

Laser technology allows structural damage siting

A new application of laser technology—one that will allow quick detection of dangerous structural changes in large objects such as a dam, bridge, or building—is being developed at Oakland University.

The National Science Foundation has awarded \$97,000 to three OU engineering professors to work on perfecting their device.

The project is entitled Laser Scanning Moire of Large Objects explains Joseph Hovanessian, one of the three investigators.

Structural changes that could lead to the collapse of a structure can be discovered by simply matching wavy-lined negatives that were taken of the object at different times.

With the moire phenomena, wavy-lined photographs of an object should remain unchanged if the object is unchanged. When there are "fringes" or areas where the lines do not mesh there is structural change, Hovanessian says.

The changes are quantitative as well. The more fringe areas, the more severe the changes in the structure.

No large scale measuring devices are now available. Investigation of strain can be done by a costly and lengthy point to point method. Strain can also be measured by gauges, but they cover only a small area of a structure.

THE OU SCANNING device will allow engineers or safety inspectors to take a "moire gram" of an entire structure. This can be compared to later photographs to see if changes occur, Hovanessian says.

The scanning device will consist of a laser light with two electronically controlled mirrors and a camera set off at an angle from the laser. The laser will scan a structure vertically creating a pattern of closely matched lines. The camera, photographing the process from the side, produces a

negative with the wavy, moire patterns. Subsequent photographs will show if there are any structural changes in the object.

The three grant winners are A.J. Durelli, internationally known for his work in stress analysis and co-author of the book Moire Analysis of Strain; Mike Hung, active in holography research, and Hovanessian, an expert in moire technique analysis.

The two-year grant begins in January and the professors hope to begin testing a scanning device by summer of 1979.

Symphony performs Concerto Grosso

By DEBBIE TEMPLETON

Local music lovers greeted the world premiere performance of Concerto Grosso for violin and orchestra, performed by the West Bloomfield Symphony Orchestra Sunday night, with a standing ovation—a tribute to its arranger-composer, Wade Marcus of Southfield.

Marcus, known for arranging recordings by Stevie Wonder and the Supremes for Motown Records, includes classical scores on his list of credits.

Violinist, and guest artist from the Detroit Symphony, Misha Rachlevsky of West Bloomfield, brought applause from a packed house at the West Bloomfield High School

auditorium with his solo interpretation of the Marcus arrangement.

The violinist, a native of the Soviet Union, is presently founder and musical director of the chamber music series Solisti Barocchi.

An afterglow following the concert provided symphony goes with an opportunity to meet with Rachlevsky, Marcus and other members of the orchestra.

Also attending the world premiere concert were John Griffin, vice-president of CBS, and CBS recording artist Bill Withers.

The next West Bloomfield Symphony concert is scheduled for Jan. 14 and will feature Flavio Varani, a pianist and artist-in-residence at Oakland University.

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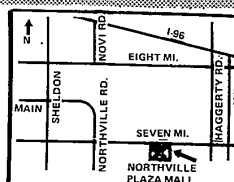
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