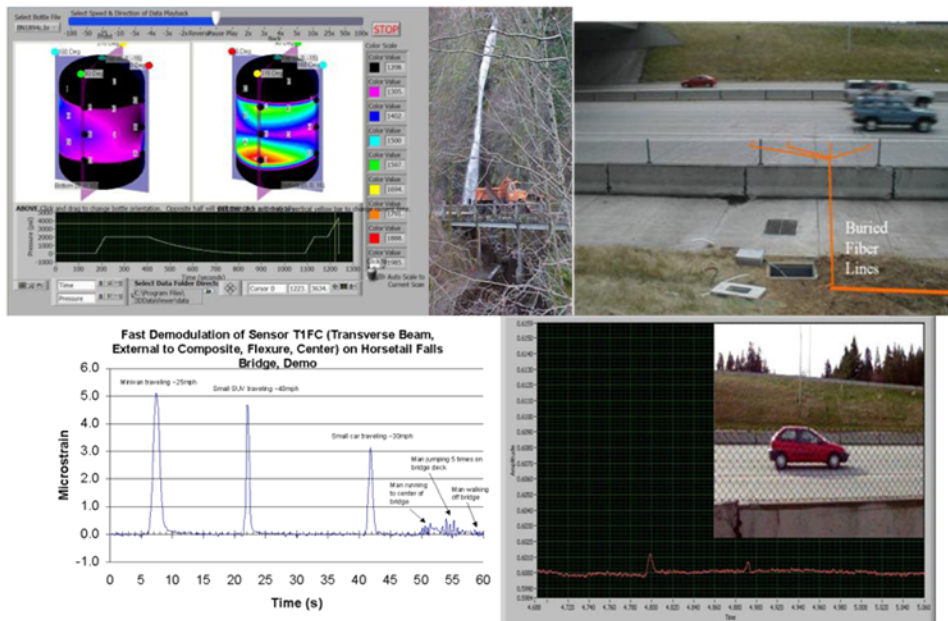




Single Axis Fiber Bragg Grating Sensor Strain Systems

Measurement of axial strain can be an effective tool for monitoring structures under test. Fiber Bragg Grating sensors offer immunity to electromagnetic interference and can be operated effectively at very high and very low temperatures. Columbia Gorge Research and Timbercon have worked together to implement optical sensors for a wide variety of applications.

Some examples of application areas include: (1) strain sensors were placed on a hydrogen tank of the Delta Clipper and supported successful strain measurements throughout several flight tests and eventually through the destruction of the hydrogen tank during a landing failure; (2) monitoring the sudden failure of composite utility poles; (3) localization of failure of a pressurized fuel tank used to support Space Shuttle missions; (4) health monitoring on the Horsetail Falls Bridge in the Columbia River Gorge in Oregon and (5) traffic monitoring on the I-84 freeway near Columbia Gorge Research.



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