



**US Army Corps  
of Engineers**  
Engineer Research and  
Development Center

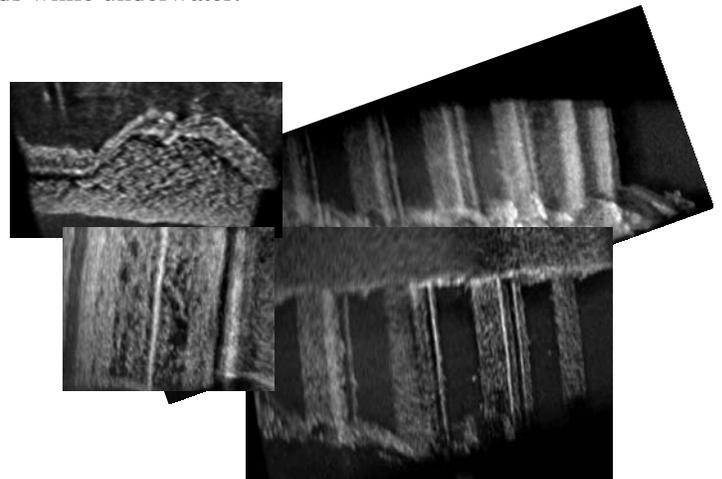
# High-Resolution Acoustic Imaging System

**Description** An acoustical imaging system is being developed by U. S. Army Engineer Research and Development Center (ERDC), Information Technology Laboratory (ITL) engineers for the inspection of structures located in turbid water. The system consists of an acoustical imaging sonar (developed by the private sector), a surface deployable platform boat that employs fixed and mobile camera mounts, and specialized software for real-time imaging and GIS locations of underwater structures.

**Issue** Divers are frequently used in the inspection, maintenance, construction and placement phases of underwater construction projects. However in turbid water, the lack of visibility severely reduces their effectiveness and subjects them to potentially dangerous operational conditions. In addition, the diver must wait until he returns to the surface before sketching what he saw or felt with his hands while underwater.

**Users** Corps of Engineers Districts, States, and other Federal Agencies.

**Products** An operational inspection system; Technical Notes explaining system operation, describing Gate Inspection Techniques using the Acoustical Imaging System, and describing optimum camera deployment and post processing techniques.



**Benefits** The acoustic imaging system can be used to expedite construction, repair and maintenance of underwater structures; provide safer conditions for employees engaged in environmental, wet construction, and structural inspection activities; and enable users to immediately and permanently log underwater images from inspections. Though not completely developed, to date the system has supported scour inspections, gate placement and operations needs, crack and joint imaging, debris mapping and characterization, and species identification.

Images of exposed sheet pile at Lock and Dam #25

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