

Portable River and Coastal Engineering Seismic System

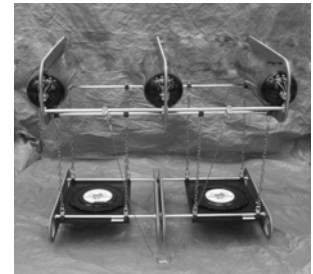
The HMS-620M Multichannel Bubble Gun Seismic System uses low-frequency acoustic signals to provide superior signal penetration vertically through coarse sand, gravel tills, and other difficult-to-penetrate sediments. Small component size and portability make this a valuable tool for any survey platform.

APPLICATIONS

- Cross River Survey for Bridge Construction Dam Site Surveys
- Bedrock Investigation
- Cross-River Pipeline Construction Surveys
- Geotechnical Site Investigation
- Coastal Engineering
- Ability to correlate seismic data with land based surveys

FEATURES/BENEFITS

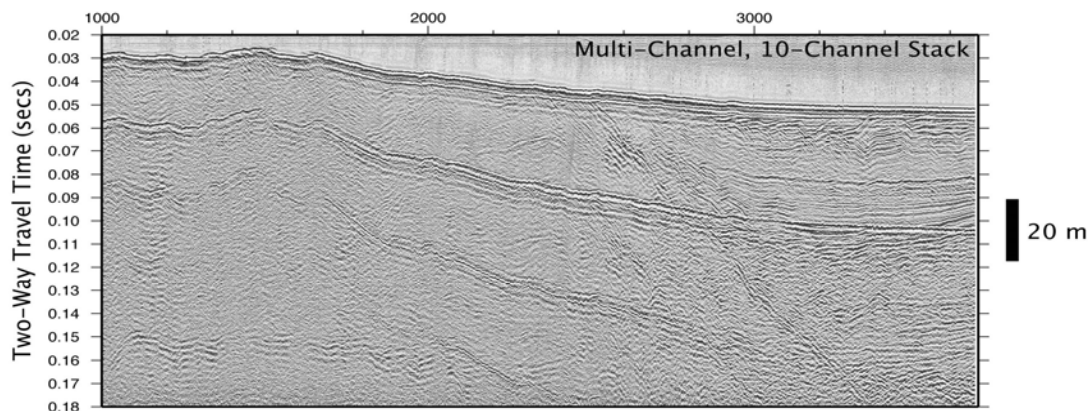
- Narrow-band 70 to 700 Hz (100 Hz peak) acoustic source provides bottom penetration through many sediment types
- Available as a Single or Dual Source system
- Operates from a portable power supply
 - 110 or 220 VAC source of less than 1 KWatt (2KWatt for Dual Source)
 - Optional 24 VDC powered system available
- Includes Geometrics Geode multi-channel analog data acquisition system:
 - 12 or 24 Data Channels, sampled with 24-bit sigma-delta converters
- Rugged, lightweight transducer platform provides stable operation in adverse sea-state conditions
- Flexible portable transceiver unit optimizes system for a wide range of sediments
- User-selectable trigger or external trigger
- Multichannel analog streamer array
 - 12 or 24 channel, user specified 2-5 meter group spacing, 3 elements and low-noise preamp per group
 - 35-meter deactivation switches enable exportation outside of USA



Dual-Source Bubble Gun Vehicle



Complete Single-Source Bubble Gun System
(shown with single-channel hydrophone streamer and source vehicle suspended on display frame)



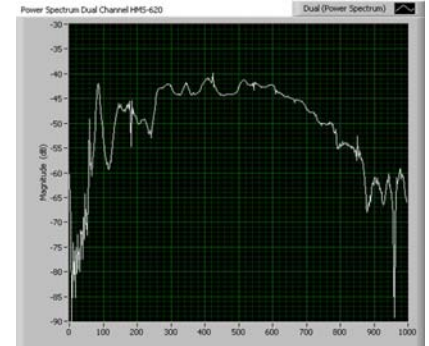
HMS-620M Bubble Gun provided over 125 meters of penetration
in this survey off of Block Island
(Courtesy of University of Rhode Island Graduate School of Oceanography)

SPECIFICATIONS

HMS-620M System Components

Source Vehicle and Electromechanical Tow Cable

Source Type:	Electromagnetic / Contained Air
Frequency:	Narrow band, 70-700 Hz pulse (100 Hz peak)
Acoustic Source Level (single):	Approximately +200 dB ref 1 μ Pa @ 1 meter with 15 cubic inch volume
Tow Vehicle:	Stainless steel frame, buoyant surface-towed vehicle
Tow Cable:	50-meter abrasion resistant
Dimensions (single):	109.22 cm x 93.97 cm x 48.26 cm 43 in x 37 in x 26 in
Weight in Air (single):	Vehicle/Source – 43.5 kg (96 lbs) Tow Cable - 12.25 kg (27 lbs)



Typical Bubble Gun Frequency Spectrum

Seismic Transceiver and Geometrics Geode Seismic Acquisition Module

Signal Input:	Designed to operate with HMS-620M System Hydrophone Streamer
Gain:	Software selectable
Filters:	Software selectable (low-cut, notch, high-cut)
Sampling:	24 bit resolution, bandwidth 1.75 Hz to 20 KHz, user selectable sample intervals
Trigger Rate:	External - limited to 8 Hz Internal - time-based selection 8 Hz to .33 Hz Manual – front panel pushbutton for test
Data Logging Formats:	SEG-2 standard with SGOS. SEG-D and SEG-Y available
Operating System:	Windows XP/W2K/ME/98/NT/Vista
Transceiver Packaging:	Portable 19" rack-mount case
Transceiver Dimensions:	55.88 cm x 53.34 cm x 25.4 cm (22 in x 21 in x 10 in)
Transceiver Weight (approximate):	17.24 kg (38 lbs)

Hydrophone Streamer Array

Length:	12 Channel Active section: 24 - 60 meters depending on group spacing Element group spacing to be user specified at time of order 24 Channel Active Section: 48 - 120 meters depending on group spacing Kevlar reinforced PU jacketed Leader - 75 meters Each group contains 3 depth-limited hydrophones
Preamplifier:	Integral low-noise 20 dB preamp per group Designed to operate only with the HMS-620M Transceiver Preamplifiers use unique encryption which power off the hydrophones if the streamer is not connected to the companion deck unit
Power Input:	Supplied by transceiver
Weight in Air (approximate):	Length dependent, minimum 68.2kg (150 lbs) Note: streamers cannot be used with non-FSI supplied equipment, and cannot be strung together or exchanged with other streamers

Specifications Subject to Change without Notice
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