



FIGURE 10

Signal diagrams demonstrate the general effect of the smoothed-recovery unit from the entering digital values to the smoothed, constant-level, analog outputs.

may be necessary, as shown on the gain sketch in this diagram. Gain drops off to zero as the seismic signals converge. Thus, using varying amounts of automatically-controlled gain, the peak values of the galvanometer inputs for all channels are averaged out at 1 volt. Burst-outs occur on a faster time scale than the AGC action. Consequently, burst-outs are recorded at amplitude values between 1 and 10 volts.

#### TIME CORRELATION

The time relationship between events on different seismic traces is an important part of the information to

be analyzed. In digital recording, it is customary to record a time code on the magnetic tape once each scan. In this system, a 15-bit binary time code with a resolution of one millisecond is recorded either at the beginning or the end of each scan. In addition, the sampling intervals within a scan are maintained to electronic-clock standards of accuracy, making it possible to determine the time of a digital sample within less than a millisecond of uncertainty.

#### HARMONIC DISTORTION

Harmonic distortion causes the output of an amplifier to contain frequency components not present in the input.