

2016-10-10 DSES Technical Planning Meeting Minutes

Location and Time: The 21th DSES Engineering and planning meeting was held on Monday, Aug 12, at 5:30 PM at the Cumulus Media conference room at 6805 Corporate Dr. # 130, Colorado Springs, CO 80919.

Attendance: Gary Agranat, Myron Babcock, Glenn Davis, Floyd Glick, Ed Corn, Michael Lowe, Glenn Martin, Dan Martin, Bill Miller, Steve Plock, Dr. Richard Russel, Bob Sayers, Ray Uberecken,

Attending Remote: Fred Brandeber, and Skip Macaulay, VE6BGT joined by Team Viewer Meetings Video.

As usual if I have omitted anyone or miss represented anyone or anything here please feel free to correct it.

Agenda:

- 1. Next Tentative Site Work Party:** Saturday Oct 22nd. Coordinate and meet at Ellicot Fire Station at 7:30AM.
- 2. Tentative work party for Rays home antenna tower** for site link on Sunday Oct 23rd. Coordinate with Ray.
- 3. Gary Agranat** will host a table at the annual Haswell Town Bazaar on Saturday, Oct 15th.
- 4. Ray Uberecken and Myron Babcock** will travel to the national Microwave Update Conference in St. Louis on Thursday October 14th.
- 5. Next Science Meeting:** Monday, Oct. 24th 5:30 at Dr. Richard Russell's residence.
- 6. Rich and Floyd** Hosted the Eads high school science group last week.
- 7. Last meeting minutes:** No New changes

This Month's Meeting Minutes

Ray Uberecken:

- 1) Ray passed out a Meiden CO-T67PZ 14.400MHz oscillator to everyone at the meeting. He purchased a number of these for various calibration projects. Adding a 10x Multiplier gives 144MHz and with different counters other ham frequencies can be derived.
- 2) Ray and Myron Babcock will travel to the national Micro Update Conference in St. Louis <http://www.ullmann.us/MUD2016/> on Thursday October 1^{3th} and present a paper and presentation on the Plishner Site, DSES organization and Multiband Antenna Feed that Ray built for the antenna on that Friday. They will return on Sunday.
- 3) Skip Macaulay, VE6BGT from Alberta Canada will also attend and present a paper on his setup and microwave transceiver work.

Dave and Glenn:

- 4) Went to the site on Sunday October 9th.
 - a) The mount encoders connected with the Raspberry Pie works on Ethernet from the mount to the comm. trailer, providing Azimuth and Elevation as well as Right ascension and declination coordinates for the dish. Kudos from everyone for this accomplishment!
 - b) Next step is to control the mount from the Laptop.
 - i) Then add a Dish Computer Control system.
 - ii) Currently running on Glenn's Lynx machine but with a Java driver could run on a PC
- 5) Rich says we need to copy the RA and DEC and the time stamp along with any collected data captured to a file.

- 6) They had one problem that when going through zenith it loses position and reads incorrectly adding 180deg but will fix this in the code.
 - a) The elevation only runs 0 horizon to about 110 deg so the SW should cover that and have a SW stop before hard stop.
- 7) Dave says the generator was low on oil.
- 8) Bill also noted that the generator needs a new fan belt. It's jumping around and loose.
- 9) Dave and Glenn brought the Generator controller back to the Springs due to the regulation problem at start up where it hunts for regulation. They did not know that turning the voltage adjustment down and then back up usually solves the problem. They also brought the keys back with them and gave them to Steve.
- 10) Dave found and brought back the LNAs someone was looking for.
- 11) Dave gave the first Library book to Rich. "Getting Started in Radio Astronomy". If anyone has additional books they would like to donate to the group library give them to Rich.

Ray

- 12) Multiband Antenna Feed and update
 - a) Without the Polyphaser the line can be measured all the way to the feed
 - b) What was thought to be a shorted pigtail at the Multiband Feed in Bill's previous trip report was actually the measurement method of a swept frequency instrument seeing the Bias T in the unit as a short. So Ray believes that the Multiband feed antenna is probably working normally.
 - c) The mount needs some improvements
 - d) There are some mods Ray would like to make to the Multiband Feed.
 - e) Need to make some mechanical mods to the Phillystran cable and mount.
 - f) Operating on Moon Bounce week end of the 22nd is in doubt unless we get lucky.
 - g) Ray wants to remove the bias Ts and modify the relay control in the feed to switch the dummy loads in.
 - h) Would like to have a temp sensor on the feed to be able to calibrate the resistor noise sources. The AD592 is a simple to use one that could be used.
<http://www.analog.com/media/en/technical-documentation/data-sheets/AD592.pdf>

ED

- 13) Electrical update
 - a) Have the Pedestal wiring about done.
 - b) Once the pedestal is done he will return to wiring the Bunker
 - i) Redundant inverters on the Sump Pumps
 - ii) Wiring on the south wall for generator and inverter power
 - iii) Tools will run off the inverter
- 14) Ray would also like to investigate the breakers on the Dish Drive.
 - a) There are two 3 Amp circuit breakers on the brakes. There are two 24 volt relays operated from the VFD and Couply. SP? These are thought to be in series with the brakes
 - b) Ed thinks that the source power for the relays or motors is dropping.

- c) The breakers seem to trip near zenith position if other than 9 O-Clock speed position and have tripped there before.
- d) Steve says they have never tripped when he has slewed the dish.
- e) Dave has a schematic of the system.
- f) Need to clean up the wiring in the control box.
- g) Need a game plan of how to troubleshoot it.
- h) Haven't touched the programming

Ray

15) What are additional projects we need to do?

- a) We have 10 or 12 pieces of Rohn 45 tower. Do we want to use it for something or sell it?
- b) Comm. trailer improvements?
 - i) Outlets in middle of the ceiling
 - ii) Seal up the doors
 - iii) Temperature control, solar vents.
 - iv) Rich wants a heat pump
 - v) More Power for More Computers
- c) Solar
 - i) Bill will provide a Solar Calculator on next science meeting
 - ii) Ed says we could run another small inverter on the second wet battery system to provide more computer power
 - (1) This has more solar panels
 - (2) Steve bought three more solar panels from PPRA that could be added to either system to improve total watt hours for computers and equipment.
- d) Additional receivers
 - i) Rich wants more frequencies and receivers to run all the time.
 - ii) Run SDRs maybe
- e) Bunker Projects
 - i) Staircase
 - ii) Tar Paper the doghouse
 - iii) Retaining Wall
 - iv) Ed's wiring
- f) Ray has another newer 25KW generator we can have from the mountain but we need a place to put it.
 - i) We could build seconds materials shed for it.
 - ii) Michael says we have about another 100 ties in Eads we could get
- g) We need to get it off of Cheyenne Mountain by spring.

16) Michael brought us a canvas tool bucket for working the towers and feed.

Dan Martin

17) Web Site

- a) Need to collect input for how we want the site structured and what the individual pages should contain.
 - i) Science Page
 - ii) Projects Do List Page
 - iii) Meeting minutes and agenda
 - iv) Updates
 - v) Maintenance Log Updates and Work Party trip reports
 - vi) Like to have a ham radio tab
- b) Establish what we want in the web site.
- c) We would like to have a partition for members and separate for the public
- d) Would like to have a flicker, drop box or other account for photos
- e) We would like to have a PayPal and fundraising capability
- f) Send Dan Martin a request to make the DSES Science website posts
- g) Once established active members and officers could make posts
- h) We are paid up on the web site for 3 years by Myron.
- i) Rex has the original web site DSES.org and Michael says this is paid up for life.
- j) Bill would like to take what we already have in documents and reports and map it into the web site while adding additional information.
- k) Bill and Gary will provide inputs to Dan and help structure the website.

Michael

18) Provided Bill with the following documents:

- a) Federal Tax Exempt Status Letter
- b) Railroad Release of Liability and Indemnity document for salvage purposes
- c) V&S Railway Salvage and Scrap Property Permission to Sell Certificate
- d) These last two are useful in salvaging wire or other RR material.
- e) Photos of the original Haswell Dish site while in operation in Aug-1972 including the now missing 500 ft Vertical antenna included here.

19) Gary

- 20) Has sent out all the QSL cards received and contact confirmation from the open house event.
- 21) Gary will go to the Haswell Bazaar on Saturday the 15th from 9:00 AM to 2:00 PM
- 22) Setting up a laptop to log Ham Radio QSOs in the comm. trailer for our ham activity.

Meeting Close: Thanks for everyone's participation and great work!

73,
Bill Miller
KCOFHN

DSES Secretary



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