Signals from SARA

Program: The ICOM IC-7300

Join SARA’s unofficial IC-7300 owners group at the May 13th meeting as we hear about an HF transceiver that is as much a phenomenon as any new radio has been in recent memory.

How has an HF radio managed to generate so much interest during the down side of a solar cycle, typically a period of bad HF propagation, when many hams turn to VHF/UHF operation or project-building?

That is a question that I’ve asked myself as I recall sunspot minima that caused radio manufacturers to drop bands like 15 and 10 meters from their transceivers altogether, or to just sulk and admit that there would be a few years of belt-tightening ahead unless they figured out some way to interest DX chasers in VHF.

I figured that something new would take root - and yes, VHF/UHF DMR is a thing.

Continued on next page
during this solar minimum - but it remains a fairly rare activity for most of us, and we are - for the most part - sticking with good old HF operation, just shifting our efforts to longer wavelengths.

Still, why is the IC-7300 so popular as to buck a sunspot minimum? That's what I will find out - and you will too - when we hear from our fellow SARA members who own and operate the most popular radio of the decade.*

Join us on Saturday morning May 13th at 9:00 AM for the last regular SARA meeting of the season at Boutwells Landing. The program will begin after the action-packed business meeting and a short but refreshing break.

See you there!

73 - Pat
wa0tda@arrl.net

*Unverified statement, but we think it’s probably true. Or should be.

NEW HAM NIGHT May 18th

You’ve earned your Amateur Radio License - so what do you do now?

SARA will host a New Ham Night on Thursday May 18th at the Stillwater Public Library. Newly licensed Amateur Radio operators are invited to attend this evening introducing a few of the many facets of the hobby available to you. Attendees will get pointers on selecting a radio; operating on a local repeater; programming radios; operating mobile; the Amateur Radio Emergency Service (ARES); contributing to your community through public service events such as bike rides, walk-a-thons, marathons; the next step; and getting on the air. Newly licensed participants will have a chance to receive one of a few handheld radios to be given away that evening.

New Ham Night is directed at those who have successfully completed SARA’s Technician License Class, however, it is open to all newly licensed Hams.

The session will begin at 6:15 PM, but arrive early to see the demo stations and get a jump in the collection of the information that will be shared by the many “Elmers” in attendance that evening.
Greetings from my shack, de Joe KCØIOO.

Referenced last month, a workplace injury has put a crimp in my physical activities since mid-March. I had ruptured tendons repaired in my left arm and right hand in two surgery sessions two days apart. Having both arms limited has really slowed things down for me. Minimal used of the right hand (I’m right-handed) and weight and rotation restrictions on the left arm left me unable to drive for nearly 3 weeks. I will be returning to work May 3rd with some strong restrictions. My recuperation time has allowed me plenty of time to work the airwaves. JT65 has been very productive for me, just point and click, done easily enough left handed.

Our Spring education cycle wrapped up at the end of April with a VE session. Technician license classes were well attended, thanks to the Physics teachers at Stillwater High School. 3 new Hams resulted from the classes and VE session. Congratulations to the successful licensees and good luck to those who came up just short and will continue to prepare for another go at an upcoming area VE session. At this writing, call signs are not yet available for the new Technicians. My thanks to SARA's Training and Education Chair Bob Jensen WØGAF for organizing and managing the Tech Class, and to all those who volunteered as instructors for the class. Congratulations to two of our members who upgraded their licenses at the VE Session. Collin KEØIYN upgraded to Amateur Extra and Linda KEØIYG upgraded to General. We will be welcoming the new Techs to the hobby with New Ham Night on May 18th at the Library.

The Summer season is shaping up to be an active one for SARA. We have Field Day June 24 and 25 at Autumn Hills Park. A special dinner is being planned for Saturday evening recognizing our 25th Anniversary. Radios in the Park is back this summer too. Five Thursdays this summer will find us outdoors at Oak Park Heights Valley View Park for some fun times on the air and among friends. We might even grill up some brats...
and hot dogs some of this evenings. And talk of a return to White Rock, SD later this summer is being heard these days.

I suggested at the April SARA Board meeting that we continue the SARA Breakfast gathering on the 2nd Saturday of the month through the summer months. The suggestion was warmly received by those in attendance. Therefore, we will expand the SARA Breakfast on the 2nd Saturday of the month year-round. The Breakfast gathering is at the Stillwater Perkins 2050 W Frontage Rd (Hwy 36 & Washington) at 7:30 AM. The dates are June 10th, July 8th, and August 12th. If you are around, please join us.

SARA is an ARRL Special Services Club, and one does not have to look far to understand why we have that distinction. License classes and study groups, VE Sessions, Skills Nights, New Ham Night, MAP, the Remote Base Program supporting Handihams, … One of the requirements for ARRL Special Services Club is 50% of the members are ARRL members. While that isn’t a problem for SARA, I’d like to challenge those of you who aren’t members of the League to join. The League is the single largest voice for the Amateur Radio Service and serves as the advocate for our service in Congress and the FCC, and is of valuable assistance on the local level. Plus, you get your very own copy of QST magazine delivered right to your door.

The May 13th meeting SARA will feature the club’s unofficial IC-7300 owner’s group extolling the virtues of Software-defined Radio as implemented in the Icom IC-7300 HF Transceiver. This highly-rated and extremely popular transceiver has developed quite a reputation in its first year. Doug N9TOW is pulling the SARA IC-7300 users together to show and tell the capabilities of this radio and what it represents in the future of transceivers. Don’t forget the pre-meeting Breakfast will be at Perkins Restaurant 2050 W Frontage Rd (Hwy 36 & Washington) in Stillwater at 7:30 AM. I hope to see you there!

73 es CUL,
de Joe (KCØOIO)
Radios in the Park

Mark your calendars now as SARA brings *Radios in the Park* back for another summer. This successful and fun outdoor operating event will be held on 5 Thursday evenings; June 8th and 29th, July 20th; August 10th and 31st. All of them will be at Valley View Park 5575 Ozark Ave N in Oak Park Heights. The park entrance is on Osgood Ave N about a ½ mile south of Highway 36. We have reserved the picnic pavilion for each night. The on-air fun starts by 6:00 PM and runs until about 8:00 PM.

Radios in the Park is an opportunity for you to bring put your portable stations, put up an antenna, and get on the air and make some contacts. Don’t have a portable station? Come on out anyway! We’ll have some club gear available to use, or just wander around and check out the stations. The operators will gladly explain their setup, antenna, or power source, or give you a chance to operate.

---

SARA Needs YOU!

Get involved ...

Make a difference ...

Have fun!

www.radioham.org
SARA will be participating in ARRL’s Field Day 2017 June 24-25, 2017. The 2A effort will be at Autumn Hills Park in Oak Park Heights, where we have been operating the past several years. We are planning on a Phone station, a CW Station and most likely a GOTA* station.

A special 25th Anniversary dinner is being planned for Saturday evening.

Planning is already in progress, with set-up beginning about 9:30 Saturday morning and we will be on-air beginning at 1:00 PM Saturday until between 9:00 and 10:00 PM that evening and then back at the park and on the air by 9:00 AM Sunday morning.

A SARA Field Day planning session is scheduled for Thursday May 11 during the weekly Eyeball QSO session at the Stillwater Public Library. IF you are interested and willing to help make SARA’s Field Day operation a success, please plan on attending this session.

*GOTA stands for “Get On The Air”. The idea is to show visitors unfamiliar with ham radio how it works by letting them actually get on the air with the help of a licensed operator.
With Field Day 2017 just around the corner it seems fitting to take a look back to the formation of the club we know as SARA and Field Day activity in years past. While we trace formation of the club to informal eyeball meetings in 1992, the club had apparently not been established in time to participate as a club by Field Day 1992.

Most of the informal eyeball meetings were held at Big Bens Restaurant (now Josephs) and were similar to the breakfast gatherings that several of us now enjoy at Perkins prior to our Regular Monthly meetings. Early formation expenses would have been primarily for postcards and postage, which were paid for by donations from some of the club founders.

The earliest hard documentation that I have been able to locate is from the 4\textsuperscript{th} formal meeting, which was on 4/3/1993. The club name was known then as “Valley Amateur Radio Club” and it was at that meeting that dues were initially established at $20/yr and family membership was the same. Am including a photo of our initial dues check as documentation that Mary forced me into the club, as she signed the check. At the July 1993 meeting, the Treasurer reported that the club had 19 members and that after paying Field Day expenses of $145.09 the club had $234.76 in the bank. For comparison we currently have 88 members.
Mike Knox WAØKKE, was our initial Vice-President and lead many of the early Field Day events beginning with 1993 with the event being held at Lake Elmo Regional Park the first year. The following year Mike with assistance from Joe Simonet WØTBC, obtained permission for us to hold Field Day at Courage St Croix.

SARA has participated in every Field Day since 1993, with several memorable years at the Courage St Croix site, followed by a few years at the Fred C Andersen Scout Camp (near Houlton), a park in Oakdale, Brekke Park (in Oak Park Heights) and more recently Autumn Hills Park (in Oak Park Heights). While all have been enjoyable, the Autumn Hills site where we will set up again this year, has proven to be an excellent site for a variety of reasons.

While some clubs participate in Field Day with a goal to attain maximum points, SARA talks about that goal only in jest. There is even a club “rumor”, that there was a year when our score was not even submitted. While we certainly like to achieve a respectable number of contacts, we are more interested in having a good time and getting folks on the air, whom have not had a great deal of experience. We also have used this event as a means to test different modes or equipment.

Some tests we can readily discuss, such as one of our earliest network logging operations which was done at Field Day at the scout camp. We have since used network logging at our Split Rock Lighthouse event last year and likely will be used at Field Day this year. Other “experiments”, such as when a metal divining rod was used and succeeded in finding water, but that was not the intended goal.

VE Session Results

The VE Team of KØGW, AD6QT, N5JLZ, ADØSN, N9JNQ, KEØGOM, KCØOIO, WAØTDA, WØGAF, NØDXH & NØDRX, conducted the April 27th exam session at Boutwells Landing.

We processed a total of 12 exam elements for 9 examinees, of which 5 were successful in either attaining a new license or an upgrade. SARA members Collin KEØIYN, earned an upgrade to Extra and Linda KEØIYG upgraded to General. Our other 3 successful examinees all earned their Technician Class licenses and have chosen to join SARA. They are Mark Hartmann KEØNEZ, John Stack KEØNFA and Mark Votava KEØNFB. The new licenses were issued on May 3rd.

Congratulations to all of the successful examinees and thank you to the instructors from the recent SARA class as well as the group that worked the VE session.

Shel NØDRX
SARA Trustee
Making New Memories

By Collin O’Connor, KEØIYN

It’s 25 years of SARA, and every month is bringing back pieces of the archive. But it’s not just the old memories in SARA that I have found are worth treasuring. For me, at least, the most important memories are the ones made in the last year.

It was February of 2016, and I finally got to a Skywarn class. I’d missed the year before by not finding out when they were until real late in the season. But this year, I wasn’t going to miss it. First class of the season, and it was right down the street too, in the Stillwater Public Library!

The class was great, but afterwards there was an extra session for ‘hams’. My comical brain made a joke about bacon, but I hung around. I’d heard of ham radio before and even had one or two people encourage me to get into it, but never thought much on those comments. However, as a lover of storms, I thought “This is an interesting way to report... and it makes sense with what I’ve heard.” So I hung around. I learned how hams could assist in storm spotting efforts. And then at the meeting was talk of classes for those who wanted to earn their license.

Well that was the beginning of the end. I picked up a class schedule flyer and shortly after found myself back at the library for classes. Classes that had some information that I’d heard before - some that was totally new - and some that was definitely in the “What?” category. It didn’t help that for the most part the class was filled with a bunch of young high schoolers, leaving middle-aged me feeling a bit out of lace. Determined to soldier on, I continued the classes and the entertaining cast of characters that were teaching them.

A few months later, I sat my exam. I passed, earning a Technician class license, and got myself a cheap HT. Of course, hams being hams, they wouldn’t let it rest with just that.

As a new ham I was invited to both a new ham night where I saw many different unique setups, as well as hams in the park. At both I learned new things and finally got on the air with assistance. And what a start, as at the hams in the park, I got on the air with the help of Dave WØOXB, and we made contact. With France! After that first DX I was hooked.

I knew I couldn’t just stay at the Technician level. I ran out and got my General book and began studying on my own. Meanwhile, I was introduced to so many more things over the coming months - digital modes, QRP, CW, DXing, APRS, SDR, DMR, nets, satellite operation, portable, mobile, the ARRL, cool setups for ham shacks, and more. I began learning new terms - ‘73’. ‘QRN’. ‘Boat anchor’. ‘Lid’. ‘OXB Spe-
cial’. ‘Friends don’t let friends operate QRP’. ‘The afterglow’ (which is hilarious to attend as I don’t drink, but love anyway.) I took part in Field Day, which was a whirlwind blast of contacts, nervousness at contesting for the first time, and working with others to log our activities.

And I can’t forget the people I met and have come to know. From Steve, hearing stories of Antarctica. Talking about planning for emergencies with a former county emergency services coordinator John. Cutting my teeth on digital modes with Joe. Commiserating with Linda about nervousness doing this ‘new thing’. The challenges present in helping develop Logbook of the World with Greg. Finding out about the ways things went wrong setting up statewide communications repeaters with Henry. Bob sharing tales of portable operations on islands and in parks. Dave and well… Dave providing demonstrations of the Release To Listen award! And so many more.

In September, just before the SARA club was to start up its General classes, I secretly took the exam and passed it at a convention I was attending. Surprising the local Elmers and people I was coming to think of as friends was great. And at that point, I got access to the club’s remote bases, and started getting more involved on HF. I started talking to the guys on the 160 net, and while I haven’t had much luck participating at this time, also tagging along on the digital nets. I signed up as a backup net control for the Wednesday night 2m nets, and have become a regular there. And so began the next phase, after an exciting weekend taking part in the Ice Station W0JH Event as one of the operators. I began to study for the Extra licensing exam.

After several more months of study, and continuing to explore the vast field and amazing hobby, I have now passed the last level, and as of April 27th I have obtained my Amateur Extra license. I know, without a doubt, I wouldn’t be here without the encouragement, support, and helpful bullshitting of everyone in the club, and wider in the hobby. It’s been a whirlwind of a year going from nothing to Extra. And it just excites me for what the next year will bring.

Thank you, to SARA, to ham radio operators the world over, and to everyone in encouraging what I know now will be a lifelong hobby. And maybe I will be here, with some of you, in another 25 years, to help celebrate 50 years of our wonderful club.

73,

KEØIYN
Somehow, while I wasn’t paying attention, 50 years have passed since I first received my Novice Amateur Radio license. Where has the time gone? How did all of those years slip by so quickly?

Part 3 – Getting on phone for the first time

Because everyone starting in Amateur Radio in 1967 expected to get on the HF bands as a Novice, it was common to know and use Morse code. The license’s one year term pushed you toward one of two goals: the General Class ticket, which opened up the HF bands and modes to you, or the Technician ticket, which was limited to VHF and above. This was a time before VHF FM repeaters were common, and most of us chose to get our code speed up to the required 13 WPM so that we could take the General exam. The General would, it seemed to me, open up a far wider range of operating activities than the Technician.

In the process of earning my General, I got pretty good at the code and made a lot of contacts, including DX contacts. I modified an old “bug” key to make a paddle and built one of the first popular solid-state kit keyers from a new company that called itself “Digi-Key”. But I knew that most of my friends in the Mankato Radio Club were also using phone, and I was curious to see if I could make that mode work for me.

To understand the challenge of getting on HF phone in the late 1960s, you have to know that it was a time of technological transition. Amplitude modulated phone, or “AM”, was still a big player through the decade. Many amateurs had AM stations with huge transmitters and sometimes rack-mounted amplifiers. The newer single sideband technology was making headway, though – and didn’t need those huge, heavy modulation transformers. A single sideband station could easily fit on a desktop and still be a very effective setup. The problem was that SSB gear was new and expensive, so I had to try what I had, which was my Knight-Kit T-60 transmitter that I had been using for code operation. It worked great for CW, even though it only ran 60 watts. And since it was capable of AM phone operation, I thought I’d have no problem
making at least a few contacts.

The T-60 was "rockbound", which meant that it used quartz crystals to determine the transmit frequency. I needed a VFO, or variable frequency oscillator, to plug into the T-60 so that I could turn a dial to choose my transmit frequency. Having little money to spend, I went about collecting parts and built a VFO from a design in the ARRL Handbook, or maybe Bill Orr’s Handbook – I don’t remember which, but I had copies of both. The result was a two tube VFO built on an old scrounged aluminum chassis with all sorts of found parts like knobs that had been on old military gear and vacuum tubes that I had pulled from old radios. The VFO did actually work, but I ended up having to mount it on a sheet of half inch foam rubber to keep vibrations from the operating desk from telegraphing through and making it unstable. Talk about marginal design!

A cheap microphone completed the setup, and I was ready to put it on the air. Making contacts was not as easy as I’d expected. For one thing, I had no phone experience, so I called CQ way too much and didn’t know where to listen. If I could get one of the local hams to talk with me via ground wave on 75 meters, I was doing pretty well. The T-60, for all of its good work on CW, was simply an awful AM phone rig. It used "screen modulation", an extremely ineffective way to get the job done, and the results were disappointing. So I ended up making more CW contacts than ever, freed from the constraints of crystal operation. But one good thing did emerge from that brief experience with AM phone.

One day I was doing something out in the back yard when our neighbor, a nice older lady whose yard backed up on ours, motioned me over to the fence.

“I wonder if you are a ham radio operator”, she said. “Your voice is coming over my radio when I’m listening to WCCO.”

Of course I was appalled by this news and told her that yes, I was a ham and I apologized for interfering with her program.

“No, that’s not a problem”, she laughed. “I am interested in learning about ham radio myself and I wonder how I can do that.”

Well, that was a surprise. I got her connected with the radio club and she did get her General and spent many happy hours on the air in the coming years. You just never know who might be listening when you transmit, so always be ready to put your best foot forward.

Eventually my fortunes improved and I saved money to build a transceiver kit, one that would allow me to get on SSB phone, do away with the need for an antenna switch between the transmitter and receiver, and come with a built-in VFO that wouldn’t drift off frequency. My choice was the Heathkit HW-100, a fairly complex kit with multiple circuit boards and twenty vacuum tubes. The parts were most assuredly NOT pre-
Many of us began our ham radio adventures as kit-building “SWLs” - short-wave listeners who became familiar with HF propagation.
assembled, either. Individual components were in plastic bags and the manual was pretty thick. The family ping pong table became my assembly bench, since it had enough real estate to lay out all those parts and diagrams.

You can learn a lot by building kits. You learn what components look like, how to sort out resistors by value, the form factors of things like capacitors and how different they can be depending on their function, and of course how to solder. Safety was important too – the high voltages used on the vacuum tube plates could be deadly. Following directions carefully was a must.

The HW-100 worked on the first try – and after the tuning up was completed and everything was up to spec, it proved to be a great piece of gear that would really turbo-charge my ham radio activities. Now I could get on the air and be a serious contender on the phone bands with 100 watts SSB, a much more efficient way to use the
available power than AM. CW was way better too, as the VFO was more stable and the receiver was better than the old Lafayette communications receiver I had been using with the T-60 transmitter. I had loads of fun checking into nets and making more contacts than ever.

I want you to think of all that one can learn by doing things, whether you are building a project from scratch or even building a kit. This opportunity to learn strikes me as a definite advantage. I had begun my ham radio career in HF at a time when it was common to put together your own gear, learning as we went. Many of us began our ham radio adventures as “SWLs” - short-wave listeners who became familiar with HF propagation. That is not the norm today, since most new hams have entered the hobby though the Technician license and will have little or no experience building their equipment or learning about HF propagation before they advance to General and try to get on the air, on frequencies and modes so different from the VHF FM phone that they are used to.

It is easy for those of us who have grown in knowledge and experience through the CW and HF days to forget how the understanding of HF propagation and what’s inside the box we call a “radio” came to us incrementally through the years. Now when we help newcomers into Amateur Radio we need to remind ourselves that they do not have the same learning experience that we had. We cannot assume that they know things a Novice class operator would have known. We will need to be patient and not make assumptions about what newbies “should” know. Make the learning process fun – hands-on activities on the air at events like Field Day can make lifelong impressions!

Next time we’ll consider the outdoor part of the station – the antenna system – and how it can (and did) get out of hand.

73 – Pat  wa0tda@arrl.net

The Heathkit HW-100 was affectionately referred to as the “Hot Water 100”. It sported 20 vacuum tubes and ran 100 watts CW and SSB. A separate power supply was required to supply the various voltages necessary. Many of us built kits like this, learning what was “inside the box”.
Up-coming Meetings & Events

- May 13: Monthly meeting; Boutwells Landing, Oak Park Heights (Last monthly meeting before summer break!)
- May 18: New Ham Night (Details TBA)
- June 8: Radios in the Park; Valley View Park, Oak Park Heights
- June 24-25: ARRL Field Day, Autumn Hills Park, Oak Park Heights
- June 29, July 20, August 10 & 31: Radios in the Park; Valley View Park, Oak Park Heights
- Regular Thursday night eyeball sessions at SPL:
  Informal Eye Ball QSO Parties
  Every Thursday; 6:00 - 8:00 pm
  Stillwater Public Library, 224 3rd Street N.

New this summer! SARA Breakfast on the 2nd Saturday of the month year-round. The Breakfast gathering is at the Stillwater Perkins 2050 W Frontage Rd (Hwy 36 & Washington) at 7:30 AM. The dates are June 10th, July 8th, and August 12th. If you are around, please join us.

Signals is on break for June - August. Visit Radioham.org for news.