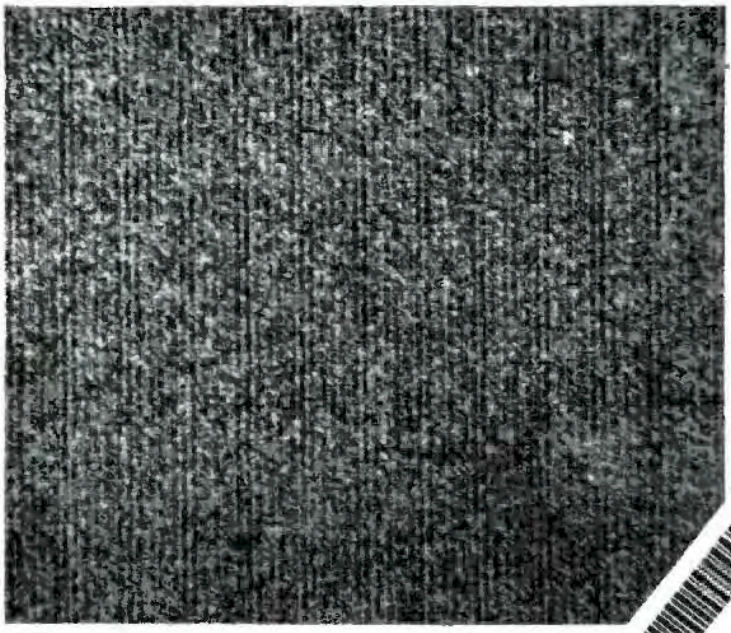
The beat note resulting from a high level recording of the two frequencies, 200 and 230 cps, is seen in this five times enlargement.

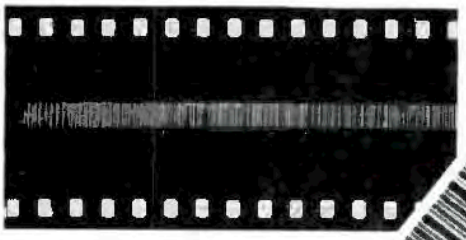
Making Magnetic Recordings Visible

The technique used in making visible the sound tracks shown on this page was described in an article entitled, "Alignment of Magnetic Recording Heads" by B. F. Murphey and H. K. Smith in the January 1949 issue of AUDIO ENGINEERING. For some purposes, where several inches or feet of tape are to be visibly examined (as for editing), Mr. Robert Herr of Minnesota Mining & Mfg. Co., who has supplied these pictures, reports a more convenient and less messy method. The carbonyl iron is suspended by shaking in a volatile liquid, such as heptane (which will not dissolve the tape) and the tape is dipped in this suspension for a few seconds. Upon removal, the liquid will dry quickly and the track becomes visible. The carbonyl iron may be removed by wiping it off. This method allows some flocculation of the particles and does not yield quite so good resolution as the suspension in a more viscous medium, but it is simpler and adequate for examination by the naked eye.



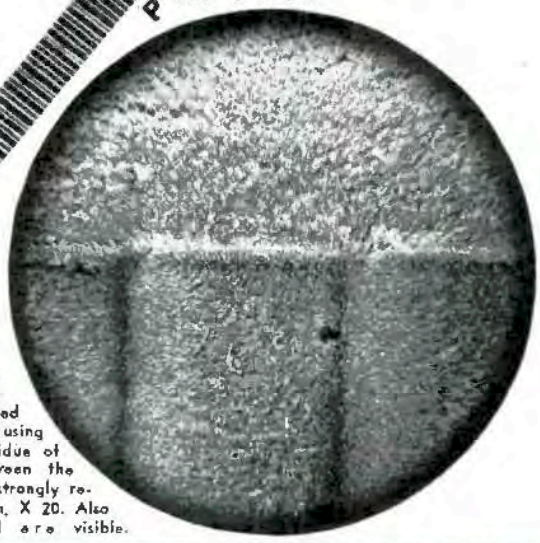
Above: A constant tone modulated by a vibrating head is shown here. Magnification X 60.

Below: The word "tape" was recorded with a full width 1/4" track, using an Ampex machine at 30 inches per second. Enlargement, X 1 1/4.



Above: Music recorded on oxide-coated 35 mm film is illustrated by this photo. Ready means for editing and track location is provided by making the track visible. No enlargement.

Below: 26-times enlargement of a 0.1-inch wavelength signal recorded on black oxide tape illustrates the fringing effect. In contrast to the other photo of a 100-mil track, no modulation noise is evident.



Below: A 0.1-inch wave length recorded on a 0.1 inch track using noisy tape shows residue of modulation noise between the prominent poles of this strongly recorded signal. Magnification, X 20. Also lamination faults in head are visible.