

Martin, D. U., 'Directivity and the Acoustic Spectra of Brass Wind Instruments',
 Vol. 1942 JASA 13, 309-313.
 (XER. Collat. vol.)

Dica
12/3

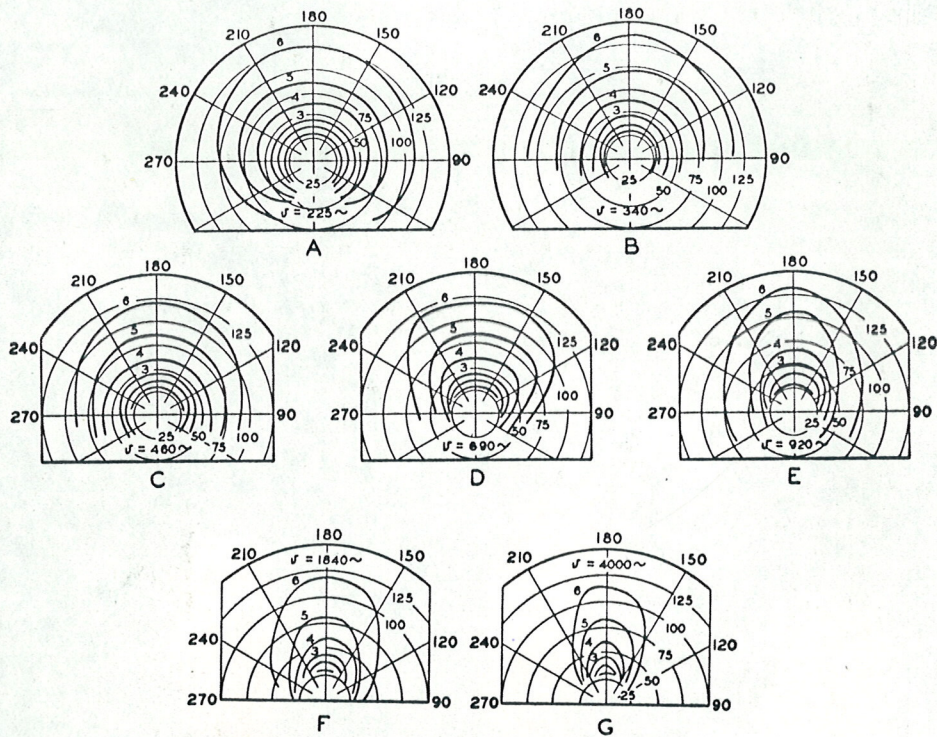


FIG. 5. Equal amplitude lines for cornet.

oscillator, an amplifier, and a Western Electric 555 driving unit fitted with a brass conical adapter. A pulley system made possible the

control of the angular and radial motion of the microphone from the room below the free field apparatus, where the electrical equipment was also located.

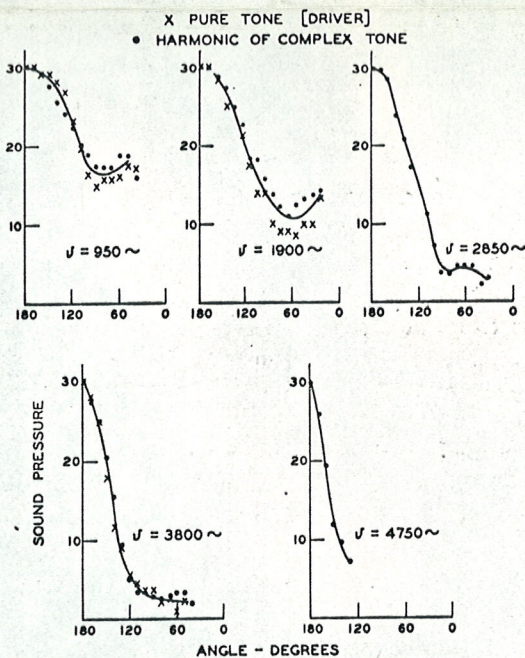


FIG. 6. Comparison of directional measurement methods.

The relative sound pressure was measured as a function of azimuth angle at various radius values; this was done for several of the normal frequencies of the instrument and for two frequencies above the range in which resonances are observed. The results are plotted in Fig. 3. These curves were drawn through most of the experimental points, and since measurements were taken at least every ten degrees, the experimental points are omitted. Similar results for French horn are shown in Fig. 4. After the modification of the driving system to accommodate the French horn, direct radiation from the driver interfered to some extent with measurements on one side of the horn at high frequencies.

Lines of equal amplitude such as those shown in Fig. 5 for cornet are perhaps better for wholly descriptive purposes than Figs. 3 and 4.

From these curves it is apparent that all of the frequencies from those of the lowest tones played to the highest audible harmonics of the