SOG 14: Signal Reporting Using the Circuit Merit System

The antiquated R-S-T system of reporting signal quality dates from the early days of radio. It gives voice operators only a vague idea of what their signal is really like at the receiving end. RST was originally intended for Morse code use and was later adapted for use with voice signals. (Contrary to popular opinion, the "T" in RST can be used in voice communication, to indicate the tuning condition of the sending station – though not applicable in FM, of course.)

The problem with the RST system is that it is vague, complicated and inaccurate. This is evident from listening in on any contest, where everyone has a signal report of "5-9", regardless of how they actually sound. The fact is, very few people know what "5-9" means - on either end!

The CM ("Circuit Merit") system was devised by HF radiotelephone professionals to better quantify the average quality of a VOICE signal. The letters "CM" (voiced as "Charlie Mike") are followed by a figure from 0 to 5 - to indicate the quality of the VOICE. In addition, it can be followed by the S-meter reading to indicate objective signal strength.

Example: A report of CM4 would be voiced as: "Your signal is Charlie Mike four." If the meter reading is added (CM4, S9) it becomes: "Your signal is Charlie Mike four, Sierra nine."

The signal is quantified using these criteria:

CM5 - **Completely clear, broadcast quality**. Each word is fully understood, without any objectionable interference or noise; on FM, full quieting. Always breaks squelch (*). This designator is not always earned on FM, and seldom on SSB; as conditions must be superb.

CM4 - **Clear with a slight amount of noise and/or interference**. Each word is understood. Always breaks squelch. A common report for solid SSB voice conditions under very good conditions; the FM equivalent is a slight amount of "white noise" behind the transmission.

CM3 - **Static and/or interference is present**. Bulk of transmissions are understood without having to be repeated. Usually breaks squelch. CM3 is generally considered to be at the margin of acceptable voice communications, particularly when using squelched FM.

CM2 – The noise level very close to signal level. **Static and / or interference very prevalent; w**ords are missed, retransmissions are necessary. Won't break squelch reliably. CM2 is not considered not acceptable or reliable.

CM1 – A signal is barely evident and words are unintelligible. You can tell that someone is "there" but will not break squelch. CM1 is deemed unusable for voice communications.

CM0 - **Absolutely no signal is detectable.**

(*) - Used for FM communications only, unless your SSB radio uses a syllabic-derived squelch such as SINAD.