SR SERIES MIC CONSIDERATIONS

This has been a much maligned and argued topic. So I am going to stick to the few stated facts and specs that we can sift from the manuals. The following does apply to the HT series transmitter and the SR-150/160/400's/500/2000.

From Hallicrafters documentation:

1. The **dynamic** mic was the recommended mic. This was found in several brochures and other documents.
2. The rig's mic preamp input Z for the 160 and 500 is stated to be 48K. For the 150, 400's and 2000 is stated to be 100K
3. With mic gain at max no more than 4 millivolts rms at the mic input will be required to produce the minimum specified ssb output in the phone portion of any band.
4. Hallicrafters testing procedures clearly state that the tx frequency response test are preformed with an audio oscillator with a **600 ohm** output Z.

From the AUDIO ENGINEERS SOCIETY (www.aes.org/e-lib)

1. Microphone out put is measured at a db level relative to: A, 0db=1volt per microbar or B, 0db=1 volt per micro Pascal. Both the microbar and the micro Pascal are units of measure of air pressure on a given area of surface.
2. There is a 10db offset between the microbar and the micro Pascal scales.
3. The load on a microphone should be at least 10 times the microphones impedance. Loading a microphone at or near its characteristic impedance will skew the frequency response and allow increased cable magnetic and RF pickup.

From the spec sheet circa 1963 for both Shure and Turner:

1. 500 to 1200 ohm Dynamic mics were speced to provide a -50 to -52 db signal into a 100K load using the microbar standard (Shure 405K or 404C, Shure used the term "controlled magnetic" for their Dynamic mic).
2. Most of the Dynamic mics were speced to be operated into a 100k or higher load.

Assumptions:

The Hallicrafters specs state three key items. 1. The microphone preamp in each rig is hi-Z, either 48K or 100K. They preferred a dynamic mic. Documentation also uses either 4 millivolts or 5 millivolts as the standard mic signal. Now due to the 10 db offset from the microbar and the micro Pascal standards I would ***assume*** that Hallicrafters was using the micro Pascal standard which was the predominant standard in the 50's and would match the 4 to 5 millivolt requirement.

NOW THE GOOD STUFF:

We really don't need to know anything about the mic. Say you have an unknown mic in the goody box. Since we know the input Z for the SR is either 48K or 100K. Then place a resistor equal to the input Z of your rig (either 48K or 100K) across the voice line of the mic and the mic gnd and measure voltage across the resistor when you speak into the mic. As you speak into the mic and repeat the words ***three, four, three, four*** you will cover most of the voice spectrum and the normal max and min volume for ***your*** voice. If the output voltage does not meet the 5 to 8 millivolts for the rig it *aint gona work* (14 to 20 mvpp if measured with a scope). Since the MIC GAIN control is two stages after the mic input you must be careful of over driving the amp. If the mic output level is more than 3 or 4 times the requirement you will probably over drive and distort the signal in the preamp and sound like you have a mouth full of marbles. **BTW THE VOLTAGES ARE RMS**