

# SARC

Schaumburg Amateur Radio Club

## RHG January 2020 250W Dummy Load – Construction Club project

Several of our members have offered (seed funding also begun) to organize a worthy build for our [Construction Project Meetings](#).

Club members have the opportunity to join this group construction project, which is to build an essential piece of equipment for their shack:

**What:** 50 Ohm Dummy Load. Consists of Extruded Heat Sink, 250W 50-Ohm RF Resistor, SO-239 Connector, Professional Machining

**When:** Now! Anticipating builds to start >January Construction Project meetings

**How:** Reserve your Dummy Load with a \$10 commitment via payment to SARC. Please reply to **Cliff Sowka K9QD** via the **SARC ALL** email group to confirm your intent.

### Background

**Dave Sims K9KBM** recently displayed his self-designed/built prototype Dummy Load during recent meetings and club interest began immediately.

**Bob Zuttermeister W9GEW** then added to the impetus Dave began by offering his company's resources, heat-sink inventory, and skills to prepare the chassis.

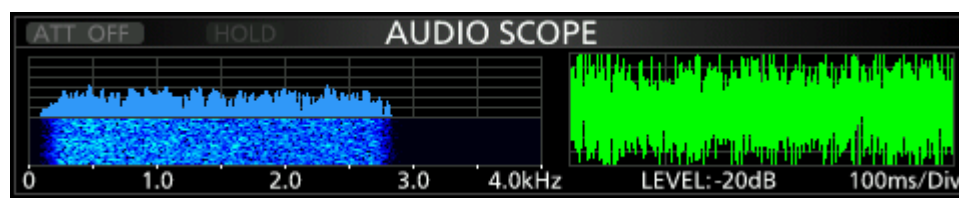
**Bill Crockett KD9AUP** has purchased 50 RF resistors and connectors. An impromptu survey during our December Business Meeting indicates more than half of the attendees present wish to build a Load for their shack. Several SARC members unable to attend the December

Business Meeting may also wish to be included in the effort. Bob believes he has enough aluminum heat-sink inventory to build 50+ units.

**We already have 44 commitments from our members, and Bob has said he can make around 50, so please let Cliff know as soon as you can.**

Cliff, K9QD

## Ways to improve your HF SSB audio – by Mike K9KQX



Audio Scope view on the IC-7300

## Ways to improve your HF SSB audio – by Mike Sorensen, K9KQX

Not many of us have probably given much thought on how we sound on the other end of a QSO. We figure the mic we got will do just fine and the rig will do its magic to get out on the air. Well, there are quite a few things you can do with many of today's rigs to improve the overall enjoyability of your time on the air.

First off let me say I'm a bit of an audiophile, so for me having a natural sounding transmission and hearing it as well as I possibly can makes for a pleasant experience. I know very well you'll never achieve full fidelity CD but taking a little time to utilize what might be available on your rig could make significant improvements.

- **Transmit Audio Bandwidth** – generally most HF transmission take the standard rule of thumb to stay within a 3kHz bandwidth. So for the new hams this means your audio fidelity would be from 0 to 3000 hz, or that of a typical phone call. Plenty good for voice communications, obviously not CD quality. AM broadcast transmission can go up to 10kHz, but are typically in the 4 to 8kHz range depending on the station. FM goes all the way up to

15khz typically and thus sounds even better. What I've noticed is that most rigs default to about 2.7khz bandwidth on transmit. Nothing wrong with that but if 3khz is allowed and accepted why not maximize it for improved sound quality. Looking at my waterfall the vast majority of what I see these days is 3khz wide. Some rigs even allow Extended transmit bandwidths, and we call that ESSB. ESSB is for those transmissions exceeding 3khz up to 4 or 5khz. I've seen higher, but honestly doing so wastes precious frequency spectrum for others to use. If the band has little activity then it's more acceptable but I would never recommend exceeding 3khz during crowded areas or contests. And for the record, I've had many QSO's at 4khz wide, but the band was underutilized and I made an effort to not bleed into any nearby signals. Tradeoffs of wider transmit bandwidths. For one thing with a wider bandwidth, your transmitter is using the same power limits to energize a wider area of RF signal. This means if you are trying to work a weak station, they may have more difficulty hearing you. By reducing the bandwidth back down to 2.7 or 2.1 khz that 100 watts out of your rig will concentrate more of its energy to the signal you transmit. Take note too, that reducing the low frequency transmit bandwidth is just as important. If you have the ability to cut audio frequencies below 300hz this will reduce the low frequencies in your voice having to be transmitted wasting energy that's not necessary to be understood. You might sound tinny but your transmitter will use all of its available power to generate a signal and concentrate that energy where it's most needed to be heard. So if you want to get through a pile up or a marginal signal or in an emergency then reduce the bandwidth to make the contact. But when you're not in contest mode, then enjoy the better sound quality of a wider bandwidth and open it up to 3khz, just be considerate of others if your experimenting with ESSB beyond 3khz.

- **Compression** – This useful feature on your rig helps improve the sound by raising quieter audio levels higher and limiting louder audio levels. By doing this the quieter parts of a transmission are brought up to help improve the power output levels of your transmitter. This is a bit of a balancing act, too much compression will distort and ruin the sound quality, too little and distant stations might have trouble hearing you as there won't be much modulation or output power. Your voice won't have that power to get through the noise. From what I've encountered if you have a meter that shows compression keeping the peaks at or under 5db tends to sounds natural.
- **Processing** – Quite a few transceivers have the ability to adjust not only the receive Bass and treble but even the transmit Bass and Treble. The Icom 7300 does, and the Yaesu FTDX-3000 and 5000 I know can do it too. By adjusting these you can help fine tune the sound

from your microphone to enhance how your voice sounds. Making these setting changes might require the use of headphones to monitor your audio or ask a friend nearby to give you some feedback on what sounds best. In my case I boost the bass 1 notch up and treble 2 notches up.

- **Mic level** – Another very important aspect that might require the help of a fellow ham to give signal reports. Having the mic gain set too low you will have very little modulation and a low average power output. Too much, and the Automatic Level control will engage often, thus clipping and or compressing your audio making it sound pinched or distorted possibly. There's lots at play here when it comes to how you hold your microphone, how close is your mouth to the mic, do you talk directly into it or off the side and the level of your voice. However you end up doing it, you will want to be consistent in how you talk. Should you change positions it will defeat all the work you did prior to determining the best Mic level. For me and the way I talk, I've had good luck with the mic gain set to around 31 to 36
- **Microphone usage** – Here is where the fun begins. There are many different ways in which to talk into a microphone and we all do it differently. In the end is there a right and wrong way, I don't know and I'm not about to say mine is right. I will tell you if you're new at this, the best thing you can do is to keep the microphone about 2 inches from your mouth, while having the microphone off to the side. This reduces the puff and sizzles sounds when using words with the letters S, P, and Z. Some with studio mics will put windscreens in front of the mics to reduce that. Most mics do have some miniature wind screen in the housing, but I wouldn't say they are completely effective but they do help.
- **Microphone brands** – Another complicated aspect is choosing your microphone. Many might consider using expensive studio microphones. Nothing wrong with that but you'll have to redo any settings above if you change from your stock microphone to something different as each have their own sound qualities. You'll also want to take into account the microphone impedance, as some radios have different Microphone pre amps that are configured to use certain impedance mics. Always research that before shelling out money for a mic to make sure it's a decent match for the rig. Some guys will spend lots of time in this area fine tuning the mic to work with the rig with additional capacitors or circuitry to compensate for the differences.
- **Station Speakers** – This here is an easy improvement, many rigs have horrible little speakers. By using external bookshelf speakers or nice computer speakers you can hear

stations much better. I've actually connected my rig to an old stereo and a set of 5 inch two way bookshelf speakers. If I had a graphic equalizer I could then tweak the received audio. As it is, I use the bass, treble and loudness control to get the sound I like.

The goal of all these settings is to improve your sound quality to have decent fidelity, improved readability and to help ensure that your transmitter is modulating in a way that increases the average power output without causing excessive distortion or clipping. To give you an idea when I turn off the processing and compression and talk the same way into my microphone my power output meter tends to hover around 50 watts with occasional peaks hitting 75 to 100 watts. When I turn processing and compression back on the power output meter increase with peaks hitting 100 watts much more often with it usually bouncing around 75 watts. If you have an ALC(automatic level control) meter, take a look at it when transmitting during testing. I try to keep that within the recommended range, not pegged out at its max safe range or exceeding it.

There's probably a ton of additional things I've missed in this article but I think any new hams might find that these settings are a bit baffling at first and knowing what they do will help them better understand their radios.

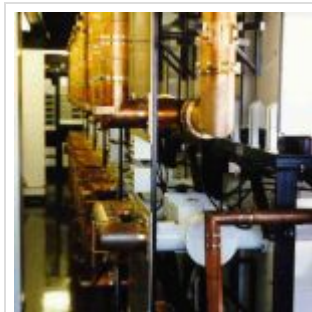
**Mike Sorensen, K9KQX**

Here is a link to [download this article](#) in Word format.

## **SARC Phase Shift: A trip to the top of the Hancock Building**

From time to time we'll be bringing back photos of past events and featuring articles from past RHG issues.

To start the series off here's a few photos of a fox hunt to track down a jamming transmitter located in downtown Chicago. The transmitter was found at the top of the Hancock building. These photos were taken in either 1997 or 1998 around Christmas as evidenced by the star hanging between the two antenna masts in one of the photos.



## SARC Holiday Party roundup – Jan 15th 2020



Below are some photos taken during the SARC Holiday Party at Garibaldi's, on January 15th 2020.

During the party, club President **Geoff Stevens KA9QGH** presented the following awards:

**Club Member of the Year, 2019 winner: Rob Glowacki, N9MVO**  
**Bill Smead Construction Project Award, 2019 winner: Rob Glowacki, N9MVO**

In recognition of his contributions to the club, including the use of materials and machinery to build the group J-pole antenna project, and more recently the Dummy Load project, **Bob Zuttermeister W9GEW** also received a **special recognition award** and a very large cake!

In addition to the awards, the following members won the twice yearly prize drawing, where names are drawn from a list of members that check in to the [club's weekly nets](#).

**Bob W9DXR**

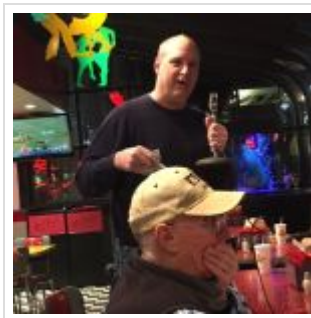
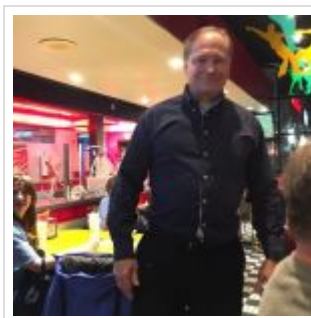
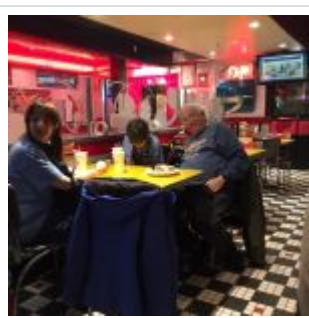
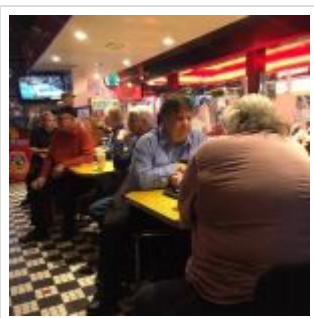
**Al KD9FIA**

**Dave K9KBM**

**Kevin KB9QVX**

Thanks must also go to **John KD9KSH** for organizing the event.

Please enjoy the following photos...





73 de Mike, K9KMV

## Schaumburg Amateur Radio Club Board of Directors Meeting January 8th, 2020

Board of Directors Meeting, 8 January, 2020

Leo Ribordy N9NBH Chairman called the meeting to order at 7:00 PM

### Attendees:

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Danny Kafka KD9HIL

Cliff Sowka K9QD

John Douglas KD9KSH

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Frank Giampa N9QPD

Bob Zuttermeister

Geoff Stevens KA9QGH



## W9GEW

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Ed Liska AC9SD

Burt Shultz AB9CV

Leo Ribordy N9NBH

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John Zietlow K9WIC

Bob Langsfeld WB9TZC

Kent Ochs W9KAO

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## Secretary's Report:

Cliff Sowka K9QD motion to accept the minutes of the December meeting. So Moved.

## Treasurer's Report:

Chris Brewer AC9GN reports 12/01/2019 through 12/31/2019

Beginning balance: \$ 5,392.36

Income: \$ 1257.00

Expense: \$ 414.91 (repeater batteries, dummy load parts, \$62.89 data line)

Pending check: \$ 1216.00 (silent key auction receipts)

Ending balance: \$ 5,018.45

Current number of fully paid members: 88

## Public Service:

Rob Glowacki N9MVO reported our first two events for 2020 will be the MS Walk May 3<sup>rd</sup> and the 4<sup>th</sup> of July parade for Hoffman Estates.

## EMCOMM:

John Zietlow K9WIC may restart EMCOMM Saturdays; more information soon. Wheaton Hamfest has offered free table space for local clubs to facilitate promotional efforts in enlisting new members. We're not prepared enough to take advantage this year.

Board authorizes John K9WIC to research possible participation in the Illinois Digital Emergency Network.

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## Repeaters:

Fusion machine at the hospital will be removed and placed in spares.

## Construction Project:

Bill McGovern W9WEM reported activity during two SARC Construction Project meetings in December.

The following folks were in attendance:

**Dec 14**

**Dec 28**

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Russ KC9NUV

Tim KC9NMW

|               |              |
|---------------|--------------|
| Abe KD9OFB    | Abe KD9OFB   |
| Jack W9YY     | Dave K9ZIB   |
| Cliff K9QD    | Leo N9NBH    |
| Burt AB9CV    | Sid KD9OLJ   |
| Al KD9FIA     | Cliff K9QD   |
| Chris AC9GN   | Daryl KB9RHR |
| Bernie KC9SGV | Dave K9KMB   |
| Rob W9RKK     | Kevin K9MKD  |
| Bill KD9AUP   | Rob N9MVO    |
| Robert W9RKK  | Robert W9RKK |
| Terry AE9TJ   | Phil WB9C    |
| Leo N9NBH     | Ron WB9PTA   |
| Ron WB9PTA    | Terry AE9TJ  |
| John KD9KSH   | Jack W9YY    |
| Doug W9YFC    | Al KD9FIA    |
| Lou N9LTW     | Ken KO9H     |
| Mike K9KQX    | Pierre K9EYE |

|               |               |
|---------------|---------------|
| Pierre K9EYE  | Bob N9JAX     |
| Daryl KB9RHR  | Mike K9KMV    |
| Ken KO9H      | Dennis KD9HIK |
| Lucas KB9UGJ  | Steve AC9EM   |
| Mike K9KMV    | John K9WIC    |
| Steve AC9MM   | Burt AB9CV    |
| Bob N9JAX     | Bob W9DXR     |
| Dennis KD9HIK | Bruce N9EHA   |
| Kevin KB9QVX  | Kevin K9BWZ   |
| Bruce N9EHA   | Bill W9WEM    |
| Rob N9MVO     |               |
| Bill W9WEM    |               |

The next SARC Construction Project meeting will be on January 11, 2020 held at the Schaumburg Park District Tennis Club (Schaumburg Tennis Plus) beginning at 8:00 AM.

## VE Testing:

John Schofield AC9JS reports Volunteer Testing Results for January 4, 2020

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| <b>Name</b>            | <b>Call</b> | <b>Class</b> |
|------------------------|-------------|--------------|
| Allen, James W         | KD9ONV      | General      |
| Zielezinski, Michael R | KD9ONW      | Technician   |
| Watkins, Ean M         | KD9ONX      | Technician   |

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| <b>Class</b> |   |
|--------------|---|
| Technician   | 2 |
| General      | 1 |
| Extra        | 0 |
| Total        | 3 |

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Participating Volunteer Examiners (VEs):

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|       |        |       |
|-------|--------|-------|
| Bill  | Davies | K9WKD |
| Steve | Karson | AC9EM |

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|         |           |        |
|---------|-----------|--------|
| Ed      | Lishka    | AC9SD  |
| James   | Migalla   | KC9UFB |
| William | Riess     | KW9WR  |
| John    | Schofield | AC9JS  |
| Dirk    | Smith     | W0RI   |

Next examination date: February 1, 2020

## Radio Hill Gazette RHG

No Report.

### Membership:

Bob Benwitz N9JAX submitted the following report:

12/2 Gary Bernstein N9VU Gary was trying to confirm his membership acceptance (I acknowledged his application but told him it was “in process” status and referred this matter to the Board).

12/14 Bernie Dekok Bernie was trying to confirm his dues submission via Paypal from an iPhone device. There apparently is some technical issue with that interface so he talked to Chris Brewer.

12/15 Tim Smith KC9NMW Tim was checking on the next membership meeting time and date

12/23 Justin Rapacz KD9JFN a new ham interested in the club

12/28 Anthony Berg AC9PL enjoys using our repeater and wants to become a member

## Publicity:

Schaumburg Park District plans to interview our club during our Winter Field Day Event the 25<sup>th</sup>

Saturday of January.

Harper College Maker's Space: Leo N9NBH will inquire with the school to ascertain if SARC should/could be a participant.

## Social:

John KD9KSH confirmed with Garibaldi's Restaurant for the SARC Christmas/Holiday Party Thursday, January 16<sup>th</sup>, we will meet at 7:00 PM. Cliff will send a note to Rob to determine plans for audio set-up.

**Date and Time:** Thursday, Jan 16<sup>th</sup>, at 7:00 PM (replaces our normal January meeting)

**Place:** Garibaldi's Italian Eatery

2346 West Higgins Road

Hoffman Estates, IL

## Education:

Leo N9NBH no new updates. Plans for September remain in place.

## Programs:

Danny KD9HIL has prepared a listing of proposed educational courses for Bill Crockett KD9AUP. Danny could make these presentations available for use at future meetings.

## Old Business:

Leo N9NBH reminded we are in need of a Membership Chair. Effort of ~1 hour per week is required. Current inquiries are captured electronically with both text and audio record retention. Kent W9KAO will set a new traffic-forwarding path to Geoff's KA9QGH email for follow-up.

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## New Business:

Winter Field Day. Leo N9NBH will work with Mike K9KMV to determine status of preparations, radios, and tarps for Winter Field Day. Starts 1PM for a 24-hour event. Mike K9KMV earlier reported further planning for Winter Field Day Jan 25<sup>th</sup> at the CRC will be communicated to the membership as plans coalesce.

Annual Corporate Report from the State of Illinois is expected this month. SARC Corp Agent of Record: Cliff K9QD is currently the club's Registered Agent.

Internal Revenue Service: Anticipating we will need to prepare our report for 2019.

We need a Budget for 2020.

Construction Project cabinet clearance: Planning to schedule club's help reviewing eligible sale items once the Dummy Load project finishes.

Kent W9KO suggested we move the 50-AMP supply from the basement of Construction Project to the repeater site for storage and have ready access for any needed backup.

Burt AB9CV has been selected as SARC Chairman for 2020 by acclamation.

Frank N9QPD moved to empower attending club officers voting authority in Board of Directors Meetings. Kent W9KAO seconded. So moved.



Bob Langsfeld WB9TZC reported on the Pekin Illinois location of Salvation Army's use of our donated Rohn 45 Tower. The SATERN team thanked the Schaumburg Amateur Radio club for the donation and reported the required effort for equipment installation is now underway.

## **Motion to Adjourn:**

At 9:09PM the Board meeting was adjourned.

**Submitted January 9<sup>th</sup>, 2020**

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Cliff Sowka K9QD Interim Secretary during Ken Krzywicki's KD9HIJ Scheduled Absence