

## A word about



## Amateur TV

By K1MNW

Just thought I would pass along some information about Amateur Television for those who are not familiar with it.

So what is Amateur Fast Scan Television? ATV is a mode available to technician class and higher amateur radio operators. Hams transmit and receive TV signals using the same NTSC standard that commercial broadcast stations use.

**Q.** What frequencies are available for ATV?

**A.** All bands from 70cm and up have allocations for ATV operation. The most popular band is 70cm, where there are 4 channel allocations. 439.25 MHz is the national DX frequency and is also where most folks operate. The 33cm and 23cm bands have also gained popularity, with some of us operating as high as 10 GHz.

**Q.** How can I find out if there is ATV activity in my area?

**A.** One way is to tune your 2-meter radio to the national calling and talkback frequency of 144.34 MHz. This is where

the majority of ATV'ers coordinate their contacts and stay in contact with each other. Don't be surprised if you here someone talking to themselves. When a person transmits on TV, his audio will also be broadcast through the TV signal, and the persons watching will use the 2-meter band to talk back to them. Jump in let them know you are interested. You will find ATV'ers to be very friendly and always willing to help others get involved.

Another way is to check your repeater directory and see if there is an ATV repeater located in your area. Although most folks operate simplex, many metropolitan areas also have repeaters for re-transmitting the TV signal.

**Q.** What is needed to receive an ATV signal?

**A.** Just about everyone has 1/3 of the equipment needed to receive, and that is a television set. Next you need a 70cm antenna and feedline and a downconverter.

The downconverter is a device, which takes the 70cm signal, amplifies it, and then outputs in on TV channel 3 to be received on your television set. Downconverters generally cost around \$90. Actually, you can receive an ATV signal without a downconverter. Since two of our frequencies in the 70cm band are also used in cable television, any cable ready TV or VCR can be used to receive the signal. 439.25 MHz is cable channel 60 and 421.25 MHz,

(used by most repeaters), is cable channel 57. Keep in mind though that some TV's and VCR's do not have very sensitive receivers and will only work best when close to the transmitting station, but it is an inexpensive way to get your feet wet. A TV pre-amp (avail. Radio Shack or WalMart) can be placed between the antenna and TV or VCR to soup things up a bit.

What type of antenna is needed for ATV operation? Transmitting and receiving a television signal is quite a bit different than receiving your local FM repeater. A television signal is 6 MHz wide, so there is a wide bandwidth of noise to deal with. The number one mistake that most folks make when setting up an ATV station is using an antenna without enough gain and using feedline with too much loss. A directional antenna is a must and should exhibit at least 12 DBd of gain, although most use yagi's with gains of 15 DBd or more. It must also be able to operate at the frequencies used for ATV. Proper feedline is the most important area to put your money for this mode. Let's face it, most of us hate to purchase feedline. It does not light up or have any knobs to turn, but for a wideband mode like ATV it is a critical link in the station. Low loss cables such as Belden 9913, LMR-400 and LMR-600 are recommended. 1/2" heliax or hardline is even better. Believe me, it will be money well spent and will save you money in the

long run. If you start with an antenna without enough gain or lossy feedline, you will just end up buying all over again. That being said, don't be afraid to experiment with what you have on hand, just be aware that your FM antenna with the RG8 coax that will hit FM repeaters 40 miles away will not work near that well on ATV. One of the best performing antennas around is the FO22 sold by C3I. It has the most gain for its length available and is manufactured for ATV frequencies. It was painstakingly designed by the world-renowned moonbouncer K1FO. It is one of the best I have ever used or tested on the antenna range.

It is also important to find out what antenna polarization is being used in your area. In the Midwest, all of our simplex operation is done via horizontal polarization.

**Q.** What is needed to transmit ATV?

**A.** Most of us own equipment to generate the NTSC video signal. Camcorders, VCR's, Computers and many other devices will output a video signal. Next you need a transmitter which will properly transmit that signal. The transmitter also includes a 4.5 MHz subcarrier unit in which the audio signal is superimposed on the TV signal to be received by the TV set. These transmitters are available commercially, or you may elect to build your own. Some units are transceivers containing the receiver and transmitter together. Most transmitters have an output power of 10 watts. Amplifiers are also available for higher output power. It's probably best to start

with a downconverter and do some receiving. This will allow you to see if ATV interests you. Most folks either love it or could care less.

**Q.** Can DX be worked on ATV?

**A.** Absolutely, although it's hardly an everyday occurrence, the same conditions that allow band openings on 70cm apply to ATV as well. It is some of the most exciting and challenging DX to work. Stations can be worked as far as 500 miles when conditions are right.

I realize that this post does not answer all of the questions, but hopefully it will be enough information to entice some of you to check it out. I have operated many modes and almost all of the bands, but ATV is one of the most fun and challenging I have ever encountered. I have also made a lot of friends through ATV. It is totally different from anything else. Checkout what is happening in your area and give it a look-see. **73 Bill**

**Editors footnote:** *During the second week of October, Donnie, WD1F in Phippsburg and Bill, K1MNW on Oak Hill had several hours of 2-way ATV QSOs on 439.25 MHz including TV sub-band voice communications. Solid P5 video and sufficient signal for good TV sub-band voice communications were exchanged. Bill has been leaving his 10-watt station up most of the time with a test pattern so folks can try to see it. Bruce, W1ZE*

## September 25th, MEETING MINUTES

By Abe, KC1W

### Call to Order:

The September Meeting of the Merry Meeting Amateur Radio Association was called to order at 7:34pm by our President Donnie/WD1F.

Best wishes to John/K1JJS, who underwent emergency surgery for a blocked carotid artery on Saturday, September 13<sup>th</sup>. John is home recovering and doing very well.

### Attendees:

MARA Members:

Abe/KC1W,	Donnie/WD1F,
Mark/N1JIM,	Bob/N1GWE,
Paul/N1ZYB,	Linda/N1ZYC,
Gay/N1XBN,	Bob/N1VVF,
Bruce/W1ZE,	Peter/K1MJP,
Bill/K1MNW,	Brian/AA1WI.

### Treasurer's Report:

Bob/N1GWE reports our current balance is \$1097.00, less checks of \$40.00 to K1JJS for coax and \$25.00 to K1MJP for crystals for the new .21 repeater.

### Technical Committee:

Donnie, Bill and Bruce recently took down the 21 repeater's Station Master Antenna due to a high SWR and found the white foam rubber spacers had become waterlogged due to a leak. The antenna seams were calked and allowed to dry out. It will be back up on the tower as soon as possible.

Peter and Bruce have been looking at an updated controller for the 21 repeater. The NHRC-10 advanced controller is state of the art and will allow several new features on the machine, such as voice mail, voice IDs and others. Peter passed out the technical specs for the new controller and after a brief discussion

Donnie/WD1F made a motion, seconded by Bob/N1GWE for the purchase of the new controller and rack mount cabinet. The cost would be \$538.00 plus shipping. The motion was amended by Bruce/W1ZE and seconded by Donnie/WD1F to add the optional 8-channel digital output board for an additional \$59.00. This brought the total to approx \$597.00 plus shipping. The motion, as amended, passed unanimously. Once the new controller is received and installed the controller currently on the 21 machine would replace the 15 year old controller on the 440/1200 machines.

Peter/K1MJP reported that the crystals for the Aerotron transmitter that will upgrade the 21 machine have been ordered and are expected in 2 to 3 weeks. The Aerotrons will provide more power for the 21 machine and we will have back up equipment in case of any problems.

Donnie/WD1F gave a quick report on the APRS/Packet node. Both are working great, connections through the node make it possible to get up into Canada, although there isn't much activity currently. The question of moving the node to Oak Hill is still pending.

Bruce/W1ZE finished up for the technical committee by reporting that the frequency coordination for all three MARA repeaters had been completed with Louis Collins/W1GXT of the New England Spectrum Management Council.

#### Activities:

Lee/N1HOC was not able to attend the meeting. Bruce/W1ZE did report the Tour de Farms on September 14<sup>th</sup> was a great success and the

organizers were very happy with the professionalism displayed by the MARA members supporting the event.

Brian/AA1WI reminded us the next event would be an exam session in Bath on October 11<sup>th</sup> AT THE Patton Free Library in Bath.

#### Old Business:

A MARA sponsored Ham Fest. Annette/KB1HNU was not able to attend the meeting, but did send an email stating she had spoken with Steve Hanks and he had recommended she speak with the organizers of Hoss Traders Ham Fest to get some ideas of how to start. A short discussion followed regarding possible sites, other than Oak Hill, including the MARA Field Day Site, and Topsham Fair Grounds. There will be more regarding this possibility at future meetings.

#### New Business:

Local Interference Committee. Following the presentation at last months meeting the idea of an official MARA LIC has been discussed by the technical committee. Bruce/W1ZE made a motion, seconded by Bob/N1GWE for the establishment of a MARA LIC to operate within the MARA technical committee. A brief discussion followed on the benefits to local hams and the motion passed unanimously.

Mark/N1JIM reported email reminders would be going out to remind members it's time for to renew MARA membership. Mark further stated there are currently about 45 paid association members.

#### Program:

Bill/K1MNW then treated the membership to an update on what's going on with Amateur Television (ATV). Bill provided

some interesting historical information and photos, including one of his 1970s vacuum tube ATV station. Bill is working on an ATV repeater that will transmit on cable channel 60, more to come on this via email when it's up and running.

A kit for a 2W ATV transmitter is available and Bill provided information from North Country Radio, the kit supplier. Bruce has volunteered the MARA technical committee's assistance to anyone who would like to purchase the kit and needs a little help assembling it and getting it on the air.

Donnie/WD1F also passed around an ATV transmitter he had built and the session ended with Peter passing on some gruesome tales of not-so-bright individuals and their mishaps with microwaves he found on a web site for the Darwin Awards.

#### Next Meeting:

Will be Thursday October 30<sup>th</sup>, 7:30pm at the West Bath Fire House.

#### Adjournment:

At 8:40pm Bruce/W1ZE made a motion, seconded by Bob/N1VVF to adjourn the meeting.

## **Tech Committee Report**

As reported earlier Bill, K1MNW finished his ATV transmitter and amplifier kits and has them on the air from his house on Oak Hill. He has established excellent 2-way video/audio QSOs with Donnie, WD1F in Phippsburg. Bill is busy gathering the hardware and data to build a 70-cM ATV repeater with a 4CX250x2 high power amplifier. (cont.)

On October 9<sup>th</sup> the new NHRC-10 controller arrived and inspected by Bruce, W1ZE. Pete, K1MJP is in the process of making up the interconnecting cables to connect to the repeater transmitter and receiver. It's technical manual has been distributed to the control OP's and technical committee so they can read it and get familiar with the 130+ page document. Plans are to get the tech committee and control OP's together so they can all get familiar with it's operation. As soon as that is accomplished it will be placed into service on the 147.21 repeater. With the new repeater controller, that gives us the chance to cross-link to 6M simplex or other bands. Discussion on wither to provide 6M access from 444.4 or 147.21 is still a topic on discussion. If 6M (52.525) is cross linked to 2M it can only be turned on or off by a control Operator from the 70cM control frequency, because the rules state that control of a remote base must be done on frequencies above 222 MHz. This would not be a problem on the 444.4 repeater and the user could turn on or off the 6-meter link.

On Saturday, October 11<sup>th</sup> Donnie, Bruce and Bill did repeater antenna work on Oak Hill. The repaired 2 meter Super Stationmaster was reinstalled and is now back in service on the 147.21 repeater. At the same time Donnie donned the climbing belt and went up the old commercial tower and removed the old BRUNS packet node antenna and associated hard line. It appears that the 2-meter BRUNS antenna has seen

better days with the N connector broken away from the antenna.

The Technical committee has decided to move the 145.01 TelPac and packet node from Donnie's QTH in Phippsburg to Oak Hill and join the APRS node and KS1R repeaters. This should improve coverage in southern and central Maine and free-up tower space on Donnie's tower. A PC has been located for Internet access and node control.

## **Bath VE Session has light turnout**

Your VE team headed by Wes, N1WC and supported of Brian AA1WI, Bruce W1ZE held a VE session at the Patton Free Library in Bath on October 11<sup>th</sup>. Only two folks showed up to take exams, but both were successful and passed their element-2 Technician tests.

### **FCC INVITES COMMENTS ON MORSE CODE-RELATED PETITIONS**

The FCC has sounded the bell to begin Round 2 of the Morse code debate by inviting public comment on another group of seven Morse-related petitions for rulemaking. The FCC put the petitions on public notice October 8, and comments are due by November 7. Members of the amateur community may make their opinions known on any or all of these filings using the FCC's Electronic Comment Filing System (ECFS) <<http://www.fcc.gov/cgb/ecfs/>>. The petitions are RM-10805 through RM-10811. To summarize:

Charles L. Young Jr., AG4YO, asks the FCC to delete the 5 WPM Morse code test (Element 1) for Technician-plus-Element 1 privileges (formerly "Tech Plus"). Designated RM-10805, his petition would retain Element 1 as an examination requirement for General and Amateur Extra applicants and give Technicians limited HF SSB privileges.

\* Describing CW as "the purest, most accurate, efficient, reliable and economical form of radio communications ever devised," Frank Napurano, K2OKA, requests that the FCC retain the 5 WPM Morse requirement "in the interest of public safety, the preservation of a radio art and as a tribute of support for a prized and respected avocation." The FCC designated his filing as RM-10806.

\* A petition by Robert G. Rightsell, AE4FA and Harry A.M. Kholer, N0PU, designated RM-10807, would continue Morse testing but give applicants up to 24 points of exam credit according to their success on Element 1. The final exam score would be the sum of earned Element 1 points and the written test score for a possible total of 100 points. Their petition also calls on the FCC to consolidate the Novice and Technician and the Advanced and Amateur Extra licenses, boost the number and range of written test questions and give new Technicians CW and data privileges.

\* Joseph Speroni, AH0A, seeks to have the FCC delete Element 1 for applicants who want to operate phone on HF but retain Element 1 at 5 WPM for applicants who want to operate

CW. Designated RM-10808, his petition would restructure the Amateur Radio testing regime to require specific knowledge of "RTTY, data, image, spread spectrum, pulse/test, RACES /ARES and space communications only for those wishing to operate these modes." Under Speroni's plan, applicants would be under no obligation to pass mode-specific examination elements for mode privileges they don't wish to operate.

\* The Puerto Rico Amateur Radio League (PRARL) asks the FCC to delete Element 1 for Technician and General classes but to increase the rigor of the written elements for those two license classes. The PRARL would keep the 5-WPM Morse exam for Extra applicants. The PRARL also would eliminate same-session retesting and require 30 days between retakes. The petition is designated RM-10809.

\*James Roux, W4YA, proposes in his petition, designated RM-10810, that the FCC cut the number of license classes to two--General and Amateur Extra--and the number of written examination elements to one--at the General level. Roux's petition would eliminate the 5 WPM Morse code exam for General but require Extra applicants to pass a 15 WPM test. Roux also would give Generals all currently available amateur privileges except the Extra-class CW subbands.

\*A petition filed on behalf of FISTS CW Club <http://www.fists.org> would delete the requirement to pass Element 1 to obtain Technician plus Element 1 (ie, "Tech Plus")

HF privileges. Designated RM-10811, it would merge Tech and Tech Plus into a single class, emphasize technical content, including digital modes, on written examinations and extend digital mode privileges within Novice/Tech Plus subbands. It would not provide additional HF phone privileges for Technicians. However, the FISTS petition would retain a 5 WPM Morse exam for General applicants and raise the Morse exam to 12 WPM for Amateur Extra applicants while increasing the technical level on written examinations for both classes.

The FISTS CW Club petition had attracted more than 230 comments by week's end. In all, the FCC had recorded a total of approximately 500 comments on the seven petitions as of October 10.

Interested parties may file comments on any or all of these petitions using the FCC's Electronic Comment Filing System (ECFS) <http://www.fcc.gov/cgb/ecfs/>, which also permits users to view all comments on file.

To file a comment, click on "Submit a Filing" under "ECFS Main Links." In the "Proceeding" field, type the full RM number and complete the required fields. "RM" must be in capital letters, and you must include the hyphen between "RM" and the five-digit number. You may type your remarks into a form or attach a file. ECFS also accepts comments in active proceedings via e-mail, per instructions on the ECFS page.

To view filed comments, click on "Search for Filed Comments" under "ECFS Main Links" and

type in the complete RM number, including the hyphen, in the "Proceeding" field. "RM" must be in capitpol letters.

## Sagadahoc & Cumberland County EC & AECs meet at Cook's Corner

By N1HOC

The Cumberland and Sagadahoc County ARES meeting was held at the Cook's Corner Denny's on October 14th. over breakfast.

Attendees: Southern ME EC BryceRumery/K1GAX, Sag. County EC Alan Kuong /WA1SCS, Sag. County AECs Bruce Randall/W1ZE and Lee Tribou/N1HOC.

Topics discussed:

\* *Getting a group together to take the CERT course. We will call Steve Hanks of the Growstown Repeater and asking them to join in, not only the class but the ARES group as well. Lee will call them.*

\* *Offering the Emergency Communications Class for those who want to take it and not want to take it on-line.*

\* *Checking the status of the MidCoast Chapter of the Red Cross in their licensing process. Finding out how many have already taken the test.*

\* *Lee will call the hospitals and see how they stand in regards to 2-meter operations.*

\* *Asking the MARA if they would like to change the meeting place to MidCoast Hospital.*

\* *Alan and Bryce discussed sending in a SET report to headquarters.*

Sagadahoc & Cumberland Counties ARES hopes that you all will get certified, get involved and help develop an effective ARES group here on the mid coast.

73, Lee

## **Midcoast Hospital asks MARA for Help**

MidCoast Hospital, via DR Allen Kuong, WA1SCS as asked the MARA for help setting up a ham radio station at the hospital to add another communications capabilities in the case of an emergency. The station should be able to communicate on the HF (80-10M) VHF (2M FM & Packet) and UHF (70cM FM). It is hoped that the MARA and area ARES folks would man the station during Simulated Emergency Tests (SET) and real emergencies.

Bruce/W1ZE has volunteered to provide guidance and technical input in setting up the station. He would appreciate the assistance of other MARA members in this project. Feel free to contact him at 442-9630 or W1ZE@arrl.net.



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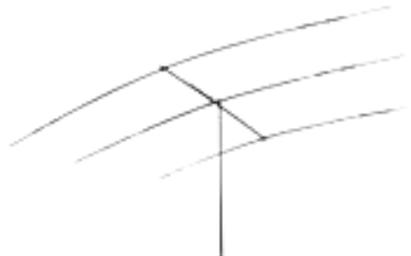
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**For the above items  
contact Bruce, W1ZE at  
442-9630 or W1ZE@arrl.net**

## **Maine Ham Examination Schedule**

**By W1JTH, ARRL Bulletin  
Manager, Maine Section**

The following shows Maine  
Ham Exams list for the  
remainder of 2003

### **November**

**15 Sat 9:00a So. Portland,**  
American Legion Post #35,  
413 Broadway, WZ1N/ARRL  
John Bergeron 207-799-368

**15 Sat 9:00a Bangor,**  
PSARC clubhouse 14 Bomarc  
Road K1AG/ARRL Bill  
Sullivan 207-947-4051

### **December**

**1 Sat 10:00a Bath, Patten**  
Free Library N1WC/ARRL  
Wes Clements 207-729-8563

## **Three MARA BoD slots to be filled in November**

The Board of  
Directors positions  
held by Bob McQueeney  
/N1VVF, Bob Watson/  
N1GWE and Loren  
Dudley/W1WHD need to  
be filled by vote in  
November. Hopefully  
the present position  
holders will place  
their names back into  
consideration. Loren  
no longer wished to  
be involved so we do  
need new blood on the  
board of directors.

Please think about  
placing your name  
into consideration.