

ACOUSTICAL TEST: Ball Track

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(a) Example of defect-free ball track

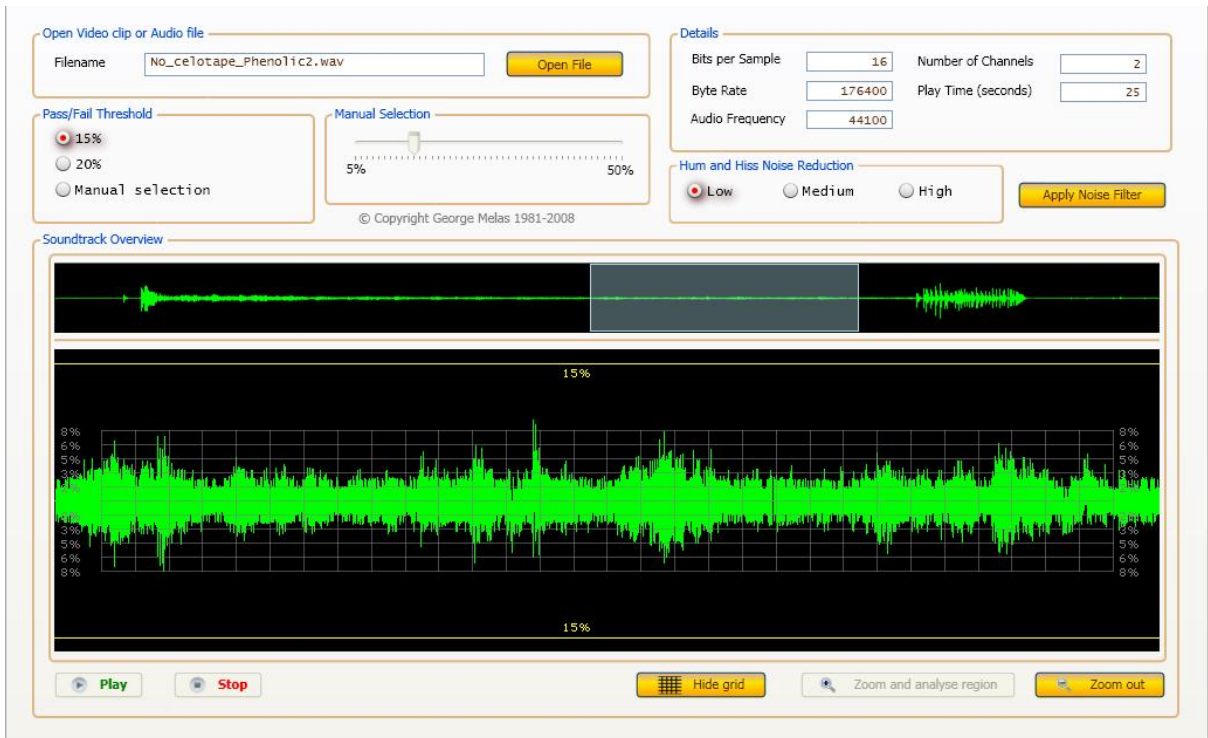


Fig. 1: Phenolic ball: unfiltered sound spectra

(b) Ball track 'hump' set to 28 μ m high and placed vertically on ball track. It can be seen that the Phenolic ball rolled over the 'hump', producing peaks in excess of 15%.

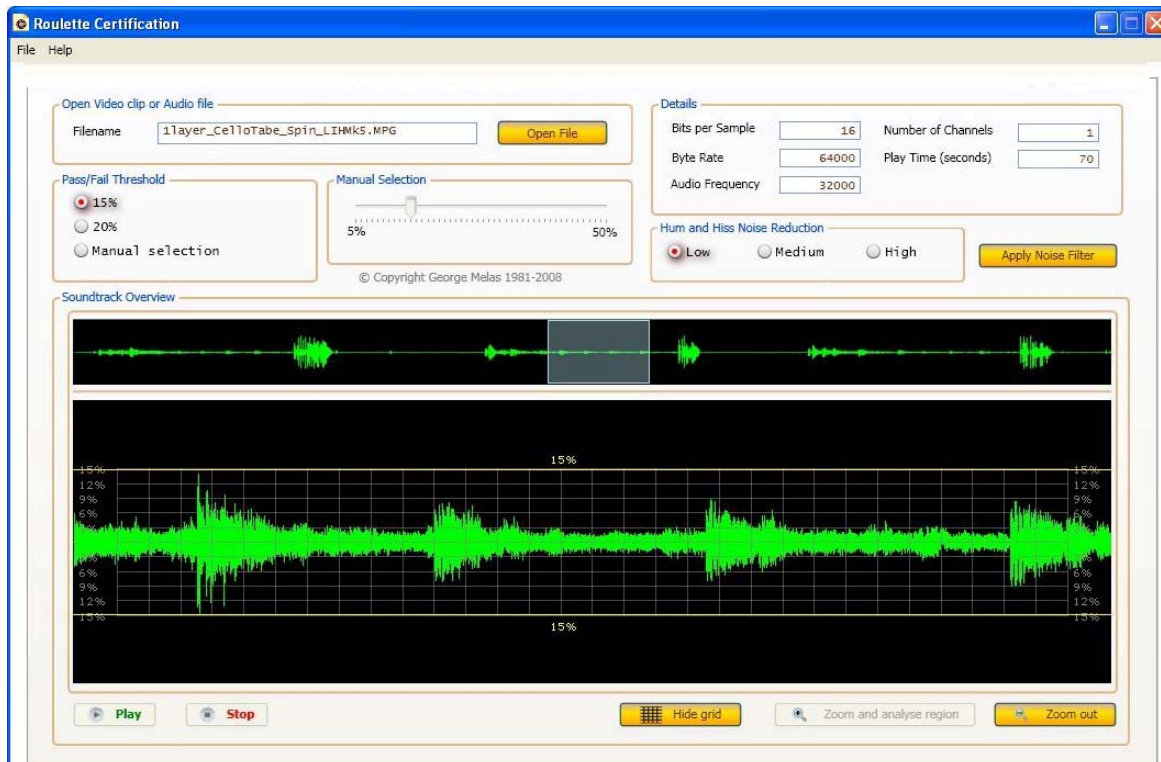


Fig. 2: Sound spectra for the 28 μ m vertical 'hump'.

White Paper

One Coup: Audio spectra of Phenolic resin ball rolling over the 'hump'.

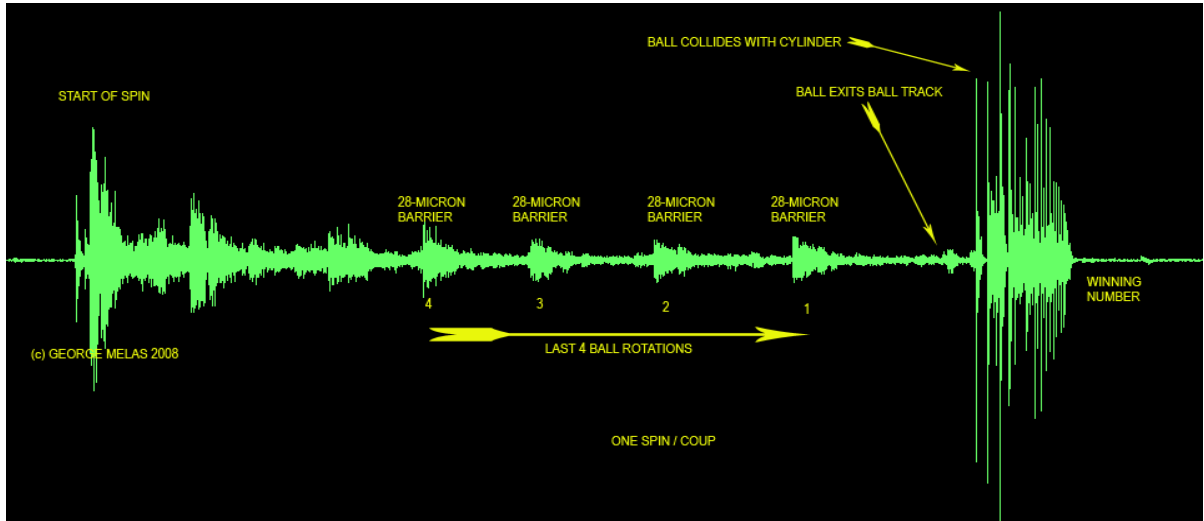


Fig. 3: Last four ball revs before ball exits the ball track

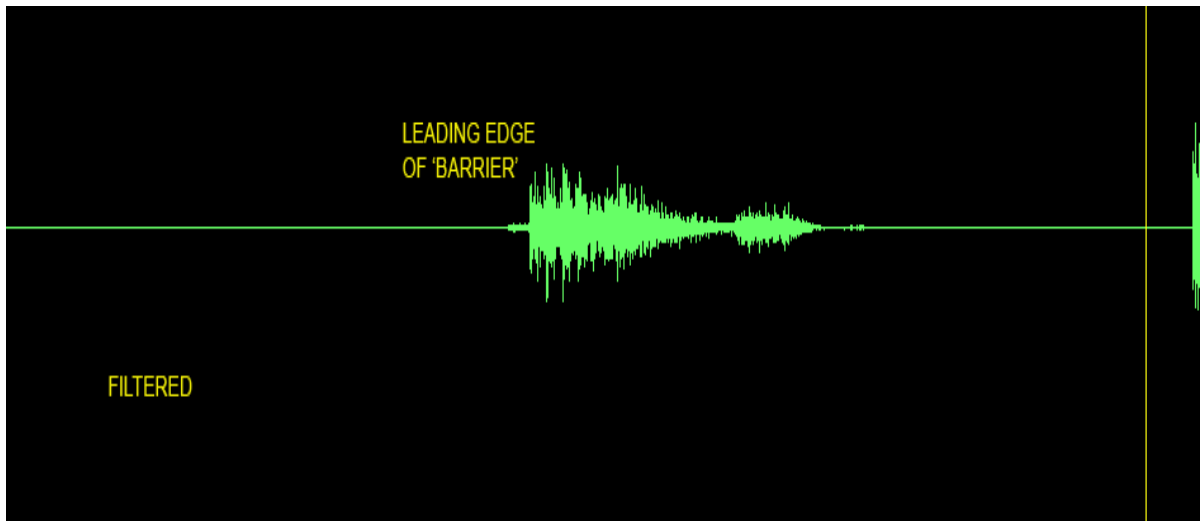


Fig. 4: Spectra of ball rolling over the 'hump' or 'barrier'

Noise reduction

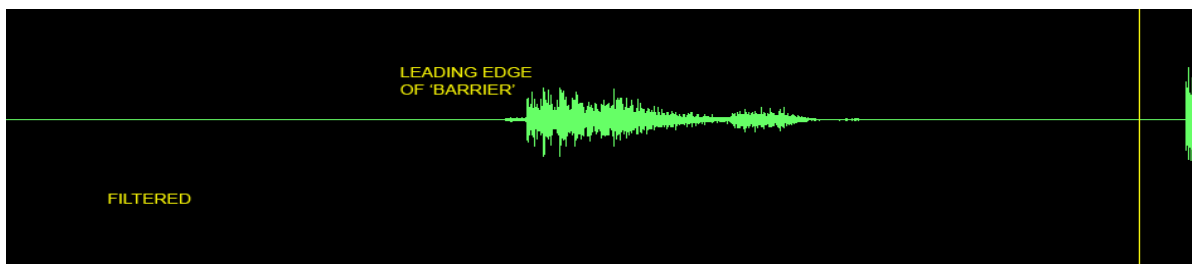


Fig. 5: The effects of noise reduction

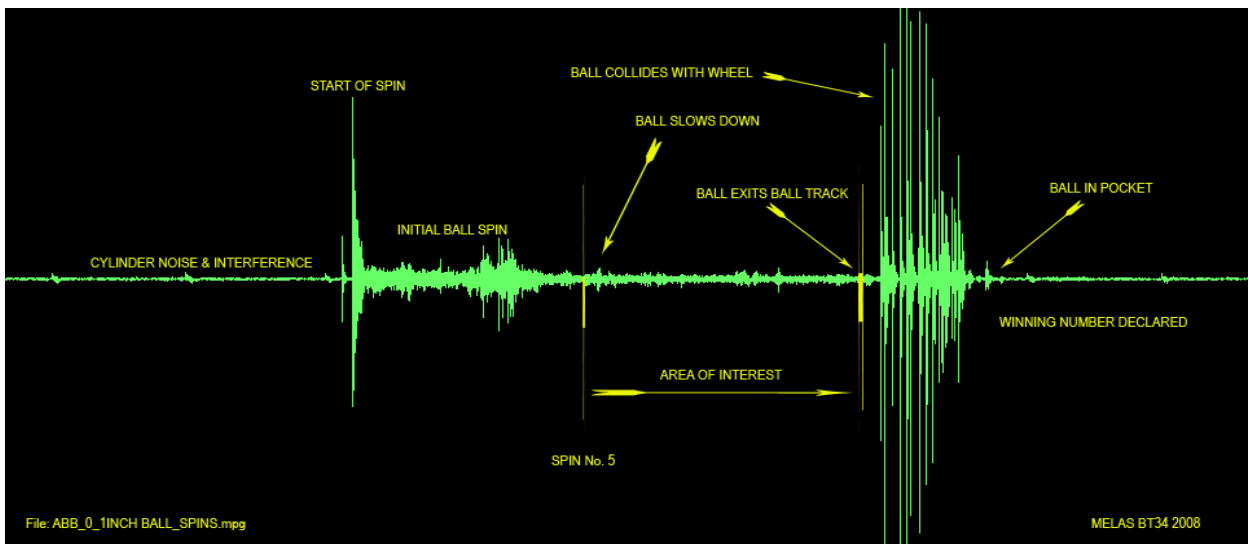


Fig. 6: Audio spectra for one coup

It can be seen that when the dealer spins the ball there is, initially, a noise peak due to the start of spin and after a short time the ball becomes more stable. The time between the ball becoming stable and the ball exiting the ball track is referred to as the ‘Area of Interest’ (see Fig. 6 above).

Applying noise reduction (-20 db hiss and hum filter) to the ‘Area of Interest’ it produces a ‘clean’ spectral response suggesting that the ball track was free of ‘blemishes’ and ‘imperfections’.

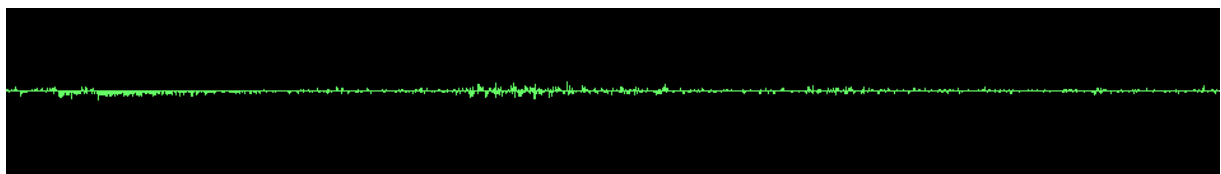


Fig. 7 ‘Area of Interest’ – following the application of the filter.