



Fathometers : 2 Ross Fineline : 1 model Surveyor 500  
(400')  
1 model Surveyor 400A  
(2400')  
ELAC DENEK LAZ-17 Sounder. Range 0-2200  
fathoms.

Radios : 1 RF 6 channel SSB 1 KW Transmitter  
1 Nera VHF 16 channel  
2 Marine Radios

### 3. Energy Source

An Electro-Pneumatic Acoustic Energy Source known as "Airguns" was used for all reflection and refraction work.

The airgun has basically two moving parts, the shuttle and the solenoid. Compressed air is supplied to this unit at a pressure of 2000 lbs. per square inch. The shuttle is forced to close on initial application of pressure. Compressed air fills the reservoir chamber through a central orifice in the shuttle. To discharge the gun an electrical current activates the solenoid and retracts a plunger, thus enabling compressed air to pass through a port hole to the underside of a flange at the top of the shuttle. The pressure difference above and below the shuttle then thrusts it open. The air from the chamber then escapes rapidly through the water, producing a single bubble and resultant shock wave. The air bubble collapses in a manner similar to that caused by explosives with one notable exception in that its period is controllable and is placed in the desired seismic frequency band.