Fall 2001

Volume 14 - No 4

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SINGLE ISSUE \$495 USA \$550 CANADA 740 ELSEWHERE

Amateur Television Quarterly

ONE NATION, REMEMBERING

INSIDE: Great articles as usual!



All you need for 420-450 MHz ATV in one box! contiguous USA, Visa/MC

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33/23FMR Synthesized, dual A/V outputs, imported. 8

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420-450 MHz Antennas - see our catalogue page 5

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http://www.hamtv.com 10/2001

Hams, ask for our free ATV catalogue or down load from our web site - AM, FM, 70cm to 10GHz Application notes can be downloaded or requested from page 3 of the web site - We have it all!

MHz deviation standard. 12Vdc @ 380 ma. AC supply incl. 33/23FMR Synthesized \$175 Hard Hat Cam, R/C Vehicle, Rocket, Balloon ATV



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AMATEUR TELEVISION **OUARTERLY**

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ATV Software

I have found that the ATI Wonder Pro tuner card in my computer has better sensitivity and selectivity than my other converters for the 450 band. 439.25 MHZ is the output from the Baltimore, Md ATV repeater and of course I use cable channel 60 for reception. The best thing about having a computer and the tuner card is that video is available from the card that shows whatever is on the computer screen. Test patterns, call sign and anything else can be shown on ATV from the computer, even NASA video when connecting the satellite dish to the tuner card.

Al Alexander, K3ROJ k3roj@k3roj.com

Is there any way to take live video into the ATI Pro card and add an overlay (callsign) and then output it back out the TV out (live, not recorded, added in and played back)? That would be a true killer application for the All-In-Wonder cards. I have two of the things around here that I never really use (except as a video card, I rarely use capture or tv out).

Unknown

I have a Win-TV card. It is a TV receiver card for your PC. It is a pretty good receiver and can cover the 70cm band. I am having problems with it crashing my PC but I haven't put much effort into that problem yet so it may be something that I am doing or something that is easily fixable. Its sensitivity and selectivity are great. It looks to the OS as another video input device like a Web Cam. This means that you can use something like NetMeeting to send your ATV video over the Internet. The site is http://www.hauppauge.com/

Bruce Campbell, KG4HLZ nashbruce@yahoo.com

I am using the ATI Wonder pro card for ATV use and also had a problem with the computer crashing or locking up. I asked a salesman at Best Buy one day and he said to install more memory which I did and the problem went away. The card is much more sensitive than any TV or converter made for ATV. Anything that can be seen on the computer screen can also be transmitted for ATV use and makes for a very interesting station including customized Test Patterns and ID screens.

Al Alexander, K3ROJ k3roj@k3roj.com

I had the Hauppauge card and it locked up all the time with my on board video. I finally returned it and bought an ATI All-in Wonder card with tuner and video card all in one. It works great - no lock-ups. Good picture. Just a little disappointed in the software. I was hoping for state-of-the-art s/w that would support auto time setting, reading of line 32 data like channel name, program name, etc. It does a good job with closed captioning though.

Skip Allison, K9SA cfad07@email.mot.com

You know between Al, Skip and me, we could probably get a pretty good article together on the cards themselves with only a little research. Does that interest you, Al and Skip? What do all of you think?

Bruce Campbell

Put me down as an interested lurker :) I have the ATI pro card, and 902 fastscan rig, but nobody around here to talk to up here.

David VanHorn **dvanhorn@cedar.net** Dave's Engineering Page: http://www.dvanhorn.org



ATVO

[EOSS] Home Made Polyethylene Floater

I've figured out how to home-make thin polyethylene balloons. I've built and test-inflated a 520 cubic foot test article, and subsequently built a 2500 cubic foot version as well. The 2500 balloon weighs 2.6 lbs, so it should be able to ascend and float at 70k feet with a 7 lb payload. If there is interest within the club, I would like to test fly the 2500 cu ft balloon soon.

I will bring the 2500 cu ft poly balloon to tomorrow night's meeting for inspection, along with my growing treasure trove of payloads: remote commanded Strato snooper 35 mm camera, the passive 35mm camera, and a light weight (0.49 lbs) simplex repeater package I have put together. The two really long links will direct you to photos of the test-inflation of the 520 ft^3 bag.

K. Mark Caviezel kmcaviezel@yahoo.com



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Say you saw it in ATVQ!

Preserving Your Desktop Icons:

Most contemporary icons are produced with great care and attention to detail. However, being subjected to repeated clicking and constant bombardment by cathode rays, they tend to deteriorate over time.

In order to maintain their graphic integrity, it is recommended that the following procedure be followed at least once every six months:

1. Remove the icon from the monitor, being careful to handle it only by the edges to avoid pixel damage.

2. Soak in a lukewarm, soapy solution for 5 to 10 minutes. Do not rub or scrub, or pixels may be shifted, resulting in serious disintegration of the image.

Remove from bath and stand on edge to dry. Under no circumstance attempt to dry with a rag or lens tissue, and never subject to blow-drying, or permanent damage may result. If more than 5% of the pixels have been lost, replace icon with a new one.
 Carefully replace cleaned icon in monitor, taking special care not to touch the surface. Allow to set one hour before using.

If icons need to be exchanged from one computer to another, they should be transported only in specially prepared icon cases available at any computer or electronic supply store. Remember, icons are the heart and soul of the Windows environment, and should be treated accordingly.

ATVQ

ATVQ TO PAY FOR ARTICLES!

Payment for Technical Articles

ATVQ will pay for certain articles that it publishes. I will outline the policy here, but it will be subject to change as needed to make sure that ATVQ continues to be an ongoing publication. ATVQ will pay \$25.00 for technical articles that are published and are a minimum of 2 pages. While this is not a great amount, I hope it will encourage more technical type articles to be written. Exceptions will be articles that are written by a manufacturer/seller of equipment that is being written about. While I do not want to discourage this type of article, the article itself is an advertisement of the product. Articles from clubs will be encouraged, and I would expect they would like to share their information with the ATVQ readership. Information gathered from the Internet will not be paid for and is mostly small filler items.

Ideas

Do you have an idea for an article that you've said to yourself that you wanted to write, but never did. Feel free to check with us to see if it is of interest, or write and send it in. No guarantees that it will get published, but if you don't try, you will never know. I'll be looking to see what you can do!

CONTRIBUTORS GUIDE

Preferred method of receiving articles is from **Microsoft Word**, however **Wordperfect** is OK too. Next preference would be **ASKII text**, followed by **typewritten** or **hand written** (clearly). Diagrams or pictures (B&W or Color) can be sent in hard copy, or if you scan them in, save to PCX or JPG formats (actually I can read about anything). If you send a computer disk, make sure it is PC (not MAC) format.

When sending in articles in Microsoft Word, please SAVE with FASTSAVE OFF and save in Word 6 format. Also, articles written in any word processor, consider what will happen when it is re-formatted to fit the style that I might put it in. An example would be setting up tables or adding figures into the article. They can be very hard to strip out. If possible, put the tables, figures, each in a file by itself. This will help me to be able to import into the magazine format.

Articles can be sent to: ATVQ, 5931 Alma Dr., Rockford, IL 61108 or to our email address: atvq@hampubs.com Also note our web page address: http://www.hampubs.com http://www.hampubs.com



Fall 2001 Amateur Tele

Amateur Television Quarterly

Angeles Crest 100 Mile Endurance Run

Gerry Walsh - KB6OOC - Email gwalsh@kilroy.jpl.nasa.gov 410 West Linda Vista Avenue Alambra, CA 91801-4753

Here are a few photos taken at Newcomb Saddle during the 2001 AC100. Newcomb Saddle is the 14th checkpoint in the race and is located North of Chantry Flats (just above the city of Arcadia) and East of Mount Wilson (above the city of Pasadena).

Our checkpoint is roughly about 65 miles into the race. Here are a few photos of our stay at Newcomb Saddle this year. We were short a few guys (on the ham radio side of the checkpoint) this year, but we still have a lot of fun! Last year was the first year (in about 12 years) that we had Amateur Television (ATV) running between our checkpoint and the next checkpoint down the hill — Chantry Flats. Thanks again to Tom O'Hara (W6ORG) for lending his ATV gear to me (Tom operated the Chantry Flats end of the link). The Newcomb ATV setup consisted of 420MHz receiver and a 900MHz transmitter. Tom solved our "bad receiver" problem from last year and we had a reasonably decent picture this year (except for some packet radio RFI — which wasn't from any of the AC100 checkpoints).

Boy, was it HOT this year! Actually, this was the 3rd year in a row that it was pretty warm. I've been working at this checkpoint since 1987 (eouch!) and prior to the last three years, I always had to put on long pants a few hours after dark. I think it was 3AM or so, this year, when I put a light jacket on (but was still wearing short pants). It was pretty obvious that the heat took its toll on the runners. We only saw 80 of the 118 that started the race (which in terms of percentage, wasn't bad at all). Last year, we saw about 127 runners come through our checkpoint.

Our cutoff time is 3:00AM. As long as I can remember back, we've had folks wandering into the checkpoint right up to (and beyond) the cutoff. This year, the last one came in at 2:15AM (unbelievable - especially with the heat we had during the day!).

I think we had about two dozen video conferences throughout the day. Crew access is available at the checkpoint just prior to ours (because it crosses Angeles Crest Highway), but we're in the back country and crew access is not available at our checkpoint. The next checkpoint, Chantry Flats, does have crew access but its the last place the crews can meet their runners before the finish line (roughly 25 miles later).

So, needless to say, Chantry Flats has tons of crews stopping by asking where their runners are. It typically takes them about 2 hours (on average) to get from our checkpoint to Chantry. By letting the runners video conference with their crews, it really seems to perk up the runners (especially after the big climb into our checkpoint!) and you can definitely see the excitement in the crews! The interesting part is that it takes people a moment or two to figure out what we've really got going on. They think we're just watching TV, taping them, or doing some Internet video feed in the middle of nowhere. When they figure out what we're doing, they absolutely love it and we enjoy hearing how much they appreciated the opportunity to use the ATV system to talk with their crews. Just as we did last year, when the last runner came in, we stole one of the televisions and watched a few DVDs for the rest of the morning — until the last runner got to Chantry Flats (at 5:10AM) and we hit the sack for a hearty two hours of sleep before packing it all in to head home.

Anyway, on to the slideshow!



We stopped by Shortcut Saddle on the way to our checkpoint. This is the view a runner sees during their last few steps into the aid station (next pic to the right).



If you continue out onto the pavement and spin around 180 degrees, you'll see the Shortcut Aid station.



Just before you leave Shortcut and head to Newcomb, you'll checkout here with the Ham Radio folks!



Once you checkout, you hit the trail for a 6.5 mile jaunt to Newcomb Saddle.



After that 6.5 mile jaunt, the runners enter the Newcomb Saddle aid station (from the right of the picture).



Arriving runners first pass by the Ham Radio check-in area. Randy (KC6HUR) is busy setting up the ATV gear (that's his back we're looking at!).



"Command Central". This is where we communicate with adjacent checkpoints and the database by voice and data.



A view towards Shortcut from Newcomb Saddle. Runners start up under those power line towers and work their way down the switchbacks to the bottom of the canyon and up to our checkpoint.



The Newcomb Saddle aid station crew poses for a "photo op" before the runners start arriving.



After some of "THE BEST" aid station service anywhere in the entire race, the runners head out this way to Chantry Flats.



Stuart Sorensen (#75) enjoys a pudding cup while taking a break at the Newcomb Saddle aid station. Our crew decided on a Hawaiian theme and were all wearing Hawaiian shirts.





Here's some of that first class catering in progress! The crew is preparing some soup and re-filling the water bottles for Stuart Sorensen (#75) seen sitting in the chair at the left (in the back).

After refreshing a runner and sending him on his way, the aid station crew looks over their spread of goodies and gets ready for the next runner.



The ATV camera sneaks a peek of the aid station crew at work — the picture is transmitted to Chantry Flats on 900MHz.



Our ATV setup. TV on the left is showing the video being transmitted to us from Chantry Flats on 420MHz. TV on the right is our local video that we are transmitted to Chantry Flats on 900MHz.



We hit the sack at about 5:30AM and got up around 7:30AM to pack up the aid station and store it away for the 2002 race.



Aaron Soulier (#84) arrives at the aid station after a 3 hour, 14 minute journey from Shortcut Saddle.



Colby Burkett (KC6RJG) helps tear down the ham radio checkpoint. Colby came out to help us do the race even though he's getting married the following Saturday! What a die hard!



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ATVQ SPECIALS

See Page 18

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Sparks from the Bench

by Ron L. Sparks - AG5RS - Email: atvq@sparkles.com P.O. Box 945 Katv. TX 77492

The First Of A Regular Featured Column!

The Difference

You are holding a pretty special magazine in your hands and probably did not even realize it. Among all the obvious reasons why this is true, lie some reasons that are not so obvious. One of them is that the editors are willing to take a chance on new authors and new concepts. Believe me, that is unique.

So, in ATVQ you get different perspectives of our hobby as well as information you would not find elsewhere. The objective of this and future articles is to explore the "edges" of ATV. That means that we will tackle subjects that are important to making ATV work - not necessarily those subjects that are directly related to ATV. Now comes the choice; how can that objective be accomplished without this turning into a schoolhouse lecture or research paper or operating manual? My plan goes back to the fun, early days of the PC. Well actually, the days before the term PC was coined by IBM and the microcomputer was just creeping into the lives of a few dedicated souls. Back then a number of magazines had articles that were simply a story of how the author did something they were proud of. And that is the kind of fun I would like to bring to ATV.

The Plan

What I would like to do is gather up one or two e-mails from ATVQ that relate to a common subject. We can then look at them in a Q & A fashion and then wander off into whatever direction they point. Most likely they will point to something that can be useful to ATV'ers. But the fun of it is they do not necessarily have to as long as they are what you are interested in.

Oops, since this is the first time this is being done there are no Q's for me to A. I guess that I will get to make them up on my own, this time. Hopefully my questions will be similar to ones you are asking. In any case, send in your e-mail for next time. I have listened to ATV discussions around the South Texas balloon launches, the ATV meeting at Dayton, and read the ATV e-mail list. One thing that seems to keep cropping up over and over is the new breed of computer - PIC's. So here is the first Question: What is a PIC?

A PIC is a Programmable Interface Controller. They got their start back in the early days of microcomputers. In fact they date far enough back that even their name is a little obscure. Some references from the early 1980's call them Peripheral Interface Controllers. Their original purpose was to put a little smarts into the control of all the external circuitry needed for the "care and feeding" of a microcomputer. Then as more and more of the job of interfacing to the microprocessor became integrated into the microprocessor itself, the PIC began to do other tasks.

This evolution continued (and still continues) until today's current microprocessors have more computing power than the mainframes of the 1980's and the PIC's now have nearly the same capabilities as the microprocessors of that same time frame.

That brings up the next Question: What does the PIC mean to me and my ATV activities?

The first part of that is easiest to answer if you have tried to build any non-RF hardware lately. If you have, you will have realized that some parts are becoming scarce. For example, dedicated speech chips and DTMF encoder/decoder chips are either gone or in inventory clearance. The reason for this is that it is now cheaper and easier to perform those functions in software with a PIC or DSP (digital signal processor) than it is to use dedicated hardware.

What that means to you and your ATV projects is that much of the dedicated hardware is going away. In order to continue to build your projects you will need to understand and use the software based solutions. That will require some investment of time and effort. In return, however, you will have many new and flexible options opened to you. For example, one PIC chip can simultaneously talk to your PC while it monitors a voltage and sends DTMF tones. All this can be done with only the PIC chip, a crystal and a couple of resistors and capacitors.

Think about what that opens up for your ATV projects - DTMF control, On Screen Display, PC control, PC data logging, voice recording and playback, analog control, digital switching, and many more that are limited only by your imagination. That brings us to the next question: How do I get started?

There are lots of options that need to be considered. Among them are issues of price, ease of use, performance, manufacturer selection, and how they all best apply to ATV. I look forward to answering those questions and explaining a little about what is going on in my shack. But, for now we are out of space and so I must just say "To be continued".

AMATEURS AMONG THE MISSING IN WORLD TRADE CENTER ATTACK

"None of the other transmitters exist anymore. They're in the rubble along with the master antenna system, hundreds and hundreds of two-way radio system antennas, and boxes and, of course, untold thousands of people who perished."

There was cause for rejoicing in the case of another amateur who worked in the World Trade Center. Rob Nall, WV0S, reports that his friend, Herman Belderok, Jr, KB0EEB, managed to get out of the building just minutes before the structure collapsed.

9/14/2001 ARRL Letter

At least four Amateur Radio operators are among the many still missing in the aftermath of the September 11 attack on the World Trade Center in New York City. The attack also destroyed the major TV and radio transmitting site atop one of the twin towers.

The hams reported missing so far include:

* Steven A. "Steve" Jacobson, N2SJ, 53, of New York City, a transmitter engineer for WPIX TV, and an ARRL member.

* William V. "Bill" Steckman, WA2ACW, of W Hempstead, New York, a transmitter engineer for WNBC TV. He was well know in the NYC area and ran a number of repeaters from the World Trade Center, most notably the 434 MHz ATV repeater.

* **Robert D. "Bob" Cirri Sr, KA2OTD**, 39, an ARRL member from Nutley, New Jersey and the ARRL District Emergency Coordinator for Hudson County. A Port Authority police officer, Cirri was on the job helping to evacuate workers from the building when it collapsed.

* Michael G. Jacobs, AA1GO, 54, an ARRL member from Danbury, Connecticut. Jacobs worked at Fiduciary Trust Company International, which had offices in the World Trade Center.

The collapse of the World Trade Center brought down the master TV transmitting antenna that served all but one television station in New York City, as well as several radio stations and amateur repeaters. "The broadcast community is in absolute shock," said Hudson Division Vice Director Steve Mendelsohn, W2ML, who works for ABC News. "We all knew transmitter engineers, we all knew people who worked up in those towers near those big television transmitters, and they're gone."

Mendelsohn said many viewers in the Greater New York City Area who are not on cable can only see WCBS, channel 2, which maintains its transmitter site on the Empire State Building. WCBS has offered assistance and space to help the other stations get back on the air from its site, he said.

9/21/2001 ARRL Letter

* Vietnam War veteran Bill Ruth, W3HRD, killed in Pentagon attack: The terrorists' attack on the US has claimed another ham and ARRL member.

Vietnam and Gulf War veteran and retired Chief Warrant Officer **William Ruth, W3HRD**, of Mount Airy, Maryland, is the fifth ham known to have died as a result of the terrorist attacks.

The Army announced September 19 that Ruth, who worked at the Pentagon, was among the 30 confirmed dead. He was 58. "I remember Bill from my time with the Rock Creek Amateur Radio Association," said Leo Boberschmidt, W3LEO, a close friend. "I still remember the great slide program he gave on his experiences during the Gulf War; it's hard to say anything else right now."

From ARRL Letters of 9/14/2001 and 9/21/201

From A Friend

I have sad news to tell you. In the twin towers bombing ,we lost Chief TV Engineer Bill V. Steckman,WA2ACW. Our ATV repeater WA2ACW ATV was there, which Bill took care of. He was in the building when the plane hit below his floor and was in contact with the studio in Rockfeller Plaza, when they lost phone contact with him. We will miss Bill as I have known him and his family many years. It is sad to see a long time friend go this way .

Ed Kuligowski - W2WIA w2wia@netscape.net



On The Road With ATV What I Did On My Summer Vacation

By Robert Delaney, KA9UVY - Email: 10630 N. Delaney Lane Mt. Vernon, IL 62864

What do you do if the band just hasn't seemed to open for you and you haven't been working any new ones on ATV? Here's what I did.

My girlfriend, Shannon, has family up in Skanteateles N.Y. about 35 mi. SE of Syracuse. We had planned to go up and stay a few days with them and take in Niagara Falls on our vacation. The trip would take us through Indiana, Ohio, the tip of Pennsylvania and across W. NY. We would pass through known (ATV Country) so why not try to work ATV on the way? I figured we would surely work someone in Indy, Dayton, or Columbus. Wrong! I'll explain later but first I had to decide on what equipment to take along.



Photo 1

I knew I wanted to work with a horizontal antenna on the car since I would be targeting DX operators and not repeaters so I chose the Little Wheel designed by Dave Clingerman, W6OAL, of the Olde Antenna Lab in Denver Co. I had made a homebrew model of this antenna (see pic #1) and just needed to fashion a mag mount for it. I chose my old TC-1 P.C. Electronics transceiver with about 7 watts average video out as the backbone of the system, minimal power but proven reliable with several miles on it already in mobile work locally. I went with an Action 9-inch black and white 12-volt dc television figuring its size was manageable and it would be big enough to see them if I got somebody in. An old 12-volt vhs-c camcorder would set on the top of the whole mess and provide out the windshield drivers view video. A Sony handy cam would be used for Video eyeball QSOs, points of interest on the roadside and provide video ID. It also would provide me with a way of recording any received video.

I made a pedestal from some 3/8th-inch plywood to elevate the system from the floor of the car and it would all sit on the hump between the front and back seats of Shannon's 96 Mercury Mystique. (See pic #2)



Photo 2

For talkback I took along my old dual band Kenwood TM-732A hooked up to a mag mounted dual band Larson. I would use it on 144.340 for calling, while sniffing for video on the uhf side of the rig.

I tried to let some of the ATV'ers up that way know we were

coming but last minute departure kept me from making any real schedules.

We left Mount Vernon, Illinois at about 7:00 PM CDT Friday, August 17th, 2001. The timing was poor indeed; we passed through ATV country in the middle of the night. I failed to raise a soul on 144.340. I did manage to see K9LPW/R the Indianapolis repeater while passing through but didn't catch anyone looking. I did do something on the way that would cost me later. I noticed that with the 9-inch television on in the car at night it seemed to illuminate the entire interior of the car. We must have looked a bit like a spaceship to other motorists and would surely get the attention of any state trooper. So when we stopped for a nap north of Columbus, Ohio. I managed to reach the brightness control and backed it down.

After our quick nap we headed North up I- 71 toward Cleveland after grabbing a McMuffin from the area Mac Donald's. I was on the mike and Shannon was behind the wheel.

First station to answer my CQ was WA8SAJ, Jeff, in Cleveland. He was obviously glad to hear some activity on 144.340 and a quick get acquainted conversation followed. He invited us to stop by for an eyeball QSO but we were already past his exit and on 271 headed for I-90.

We tried video but he said we were past the sweet spot and no TV contact was made. We pledged to try again on the return trip through and got his phone number.

Well needless to say I was encouraged to make more noise on 144.340 after hearing a real ATV station.

Onward to Erie, PA. Looking for W3POS. Where were you? Oh well, nothing heard so my next hope was the Buffalo, NY area. After many CQ's we heard light copy on 144.340 and someone had heard me.

It turns out it was Don W2WHK in Tonawanda, NY. He and a few other ATV'ers were working that morning. By the time we got into solid 2-meter range they had all cleared the air.

After a couple of quick calls into thin air someone came back and acknowledged me. It was Casey, W2OSW, of Buffalo, NY. He was friendly and curious about the ATV setup. We decided he would transmit first but I couldn't see anything so he said he knew another ATV'er with more power and called out for Mark, N2SIT, of Marilla, NY. Mark came on and we got aquainted briefly and figured out where he needed to point his beam. Mark fired up and I saw something but the TV just didn't look right. I finally rocked the tuner enough to get a glimpse of his picture. Yes P-1 at least with lots of flutter. I just couldn't see it very well.

It was my turn to transmit so I crossed my fingers and flipped the switch. Well the silence on 144.340 seemed to go on forever so finally I picked up the mic and asked well what you got? Mark came back and said just sync right now. I let it burn for a few minutes and then Casey, his voice almost bursting with excitement, keyed up and said "I see it, I see it!" I zoomed in with the camera on a white van up ahead and he said "your're behind a white van!"

Yes, he had me and pretty good. He gave me a P-3 report and I couldn't wait for him to come booming in when it was his turn to transmit. Well I rocked the tuner and found his signal but I just couldn't see it very well. He had to settle for a P-1 from me and I just couldn't figure out why I couldn't see their pictures.

OOP's Remember the adjustment I made back in Ohio? I had the brightness backed off to far and the sunshine of the August morning was washing out the TV screen. I couldn't get to the control without stopping the car and crawling in the back so it would have to do. After working with Mark, N2SIT, and finally getting my video to him Casey got Don, W2WHK, (The station that originally heard us coming into town) back on for a try. We never made it with him on video as we were headed east at a rapid pace but we did discuss details of a try on the way back through later in the week.

I found out that the W. NY area has a group that gets on 3 times a day. They would be on at 10:00 AM, 3:00 PM and again at 10:00 PM Eastern. I also asked about an ATV'er that I had met through the ATV Reflector, Dennis, K2CEC, in E. Aurora, NY. They all knew him but he wasn't on that morning so I asked them to pass along a big hello from S. Illinois for me and they said they would.

Shannon and I were buzzing from the contacts and our excitement lasted all the way to Skaneateles where we were to be staying for the next few days. I am glad the excitement lasted because I failed to make contact with any ATV'ers from where we stayed.

The next few days were filled with sight seeing, swimming and getting to know her family. I found very little time for radio but did make some observations. I did find some SSTV activity on 147.150 but couldn't get into the repeater to find out if anyone in the area operated FSTV. I also studied the UHF broadcast band and noted some tropo into Ontario. Rochester, NY stations were P-5 almost all of the time with only a Bowtie indoors. While Syracuse, NY, less than 40 mi. was unwatchable due to multipath down in the lake valley.

We left Skaneateles Lake on Thursday morning Aug 23rd, a day earlier than planned. The Buffalo area guys wouldn't be looking for us so we would have to make some noise and hope for the best as we headed for Niagara Falls and Canada. By the time we got to the Clarence Service Area on I-90 we had them on .340. They had been working with 900 MHz ATV. We attempted Video with Joe, WA2PZV, in Kenmore, NY; Don W2WHK Tonawanda, NY; and Casey, W2OSW, in Buffalo. We were unable to get much better than sync from anyone and then K2CEC ATV popped on the screen. It was Dennis from E.



Photo 3

Aurora, NY, the guy I had been looking for originally. It was the first received signal that I was able to record. (See pic #3).

We tried various parking places but could only manage P-2 video at best. We decided to get moving and Don said we would come very close to his QTH on the way to the falls so we would have an easy time working him on the way up. I mentioned to Dennis that I would love to work a VE3 on ATV and he said he knew a very active operator in Niagara Falls, Ontario. He would call him on the twisted pair and try and get him on! As we went on up toward the falls Don, W2WHK, did indeed put in some good video with P-4+ signals at times. (See pic #4) He also helped us navigate our way through the city.



Photo 4

Just before we crossed the Grand Island Bridge, Bob, VE3BHH, came on 2 meters and said hello. We got acquainted briefly and started to work at Video. I can't recall who saw whom first but the excitement level jumped to 10 when his ID slide popped on the screen. (See pic #5) I was turned around tuning the Rx and trying to capture his video when Shannon had to stand on the breaks almost sending me backward through the windshield camera still in hand! It seems a few vehicles on the downhill side of the bridge were dead stopped. After that and a few choice words from my pilot snapped me out of my ATV trance we decided we had better get parked to work with the VE3. While all of this was taking place Bob called up Ralph, VE3KYW, and he came on to work us. We worked Ralph with around P-2 Video but the FM interference was terrible and a 14 Amateur Television Quarterly Fall 2001



Photo 5

capture of his video was too poor to be pictured here. We worked the Canadians for a bit but it was time to sightsee. That's what we came for right?

We did the American side tour and decided it was time to cross the border into Canada and operate /VE3. Let me tell you that antennas like the Little Wheel, cameras and wires running everywhere might make you look a little suspicious to border guards. Yes we were asked to pull to the side so the vehicle could be searched. While they were going through the car I was shooting video for the guys back home and I didn't really get nervous until I hear this voice on my right, "Sir there's no video allowed in this area."

Huh? I didn't see any signs about shooting video? "This is a federal area and I'll have to take your tape sir" What! I had ATV contacts on the tape and wasn't about to surrender it. After some discussion we were able to rewind passed the inspection part and tape over it pointing at the ground.

Whew! That was a close one. We did finally get to cross into Canada and see the falls from the Canadian side but didn't make a single contact while /VE3.

We also failed to get any video contacts on the way back down through Buffalo but did enjoy good conversation with Dennis, K2CEC, about ATV gear and such. We said goodbye to Dennis and headed for Erie, PA, still looking for W3POS with no luck.



Photo 6

Say you saw it in ATVQ!

Our next contact was with Mark, KB8FKM, of Fairport, OH. (See pic #6) He had never worked a mobile ATV station and he and his XYL enjoyed the live freeway shots as we sped along I-90. We also worked Jeff, WA8SAJ, of Cleveland, OH. (See pic #7) The pic of Jeff really doesn't do him justice because he achieved near P-5 signals at times (just not when I was recording.) We decide it was a little late to drop in for and eyeball QSO since he had to work the next morning.



Photo 7

As we got out of range from Jeff and Mark, another ATV'er from Hinkley, OH, came on for a try. It was Joe, K8JAS. We tried with him for several miles but had to settle for good conversation on 2-meters again.

Here is where it gets a bit embarrassing for me again. After stopping for gas near Columbus, OH, and getting interference from the pumps I turned the Volume down on the 2-meter rig. I called CQ all the way down through (ATV Country) and didn't discover my error until we were back in Illinois. I hope we didn't get to many answers.



Photo 8

As we made our way over to I-57 to head south I did hear some activity on .340 but it was to weak to copy solid. The next contact we made was with Jim, KA9EGM, of Centralia, IL. (See pic #8) Jim represents the North Point of the Southern Illinois ATV

Group and video was exchanged with him for about 10 miles.

We knew we had made it home when we worked our last contact of the trip Glen, W9TZB, of Mt. Vernon, IL. With P-5 video received all the way into the driveway. (See pic # 9) Clearly no new records were established and no great advance-



Photo 9

ments were made to ATV on our trip but we had a real blast getting to know others that share an interest in this special mode. We found everyone to be very friendly and helpful. Maybe all ATV'ers suffer from the Maytag Repairman syndrome and just need a chance to work someone on TV but I encourage everyone to take your ATV gear with you when you travel across the country and promote ATV. It's worth it!



Photo 10 Bob & Shannon Note to Gene - WB9MMM,

I called up today and renewed for another year. Also ordered a gift subscription for our newest ATV'er here in Southern Illinois. He is the 12 year old son of Flip, N9AZZ. His name is Richey Minton his vanity call is W9AZZ. It is nice to see someone that young working ATV. The first night he was on the air as KC9ADH He made at least 4 creative ID slides to show and worked several of the locals. He is a natural in front of the camera and his mouth is watering for his first real DX opening. I can hardly wait to hear him on working DX.

73, Bob - KA9UVY-TV



IVCA VISION NEWS LETTER No.2 Sept.21-2001

Keeping Amateurs Informed On Developments In Visual Communication Around The World Ray Glidden, W5NOO EDITOR - Email: ray@junct.com RR1 Box 145 Vinita. OK 74301

Reported By Tom Jenkins N9AMR

By now we have all learned of the disaster in New York and Washington. I have been informed that four or more amateurs are missing or have lost their lives at the World Trade Center airline plane crashes. Hams reported missing so far include Steven A. Jackson N2SJ engineer for WPIX TV. Willman V. Steckman engineer for WNBC TV who ran several repeaters including 434 MHz. TV repeater. Robert D. Cirri Sr. KA2OTD the ARRL District Emergency Coordinator that was helping to evacuate workers when the building collapsed. Michael G. Jacobs AA1GO employed by the Fiduciary Trust Company in the World Trade Center. All four were members of the ARRL and will be missed by friends and family. The Collapse of the World Trade Center brought down the master TV antenna that served all but one Television Station in New York. Viewers in the greater N.Y city that are not on cable can only view WCBS channel 2 which maintains it's transmitting site at the Empire State Building that has offered space to help the other stations get back on the air from it's site. None of the other stations transmitters now exist and hundreds of two way radio antennas and hardware are gone and of course untold thousands of people who have perished. Our condolences to the victim's families.

General Information

To introduce my self as the current Director of the IVCA and editor of this News Letter, My name is Ramon Glidden W5NOO and my QTH is in N.E. Oklahoma. a licensed Amateur for 50 years and active in SSTV for over 30 years. I have given talks at Dayton and also at various Radio Clubs in Oklahoma explaining and demonstrating SSTV. Like lot's of the Old Timers we were sending pictures over the air and down the phone lines 10 years before the invention of the home personal computer. As it seems the majority of amateur operators now have and use computers and have web access and e-mail operation, I believe to change from a surface or snail mail VISION News Letter to an e-mail version has numerous benefits. It is faster and less expensive and permits more frequent messages to be sent around the world. As you may know the IVCA is a nonprofit organization and all officers are volunteers. I was asked to take over as IVCA Director and then Lew, W6FVV, previous Director, was killed in an auto accident before he could fill me in on my duties. I've had to fly this job by the seat of my pants and try to get it back up and running.

You can contact me directly by e-mail at ray@junct.com or use the new Yahoo Reflector ivca@yahoogroups.com to send mail to members. My web page (a modest one) is at ray@junct.com/ramon

New Products Hardware and software and operating systems etc.

Lot's of new products coming on line including new operating systems like the High Definition digital SSTV successfully operated using the AMSAT Satellite AO-40 ,S2 transponder,435 MHz up and 2.4 GHz down exchanged between W9NTP to W8ZCF and W8ZCF to N9NTP This system invented by KB9VAK and W9NTP, a record historical event of perfect pictures traveling nearly 70,000 miles using a system with Linux operating software. I understand there are also two more new SSTV operating systems in development (more on this later) one new system, a Blk & Wht picture system using AM with 2.5 FPS and a 2.5 KHz band width.

Also we have some new liquid crystal type displays that are thin and bright and have a sharp picture and use less power that will be used in cell phones etc., in a year or more and drive down the price of the current flat panel TFT screen displays. Like some we have two computers on the desk and 10 drives including three HD, and a 3 1/2 -5 1/4 and ZIP and 3 1/2 super disk that I now have a special 6 Ft.USB cable the Link-100 let's me transfer folders and files between two IBM Win98 computers at 4 Mbps using an on screen drag and drop program provided by the Cable Mfg.GTC Co. (Cables to Go).

Future Vision News Letters

I'll try to publish the VISION on a bi-weekly or monthly basis depending on the news availability Send me any news or activities you know of and I'll try to put it in. To be removed from the IVCA group mailing e-mail me at ray@junct.com

Happy viewing

Ray Glidden, W5NOO, EDITOR

New Release of MMSSTV

MMSSTV Version 1.05 is now available for download form the MM Hamsoft Website.

- Added two window layouts

- Added an optional window for the control buttons

- Added an option that attaches the RX window to the WIN-DOWS desktop.

- Added double-click short-cut operations for the stocked pictures, stocked templates, folder thumbnails.

- Added 320x240 image manipulating schemes

- Added a repeater function

- Fixed a bug that caused the resource shortage in Windows 95/98/ME

- Fixed some bugs and applied minor improvements

For additional information, see What's New in Ver. 1.05 on the website.

73 . . . Ken - VE5KC - ve5kc@sk.sympatico.ca

SSTV HOT NEWS 9N7SC

Hiro just finished his VFB work from Katmandu Nepal in SSTV/RTTY. He will fly back to JA with his family tonight. Thanks for the cooperation and the help. We hope that Hiro popularized SSTV and we will hear 9N in the future. Here is his last picture from Nepal. Propagation was not so fine and he has had a problem with his linear after the 2nd day.

73s Lajos HA5DW. sstv@dpg.hu



http://www.hampubs.com

A0-40 Pictures

We now have a record of a very Historical Event consisting of a 2 way exchange of perfect HD Digital SSTV pictures consisting of a test pattern which was sent during August 2001 in less than 30 seconds each way via AMSAT Satellite AO-40, S 2 transponder, 435 MHz up and 2.4 GHz down, SSB. These pictures were exchanged between W9NTP to W8ZCF and W8ZCF to W9NTP as recorded on the 2 images.(As to detail, one can note the faintly imbedded "B" and "W" symbols on the black and white blocks of the test pattern!). We believe it is truly remarkable in that these pictures traveled a distance of nearly 70,000 miles from the transmitting station to the receiving station.

This is a 1st for HD Digital video through AO-40. Given time for adapting this with software for MS windows (present setup uses Linux) and a fine tuning of the technique to send and receive this new invention by KB9VAK and W9NTP, this method of sending and receiving perfect digital pictures will undoubtedly replace the older conventional SSTV! Thanks for all your work and perseverance to make this happen. Working with both of you in these digital experiments has been a most exciting and rewarding adventure in Amateur Radio.

73, Farrell, W8ZCF



Fall 2001 Amateur Television Quarterly

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ATVQ Advertising Rates To Go Up January 1, 2002

Along with the increases in postage. ATVQ has experienced increases in printing costs. They tell me that the paper cost is the biggest reason. We won't raise rates any higher than needed to cover these costs. The new rates are listed below.

AD RATES

Ef	Effective 1-1-2002		
SIZE	1-3	4 up	
FULL PG COLOR	\$650	\$500	
FULL PG B&W (Covers II, III, IV \$30 extra) (2nd color add \$100 per page	\$160 e)	\$140	
ADDITIONAL COLORS/PAGE	\$100	\$100	
1/2 H or V	\$110	\$80	
1/4	\$85	\$55	
1/6	\$55	\$38	

Charges for making negatives are billed at our cost and are added to the above prices.

Multi-page ads are billed at the combined rate based on frequency.

Covers are reserved for COLOR ads.

All typesetting and layout charges for non camera ready ads will be added.

Your understanding and faithfulness to ATVQ is appreciated! - Gene - WB9MMM

ATVQ

ATVQ Subscription Rates To Go Up January 1, 2002

The announcement is coming now to give you a chance to extend your subscription at the lower rate. ATVQ has experienced 3 postage increases in the last few years since we took over. While the increase below is not a lot, it should get us back in the ballpark.

OLD Rates

RATE	E USA	CANADA	DX
1 yr.	\$18	\$20	\$26
2 yr.	\$35	\$38	\$50
3 yr.	\$50	\$56	\$75
4 yr.	\$65	\$74	\$100
5 yr.	\$80	\$92	\$125
LIFE	\$299	\$349	\$399

NEW Rates - Starting 1/1/2002

			-
RATE	E USA	CANADA	DX
1 yr.	\$20	\$22	\$29
2 yr.	\$38	\$42	\$57
3 yr.	\$55	\$61	\$84
4 yr.	\$71	\$80	\$111
5 yr.	\$87	\$99	\$136
LIFE	\$399	\$439	\$579

Single Copy Rates

USA \$5.50 Canada \$6.00 All prices in US \$.

DX \$8.00

You have until January 1, 2002 to get any extensions to your subscription to save a little before the increase takes effect.

Your understanding and faithfulness to ATVQ is appreciated! - Gene - WB9MMM

ATVQ

SPECIAL SALE! Your choice of either ATV Secrets Vol 1 or The Best of Beasley on ATV Cartoon Book for only \$5.00

Including Shipping in the USA (add \$3.00 shipping elsewhere) Good through December 31, 2001

Get your copies NOW!

Even better - Buy 10 copies, mix or match, only \$3.00 each. Get one for everyone in your club today! Great holiday gift, or handout at your holiday party.

Do you have these yet?



ATV SECRETS volume one

ATV SECRECTS is a great place to start your ATV adventure. Its 64 pages are are tightly packed with information that covers all aspects of getting started, where to find activity, equipment, how to DX, and answers frequently asked questions of power, antennas, vestigial sideband operation and more. Everything you need to know to enjoy ATV in one place! **\$8.95 plus \$4.50 shipping**



TV SECRETS volume two

A mammoth book, with 292 pages of technical material. More than 40 authors present over 90 technical projects and theory topics to fully acquaint anyone from novice to expert in the how and what of TV, video, and ham TV. Divided into 11 chapters, the book presents tested projects for all areas of interest in ham TV including antennas, amplifiers, repeaters, receivers, transmitters, video accessories, and more! **\$24.95 plus \$4.50 shipping**

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ADVERTISE IN ATVQ!

ATV'ers are hams that build projects more than other hams. They have a varied background ranging from technicial to engineer, and just might see a need for your product in their regular job as well as in their hobby. I hope to hear from you soon.

Please call TODAY!

Gene Harlan - WB9MMM - Editor/Publisher

ADVERTISING RATES AND DEADLINES

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COVER DATE	COPY DEADLINE	TO Printer	MAILING DATE
WINTER	January 1	January 15	Febuary 1
SPRING	April 1	April 15	May 1
SUMMER	July 1	July 15	August 1
FALL	October 1	October 15	November 1

While we will try to adhere as close as possible to the above dates, we reserve the right to adjust as needed.

If material is going to be late, please call to check if it will meet our schedule. We will try to accommodate everyone as best as we can.

Camera ready art or negative film right reading down are acceptable.

Trim Size:	8 1/2 x 10 7/8
Bleed Size:	1/8" beyond trim
Live matter:	1/4" within border

Harlan Technologies reserves the right to reject any advertising which is not in keeping with the publishers standards. Previous acceptance of any ad will not prevent Harlan Technologies from exercising the right to refuse the same advertisement in the future. Advertising orders are subject to the terms on the current rate card. Advertisers assume all responsibility and liability for any claims arising from advertisements and will protect the publisher from same.

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1/4	\$80	\$50
1/6	\$50	\$35

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NEW! "The Best Of Beasley - K6BJH - On Amateur Television" A collection of all the cartoons that have appeared in ATVQ over the years plus many more! Only **\$8.95** (shipping \$3 US - \$6 Overseas).....

Many issues of ATVQ are now available on CD ROM.

CD 1 contains 1988 & 89 (6 issues), CD 1 is \$19.95
CD 2 contains 1990 & 91 (8 issues), CD 2 is \$24.95
CD 3 contains 1992 & 93 (8 issues), CD 3 is \$24.95
CD 4 contains 1994 & 95 (8 issues), CD 4 is \$24.95
plus \$5.00 shipping (\$6 for two, \$7 for three, \$8 for all four - Other than USA - higher)
Previous ATVQ issues that are still available (most from 1994 to present) sell for \$4.95 each (postage
included for USA). Quantities are limited. Some real good articles exist in these issues!
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VHF COMMUNICATIONS, a super quarterly publication from KM Publication in England - \$35.00				
OSCAR Satellite Report, a newsle	tter published twice a month with the latest news on			
Ham Satellites. Mailed FIRST CLA	<i>LSS</i> - USA \$35 - Canada \$38 - Elsewhere - \$46			
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RATE USA CANADA DX	NAME:			
1 yr. \$18 \$20 \$26	STREET:			
2 yr. \$35 \$38 \$50	CITY:			
3 yr. \$50 \$56 \$75	STATE: POSTAL CODE Country			
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The Video Toaster The Perfect ATV Station Tool

By Ed Mellnik, WB2QHS - Email: ed@emavideo.com 3218 SW Dosch Rd. Portland, Oregon 97201



I am sure that many years ago there have been articles on the Video Toaster, however now that these incredible devices are now so cheap on the used market, I thought I would remind the ATV community of the great capabilities the toaster has. When I say Video Toaster, I mean the one that was developed for the Amiga computer and not the new one that is an editor on the Windows platform.

The Video Toaster is a board that plugs into many of the old Amiga computers. It needs to be either an Amiga 2000, 2500, 3000 or 4000. Whole system including the computer, the Toaster board and all the software can be found on Ebay and other used outlets for between \$300 and \$600. If you already have an Amiga computer, then you only need to buy a used Toaster board with its software. The Boards are running about \$150 to \$200. Here is what you get with a Video Toaster system:

A broadcast quality switcher -4 inputs

A special effects generator A Broadcast quality Character Generator A Paint Box A Freeze Frame store An Animation Program

I will talk a little about each one for all of you who might not be familiar with these terms.

THE SWITCHER

The Switcher has four inputs, but if you want to switch between cameras or VCRs you need to have a Time Base Corrector for each camera or cameras that will take external sync. But the switcher can dissolve between one camera and a graphic or between graphics without the need for a time base corrector. The Switcher has a built in Keyer which allows for all kinds of overlay possibilities. I like to key my call sign in the corner of my video camera picture. The Switcher has the capability of grabbing frames and saving them to hard drive or displaying them on the air.

At the end of my transmission I enjoy flying my call sign graphic in for a closing ID.

There are many types of dissolves and digital effects for transitioning to new pictures.

THE CHARACTER GENERATOR



Say you saw it in ATVQ!



Every ATV station needs a character generator. Titling, graphics, Call sign Ids are only the obvious uses. The CG uses postscript fonts. This means that fonts can be made to any size you want. Add outlines and shadows. Choose the color of the letters and of the shadows and outlines independently. Move them around on the screen. Lay them over stills you grabbed and saved with the frame stored or created in the paint box. The Character Generator also scrolls and crawls letters across the screen.



THE PAINT BOX

The first thing you think of when you think paint box is drawing with it. And if you don't draw, then, what do you need a paint box for? I never use it for drawing. I use it more like a simplistic Photoshop type of program. I load pictures in and change their size or tint. I make photo collages, I take some picture element and save it as a brush and use it in the character generator. I love making new call sign ID graphics. This is great for preparing photos for Slow Scan work as well.

THE ANIMATION PROGRAM

Lightwave 3D is known the world over now as one of the premium computer animation packages. Of course back when the Video Toaster was popular, Lightwave 3D was only in version 2.0 and 3.0. Today it is up to 7.0 and on Mac and PC platforms. Even with version 2.0 and 3.0,effects for Sci Fi programs like Star Trek and Babalon 5 were done. You can create animations with this program but you do need extra hardware to play them back in full broadcast quality. I like to use Lightwave to create still 3D pictures and ID cards. It comes with a modeler and many already made 3D objects.

The Newtek video Toaster is no little toy. As a video producer I used it to put together documentaries that were aired over the Discovery Channel and the Learning Channel.

http://www.hampubs.com



In 1985 I paid \$10,000 for a Character Generator alone that did not do half the job that the Video Toaster does. Now that the Amiga computer is a defunct platform, ATVers can pick these units up for a bargain. I would suggest finding systems that have it all put together for you.....The Amiga computer with monitor, Toaster board, Mouse and Keyboard. All these things were not interchangeable with standard PCs but had their own special connectors. If you are interested in Non Linear Editing you can also find the Video Toaster systems with its sister board - THE TOASTER FLYER. Again, I would suggest that the best way to go is to get the whole system with special hard drives and all so you don't have to configure anything. The Edit system worked with the Toaster and allowed you to digitize video footage onto Flyer hard drives and arrange the clips in the order that you wanted and then play them back for recording back to video tape. Here again you did need a Time Base Corrector for the edit system because the Toaster switcher only takes a solid camera source or Time Base Corrected Video from a VCR. You can find used Flyer edit systems in the \$2000 range however for ATV, the Toaster system without the Flyer editor is really all you need.

There is a large support group out there on the news groups as well as on the Newtek web site to help with questions.



10 GHz ATV LNB

I see that Bob Platts has a new email address in his ad in the latest BATC CQ-TV magazine - g8ozb@hotmail.com

Bob has a great antenna mounted LNB with a 9 gHz LO so that 10.4 gHz ATV from gunnplexers, etc., can be directly tuned on a satellite receiver. I have used his LNB and a Bensat on the receive end with my GVM-1 gunnplexer modulator and gunnplexer tx from SHF microwave and it works much better with higher sensitivity and stability than a second gunnplexer as a receiver. I paid \$95 delivered at the time for a less than 1 dB NF LNB. I know some were not having any luck contacting him before with a bad email address and he also moved.

Tom O'Hara W6ORG www.hamtv.com



23cm 2W ATV TX

The new Videolynx Z23B 2 watt 4 channel 23cm FM ATV Transmitters are now on the shelf ready to ship. DX is snow free up to 28 miles with the 2 watts FM, 3dB coax loss, 2424LYRM Loop Yagi antenna line of sight to a repeater with a 10 dBd stick. The standard frequencies programmed in and selected by a front panel digiswitch are 1252, 1255, 1265 and 1280 MHz, but you can get any other set up combination of up

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to 16 frequencies between 1248 to 1292 for use in the USA or higher frequencies for use in other countries by special order. A small fan is built in to the transmitters 4.1"W x 2.5"H x 5.5"L aluminum case so that the Z23B can be used for continuous duty - repeater TX or public service events, etc. The front panel has RCA phono jacks for camera video and line audio input. Deviation is the 4MHz standard for the video with pre-emphasis built in and 5.5 MHz sound. DC requirement is 12 to 14 Vdc and draws about 1 amp. Just plug it in and you are ready to go on the air. So call us and spend \$349 of your tax rebate check on a Videolynx Z23B.

Tom O'Hara W6ORG P. C. Electronics www.hamtv.com



ATVQ LETTERS

In the summer issue, one of the subscribers decided to not renew because of an article in German. I do subscribe to the German publication and find it both interesting and useful. I have purchased equipment from their advertisements since equivalent units are not available through any US source that I have been able to identify.

It is not necessary to read a foreign language to find value in foreign language publications. An open mind certainly helps.

John Oehlenschlager K0JO joehlens@wcta.net



APRS freq 435.250 and ATV

k0py@southwind.net writes:

<< Just reading my email from ARRL about the new APRS satelite going up (big deal) and saw the freq on 70 cm..... Yes 435.250... Wonder how they got to use this freq?? This might affect our ATV repeater input (which ARRL doesn't care about

http://www.hampubs.com

any way)... Hope not ... We got FM repeaters on top of us, now aprs crap on the bottom. What's a club to do?? >>

Satellite downlink usually does not bother ATV because most of the pass is above the fixed antenna pattern



ATVC-4 is one of the most robust and reliable Amateur Television repeater controllers on the market today. Four of ATVC-4's five video inputs can be configured to automatically scan for valid incoming video and key the transmitter. The fifth video input is available for a video ID generator and all five inputs can be selected remotely. Additional features include four mixable audio inputs, a non-volatile Morse Code repeater ID, a non-volatile DTMF password, robust Morse Code repeater telemetry, a programmable hang time, a beacon mode, and the ability to remotely control two repeater site devices (e.g. repeater room lights, fans, etc.) 6" x 3.75" One year warranty. \$279



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main power lobe. Uplink bothers when the antenna is pointed at the repeater or is very close. In any case, the amount of time is short and usually not a problem. There is all kinds of satellite inputs and outputs at the bottom end of the 435.0 to 438.0 satellite sub band and very little problem in most areas. Tom W6ORG



ATV - SUCCESS!

Between 5 and 6 PM this afternoon recent history was made when W7AI and W7WKM HAM TV exchanged color video (W7WKM with sound, too) over an approximate 12 mile path from QTH to QTH. Signal strength was better than P-3 and maybe even better than P-4 (P-5 being broadcast quality reception).

During W7AI's transmission W7WKM called KG7KV and he received W7AI's video on a vertical (!) at P-3 over a 14 mile path.

Next time we hope that KG7KV will return video as well.

Bil Munsil. W7WKM HAM TV w7wkm@cs.com Tucson.

PS - By the end of August we hope that the cross-band repeater on Mt Lemmon will be operational.



Fall 2001 **Amateur Television Quarterly**



The Southwestern Division Meritorious Award

The Southwestern Division Meritorious Award is an award I give each year at the SW Division Convention banquet, hopefully as a surprise to the winner. This award goes to someone that has given many years, day in/day out, to our division. While I usually only have one to present, this year I gave out three. One went to Mike Collins, WA6SVT. The other two went to Larry Brown,W7LB, and Sandra Heyn, WA6WZN. The only picture I have is of all three and myself (from left to right: WA6WZO, W7LB, WA6SVT, WA6WZN).

This is what Dave, KA6DPS, wrote me about Mike: "As far as I know. Mike put one of the first ATV repeaters in Ca. on Mt. Wilson with K6KMO. He put another one up for a short time on another hill after he & Douge separated. I think he was 19 years old at the time.

He then put the one at Santiago Pk. I think it's been there for 20 years. At a later date he was instrumental in forming ATN. Over the years there have been a lot of people who have helped support the repeater with work & money, but the driving force in making improvements to the system has always been Mike. He has invested countless hours maintaining all of the repeaters, & spent a lot of his own money. His dream has been to have a large system linking the South Western States on ATV. We have repeaters on Santiago Peak, Blueridge Mt., San Gorgonio Mt., Oat Mt., and associated with repeaters in San Diego, Las Vegas & Phoenix, AZ. Soon we should have Mike's dream completed.

He has spent so much time on the repeaters & helping every-

body else with their stations that he has yet to get his 2 GHz station going.

If you go to the ATN web sight you will find all of the info on the repeaters, as to inputs, outputs & locations. The address is www.atn-tv.org ."

Mike has been my friend ever since I became a ham about 28 years ago. As Moody, WQ6I, says, he is a "BIG DREAMER, MAXIMUM EFFORT & MAXIMUM RESULTS, EATS AND SLEEPS ATV."

Few hams have given so much for so long to ham radio!!!

73/Fried(ô¿ô) God bless.

ATVQ

Fried Heyn, WA6WZO (ARRL SW Director) lucky@surfpage.com

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ATV Activity! Game ON!

Stations seen or heard this evening in S. Illinois so far:

K9KKL Springfield IL N9XHU Springfield IL KB9PWQ Chicago IL NIOD St. Peters Mo KO0Z St. Peters Mo KD0LO/R St. Louis Mo KA9JJS KB9QKL S. Illinois

Bob, KA9UVY-TV

ATV Opening Continues In Mid West

Well it's open again tonight with P-4 Color and Sound from KF0DW near Kansas City to KA9UVY in Mt. Vernon II 300 miles! Stations in E. Kansas and E. Oklahoma are needed for Contacts! GET ON! MAKE IT WORK!

73, Bob, KA9UVY-TV

ATV Opening Results Last Night

Well, here is the run down on ATV activity overnight from here in S. Illinois.

It's 10:00 am and my eyes are tired! K9KKL Springfield II. P-2+ @ 110 mi. N9XHU Springfield II. P-3 @110 mi. KB9PWQ Chicago II. P-1- @300+ mi W4HTB Bowling Green KY. P-2+ @165 mi. NI0D St. Peters MO. P-4 @100 mi. KO0Z St. Peters MO. P-3 @100 mi. KD0LO/R St. Louis MO. P-2 @90 mi. W8ZCF Cincinnati OH. Sync @250 mi. KD0FW Independence MO. P-3 @ 300 mi. 8:30am-9:30 Southern Illinois ATV Operators on air last night =KA9JJS, KA9YCB, KB9QKL, N9SHA, WA9RSO and myself KA9UVY-TV

Also heard on 2 meters 144.340 but not worked, some giving reports only and some unable to break! W0DQY, K0PFX, K0TVI, KB9JGF, W8RVH

Several bands were tried but 70 cm clearly is the ATV DX Band! NIOD in St. Peters, Mo. did get his AM video carrier here on 923.250 with detection on NBFM @ KA9UVY MT. Vernon 100 miles. 1.2 FM was attempted but with nil results so far.

THAT IS ALL! Goodnite.

Bob, KA9UVY-TV ka9uvy@hotmail.com



ATV Beacons?

Just wondering if there are any ATV beacons out there on either 440mhz or the 900mhz bands? Would such beacons even be legal?

ATV beacons would be legal on all bands from 902 MHz and up per 97.203(d). The band segments where beacons are allowed below 450 MHz are too narrow for the ATV mode. The definition of a beacon in 97.3(9) says that it is for the purpose of observation of propagation and reception or other related experimental activities. Beacons are also limited to 100 watts of transmitter power.

Tom O'Hara W6ORG

Tom, I have a question(s), I was reading your message to Les, and I don't dispute what you said, but what you said "The band segments where beacons are allowed below 450 MHz are too narrow for the ATV mode.", Got me to thinking, how narrow could someone make an ATV signal? With just the basic black and white information as a beacon on 902 mhz, I was thinking you wouldn't have to be widebanded on the amplifier, that maybe the signal would go farther?

Thanks in advance, 73 John Hamilton KD5INM

Sure, the narrower the bandwidth the lower the noise floor and farther distance possible. You could possibly go down to 1/2 MHz or so and still preserve the sync and enough luminesce to see fat black lettering on a white background, but the beacon band on 70cm is only 100 kHz wide from 432.3 to 432.4 MHz.

Tom W6ORG TOMSMB@aol.com

It seems that almost no one is interested in simplex DX work on ATV these days. I keep thinking that much could be done with TV Tuner cards, using software to reduce the bandwidth and thus improve the signal to noise ratio.

I experiment a lot on longwave where advances in personal computing have totally changed the hobby in recent years. We now use modes like QRSS (slow speed CW) and BPSK to detect signals up to 28db below the noise floor! It might be possible to do the same for ATV and thus spur more interest in simplex DX.

Perhaps beacons in the 900mhz band might be one way to spur activity on this band...It certainly would qualify has propagation research.

Could a unit such as a rabbit be modified to reduce the bandwidth down to 1mhz or so?

Les Rayburn, N1LF

ATV Beacons Continued On Page 30 Say you saw it in ATVQ!

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ATV Beacons Continued From Page 28

After another message that you posted a while ago, I tried my ATV Wonder card on ATV. I just used it to monitor my own signal, using a few jumper wire for the receive antenna, and it worked great. I think that you had mentioned the blue screen when there is not a picture, but I did not have that with my card/software. I had snow when there was no signal. One of these days, I will hook to an outside antenna to see how good it is with weaker signals.

On ATI's web site, they do have source code available for the existing program, and a SDK (software development kit) for those that want to play with writing programs for the card.

Gene Harlan - WB9MMM Harlan Technologies - publishers of: Amateur Television Quarterly

Gene,

I had also "discovered" the older ATI All in Wonder cards, and am using one on my computer now. Connected to good quality TV antennas, with pre-amps, they make fine "off air" receivers, on a par with my Icom R-7000.

I would imagine that they would perform very well with 440mhz beam antennas as well...allowing for ATV use. As you mentioned, they do not have the "blue screen mute" feature.

If anyone is interested in these look on ebay for ATI All in Wonder cards containing the RAGE PRO chipset.

Also looked at the SDK for ATI ... programming is still out of my league. But I still think the possibilities are there for experimentation.

Tom mentioned adding low pass filters between the receiver and the video monitor to reduce the IF bandwidth. This would seem a real aid to weak signal ATV or TV DX work ... anyone know where such filters can be purchased? I would imagine that reducing the bandwidth to 4.5mhz or even more narrow would really improve a DX signal. You'd loose chroma and if you went too narrow, even the sound sub-carriers, but those big white letters on a black background would sure stand out.

Anyone know of a source for 750hm video low pass filters?

Les Rayburn, N1LF 4919 Cox Cove Helena, AL 35080



AA9XW Becomes Weatherman

Henry Ruh AA9XW aka KB9FO. made his debut as a TV weatherman at WYIN TV 56 Chicago. Although only as a backup for an ailing regular, he made his own (accurate!) forecasts and credible presentations for the two days, ushering in yet another "hat" for Henry, best known as Mr. ATV and 30 year veteran pro ham activist before the FCC and former publisher of ATVQ and Amateur Television Magazine. He is expected to appear again as the regular replacement, in addition to his duties as Chief Engineer at the station. Henry is also recovering from recent hand, knee and cardiac surgeries.

West Coast ATV Net

ATVO

Ron, W6VCF, on the Central coast of California is running the West Coast ATV net on 7243 kHz on Saturday and Tuesday mornings at 9 AM Pacific time. Any ATVers able to get on 40 meters with in range are welcome to check in. Info thanks to Doug K6KMN. Tom W6ORG



Two Auckland ATV URLs

Here are two URLs for Auckland ATV that you might like to mention in ATVQ.

http://www.qsl.net/zl1qf/atvug/Wpics/whitpics.htm http://www.qsl.net/zl1qf/atvug/ATVusers.html

Some good information is given & there are some super pictures of the Whitford site & equipment.

Michael Sheffield, ZL1ABS zl1abs@xtra.co.nz



FCC's Steve Linn Killed

I regret to inform you that Steve Linn, Deputy Chief of the Licensing and Technical Analysis Branch of the Wireless Bureau's Public Safety and Private Wireless Division, and his wife Lesley Nearman were killed on Friday in an automobile accident. Steve was based in the FCC's facility in Gettysburg, PA. He and Lesley are survived by their children, Andrew (12) and Denna (9).

The accident occurred on Friday morning when Steve and his family were on travel to an Amateur Radio conference in Virginia Beach. Steve's two children survived the accident with minor injuries; they were treated on Friday and released the same day. We are all deeply saddened by this tragedy. Steve was a wonderful person and a dedicated FCC employee of 25 years. He will be sorely missed by this Bureau and the entire Commission. Our deepest sympathies are with his and Lesley's families, especially their two children.



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ATV RFI Filters

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Configuration	8-pole In-line	8-pole Folded	8-pole Rack-mount
Weight (approx)	12 lbs.	12 lbs.	14 lbs.
Dimensions (inches)	24 x 3 x 8	12 x 6 x 8	19 x 6 x 8

The graphs below show the characteristics of a typical DCI 8-pole ATV filter with a video carrier frequency at 433.25 MHz. We make similar filters for 900 and 1200 MHz.





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Selden, NY - ATV Repeater

I hope you can use these pictures for the next issue, this is my repeater which I put together a little less than a year ago.

I had gotten started in ATV about three years ago, so I am a relatively new comer to the sport and living on the east end of Long Island, I had only a few people with which to make any kind of contact. Since I was not able to make the World Trade Center repeater from my location, and the New Haven repeater is now off the air, I was real frustrated with the lack of activity. When we had good band openings that was great, but those were few and far between. I also found I had a lot to learn about putting up an ATV repeater.







Since Long Island did not have an ATV repeater, I decided to put one up myself. The amount of people here on Long Island that had interest in ATV made the idea seem like a good one. I started to research what was available for equipment and loca-

The combiner was the most difficult to get working properly. I called Ralph at DCI and told him what I wanted to do after trying other used repeater type combiners and much expense. DCI came up with a great combination of bandpass filters that worked real well. The transmitter is a commercial single channel modulator with an output on 439.25 mhz. this drives a Pauldon 150 watt amp, but I was only able to get about 40 watts out average with good linearity with this amp. The receiver is a



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Say you saw it in ATVQ!



commercial unit by Olsen Technology with a GasFet preamp ahead of it to get the sensitivity up receiving on 426.25 mhz. The controller is the board made by Intuitive Circuits with their ID board which I built into a nice rack mount housing bringing all the controls out to the front of the panel so I don't have to open the unit up to make adjustments. The antenna is a Ribbed Cage Slot mounted on the Tower at about 225 feet and fed with 7/8 inch heliax cable.

The site is located in Selden, on Long Island, with coordinates of N. 40 50 32 and W. 73 02 23. The tower itself stands at 350 feet tall with a ground elevation of 260 feet amsl. and is one of the largest towers in the area.

I think all the pictures are self explanatory. You see me by the repeater and at the base of the tower, a shot of the tower from another hill in the area, and various shots of the building transmitter room and the ribbed cage slot on the side of the tower.



been an amateur for over 30 years when I was first licensed

On-Screen ID Overlay



OSD-ID (PC) is an on-screen display board that overlays user defined text onto either an incoming video source or self generating background screen. Every position on the 28 column by 11 row screen (308 characters total) can contain a user selected character. All information is stored in non-volatile eeprom memory so even with loss of power OSD-ID (PC) retains all screen information. The on-screen text is created using a robust editor called IdMaker which runs under Microsoft Windows. IdMaker includes an integrated upload utility which sends the user created screen to the OSD-ID (PC) board through a supplied RS-232 serial cable. OSD-ID (PC) has two screen modes, a "mixed" (black and white text overlaid onto an incoming video source) mode and a "full page" (OSD generated color background) mode. OSD-ID (PC) supports screen background, character border, and character background color selection. Character border and pixel offset can be set for each of the eleven rows. In addition, programmable character zoom levels, horizontal and vertical pixels positioning, individual color and blink character attributes can also be set. And finally, the user can define OSD-ID (PC)'s text triggering method. 3.5" x 2.5" \$129 includes serial cable and 3 1/2" diskette.

Intuitive Circuits, LLC Voice: (248) 524-1918 http://www.icircuits.com

in 1970 back in high school as WN2PJP and operated mostly AM on the low bands. I have worked for TV broadcast such as ABC and local cable stations receiving video training through these jobs. Most of my background has been in the two-way radio and paging fields.

Joseph E. Rose WA2PJP WA2PJP@aol.com

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Fall 2001





A Science Club Start-Up

Dick Kors, KM6EP Email: dk@ofkors.com AIR Science Club (Aeronautically Inclined Rocketeers) 119-A Flynn Ave. Mountain View, CA 94043

Often people find the science curriculum in today's schools wanting. In our case, a group of parents together with the students from one Saratoga, California middle school formed our own after school science club hoping to challenge more demanding, yet fun topics. The club was formed with two major objectives in mind, each member was to become a licensed amateur radio operator (HAM) and the club was to build and launch a rocket payload call a "CanSat".



CanSat

The term CanSat (http://ssdl.stanford.edu/cansat/) coined by Prof. Twiggs of Stanford University describes a simple electronics module packaged inside a 12oz. soda can to be lofted to over 10,000 feet by an amateur rocket for release. When deployed, the desent by parachute requires roughly 15 minutes, the approximate time a low orbiting satellite can be contacted



The guys

from earth during each overhead orbital pass—Thus the name CanSat.

The first year's club membership consisted of twelve, seventh graders, ten of which obtained their amateur radio license within four months (**http://www.best.com/~rjkors/sci-club/**). The club also built two CanSats and traveled to the high Nevada



Some of the girlsAmateur Television Quarterly Fall 2001



The desert Say you saw it in ATVQ!



desert with a group of rocketeers for launching (http://ssdl.stanford.edu/arliss/). Other club activities included field trips to both the "Big Dish" at Stanford University and the Stanford Linear Accelerator in nearby Menlo Park.

During the second year, the club (http://www.air-scienceclub.org/) decided to concentrate on the details of building and operating the CanSat. Members honed their computer programming skills on the "Basic Stamp"; plus learned how to design, etch and assemble PC boards. For a prototype, they built and learned to fly a Radio Controlled airplane incorporating a video system transmitting real time NTSC television video to the ground. Later, a CanSat was constructed using the same video system design. A second design CanSat carried a simplex amateur radio repeater.



Unfortunately, when the video CanSat deployed, it failed to return any signals of any type and was never located. It simply disappeared. Some in the club theorized that since the launch area in Nevada is near secret Area 51, probably an unknown government force neutralized and captured the CanSat. Undeterred, the club is contemplating next year's activity - a bigger and more powerful autonomous airborne surveillance vehicle of a yet undefined design and mission.





Same Waves, Similar Problems?

by Klaus Hirschelmann, DJ7OO - Email: k.hirschelmann@mainz.netsurf.de Translation by Klaus Kramer, DL4KCK - DL4KCK@t-online.de Reprint from TV Amateur Nr. 121

As you all know the 13 cm band (2400 MHz) is used not only by radio amateurs but by several commercial and national services.

These are security agencies for instance and public or commercial television broadcasters. They have added a lot of field equipment for TV outside broadcasting lately, mostly as "wireless cameras" in live shows, sport events and news gathering, where flexibility is a premium option. For video transmissions FM-TV devices are common, they have technically similar parameters like the ones used by TV amateurs. In order to avoid reflection artifacts there are directional aerials pointed to each other. In Germany there are 7 channels on the band 2300 - 2500 MHz devoted to such purposes, but only 4 of them can be used simultaneously without mutual interference.

Recently also digital technology is appointed to television transmissions using OFDM on the same frequency band with some clear advantages. In opposition to analog links there is a connection possible without reflection artifacts and even without line of sight! During a carnival parade in Mainz we got live video via OFDM from a camera riding on a carriage over several kilometers. With analog technology we could have used only a helicopter repeater device. At skiing events there is no line of sight between start and finish, so the new digital technology enables us to establish video and audio links by reflections at nearby mountains. Both sides have to point their directional aerials to this location.

Having produced many TV outside broadcasts for more than 20 years also on the 13 cm band I cannot remember big conflicts

with amateur radio stations. Sometimes we had to ask for temporarily shutting down an ATV repeater if we needed a lot of channels. This was done from OM to OM and raised no problems. More critical were unsafe microwave ovens and even private camera links from nice neighbors!

But these are trifles against recent developments like powerful hf digital data links like LAN and "Bluetooth" trashing large portions of the 13 cm band without a chance for other usages. Looking at the diagram below plotted in the city of Dortmund (Rhine-Ruhr area, Germany) you see mostly the ISM band above 2400 MHz is concerned. In similar areas the situation is surely not much better. We have to consider a longtime interfer-

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ence using this band. As long as only one or two channels are needed for a TV link we have the possibility to find undisturbed frequencies in the lower part of the band. But with large area productions and helicopter links we have to cover at least one channel in the upper portion because of isolation purposes. This means: any live reports from bicycle races or marathons have become a risk.

What now? We have to consider that public usage of the 2.4 GHz band cannot be stopped, so this shared spectrum will be lost for other users like TV amateurs soon. After having recognized the TV producers' problems, our telecom authority has envisioned some new frequencies for us. Being partly on the 10 GHz amateur band they will ensure that TV producers and TV amateurs will not be parted too far away in the future, hi.



Is ATV Illegal For RACES?

Thanks go out to those of you that have provided me with info concerning ATV usage with RACES.

However, I just received one e-mail that said that ATV was illegal according to Part 97.

What do you all know that this fellow doesn't?

Bil Munsil, W7WKM HAM TV W7WKM@cs.com

Technically, RACES in the FCC Rules only talks about mes-Say you saw it in ATVQ!



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sages. I doubt any FCC enforcement person is going to cite you for using ATV as part of the Emergency Preparedness Drills if you say you consider the video and voice communications as messages and if they want to strictly interpret it as such, just agree to cease and desist.

Remember, a lot of these rules are old and all modes were not considered or thought of at the time. Sometimes you just have to go with the intent of the Rule and then keep your fingers crossed.

RACES was for Civil Defense purposes as part of a state or localized plan if you read through the 97.400 to 97.407 sections, and what most of us up till now have been doing really is amateur emergency communications with AREC and other groups.

Tom, W6ORG TOMSMB@aol.com





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At a soap-box race in Osnabrueck we tried to put attention to amateur radio. It was an idea of Henning, DG2BCA, and the "youth group amateur radio Belm" (DOK I-34) worked with us grown-ups from Bramgau (I-52) and Schinkel (I-34) to build up an experiment: ATV live transmission from a running soap-box. We would have liked to install 7 cameras on the mobile (like the big brother at Formula 1), and there were 90 starters. But with our small budget we could not afford that. So we used a borrowed camera from Peter, DH6BAX, and a 23 cm ATV-TX from Henning, DG2BCA. Accumulator and self made aerial came from Manfred, DL8BM.

One day before the race Manfred used an old bicycle attachment for cars together with PVC pipes as a camera port on the soapbox. Some cuttings at the stern were big enough to carry the PLL-TX for 23 cm and a lead-gel accumulator. An experimental aerial was available as a 13 and 23 cm version. For a training run we had not enough time, so we only performed a test transmission to adjust camera position and base-band levels. Then we



erected the amateur radio demonstration stand at the racing track. As late as 10 hours pm I had to unload my shack into my car, and at 4 hours in the morning we began to install cameras and hf links transmitting live from the racing start to the finish and vice versa. So time-keepers and spectators at the finish as well as starters were able to see the ongoings on the other side. Some of the live video was

Just For ATV Fun Zero horsepower, but high-tech on board a soap-box! by Manfred Hoffmann, DL8BM Translation by Klaus Kramer, DL4KCK DL4KCK@t-online.de Reprint from TV Amateur Nr. 121





repeated via ATV relay DB0TEU by Henning, DG2BCA. He was lucky to be able to use a 26 m high lifting gear on a truck that was placed at the finish for advertising reasons.

We managed to

record all three races seen from the drivers vision and very nice pictures from the whole track. Thomas, DH1BDL, took additional views on tape from the surrounding area. We shall have to sort out and archive everything, the whole action was nerveracking and should be worth improving. Refining the equipment is a goal for the next event.





Say you saw it in ATVQ!

ATV Repeater ID A Discussion

I wanted to find other ATV repeater operators to ask about basic repeater identification. A user within the coverage area of our machine has asked about repeater identification. I thought who better to ask than other repeater owners and/or operators via these list servers. The question relates to a repeater and when to identify. Per FCC Rule Part 97, a repeater station must identify while the machine is transmitting. Our system does conform to this rule and also identifies itself while not in use every 9 minutes. I've examined FCC rules on this topic and can't find any rules that offer an explanation for identification while a repeater station is not in use by others. What I am asking is for input from others as to what is done now and has been done in the past. As with most 2M and 70CM FM repeaters, they identify station information, club announcements, along with any other ARES or RACES data when requested. Our club's position is that to identify our repeater station and to communicate the necessary information to current or potential users of our machine was a correct decision when it first went on the air over five years ago. If anyone has documentation on this topic, or have comments, I would love to hear about them.

For more information on our activities, please reference: http://www.qsl.net/kd2bd/atv.html

73, de Ken, N2SMT **kbrockel@monmouth.com** Trustee of Brookdale ATV/R

Doesn't it seem that your system is violating 97.111 and 97.203 every 9 minutes? If true, your potential fine is adding up rapidly. Five years?

Don Milbury, W6YN w6yn@juno.com

I don't know the US rules about this but, personally, I think that the best and the most useful identification would be to have, when no user is present, the transmitter permanently running ON with an identification picture (call-sign, responsibilities, list of DTMF commands, etc...)

With this, everybody can use the repeater as ATV beacon for tests, very useful especially for SWL and as publicity for our hobby. This tells also to other users of our radio spectrum, that this frequency is occupied. In this time when the radio amateur traffic is decreasing, this gives also an indication to our authorities that ATV is present.

Michel Vonlanthen, HB9AFO mvonlanthen@vtx.ch

Please explain why you think our system violates Part 97? I read those parts and we are not in violation according to current FCC rules.

73, de Ken, N2SMT kbrockel@monmouth.com

Your original question included the information that your system is transmitting one way transmissions every 9 minutes. The expressed intention is to send the station call sign or what could be defined as a beacon.

One way transmissions are illegal except in certain cases (97.111) your case is NOT one of the exceptions.

A beacon may transmit one way communications (97.203) your transmitter is NOT in a beacon band.

As your transmitter activates automatically every 9 minutes, it could interfere with another operator that could be using the frequency (97.101).

I trust this information will be helpful to you.

Don Milbury, W6YN w6yn@juno.com

The Repeater and the user of the repeater must ID every 10 minutes during a continuous transmission and at the end of a transmission - 97.119(a). It sounds like you also have the repeater transmitter come on and ID every 9 minutes when not in use by others. You can have automatic control like this if used as a beacon. However, this cannot be done outputting in the 70cm band on ATV. You can have a beacon on any frequency above 902 MHz though. On the 70cm band, the beacon must be between 432.300 and 432.400 per 97.203(d) which is obviously too narrow of a band segment for ATV and would interfere with weak signal work.

So in my opinion, ATV repeaters with outputs on 70cm cannot automatically transmit periodically the ID and other information. There must be a control operator present to do it. Any user can be designated as a control operator.

Tom O'Hara, W6ORG TOMSMB@aol.com

Sorry, but a station ID "IS" OK and must be part of any amateur transmissions (97.119).

Do you really expect anyone to have a control operator at the control point every 9 minute increment of each 24 hour day?

I know you mean well, but the introduction of a "control operator" to the mix does little more than muddy the water and does nothing to address the original question.

Don Milbury, W6YN w6yn@juno.com

Why don't we do something radical like asking the FCC for an interpretation.

73 Max KI6NJ ki6nj@juno.com

I've watched this thread with interest but in silence for the last few days. HATS runs an ATV repeater in the Houston area and

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http://www.hampubs.com

Repeater ID Continued from Page 39

has for a number of years.

Max mentions doing "something radical" like asking the FCC for an interpretation.

That is exactly what we DO NOT want to do. We can all read Part 97. We can all interpret the rules as we read them. We can all implement systems that behave in manners that we have determined to be within the operation of systems as specified by the rules. AND, we can all live with those operations since its OUR licenses on the line if rules are broken and the FCC calls our operations to task.

We NEVER benefit by pressing an issue like this to the Commission and asking them for a narrow ruling. What is common practice for years in the amateur community and never questioned or opposed by the FCC ends when someone demands that the Commission WRITE DOWN an opinion that must necessarily be narrow and legalistic.

Please, read the rules for yourself, decide how you want to operate your system, ask a close friend or someone whose experience you respect for an opinion if you wish. But, please don't air these kinds of discussions in a forum like this where eventually someone feels that their interpretation needs to be "proved" by going to the FCC. We have done a pretty good job of selfpolicing our service in the past. Let's continue that tradition.

Ed Manuel, N5EM n5em@amsat.org

Because, when you do, you bring attention to the particular repeater operation with the FCC and could turn them on to changing the priorities of their enforcement. Is this really a serious problem that affects amateur operation or just some legal nit pickers with nothing better to do?

There are many voice as well as ATV repeaters that are in the "auto-jam" mode or beacon on frequencies below 450 MHz that are not really interfering with anyone though may be in violation. How many have primary control below 222 MHz too? Does your repeater key up with the ID, site camera, weather radar, Space Shuttle, etc., when ever any one tones it up on a two meter freq? Do you really want to bring attention to your local repeater for a look by the FCC?

I suggest asking the legal experts at the ARRL first before going to the FCC.

Tom O'Hara, W6ORG TOMSMB@aol.com

So you are saying it is illegal to change video screens with 2 meter tones? Even though "real" control is on a much higher frequency? I don't think so, i.e. DTMF dialed phone calls on your local 2 meter machine. Lets spend time getting our ATV

repeaters working better and membership up than bothering with this garbage.

Lee AB5IG main@seabrookcomputers.com

It is illegal to have primary control below 222 MHz. But you can have secondary control below 222 MHz which means that once the repeater is keyed on normally on its input you can use tones for autopatch, to change ATV screens, etc., on another frequency. But you cannot come on two meters to initially turn on the ATV repeater and then tone up other repeater functions unless you are also repeating your sound below 222 MHz audio on the sound subcarrier of the ATV repeater in which case it would be operating as a crossband repeater. In other words there is a primary control function and a repeater operation which are two different things in the FCC Rules.

Tom O'Hara, W6ORG TOMSMB@aol.com

C'mon Lee. These topics may be passe for old-timers, but have a little mercy on the newer hams who can still learn a lot by some friendly discussions on a mail list. Part of any discussion process is bound to introduce a little "misinformation" every now and then--not all bad if it gets folks thinking, and eventually gets corrected.

BTW, regarding auxiliary operation and the FCC, we have a very recent case where the FCC did rule against Kenwood's Sky Command system for these very issues: auxiliary operation below 220.15 MHz. See article: http://www.arrl.org/news/stories/2000/07/28/3/

John Chamberlain, AC5CV AC5CV@arrl.net

I agree with Tom and Lee. The FCC has a hands-off attitude as far as Amateur Radio goes. They look to us to regulate ourselves.

The FCC sees it this way, if they are busy with us trying to settle our debates, then they don't have time for the rest of the mountains of business they have to deal with. They also feel like that if they put to much "strictness" and regulation on us, that it could stifle or impede progress of new developments in the radio arts(i.e. PSK31, radio technology like the DSP-10 radio being kitted by TAPR).

Which would you like to have, rules that are somewhat open to interpretation?? or ones that strictly, tightly control Ham radio??

The FCC wants to encourage amateurs to get along and work out our problems without bothering them. The ARRL is an excellent source of info.

John,KD5INM Kd5inm@aol.com

I have seen where an ATV station will turn on the transmitter and transmit NASA, and while they might identify properly,

> Repeater ID Continued on Page 40 Say you saw it in ATVQ!



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Driving the PA5 20 Watt Amplifier from the 1.5 Watt TXA5-RC ATV Transmitter Board

There are many applications where having the flexibility of easily switching from 1.5 Watts to 20 Watts without having a completely separate ATV transmitter system is desireable. If 1.5 Watt is not enough for a public service event, or in a long range balloon, rocket or R/C application, but there are other times when you dont need 20 Watts, then you can drive the PA5 20 Watt peak envelope power amplifier through a RF attenuator.

I often get asked if the PA5 20 watt amp can be driven by the TXA5-RC just by turning the peak envelope power down with C7. The answer is maybe; but you had better be able to accurately measure the TXA5-RC output power. If you dont verify before connecting to the PA5 that the power is less than the 200 milliwatt's, you will blow the first stage of the power module. Most do not have a RF power meter that will accurately go down that far.

Secondly, the 20 watt power module in the PA5 only takes about 20 mw to give the 20 Watts out at 13.8 Vdc applied. The TXA5-RC may not want to be turned down that far and still be able to set the pedestal as well as get good stable video.

If you want to switch back and forth between 1.5W and 20Wpep the easiest answer is to put a good, known, 15 or 20 dB 2 watt inline attenuator in the coax line between the TXA5-RC and PA5. Mini-Circuits Lab makes a 50 Ohm 2 watt inline coax attenuator with SMA connectors, model S20W2, for \$30 (718-934-4500 www.minicircuits.com).

Using a 13.8 Vdc supply, the 20 dB Mini-Circuits Lab S20W2 attenuator, gave 16.5 watts pep out with 1.7 watts out of the TXA5-RC on 426.25 MHz in my tests. Dropping the DC voltage down to 12.0 Volts to the TXA5-RC as one might do in an R/C aircraft, rocket, portable, or engine off mobile, the TXA5-RC put out 1.3 watts pep and the PA5 9.6 watts. If the PA5 is also run at 12.0 Vdc then you could use the 15 dB model S15W2 attenuator for higher power output.



62 Ohm 2 Watt Metal Oxide Resistor - 282-62 220 Ohm 1 Watt Metal Oxide Resistor - 281-220 100 Ohm Carbon Trim Pot - 531-PT10V-100

Use a small piece of copper PC board as a ground plane and heatsink to mount the attenuator parts. Bend the pot CW and wiper pins up 180 degrees and connect directly to the 220 Ohm resistor and to the RG174 coax center. CCW pin to ground. Make sure that the CW and wiper pins do not touch ground when adjusting. With TXA5-RC pedestal pot at max CCW, no video plugged in, start attenuator pot at CCW and slowly increase to 20 Watts. Then reset the pedestal pot for 11 to 12 W. You can also build a Pi attenuator using non-inductive resistors (no wire wounds), but the wire leads are very significant inductors, especially the 62 Ohm resistor. The TXA5-RC side 62 Ohm needs to be a 2 Watt as it dissipates most of the power.



Interconnection shown before mounting in the PA5 chassis.

The attenuator shown varies from about 18 dB to 33 dB with the pot, and gave 25 Wpep max to 2 Wpep minimum when driven with 1.7 Wpep from the TXA5-RC. Construct on a 1.5 x 1.25" piece of copper PC board. Note there are practically no leads so as to minimize inductance. Two holes are drilled to mount on the chassis with screws to help pull away some of the heat. Check for shorts before applying power with an Ohm meter.

Another solution, if you have room, is to coil up 80 feet of RG174 coax to give the 20 dB of attenuation at 420 MHz between the two modules. RG-174 has 25 dB/100 ft. of insertion loss at 420 MHz or 1 dB/4 feet. The coax length can then be reduced little by little until the full 20 watts p.e.p. is reached out of the PA5. No matter which method of attenuation you use, you would need to have a good RF power meter in the PA5 output to verify that the peak envelope power does not exceed 20 Watts and to reset the TXA5-RC pedestal pot for 60% of what ever the p.e.p. reading is. The PA5 will put out more p.e.p., some as high as 30 watts, but the video linearity and color burst start to degrade and the signal strength between 20 and 30 watts is hardly noticeable at the receive end.

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there might not be anybody listening, i.e. a one way transmission. Another instance is the broadcast of weather radar continuously.

It seems these are both not right as they would be one way transmissions. How do different repeaters/ATV'ers handle this? On a repeater, you could have it brought up with touchtones, but how long would it stay on? And as has been mentioned on this thread, some are doing this on two meters. What does your system use to do this?

Gene Harlan, WB9MMM ATVQ@hampubs.com

It's OK as long as it complies with 97.113(e)

Don Milbury, W6YN w6yn@juno.com

One could consider it a permissible one way transmission under 97.111(b)(6) as an information bulletin. Some repeater ID's include local radio club or net time/freq info as an information bulletin. I think it is the periodic call ID only that might be in question.

But if one goes by 97.1(c), strict interpretation of the FCC Rules where no interference or operational problems exist is contrary to this basic purpose of the Rules to improve the amateur service and advancing the skills and technical phases of the art.

Tom O'Hara, W6ORG TOMSMB@aol.com



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"It [IC-R3] is perfect for general monitoring or testing purposes in the shack as well as portable and mobile ATV applications such as R/C, finding downed balloons and rockets and public service events. This receiver is also very handy for repeater owners to track down interference from legal and illegal Part 15 transmitters or other services too. It does surprisingly well for viewing in bright sun light too."

-Tom O'Hara,W6ORG,of PC Electronics in Amateur Television Quarterly -Spring 2001

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Frequencies courtesy of Scanning USA, Feb. 2001 -Something new to monitor, by Tom Filecco



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