

Amateur Television Journal

February, 2026
issue #201

BATVC web site: www.kh6htv.com

ATN web site: www.atn-tv.com



Jim Andrews, KH6HTV, editor - kh6htv@arrl.net www.kh6htv.com



1979 -- BCARES mobile Communications Van



Photos from inside the van. Note the TV receiver on the shelf. We actually were doing ATV for ARES way back in 1979. We also had our own ATV repeater then. It was on Lee Hill with great coverage over much of the county.

BCARES Annual Meeting

On Jan. 19th, the Boulder, Colorado Amateur Radio Emergency Services, (BCARES) held their annual meeting. The meeting was held in the meeting room at the Sheriff's dept. headquarters building in Boulder. The meeting was chaired by E.C. Allen Bishop, K0ARK. Out of BCARES 48 members, 22 were present in person and 3 participated via google meet. There were also four guests from our served public safety agencies.



Allen started off the meeting with a demonstration of some of the BCARES video gear including Unibiquit 5.8 GHz microwave link, video pack sets, and new 70cm DATV repeater. Allen reviewed the history and Mission of BCARES, noting it was incorporated 47 years ago.

Allen then talked about the events of the past year. They were mainly training events. BCARES was activated for three days in December for the major electrical power outage caused by Xcel Energy shutting off power for much of the county due to high winds.

Allen then discussed plans for the coming year. They include spending more of the recent \$30K grant from Boulder County to enhance our communication networks in the county. BCARES recently purchased two new 70cm ATV repeaters, but has yet to pin down specific sites for them. Sites being considered are in Boulder, Lafayette (south-east county) and Lyons (north-east county including Longmont). He is still negotiating with govt. agencies for sites. He is on a push to try to talk up ATV to other ARES groups in Colorado. Other plans are to expand MERN north and south, and increase cooperation with FMRS network.



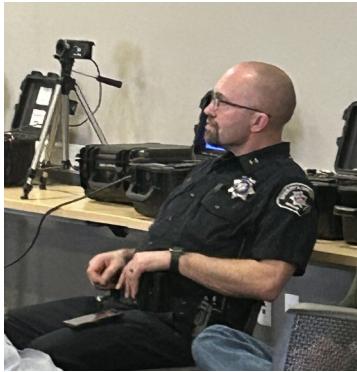
E.C. Allen, K0ARK



Cmdr. Nick Goldberger - BCSO (on left)
& Deputy Chief Hartkopp - BPD (center)

Allen introduced our public safety guests and gave them all an opportunity to talk also.

From our primary served agency, the Boulder Sheriff, we had commanders Jason Oehlkers (operations) and Nick Goldberger (emergency services). They both expressed appreciation for all the past work of BCARES and looked forward to continuing it in the future. Both Nick and Jason also recognized Allen, K0ARK, Mark, K0LRS, and Jim, KH6HTV, for their past service with the Sheriff's SWAT team, of which Nick and Jason had also been members.



Cmdr. Jason Oehlkers - BCSO



Deputy Chief B. Hartkopp,
BPD



Director Mike Chard - ODM
ODM



Perry Lundquist, W6AUN,
CO-ARES EC

The City of Boulder Police Dept. was represented by Deputy Chief B. Hartkopp. He recognized that the city has not used BCARES for a very long time now, but hopes to change that relationship in the future with more cooperation. He noted the coming of Sundance Film Festival to Boulder starting next January (2027). The Boulder Bolder and Boulder Marathon races continue to be increasingly attractive

as areas to use BCARES. Allen mentioned that he was hoping to find a home for one of the new TV repeaters on the Boulder PD radio tower on East Arapahoe. Chief Hartkopp said he would see what he could do to expedite that process.

Director Mike Chard of the City and County of Boulder Office of Disaster Management also expressed thanks for the support of BCARES. He noted that with only five ODM staff, BCARES members are a plus in the team. Among the specific needs he discussed were the following:

The advent of planned power outages (PSPS) has opened up a whole area of needs.

Loss of 911 centers can call for increased community connectivity, especially in the mountain areas.

His main message and request for action from BCARES was an enhancement to the Mountairn Emergency Radio Network (MERN). MERN was started by BCARES, Sheriff & OEM 15 years ago after the 2010 Four Mile fire. It was a 2 meter FM voice radio network with repeaters for the residents in the mountains of western Boulder County. Allen said that both Gilpin and Clear Creek counties now want to join MERN. Mike said the biggest issue is the last link for mountain residents to actually be able to connect into the 911 center. When there is not a disaster with the EOC activated and a BCARES ham sitting in the EOC at a MERN radio, there is no one really out there 24/7 monitoring MERN with access to 911.

Perry Lundquist, W6AUN, is the E.C. for the state of Colorado ARES. Perry discussed the national and state ARES organization. He emphasized the need to attract younger hams into our graying ARES organizations. He also discussed the continuing need of maintaining relevancy and to adapt our communication skills and equipment to embrace new emerging technologies. He was thrilled with the Boulder BCARES use of ATV and hopes we can get the message out to other Colorado ARES groups.

After a short break -- Allen reconvened the meeting to transact needed business. It included Bill, AB0MY, giving a treasurer's report. The bulk of our assets are unspent funds from the county's \$30K grant. Allen then turned over the meeting to Bill, AB0MY, to conduct elections for two directors for the board of directors, plus two alternates. The new board members are Steve Markman, K0SPM (2yr) and Don Lewis, AB0MY (1yr) with Rick Meyers, KK0COP, and Mike Delesma as alternates. The meeting was adjourned at 8:30pm.

It is OK to say "NO"

(an editorial, by Jim, KH6HTV)

A recent incident in a BCARES operation brings up this topic. It occurred during the December, 2025 severe wind storm and attendant Xcel Energy's shut-down of electrical power grid for much of Boulder County. On the first day of the storm, a TV crew of BCARES members were tasked to take a video camera and transmitter out to a high point to monitor for potential outbreaks of either forest or prairie fires. They initially tried NCAR's parking lot, but found the wind to be way much too strong. They ended up at Panorama Point on Flagstaff mountain. After a struggle, they were able to set up and secure their TV camera and Yagi antenna. They then retreated to the sanctuary of their car.

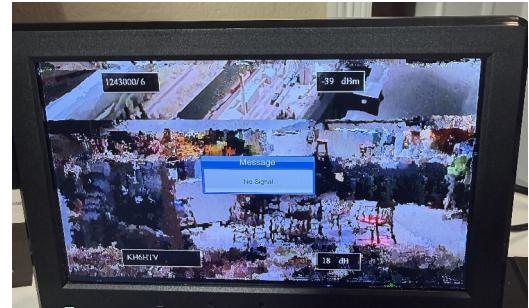
So what happened next ? --- The winds were so severe that their car was violently sand-blasted resulting in many thousands of dollars damage to the car's finish and destroying the windows. As a result, no one was asked to go out in the strong winds the next couple of days of the storm. BCARES instead relied upon video images of the Front Range of the Rockies provided by a TV camera inside of KH6HTV's home. These images were displayed on a large screen monitor in the Boulder EOC.

We all need to remember that we are unpaid Volunteers in our local ARES groups. Being volunteers, we are not expected to risk life, nor limb, nor suffer financial loss. Our motto needs to be "**Safety First**". So it is really OK to occasionally say "NO" when we are given an ARES assignment, if we feel it violates this principle.

73 de Jim, KH6HTV

New Gung-Ho ATVer

At the recent BCARES meeting a new member, and new to Colorado, Joe Dempster, K2EVK, was excited to find out about ATV. He asked Jim, KH6HTV, a lot of questions about Jim's ATV display at the meeting. He later visited Jim's ham shack for a live demo with our weekly ATV net. Jim sent him home with a BATVC loaner DVB-T receiver



to try out at his home QTH in Longmont. A couple of days later, Joe called Jim and asked for a test signal from the W0BTM repeater. Bingo ! Joe reports that he is just at digital threshold for receiving the signal from the repeater 29 km away in Boulder. The above photo documents what Joe saw.

Now with some encouragement and technical improvements to his antenna system, etc. we hope to soon see Joe's smiling face come over our W0BTM TV repeater !

VERSATUNE UPDATE:

As many of you know, we were working on the design of a completely self-contained DVB-T / DVB-S receiver for DATV use. However, the progress has come to an abrupt halt. We finally developed software free enough from bugs to release the design for production but after I went through a parts availability and cost edit, I found that the tuner we need is obsolete and all parts have been liquidated. There are no parts available from them and no alternate sources found. With that information we declared the project dead.

It's too bad the tuner vendor did not tell us that they were obsoleting their tuner without any chance of a last time buy opportunity. We found they stopped production and liquidated all parts almost 2 years ago without any notification to anybody. (It's sure good I found out about this before I purchased production parts!!!!). I tried to contact the tuner vendor to see if they had any paper documentation left

hoping that if they did, they would at least send me a copy of the printed circuit board in it. If I had a Gerber file of the board, I could replicate the complete tuner because all parts are still available from their manufacturer. There is no proprietary information here as the tuner is obsolete. They didn't even reply to multiple Emails sent to them.

Well, what to do now? I have a couple of irons in the fire which look promising. More info later. Check with me at Hamvention coming up in May. We may have information at the ATN booth 1003-1004 and also at the ATV Forum on Hamvention Saturday. I'll keep you posted....

73 de Art Towslee, WA8RMC, Westerville, Ohio

(reprinted with permission from *ATCO Newsletter*, vol. 43, no. 1, Jan. 2026)

VIEWERS CAN'T DISCERN 4K,8K RESOLUTION

Researchers in the U.K. have confirmed what many in the broadcast industry have known for years: most viewers have trouble detecting 8K—or even 4K—video resolution.

According to the researchers at the University of Cambridge and Meta Reality Labs, the human eye has a resolution limit: in other words, there are only so many pixels the eye can see. Above this limit, a screen is giving our eyes more information than they can detect. To calculate the resolution limit, the researchers conducted a study that measured participants' ability to detect specific features in color and greyscale images on a screen, whether looking at the images straight on or through their peripheral vision, and when the screen was close to them or further away.

The precise resolution limit depends on a number of variables, including the size of the screen, the darkness of the room, and the distance between the viewer and the screen. However, for an average-size U.K. living room, with 2.5 meters (~8 feet) between the TV and the sofa, a 44-inch 4K or 8K TV would not provide any additional benefit over a lower resolution Quad HD (QHD) TV of the same size. (for the complete article with URL links, see *ATCO Newsletter*, Jan. 2026 issue, or *TV Tech magazine* Oct. 2025)

Belgium ATV Repeater Adds 6 Meters

The further development of our new, ON0TVO, HD ATV repeater has again made significant progress.

6m input: The 51.7MHz input is now an established feature, and several OMs have already used it. At a distance of about 20 km, despite the small Halo antenna currently in use for RX, I only need 200 mWatts or +23 dBm to produce a perfect picture. The beautiful design with bandpass



filter, preamplification, and double upconversion that Guido ON1AFB custom-made for us is now working perfectly, and the problem of relatively long lock times has already been resolved by Kenneth ON5KR with a perfectly working RYDE receiver, which can automatically receive SR of both 125 and 250 kph for both DVB-S and DVB-S2.

In the meantime, I've made and tested a "full-wave horizontal loop antenna" for this entrance. According to calculations, it should provide an improvement of at least 6 dB. Lifting this antenna onto the roof won't be easy, as its size means it will have to be done with a cord along the outside of the building.

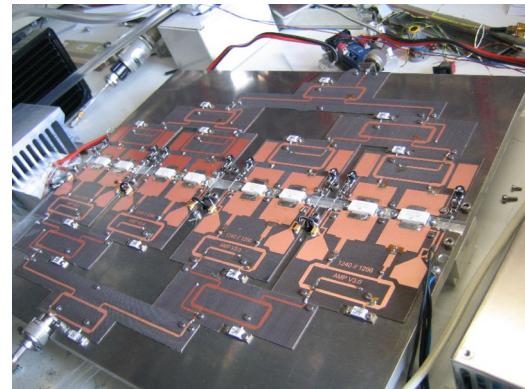
The antenna is roughly rectangular, with the feed on one of its narrow sides, to achieve an impedance of approximately 50 ohms. Therefore, it will not be perfectly omnidirectional for the radiation pattern. The conductor is a thick, solid copper wire with an 8mm diameter to achieve low ohm resistance, a wider bandwidth, and a slightly lower feed impedance. The structure is reinforced with Perspex tubing, 5cm in diameter and 0.5cm thick.

73 de Frans Van De Velde, ON4VVV, Massemen-Wetteren, Belgium

PE1RKI -- new ATV Supplier

From Frans, we have learned of another ATV supplier of quality equipment for our hobby. Check out PE1RKI, B. Modderman's web site, www.pe1rki.com He is in Heerenveen, Netherlands.

For RF power amplifiers, he offers for sale amps for 70cm, 23cm, 13cm, and 3cm bands. He offers some really high power amps such as the 500 Watt one shown in this photo.



500 Watt !, 1296 MHz Amplifier

He also offers both a pre-amp and down-converter for 23cm band. Also included are filters for 2m, 70cm, 23cm, 13cm, 9cm and 6cm bands. Plus slot antennas for 3cm band.

A Milli-Meter, Micro-Wave Challenge to NOYE, K0RZ, & Others

Check out the latest Jan/Feb. 2026 issue of the ARRL's QEX magazine for this exciting new project.



The Top Band (1 mm) Is Within Reach: 241 – 250 GHz Transverter

A 241 – 250 GHz transverter built around Indie's TRA_240_091 RFIC eliminates high-order multipliers, uses a 2 meter IF and PLL lock, and enables full-duplex FM and CW operation.

This **250 GHz !!!** transceiver was built by a down-under Aussie who has dedicated his ham career to the noise bleed high frequencies. Check out VK3CV, Andrew Anderson's bio. on www.qrz.com

Andy built his new rig around a new, \$600, fantastic IC from Indie Semiconductor. (TRA-240-091). Their block diagram of the chip shows it contains almost everything you need for a complete transceiver.

For the full details, read the complete article in QEX.

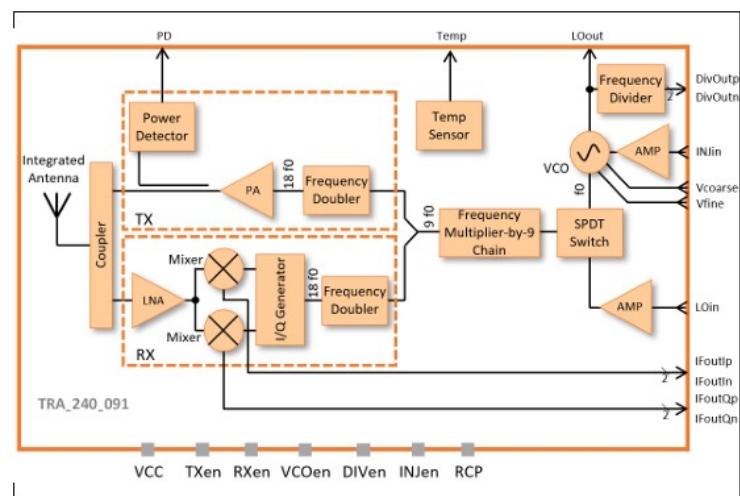


Figure 1 Block Diagram TRA_240_091

CALL FOR FEEDBACK: Reviving the Columbus, Ohio ATCO Repeater Bulletin Board.

A few years ago the ATCO ATV/DATV repeater in Columbus, Ohio had a popular manual "slide show" bulletin board feature. A fellow Ham dedicated his time to create JPEG slides and transmit them to the repeater via 23 cm DVB-S. The repeater would then turn on every 1/2 hour to display it for about 5 minutes. Since the Ham is now a silent key, his home computer and logic are sitting idle. - but I'd like to bring it back with a modern, automated twist.

Proposal: I am proposing a new, automated, and interactive bulletin board feature for the repeater. Rather than manual RF uploads, I plan to add a Raspberry Pi computer at the repeater site connected to our existing MESH system there. Then, anyone with MESH capabilities will be able to upload their favorite topic to it. The Raspberry Pi and associated hardware and software at the repeater is all that is needed.

How to Help: I don't want to build this if it will not be used - I want it to be a feature the whole group interacts with. If the proposal is adopted, I may be looking for a good software person to help. Then, other groups could use it too. But first, I ask if anybody will use it? What features should it have? I have a few suggestions but there may be many more unknown potential ones, so I seek help for suggestions. Let me know if you think is it a "GO" or should I "Trash the proposal" I am just looking for ideas so I am all ears.

Below are some ideas I have, good or bad. All suggestions are appreciated.

- Details of current projects, workbench activity
- Ham related jokes
- Clever call sign creations
- Original test pattern displays
- Upcoming Hamfest schedules
- FCC announcements
- New band openings
- New and current contact distance records
- Weather related info

You can post suggestions to Jim's Newsletter or contact me directly or both. I'm available at Email art.towslee@gmail.com or text at 614-580-4793.

73 de Art Towslee, WA8RMC, ATCO, Columbus, Ohio

W0BTW Details: **Inputs:** 23 cm Primary (CCARC co-ordinated) + 70 cm & 3 cm secondary all digital using European Broadcast TV standard, DVB-T with standard 6 MHz wide TV channels. Frequencies listed are the center frequency of the TV channel.

23 cm = 1243 MHz (primary), 70 cm = 441 MHz & 3 cm = 10.380 GHz

Outputs: 70 cm Primary (CCARC co-ordinated), Channel 57 -- 423 MHz with 6 MHz BW, DVB-T Also, secondary analog, NTSC, FM-TV output on 5.905 GHz (24/7 microwave beacon).

Operational details in AN-51d Technical details in AN-53d. Available at: <https://kh6htv.com/application-notes/>

W0BTW ATV Net: We hold a social ATV net on Thursday afternoon at 3 pm local Mountain time (22:00 UTC). The net typically runs for 1 to 1 1/2 hours. ATV nets are streamed live using the British Amateur TV Club's server, via: <https://batc.org.uk/live/> Select **ab0my or n0ye**. We use the Boulder ARES (BCARES) 2 meter FM voice repeater for intercom. 146.760 MHz (-600 kHz, 100 Hz PL tone required to access).

Newsletter Details: This newsletter was started in 2018 and originally published under the title "*Boulder Amateur Television Club - TV Repeater's REPEATER*" Starting with issue #166, July, 2024, we have changed the title to "*Amateur Television Journal*." This reflects the fact that it has grown from being simply a local club's newsletter to become the "de-facto" ATV newsletter for the USA and overseas hams. This is a free ATV newsletter distributed electronically via e-mail to ATV hams. The distribution list has now grown to over 800+, both in the USA and overseas. News and articles from other ATV groups are welcomed. Permission is granted to re-distribute it and also to re-print articles, as long as you acknowledge the source. All past issues are archived at: <https://kh6htv.com/newsletter/>

ATV HAM ADS -- *Free advertising space is offered here to ATV hams, ham clubs or ARES groups. List here amateur radio & TV gear*

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