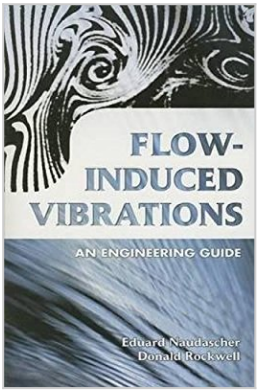

Flow-Induced Vibrations: An Engineering Guide (Dover Civil and Mechanical Engineering)

By Eduard Naudascher, Donald Rockwell

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Despite their variety, the vibration phenomena from many different engineering fields can be classified into a relatively few basic excitation mechanisms. The classification enables engineers to identify all possible sources of excitation in a given system and to assess potential dangers. This graduate-level text presents a synthesis of research results and practical experience from disparate fields in the form of engineering guidelines. It is particularly geared toward assessing the possible sources of excitation in a flow system, in identifying the actual danger spots, and in finding appropriate remedial measures or cures.
Flow-induced vibrations are presented in terms of their basic elements: body oscillators, fluid oscillators, and sources of excitation. By stressing these basic elements, the authors provide a basis for the transfer of knowledge from one system to another, as well as from one engineering field to another. In this manner, well-known theories on cylinders in cross-flow or well-executed solutions from the field of wind engineering--to name just two examples--may be useful in other systems or fields on which information is scarce. The unified approach is broad enough to permit treatment of the major excitation mechanism, yet simple enough to be of practical use.

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