



January 2004

# The Spectrum

Fun, Public Service, and Learning using our Amateur Radio Licenses

## CARS on the AIR

At the Shack W4CAR HF & VHF

146.610 MHz W4CAR Repeater

146.820 MHz W4CAR Repeater

444.000 MHz W4CAR Repeater

## CARS Officers & Chair Persons

President: **Ruth Bigio KB4LIF**

Vice Pres: **Bill Runyon WF4R**

Secretary: **James Gwaltney KA4EDI**

Treasurer: **Sonny Hood K4WYS**

BOD: **Barry Goldblatt W3AFH**

Public Service Coordinator:  
**Leo Kusuda KG4PWC**

COM Coordinator: **Rick Smith KC4USH**

Home Page: **Leo Kusuda KG4PWC**

SpringFest: **Leo Kusuda KG4PWC**

Trustee of W4CAR: **Frank Duval K4PRR**

Technical Committee:  
**Bill Runyon WF4R**

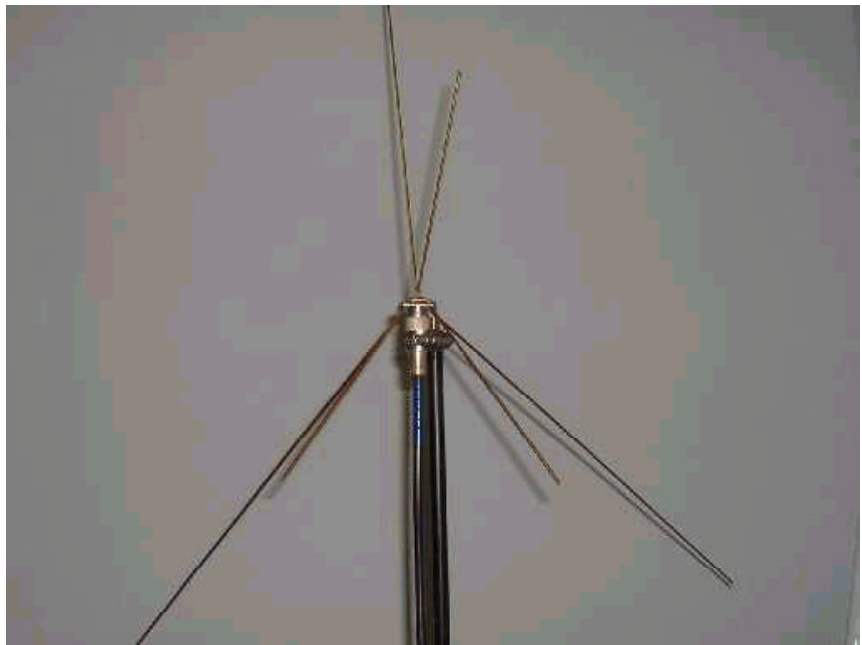
## Chesapeake Amateur Radio Service

POB 6867  
Chesapeake, VA 23323-  
6867

**Newsletter Editor**  
**Rick Aldom - W7STS**

## The NA4IT "CHEAP" Dual Band Ground Plane Antenna by NA4IT, Scott Duckworth (Used with permission)

Here is a neat little antenna that is very easy and cheap to build. It is ideal for Technician class hams needing a "first" antenna, and also a very good "emergency" antenna for use during Skywarn events when you don't want to be on the sky hooks tall in the sky!



This little antenna is very functional on 2 meters and 70 centimeters.

### Materials needed:

- (1) SO-239 4 hole chassis mount connector
- (3) 3/32 bare welding rods (copper or brass)

Rosin Core Electrical Solder

Clear Silicone Sealant

### Tools Needed:

# Words from the President Ruth Bigio KB4LI F

The New Year will bring many changes for CARS — good ones I hope. We have some new ideas that we hope we will be implementing for the coming year — the Fox Hunt seems to be the most popular one so far. Thanks to Ricky Lee, KC4USH, and his wonderful booklets, a lot of us will have some great reading to do as we learn about fox hunting in preparation for the challenge by the Portsmouth Club in March.

Rick Aldom, W7STS, is leaving our area to return to his family and home state. He was a cool, calm customer during high times of stress in the Chesapeake EOC as well as a good elmer to the “newbies”, as Ricky Lee likes to call everyone. Rick operated 40 meters at our National Skywarn Recognition Day on December 6, 2003 as the last event he participated in before he left. Rick was also instrumental in the changed look for our newsletter. As we say goodbye to Rick Aldom, W7STS, who helped im-

mensely during Hurricane Isabel, we also welcome back a member for a very brief stay - Jim Rogers, KG4WOJ. It is always nice to welcome back members or to remember them during anytime of the year. If you know of a fellow ham who is not a member of the club — bring them to a meeting. Meetings are open to anyone interested in amateur radio. Let them know of all the activities the club has had in the past and have planned for the future! We are a group of hams who like to enjoy amateur radio and share the hobby with others.

[Editors note: Ruth inclosed a photo of me operating the 40 Meter station on SkyWarn Recognition day, but the resolution was such that I chose to not include it. I strongly deny it was because it showed me bundled in a parka, sweater, sweatshirt and finally a tee-shirt. That's my story and I am sticking to it!](#)

- Rick Aldom

## Public Service Calendar

KID's Day is January 4<sup>th</sup> — we are planning to have our HamShack open that day 10 till 3 and allow the kids to operate. Any and all children from the surrounding cities are invited with or without licenses. Boyscout and girls scout troops are especially invited. If you know of a troop you would like to get involved, please see Ricky Lee, Leo or Ruth.

January 10, 2004 is our regular HamShack Day.

February 2, 2004 dinner meeting — location to be announced 1900 hours.

February 7, 2004 — HamShack Day.

March 1, 2004 regular meeting 1900 hours. March 6, 2004 — Monitor-Merrimac Special Event Station (HamShack Day). Fox Hunt End of Month

April 5, 2004 dinner meeting 1900 hours. Location TBA. HamShack Day will be dispensed with because of Diabetes Tour de Cure weekend and getting ready for SpringFest (HAMFEST) April 24 at Hickory Ruritan Club.

# 2003 National Skywarn Recognition Day

Although we did not get any significant snow, December 6, 2003 started off dark and windy with ominous snow flurries swirling in the air. Sonny, K4WYS was at the Chesapeake Center Science and Technology gate at 0915 while I was still rolling down the highway. Rick KC4USH came on the W4CAR repeater announcing that he was "KC4USH freezing". I had had my car heater kicked up to the max for 15 minutes so I came back "this is KG4PWC/mobile toasty." Well my "toasty" state didn't last long. As soon as I stepped out and faced the chilly blast coming around the shack, I was reminded of the scene of those poor souls falling in the water in the movie "Titanic." Sonny and I proceeded to setup the field vertical antenna kindly provided by Rich, WA4BUE. It would have been nice if the tie wraps came preheated. The antenna came together OK but the feed line had to go through the window in the station. The heater was allegedly on, but the shack felt more like one of those large walk-in freezers. Rick setup his Yaesu FT 847 to take advantage of the VHF/UHF beam and WX4AKQ, NWS Wakefield Special Even Station was in operation.

Over the course of the next several hours, a total of 15 operators stopped by. They included Rick W7STS, Rich WA4BUE, Ruth KB4LIF, Paul K4PRB, Dennis K4DKR, Barry W3AFH, John K0IBS, Stewart KG4KJW, Frank K4PRR, Bobby WA4JRC, Keith KG4ZXK and Bill WF4R. The initial placement of the vertical switched from near the end of the 40/80-meter trap dipole, to the bumper of my truck, to a partially dismantled van and

finally to a cart, weighted down with old towers. The wind kept reconfiguring the 28 ft mast, but it refused to fall. The final position seemed to allow the autotuner to function the best and had the least interference from the inverted V dipole. Unfortunately, the skip and the low gain of the vertical did not allow for good propagation on the upper HF bands. 40 meters was by far the most productive station. A total of 167 different contacts were made. 24 states and Canada were worked. The furthest stations were Toronto, Wisconsin, Florida and Texas. 147 contacts were made on 40-meters SSB, 19 on 2-meter FM and 1 on 10-meters. Except for the Florida stations, most stations reported cool temperatures with many reporting several inches of snow. Although doughnuts and mini-eclairs were provided, it was not sufficient for some of the more "serious" operators, who proceeded to go to Ruby Tuesday's for lunch. Coffee and a hamburger definitely thawed out the old paws more effectively than doughnuts. Upon returning to the station, the wind had picked up and the wind chill was now unbearable. 40 meters continued to be hot and we operated until 4 pm EST, the planned termination time. Fortunately, dismantling the vertical took less time or my mind was too numb to tell.

Thanks go to WA4BUE and KC4USH for providing additional equipment. It was a very enjoyable experience despite the weather. Thanks to all who came out and see you again next year.

73

Leo KG4PWC

## Some Important Severe Weather Information

Although we didn't get the blast of winter weather that the Northeast did, it's still a reminder to us that we can still get similar weather patterns down here. NOAA Skywarn spotters are needed to report: Snow depth of 2" or more, or falling at a rate of 1" per hour or more. ICE any accumulation on roads, trees, etc.

If a Winter Storm Watch has been issued for your area, that means that hazardous winter conditions (such as snow greater than 6 inches in 24 hours, winds gusting over 35 mph, or visibilities less 1/4 mile) are expected in the next 12 to 36 hours. You should be prepared in advance.

The following checklist is what you should have on hand. If you volunteer to man shelters or otherwise assist the city -- make sure you have your batteries charged for your radios and generators for your home use if you plan to stay or



work out of your home.

At home make sure you have:

- a working flashlight
- battery powered NOAA weather radio, radio or TV
- extra food, water, medicine, and baby items
- first aid supplies
- heating fuel (propane, kerosene, fuel oil, etc...)
- emergency heating source
- fire extinguisher and smoke detector

### In cars and trucks:

- fully check and winterize your vehicle
- keep your gas tank near full
- try not to travel alone
- let a friend or relative know your timetable for travel

Carry a winter storm survival kit which contains:

- blankets/sleeping bags
- flashlight with extra batteries
- knife
- high calorie non-perishable food
- a smaller can and water-proof matches to melt snow for drinking water
- sand or cat litter
- shovel
- windshield scraper
- tool kit
- tow rope
- jumper cables
- water container/Compass & Maps

The main thing if you are caught out in bad winter weather is to stay warm. If you are outside find shelter. If there is no shelter than you will have to make one.

If you are in an automobile stay in it. Conserve fuel by running the car 10 minutes every hour. Crack your window for fresh air and to avoid carbon monoxide poisoning.

Remember not to eat snow. It will lower your body temperature. Melt it first.

Hopefully you will not need this information but you will never know when mother nature can give us unexpected weather conditions. Be prepared.



**New Editor's Note:** This is the picture Rick was talking about. However, we felt we could not keep it out of this edition. Enjoy and sorry Rick.

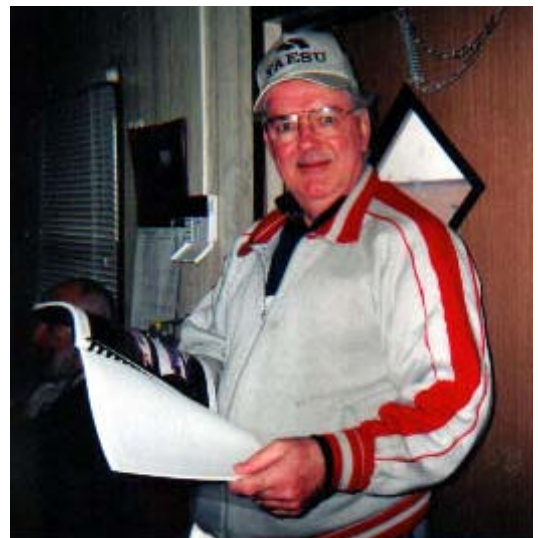


Ricky Lee, KC4USH, haming it up at the December dinner meeting.



Two of CARS newest members, Dennis, K4DKR & Paul, K4PRB enjoying the food and conversation at the December dinner meeting.

Bill is excited about the upcoming Fox Hunt against the Portsmouth Amateur Radio Club (Parc)



## Event Calendar

Continued from page 1

SpringFest 2004 is being planned by Leo, KG4PWC, and Ricky, KC4USH, who may have a new call by then.

The proposed date is April 24, 2004 at the Hickory Ruritan Club. Volunteer to Ricky or Leo and help make the 2004 SpringFest Best Ever.

Heavy duty soldering gun

Wire cutters

Vise or "Third Hand" or another human.

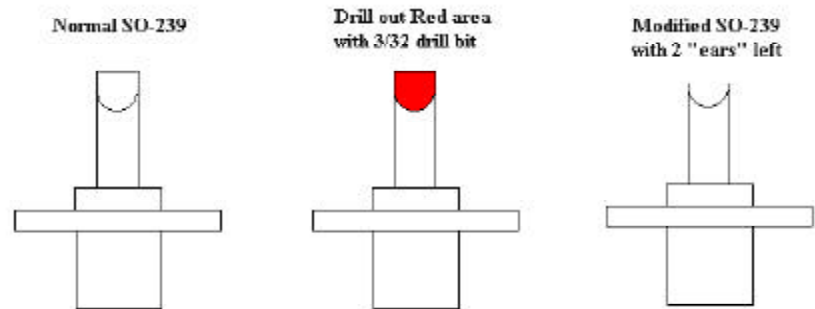
Let's get started! From the welding rods you need the following:

(1) piece 25 & 1/8 inches long

(2) pieces 6 & 1/2 inches long

(2) pieces 19 & 1/2 inches long

Here is how to prep the SO-239 connector:



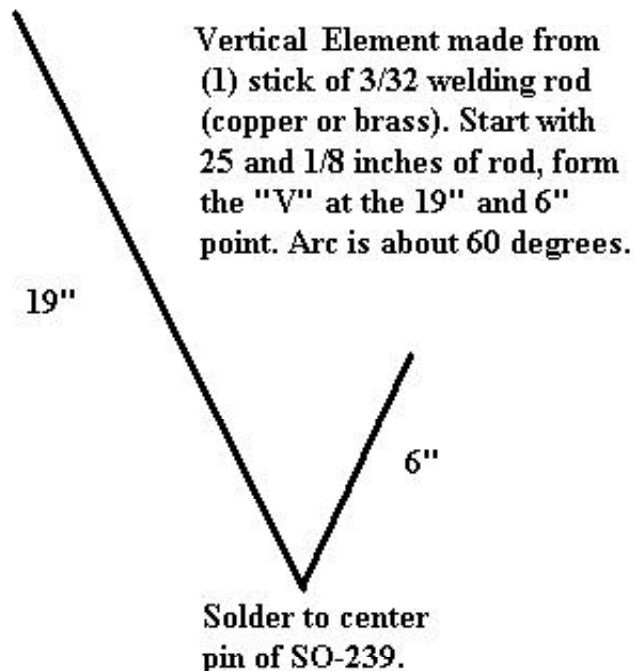
## CARS Net Activities

**CARS Sponsored Nets -  
Join us for CARS on the  
Air FUN**

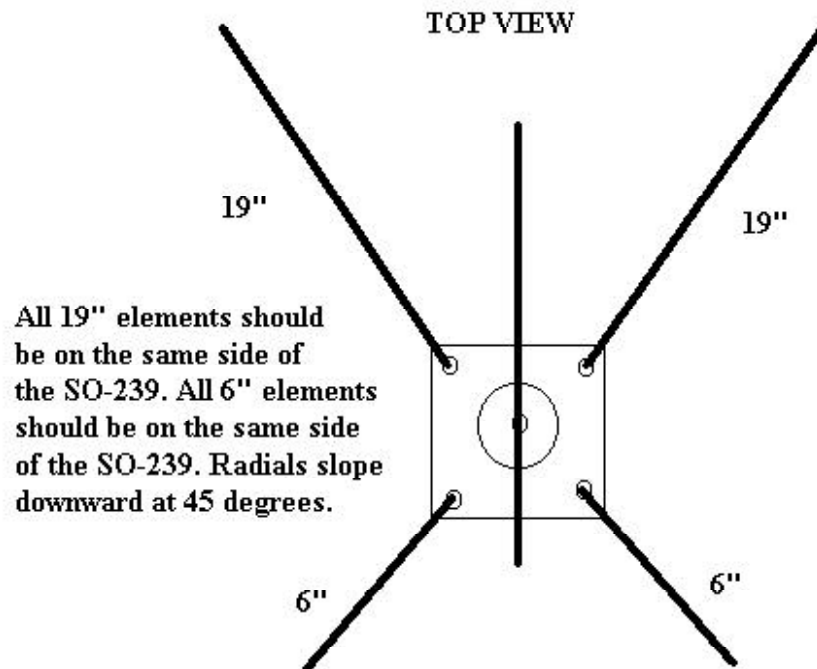
SKYWARN Fridays at 7 PM  
on 146.820 MHz FM

CARS Monday Night Meeting  
on the Air (when CARS does  
not formally meet) 28.4 MHz  
USB at 8 PM

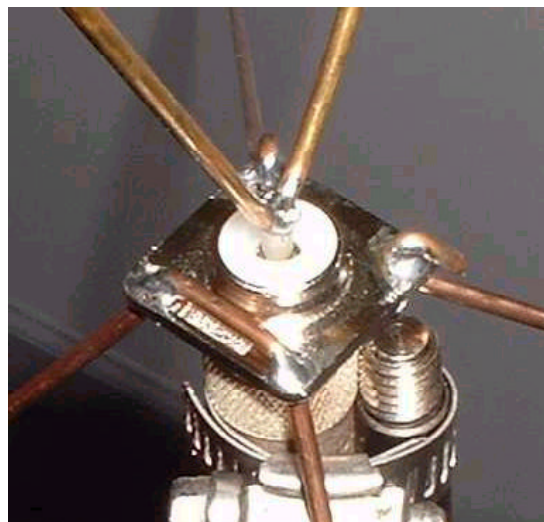
Now to make the vertical element:



Now take the 19 & 1/2" on one end, placing each on into one of the mounting holes of the SO-239 and crimp it tightly, then solder, filling the hole. The arrangement should look like this:



Here is a close up photo of the first one I did: (My 6" radials were made from a welding rod 12 12 & 3/4" long bent into a "C" shape and run down through 2 of the mounting holes, then bent back out to the proper angles and soldered.



## NEW ARRL ANTENNA DESIGN AND CONSTRUCTION COURSE TO START IN JANUARY

If there's one thing that all radio amateurs have in common it's the need for an antenna. The ARRL Certification and Continuing Education program (C-CE) <<http://www.arrl.org/cce>> will open registration Monday, December 22, for its new "Antenna Design and Construction" (EC-009) on-line course. Signup begins at 12:01 AM Eastern Time (0501 UTC). Registration for "Antenna Design and Construction" will remain open until Sunday, December 28. The class will begin Tuesday, January 13, 2004.

Authored by Ward Silver, NOAX, "Antenna Design and Construction" joins "Antenna Modeling" (EC-004) as the C-CE program's second antenna-related course. It will use the ARRL publication Simple and Fun Antennas for Hams <<http://www.arrl.org/catalog/?category=&words=8624>> by Chuck Hutchinson, K8CH, and Dean Straw, N6BV, for its textbook. Students must have a copy before starting this class, which takes 20 to 25 hours to complete.

Students who take "Antenna Design and Construction" must hold an Amateur Radio license to be able to complete some of the course's practical activities. They will become familiar with—and experience—antenna design and construction techniques. Optional antenna construction projects and experiments involving HF and VHF/UHF antennas of various types are available for the more adventuresome.

The registration fee for EC-009 is \$65 for members and \$95 for nonmembers, exclusive of textbooks and materials.

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Finish by covering the entire center pin and insulator area on the "top" of the SO-239 with Clear Silicone Caulk.

To mount the antenna, use a 1-foot piece of PL-259 connector up through the piece of conduit, connect the antenna to the coax, and let it sit down into the conduit. Use stainless steel hose clamps to attach it to a mast. I'm sure you can come up with other ways to mount the little antenna also. This antenna makes a great Severe Weather antenna, so that you can maintain communications, by mounting it in the attic or even below the eaves of your house.

The first time this one was used, it was used at a RACES drill. It was mounted to a small telescopic speaker stand by clamping the PL-259 to the stand with a single hose clamp. It was inside the building, and with 10 watts, we could hit both 2M and 70cm repeaters up to 30 miles away (and that's in East TN, the "Heart of the Smokies"!).

SWR results of the prototype were less than 1.5-1 on across both bands with 55 watts input. Your results may vary. Also, this antenna may be somewhat directional. Experiment with it. I would welcome computer-plotting results if some one would like to do them. Let me know how it works for you!

NA4IT, Scott Duckworth  
[na4it@arrl.net](mailto:na4it@arrl.net)

## **HAM RADIO IN SPACE REACHES ANOTHER MILESTONE**

Ham radio in space has reached another milestone with the successful installation and checkout of the first Amateur Radio on the International Space Station (ARISS) Phase 2 equipment. The ISS now sports a new Kenwood TM-D700E dualband transceiver in the Zvezda Service Module—the crew's living quarters. ISS Expedition 8 Commander Mike Foale, KB5UAC, set up the new transceiver at NA1SS earlier this month. Only official approval is needed to begin operations. Activation of the new gear will mean a power boost for the NA1SS downlink signal, which could prove especially helpful in school group contacts. The additional equipment—which soon will include a slow-scan television (SSTV) system—also opens up new operational possibilities.

“Clearly, we've got multiop, multi-station capability,” ARISS International Chairman Frank Bauer, KA3HDO, told ARRL. The ARISS Japan Team donated the Kenwood radio and made certain hardware and firmware modifications—including limiting its power output to a maximum of 25 W—to prepare it for flight, he said. Bauer and the ARISS US Team recently returned from Russia following successful ground testing of Phase 1 and Phase 2 equipment using a set of flight-identical ARISS antennas as well as testing of a slow-scan TV (SSTV) system.

The Phase 2 gear will use the four antennas installed on the Service Module during space walks in 2002 specifically to support Amateur Radio operations. Addition of the new antennas, which will cover from HF to microwave frequencies, opened the door to deploying the two separate ham stations aboard the orbiting outpost.

Waiting in the wings is a Yaesu FT-100 HF/VHF/UHF transceiver that could go into space in January along with the new SSTV gear.

Details of the ARISS Phase 2 gear is available on AMSAT's ARISS Web page <<http://www.amsat.org/amsat/ariss/Papers/Phase%202%20AGM03Final.pdf>>.

## **SCHOLARSHIP INFORMATION**

A number of scholarships are offered to college students and are coordinated by the Foundation for Amateur Radio. You can contact FAR at:

FAR Scholarships  
P.O. Box 831  
Riverdale, MD 20738

and request an application or go to their home page.

For many of the FAR SCHOLARSHIPS you will require a sponsor signature. For ARRL, QCWA, and OOTC endorsements contact me, Richard - WA4BUE at 485-3762 or catch me on 146.820 or 28.400 MHz. Scholarships range from \$500.00 to \$2500.00.

The Foundation for Amateur Radio administers 55+ scholarships sponsored by 28 amateur radio clubs, organizations and private individuals. The Foundation administers these scholarships without cost to the applicants or sponsors.

Scholarships are open to all licensed amateurs who are pursuing a full-time course of studies beyond high school and are enrolled in or have been accepted for enrollment at an accredited university, college or technical school.

The awards range from \$500 to \$2500 with preference given in some cases to residents of specified geographical areas or in pursuit of certain study programs. All clubs, especially those in **Delaware, Maryland, New Jersey, Ohio, Pennsylvania, Texas, Virginia** and **Wisconsin**, are encouraged to announce these opportunities to any and all amateurs in their states.

The following is a list of some of the sponsors for the various scholarships

[Quarter Century Wireless Association](#)

[Foundation for Amateur Radio](#)

Radio Club of America

[10-10 International](#)

Patricia and Jack (W9AMF) Chichester

[Young Ladies' Radio League](#)

[Columbia \(MD\) Amateur Radio Association](#)

[Baltimore Amateur Radio Club](#)

[Dade Radio Club of Miami // Tropical Hamboree](#)

Martin County ARA

[Vienna \(VA\) Wireless Society](#)

Frederick (MD) Amateur Radio Club

Kay (WT3P) and Carter (N3AO) Craigie

[West Allis \(WI\) Amateur Radio Club](#)

[South Milwaukee\(WI\) Amateur Radio Club](#)

[Ozaukee \(WI\) Radio Club](#)

[Virginia Beach \(VA\) Hamfest](#)

[Nanticoke \(DE\) Amateur Radio Club](#)

Murgas Amateur Radio Club  
Baltimore Radio TV Society

[Free State Amateur Radio Club](#)

Mrs. Shirley True Banning

[Old Old Timers Club](#)

[Northern California DX Foundation](#)

[Maryland Mobileer's Amateur Radio Club](#)

For more information on these scholarships please contact Richard, WA4BUE at 757-485-3762 or on 148.820 or 28.400 Mhz.

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I hope everyone had an enjoyable holiday season with friends and family. May 2004 be the best year for the club and all of you no matter what you do.

I look forward to being the newsletter editor for CARS. You are all a great group of people and I enjoy the opportunity to get to know you all better in the upcoming year.

I am looking for articles to publish in the February edition of the Spectrum. Please contact me at kg4zxx@arrl.net with any ideas you would like to see in the next issue. I am more than happy to put you in here.

73's  
Keith Ainsley,  
KG4ZXX