RS92-SGP Radiosonde Launch Procedure for TAVE

Things to check ahead of time:

Make sure you have a sonde, water to add to battery, plastic container to soak battery in, balloon, 2 zip ties, wire cutters, and 400 psi of helium

Log on to sounding laptop as Administrator and launch the DigiCORAIII sounding program. When using this software keep in mind that it is exceptionally slow and you will often have to wait for response from the system. It is also a good idea to restart the receiver and sounding computer at the beginning of each day. To do this, shutdown computer, turn receiver off and back on, wait for green light above Ethernet ports (about 2 minutes), and then start the sounding computer.

40-45 minutes prior to scheduled launch time

A.) Ground Check Preparations:

1.) Make sure the ground check unit is OFF.

2.) Open package, remove sonde / winder, and place in ground check. Close the chamber door immediately to preserve the desiccant.

3.) Connect sonde to GC unit and turn the unit on.

4.) Select yes to perform a U reconditioning of the sensor (takes 3 minutes)

5.) If there is still a sonde in the air that might cause a conflict, select yes and scroll the frequency to a different part of the spectrum (about 2 or so MHz away is fine).

6.) If you are going to limit the sonde broadcast time select yes and scroll to the cutoff time (usually about 90 minutes). This will automatically terminate the data transmission after the designated time has passed ('////' will appear in all data fields in the sounding and the software should terminate the sounding. This does not always happen, so you may still have to terminate the sounding manually).

7.) Press select to enter ground check mode.

8.) Wait until conditions stabilize. At this point the GC unit will tell you if desiccant needs changing.

9.) Go to the sounding laptop computer named helium.

B.) Sounding Software:

1.) After the ground check has stabilized, at the sounding computer click the new sounding button. This will open the find signal screen. If having problems getting coefficients, check to make sure that antenna type in radio screen is set to OmniDir. You can also try clicking on the 'Find' button (radio screen) or the 'Find Signal' button (original find signal screen) to get a good telemetry link. If a screen appears that asks you to select a method for transferring coefficients, select radio and the find signal screen should then appear.

2.) Click next after the coefficients have been loaded.

3.) Use defaults for wind type (GPS-DCC) and special (none), click next.

4.) Check that WMO messages and Outputs triggers are selected. Deselect all others and click next.

5.) At research mode screen do not use any research modes, click next.

6.) Adjust GPS data if needed. Right column should approximately match left column (system really slow at this point). You will likely need to adjust the altitude to match the altitude on the left. Click next

7.) At initialize sounding system window, select manual and automatic, click next (wait!!)

8.) At GC Request screen click 'Perform GC'. This pops up a screen that has three data boxes. Wait until boxes turn white (has to average 30 points from GC) and enter pressure from surface station, temperature from GC, and 0 for humidity. At this point, it's a good idea to look at the PTU on the right side of the screen to make sure the values are reasonable. If the humidity is greater than 0.5, then be sure to change the desiccant in the GC unit before the next launch. To get the surface station obs, do a Control-C, then Tail –f <rig data file> (or up arrow, and make sure the date is correct) on the computer to the left of the sounding computer.

9.) This next window is a GC correction confirmation window, click next. At this point the raw data starts.

30 minutes prior to scheduled launch time

C.) Radiosonde Battery Preparation

1.) Remove radiosonde battery from package and twist the connecter so that the 2 prongs face AWAY from the battery.

2.) Place battery in small plastic container and submerge it in water (tap water is fine). It must soak for 4 minutes to activate.

3.) Pour water out of battery being careful to not get the connector wet.

4.) Remove sonde from chamber and SHUT CHAMBER BEFORE GOING FURTHER.

5.) Connect battery (prongs on the connecter face up) and snap into place.

6.) Remove GC connector from sonde and turn the GC unit off.

7.) Snap sensor mounting (metal piece to which T and U sensors are attached) back.

8.) Hang sonde outside in a shady area so that it can record surface conditions prior to launch.

10 minutes prior to scheduled launch time

1.) Call the tower. Identify yourself as the TAMDAR balloon launching group and ask to speak with the tower supervisor. Request permission to launch a balloon in 10 minutes time.

2.) If they give the OK, click surface obs button on the sounding computer and enter surface data. P, T, and U will come from the Bago observations (see step B8 above). Wind data will come from:
http://www.srh.noaa.gov/data/METAR/KMEM.1.txt
Be sure to convert wind from kts to m/s (1 kt = 0.51444 m/s).

3.) Fill balloon with 400 psi of helium.

4.) Attach sonde to balloon, then call the tower, identify yourself, and tell them you are ready to launch.

5.) If the tower gives you the OK, then remove stopper from the tether and release balloon while holding sonde in open hand. Sonde should rise from your hand before tether has fully unwound.