



April 30, 2020 ICARC NEWSLETTER

Officers for 2020:

President - Doug Fitzsimmons K3LAB
Vice President - Harry Dushac K3FSE
Treasurer - Terry Carnahan KB3JOD
Secretary - Chris Edwards N3VFK

Board Members for 2020:

1. Dave Dzelsky N3DZ
2. Craig Bigler AB3XA
3. Jerry Kiehl WB3DUD
4. Cass Fitzgerald, N3FLO
5. Larry Freeman N3LT

LOCAL HAPPENINGS:

The minutes, courtesy of Chris Edwards, for the March ICARC meeting, can be read at the end of this document.

Due to the COVID 19 virus the in-person group ICARC meetings have been suspended temporarily. The May meeting will be held on May 5 at 7:30 pm through the 146.910/310 repeater. It should be very interesting so try to be there promptly tuned in at 7:30. Also, the breakfast gathering at Eat n' Park restaurant has been suspended until further notice.

Generally, the plan seems to be that things will start to open up based on counties starting May 8, 2020. It looks like it will be a graded opening with hopes high for near normalcy by the end of May or early June.

THINGS YOU CAN DO TO STAY SAFE

Follow the guidelines put forth by the Federal and State government health officials.

STAY ISOLATED AT HOME AS MUCH AS POSSIBLE

WASH HANDS FREQUENTLY AND DISINFECT FREQUENTLY USED SURFACES

KEEP HANDS AWAY FROM EYES AND FACE, IF POSSIBLE

COVER YOUR COUGHS AND SNEEZES

IF YOU MUST BE OUT, KEEP YOUR DISTANCE FROM OTHERS (AT LEAST 6 FT)

IF YOU MUST BE SHOPPING, AVOID CROWDED AISLES AND SMALL CROWDED STORES, ALSO WEAR GLOVES AND A MASK IF POSSIBLE

SOME SYMPTOMS OF COVID 19 INFECTION

FROM THE CENTER FOR DISEASE CONTROL (CDC)

Generally, people may be infected with the virus for 1 to 14 days before developing symptoms.

The most common symptoms are fever, tiredness, and dry cough. Most people (about 80%) recover from the disease without needing special treatment.

More rarely, the disease can be serious and even fatal. Older people, and people with other medical conditions (such as asthma, diabetes, or heart disease), may be more vulnerable to becoming severely ill.

People may experience:

cough, fever, tiredness, difficulty breathing (severe cases).

Using available preliminary data, the median time from onset to clinical recovery for mild cases is approximately 2 weeks and is 3-6 weeks for patients with severe or critical disease.

In the event that you feel that you or a family member may be infected, seek medical assistance in your local area.

SOMETHING TO DO FOR FUN:

If you are into ham radio as a hobby then one of the most fun things to do is to make an antenna of some sort. We saw that, when recently Mark Longwell, KC3AHP, sent out a very interesting email about his "tape measure" antenna that he used in a Fox hunt. This started me thinking and I remembered a 2 meter, 1/4 wave portable antenna that was made from a tape measure in 1975. Since I had the time, I decided to duplicate it from memory as best I could this past weekend (April 25, 2020). It is a ground plane antenna and took a couple of hours. It consists of three radials, each 19-3/4 inches long with a radiating element of total length of 19-1/2 inches. The foundation of the antenna is a square based, panel mount, SO239. It has a hole slightly smaller than a #6 screw at each corner of the base which needs to be reamed out a bit. To fabricate this antenna perform the following steps:

1. Cut the (3) necessary radials and a radiating element from a "trashed" 3/4 inch steel tape measure:

PRECAUTIONS: WEAR GLOVES AND SAFETY GOGGLES IF POSSIBLE! DO NOT USE A SAW OR TIN-SNIPS, THEY DON'T WORK WELL FOR THIS. USE HOUSE HOLD SCISSORS OR KITCHEN SHEARS WITH SMOOTH OR VERY FINE SERRATED BLADES. ONE CAN ALSO USE A DRIMMEL TOOL WITH A FIBER OR DIAMOND METAL CUTTING DISC. GRIND OR SNIP OFF THE SHARP CORNERS OF ALL CUTS AND THEN WRAP THE ENDS WITH TAPE AND COLLECT THE SMALL, SHARP TRIMMING SHARDS WITH A PIECE OF STICKY TAPE (NOT BARE FINGERS) TO BE DISCARDED IMMEDIATELY. Cut four pieces from the tape measure that are 21 inches long and be sure to secure the cut end of the tape measure after each cut to prevent it from springing back into the housing (Remember, it's spring loaded). The final element lengths will be determined after the antenna is essentially completely fabricated. The elements are cut longer here than necessary because final trimming will be done as needed when the antenna is tested. There will be waste.

2. Making holes: I tried two methods. a.) The first is using a drill press with a glass drilling bit that is flat, made of carbide, and triangular shaped with a point for gradually digging through glass. For this process the metal is placed on a flat board with the convex curve of the metal in contact with the wood. Use a hard screw or a center punch to make a small divot (no hole) in the center bottom of the curve of the metal about a half inch from the cut end. Start the drill press and gently bring the drill bit down so that the bit point is in the divot. Go slow with no heavy pressure and gently make the hole large enough for a #6 machine screw. If you do this carefully and gently you will get a nice round hole with no tares or cracks in the metal. **DO NOT USE A STANDARD DRILL BIT FOR THIS OPERATION. IT WILL NOT WORK WELL.**

b.) The second method involves tightly clamping the metal tape flat between two pieces of

wood. Orient the metal so that one cut end is flush with both edges of the wooden clamp pieces. Drill a pilot hole using a 1/8 inch standard bit through the top piece of wood about a half inch from the edge and centered in the metal channel. Drill gently and do not attempt to go through the metal. Remove the bit and take a #8 hardened construction wood screw or drywall screw and slowly screw through the pilot hole until you are about a quarter inch into the bottom piece of wood. For this you can use a hand screw driver or a hand power drill but go slow. Remove the bit and inspect the hole and test to be sure a #6 machine screw will go through. As you will see on the under side of the metal there will be "punch through" metal that should be filed or ground away to make a relatively smooth and clean surface. The hole may not be perfectly round but if there are no tares or cracks the hole is good. (See Photo 1) Make a hole like this for each of the three radials. Be sure the ends are rounded as in (b). For the radiating element make at least two holes separated by about two inches to allow for final trimming while it is hanging from a tree limb or structure.



(a)

Photo 1



(b)

3. Trimming the radials: Trim the radials so that they have a length of 19-3/4 inches and rounded ends with the hole no more than 3/16 inch from the end of the radial. This allows for easily orienting the radials when later mounted to the SO239. (The ends must be rounded because sharp corners make for very high electric field regions that cause corona discharge to the air and generate noise.). Grind or Sandpaper and any paint from the hole area on one side of the metal tape, depending upon which side you choose to face the ground when the antenna is finally mounted for use.

4. Preparing the radiator element for mounting to the SO239: The radiator element must be soldered to the center tab of the SO239. In order to do this one must attach a copper stud to the metal radiator. The copper stud is made from a straight piece of 12 gauge clean, copper wire approximately four to six inches in initial length. It should be cleaned and tinned with solder for about 1-1/2 inches from one end and set aside for a few minutes. At this time remove, from the radiator element, any paper or vinyl protection tape and grind away the paint from the metal down to shiny surface for a couple of inches from the end of the metal tape (the end with no holes). Lay the full length of the metal strip on an appropriately sturdy structure with the shiny metal protruding horizontally, a few inches, over the edge. The tape should be horizontal and the concave channel should face upward to form a valley. Apply solder paste to the shiny metal on the concave side. Using a 100 to 150 watt soldering gun or a small butane torch apply heat enough to melt the solder but not make the metal glow orange. Make a deep molten puddle of solder that is clearly adhering to the metal tape. Place the long piece of copper wire in the concave channel with the tinned copper laying in the solder puddle protruding about 3/4 inch

beyond the end of the metal tape. Gently add enough heat to be assured that the copper is surrounded by molten solder after which the heat is removed and the solder allowed to solidify. (See Photo 2 (a) & (b)) below. The copper wire can be clipped just above where the puddle ends on the metal tape. Once trimmed as in Photo 2 (b) it's ready to be soldered to the SO239.



(a)

Photo 2



(b)

5. Soldering the radiator element to the SO239: Cut the copper stud to a length slightly longer than the SO239 soldering pin cavity depth. If the SO239 is brand new it likely does not need to be tinned but it is a good idea to tin it just to get some solder in the cavity. Don't use so much heat that you melt the insulator. Force the copper stub into the soldering pin cavity while adding enough heat to melt the solder. Let it cool and you have it done. Don't try using a 25 watt soldering pencil for this. You need at least 50 watts. Use a gun or small butane torch but be careful with overheating. There is a danger of desoldering the copper stub from the radiator element. Holding the SO239 is another issue. You will have to be creative. I tend to use a vise clamping one of the corners of the square mounting base and heating the solder tab from the side while pushing the radiator's copper stub into the cavity of the soldering pin. This is the most tedious part of the whole operation. Photo 3 below shows the result.

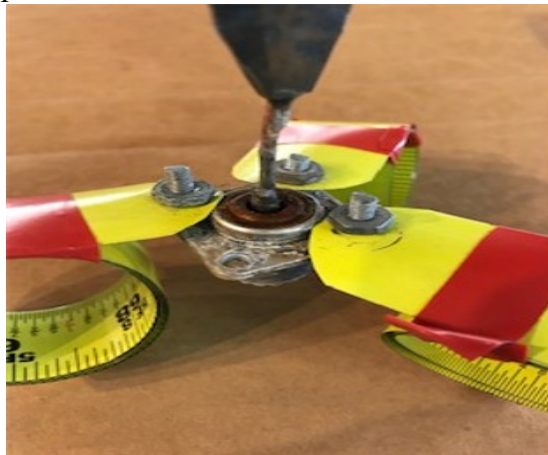


Photo 3

6. Attaching the radials: Refer to Photo 3 above. Use three #6 screws and nuts to create the radial mounting stubs. One could solder the screws in place. I soldered two of the steel screws but used just the nut on the third for later comparison. Brass screws would be better in any case. The heads of the screws should be on the coax connector side of the SO239 and the screw lengths should be about 3/4 inch. The radials are attached through the holes on the ends with the concave facing down in the direction the coax hangs. Use another nut on each screw to hold the

radial in place. Once they are attached, snug the screws down just enough that the radial angles can be adjusted. The desired angle is 120 degrees between the adjacent radials but approximate is good. Now tighten the radials in place. (One could use "wing nuts" for the second set of nuts to make it easier to disassemble.) Now it's time for final adjustment.

7. Final adjustment: No trimming is needed on the radials. The radiator is intentionally cut too long for resonance in the two meter band. **IN ANY CASE DO NOT USE RF POWER ABOVE FIVE WATTS TO DO THIS TESTING!** The final adjustments are made with the antenna hanging in the air. For this you will need 15 to 25 ft of light-weight coax like RG58. Don't use RG174 because it's too small and lossy. Be sure to have a PL259 on one end and an appropriate connector or adapter on the other to fit your signal source. You will need a minimum of an swr meter and a signal source of at least a few milliwatts to do the test. It would be better to have an antenna analyzer. I did the testing with the antenna about 10 ft in the air which too low. As initially fabricated before trimming the radiator it was resonant at 136.000 Mhz with a low swr of 1.3. At 146.000 Mhz the swr was 1.6 which is not bad. Therefore, as cut, it will work across most of the two meter band. After trimming the radiator total length to 19.5 inches the swr dropped to 1.3 at 146 MHz. and stayed under 1.5 across the whole two meter band. I was able to have a sketchy and noisy qso with Dave Dzelsky, N3DZ on the 146.910/310 repeater on a rainy day running low power on my hand held (about 2.5 watts, I think). If you decide to trim the radiator and do the testing, don't take off more than a quarter inch at a time. **ALWAYS LEAVE THE METAL ENDS ROUNDED TO REDUCE CORONA DISCHARGE.**

PRECAUTION: COLLECT THE TAPE MEASURE METAL TRIMMINGS WITH A PIECE OF STICKY TAPE AND DISCARD. DON'T LET THEM DROP ALL OVER THE PLACE BECAUSE A PET OR OTHER ANIMAL WILL END UP GETTING METAL SHARDS IN UNDESIREABLE PLACES.

Photo 4 (a) & (b) show the antenna hanging in a tree and in compact storage form, respectively. Note of caution: As shown in photo 4 each elements is rolled tightly in a loop so when the tape is cut to release each element, it springs out very fast, so if you decide to fabricate this antenna please be careful and take heed of all PRECAUTIONS.



(a)



(b)

Photo 4

INTERESTING HAM RADIO NEWS

National Public Radio (NPR) reported on All Things Considered : Long-Lost U.S. Military Satellite Found By Amateur Radio Operator. This was reported by Joe Palca in his Special Series "Joe's Big Idea" posted on the NPR website. Kudos go to **Chris Edwards, N3VFK**, for

finding this at <https://www.npr.org/2020/04/24/843493304/long-lost-u-s-military-satellite-found-by-amateur-radio-operator>

It's a good read so go there and enjoy it.

Hamvention QSO Party scheduled on May 16, 2020

The Hamvention QSO Party will be a 12-hour event, from 1200 UTC until 2400 UTC on May 16. Operate CW or SSB on 160, 80, 40, 20, 15, and 10 meters

From: Conference of Volunteer Coordinators (NCVEC) website.

The [2020 - 2024 Extra-class pool](#) incorporates significant changes compared to the current 2016 - 2020 question pool, which expires on June 30. The number of questions in the pool was reduced from 712 to 622. The result was 239 modified questions, 49 new questions, and 139 questions removed due to changes in what was felt to be an abundance of outdated questions, while areas of new technology and subjects were added. In addition, an effort was made to balance the difficulty level, removing or replacing some questions deemed too easy or too difficult compared to the rest of the pool. The 2020 pool has 10 diagrams, which have been renumbered because the new question pool has two fewer than the 2016 question pool.

- ARRL Letter, January 30, 2020

RADIO AMATEURS OF CANADA ANNOUNCES A NEW SECTION

The number of Sections needed for a clean sweep in the ARRL November Sweepstakes (SS) will rise to 84 in 2020, with the addition of a new Prince Edward Island (PE) Section. Radio Amateurs of Canada (RAC) has announced that the new Section will become effective on April 1. Prince Edward Island has been in the Maritimes (MAR) Section. RAC said its Prince Edward Island members have been working for some time to create a separate Section for RAC ARES activities there. The provinces of Nova Scotia and New Brunswick will remain in the Maritimes Section. In addition to Field Day and Sweepstakes, the new Section in Canada will affect the ARRL 160-Meter Contest but not the ARRL 10-Meter Contest, which uses individual states/provinces for US and Canadian multipliers. The change will mean that logging software developers will have to update their software to include the PE Section as a valid exchange element for any affected operating events. RAC also announced an adjustment in two of its Ontario Sections. Effective April 1, radio amateurs in the City of Hamilton and in the Regional Municipality of Niagara will shift to the Greater Toronto Area (GTA) Section from the Ontario South (ONS) Section. - ARRL Letter, January 9, 2020

CHINA TELECOMS REGULATOR PROPOSING TO DELETE SOME CURRENT AMATEUR ALLOCATIONS

China's telecommunications regulator has proposed amending the Measures for the Administration of Amateur Radio Stations, and some amateur bands are in danger of being eliminated. Lide Zhang, BI8CKU, told ARRL that the proposal would prohibit amateur operation on the 2200-meter band as well as on 146 - 148 MHz, 1260 - 1300 MHz, 3400 - 3500 MHz, 5650- 5725 MHz, and all bands above 10 GHz. Radio communications engineer and Chinese Amateur Satellite Group, February 2020.

(CAMSAT) CEO Alan Kung, BA1DU, told ARRL that government efforts to eliminate some amateur bands are nothing new, but proposals that have been aired for a while now are on the regulatory agency's schedule. Kung said he does not anticipate that all of the bands proposed will be taken away, but he conceded that the climate will "undoubtedly" become increasingly more dangerous for China's amateur radio community. "The attempt to crowd out the amateur radio bands has a long history throughout the world," he said, "but it may never have become so urgent for the amateur radio community as it is today. We all understand that radio spectrum resources

have become a bottleneck for further development." He said today's radio communication industry "is working hard to share spectrum resources." Kung characterized spectrum as "the soil on which amateur radio depends."

- *ARRL Letter*, January 9, 2020

QRZ.com Beefs Up its Security: QRZ is offering its online users enhanced security options. It is now offering registered users the ability to use a "two- factor authentication" (2FA) hoping to make it more difficult for password phishers and fraudulent posters. They are also going to require anyone marketing gear through the Swapmeet forum to enroll in its Verified User program.

Petition Seeks a New Amateur Band at 40 Mhz : Michelle Bradley, KU3N, a Maryland amateur has filed a petition for rule making with the FCC, seeking a secondary amateur frequency allocation at 8 meters in the 40-41 Mhz range. Michelle feels that the new spectrum would spark the next generation of 'Makers' in the fields of science, technology, education, and math ..etc... She notes that since there is currently no mass-produced equipment for this band that "makers" will have to make their own gear.

The petition number is RM-11843

OTHER INFORMATION

If anyone would like to include information or write an article for the Newsletter please let Larry Freeman know by email at: wd4hoz@gmail.com .The only caveats are: The editor reserves the right to alter the format for publication purposes. The content may also be modified contingent upon accuracy and appropriateness of the contained material. The latter would, of course, be subject to the approval of the original author.

Equipment to Sell:

From: Jim King, KI4MVA in Myrtle Beach, SC Contact: jl3326king@gmail.com

1:1 MFJ-918 balun, paid \$42 for, never used and will take \$15 for. Diamond HF80CL Mobile 80meter antenna I paid \$70 for and Comet 3D4M Mobile lip mount Paid \$30 for. Used once as base station antenna taped to a 2X4 and leaned against the house. Will take \$30 for both. Bought new in 2018 and only been outside a couple hours at night. See at DX Engineering.

Indiana County Amateur Radio Club
Minutes of the Monthly Meeting 03/03/2020

Call to Order: The meeting was called to order at 7:30pm by Club President Doug Fitzsimmons with the Pledge of Allegiance & Roll Call.

Reports: The minutes of the February Meeting were read by Club Secretary Chris Edwards. The minutes were accepted and approved. Harry Dushac read the financial report. The financial report was accepted and approved.

Old Business: Doug Fitzsimmons announced that the Antenna replacement has occurred at Blue Spruce and the room at the County EOC has been redone.

New Business:

Doug is going to sit down with Cass & Terry to detail planning for the relocation of the club repeater. Field Day: Gary Miller said he was interested in doing Satellite & Simplex two meter operations this year. Doug is going to contact Blue Spruce about operating from there. Other new business discussed. Improvements to be made to the two meter repeater. Bill McMillen announced a VE Session on Saturday April 4th at 1pm at the County EOC. Chris said that he was looking into doing a Parks On The Air sometime in July. He will be using his rig but would probably need help with antenna set up & operators if anyone is interested.

Adjournment: A motion was made to adjourn the meeting. It was approved & the meeting was adjourned at Approximately 8:21pm.

Attendance: 15

Alton Strong N3PHL	Bill McMillen N3QM	Chris Edwards N3VFK
David Dzelsky N3DZ	Dave Steiner W3CDH	Doug Fitzsimmons K3LAB
Harry Dushac K3FSE	Jerry Kiehl WB3DUD	Larry Freeman N3LT
Paul Morris K3VAR	Phil Kopczyk K3PJ	Terry Carnahan KB3JOD
Gary Miller KC3NHE	Joseph Buckles KC3ONZ	Leonard Walizer

