



Spark Gap

Vol. 38, Issue 2, February 2021 *MARC - Serving Central Indiana Communities for thirty-eight years*

Tuesday, February 23rd, we will be having a special guest speaker for our Tuesday evening Tech Discussion. Clint Bradford, K6LCS, will be presenting a special 90 minute presentation (with a 30 minute Q&A following) entitled "How to Work Amateur Satellites with Your HT." This Zoom meeting will be from 6:30 - 8:30 pm EST (Clint is in California).

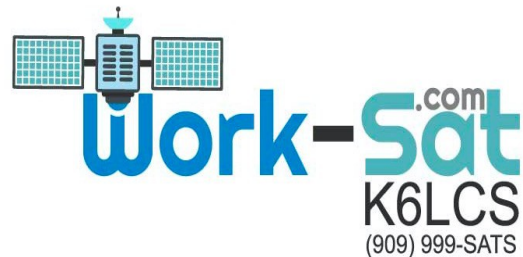
Clint is an AMSAT Ambassador and an ARRL instructor. He has served as a liaison between NASA, the ARISS team, and schools coordinating amateur radio contacts between the International Space Station and students. Audiences have never found his presentation slides "wordy" nor dull. Trivia questions are included throughout the session - audiences are never bored. He will explain that you do not need 100W of transmit power nor expensive antenna arrays to work the FM amateur satellites! Many hams already have the necessary equipment to "work the birds." This presentation will walk you through ALL the steps needed to successfully work several ham satellites.

This meeting will use Zoom and not WebEx. Clint will be hosting the virtual meeting using his Zoom account. He has asked that participants download the most recent version of the Zoom software. I have forwarded the zoom meeting invitation from Clint to the club members.

For reference materials, Clint has created a support Web site at work-sat.com for all to use. The Web site has become a one-stop source for ALL the citations and equipment recommendations and software suggestions made in the presentation. Between the material presented, the handouts, the always-lively Q&A during and afterward, the work-sat.com support Web site, and access to Clint after the fact (via email or phone at 909-999-SATS) with satellite inquiries - MARC will be providing attendees COMPLETE information on this aspect of the amateur radio hobby.

As a speaker for MARC, Clint will provide his Web site visitors a link to our club's Web site on his work-sat.com Web site. MARC will also be promoted with announcements on eHam.net and QRZ.com.

Professionally, Clint was sales manager for ADI / Premier Communications / Pryme, worked for a Motorola commercial two-way dealer a couple of years, and for Ham Radio Outlet a couple more. He resides in Jurupa Valley, California, with his wife, Karen, and their rescued lab, Freja.



Please plan to attend our virtual Zoom Tech discussion 6:30 -8:30 pm Tuesday, 2/23!

Tim WC9G



Birthdays for the month of February:

K9DY - Steve Carmean

ND9C - Steve Curtis

N9SIU - Bob LaGrange

KD9LVS - Douglas Loy

WB9TSW - Toby Monk

W9OQ - Chris Read

K9THR - Ron Schuetz

It's not a Begali, but....

By Dan Romanchik, KB6NU

One of the questions I'm most frequently asked is, "What is a good paddle for a beginner?" My usual answer to this question is to look for a used Bencher BY-1 at a hamfest or on one of the online venues. You used to be able to get them for \$60 or less. Now, however, there are few hamfests and the price has gone up. Now, used Benchers are close to \$80.

Another option that newcomers might consider is the [CW Morse](#) paddle (shown in photo below). They cost \$60 with a steel base (\$43 without), and are available from [3rd Planet Solar](#) and [Gigaparts](#). I purchased one recently, and used it for a couple of days. To be honest, I was prepared to hate it, but it actually works pretty well. It's not a Begali, but it's good enough that I'd recommend it as a starter key.

These keys are mostly made from 3D-printed plastic parts. You can tell this from the finish. While not as bad as some 3D-printed parts, they do look a little rough. I wouldn't be surprised if they go to molded parts, though, at some point. In high volumes, it has to be cheaper to mold the parts rather than print them.

The key does have metal parts where it counts, though. The contacts are all brass, the base is made from 1/2-in. cold-rolled steel, and the levers pivot on sealed ball bearings. My key weighed 22.5 oz (1.4 lbs.), and was quite stationary on the silicone mat that I use for my keys. The Begali is, of course, a lot heavier at nearly 60 oz. (3.75 lbs.).

A spring between the levers provides the tension. Two screws allow you to adjust the contact spacing. Unlike the Begali, whose adjustment screws have a very fine thread to give you plenty of adjustability, these screws are standard thread screws. What this means is that it can be a bit tricky to set the contact spacing. The screws are spring-loaded to prevent the adjustment from changing, but the springs don't seem to be very beefy, and I can see where the adjustment might change after a lot of use.

The ball bearings give the key a nice action. During my tests, I had the speed cranked up to 23 wpm, and this key performed well at that speed. One thing I didn't like very much is that the arms tend to flex more than I like, but I actually have the same problem with the plastic Begali finger pieces. That's why I use the aluminum finger pieces on the Begali.

Overall, though, I'm quite happy with this key. And, for sixty bucks, which is about one-fifth of the price of a new Begali Magnetic Pro, I can certainly recommend this key to newcomers getting started in CW.

Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (KB6NU.Com/study-guides/), and often appears on the ICQPodcast (icqpodcast.com). When he's not testing new keys, he teaches online ham radio classes and likes to work special event stations and state QSO parties.

K1CE for a Final: Solar Cycle 25 Implications

Dave Davis, WA4WES, Net Manager for the ARRL Northern Florida Section ARES net, which meets daily on 3950 kHz, reported that HF conditions in recent years have been a problem for the net: "By 1000 hours 80 meters has shut down, and will not open again until late afternoon," adding, "when that happens we try 40 meters, which can be useful. In an emergency, net control stations will use propagation charts to find the best frequencies. Net managers have been exploring use of digital modes, especially weak signal-capable Winlink. Net members are also exploring the use of CW, which can work given programs that will read the Morse code."

There may be help for HF public service nets like Dave's, coming from Solar Cycle 25. With the solar minimum behind us roughly two years ago, the net and other HF voice ARES and public service nets may get a boost from new Solar Cycle 25, bringing better conditions on the low bands. The zenith of sunspots in Solar Cycle 25 is predicted for 2025.

It's time to renew support for, and activity on, the low band ARES and public service nets.

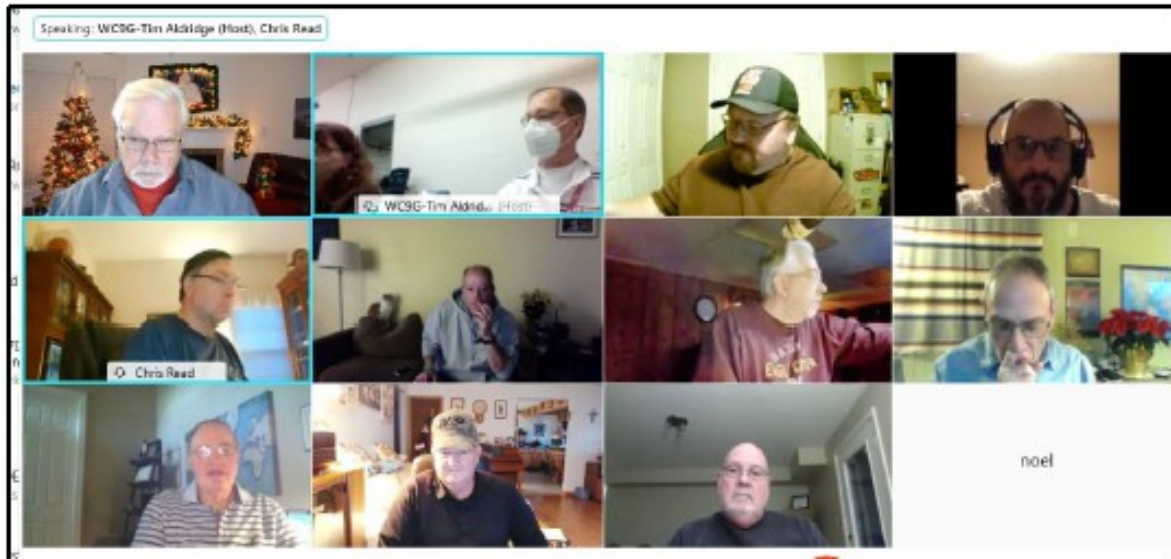
..... *ARRL News January 2021*

From the Treasurer..... Club Dues

- 1) Pay dues through PayPal. Go to the website for the link.
- 2) Sign up for Amazon Smile . Go to the website for directions. Please pass along to friends and family. Amazon sends us a check.
- 3) Sign up for Kroger. Go to the website for directions. Please pass along to friends and family. Kroger sends us a check.

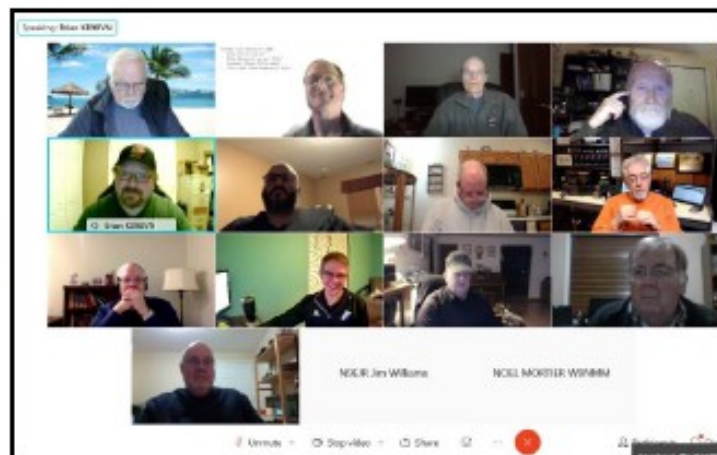
HAMS IN TOUCH VIA WEBEX

If you haven't signed on to the MARC Tuesday night virtual forum you are missing out. For the past several weeks club President Tim WC9G has been hosting an hour-long Tech night discussion using WebEX virtual chat room.



So far, discussions have covered batteries to use in the ham shack and on the road for amateur radio. Once the Tuesday night sessions got off the ground, we went into orbit talking about Amateur Radio Satellites and how to make contacts. DMR and Wires-X radio have been discussed as well as our club repeater and how the Franklin Link works. The topics are wide open and often cover several facts of Amateur Radio.

Tim WC9G sends out an email to club members as a WebEx invitation to join the meeting. If you have not received any just email Tim at president@midstatehams.org to get on the list. Then all you need is a computer, preferably with a video camera and you are ready to participate in the Tuesday night 7pm Net. Even if you don't



have a camera or are camera shy you can listen and talk back via your computer.

We hope to see you soon.

73,

Jack W8ISH

A HOT Winter Field Day

You don't expect Winter Field Day to be Hot during an Indiana Winter. But several MARC members kept their selves busy and the radios warm the last weekend of January. Bruce K9ICP headed up the club effort to make as many contacts as possible during the 24-hour marathon.

Bruce, operating 1H (home station commercial power), reported 616 SSB contacts. A good showing for a winter weekend. Operating under Covid-19 rules each participant was encouraged to work from home as a member of the MARC WFD team.

Operating from his winter home in Florida, Steve K9DY had 168 Contacts. 89 CW / 79 SSB covering 38 states while on battery power. Rudy KN9C logged 76 SSB contacts.



Jack W8ISH followed up with 43 PSK31 digital contacts.

Dave N9QBO logged 31 SSB contacts while Tim WC9G added another 24 contacts to our total. Chris KQ9Y had 10 SSB contacts.



Total club points is 968 which Bruce says beats the 2020 WFD effort by a long shot.

Total club score with various multipliers still has to be calculated. Winter FD 2021 goes in the log book as a major success. Thanks to all those who participated.

Photos provided by participants -Jack w8ish



Transmitter Newsletter - February 2021

IN THIS ISSUE:

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 - February CARC Meeting -- Estate Price List
 - RF Probe Build
 - ARRL Learning Network
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HITTING THE GROUND RUNNING

Bruce KD9RPB has just received his Tech license (2/2/2021), but as Russ KA9MZV's ex-son-in-law he has four decades of tower climbing and antenna raising experience and, since Russ became a silent key, a house full of radios. Therefore, it's no surprise that he's joined CARC and has offered to host our Club meetings via his Zoom account. Noel N9CJT has taken him up on the offer. (See next paragraph.)

FEBRUARY CARC MEETING

Stuart KA9ENO, CARC's Secretary, has a work schedule that makes 7:30 p.m. almost doable but a mad rush for him to attend a meeting. Bruce KD9RPB's schedule includes his scout troop meetings on Thursday nights; therefore, our new Zoom host is tied up until 8:00 p.m. each Thursday. AS AN EXPERIMENT, Bruce will host the February CARC meeting on Zoom at 8:00 p.m. on the 11th. Club members will receive an invitation email that contains a link, a software download option, a session number, and an access code. That email will be sent to each member's email address of record -- if you're reading this, you're on the list. Since no one will need to travel to/from a Zoom meeting, it is hoped that all members will have the flexibility to make the delayed time work for them. In the mean time, Josh KC9YUA will hold a net at the scheduled 7:30 time (146.790) for check-ins and to let everyone who doesn't read this know what's happening (and how to access it) at 8:00 that day (Thursday February 11th).

ESTATE PRICE LIST

KC9TXR's brother-in-law has provided the attached price list for the as-yet-unscheduled sale. He will notify if he decides to travel to the Dugger or Wabash Valley hamfests instead of holding a literal garage sale. However, currently he is still placing all plans on hold until he gets the Pfizer vaccine.

RF PROBE BUILD

Attached please find a schematic and a photo from Gary KD9SB. He reports, "I have been working on an rf probe for signal tracing & troubleshooting. I have used a basic circuit from several ARRL books. Such a probe would be ideal for signal tracing rf circuits in transmitters, receivers, etc. BK Precision #PR-32A probe is available for \$67.00 in the Newark catalogue. What I have come up with is something that can be built for less than \$5.00."

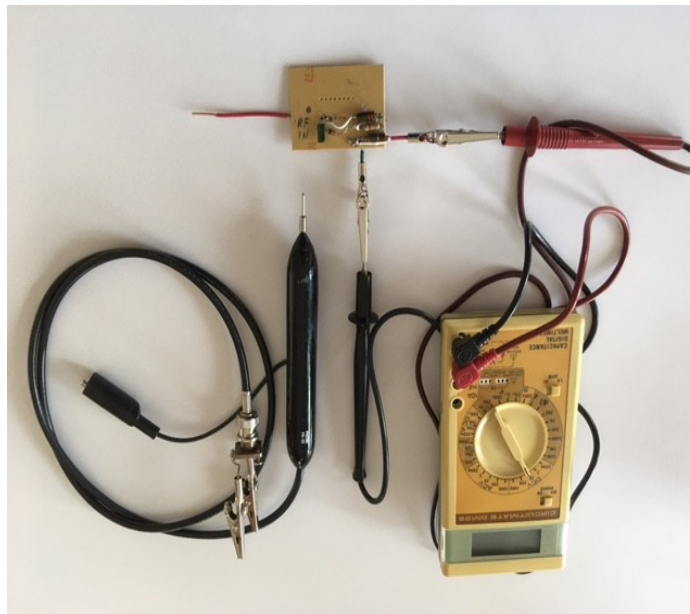
ARRL LEARNING NETWORK

<http://www.arrl.org/arrl-learning-network> is the address of a list of webinars and podcasts that have appeal to the ham community. Here's a list of titles:

- Interesting Stories about Ham Radio & Weather Spotting
- Maxim Memorial Station W1AW Tour
- Talking to Astronauts: An Elementary School's Exciting ARISS
- Technicians, Life Beyond Repeaters
- The Art and Science of Operating Ultra-Portable
- Finding and Fixing RFI

See the website for further details including presenter info, dates, and times.

..... Thanks to Noel, N9CJT



This simple RF voltage probe circuit is from the ARRL Handbook. It can be used to trace low signal RF faults in transmitters and receivers when used with a 10 megohm input digital multimeter. A commercial (BK Precision PR32) model sells for about \$70.00. This version can be built for about \$5.00. I have recalibrated the ARRL values to match the PR32.

The RF probe pc board is only a test version without a probe case as shown here with the PR32.
The max RF voltage is 15v to 20v R.M.S.
For more info:
gdavis@d9sb@sbcglobal.net
812-579-6537

PARTS LIST
 C1 .001 MFD 100v capacitor
 R1 2.2 megohm 1/2w resistor
 R2 470k ohm 1/2w resistor
 D1 small signal germanium diode 1N270 or 1N34
 3 ft. shielded cable with alligator clips
 6 inch RF ground wire with alligator clip

RF Voltage Probe			
DATE	02-05-21	DRAWN BY	Gary Davis kd9sb
SCALE		REVISED	
		DRAWING NUMBER	

2021 NWS Online Spotter training. Signup today.

There will no in-person Skywarn spotter training courses in 2021.

Below are the dates, times, and registration links for each training opportunity. People only need to attend 1 of these sessions, but they must make sure they register using the unique URL for the date they wish to attend. These information and registration links are also available on our spotter training website at:

Indianapolis <https://www.weather.gov/ind/Spotter>
Paducah/Southern <https://www.weather.gov/pah/spottertraining>
Louisville/Southern <https://www.weather.gov/lmk/skywarn>
Northern Indiana https://www.weather.gov/iwx/Spotter_Event_List
Courtesy NWS - Indianapolis

ARRL Indiana Section

Section Manager: Jimmy L Merry Jr, KC9RPX

kc9rpx@arrl.org

FOR SALE ((MUST SELL))

Jack W8ISH 317-997-5919

MFJ Versa Tuner II \$50.00

2-meter Cushcraft A144-10T 11-element
Horizontal Yagi Antenna Asking \$50.00

2-Meter 5-element Yagi beam Asking \$30.00

11-Element Cushcraft A449-11s 70cm FM Yagi Antenna
Asking \$45.00

Alpha Delta DX-CC 82 ft Long "No Trap" shortened Dipole
For 80-40-20-15-10 Meters Asking \$40.00

Kenwood 520 HF radio Asking \$125.00

A-99 Solarcon 11 Meter or 10 meter base antenna \$15.00

Various lengths of Coax

2021 Indiana ARRL Hamfest Schedule

(As of Feb 12 2021)

February 6

Hendricks County Hamfest - Canceled

February 26

LaPorte County ARC Hamfest – Canceled

February 26

Dugger Hamfest

Dugger Community Building - Hwy 54 W – Canceled

April 3

Columbus Hamfest - Canceled

July 9 & 10

Indianapolis Hamfest

2021 - ARRL – Indiana Section Convention

Marion County Fairgrounds – 7300 E Troy Ave – Indianapolis

<http://indyhamfest.com>

July 10

Auburn Hamfest

Auburn Cord Duesenberg Museum - 1600 S. Wayne Street – Auburn

<http://W9OU.ORG>

August 7

Elkhart Hamfest Northern Indiana Event Center - 21565 Executive Parkway
- Elkhart

<http://elkharteasthamfest>

August 14

Hendricks County Tailgate Fest

Avon United Methodist Church - 6850 E. Highway 36 Avon, IN 46123

November 13 & 14

Fort Wayne Hamfest & Computer Expo

2021 - ARRL - Central Division Convention

Allen County War Memorial Coliseum – 4000 Parnell Ave – Fort Wayne

<http://www.fortwaynehamfest.com>

Canceled 2021 Indiana Hamfests

February 6 Hendrick County Hamfest

February 26, 2021 - LaPorte Cabin Fever Hamfest

April 3, 2021 - Columbus Hamfest

May – Dayton, Ohio Hamvention

ARRL Indiana Section

Section Manager: Jimmy L Merry Jr, KC9RPX kc9rpx@arrl.org



MID-STATE AMATEUR RADIO CLUB

The Mid-State Amateur Radio Club meets the **THIRD SATURDAY** of each month at the Johnson County REMC 750 International Drive Franklin, IN 46131.

See our website, www.midstatehams.org, for maps on how to get to our meeting.

Everyone is welcome; you do not have to be a *HAM* to attend our meetings or a member of the club.

W9MID Repeater:

146.835/
146.235 MHz
(151.4 Hz PL Tone)

Club Officers:

President: Tim Aldridge - WC9G
Vice President: Jacki Frederick - KI6QOG
Secretary: Chris Read - W9OQ
Treasurer: Chris Mazzarella - KC9VGQ
Repeater Trustee - Chris Frederick - KQ9Y

W9MID Repeater:

443.525/
448.525 MHz
(151.4 Hz PL Tone)

Weekly Net: Sunday evening 7:00 PM ARES/RACES members and ALL RADIO AMATEURS
146.835/146.235 MHz (151.4 Hz PL Tone)

The Official Newsletter of the Mid-State Amateur Radio Club

P.O. Box 836
Franklin, Indiana
46131

Spark Gap Editor: Robert LaGrange N9SIU

Please send your articles to my email: n9siu@yahoo.com no later than the 2nd week of the month.



Special thanks to Johnson County REMC for the use of their community room for meetings and testing.