



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

Activities of the San Bernardino Microwave Society For April

Walter Clark, Editor

Pre-Meeting Discussion

Most SBMS members beat the traffic and yammer away the time at Corona Sizzler. Here's a picture of a typical group...



Ed Munn, W6OYJ is fourth from the front on the right. He told me about some SBMS history that relates to its name and location. The name comes from the county it was incorporated in. That was 1955. It wasn't meant to represent membership. The first of the monthly meetings were at the Upland California home of Bill Baird W6VIX, one of the two co-founders of the Club. Then they moved on to a bungalow site on Chaffey College, near Upland. When that became unavailable, they moved to the old City Hall of Corona, in Riverside County, but the original name was retained. Corona was host to the Naval Ordnance Laboratory, where many of the employees were involved in Radar and Countermeasure projects. That included Donavon Thompson, W6IFE, the other co-founder of the organization. Ed himself, worked there as a summer student. The SBMS met in several other locations in Corona, including a local Bank's boardroom, the new City Hall (the old Corona High School), and finally its current site, the American Legion Hall, three blocks south of the old City Hall. All the members were young men, younger than the youngest member of the present SBMS.

Tech Talk for the April 3rd Meeting

Amateur Radio In The 21st Century...
Mainstream or Backwater?

Amateur Radio is not an entitlement. Rather, the Amateur Radio Service is expected to provide public value as defined in paragraph 97.1 of the FCC Rules. So how well are we doing? Ask a Ham and you'll probably hear that we're doing OK. Ask an elected official or a member of the general public and you'll likely get a blank stare. In this case, ignorance is not bliss. Government and public perceptions will continue to influence how Amateur Radio fares into the 21st century.

How can we determine the public value of the Amateur Radio Service? How can we get our report card out to decision-makers and the public? Who should do it?

Our guest speaker is Art Goddard, W6XD. Art is well known for his involvement and promotion of Amateur Radio. Licensed for 57 years, he is Past Director, ARRL



Art Goddard became interested in Short Wave Listening in 1954, using the family's Philco console radio. In 1956, he earned his novice Amateur Radio license. He worked his way up through the ranks to Amateur Extra class. Art's radio activities include HF/VHF, DX, and contests.

Art is a life member of ARRL and Past Director of ARRL Southwestern Division. Professionally, he is a consultant in electronics systems, retired from Boeing (formerly Collins Radio and Rockwell International). Art and his wife Mary Ellen live in Costa Mesa, CA.

Activities at the March Meeting of the SBMS (that would be of interest to the General Ham Radio Community)

Presiding: Chris Shoaff (23 in attendance)

Guests Or Members Not Seen In a Long Time

- Norman Thorn K6UU Redondo Beach

Norman's present project is portable repeater for 440. This he would set up for local events such as CERT rehearsals or real disaster services.

Norman is on the board of directors of the Redondo Beach CERT. He has a 10 watt 1.2GHz rig feeding a 15' foot high co-linear, which means he's already in microwave.

His oldest rig is a 1963 Heathkit 5-Tube 2 meter Lunchbox he restored.

Old Business

- **Membership Dues are to be paid at the April Meeting.**
Your money goes for general operations such as yearly rental on the P.O. Box and the meeting hall. There are no benefits which you can't get for free, so think of it as a donation. Sorry we can't give you a tax number to write off the donation, but heck it's only \$15.
- **Jeff Fort**
His project is getting our tax status straightened out. It involves the IRS, Secretary of State, and State Franchise Tax Board / Board of Equalization. As of Friday, 27th he has heard nothing from the IRS; nothing from the Franchise Tax Board / Board of Equalization, but did receive a letter from the Secretary of State. After a phone call to the SoS's office he found out among other things that we missed a filing in October 1982! A letter of response was mailed Thursday, 26th. Now we wait again.
- **2015 MUD**
Pat Coker pointed out that we have to book the conference center for the 2015 MUD about now. He reported that when the San Diego Microwave Club (sister to SBMS) was asked if they would host the MUD event down there, they declined. But they did volunteer to run the antenna range in the parking lot of whatever venue we choose to hold it in.
- There was some discussion on where it would be held but the only suggestion was that it again be at the Sheraton in Cerritos.
- Pat asked for volunteers, and, and, silence. You could have heard a flea fart.

- It was suggested that we have a separate checking account for Pat in organizing the event.
- The details of the extra bank account will be handled by the board later.
- Pat reminded us to think about a field trip. A few suggestions were made.
- There was some discussion on timing our MUD event to be the same time as an ARRL event to inherit a few of their attendees. Previous SBMS sponsorships did exactly that and found the logistics hassle to be not worth the benefit. The suggestion was dropped.

New Business

- **The 2 Gig and UP Contest**
 - Wayne Overbeck felt that to encourage activity, the logs of the individuals should be submitted, not just the club log. The individual scores should be kept in addition to the club scores.
 - Wayne further suggested a weighted scale as a function of band to encourage all but the 10 GHz band which tends to be over represented. Others entered in on this discussion on scoring.
 - It is scheduled for May 3rd and 4th. This is the same time as the 902 Sprint contest.
 - Wayne created some rules based on the ARRL rules and Chris asked him to submit them to the SBMS Reflector for discussion.

(More on 2 Gig and Up later in this newsletter. --ed.)

Events

Marty Woll N6VI has found for us the following upcoming gatherings:

- The International DX Convention in Visalia, CA is April 4-5-6.
- The Two-meter Sprint is Monday evening, April 7.
- The 222 MHz Sprint is Tuesday evening, April 15.
- The 70 cm Sprint is Wednesday evening, April 23.
- The 902-and-up Sprint is Saturday morning, May 3.
- The Maker Faire in Santa Clara, CA is May 17-18.
- **And of course, The SBMS 2 GHz & Up contest: Saturday, May 3 and Sunday, May 4.**

To Inspire Your Own Involvement in the 2 Gig and Up here's Wayne's rig



Ten bands, one tower;
mobile. Kind of intimidating
isn't it. But remember, *you*
work him for points.



Now that the SBMS 2 GHz and Up Contest includes a competition for individuals in addition to the club competition, I hope we can have a good turnout this year on May 3-4. Let's discuss the contest--and who is going where--at the April club meeting.

Here's the latest version of the rules, with pdf forms for logs and the summary sheet . . . www.n6nb.com/sbmsrules.htm 73, Wayne

For information on other events... see "Activities" in the SBMS website, which, you should have memorized by now

- Google SBMS
- click on our website
- then Ctrl-F Activities

Brian Thorson, AF6NA On Finding Best Focus (Using the sun-reflection-off-pieces-of-packaging-tape method.)



This is a DirecTV "Slimline" reflector that is normally fitted with 4 LNBS. Note (below) that I found the best focus point is below the feed by about 2



inches. Also note I only put a tape-reflector in the center part of the reflector to avoid confusion from the sides. I intend to use a circular offset feed. I'm hoping for about 33 dB gain.

What Our Members Are Working On

(Chris Shoaff chose not to have Activity Reports this Month)

Courtney and Ed submitted activity reports by email. That's why they are the only ones posting.

- Norman Thorn K6UU (Redondo Beach) ←New
- Tom Board WB6HYH (Rancho Cucamonga)
- Jason Sogolow W6IEE (Burbank)
- Brian Thorson (Corona)
- Eric Fort AF6EP(Phelan)
- Pat Coker N6RMJ (Lake Los Angeles)
- Rein Smit W6SZ (Alta Loma)
- Marty Woll N6VI (Chatsworth)
- Larry Johnston K6HLH (Lake Los Angeles)
- Frank Kromann AG6QV (Trabuco Canyon)
- Wayne Overbeck N6NB (Tustin)
- Walter Clark (Fullerton)
- Jim Steffen KC6A (Fallbrook)
- Jerry Mulchin N7EME (Corto de Caza)
- Mel Swanberg WA6JBD (Upland)
- Bill McNally N6MN (Seal Beach)
- Gary W6KVC (Running Springs)
- Miguel Ramirez W6YLZ (Winnetka)
- Courtney Duncan N5BF
 - is working with W6PQL on obtaining a solid state 23 cm amplifier, working towards a home EME station very similar in architecture to what Bill McNally N6MN is working on, but with solid state finals.
 - He checks into Ralph K6TSK's 1296 net every Friday and some Tuesdays.
 - In what Courtney calls "macro"-wave, he got a 75 meter dipole up, so he's back on 75 and 40, following the little Gap incident last fall. 160 still pending.
- Doug Millar K6JEY (Long Beach)
- Dennis Kidder W6DQ (Inyokern/Fullerton)
- Jeff Fort KN6VR (Phelan)
- Dick Bremer WB6DNX
- Ed Munn W6OYJ (Sand Diego) Reporting on the Activities of the San Diego Group (They normally meet 3rd Monday at Karry Banke's house.)
 - If anyone would like to go this sister club to SBMS, write to Ed Munn by way of SBMS Reflector.
 - At the February meeting Dennis Dauben WBWYR provided a program for discussion called The Timekeeper which describes the complexity of the methods used by NIST to provide highest accuracy time.

- Ed Munn W6OYJ reported that Kerry helped him get his DTV Dongle working with SDR software and a small indoor antenna. Ed was able to see/hear the 1296 beacon on Mt. San Miguel, a distance of 25 miles.
- Kerry has been working with a national group to design and test amateur TV ground stations capable of receiving 2.4 GHz signals from the International Space Station. In the past, the popular scheduled contacts between the ISS and school children have been limited to 2 meter FM voice modes during overflights. The new LIVE TV downlink receiving stations must have accurate antenna tracking capability. Kerry has been receiving local test signals with this setup that includes a 70 inch dish.
- Tests with actual ISS downlink signals started March 8th and are continuing with good success!
- Dan Bubke K6NKC has built a beacon which will operate on a frequency of 3456.300 MHz from Mt. San Miguel (DM12mq). It should go into service by the time you read this. It should be transmitting from Mt. San Miguel prior to our meeting on April 3rd.

Tech Talk (Last Month) Advancements in Test Equipment

Last month we had a presentation on current test equipment that might relate to club members. Dennis, W6DQ brought his favorite Agilent FieldFox all-purpose analyzer and his favorite network analyzer. Bill, N5NM brought his new Oscilloscope/DMM made by Hantek. Doug, K6JEY presided with an overview and some details about USB linked equipment and a presentation about a new GPIB/USB adapter and plotter emulator program for use with HP spectrum analyzers and other gear. Several members had interesting comments about other gear available. Members were given time after the presentation to take a look at the gear that was being demonstrated and had a chance to ask questions.

To see Doug's PDF file click on this link:

http://www.nitehawk.com/k6jey/presentations/Advances_in_Test_Equipment.pptx

(You will need Microsoft PowerPoint on your computer to see this. If you don't have that you can use Google to find a "free power point viewer". Install it and then go to this link.)



9

The Present

- The newer gear has sophisticated features you may not want. (GPS, tracking)
- Newer gear may be able to do new things
- Newer gear is supported for a shorter time
- Not field fixable. (except Rigol)

Next are Two Examples
Of Spectrum Analyzers

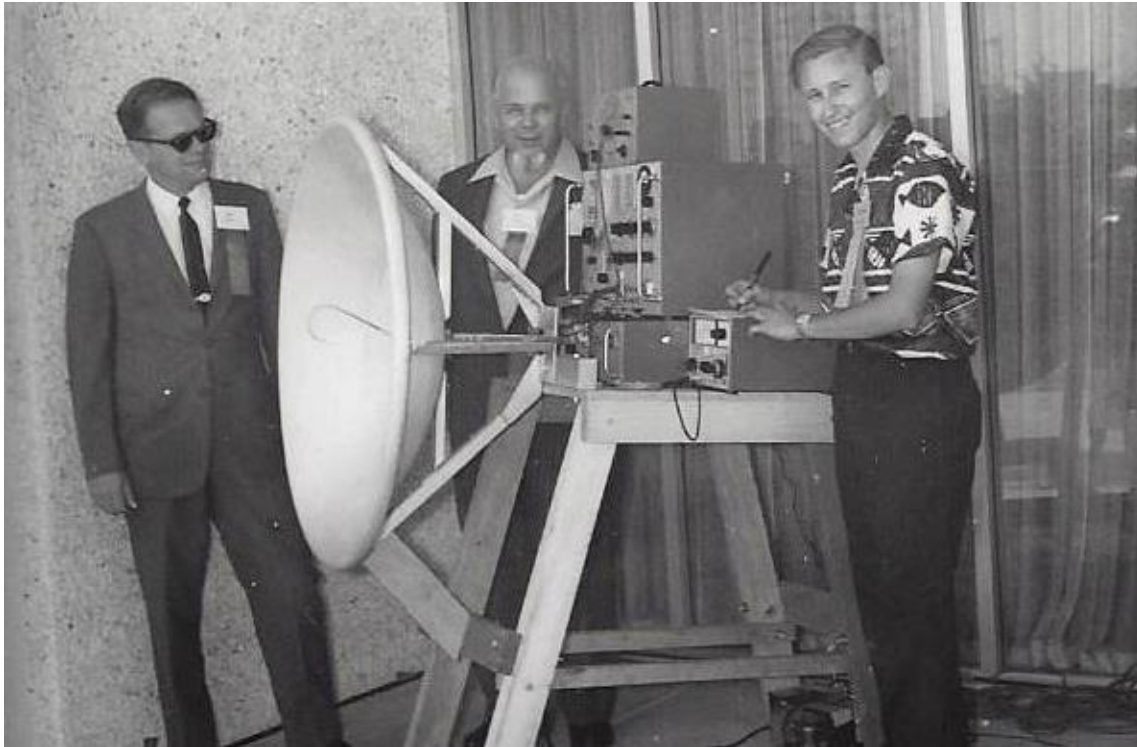
10

Agilent FieldFox N9918A

- 20.0 GHz BW
- 500 MHz Res
- Spectrum Analyzer
- Independent Tracking Generator
- Power Meter
- Vector Voltmeter
- Fault Detector
- Transmission Loss
- IP tool
- Internal GPS
- USB 12 bit D/A converter

Some Microwave Ham History (submitted by Marty Wol N6VI)

The recent passing of John Huntoon W1RW, who was ARRL's General Manager and QST Editor for 14 years, prompted a friend in Arizona to send this photo. It is at the 1968 ARRL Southwestern Division Convention in Phoenix. Gary Hamman W7CAF (now K7GH) on the right in the photo below and Lori Cripps WA7EDI set a world DX for 40 GHz and above (3,720 feet). This photo shows Gary's location: the patio right in front of the exhibition hall at the convention hotel.



The three people in the picture are John Huntoon (who was General Manager of ARRL), John Griggs, W6KW (our Division Director at the time), and Gary (who was then the AZ Section Communications Manager). Ray Cripps WA7EDH, Lori's husband, and Gary worked in Motorola's Antenna Section at the time, so they made the feed for the 3 foot dishes and used borrowed standard test equipment for the transmitters and receivers. The mode was CW (actually keyed amplitude modulated with 1000 Hz).

The transmitters were H-P 628A signal generators driving H-P 940A frequency doublers with a power output of about one milliwatt at 40.100 GHz. Each receiver used an H-P R400A crystal detector into an H-P 415E narrow-bandpass amplifier and speaker. Gary and Lori used hand-keyed Morse Code and worked duplex through 10-dB directional couplers.

The dishes had a measured beamwidth of 0.7 degrees and a calculated gain of 48 dBi.

Gary Heston's ATV Mobile Studio

You enter the chat room by clicking on the white space) on the right of the website here →

Just as a reminder, this is how you watch SBMS meetings from home:
http://www.batc.tv/ch_live.php?ch=2&id=139

Better yet memorize the following and use Google → BATC TV.

The TV part is easy to remember. Think of the BATC and batch without the h. It's a British website (that's the B) Once you are there, on the left, you have to pick a stream. It's W6ATN. Memorize ATN. W6ATN is the club call sign for six ATV repeaters that are a part of the Amateur Television Network (ATN-CA) in Southern California. This stream is from the ATN repeater on Santiago Peak and is provided by: Roland Hoffman, KC6JPG

http://www.batc.tv/ch_live.php?ch=2&id=139 →



The screenshot shows the batc.tv website interface. At the top, there's a blue header with the batc.tv logo and a 'FORUM' link. Below the header, there's a navigation bar with 'To stream your ATV repeater here free of charge, please [contact Us](#) today!'. The main content area is split into two columns. The left column features a video player showing a test pattern with the call sign 'W6ATN' overlaid. Below the player is a dropdown menu for selecting streams, currently set to 'W6ATN (streaming)'. The right column contains a chat window with a list of messages from users like W6EMAFIash, W6KVVRE, W6AKHOGREG, and W6EMAFIash. At the bottom of the page, there's a footer with contact information for Roland Hoffman (KC6JPG) and a link to the Amateur Television Network Directory.

- The newsletter is to keep member informed on current activities of the “active” members; the members that come to the meetings or use ATV to report in.
- The website is for articles and all activities of the past.
- But questions or even bragging is for the SBMS Reflector. Send your email message to: sbms@ham-radio.com. More than 80 people will see your question or your bragging. (To sign up go to: <http://lists.altadena.net/mailman/listinfo/sbms>.)

Microwave Mystery Device of the Month



Hint: that's a tungsten rod across the bottom and a tungsten disk in the tube. Through the BNC on the back, it's powered by 3,000 volts DC. And yes, it is a microwave device.

This is a gadget I made for a 2010 MUD lecture. (As you might guess, I'm running out of microwave mystery devices of the month. Please send me your discoveries of interesting stuff. Oh and you don't have to know yourself what it is, but if you do, you can tell us on the SBMS Reflector.)

Submit your ideas to
the SBMS reflector.

sbms@ham-radio.com

Needs, Wants and For Sale

- **For Sale:** 30w 1296 MHz PA kit \$50 + \$5 for US shipping Chris Shoaff, N9RIN cshoaff@yahoo.com
- **For Sale from Bill Burns** (Bill will only rarely come to the meetings, so if you want any of this, please contact him by email at . . . bburns@mediacombb.net)
His address is: 247 Rebel Road Ridgecrest CA 93555 and phone: 760-375-8566
 - 8 watt 5 GHz TWT's with power supplies \$50 each
 - HP 410B Multimeter with RF probe and manual free
 - copper wire enamel coated #14 many feet coils \$10 each
 - Bencher BY1 Iambic paddle key \$90
 - ARRL books- Cynthia Wall mysteries Disappearing Act; A Spark to the Past; Hostage in the woods; Easy Target; Fire Watch; Night Signals;

Member Ads

Sixty North Electronics

Kits Made by member KL7UW

Let Ed Cole assemble your Down East Microwave kit. For kits in stock, he can deliver an assembled unit to your custom design preferences within 30-days of a paid order. **His prices are the same as you pay DEMI for an assembled transverter, but much quicker delivery time. And comes with 90-day written warrantee on labor (guaranteed to work)!**

Shipping for a transverter is typically that of medium-size flat-rate Priority Mail anywhere in the USA.

For examples of his work click on... <http://www.kl7uw.com/kits.htm>

Contact him at kl7uw@acsalaska.net

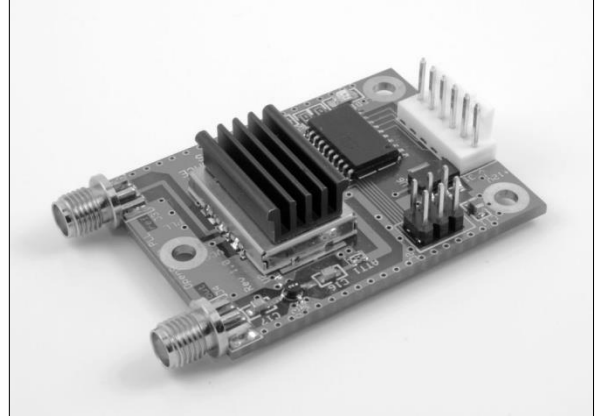
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Available at <http://reactancelabs.com>



If you are a member you can have a picture ad here yourself.
For the time being this service is free.
eMail WalterClark@roadrunner.com

About SBMS

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs. The focus of the club is microwave activities in the Southern California. ***Our sister club is San Diego Microwave Group (SDMG). At least one meeting a year are joint meetings.*** SBMS dues are \$15 per year, which includes a badge and that's about it. The dues are more in the way of a donation to pay for outreach things such as video portals, a bank account, and rent for the building. When to pay is not a matter of remembering. The Corresponding Secretary will contact you by email and will then hound you like your own personal PBS telethon. Dues can be handed to the treasurer at the meeting, or mailed to the address of the treasurer listed in the banner below.

Meetings are first Thursday of the month, 7:00 PM at the American Legion Hall, Corona. For carpooling from North Orange County call Walter Clark @ 714 882-9647

The Reflector (SBMS Group Email)

The most active method of information exchange is our group email called the SBMS Reflector. You don't need to be an SBMS member to participate. To subscribe fill out the form at the website: <http://lists.altadena.net/mailman/listinfo/sbms> (If you are getting email on the SBMS Reflector now, and you want to write your own message, pull up a recently received message, click on "Reply to List." Don't forget to change the subject line and delete all previous text as appropriate.)

The SBMS Website and Newsletter

The SBMS Reflector is ephemeral. There's no record kept. The Newsletter has a slightly longer life. It is sent to members and past issues are recorded in the website. It's URL is: <http://www.ham-radio.com/sbms/> You don't have to memorize that or write it down, just enter SBMS into any internet search engine.

Newsletter: Walter Clark: walterClark@roadrunner.com

Website: Rein Smit: rein0zn@ix.netcom.com

The newsletter is created about the middle of the month and broadcast as a link inside an eMail letter to the members. This is mailed to you on the weekend prior to each meeting. SBMS Newsletter and website material can be copied as long as SBMS is identified as source.

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