

RV Reuben Lasker Equipment Setup & Testing Summary

Date of Project: 18 – 21 September 2013

Location: RV Reuben Lasker, Colonna's Shipyard, Norfolk Va

Equipment setup & testing by James Wilkinson for MMC

Instrument	Description
Dell Computer CTD	CTD & SeaCat operations computer; requires Seasoft, Seasave, & Seaterm (Seabird-authored software) install and configured
6.3 Seabird SBE 9+ CTD	Main data acquisition instrument with dual temperature & conductivity sensors, two pumps, single pressure and oxygen sensor
6.4 Seabird SBE32 Carousel	Controlled by the SBE11 Deck Unit, closes Niskin bottles
6.5 Teledyne PSA916 Altimeter	Atlimeter – mounted low on the frame to detect height off the seafloor
6.7 Chelsea Transmissometer	Chelsea ALPHAtacka Mark II Transmissometer – detects particulates in the water
6.9 General Oceanics Bottles	24 – 10 liter bottles to collect seawater
6.10 Seabird SBE11 Deck Unit	Powers and acquires data from the SBE 9+ (item 6.3)
6.11 Seabird SBE19+ SeaCat	Data acquisition instrument with single temperature, conductivity, pressure, and pump
6.12 Seabird SBE36 Deck Unit	Powers and acquires the data from the SBE19+
Dell Computer XBT	XBT operations computer with Sippican MK12 XBT software
6.1 Sippican LM3A Launcher	XBT hand-held launcher
6.2 Sippican MK21 System	Data acquisition system for LM3A Launcher
6.17 Turner Designs Fluorometer	Fluorometer interfaced with the underway data logging system

Item	Instrument	Operational	Score (out of 10)	Comments
1	Dell Computer - CTD	Yes	10	Seasoft installed & configured with sensor coefficients; Seasave installed and data acquired & processed
6.3.0	Seabird SBE 9+ CTD S/N 09P62840-1050	Yes	10	Main Underwater Unit
6.3.1	Seabird SBE3plus S/N 03P5485	Yes	10	Primary Temperature Sensor
6.3.2	Seabird SBE3plus S/N 03P5437	Yes	10	Secondary Temperature Sensor
6.3.3	Seabird SBE4C S/N 043948	Yes	10	Primary Conductivity Sensor
6.3.4	Seabird SBE4C S/N 043949	Yes	10	Secondary Conductivity Sensor
6.3.5	Digiquartz Pressure Sensor S/N 119687	Yes	10	Main Unit Pressure Sensor
6.3.6	Seabird SBE5T S/N 056073	Yes	10	Primary Pump
6.3.7	Seabird SBE5T S/N 056073	Yes	10	Secondary Pump

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6.4	Seabird SBE32 Carousel Sampler	Yes	9	Water Sampler – trigger #15 failed the deck test, was cleaned, then worked during sea trial
6.5	Teledyne Benthos PSA916D Altimeter S/N 53324V4	Yes	10	Altimeter Sensor
6.7	Chelsea Alphatracka Transmissometer S/N 118116-01	Yes	10	Transmissometer Optical Sensor
6.9	General Oceanics Niskin Bottles	Yes	10	Black latex springs & o-rings are toxic to live incubations but they operated perfectly
6.10	SBE11 CTD Deck Unit	Yes	10	Operational and ready for use; all LED panels and indicator lights were functioning properly
6.11.0	SeaCat SBE19 Plus V2.3 CTD S/N 6868	Yes	10	Operational and ready for use
6.11.1	SeaCat Temperature Sensor S/N 6868	Yes	10	Operational and ready for use
6.11.2	SeaCat Conductivity Sensor S/N 6868	Yes	10	Operational and ready for use
6.11.3	SeaCat Pressure Sensor S/N 2093221	Yes	10	Operational and ready for use
6.12	SeaCat Deck Unit	Yes	10	Operational and ready for use; operating under Seasoft, using a different plot & data acquisition configuration than 911+ CTD
6.13	CTD & XBT Computer Monitors	Yes	8	Monitors are fixed-mounted too high for general use; the XBT monitor blocks the CTD operator's view of the deck unit diagnostic lights.
CTD & SeaCat Ship Interface				
2.0	GPS feed	Yes	10	GPS feed to CTD computer
2.1	Sea Cable Conductive Wire – Aft Winch	Yes	10	Connection from CTD to Deck Unit via winch conductive wire
2.2	Sea Cable Conductive Wire Switch Box	Yes	10	Switches between forward & aft winch sea cable connections
2.3	Sea Cable Conductive Wire – Forward Winch	Yes	10	Connection from SeaCat to Deck Unit via winch conductive wire
2.4	Aft Electric winch & Slip Rings	Yes	10	Impressed by the fine control & handling the weight of 24 full 10L seawater bottles + electronics
2.5	Forward Electric winch & Slip Rings	Yes	10	Impressed by the fine control & handling the light, electronic-only SeaCat
2.6	Aft Winch Block	Yes	9	Aft winch wire guide stuck to the sheave initially; after paying the conductive wire in & out, it moved freely
2.7	Forward Winch Block	Yes	10	Operational, no problems

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6.1.0	Dell Computer - XBT	Yes	10	XBT software was setup and ready to go for acquiring data; assisted with porting serial data to SCS (null modem)
6.1.1	LM-3A Hand-Held Launcher	Yes	10	Trained how to launched XBTs; shallow depth requires manually breaking the copper conductive wire
6.2	XBT Data Acquisition System – see 6.1.0	Yes	10	XBT software is setup and ready to go; serial data exporting to SCS (null modem required)
6.17	Turner Designs 10-AU Fluorometer	Yes	10	Configured the fluorometer sensitivity, sampling rate, & serial output to interface with SCS

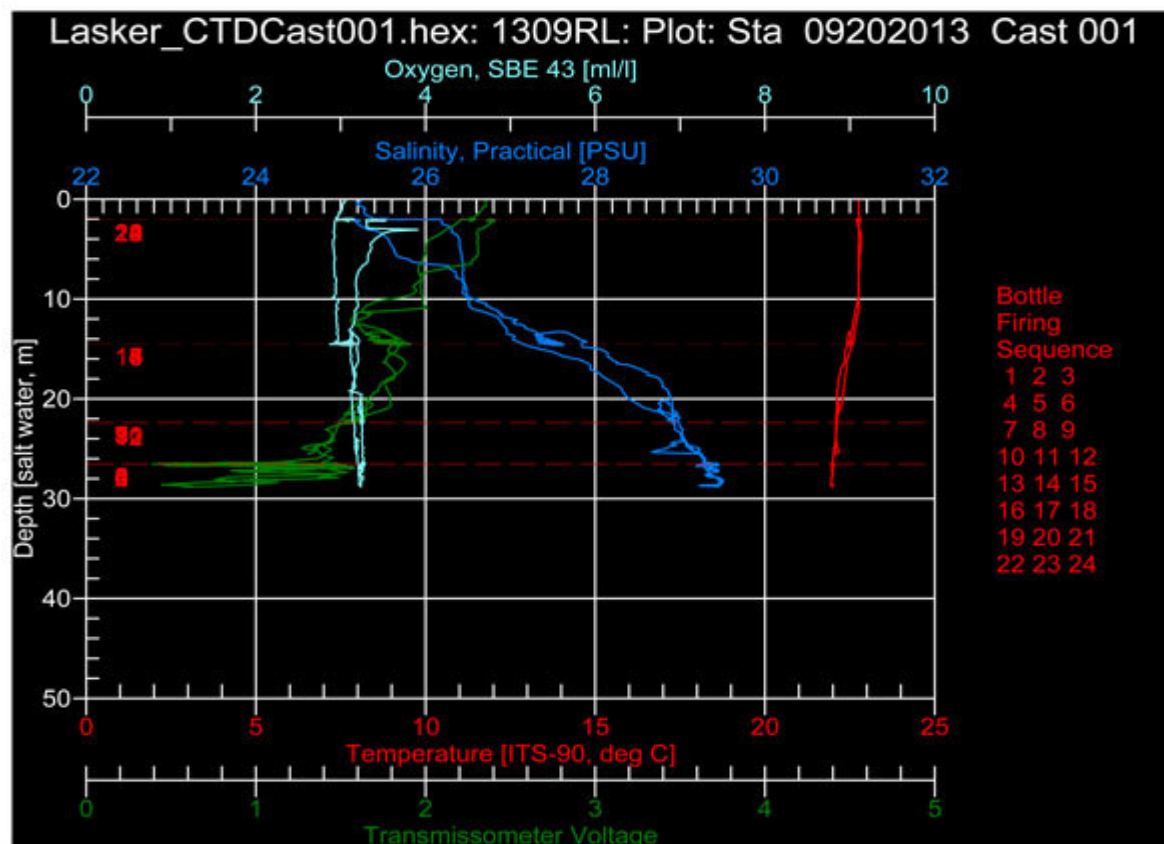
General Observations:

Please refer to specific item comments for observation about individual items. CTD Lab is a significant improvement over the limited space available for those operations on Shimada. CTD & XBT computer monitors are mounted too high for ergonomics. Recommend a vibration-dampening, adjustable arm for each monitor. Being able to move the monitor will improve the visibility of deck unit LED panel & lights since their current position blocks the CTD operator's field of view. The fine controls on the electric winches are a significant improvement over Shimada's.

Comments:

Please refer to specific item comments.

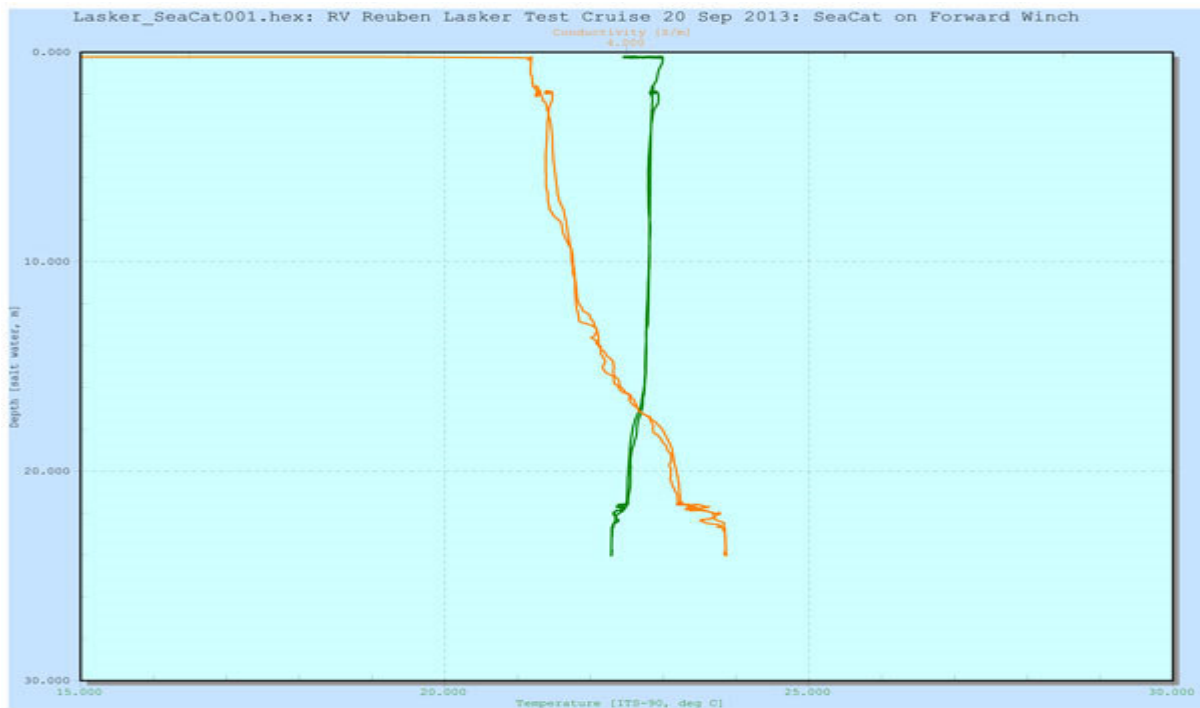
SBE911+ CTD Cast Plot



This is the cast plot for the 20 Sept 2013 SBE911+ on aft winch. Blue, red, green, & cyan lines indicate normal sensor measurements. The right margin displays bottle firing sequence and successful closure of all 24 bottles.

Please refer to the attached Lasker_CTDCast001.btl file for tabulated CTD sensor data with operational parameters & statistics.

SBE19 SeaCat Cast Plot



This is the data plot for the 20 Sept 2013 SBE19 SeaCat cast on forward winch. Green & orange profiles indicate normal sensor measurements, overlaying up and downcast data.

Please refer to Lasker_SeaCat001.asc file for tabulated SeaCat sensor data; operational parameters are in the Lasker_SeaCat001.hdr file. Files are attached.