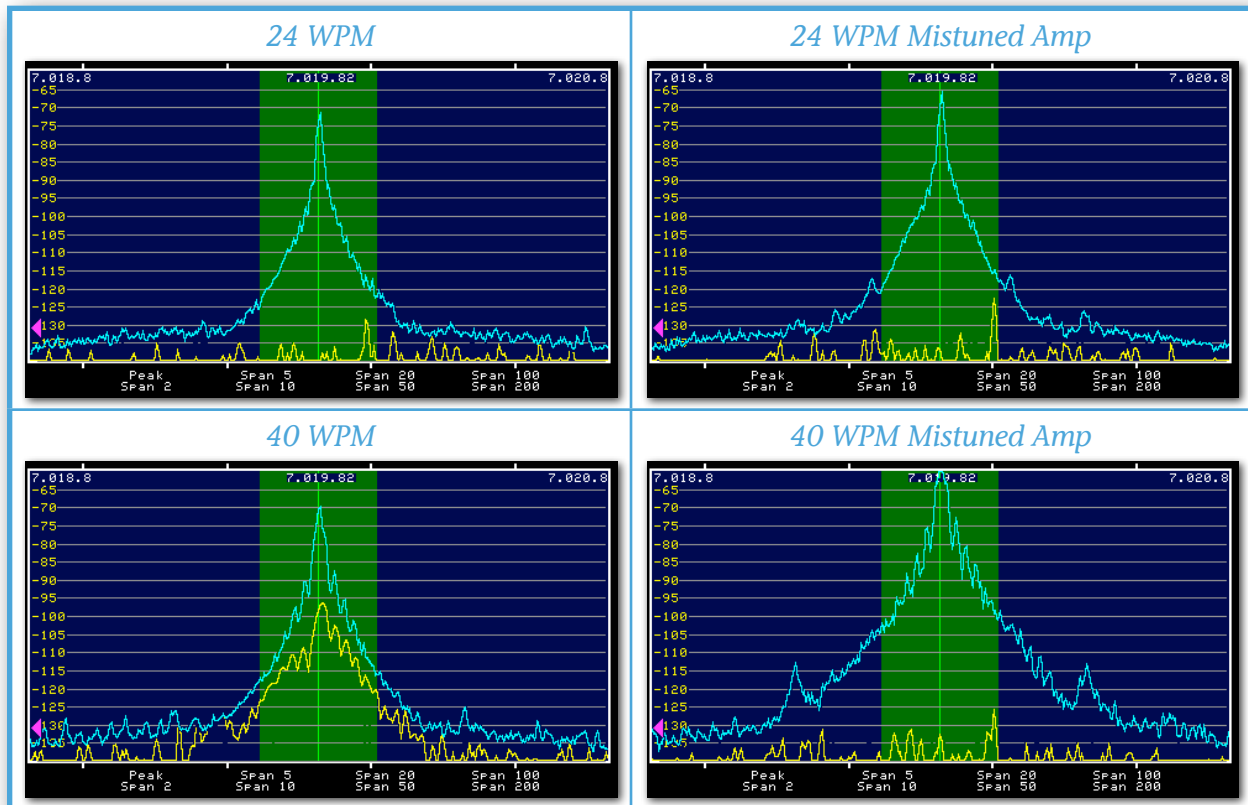




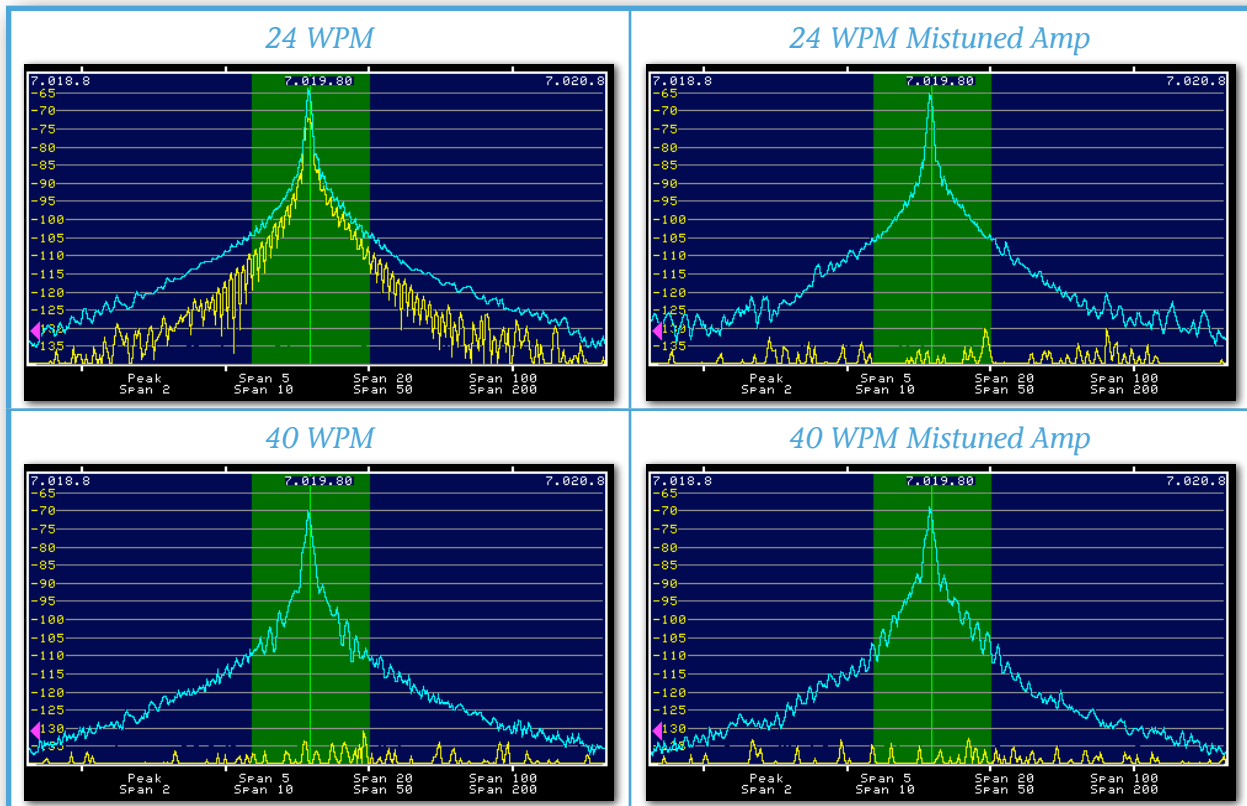
K1DG EXPERIMENTS

Doug asked me if we could run some experiments capturing transmitted signal spectral pictures for his equipment. We did, near 7019 kHz on 2011.12.02 at about 19Z. Doug has two stations: a Yaesu FT1000D with W8JI click modification and Alpha 76A amplifier, and an ICOM IC-781 with Ameritron AL-1200 amplifier. The following sections show pictures for two sending speeds, for properly-tuned and mistuned amplifiers, and for properly-adjusted and mis-adjusted transceivers.

EFFECTS OF SENDING SPEED AND AMPLIFIER TUNING



FT1000D and Alpha 76A



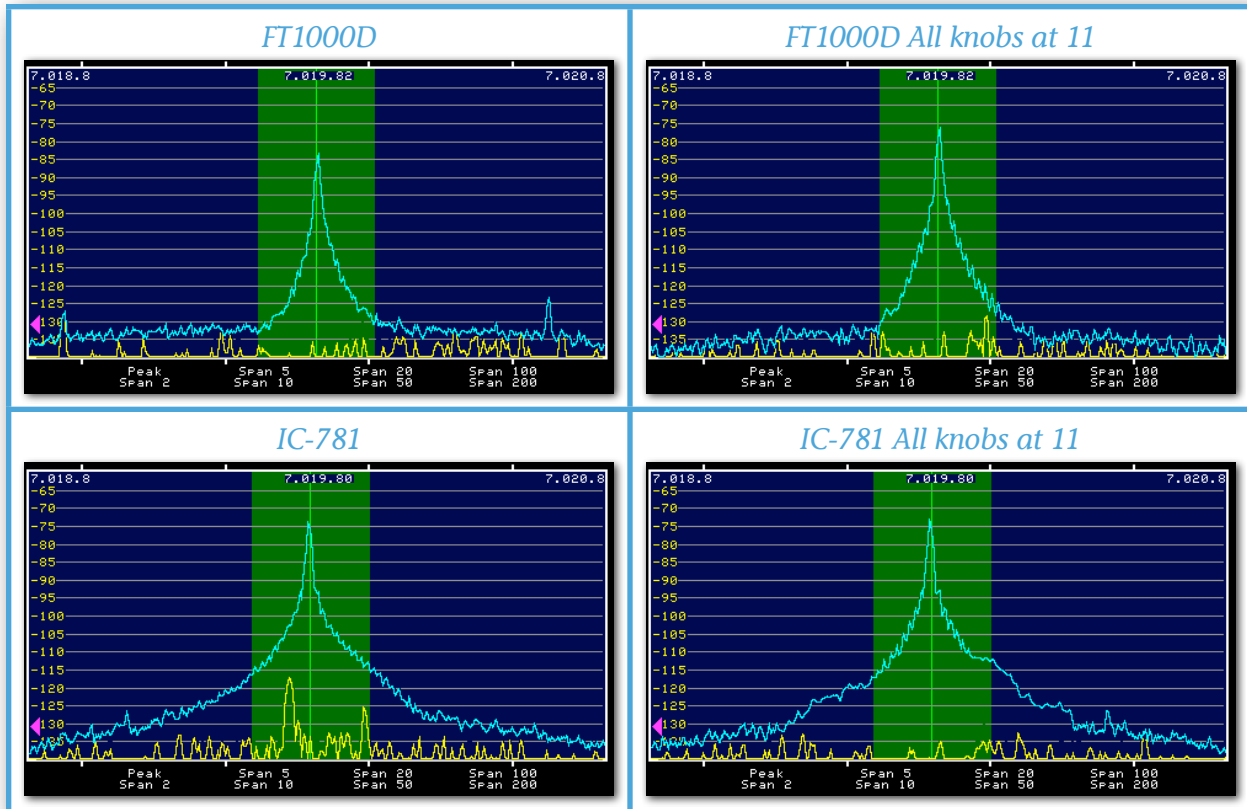
IC-781 and AL-1200

Observations:

- ❖ Sending speeds within the range typical for contesting have no significant effect.
- ❖ Mistuning an amplifier can introduce bumps in the sidebands but doesn't significantly affect their extent relative to the peak level.
- ❖ The transceiver itself is the dominant factor determining the shape of the spectral distribution. Other experiments suggest that phase noise contribution to the distribution is negligible, so the observed results are almost certainly related to the keying waveform. [W9CF](#) describes the mathematics relating that waveform to the spectral envelope, and discusses the ideal waveform.



EFFECTS OF MISTUNED TRANSCEIVER



Barefoot Transceivers at 24 WPM

“All knobs at 11” describes our tendency to turn knobs all the way clockwise to get louder. Due to the reduced peak signal level, it is difficult to draw conclusions from these experiments. The FT1000D seems not to be affected all. The distorted shape of the mis-adjusted IC-781 case is likely due to other signal energy polluting the experiment.