**SOUNDMAN2020 PROCEDURE FOR USING R.E.W.**
**"WALKING MIC" TEST**
(prepared by Stuart Allsop – Digistar)

If you have not already done so, perform the full REW calibration procedure before continuing with this test. (See here: http://spartanew.digistar.cl/Forum/viewtopic.php?f=9&t=5 )

Even if you have already done that, check that you are still getting a reading of exactly 80 dB SPL on both your HH meter and also the REW calibration meter when only the left speaker is on, or only the right speaker is on, and that you are getting 86 dB SPL when both speakers are on (using the REW pink noise test).

**1. Before you start**: Get some hearing protection: the test signals can get pretty loud, and don't sound very nice anyway, so it's a good idea to protect your hearing.

**2. Test description and purpose**: The "walking mic" test is designed to help identify which of the acoustic problems in the room are caused by SBIR, which ones are caused by modal response, and which ones are reflections. It also helps identify which problems are associated with which surfaces.

The procedure is simple but boring! It involves moving the mic along the central axis of the room, from front to back, in small steps, and taking a measurement at each location.

**3. Setup**: Get a piece of string (twine) long enough to stretch from the front wall of the room to the rear wall of the room (or to the rear corner, in the case of a "corner control room" design). Mark the string at intervals of two inches (5cm) with pieces of masking tape or something similar, and tape the ends to the front and back walls such that the string is exactly on the room center line, and at a height of 48" (122cm) above the floor (or at the height of the acoustic axis at the mix position, if it is not 48" in your room). Try to keep the string as straight and taught as possible, but it will probably sag a little in the middle: that's OK.

Set up the string so that one of your masking tape tab markers is exactly at the location of the mix position (where you had the mic for the initial "baseline" tests). Write the number ' 0 ' on that tab. Moving forward from that point, write ' +2" ' on the next marker, then +4" on the following marker, +6", +8", +10", etc. until you reach the front wall. If you use the metric system, them mark them +5cm, +10cm, +15cm, +20cm, etc. It is not necessary to get any closer than 6" (15cm) to the front wall, so you can stop there. (Ditto regarding the rear wall: no need to get closer than 6" – 15cm)

Now go back to the marker at the mix position (the 0" marker), and working from there towards the rear wall (corner), write ' -2" ' on the first tab, ' -4" ' on the next one, then -6", -8", etc. all the way to the rear wall (or corner, if your room is a "corner type" control room). Once again if you are using metric, then mark them –5cm, -10cm, -15cm, -20cm, etc.

Another method is to stick a long strip of masking tape on the floor down the center line, and mark the steps on that, then hang a small plumb bob from your mic to get it over the locations.

Once you have all the tabs marked with the location in the room, you are ready to do the actual test. Set up your measurement mic on a good sturdy stand, with the mic angled upwards towards the ceiling at about 70°, and the tip of the mic just in front of the first tab on your string (or directly over the first mark on your masking tape strip, if you use the second method)

**4. Make the measurements:** With the exact same setup as for the “baseline” measurement in REW, but starting with an empty REW file (no measurements), set up the mic at the marker closest to the front wall, click on the "Measure" button in the top left corner of the REW screen. It opens another window, titled "Make a Measurement". Check that it is set to "SPL" (not "Impedance").

Make sure that "Start Freq" is set to 15, "End Freq" is set to 22,000, "Level" is set to -12dB, "Length" is set to 256k, and "Sweeps" is set to 2.

Make sure that you have both speakers turned on. Click on "Check Levels". It should play pink noise for a few seconds, and you should see the output meter jump to "-12", and the input meters should show a reading of somewhere between 0 and -20. After a few seconds, it stops playing the pink noise, then tells you what the level was, with a message saying if it was too high (clipping), too low, or OK to proceed. You might need to adjust the mic preamp gain or speaker levels to get that correct, and if so you will have to go back and repeat the baseline calibration procedure, then return here and continue.

Once everything is OK in the above step, you can do the measurements.

For each actual measurement sweep, move the mic to the next tab on the string (or tape), with the mic tip just in front of the tab (so the tab doesn’t affect the reading). Please get out of the room while the test runs (your body can affect the measurements). Set the “Start Delay” option to several seconds, enough time for you to get out of the room and close the door, plus another 4 or 5 seconds for the room to settle down.

Click "Start Measuring", leave the room, and wait for the test to complete (it only takes a few seconds). In the name box at the top of that test measurement (left hand column of the REW screen) type in the word “Walk” and the number of the tab on the string where the mic was (eg: ‘Walk +80cm ‘), then move the mic to the next tab, and do another test.

For each test, be careful to type in the number of the mic location where that test was done! It’s easy to forget, or to type the wrong number. Double check!

Do not change any settings between tests! Leave the room while each test runs!

Save all of the measurements when you are done. Older versions of REW allow you to save up to 30 measurements in one single MDAT file. If your room is longer than 60” [150cm] (most rooms are!), you will run out of space in the file. With newer versions there’s an option to increase the number (Preferences--> View --> Maximum Measurements), but you have to reset REW after changing it! So do that first, BEFORE you start the testing. If you forgot do to that, or if you are using an old version; then save the complete file once you get the warning message that there is no more space, close that file and start with a new blank file, continuing from the point where you stopped. For a very long room, you might need to use several files.

This is a long, slow, boring process, I know, but it really does help to understand the room. If you are short on time and don’t need high resolution results, then mark the string or tape every 8” (20cm), instead of every 2” (5cm).

If you want me to analyze your “Walking Mic” test, then I’d be happy to do so, but there’s a fee for doing that. Contact me via the forum ( http://www.digistar.cl/Forum ), and we can discuss.