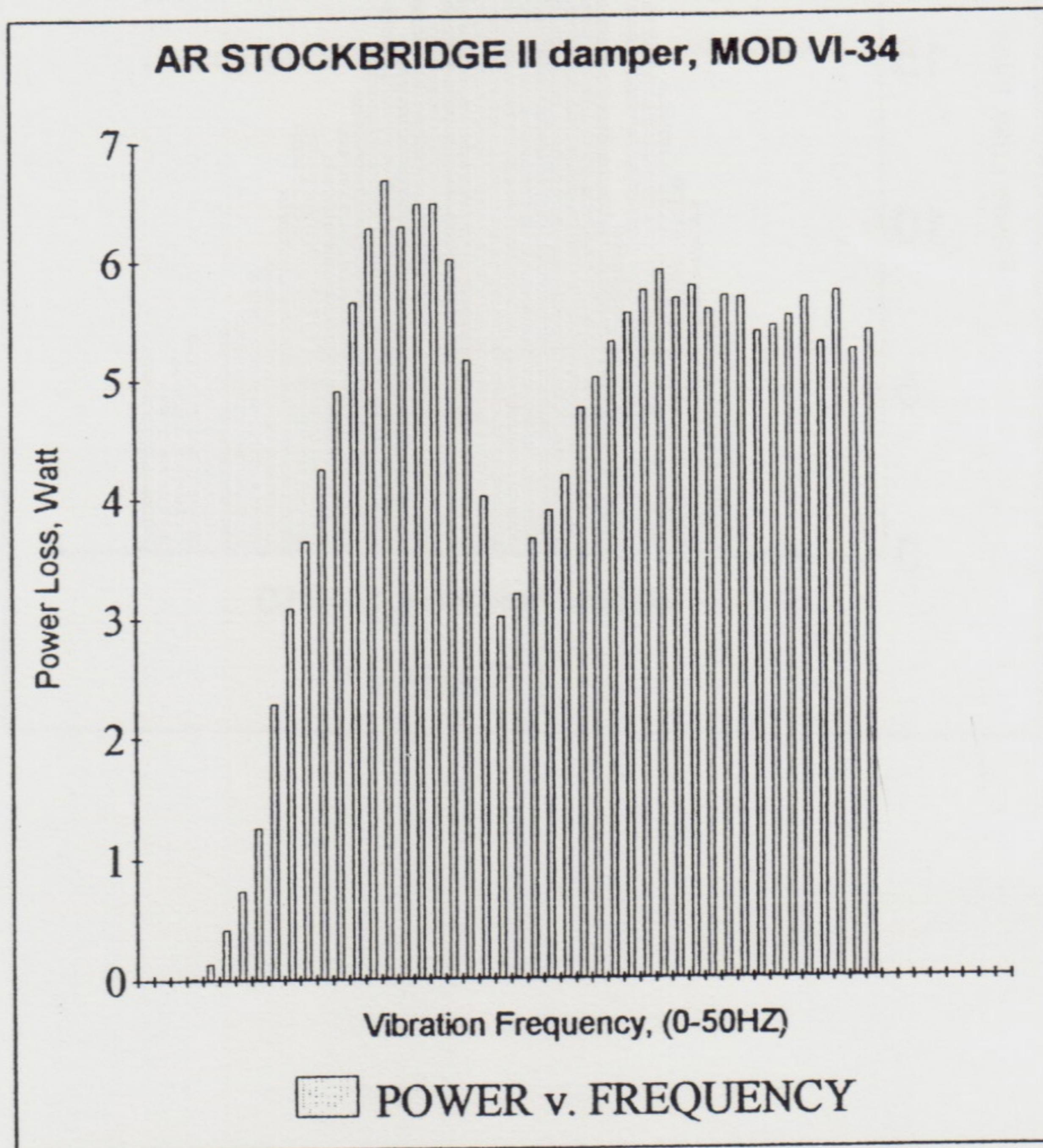




AR PRODUCTS

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Comparison of Stockbridge Damper Performance

Stockbridge dampers have been used by utilities since 1926. The name is given because of the first field trials of vibration dampers by G.W. Stockbridge, Transmission Line Superintendant for California Edison Company. He experimented on a 1000ft. span of 660 kcmil ACSR type conductor to determine which of four methods were effective in mitigating the vibration caused by wind. Two methods were found to be effective. The first consisted of a set of concrete weights attached by stranded cable to a simple parallel groove clamp fastened to the conductor. The second consisted of a canvass bag of loose iron pieces hanging from the conductor.

Present-day devices are fashioned after these two methods. Here, they are distinguished as Stockbridge I, and Stockbridge II dampers, respectively. In the first type the concrete weights have been replaced by steel or cast iron. In the second type the canvass bag is replaced by an aluminum enclosure or other methods of support to the conductor.

Devices were tested by NEETRAC at Forest Park, Georgia. NEETRAC is the National Electric Energy Testing Research and Applications Center, operated under the management of Georgia Tech. All vibration tests were conducted in accordance with IEEE standards. Power dissipated by the damper is plotted against the frequency of vibration over a range of 1.5HZ to 50Hz. The vibration value of 200 mm/sec. level is maintained constant over the entire range of frequencies.

Test results for the AR MOD VI-34 damper are seen on the facing page. The weight of that damper is 6 lbs. Test results for the AR MOD VIII damper are seen on the second page. The weight of that damper is 10 lbs. Test results for the ALCOA model 1709 damper are seen on the fourth page. The weight of that damper is 32 lbs.

A performance figure of merit is defined as the sum of all power levels over the test frequency range, divided by the damper weight. A comparison is tabulated:

AR MOD VI-34.....	32.5 Watts/pound
AR MOD VIII.....	33.7 Watts/pound
ALCOA model 1709.....	7.6 Watts/pound

