

THE CHERRY JUICE



Newsletter of the

Cherryland Amateur Radio Club

Traverse City, MI

ARRL Affiliated Club #1082



Club Officers

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Chuck Mellberg, W8SGR

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Club Repeaters

W8TCM/R 146.86- (PL 114.8)

W8ZTB Memorial Repeater

W8TCM/R 442.50- (PL 114.8)

W8NGH Memorial Repeater

Club Radio Nets

MESH NET

Monday Evening Social Hour
Each Monday, 8pm

146.860 MHz (-) (PL 114.8)

SMASH NET

Sunday Morning Amateur
Social Hour
Each Sunday, 9am

3.935 MHz

UPCOMING EVENTS

General Meeting: Sep 26th Tuesday 7pm

Program: Grounding by David Poinsett W8APT

Also: Greilick Update with Director Nick Killian

The Salvation Army - Basement Meeting Hall

1239 Barlow St., Traverse City, MI 49686

(at the intersection of: Barlow st. & Boon st.)

Tuesday Project Nights

Where: At the club station in the lower level of the Salvation Army Building located at the NE corner of Barlow and Boone. 7 p.m. Every Tuesday except the 4 Tuesday of the month which is reserved for regular club meetings.

Forward Waves

Hamfests / Swaps

Great Lakes HamCon!

2017 ARRL Great Lakes Division Convention

October 7 & 8, 2017

Michigan International Speedway,
12626 U.S. 12, Brooklyn, MI 49230

Talk-In 145.120- 123Hz tone

Active 0800 Thursday Oct 5

through 2100 Sunday, Oct 8

More information: glhamcon.org

VE Testing

Traverse City, MI

November 11th

Sponsor: Cherryland ARC (ARRL/VEC)

Time: 1:00 PM (Walk-ins allowed)

Contact: Hope Francisco, (231) 218-0622

Email: hopeaa8sn@gmail.com

Location: Traverse City District Library

610 Woodmere Ave, Study Rm D

Traverse City MI 49686-3103

Gaylord, MI

November 14th

Sponsor: Top of Michigan ARC (ARRL/VEC)

Time: 7:30 PM (Walk-ins allowed)

Contact: John W. Clements, (989) 619-4499

Location: Gaylord Regional Airport

1100 Aero Dr, Gaylord MI 49735-9822

Reflected Waves

September 1995

The CARC had an auction (officiated by auctioneer WD8IIR) of the equipment from the estate of silent key N8DUW. Jack was a long-time active member of the CARC and his wish was that his equipment would be used by people in the Cherryland ARC

The Cherryland ARC participated in the Simulated Emergency Exercise involving Total Oil Company. The scenario was a simulated oil spill occurring during the unloading of a tanker during the night at the Total terminal on West Grand Traverse Bay. More than 250 people were involved in this successful SET. The Cherryland ARC's involvement was coordinated by Paul KA8HIB, at the time the GT county EC.

September 2006

The CARC Program was a presentation by the Salvation Army Traverse City Major on the Salvation Army Team Emergency Radio Network and how each group works together during a disaster event.

The CARC published the rules for the 7th annual TBI contest. For this year the contest began on Oct 1st and concluded on Oct 31st.

Bill N8GAJ presented a possible project for the CARC to construct.

Volunteers Needed - Trailblazer Weekend Oct 7

Joe Erlewein N8CN

The organizers of trailblazer this year are requesting that the Cherryland ARC send some volunteers to operate, teach, and demonstrate Amateur Radio at the tech shack at GO-REC (Greilick Outdoor Recreation and Education Center, formerly known as "Camp Greilick") — (licensed call W8BSC).

It will be a round robin for the scouts, so we will be demonstrating during several short periods of time (10-15 minutes) that will capture their interest. The event is October 7th from 9:00 until 4:00.

Those interested in being on-site at the Camp Greilick Ham Radio shack (or assisting remotely with a simulated contact!) should contact Joe N8CN for further information - joe@n8cn.org (or call 231.668.4223)

For Scouts and interested groups, here is the registration link:

<https://scoutingevent.com/272-2017trailblazer>

Saturday, October 7, 2017

Camp Greilick | 4754 Scout Camp Rd, Traverse City

**Volunteers needed for
BSA Jamboree On The Air 2017**

This year, Holly Bringman KB8ALS is coordinating a local JOTA effort at Camp Kellogg in Kalkaska.

Jamboree-on-the-Air, or JOTA, is the largest Scouting event in the world. It is held annually the third full weekend in October. There are no official hours, so you have the whole weekend to make JOTA contacts. The event officially starts Friday evening during the JOTA Jump Start and runs through Sunday evening.



JOTA is October 20-22nd, and we are targeting having some CARC members assist the scouts from for a few hours on Saturday Morning (Oct 21st) and then a couple more hours in the afternoon. Meals Provided! There is a break for lunch and there is a pig-roast in the evening.

We are looking for volunteers to assist with setting up a field-day type of station, possibly even setting up two stations. We would then act as control operators as needed as well as educate and demonstrate for scouts at the stations.

If you are interested in assisting, please contact Joe N8CN who is coordinating the CARC effort - you can email joe@n8cn.org or call 231.642.1049.

TBARG Update

Glen Johnson K8SGZ

Here is an update on current TBARG topics!

September 30th SET

The Simulated Emergency Test by ARRL is planned for this coming Saturday. The purpose of the drill is to practice send voice messages. We will be meeting at Glen's office at 5123 N Royal Drive in Traverse City to represent the Grand Traverse County. We will be grilling burgers for lunch – if you are interested in being a part of the exercise (or just want to watch), please email Glen at GTSkywarn@gmail.com.

Integration with 911 Centers

During the wind storm two years ago, the Grand Traverse and Leelanau 911 centers lost communication for a brief period of time. We are planning a small scale exercise to connect two 911 centers together using ham radios. After we have “debugged” this exercise, we will be looking at a larger effort for Northwest Michigan late Fall or early Winter. This is still in the planning stages and I will let you know when I have more information.

Munson Emergency Communications

We will be looking at sending digital information (most likely Packet) from one Munson hospital to another. This will be a gradual process and our goal is

to add one Munson hospital at a time. There will be a planning meeting in October (date yet to be determined).

This Summer has been an extremely for most of us and has limited many peoples availability. With Fall coming, people will be more available for upcoming activities.

So stay tuned, more is on the way.

Glen Johnson K8SGZ,
TBARG and Munson Emergency Communications

Paddle Antrim Report

Mike Cleary W8VPC

I would like to thank all the ham operators that came out to help with communications. Great JOB!



Besides myself, Participants were Nelson W8NWO, Christian K8RGB, Toby KC8VSU, Ernie K8RCT, Glen K8SGZ, Justin N8QVQ and Russ K8RUS. Also standing by in case they were needed, Pete K8WQK and Bill N8STX.

The event was a two day event involving about 140 kayakers starting on Friday September 15th and about 90 kayakers on Saturday September 16th.



The County Emergency Management allowed us to use the command post trailer which was positioned throughout the area. Also provided were 6 portable 800

mhz radios programmed to use the state radio system (MPSCS). We also were using the Mancelona K8WQK 147.38 repeater which covered most of the area. Sheriff marine patrol provided safety.



Other than a few issues with the command post, there were no serious problems.

Frequencies used:

event channel G13

147.38 repeater

146.58 simplex

146.52 simplex (unofficially)

Marine channel (sweep boats)

Thanks, 73 - Mike W8VPC

Mike also created a Google + group for Antrim County ARPSC — feel free to join..

<https://plus.google.com/communities/103574874549647409850?sqinv=Oopobk9TQVhMMG1mbnJPUDdRT2xYZmxrSW9zdkpn>

Club Picnic

Joe Erlewein N8CN

The CARC had its annual picnic this year on July 25th. There as a great turn-out this year once again, and there was a lot of fun had, and a lot of food eaten!

There must have been about 30 people there. One of the highlights was that Glen brought out new Ford van that he was outfitting into a camper van. He and his wife were going to take it on a two week camping trip to the New England states. (They are now back and had had a great time.). Glen also did the cooking for the picnic.

Classifieds

===== Yaesu VX-7R Accessories For Sale =====

Due to an encounter with the front tire of a Chevy 350 pickup and the ground, my Yaesu VX 7R is in the scrap bin at the Yaesu Repair Center. Thus I have a few accessories with no home. They include:

- (1) Yaesu FNB-80LI battery, 1500 mah
- (3) Priam premium batteries, 1300 mah
- (1) Yaesu CD-15A charging cradle
- (1) Yaesu belt clip kit for VX 7R

Note there is no power supply for the cradle, but takes a unit that supplies 12-16vdc at 600 Ma such as the Yaesu EDC-5B (mobile) or a PKPower 120v supply (fixed or standby) (\$10-\$14 range)

The batteries have been used in rotation, minimally, for about 36 months.

New, you can buy all this on Amazon for about \$160. Asking \$40. Contact Chuck, KD8PCG, b@mypgi.us

FOXHUNT 2017

The 2017 Fox Hunt happened on August 20th, and Glen was the fox! Mike W8VPC, Joe KC8RLU and Ernie K8RCT with friend Bob Kennedy. Ward N8WK also joined in the hunt, with his family.

Ward was able to find Glen in just under an hour. Congratulations, Ward! We'll be looking forward to finding you next year when you hide as the Fox!

VE Report

Hope Francisco, AA8SN

On Saturday August 5, Hope AA8SN and helpers administered Volunteer Examinations for three candidates at the Traverse Area District Library in Traverse City. All candidates were successful in their pursuits, yielding two new operators and one upgrade!

The next VE testing session is scheduled for Nov 11. It will be held at the Traverse Area District Library in Study Room D at 1pm.

Contest Time!

TBI, UTR and WAM, Oh-My!

Joe Erlewein N8CN

At some point this year, a few of us got to talking about an activity to get everyone's interest re-homed onto Amateur Radio after an active and eventful Northern Michigan summer.. "Well, how about a contest?" someone said.

In the past, the Cherryland ARC has sponsored a few localized contests. Most notably, we've had a "Worked All Members" (WAM) contest, a "Use The Repeater" (UTR) contest, and a "Tom's Bright Idea" (TBI) contest. I hope that clears up the acronym-soup in the subtitle of this article... and most of those are self explanatory... but just what is "Tom's Bright Idea?"

Imagine my surprise when I found this in the October 1999 issue of the Cherry Juice:

September 1999 marked the appearance of the 1st TBI Contest. I know that right now you're scratching the ole cranium and wondering what in the heck is a TBI contest. Sounds dangerously close to an RFI contest doesn't it? Here's the scoop, straight from the contest director John KX8LL:

At the May CARC meeting, Lee Ewald W8WA and Gary Goetzman K8FX described their personal 160 meter contest and suggested that contests such as theirs are an excellent way to get people on the air and actually having fun with their radios. Prez Tom AA8YI thought this sounded like a great idea and at one of the Tuesday project nights he mentioned it to Hope AA8SN and myself (John KX8LL). We agreed that it sounded like an excellent idea and over the next couple of months we hashed out a few details and aimed for a September starting date. The final rules didn't emerge until the last moment and the contest ended up being a club wide CW and SSB contest. Credit for naming the contest goes to Joe Novak W8TVT. After hearing the idea on the MESH net, Joe immediately came up with "TBI" for "Tom's Bright Idea."

The thought behind the contest was that everyone seems to be so busy all summer that they spend little time on the radio. The goal was to get everyone back on the air in a big way. The CW and phone segments operated separately but simultaneously.

One could work both CW and phone, but they are separate contests. CW did not compete with phone.

Power: QRP=5 watts or less. Low power 150 watts maximum. High power > 150 watts. Logs can contain mixed power levels.

Scoring: QRP contacts count 5, Low power contacts count 2 and High power contacts count 1.

Multipliers:

- 1- Michigan Counties, States, Countries*
- 2- Working Novice/TechPlus stations*
- 3- CARC members*
- 4- Number of days on which you made at least 1*

contact.

Chuck W8SGR read the rules and made the most of them in the phone contest. Working 2 meter QRP, he made a TON of QSOs with CARC members. He also made contacts on each and every day of the month to get the maximum multiplier in that category. Look carefully at his and Hope's score to see the power of multipliers. Chuck easily won the phone segment with a score that looks like the national debt.

On the CW side Ken KC8LTL, won with a wide margin. Ken worked a bunch of Novice/Tech+ stations and made contacts on 28/30 days, again showing how the multipliers work.

A total of 17 logs were turned in and more importantly I think a lot of folks had some fun with this contest. Plans are being made at this time for another, probably in December. Ideas anyone? - 73 de John KX8LL



Back in the day, contest winners received a Mug for placing.. Here is the last known group-photo taken of the TBI contest winners! Left-to-Right is Ken KC8LTL, Dave N8CN, Hope AA8SN, Ward N8WK and Chuck W8SGR.

It was interesting to see that the same line of thinking existed - everyone was SO busy over the summer that we wanted to get everyone back on the air in a huge way! Kinda like... well.. kinda like this summer! We need to get everyone back on the air in a BIG way! }

Well - Here we go! Joe KC8RLU is spear-heading the revival of the TBI contest. We will be hearing more from Joe KC8RLU about the dates and details in the coming meetings, on the website, facebook/twitter, and the club website CherrylandARC.com - so be sure to stay informed! (Most of the magic happens at the meetings, so be sure to attend!) Also, yes, we'll have another Cherry Juice out with an official announcement and rules when all of the details are ready. So— mentally prepare yourselves, and get ready to take the airwaves by storm! The club has allocated funding for prizes for the winners — what do you think you will win?? A shiny mug perhaps??

Christmas In July

On July 15 of this year, the Cherryland ARC once again assisted the Salvation Army with their annual summer fundraiser "Christmas in July."

Those who graciously assisted with the event were Joe KC8RLU, Tom KE8CVM, and Ernie K8RCT. Thank you all for helping the CARC to help the Salvation Army!

The Field Day Report, 2017

Joe Novak W8TVT

Editor's Note: Joe Novak provided me this report in late-June. However, I hadn't the opportunity to publish a Cherry Juice until Now—September! I sincerely apologize for the delays in this (and other) content. Things should be back to normal now! - joe N8CN (on with the article...)

FIELD DAY REPORT 2017

Another field day is now complete. What a great time. It was low key this year with no towers and beams but plenty of participation. We had stations for CW, 20 Meters, 40 Meters and 2 Meter Solar.

Here is a report - I hope we have included everyone who participated. If I missed someone we will try to mention your call...next year!

Things got off to a good start on Thursday when a group gathered at the Parker Farm to load up the trailer and get the generators ready to be transported. Those who helped included AA8SN, K8RCT, W8SGR, N8WK, KC8RLU, K8OJP, W8TVT, KE8CVM, KD8EDC and Michelle, NS8K and KD8NRZ. A caravan of seven cars and two trailers make it to the Kiessel Farm on Fort Rd. N8CN also made it.



On Friday afternoon members gathered to set up stations do preliminary work on the antennas. Participating were K8SGZ, K8RCT, W8QPO, AA8SN, KC8RLU, KC8CLR and Sandy, KE8CVM and Michelle, and W8TVT.

K8SGZ brought out his kitchen food items for the weekend. He served meals for the weekend thru Sunday lunch. They were all well received with the high light being his barbecued ribs dinner on Saturday night.



More than 23 people participated in this event, some of the people seen included KC8VSU, W1WOW, K8RGB, K8RCT, KE8CVM, K8DT, W8TVT, N8RRR, AA8SN, KC8RLU, WZ8C, W8KEC, KJ4KFJ and Debbie, N8CN, NS8K, KE8BDP, and many others.



Glen had many helpers though out the weekend (including KC8CLR and Sandy, KE8CVM, K8RCT, K8DT, NS8K, KJ4KFJ and KD8RTE).



Saturday was full of activity. People seen in various stages of activity, operating and visiting included WD8IIR, K8SGZ, N8WK, K8RGB, KC8RLU, NS8K, N8CN and Julian, KB8RDI, KJ4KFJ and Debbie, KC8VSU, KB5BO (Bill is from Dallas but summers at Old Mission.), KC8ZAP, K8RCT and Jennifer, KE8CVM, KD8HBM and Elinor, WZ8C, KE8BDP, W8KEC and Birdie AC8WM. (She was brought out to field day by husband Eric on their BMW motorcycle!).



Also making the scene was Bill W8PIT. This old timer is now 92 years young but doing very well. His daughter Barb and her husband Bill brought W8PIT out for a visit and a few "eye ball" contacts.

Helping out at the CW station was AA8SN, N8KV, K8RCT, & KD8EDC. Observers included KE8CVM, KB8RDI, KE8BHO, W8RAK, WD8IIR and W8APT. This station had 323 contacts throughout the weekend.



The 20 meter station was run by Ward N8WK. He was assisted by KB8RDI, K8DT, K8RGB, N8CN, KB8EDC, W8QKP and others. They had many observers including KB8WZK.

Joe KC8RLU ran the 40 meter station. Helping out was KCSRKL, N8CN, WZ8C, W8KER and WD8EDC.



The 2 meter solar station on 52/52 ended up with 20 contacts. K8RGB and W8TVT had direct contacts with Gaylord, Kalkaska, Bellaire, Elk Rapids, Petoskey, Interlochen as well as stations in GT and Leelanau counties.

The clean up crew was outstanding. It only took them an hour to pack up and be ready to go after the final contact. Those helping out included W8QKP, AA8SN, N8WK, N8CN, K8OJP, N8KV, K8SGZ, W8TVT, KC8CLR, KD8EDC, KC8CVM and K8RCT. Special recognition goes to N8WK and K8RCT who took the two trailers back to storage at the Parker farm, as well as the folks who assisted them to put things away.

Well, that's the report. Special thanks to all those who participated, observed, helped out and came out to socialize. We had all kinds of WX including sun and rain but thankfully, no snow!

73 de Joe W8TVT

Official Score for Field Day 2017.

Here is the Cherryland ARC Score as submitted by Hope AA8SN:

Timestamp: 2017-07-19 13:54:42 PDT

Confirmation: fa33667eca31d3be

Call Used: W8TCM

GOTA Station Call: (none)

ARRL/RAC Section: MI

Class: 3A

Participants: 48

Power Source(s): Generator, Solar

Power Multiplier: 2X

Bonus Points:

100% Emergency power	300
Media Publicity	100
WIAW Field Day Message	100
Natural power QSOs completed	100
Site Visit by invited served agency official	100
Submitted via the Web	50
Social media	100
Safety officer	100
Total Bonus Points	950

Score Summary:

	CW	Digital	Phone	Total
Total QSOs	323	0	386	709
Total Points	646	0	386	1032

Claimed Score = 2,064

NWS Winter Weather Spotter Trainings

NWS Gaylord hosts several winter weather talks across northern Michigan each fall. The classes are free and open to everyone - no pre-registration necessary. Please click the link below for more details and to find a winter weather talk near you. This year's talks will cover a wide array of topics including: winter precipitation types, snow measuring and reporting, NWS winter product

changes, a look back at the winter of 2016-2017, this winter's outlook, and fun winter folklore.

If you have any questions, please call the National Weather Service at (989)732-9306 or email matthew.gillen@noaa.gov.

http://www.weather.gov/apx/outreach_events

Additional questions or comments should be sent to w-apx.webmaster@noaa.gov or call NWS Gaylord at 989-732-9306.

The Purple Crystal

A column about repeaters

Joe Erlewein N8CN

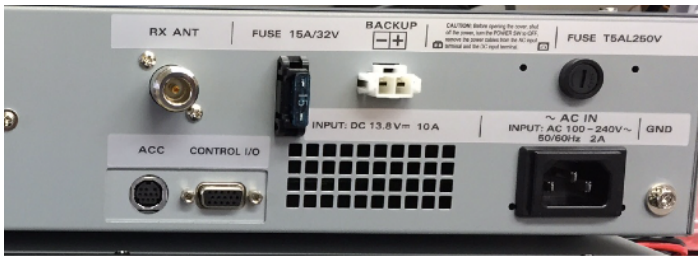
For the September edition of the Purple Crystal, I present to you: a status report of the new repeater controller project!



It's been some time since the club approved purchase of the new S-Com repeater controller and most of the other equipment, interfaces and tools with which to connect the controller to the repeaters. Since we don't have a new "beep" on the system yet, I decided I'd write a bit about the status of this project.



So, the Yaesu DR-1X repeater systems that the club uses for its repeaters (86 and 442.5 as listed on the front page) are dual-mode repeaters. They both support Yaesu System Fusion digital and normal analog operation. Since the repeaters can switch "back and forth" from analog to digital within a few seconds (it repeats the signals that come in, in the format they're received) you can imagine that there's some amazing detecting and switching circuitry involved in order to make this happen.



While it is true that the repeaters have a “port” that says “ACC” “and CONTROL I/O” on the rear, and the literature says that the port makes it possible to have an external controller control the repeater, having that come to life in a meaning full way can be challenging, especially when using the repeater in AMS (“Auto-Mode-Select”) mode, which basically is what allows the repeater to switch back and forth between analog and digital, and not just be “locked” onto one mode or another.

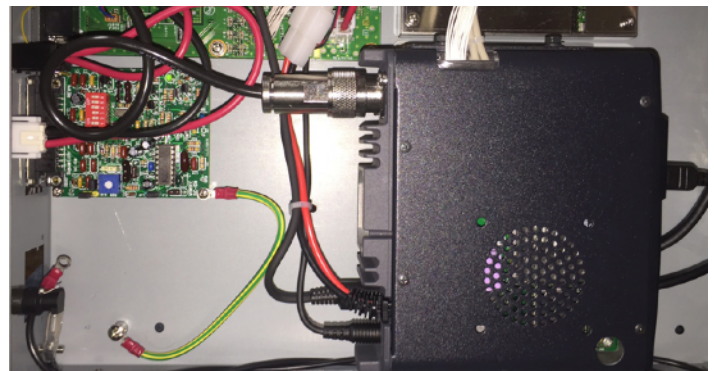


AMS receive → AMS transmit

Since we desire to keep AMS on the repeaters, yet be able to use the features of an external controller on Analog mode, this is where users begin to wander into “Unsupported Territory” according to Yaesu. The biggest issue (there are several, but one is definitely a show-stopper when not addressed) with this type of operation is that when an external controller “takes control” of the repeater to repeat an analog signal, the built-in digital controller still has priority override operation of the radios in the repeater system.

The digital controller can attempt to repeat a digital signal at the same time that the analog external

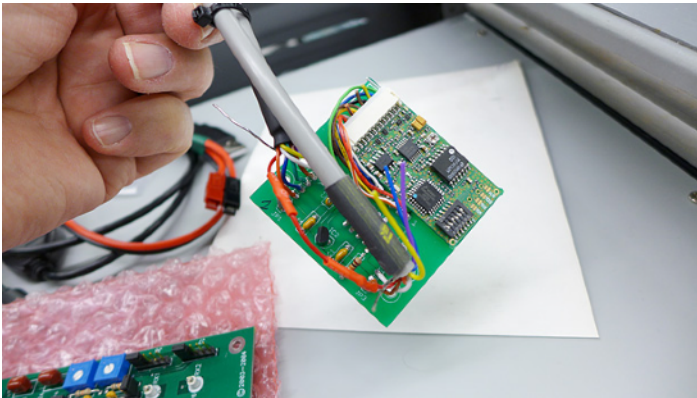
controller is requesting the system to transmit in analog mode. Say, for a time-triggered identification, scheduled event, or just plan fast-switching-use if users are mixing analog and digital signals. Without some way to control “who has the authority to push the button” these two controlling facets can collide and hang up the internal controller into a condition that causes the repeater to enter transmit mode... and stay there.. until someone unplugs it! This causes burned-up transmitters, and general badness. So, knowing this issue existed, we did some research on how to avoid it.



Another hurdle I should mention at this point is that using ANY external controller with a DR-1X that you want to use in AMS mode requires modifications to the DR-1X that can void the warranty. It is necessary to “Sever” or at minimum “Probe” the transmit signal from the internal digital controller and connect it to the external controller. Nope, this isn’t one of the signals available on the external controller port on the DR-1X (thanks, Yaesu!). It’s available by either slicing into the proprietary cable connecting the TX and RX units (the connectors are ONLY available from one manufacturer and are costly!) or you can remove the lid of the RX unit and “tap” a pin on the board to probe the signal.

The early solutions were to use a go-between interface from the DR-1X repeater and an external controller. The most popular was a unit made by Arcom called the ADR interface. It costs about \$200 completely assembled and programmed, but did come with other versions not including some components (in case you had them already and liked building kits). Owning a DR-1X myself, I ordered a unit and the interface consists of a tiny Atmel processor which basically watches the status of the “transmit” signal from the

built-in controller, and buffers that along with your external controller's transmit signals before sending the output of that to the repeater itself. It's really a glorified "OR" gate with some additional logic (watchdog, etc) and some programmed timers. It works well and I do recommend this if you have a DR-1X and are looking to attach an external controller and operate your repeater in AMS mode.



An even better solution presented itself as we researched the project "in active mode" on some forums — meaning instead of just going hunting for the info we needed, we started asking groups that have "been there and done that" the question - what's the best way to hook up an S-Com Controller to a DR-1X? By then, we had already determined that the S-Com controller was the most desired solution to suit our needs. We received a pleasant surprise response - the S-Com 7330 controller can interface to the DR-1X without the need of a special adapter (like the Arcom ADR) - it can simply connect and work!

Naturally, hearing this, our response was a mix of optimism and skepticism. We asked more questions. As it turns out, there are timers, interrupts, and external I/O in the very-capable S-Com 7330 which basically, with some programming/scripting, can do *exactly* the same function as the Arcom ADR (or similar) interface. Meaning - the controller itself could be "taught" to interface with the DR-1X in a manner that would not cause the lock-up issues. (Modification to the DR-1X would still be necessary, however, as outlined above.)

Our original goal was a solution that did not involve "hacking up" the DR-1X to make something work. As it turns out, if we want to maintain AMS (and continue to

support digital) and still use an external controller, there's no way to avoid it.

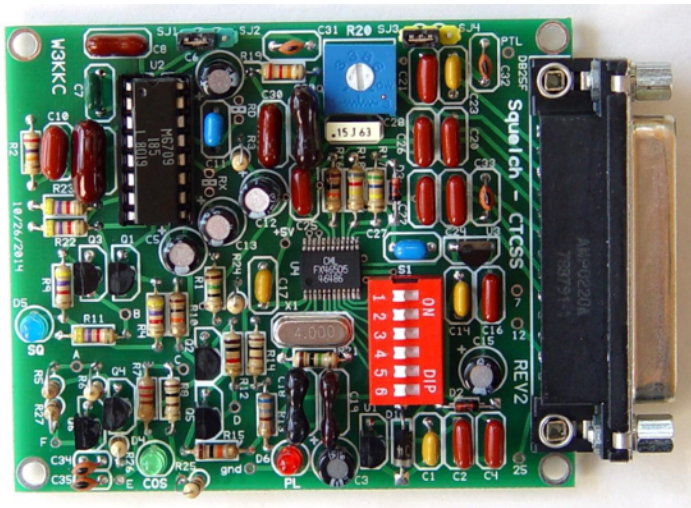
Good news: Since the S-Com controller could interface "directly" to the DR-1X, we could save \$200 or so on the Arcom ADR needed for both repeaters - a savings of about \$400. Not shabby! Also, the S-Com basically includes "everything" for one price, which turned out to be lower than expected. The purchase of equipment came in well under the amount outlined in the original BOM presented at the board meeting.

One of the "most recommended" points that came from our research was a little outside of the original scope: use an SC-50 tone/squelch card. What's an SC-50? This is a module made by Masters Communications which is essentially an external Squelch/CTCSS detector which is based on the "Motorola MICOR" design (actually uses reclaimed MICOR M6709 chips from recycled MICOR radios).



The SC-50 is shown to vastly outperform the built-in Squelch and CTCSS decoding capabilities of the Yaesu DR-1X. This is something we noticed (it stuck out like a sore thumb) when comparing the DR-1X to our older Motorola MSR2000 repeater controller - weak signals "cut in and out" even though the squelch should be able to allow the capture of the signal, even when the squelch is properly set. Loosen it a bit, and you get "long" squelch tail crashes after each signal (sometimes up to 2s long) as the squelch fails to detect signal loss and tell the repeater to stop repeating, so it just keeps going. Some of you have maybe heard this effect on 86, as when band conditions change slightly, this can happen occasionally. It's a well-documented artifact of the DR-1X system. Yaesu has also published several versions of firmware and microcode upgrades to both the controller, receiver, and DSP software in the

DR-1X. None of them have really “improved” the situation past a certain point... when you break down the problem, this is essentially trying to fix a hardware shortcoming with some fancy software. It comes close, but misses the mark.



The MICOR squelch detector was really the “pinnacle” of detector technology, which is why many groups still implement high-profile systems using MICOR radios and sometimes “borrow” the MICOR detectors from the radios for use in other systems. Well, Masters Communications sells assembled-and-tested SC-50 boards for \$100 each. We used the money saved from the Arcom ADR interfaces to order the SC-50 for the systems. Since we’re modifying the DR-1X anyway, this was suggested to the club to be “the best improvement” one can make to a DR-1X repeater. Also, it uses the same single-wire modification that we needed for the external controller anyway — Bonus.

So after all these paragraphs of techno-babble, what’s the current status? Well, as stated when we made the order, I was basically unavailable June through August, hoping for a September reprieve from travel and family events. September did offer me an opportunity to “resume normalcy” and I even have both test systems on a bench with the controller connected - and everything works, but we uncovered an interesting problem that we’re working through.

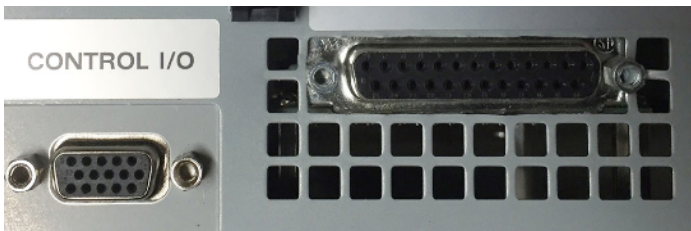
The controller is correctly working with the first DR-1X system. In fact, it works very well! I then set things up to work with port 2 for the UHF repeater. I moved the DR-1X system over and began setting things

up, and hit an error. A programming error. I wrote to the author of the programming used for this, and he mentioned something nobody had yet mentioned - “Oh, yeah, there is only one timer and control element available for interfacing to a DR-1X.” After a head-smack, I asked for suggestions. As it turns out, for *each* DR-1X you connect to the controller, a unique timer circuit (programming timer and controlling functions) is needed. Sure, there are enough *ports* for both repeaters... but not enough *timers and interrupts* in the S-Com to support two DR-1X systems. Their recommendations included (1) “sharing” the timer, but this may cause “strange” transmission cycles on repeaters that are not currently being used if AMS is switching between modes on the other system - which seems bad, but is probably something we’d only run into occasionally. (2) the other option is to use an interface like the (you guessed it) Arcom ADR to control the second DR-1X system and present it to the S-Com 7330 as a “simple” repeater to control, not requiring the additional signaling.

So the current status is that I’m migrating my tests from the current configuration to one that uses an ADR between the second repeater and the controller. Also, I’m working with my personal repeaters as tests, so each step I do I’m documenting and making a list of things “to do” so that when I perform this work at the site I (1) have exactly what I need, (2) can minimize “downtime” of the repeaters and (3) actually complete the upgrade successfully. It is a little like having a satellite in orbit, mocking up changes here, and then getting in a shuttle and going to space to upgrade a satellite.. it’s going to go poorly and look embarrassing if you go all that way there and can’t finish the job successfully.

My to-do list includes finding a “decent” mounting position for the SC-50 unit inside of the DR-1X, locating its external squelch adjustment to a convenient spot on the DR-1X (back somewhere?), finding a good-quality 9-pin connector for interfacing (i’m leaning toward a DB-9, but mounting one on the rear of the DR-1X in “a way that looks nice and less like a hack” with my available tools (I don’t have a nibbler) is a little challenging - I don’t want this to look like a hack job, and I want it planned and professional. Another thing

on the to-do list is to get the S-Com software running and able to remotely control the controller - I donated a Windows computer to the club and it's located up at the tower site, which will allow for remote control via the Internet. Also I need to design and connect the EchoIRLP interface for the controller's port 3. I'm treating that last part as a "nice to have" that I can always implement later - the current echolink connection is stable and workable, and will continue to be after the major upgrades are done. It's also a "really quick" project as compared to the other remaining tasks.



I'm planning on starting to bring things to the Project Nights to lay it out on the table and let people take a look at where we're at. I'm also hoping to crowd-source some ideas on the remaining tasks (how to mount the SC-50, where to put the SQL control, what connectors to use, etc) by having people put their heads together and brainstorming. I'm really hoping to have something on the air before mid-November.

Thanks all - 73

Joe N8CN

Casting Nets!

Joe Erlewein N8CN

If you (and I hope that you do) visit the [Cherryland ARC Website](#) and take a look at the [calendar](#), you'll find that there are a TON of events listed. Don't believe me? those "underlines" above are links - click them and take a look!

As part of an outreach effort to engage both licensed amateurs and those who might be a little curious but not yet a ham, the Cherryland ARC will be helping to publicize the events and activities of other near-area ham-radio-related clubs and organizations including

(and certainly not limited to) swaps, meetings, nets, and other gatherings.

As radio amateurs and members of the Cherryland ARC, one of our goals is to help expand the use of the amateur radio service, and to help those interested or already involved to become more involved and become better operators. Part 97 subsection 1 paragraph (e) actually specifies this: "Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts." In fact, much of the verbiage of part 97 is geared toward this sentiment.

The Cherryland ARC wants to see Amateur Radio promoted, wants to see more operators, wants to see more operators advancing their knowledge, experience and skills, and desires to promote goodwill, fellowship, and senses of service and duty (particularly with respect to community service and assistance during emergency events) within and around the Amateur Radio service. To this end, the CARC wishes to help promote the service as much as possible and steer people who are interested toward the nearest and most convenient centers and hotspots of interesting activity... and hopefully we'll be hearing you on the air soon!

How can you help? Several ways — but the easiest way is to simply "get on the air!" The weekly Monday Evening Social Hour is back in full swing, and it carries announcements and bulletins of upcoming club events and related area events. Tune in on 146.86- (PL 114.8) and check in! Away from the area? Without a radio? We've got you covered! Search for W8TCM-R (or node # 824031) on Echolink and check in from your iPhone, Android, PC or MAC. There is software available for all platforms. Still, if you're unable to do echolink, you can always listen live to the streaming audio of the repeaters at: <http://www.broadcastify.com/listen/feed/17816> - You can even do this from mobile devices, or apps like ScannerRadio or similar.

Project Nights are also a great idea to encourage, mentor, discuss, learn and teach in real time. Also to BUILD and experiment! Did you know that the Cherryland ARC has an entire room full of tools, equipment, parts, and resources in the basement of the Salvation Army in downtown TC? If not, head on down

Tuesday and take a look! Or just show up to “soak up” the social experience with other hams!

Volunteer! The CARC hosts between 3 and 8 volunteer opportunities, on average, per year (sometimes a lot, sometimes only a few - depends on the need!).

We are also working to improve the club website. Missing is an “Elmer” section - people listed who are able to volunteer their time, effort, energy, knowledge, or coffee - to helping newer hams get going, and get on the air! If you would like to be listed as an “Elmer” who is available to assist with new members, please contact me - joe@n8cn.org or by phone 231.642.1049.

73, Joe N8CN

To become a member of the CARC:

1. Fill out a membership form.

You may fill out a form at any meeting, fill out the form online via the website, or you can email cherrylandarc@gmail.com to receive a form via email.

2. Submit dues with your form.

Dues are \$24 per year and are due January 1 each year or with your membership form submission. (pro-rated)
(Family Memberships available for \$26)

That's all for the September 2017 issue of The Cherry Juice!

As always, if you have any suggestions or comments, I'm all ears!

joe@n8cn.org

73, Joe N8CN

Cherryland ARC Information:

Club Meetings:

The official CARC Club Meeting occurs on the **Fourth Tuesday** of each month at 7pm. Anyone is welcome.

Board Meetings:

The CARC Board meets on the **First Tuesday** of each month at 7pm. Board meetings are open all.

Project Night:

The CARC meets for a “project night” on **all other Tuesday nights** at 7pm. Anyone is welcome to come and use the tools, parts, resources, and “elmers” in the project room / SATERN station.

All Meetings occur at the **Salvation Army building on Barlow St. (at Boon st.) in Traverse City.**

The project room is on the **basement level.**



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