



2020 SIDE SCAN SONAR OPERATIONAL/MAINTENANCE TRAINING OPTIONS

Semi-Annual Training Course at Klein Marine Systems, Inc.

\$800.00 USD per person and includes training material and lunch each day.
Contact Klein Marine for dates and availability.

The Training Includes:

- 2 Days in Classroom
- 1 Day at Sea
- SSS Interpretation and Training Manual per student

On-Site Customer Training (3 day course)- (USA rates)

Field Service Engineer – 5 days (including travel) @ \$1,320.00 = \$6,600.00 USD
Travel & Misc. Expenses billed at actual cost + 15%.
Boat must be supplied by the customer.

The Training Includes:

- 2 Days in Classroom
- 1 Day at Sea
- SSS Interpretation and Training Manual per student

Note 1: U.S. Government contracts – Travel expenses billed at actual or up to or at Per Diem (per accepted contract requirements) + 15%

Note 2: Non U.S. Government Contract – Travel billed at Actual +15%

Note 3: Training provided at International location(s) will require additional travel days.

Customer Specific Training Course at Klein Marine Systems, Inc.

Operator and Basic System Maintenance Training for Klein Systems is available at Klein's facility in Salem, NH for \$6,600.00 USD for a group of 20 people (maximum) plus \$68.00 per person for training materials.

Cost for the boat rental is an additional \$2,730.00 USD for the at-sea day.

The Training Includes:

- 2 Days in Classroom
- 1 Day at Sea
- SSS Interpretation and Training Manual per student

Contact Information:

Klein Marine Systems, Inc.
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Training Program Outline

<p>CUSTOMER LIST</p> <p>FOR SIDE SCAN SONAR TRAINING PROGRAM:</p> <p>American Underwater Search and Survey (John Fish & Arnold Carr)</p> <p>Oceaneering Nauticos</p> <p>US Army Corps of Engineers Canadian Transportation Aviation Safety Board</p> <p>Georgia Dept. of Natural Resources US Geological Survey (USGS) NAVO (Naval Oceanographic Office) DARPA (Defense Advanced Research Projects Agency) Ohio Geological Service</p> <p>Australian Navy Canadian Navy Swedish Navy German Navy French Navy Spanish Navy Portuguese Navy Finnish Navy Korean Navy Singapore Navy Japanese Navy Thailand Navy Columbian Navy Venezuelan Navy New Zealand Navy Taiwan Navy Malaysian Navy Indonesian Navy Croatian Navy US Navy</p> <p>Fugro Surveys C & C Technology Naval Undersea Warfare Center (NUWC) Louisiana State University Trident Foundation National Oceanic & Atmospheric Administration (NOAA) Arctic Submarine Laboratory SAIC Conoco Amoco Brit Survey Woods Hole Oceanographic Institute US Coast Guard Mineral Management Service Canadian Seabed Research N.A.S.A. Comex MRJ GESMA De Beers Diamond Mining A.R.L. South Carolina Department of Marine Resources Mel Fisher, Inc. Bedford Institute of Oceanography</p>	<p>INTRODUCTION</p>	<p>Course Welcome Historical Development Basic Sonar Principles Applications of Side Scan Sonar Sub-Bottom Profiler Principles Applications of Sub-Bottom Profiling</p> <hr/>
	<p>SONAR DESIGN DETAILS</p>	<p>Introduction Source Level Pulse Length Beamwidth Frequency Multi-beam Principles</p> <hr/>
	<p>UNDERWATER ACOUSTICS</p>	<p>Introduction Sound Velocity Spreading Absorption Refraction Mechanisms for Sound to Return to the Sonar: Reflection Backscatter (Reverberation) Time-Variied Gain Noise (Ambient, Self Made) Sound in Sediments Sonar Equation</p> <hr/>
	<p>RECORD INTERPRETATION</p>	<p>Surface Effects Targets and Shadows Sonar Design or Function Towing Conditions Electrical Noise Distortions Quantitative Treatment Sub-Bottom Profiler Interpretation</p> <hr/>
	<p>THE KLEIN SYSTEM</p>	<p>System Architecture SonarPro Application TPU Towfish Towing Accessories Maintenance, Operation, and Troubleshooting</p> <hr/>
	<p>FIELD OPERATION</p>	<p>System Installation Towfish Rigging Operational Variables Towfish Positioning Targets Safety Concerns</p> <hr/>
	<p>SPECIALTY AREA</p> <p>"HANDS ON" OPERATION AT SEA</p>	<p>Bathymetry Overview Military Applications Oil-Field Applications Geological Applications General Search and Survey A.U.V.'s</p> <hr/>