

## 2017-08-14 DSES Technical Planning Meeting Minutes

**Location and Time:** The DSES Technical Planning Meeting was held on **Monday August 14th at 5:30PM MST** at the Cumulus Media conference room at 6805 Corporate Dr. # 130, Colorado Springs, CO 80919.

**Attendance:** Gary Agranat, Ed Corn, Steve Plock, Dave Molter, Glenn Martin, Bill Miller, Ray Uberecken, Myron Babcock, and Ed Schade

**Two new members attended:** Phil Coker and Doug Ducote

**Attending Remote:** I did not open a Team Viewer session for remote access but will do this for future meetings.

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

### Agenda:

1. Treasures report
2. Position Control Box Status
3. FT736R 144/432 transceiver Status
4. 1420 MHz receive only feed antenna status
5. Rotator and control box in trailer
6. Meteor Receiver update
7. 1296 beacon update
8. 15KW Generator
9. Engineering meeting host
10. Discuss the open house and wrap-up. (See the separate open house report)
11. Next Trip
12. Other items

### Meeting notes:

Pizza and Soda. Thanks to Myron for bringing in pizza and soda for all to open the meeting.

1. **Treasures report and propane purchase** for status prior to the open house provided by Myron Babcock here,  
*"The propane tank at Plishner was filled up to 80% several weeks ago. The cost was \$985.65. The first fill of 400 gallons at \$1.05/gal for a total of \$420 was delivered on October 6, 2015. This recent fill up hopefully will last us for at least 3 years or more. I will be delivering a check to Paul at Haswell Propane this weekend during our open house. Our current balance in the DSES checking account is \$1879.87 and our savings account is at \$2876.49. After paying for the propane fill our checking balance will be \$894.22. We had a \$405.00 reserve in our checking account left over from the generous \$825.00 donation from Lauren Libby on November 3, 2015, for the initial 400 gallon propane fill. "*

Some additional expenses for the open house and infrastructure were incurred and we added 4 new members as a result of the open house so the finances are dynamic and the numbers above will change a little before the next meeting.

2. Ray reported that Ed Johnson couldn't make the open house but has the position controller ready to install with the watch dog timer and the Copley Controls motor controller interface fixed. He and Ray will go down to install it in a couple of weeks.
3. The FT736R VHF/UHF All Mode Transceiver was checked out by Ray and it looks good with possible exception on 1296 Mhz.
4. Ray is working on the 1420 Mhz receive only feed antenna which will be done in about a month. This feed antenna will give better neutral hydrogen emission capability but will only be used to receive the 1420 Mhz and can only be used by replacement of the tri-band feed and both cannot be mounted on the dish simultaneously.
5. Ray took an antenna rotor and controller down to the site last week but it needs an 8 conductor rotor cable. Doug Ducote says he may have one for this and can also do the tower climbing and installation of the rotor on the 6 meter beam.
6. The meteor scatter receiver didn't work too well but Ray will leave it at the site and build another one with modifications.
7. While at the site this last weekend Ray led a team to scan the horizon with the big dish looking for all available beacons and could work 440 and 144 Mhz but could not definitively receive the 1296 Mhz beacons. Something may be wrong with the 1296 Mhz receive on the FT736. They could hear something there but was not as expected.
8. There is a 15 KW generator on the mountain that is available for our taking. We need to get it down from the mountain while it is still available. Ray will organize a trip in a few weeks to go get it. Bill and Ed volunteered to help on this recovery trip. There is another 30KW generator available but is much heavier and will require a larger trailer and lift capability to recover. The 15 KW is a good size and weight for our usage. There is also a 6.5KW generator available. All of these are propane fueled and surplus from the broadcast industry. Bill suggested getting them all and picking the most reliable two and then sell the current 30KW and the remaining one but Ray said there isn't much of a market for these.
9. Ray would like to have someone else run the monthly technical ops meeting from now on but we could still use Cumulus Communication's conference room. Ray would like to deviate from the daily infrastructure and technical tasks and do more science related work from now on. He would like those more involved in the site infrastructure and technical fit up to run the meeting. Ed and Steve are most suited for this and Bill can provide agendas and meeting organization support.
10. The open house was discussed at length and the first impressions from the two new members, Phil and Doug were solicited. Doug was very impressed with what the organization is doing with the Plishner site for both Ham radio and Radio Astronomy. He was generally overwhelmed with how much we have going. Phil was also impressed but also concerned with our organization and documentation of how systems are configured and tied together. Lot of discussion about this and the "1000 projects" status. There are many projects to do and get pieces of the site working and documented. We just need more members that will come down and take ownership of these projects in some order of priority and get them done. Phil also suggested that the site, originally being a government facility should have a lot of engineering

documentation available. We have very little of the original engineering but this is probably in an archive in DC or as Ed suggested, in the US General Record System in St. Louis but someone would have to find it and all of the electrical has been changed from the original anyway.

11. The open house went public on Saturday, August 12<sup>th</sup> from 5:00 to Midnight. See the separate open house report to come in separate email. One item of note is that Skip Crilly, a volunteer worker, engineer and mathematician, working with the SETI project at the National Radio Observatory in Greenbank, West Virginia drove out and spent two days with us on site. He brought his receiver and picoscope and attached it to the dish feed. After doing a manual and questionable pointing we may have seen a pulsar with his setup. He also gave the presentation he will be doing at Berkley this week on strange numbers in signals he has captured on the Greenback 10 meter dish. This was a real treat! Skip's trip and looking at our capabilities prompted him to propose a joint project with his Greenbank 10 meter dish where he would provide equipment that our site would use to coordinate and confirm signals.
12. Many members will attempt to observe the total Solar Eclipse from Wyoming on Monday, August 21<sup>st</sup> so are not available for about a week.
13. The next trip is tentatively scheduled for Saturday, September 2<sup>nd</sup>.
14. Gary wants to do the Colorado QSO party on site on Saturday, Sept 2<sup>nd</sup>.

#### **Additional impromptu notes and discussion:**

15. We need more hurricane fencing to keep the tumble weeds out of the bunker ramp so if anyone comes across some 6 foot galvanized chain link at a very low price or free, snag it for the bunker ramp fence.
16. We had voted to rent a porta-potty for the open house at a \$250 cost but this was not done. Instead Ed installed a real flush toilet in the bunker bathroom and attached it to the existing leach field. This worked pretty good for the weekend but more work will have to be done to install a sump tank and grinder pump in the vault to pump the waste to a surface septic tank. This will add a great convenience and capability to bunker to handle longer trips and more people on site such as occurs with the open house and educational tours. We are looking for volunteers to help with this in the future.
17. Ed also installed a timer on the bunker water pump to prevent accidentally emptying one of the 250 Gallon Poly tanks as has been done before. Need to have a certification for operating the water system as is currently done for the generator.
18. Ed installed a large battery charger on the bunker battery bank to charge the batteries whenever the generator is running as well as by solar power when not. He also installed a small 100 PSI compressor that comes on whenever the generator is started so we always have a source of compressed air when on site.
19. Ed also did maintenance on the site and the generator during the open house and kept everything running smoothly. Thank you from all to Ed for all the great work!
20. There is a Rohn 25 base and 3 sections of 25 on site. Ray also has 100 ft of Rohn 45. Steve would like to add a second 40ft tower for 6 meters and other dedicated armature radio use at the bunker and get some of that out of the comm. trailer leaving it for more dish and radio astronomy based projects. Ed noted that Michael showed him that there is already a cut off Rohn 25 base near the bunker. We need the top section for

- both Towers. Doug said he may have some of the end sections for these towers and could climb towers and help put them up.
21. We need to do a better lightning and ground mitigation on the comm. trailer and the dish. We are currently running cables in thru the walls directly and we should use the patch panel with the PolyPhaser pass-through bulkhead connectors and better grounding and better attachment of this bulkhead to the to the grounding rods near the tower.
  22. So far the solar powered exhaust vent that Bill bought and installed in one of the windows appears to be doing the job of preventing extremely high temperatures in the comm. trailer. Some previous readings were over 160 deg F and the battery and case of the WiFi hot spot melted as a result. Now the inside air temperature seems to track the outside ambient on sunny days within about 10 deg F. Bill checked and reinforced this solar panel roof mounting on the open house trip. The cost of the fan kit was more than advertised and with filters and tax was \$245.70. A receipt was given to Myron for reimbursement.
  23. Michael gave the laptop purchased for Paul Plishner back to Myron to complete the slide and files setup for delivery to Paul. New member, Doug volunteered to organize the files and make a power point slide presentation that will boot with the computer to show all the site activities. Bill will get together with Doug and add context and content to make it understandable.
  24. New member, Phil Coker was an EE and engineering manager, then changed over to business law and retired two years ago so has a background in business, engineering California law, organization and documentation. Phil asked about block diagrams and documentation and would like to document the wiring and all the equipment.
  25. Ed would like to install a second inverter for the other sump pump. Currently the two pumps tax the existing inverter to its limit and adding the bunker lights can blow the breaker and shut it down.
  26. We should install a piping system to fill the 250 gallon poly tanks from a service truck at the surface.
  27. All future projects abound as usual, only limited by our member participation and the number of onsite man hours we can muster. However, if you look back a year the 12 or so project participating members have made tremendous progress in getting the site operational and having the basic infrastructure to support it. Think what would be possible with twice the member participation.

That concludes the minutes from the technical meeting on August 14.

73, and keep looking up!



Bill Miller

KCOFHN

DSES Secretary

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