



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

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

July 2015 Newsletter on the Activities of the San Bernardino Microwave Society

Walter Clark, Editor



Wayne Overbeck, N6NB will be our speaker at the upcoming meeting of the San Bernardino Microwave Society on Thursday, July 2nd. Come and hear all about the exciting turn of events in the last two weeks that led to the new microwave distance records.

Tech Talk Description



Wayne Overbeck, N6NB, has risen to yet another level in wireless communications. He has set new distance records for the Amateur 2.3 and 3.4 GHz bands of nearly 2500 miles! Wayne is no stranger to DX-peditions, he has not only been all over the world and the U.S. on radio sport trips, but has been an organizer and enabler of others. He already has so many accomplishments, antenna designer, contest winner, microwave system integrator, mobile communications expert, propagation expert, the list goes on. This time it was Hawaii. Wayne's experience and the prevailing weather conditions told him propagation would be good. He packed his radio gear and went!

If you can't make it: watch online through Gary Heston's mobile video facility W6KVC by way of:
http://www.batc.tv/ch_live.php?ch=2&id=139

Activities at the April Meeting of the SBMS

(that would be of interest to the general ham radio community)

Business Meeting

Presiding: President Chris Shoaff (N9RIN)

(19 in attendance... 22 last month)

Guests or Members Not Seen In a Long Time

- Jeff Harris NC6Y. Long time ham whose work schedule has changed. Mostly active on 2 m. / 70 cm right now.
- David DeBerry of Norco, CA. Guest of Brian Thorson
- Gordon Castle of Corona, CA. Cousin was in ham radio 50 years ago.
- Bill Preston, KZ3G, VP of Fullerton Radio Club
 - Bill sends greetings from Dennis W6DQ who will be at the meeting in July.
- Members of the AREDN Hamnet Project Team
 - Andre Hansen K6AH of Fallbrook, CA. Project Manager and this evening's Tech. Talk presenter.
 - Joe Ayers AE6XE of Mission Viejo, CA. Project team member, licensed since the 1970s, and member of RACES.
 - Frank Columbus WA2KWR of Laguna Niguel. Project team member. Active on 0.9, 2.4, 3.4, and 5.8 GHz.

Old Business

Chris Shoaff on the XE2 beacon project: Bernardo XE2HWP is not able to get to the rig that Antonio XE2HWH has. No rigs will be coming back to SBMS from XE2. (None were expected.)

MUD

Pat Coker N6RMJ led the discussion of preparation for Microwave Update 2015. In order to coordinate planning work and MUD web page

maintenance, a separate meeting of the MUD team was set for 8 p.m. Saturday June 6, 2015 in Brea, CA. Pat reported later that this meeting was productive and MUD preparations were in much better shape as a result.

Chris Shoaff N9RIN reminded the group that this year is the club's 60th anniversary. Should we celebrate with a cake before the banquet dinner at MUD?

New Business

Chris Shoaff noted that the regular July meeting will be on July 2, 2015, right before the holiday. Should it be delayed due to the holiday? Consensus was that the meeting should be held July 2 as scheduled.

Marty Woll N6VI announced the first draft of a modern SBMS roster made up of people who were on a dues-paid list from three years ago plus the attendance list over the last year maintained by Courtney Duncan N5BF. Marty had added addresses from QRZ, phone numbers and e-mails as available and would send it around to see if others had some of the information missing. This list can be used as a reference for people who are active on microwave bands and also to identify some who might want to resume participation or membership in SBMS.

Courtney Duncan (N5BF), Recording Secretary

MUD Speaker Slots Still Available

What Our Members Are Working On

Dick Bremer WB6DNX:

picked up a 40 dB 50 Watt attenuator for 8.5 GHz.

Walter Clark: Fullerton

is working on another physics demonstration, The Wiener Experiment; a microwave version of what was done with light, film and a microscope 130 years ago. He's had to learn about small-loop antennas, the kind that detects only the magnetic field component of an E and M wave. The first loop antenna he built was of poor quality but worked quite well and hasn't been able to reproduce it after a dozen tries. He demonstrated something of interest to hams about loop antennas... they are less sensitive to the multipath than a normal antenna.

Rein Smit W6SZ: Alta Loma

His latest project is a Raspberry Pi waterfall display that can be used in the field. He will be making a presentation for us when this is under control.

Wayne Overbeck N6NB: Tustin

decided to build a ten band station that fits in a box the size of Marty's satchel (lunchbox size) 5 transverters, 14 relays, a lot of non-color-coded wires. 6 m. through 3 cm. Will do a show and tell at a future meeting.

Marty Woll N6VI: Chatsworth

reminded us all that the next weekend is the June ARRL VHF Contest which includes microwaves. W6TE will be on Frazier through 24 GHz with a lot of time on his hands. N6RMJ and K6HLH are always reliable contacts from up there. N6VI will likely rove into Antelope valley. Not a contest we usually do, but microwaves will be appreciated: 11 a.m. Saturday to 6 p.m. Sunday.

Mel Swanberg WA6JBD: Upland

is working on antenna range instrumentation for the SBMS tuneup party in July and MUD in October. Has made a little progress but nothing significant to report yet.

Frank Kromann AG6QV: Trabuco Canyon

has a new toy, a 10 MHz-6GHz signal generator that he plans to build a microwave radio out of.

Courtney Duncan N5BF: La Canada

took delivery of 10 GHz antenna from Brian just now and plans to have it on the air with DB6NT 8 Watt amplifier for the tuneup in July. Has been listening to N6CA Palos

Verdes beacon on the DB6NT transverter referenced to a Rubidium oscillator. Checks into K6TSK's 1296 net every Friday evening.

Brian Thorson AF6NA: Corona

got into the 2 GHz and up contest in early May and made a half dozen QSOs. Jim KK6MXP made considerably more. Finished up mechanical part of the N5BF 10 GHz system.

Chris Shoaf N9RIN: San Clamente

said that Dan Bubke N6NKC San Diego is working on 30 Watt 4 foot dish 10 GHz rig. Chris himself is trying to get his Raspberry Pi working with WJST but so far just has nice display.

Dave Laag W6DL:

is working towards new and exciting things on 10 GHz. Dave is an old time SBMSer but absent for the past five years or so. He reminded us of that history and volunteered to give a MUD history talk someday.

Bill Locke N6WL:

is not yet on the air. He's playing with an SDR dongle that Brian AF6NA got him.

Gordon Castle:

45 years ago was a medic in Viet Nam next to amateur radio operators (military affiliated radio service MARS) who could communicate with families back in the states. (Gary W6KVC Heston commented that he had been a MARS operator out of March AFB and at his home and would get up at 3 a.m. every morning and do 100-150 patches when the bands were open.)

Pat N6RMJ

is still working on new tower and has it up. He has 6/2/1296 working. It has a 4-bay, 55 element loops for 1296 at 85 feet with 70 Watts. It has a mast mounted preamp and has worked Fresno S-9. He has 1180 amp hours of batteries in shack, charged from solar, that run everything but the big amps. He has also done some ARES and Mesh work and will talk to the presentation team afterwards.

On Amateur TV at the Meeting

- W6KGE from Simi Valley
- W6ORG from Arcadia.
- From the Chat Room: W6DQ, KJ6HZ, KE6BXT, VE4MA, WA5YWC, K4QF K6YC, KE6BXT, KJ6HZ, N0KP, N8KH, N9RIN, VE4DDZ, VE4MA, W6KGE, WA5YWC, WA8RJF

Photographed during the meeting . . .



Walter Clark showing his field strength meter and 2.45 GHz WiFi source (in the can) he uses for physical optics demonstrations. Next to him is Marty Wol N6VI and Wayne Overbeck N6NB

The above Activity Report was recorded by
Courtney Duncan (N5BF), Recording Secretary

Two New Microwave Records

SBMS member Wayne Overbeck N6NB broke two world distance records on June 18 when he completed SSB contacts from a rental car in Hawaii to his Panorama Heights, CA station (operated by Greg Campbell W6IT) on 2.304 GHz and 3.456 GHz. After seeing favorable Hepburn tropo forecasts, Wayne took a chance and took 150 pounds of gear with him to the Big Island, where he constructed a rover-type station and drove the slope of Mauna Loa until he found the “sweet spot”. There, he was able to contact W6IT on multiple bands through 3.4 GHz. The prior records on these bands was set by Chip Angle, also an SBMS member, several decades ago. (Chip still holds the world distance record on 5.7 GHz.) You can read more in the News section of the ARRL Web site and hear from Wayne himself during his presentation at MUD 2015 in October. Congratulations, Wayne!

Marty Woll N6VI



Photo by Wayne of his rig on the rental car in Hawaii

The Society of Amateur Radio Astronomers

had their conventional few weeks ago at Green Bank West Virginia NRAO

The Following Papers Were Presented at the Annual SARA Conference

- Pulsars, flickers and cosmic flashes: the transient radio universe
- Portable VLF Receiver for Making Calibrated Magnetic Field Strength Measurements
- 611 MHz Total Power Radio Telescope - Part 0x03 (Software)
- SARA/JOVE Activities In A College-Level, Management Of Technology (MOT) Curriculum
- RASDRviewer Pulsar Feature Update
- Field Demonstration of the Radio Astronomy Supplies SpectraCyber Radio Astronomy Receiver
- Detecting meteor radio echoes using the RTL/SDR USB dongle
- Shannon Entropy Measurements of Radio Telescope Signals
- Developing a Radio Astronomy Program For Community Observatories
- Small-Antenna Radio Astronomy with RASDR2
- The Biggest Offset Dish in the World. The NRAO 100 Meter

For author name and abstract for each of the above titles go to:

<http://www.radio-astronomy.org/?q=node/218>

Their proceedings will be available in a few days for \$30. Order it at the following email address:

<http://www.radio-astronomy.org/e-store>

SARA Conference pictures on the next page.

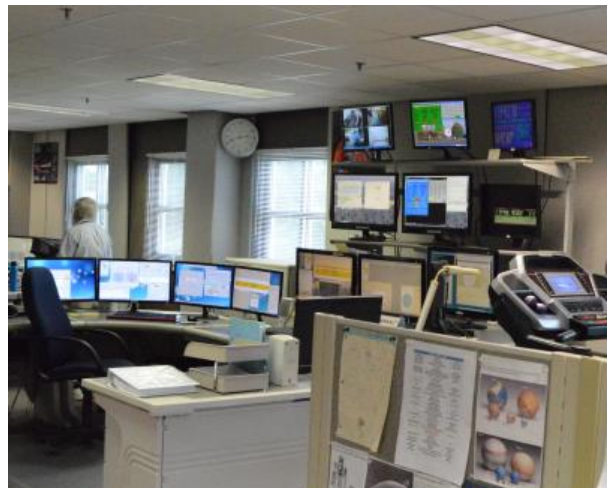


Participants at SARA Conference 2015 in front of Jansky antenna, at Green Bank, WV (I know you can't see their faces. It is presented here to show you that like microwave hams, it is made up of old guys and few women. .ed)



← Carl Lyster's horn antenna receiving hydrogen line on 1420 MHz

Below is the Green Bank Telescope (GBT), the largest aperture (100 m) steerable radio telescope in the world, and its control room



Two GHz and Up Contest Results

SAN BERNARDINO MICROWAVE SOCIETY								
2 GIGAHERTZ & UP CONTEST								
2015 RESULTS - INDIVIDUAL COMPETITION								
CALLSIGN	2 GHz	3 GHz	5 GHz	10 GHz	24 GHz	TOTAL	Best DX	Club
N6VI	1,648	1,648	951	9,368	-	13,615	474 km	SBMS
K6ML	-	-	-	12,965	-	12,965	312 km	50 MHz & Up
W6IT	956	956	719	5,146	750	8,527	302 km	Assoc. Mountain Toppers
WA6QDP	-	-	-	6,625	773	7,398	439 km	50 MHz & Up
W0GHZ	1,002	767	1,683	3,574	-	7,026	245 km	Northern Lights
W6DXJ	826	574	574	4,857	-	6,831	474 km	50 MHz & Up
W0ZQ	1,321	497	570	3,553	-	5,941	329 km	Northern Lights
K0AWU	-	-	-	5,720	-	5,720	328 km	Northern Lights
N0KP	-	-	1,617	3,597	-	5,214	329 km	Northern Lights
KC0P	1,072	-	-	4,080	-	5,153	256 km	
WB0LJC	1,299	-	-	3,179	-	4,478	257 km	Northern Lights
K0KFC	-	-	-	3,133	-	3,133	212 km	Northern Lights
N0HZO	-	-	-	3,004	-	3,004	144 km	
W9SNR	474	1,107	304	667	446	2,998	204 km	Badger Contesters
K6HLH	-	-	-	2,865	-	2,865	246 km	SBMS
K9PW/R	436	914	-	641	410	2,401	173 km	SMC
K5LLL	423	423	423	783	-	2,052	323 km	Road Runners MG
W5LUA	550	550	432	432	-	1,964	332 km	North TX Microwave Soc
N0UK	-	-	-	1,269	-	1,269	142 km	Northern Lights
N9RIN	-	-	-	1,067	-	1,067	119 km	SBMS
NO5K	-	-	-	172	-	172	72 km	Road Runners MG
Bold denotes top single-band score								

Although no log was received from Andreas N6NU, his outstanding effort would, if included, likely have put him in 2nd or 3rd place overall and would have put the 50 MHz & Up Group in first place for the club competition.

SAN BERNARDINO MICROWAVE SOCIETY
2 GIGAHERTZ & UP CONTEST
2015 RESULTS - CLUB COMPETITION

CALLSIGN		SCORE		CLUB
W0GHZ		7,026		Northern Lights
W0ZQ		5,941		Northern Lights
K0AWU		5,720		Northern Lights
N0KP		5,214		Northern Lights
WB0LJC		4,478		Northern Lights
K0KFC		3,133		Northern Lights
N0UK		1,269		Northern Lights
	Club	Total	32,781	
K6ML		12,965		50 MHz & Up
WA6QDP		7,398		50 MHz & Up
W6DXJ		6,831		50 MHz & Up
	Club	Total	27,194	
N6VI		13,615		SBMS
K6HLH		2,865		SBMS
N9RIN		1,067		SBMS
	Club	Total	17,547	
W6IT		8,527		Assoc. Mountain Toppers
	Club	Total	8,527	
W9SNR		2,998		Badger Contesters
	Club	Total	2,998	
K5LLL		2,052		Road Runners MG
NO5K		172		Road Runners MG
	Club	Total	2,224	
K9PW/R		2,401		SMC
	Club	Total	2,401	
W5LUA		1,964		North TX Microwave Soc
	Club	Total	1,964	

Upcoming Events (Identified by Marty Woll N6VI)

- July 23 and Sunday July 26th: The Central States VHF Society Annual Conference (See below for details.)
- July 25: SBMS Tune-Up Party at Fairview Park in Costa Mesa
- Aug. 1-2: ARRL UHF Contest – includes all microwave bands
- August 15-16: ARRL 10 GHz & Up Contest – 1st weekend
- Sept. 11-13: ARRL Southwestern Division Convention, Torrance CA (can you offer a microwave program?)
- Sept. 5 - 6: ARRL EME Contest – 2.3 GHz & Up
- Sept. 12-13: ARRL September VHF Contest – includes all microwave bands
- September 19-20: ARRL 10 GHz & Up Contest – 2nd weekend
- October 16-17-18: Microwave Update 2015 at the Crown Plaza Hotel in San Diego
- Oct. 31 - Nov. 1: ARRL EME Contest – 2.3 GHz & Up
- Nov. 28 - 29: ARRL EME Contest – 50 through 1296 MHz – 1st weekend



http://hamradio.com/sbms/mud2015/mud_index.html

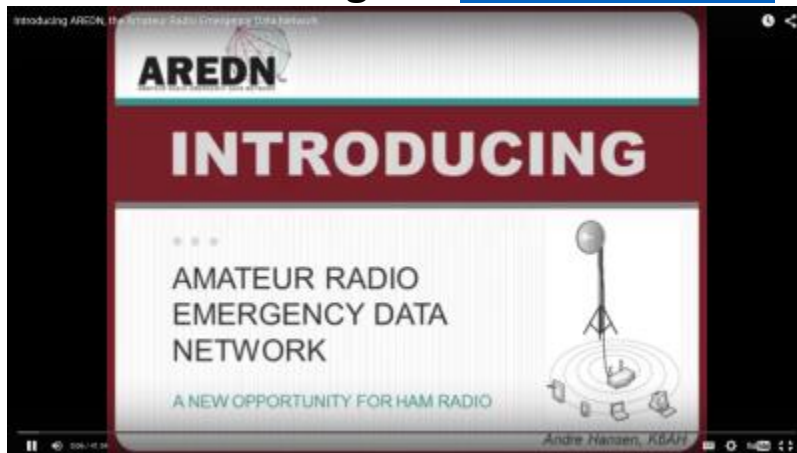
Anyone, (not just SBMS members) . . . if you know of any future 1 GHz and above amateur radio event, please send date and description to the editor:
walterclark@roadrunner.com

Word from Dennis Kidder W6DQ, Inyokern CA is that there's still some un-opened boxes and had to rent a FOURTH container ... YIKES ... But that cleared some space for his workshop. He was at OVRO and Doug's star party. Good turnout, but poor optical conditions. They saw the brightest Iridium flash ever . . . estimated magnitude -7.4!!! Holy cow!!
He will be at the July SBMS meeting.

Last Month's Tech Talk:

Andre Hansen, K6AH presented an overview of the **Amateur Radio Emergency Data Network (AREDN)** Project for San Diego and neighboring counties. He also described the significant advances local hams have contributed to this fast-growing emergency communications technology.

For more on this go to www.aredn.org



Andre Hansen, K6AH. AREDN (Amateur Radio Emergency Data Network) Mesh Implementation Considerations. Broadband-Hamnet (BBHN) group. Emergency Manager's (IAEM) Innovation and Technology Award.

Gary Heston's ATV Mobile Studio

Not only can you watch our meetings live (well delayed by 240 milliseconds) You can chat with other viewers about what you are watching (or anything else.) Enter the chat room by clicking on the white space on the right of the website described below.

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

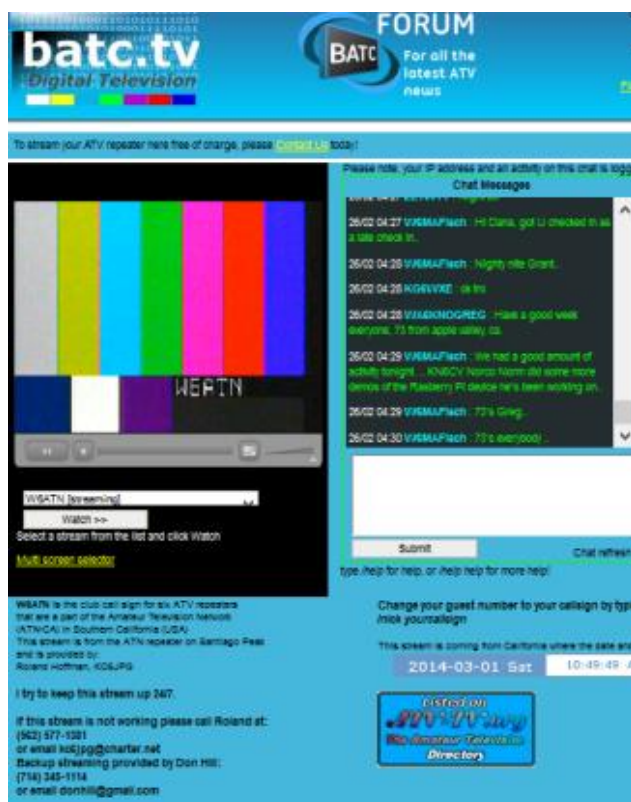
Keywords: BATC TV

and use Google

The TV part is easy to remember. Think of the BATC as batch without the h. It's a British website (that's the B) Once you are there, and logged in, on the right choose "Repeaters" and then on the left, you have to pick a stream. The stream to choose is: **W6ATN**.

Memorize W6ATN as ATN in California. W6ATN is the club call sign for six ATV repeaters that are a part of the Amateur Television Network in Southern California. (ATN-CA)

Gary Heston's mobile studio beams its signal to the ATN repeater on Santiago Peak which is provided by: Roland Hoffman, KC6JPG



ATV Checkins For the July Meeting

W6KGE from Simi Valley.

W6ORG from Arcadia.

Needs, Wants and For Sale (Updated 17 June)

- **For Sale from Bill Burns:** Bill will only rarely comes to the meetings, so if you want any of this, please contact him by phone or email.

phone: 760-375-8566 email: bburns@mediacombb.net

His address is: 247 Rebel Road Ridgecrest CA 93555

- TVRO dishes 10 ft, 6 ft, and 5 ft free
- 6 ft and 4 ft 19 inch racks free
- Leader LBO514A 15 MHz Dual trace oscilloscope \$75
- HP 5381A 80 MHz counter \$10
- 8 watt 5 GHz TWT's with power supplies \$50 each
- copper wire enamel coated #14 many feet coils \$10 each (coils are like a foot in diameter and maybe a dozen turns or so...30 or 40 ft long wire)
- **For Sale from Doug Millar (drzarkof56@yahoo.com):**
 - a Rohde and Schwarz 309 10-18GHz Signal Generator in perfect shape. It is digitally synthesized and has a pull out instruction card. It has internal modulation and will also sweep. Will accept \$900.
 - I also have an HP432 power meter, cable and head (478) in working order for \$100



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.

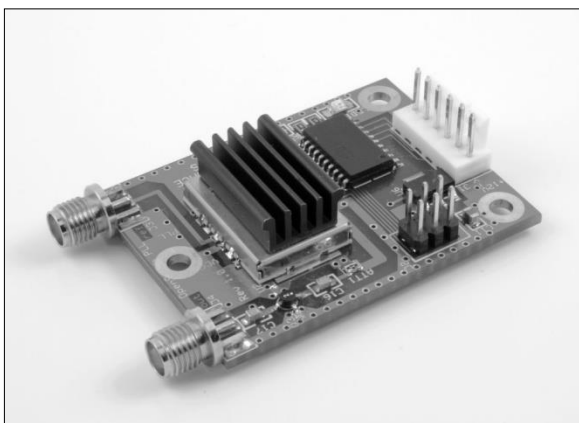
For examples of his work click on... <http://www.kl7uw.com/kits.htm>
Contact him at kl7uw@acsalaska.net



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For the time being this service is free.
eMail editor at: 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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