateur to visit a foreign country for the primary purpose of operating an amateur station there was the late Jack DuBoise, W3BXE, when He went to the French Islands in the Gulf of St. Lawrence (FP8) in 1949. I understand that he originated the term 'DXpedition'. (QST of November 1949.)

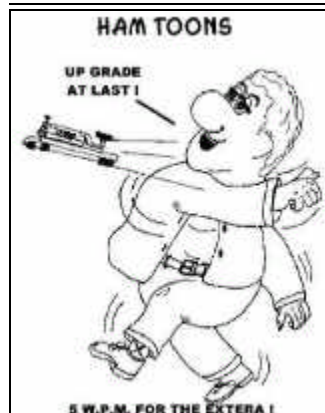
Much of this article is based upon my memory, which is subject to error. Some of this material is contained in my article 'DX in the Early Thirties' in WorldRadio of July 1982.

### **New DXCC Card Checker**

Barry Mitchell, NØKV, has received notification of his Official position of ARRL Colorado Section DXCC Card Checker. Barry is a member of MHDXA and can be reached by email at: [n0kv@arrl.net](mailto:n0kv@arrl.net) or by phone at: 303-841-6510

Please note that many changes in DXCC Card Field Checking have taken effect. You should review the new criteria for submissions and form availability at:

<http://www.arrl.org/awards/dxcc/>



**BARC's Bark will proudly feature monthly cartoons by Woody, W7EPP - "Ham Toons" are reprinted with his permission.**

### **The Swapfest Swami's 2001 Calendar**

**March - Denver Radio League's Swapfest has been cancelled.**

**April 7 - Longmont ARC "Garage Sale" -** This will be held at Boulder County Fairgrounds, Nelson and Hover Roads, Longmont, CO. -- 8:00 AM to 2:00 PM. Set-up starts at 6:00 AM on the 7th. Food and Refreshments. Power Strips Available. Set-up wherever you wish and sell anything (legal.. that is)! Admission is \$2.00 (buyer or seller) Table rental at the door only! If you need a table they are \$10.00 each while they last. Includes one chair. Contact LARC at email address below or mail us at Longmont Amateur Radio Club, P.O. Box 86, Longmont, CO 80502-0086 For information only. NO Pre-registering or Pre-paying! It is very unlikely we run out of room in this large building. License Testing @ 10:00 AM, Cost is \$10.00, Bring a picture ID. If upgrading, bring current license AND a copy of that as well as any Certificates of Successful Completion. Testing held in building just north of the exhibition building. For more info see: <http://www.qsl.net/larc>

**May - PPRAA - Pikes Peak Radio Amateur Association Swapfest** - held at Lewis-Palmer Memorial High School, 1300 Higby Rd., Monument, CO.

**May 18-20 - ARRL National Convention - Dayton ARA** - held at Hara Arena, Dayton, OH - <http://www.hamvention.org>.

**May - Wyoming State ARRL Convention** - Casper ARC -- Casper, WY.

**Jun 23 & 24 - ARRL Field Day**

**July 13-14-15 - The Rocky Mountain ARRL Division Convention and the Utah Hamfest** will take place at Ruby's Inn at Bryce Canyon, Utah. Keynote speaker will be Riley Hollingsworth, K4ZDH, FCC Special Counsel for Amateur Radio Enforcement. Another special guest will be Rosalie White, K1STO, ARRL Field Services Director. For more information, see the Utah Hamfest web page at:

<http://www.Utahhamfest.org>

**July - NCARC - Northern Colorado ARC swapfest** held at Larimer County Fairgrounds, Loveland, CO.

Boulder Amateur Radio Club  
P.O. Box 17362  
Boulder, CO 80308-0362

*Amateur Radio  
A National Policy  
Public Law # 103-408*

## First Class Mail

*Mar. 20 - DXing Program* presented by Bill Leahy, KØMP President of the Mile High DX Association. Bill will present a video this evening of the A52 DXpedition and then be available for questions regarding DX operations, procedures, equipment and programs.

**Have You Paid Your 2001 Dues Yet?**

### 2001 Boulder Amateur Radio Club Membership / Renewal Application

**Please supply all the information requested below:**

☐ Regular Membership ☐ Child Membership ☐ Associate

Date: \_\_\_\_\_ Call Sign: \_\_\_\_\_

Name: \_\_\_\_\_

Other Family Member Name: \_\_\_\_\_ Call Sign: \_\_\_\_\_

Address: \_\_\_\_\_

City & State: \_\_\_\_\_

Zip Code + 4: \_\_\_\_\_ + \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

☐ Check here if you want to be included on our email notification list of BARC meetings and events.

☐ Check here if you want the "BARC's Bark" club newsletter Emailed to you each month.

License Class: \_\_\_\_\_ { Extra, General, Technician or None }

ARRL Member: \_\_\_\_\_ ( Y or N ) License Expires: \_\_\_\_\_

#### Membership Types:

**R ( Regular ) -- \$ 20 / year**

*Note: Family members are included in regular memberships in the same household.*

**C ( Child ) -- \$ 6 / year\***

*\*Child memberships are for children 17 years of age or younger whose parents are **NOT** members of B.A.R.C.*

**A ( Associate ) -- \$ 20 / year**

**Make Checks Payable to B.A.R.C.  
and Mail to :**

**B.A.R.C. Membership**

**P.O. Box 17362**

**Boulder, CO 80308-0362**



**Your 2001 BARC Membership Dues are Due Now!**