

The MARA-VARA *Monitor*

FEBRUARY 1997 -- Volume 97:02

This is the web page version of the MARA/VARA *Monitor*.

The *Monitor* is published monthly by the Massanutten Amateur Radio Association, Inc.,
(a non-profit organization under the IRS regulations),
for radio amateurs in the central Shenandoah Valley of Virginia.

ARES Supports Search For Lost Biker

Amateur Radio operators in the Shenandoah Valley proved once again that they are ready, willing, and able to respond to assist the public when necessary.

On Sunday, January 26, a group of bicycle riders was enjoying the break in the winter weather. Following no particular route, the cyclists were running the backroads of the Dry River Ranger District in the George Washington National Forest, not far from Reddish Knob. Running downhill on a particular stretch of forest road, the main part of the group got considerably ahead of one female biker. By the time they stopped to wait for her, she was nowhere to be seen. After waiting an extended length of time with the biker still not showing up, the group reported her missing. Since she was not dressed to survive a night in the mountains, a search was begun.

The search originated in Pendleton County, West Virginia. A command post was set up at the South Fork fire station. Because the search area straddled the state line, officials requested assistance from Rockingham County to cover the east side of the mountains. To allow communications between the West Virginia and Virginia operations, amateur radio operators were called in.

Plans were quickly formulated to place hams in strategic locations to enable the searchers to communicate with one another and with command posts, located on opposite sides of the signal-blocking mountains. Because of the hazardous conditions of the roads (snow and ice) it was decided to not send Valley hams to West Virginia, but rather to mobilize Pendleton County hams for the western half of the search area, with Rockingham and Augusta hams providing comm support for the east side. Wide-coverage repeaters such as the 147.315, 147.285, and 147.045 machines were used to support the activity.

The Rockingham County mobile EOC command van was brought in from Elkton and stationed at Briery Branch. Hams were stationed there, as well as the South Fork fire station and other strategic relay points.

Fortunately, searchers were able to pick up the tire tracks and footprints of the lost cyclist, and followed them to a remote cabin not far from the MARA/VARA Field Day site. The cyclist had wisely sought shelter at nightfall. She was cold, but not hypothermic, and otherwise in good health.

By press time, the names and callsigns of all the hams assisting in this effort could not be gathered. However, it is known that the following hams contributed to the endeavor. Thanks to Ray, KD4OXU, Rockingham County net control; Curtis, KB8PJI, West Virginia control station; Colin, N4ZFY, official liaison station with the authorities; Jeff, WB4PJW for relaying the initial calls from West Virginia; Bob, W3MMC who assisted

in mobilizing the Valley ARES members; Scott, KE4CKJ, and Ken, KE4GKD, who served as Augusta County contact; Tiny, WD4FOZ, controller of the 147.045 repeater which was gladly "donated" for primary net use; Rusty, N4YET, trustee of the 147.315 repeater; Buck, N3YFF, and Dave, KE4ZLD, who came out into the cold to furnish equipment and man the Rockingham County command post; Dave, KD9LA, who volunteered as relief operator if needed; and Elsworth, K4LXG, who also offered equipment and assistance. Several other Valley hams also responded to the need, and the Monitor apologizes for leaving anyone out.

*Prepared with assistance from
WB4PJW and W3MMC*

"PL TONE OFF"

Many repeaters require the transmission of a subaudible tone to activate the repeater's transmitter. Some hams own older transceivers which cannot generate a subaudible tone. Therefore, when an emergency strikes and we need all the help we can get, the subaudible tone requirements on the repeaters are disabled, allowing the repeaters to pass all transmissions regardless of whether the user is transmitting the tone or not. During this ARES activation, the tone requirement was removed from the 147.045 machine to enable more hams to participate. Anytime an emergency strikes, do not hesitate to ask for assistance in using any of the valley machines. All of the local repeater trustees have indicated enthusiasm for supporting ARES activations.

MARA President's Message

Well, the weather did it again! We had to cancel the January face-to-face club meeting at the Golden Corral due to snow and ice, so we held our first on-the-air club meeting (that I know of), at the suggestion of Dick W3HXX. We had twenty-three (23) hams checking in, which is about the average attendance at the restaurant meetings. In the future, if the weather is questionable, I'll try to decide early and announce on the 146.625 and 147.315 repeaters every so often if we decide to cancel a meeting. No sense risking an accident for a meeting.

I'll attempt to present a program on EME (Earth-Moon-Earth signal propagation, or "moonbounce") at the February club meeting. For March, I plan on showing how to use low-loss CATV hardline for your feedline, complete with homebrew connectors, and how to cut the line for 1/2 wave lengths for impedance matching. If you want maximum power to get to your antenna, at a very reasonable cost, you'll want to be there March 6! See you then!

*David Tanks, AD4TJ
MARA President*

VARA President's Message

I would like to thank everyone that came out to the January Meeting. We had 27 in attendance, a very good turn-out for such a cold night. We voted in a new member, Richard A. Thompson (N4SIH). We would like to WELCOME Richard to VARA. We also formed a Field Day Committee which consists of Bob Osterloh (N4ICT) Jeff Rinehart (WB4PJW) and Ken Harris (KE4GKD). I would like to thank them for volunteering.

The Club voted to purchase a tape recorder for the taping of the club meetings (so I can remember things) and Ken Harris (KE4GKD) was appointed to make the purchase. The 50/50 drawing was won by Bill Shott (W2ZVM) a total of \$25.00 was split, with \$12.50 going to Bill and the same to the Club. (Congratulations Bill).

Jeff Rinehart (WB4PJW) gave a brief Skywarn Report as to when Skywarn would be activated, such as 4 inches. of snow or more. The frequencies that will be used are 146.850 (minus offset and a tone of 131.8 " if needed") and 146.520 Simplex as a back-up. (Thanks Jeff).

We also voted to continue our monthly meetings at Gavid's and I think it was nice to start our meetings on time and not have interruptions. We would like to thank the owners of Gavid's for the use of their room. Also the food "ain't bad" either and of course Joe (W4XD) Dick (WB8GIF) and Frank (WD4LES) ate way too much Ice Cream!!!

Joe Moomaw (W4XD) gave us some information on programs from the ARRL, but we as a club have to be affiliated with the ARRL, so Joe will find out some more information for the next meeting.

Remember to " PLEASE PAY" your club dues for 1997 by the end of the March Meeting, so you can continue to receive the Newsletter and have a vote in the club's business. Ken Harris (KE4GKD) will make an up-dated member list right after the March Meeting and pass it along to David (KD9LA) so he will know who to continue to send the Newsletter to. You can pay Charlie (WA4ITY) or Ken (KE4GKD) or mail it to VARA at P.O. Box 666, Staunton, Va. 24402.

I am looking forward to serving the Club this year and "THANKS" for your support.

Pat Smiley - President
2425 Morris Mill Rd.
Staunton, Va. 24401
Home - (540) 886-0347
Work - (540) 946-1164

March Monitor Deadline: Friday, February 21st.

NOTE:

Unless you renew your membership in MARA or VARA, the March issue will be your last copy of the Monitor.

ATTENTION ALL VARA MEMBERS

We need some IMPORTANT INFORMATION from you. We need to know if you are a member of the ARRL and also we need your Internet E-Mail address if you have one. You can get this information to Ken Harris (KE4GKD) by calling (540) 885-1818 and leave a message on the answering machine, or E-Mail at KHarris1@Juno.Com or leave a message on Mike's BBS on 145.610. This information is needed to see if the Club can become a member of the ARRL and for Club information. Please do not "ASSUME" that Ken has

this information on file. (forward it to him!) This will be collected for the NEW MEMBERSHIP LIST for 1997. Remember, he needs the information from all Full Members and Associate Members. Again dues are due by the end of the March Meeting to continue to be a member of the club and to receive your newsletter. "THANKS".

Pat Smiley
VARA President

Greetings From Old Friends

While working the North American QSO Party last nite I ran into WD8LDY. David asked that I pass along his regards to all here. This was, of course, on CW.

Later on I ran into Gary Carter. Gary, who is a fine CW operator, worked with the Club on a couple Field Days 15 or so years ago. Some of the older members will remember how he and Norvel, WA4UML, kept our CW station going strong.

Joe Moomaw,
W4XD

Want to find somebody in the Shenandoah Valley?

check out this site: <http://www.cfw.com/~parks/>

Enjoy!

Provided by
Terry Henderson, KT4UO

"This Is Only A Test! If This Were An Actual..."

The next ham radio exams in the Shenandoah Valley will be held at the Massanutten Vo-Tech Center on Saturday, February 8th. Candidate sign-in starts at 9:00 am. The exams proper start at 10:00 am sharp.

Calling All General, Advanced, and Extra-Class Hams!

We are in real need of additional Volunteer Examiners to assist in the administration of ham radio exams. Becoming a Volunteer Examiner is easy. There is no cost for accreditation, and you will be offering a valuable service to those in the community who wish to become a ham. If you hold a General class of license or above, you can become a VE. We hold sessions six times a year, but as a VE you could choose which of the sessions you desire to participate in. If you would like more information on becoming a VE, call Brown Snyder, N4ZHV, at 540/434-3133. If you live outside Rockingham County and don't want to make a toll call,

you can obtain more information and a free VE accreditation packet by calling Marge at the ARRL Volunteer Examination Accreditation Desk at 1-800-9-ARRL-VE.

*Randy Smith, KN4KB,
VE Session Manager*

January VARA Treasurer's Report

We received a nice "thank you" card from Maria and Joe Pehan for the flowers the club sent Joe. They said Joe was getting along much better and both were hoping to attend the Christmas party. Speaking of the party, I was very disappointed to miss it, but was very much under the weather with the flu. The reports I heard were that everyone had a great time.

Joe, W4XD, reports that none of our previously-requested club callsigns were available, so we mailed another application (and another check) with a new request list. We should be getting our refund in the near future.

For 1996, VARA had total dues revenue of \$660, 50/50 revenue of \$127, and miscellaneous revenue of \$176, for a total revenue of \$963. We had total expenses of \$552.93 for the newsletter, \$91.54 for postage (PO box rental and stamps for the officers), \$56.98 for field day expenses (see below) \$138.29 for miscellaneous expenses (primarily flowers), for an expense total of \$839.74. This gave the club a net income for the year of \$123.26. Combined with a beginning balance of \$810.25, we had an ending balance in the bank of \$933.51.

The field day expenses shown above are funds that have been paid out. I am expecting some additional expenses from the MARA club, and both clubs will split the total, so the final amount may differ somewhat from what I have shown above. Also, we have thus far not received any donation from Bike Virginia this year, or any other group we provided communications for. As you can see, the club is operating on essentially a break-even basis. David Fordham has informed me that both the printing and the postage expenses for the newsletter are increasing regularly, so we may need to consider a dues increase this year if these trends continue.

I hope all you managed to keep warm during this cold spell.

*Respectfully Submitted,
Charlie Garner, WA4ITY*

Beginning Balance -- \$1,296.79

Dues Receipts -- \$235.00
January 50/50 -- \$12.50
Christmas Dinner Reserv. -- \$158.75
Flower Fund Contributions -- \$42.00

Subtotal -- \$1,745.04

Dec & Jan Newsletter -- \$175.25
Christmas Dinner Cost -- \$533.25
Christmas Dinner Adj. -- \$29.25
Pehan Flowers -- \$22.90
Bike Virginia expenses -- \$19.82

FCC (another application) -- \$30.00

Expense Subtotal -- \$810.47

Ending Balance -- \$934.57

Renewal Time for N4RAG Autopatch Subscriptions.

If you are a subscriber to the N4RAG autopatch association, it is time to renew. The dues are \$15.00 annually, from January to January. Mail your check to Buck Mowbray, RR 2 Box 426, Penn Laird, VA, 22846. Note that this is Buck's new address since the Penn Laird Post Office re-numbered the boxes and routes.

If you are not yet a subscriber, and wish to enjoy autopatch capability to the Harrisonburg area, call Buck or Donnie Mowbray on the 147.225 machine (103.1PL) at: 540-289-9790, or leave a message for Buck on one of the packet BBS systems (N3RIQ @ KC4MZN), or use Internet e-mail at

dmowbray@gte.net.

ARES NET SCHEDULE

PAGE COUNTY: The Page County ARES net meets every Sunday night on the 146.625 repeater at 8:00 PM local time.

ROCKINGHAM COUNTY: The Rockingham County ARES net meets on Monday nights at 8:00 PM local time. On the first Monday of every month, the Rockingham County ARES meets on 146.550 simplex. On all Mondays except the first Monday of each month, the net meets on the 147.315 repeater.

New Trader's Net Serves Valley

Looking to buy or sell equipment? The Rockingham Trader's Net meets once a month, on the third Monday night of the month, right after the Rockingham County ARES net, on the 147.315 repeater.

August 17 Date Set for Big Mountain Repeater Picnic

For those who wish to mark their calendar well in advance, Bob, W3MMC, has announced that the Big Mountain Repeater Association Annual Picnic (more popularly called the "Bob's Knob Bash") has been scheduled for Sunday, August 17, 1997. This event is open to all local radio amateurs.

TRIP TO GREENBANK, W.VA. PLANNED

A group of hams have made two trips to Greenbank, WV (National Radio Astronomy Observatory) during the past three years to check on the progress of the new 330 foot dish (replacing the old one that fell) and to tour the facility. It's not too early to start making plans to attend. Spring will be here before you know it, hopefully (its 10 degrees outside today as I write this!).

We usually go about the middle of May and make an all day trip of it. Lunch is available at the cafeteria and the weather is usually beautiful (hopefully). A group from Charlottesville usually goes and those of us from the Valley meet up with them and carpool. We have several ham connections either working or retired from NRAO which makes for a more interesting tour.

Please start making plans to attend. Its open to everyone, not just hams, so bring the whole family and see some beautiful scenery and you might discover more interesting things to do on another trip. Hope to see you in May. More details to follow in later newsletters and will probably be talked up on various repeaters.

Submitted by
Joe Meek
KD4FKT

BELATED FIELD DAY REPORT

This is an official report from your duly elected Field Day Chairman, albeit a little (!!!) late. Hopefully it will spark a little interest in Field Day, 1997, which is June 28-29, 1997.

This report will be more on how we finished in the standings and not on the problems or weather(which is always beautiful)!!

Somehow we always manage to beat the previous years score and have a good time in doing so. We finished 17th overall in the 2A category out of 570 entries. We finished 1st in the state of Virginia and 3rd in the fourth call area. Not bad for a serious Field Day group that has a very good time in doing it.

Translated, we are serious but not at the expense of having a good time. Hopefully I have sparked a little interest in this years Field Day and we are able to attract new participants, we always have room for more hams and non hams who are interested in Field Day.

Remember Field Day is the 4th FULL WEEKEND IN JUNE every year, so you have been officially notified!!! Hope to see you at the official Field Day campsite, which is between Reddish Knob and Flagpole Knob, and may actually be in West Virginia, come to think about it!

submitted by
Joe Meek,
KD4FKT

SHORTS AND BRIEFS

- The League has made it official -- The ARRL will work to keep Morse code as a requirement for

access to the high frequency amateur bands. The League's decision comes after survey results showing a majority of members favoring keeping Morse code as a requirement for HF operating privileges.

- Amateur radio licenses could get new names and licensing criteria. A committee proposal for changing the FCC's amateur licensing structure will be published in next month's QST magazine. League members will be invited to submit comments to their Directors before May 31st.
- The Commission has extended the effective date of its requirement that all operators of radio transmitters over 50 watts evaluate the field effects of the RF energy. The new effective date is September 1, 1997 for most radio services, but for the Amateur Radio Service, the effective date has been extended to January 1, 1998. However, the nations VEC's have decided to begin testing hams on the new RF exposure questions starting next July (1997).
- Ham Astronaut Jerry Linenger, KC5HBR, is now operating from the Russian Space Station MIR For those of you with Internet Web Access, <http://www-dx.deis.unibo.it/htdx/index.html> has a very nice page on the MIR Soviet Space station, including current ham radio frequencies, operating activities, real time location of the station, etc.
- During the time period February 4th through 24th, an additional German/Russian space mission is scheduled. German astronaut Dr. Reinhold Ewald together with his Russian colleagues will fly to the Russian space station MIR. During this mission, the SAFEX equipment (Space AmateurFunk EXperiment) will be used primarily to inform interested ham radio operators of actual space events taking place on MIR. Due to the severe workload of astronaut Reinhold, the QSO mode has secondary priority. Therefore, Reinhold will use the digital voice recorder of SAFEX to automatically transmit actual information about the mission. The SAFEX modes and frequencies are as follows:

Mode	Uplink	Downlink	CTCSS-Tone
Packet	435.775 MHz	437.975 MHz	none
Repeater	435.750 MHz	437.950 MHz	141.3 Hz
QSO mode	435.725 MHz	437.925 MHz	151.4 Hz

- As of 1 January, 1997, the non-SAFEX amateur operations aboard MIR began using different set of 2 meter frequencies than it had since 1 November 1996. (On 1 November it began using 145.8 MHz as both uplink and downlink for packet. For voice, 145.2 MHz was used for the downlink and 145.8 MHz for the uplink.) Now, starting 1 January, the frequencies became, 145.2 MHz for the uplink for both packet and voice and 145.80 MHz as the downlink for both modes. Only one of these modes can be switched on at a time. At present, the equipment works usually in the Repeater mode. During the upcoming mission, the QSO mode will be activated. This mode includes a digital voice recorder. The astronaut can store his recording with a recording time up to two minutes. This recording will be transmitted automatically at periodic intervals. According to the position of the MIR station, the transmissions can be received even using a handy-talkie.
- The next Space Shuttle mission carrying amateur radio is STS-83, scheduled for launch on April 3rd.
- Mike Owen, W9IP, reports that he received a catalog from the Ben Meadows Company, a big outdoors-oriented equipment supplier. They advertise the Garmin GPS-38 handheld GPS receiver for \$150.00 which is \$50 less than the next-cheapest price he'd found. Since the GPS-38 provides Maidenhead grid squares and NMEA-0183 output, some local hams might be interested in it. The telephone number for Ben Meadows is 1-800-241-6401. Their web address is <http://www.benmeadows.co>.
- The FCC says that it could be March before another call is issued under Gate 2 of the vanity call sign

program. No vanity calls dated since the end of last November have been processed because of what an FCC spokeswoman called unspecified computer related problems. According to the Gettysburg License Processing Facility, vanity applications have not been processed since last December 19th. While computer experts work to resolve the latest problems, Gettysburg personnel are continuing to hand process the pile of some 600 vanity applications that required special handling from the December 19 vanity call sign run. The FCC also is in the midst of processing several hundred refunds for earlier unsuccessful vanity filers.

- In DX, F6EXV, has received his CE3/F6EXV license to operate in Chile. He will be on the air as soon as he can get the station up and operational. Reports say that he will be there for 2 or 3 years. And PB0ALB will be in Sarawak, East Malaysia from April 19th to June 6th as 9M8CC. Activity will be on AMTOR, RTTY and SSB on 80 through 10 meters.
- The ARRL Contest Advisory Committee and the ARRL Awards Committee have clarified the rules on using repeaters to make contacts for ARRL VHF and UHF contests. Prior rules have prohibited the use of "repeaters or repeater frequencies on 2 meters for the purpose of soliciting contacts." The change removes the words "on 2 meters" from the rules, thus prohibiting the use of all repeaters and repeater frequencies regardless of band.
- You soon may need to have continuous tone coded squelch to use repeaters in the North Central United States. The new Indiana Repeater Coordinating Council is proposing that every repeater in the state switch to a CTCSS input. According to the plan, repeaters in each area of the state will have a common PL tone, something like an area code. This, according to officials, would eliminate most repeater interference and allow development of more repeaters in the state. Repeater councils in other states with crowded 2-meter frequencies are considering similar arrangements.
- Some of you may remember SIGPLOT, a computer program which used your RS-232-capable GPS receiver to create a plot of your antenna's actual reception pattern. (You simply scaled your antenna design to the 1.3 GHz frequency, connected an RS-232 GPS receiver to the antenna and the serial port of your computer, and left the program running for several hours. The GPS would continuously tell the computer the relative signal strengths of the satellites as they progressed across sky, and the program would generate an elevation plot of your antenna pattern.) Well, now, the author of SIGPLOT has posted a new SIGPLOT.ZIP which contains the BASIC program SIGPLOT.bas on the TAPR.ORG server, in the `tapr/SIG/aprssiig/files/dosstuff/APRSdos` directory This new version now plots your GPS antenna pattern in AZIMUTH as well as ELEVATION! For a good EL profile, you only need to run your GPS an hour or so. But for a good AZ plot, 12 hours is recommended so that you will have seen at least one satellite at all angles of AZ and EL For more information send email to wb4apr@amsat.org
- The FCC has released a January, 1997 version of its FACT SHEET PR5000, number 201, "Information About the Amateur Radio Service". This sheet contains a wealth of information about the service, and is intended primarily for non-hams interested in the hobby.
- Interested in orbital mechanics, the laws of physics which govern satellites and where in the sky they will be? There is a fun Web site that provides a nice visualization of Kepler's 3 laws of orbital mechanics using JAVA applets:

http://observe.ivv.nasa.gov/observe/exhibit/reference/module/orbits/orbit_sim.html

- The possibility of expanded high frequency Amateur Radio allocations after the turn of the century is included in a December 13th document released by the National Telecommunications and Information Administration. Titled High Frequency Spectrum Planning Options by the N.T.I.A., the

report lists up to nine hundred kilohertz of new or upgraded allocations that could be opened to Amateur Radio at a later date. Included is a new ham radio band from 4.945 to 4.995 MHz. Changes or additions to existing bands include making 3.5 to 3.8 MHz and exclusive worldwide Amateur Radio allocation, rearranging 40 meters to cover 6.9 to 7.2 MHz, expanded worldwide primary allocations at 10.1 to 10.35 and 14.000 to 14.400 MHz. Also included are expanded bands at 18.068 to 18.318, 24.74 to 24.89, and 28 to 30 MHz. If you want to read the report, point your web browser to: www.ntia.doc.gov

Information above from Amateur Radio Newslite, ARRL Letter, and AMSAT bulletin services.

VARA SECRETARY'S REPORT

January 8, 1997 Meeting

The VARA club meeting was held at Gavid's Restaurant in Staunton on January 8, 1997. The meeting was opened by the club president, Pat Smiley (KD4WWF), at 7:30 P.M. Present were 27 members. There were no new calls or upgrades.

Jeff Rinehart reported on Skywarn. He went over the criteria that must be met in order to be able to properly report weather conditions during an A.R.E.S. activation. Four inches of snow or more, downed electric lines, and trees that have fallen over into electric lines are legitimate happenings that should be reported. Also ice, if it has stopped traffic, should be reported.

The 50/50 winner was Bill Shott (W2ZVM). The total amount was \$25, with half going to Bill and the remaining going to the club treasury.

There was no secretary's report in last month's newsletter to be accepted.

The treasurer's report was accepted as printed in last month's newsletter. Dick Waldmuller (WB8GIF) made the motion to accept and Ray Colvin (KE4HVR) seconded.

Richard A. Thompson (N4SIH) was voted on and accepted into the club. Ken Harris (KE4GKD) made the motion to accept him in. Dick Waldmuller (WB8GIF) seconded and a majority vote finalized the acceptance of Richard as a VARA member.

Kathy's restaurant had offered VARA their back room in their Verona restaurant. The club unanimously voted to not accept the offer and continue their meetings from their newly acquired restaurant, Gavid's.

Some discussion was made concerning the taping of the meetings. Joe Archambeault (N4TRH) made the motion for the club to purchase a tape recorder and Dick Waldmuller (WB8GIF) seconded. A majority vote decided that the club would purchase one. Ken Harris (KE4GKD) was appointed to the task of finding a tape recorder of reasonable quality that could be used for taping the meetings.

The club's by-laws state that if dues are not paid by the end of the March meeting, then those members, that have not paid, will lose club membership and the newsletter. At that point, candidates will have to pay their dues and wait to be voted in as new members in order to rejoin the club. Also, they would start getting a newsletter again, once they have been voted in.

Next club meeting, the "hat" will be passed around for the flower fund. Bill Jordan's (KE4LKS), father

passed away and the club had sent flowers.

There was a motion to adjourn the meeting by Dick Waldmuller (WB8GIF). The motion was seconded by Bob Osterloh (N4ICT) and the meeting was closed at 7:49 P.M.

Submitted By:
Douglas S. Zirk (KE4RMD)
VARA Secretary

The January meeting of the MARA was held on the air due to weather; no minutes were provided.

End of this month's issue.

MASSANUTTEN ARA

President: David Tanks, AD4TJ
Vice-President: Walt Lam, KF4BFB
Secretary: Wilton Thomas, KF4BFL
Treasurer: Richard Weaver, W3HXH
Board (exp 97): Bill Edmundson, W4IMS
Board (exp 98): Sandy Mullins, KE4PZC

THE VALLEY ARA

President: Pat Smiley, KD4WWF
Vice-President: Kenny Harris, KE4GKD
Secretary: Doug Zirk, KE4RMD
Treasurer: Charlie Garner, WA4ITY

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by David R. Fordham, KD9LA*

*It does not necessarily contain all information
which appeared in the paper copy.*
