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A response spectrum (shock spectrum) is the response of a series of a single-degree-of-freedom systems of given damping to a shock or vibratory motion, as a function of the frequencies of the simple systems. An oscillographic galvanometer is a single-degree-of-freedom system having a rotational response to an exciting current. If the exciting current is made proportional to the amplitude of the motion, the response of the galvanometer to the current will be proportional to that of a single-degree-of-freedom system to the motion, provided their natural frequencies and damping properties are the same. A commercial galvanometer-type oscillograph has been obtained having twelve undamped galvanometer elements with natural frequencies in the range between 10 and 2500 cps. Damping by electrical means, has been made adjustable between about 3 and 50% of critical. Associated circuitry have been constructed so that electrical playback of recordings of shock and vibratory motions can be conveniently analyzed. Calibration techniques are described and examples are given for analysis of simple and complex shock motions. (Authors' abstract)

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