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**High-speed electronic speckle pattern interferometry of a struck
flat plate**

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An electronic speckle pattern interferometer capable of imaging 33,000 frames per second has been used to study the transient motion of a flat plate which was struck at a point near the edge. Multiple interferograms, each with an exposure time of 25 microseconds, were combined to construct a video of the plate motion that can be used for both qualitative and quantitative analysis. The interferograms reveal the expected evolution of the bending waves created when a thin circular plate is struck near the edge; however, anomalous displacement of the surface of the plate is also observed. This unusual displacement of the surface takes the form of a transverse wave that precedes the motion directly attributable to the normal propagation of the initial bending wave.