

Portable Low-Frequency Acoustic Sub-Bottom Seismic Systems

The HMS-620 Bubble Gun™ systems use low-frequency acoustic signals to provide superior signal penetration vertically through coarse sand, gravel tills, and other difficult-to-penetrate sediments

HMS-620 Single Source

- Ideal for Small Boat or Inland Surveys

HMS-620D Dual Source

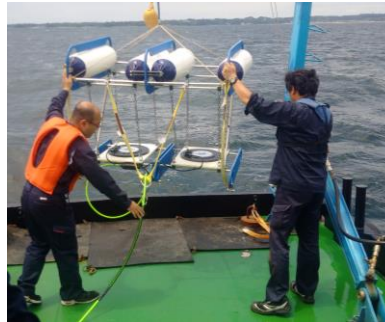
- Higher Source Level, Greater Penetration
- HMS-620LF Low Frequency Source
- Wide 20 – 1700 Hz Energy Spectrum
- Ideal for Multi-Channel Reflection Surveys



The complete Single-Source Bubble Gun™ System includes transceiver, shipping case, tow cable, hydrophone streamer, and source vehicle (suspended on display frame)

APPLICATIONS

- Offshore Wind Turbine and Dam Site Surveys
- Cross River Surveys for Bridge Construction
- Bedrock Investigation
- Pipeline Construction Surveys
- Geotechnical Site Investigation
- Coastal Engineering
- Shallow Gas Hazard Surveys



HMS-620D Dual Source Bubble Gun™ Vehicle



HMS-620LF Low Frequency Bubble Gun™ Source Vehicle

FEATURES/BENEFITS

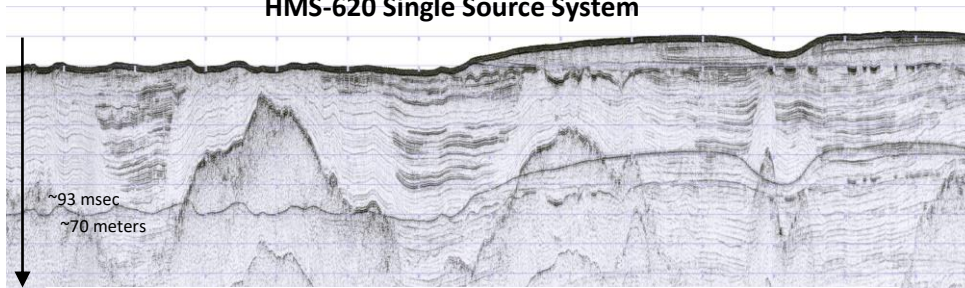
- Single and Dual Source Systems do not need heavy handling or deployment equipment
- **Wide-band 70 - 1700Hz** pulse provides bottom penetration through many sediment types
- **LF System Source Bandwidth 20Hz – 1700Hz**
- **Very stable and repeatable source pulse without the need for external timing controllers**
- Rugged, lightweight transducer platform provides stable operation in adverse sea-state conditions
 - Electromagnetic acoustic source; **Contained Air Volume (no air compressor needed)**
- **Minimal Electric Power Requirements**
 - Selectable 110 or 220 VAC source of less than 1 KWatt for Single Source, or 2 KWatt for Dual or LF Source
 - Optional 24 VDC powered system available (two 12V batteries; no generator needed)
- Flexible portable transceiver unit optimizes system for a wide range of sediments
 - Low-noise pre-amp with high/low pass filters and gain control
 - User-selectable trigger or external trigger
 - **Multiple Sources can be synchronized to a common trigger without need for external timing control**
 - **Repeatable Shot-to-Shot Phase and Amplitude Wavelet Correlation > 0.96**
- Oil-filled single channel hydrophone streamer cable incorporates a 7-meter multi-element active section
 - 35-meter deactivation switches on each hydrophone element enable exportation outside of USA
- Compatible with industry-standard data acquisition software & multi-channel streamers



HMS-620 Bubble Gun™ Systems

HMS-620 Bubble Gun™ Data Examples

HMS-620 Single Source System

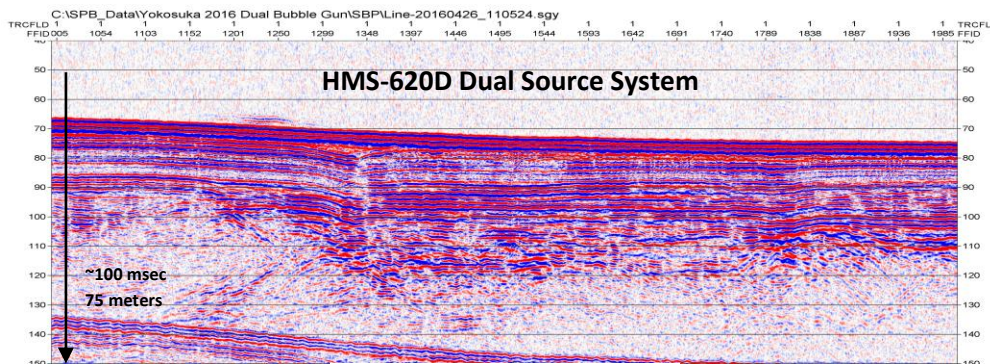


Data courtesy of the University of the Rhode Island Graduate School of Oceanography



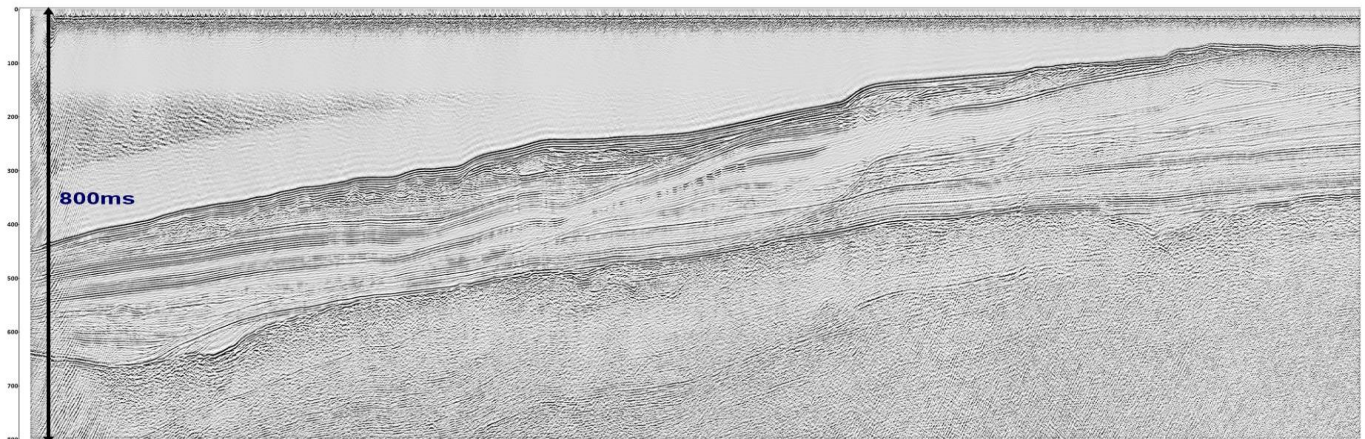
HMS-620 Source vehicle is compact and easy to deploy by hand

All survey data was collected with FSI's single channel hydrophone streamer sub-system

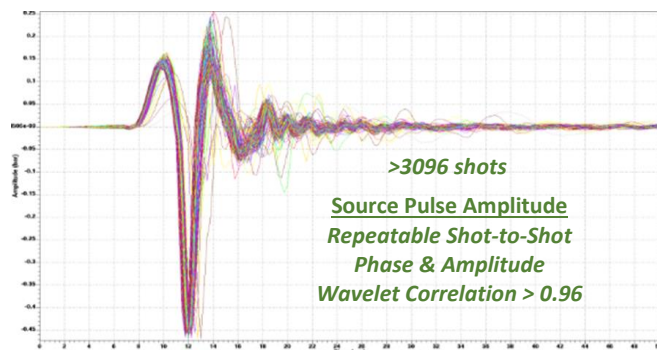


Data collected in Yokosuka Japan

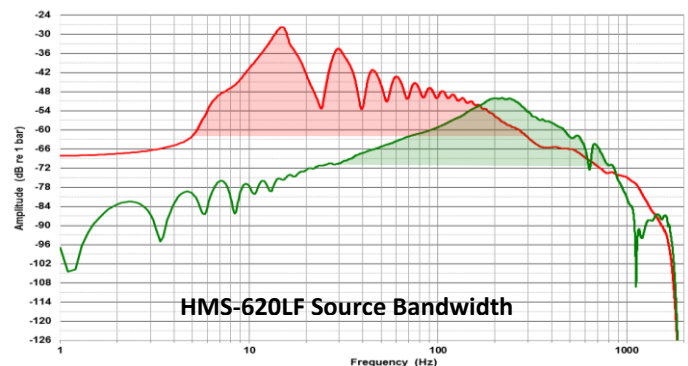
HMS-620LF Low Frequency Source System



Data courtesy of Luca Gasperini, CNR, Italy



Specifications Subject to Change without Notice
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(Bandwidth Data Acquired at 4 KHz Sample Rate)

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