MODAL ANALYSIS AND ID TECHNIQUES FOR LIGHTWEIGHT BRIDGES

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BOWEN LABORATORY

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Research Objectives

- Determine through experimental procedures the vibration behavior of a military-type deployable bridge under various types of loading conditions
  - Moving mass
  - Moving load
  - Moving oscillator.

- To develop a valid approach to identify the types of load the structure is subjected to, using only experimental data.


LIGHTWEIGHT BRIDGE


LIGHTWEIGHT BRIDGE W/VEHICLE

Research Procedure

1. Obtaining a Finite Element Model simulation of a comparable structure in order to obtain comparable results for validation with existing studies.
2. Perform Impact testing to identify structure parameters and compare them to the analytical results previously obtained.
3. Analyze relationship between bridge and loads supported through acceleration measurement while different bridges cross the structure.