Data Acquisition and Processing Report
OPR-G381-NRT2-05

NOAA Launch 1210, Navigation Response Team 2
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A. Equipment

HYPACK MAX was used for on-line data acquisition. Caris was used for data processing, and MapInfo Professional, were used to support processing and plotting. The Trimble Pathfinder DGPS Backpack was used for collecting and processing the ENC high accuracy position data. The NOS program Velocity, and MS Word were also used during this survey.

NOAA launch 1210, a 27-foot SeaArk with a draft of 0.5 meters, was used to collect all survey data. There were no unusual vessel configurations or problems encountered with the vessel.

A Klein 3000 side scan sonar system was used throughout this survey. The side scan sonar equipment was used to conduct dual beam surveying and investigate AWOIS items using NOAA launch 1210. The system frequency used was 100 & 500 kHz. The recorder was set on one of either 50/75/100-meter range scales. The confidence checks were performed daily at 100kHz.

An Innerspace model 455 Fathometer, was used to collect all echo soundings on this survey. A standard lead line calibrated in meters, was used during this survey for depth comparison checks with the echo sounder. No problems were encountered with any of the sounding equipment.

B. Quality Control

Survey data for single beam and side scan sonar Hydrography was transferred to a removable hard drive on the launch and entered into the post processing system in the Office trailer. Data is check scanned and edited through Caris software.

The High accuracy DGPS positions for ENC (Electronic Navigational Chart) are transferred to Trimble Pathfinder Office software on the post processing system in the Office trailer. The data points are then plotted via MapInfo and processed into shape files for MCD. The data upon completion is posted on the FTP site for the Navigation Response Branch.

NOAA Remote Sensing Division provides the Chart Evaluation File (CEF) to the NRT. This file contains polygons for the NRT to make visual investigations and record field

notes and recommendations for the digital shoreline compiler at RSD. This file on completion is returned to RSD for placement in the Shoreline Update Notice (SUN) for cartographers at MCD in Raster and ENC work environments. The fieldwork conducted by the NRT is submitted as “Information Only” and does not require processing at the Marine Center.

Coverage of 200% was obtained in the required survey areas and AWOIS items where water depth and/or hazards permitted. Side scan sonar coverage was conducted to the 12-foot depth curve and single beam reduced line spacing was performed in other areas where warranted. The towfish was deployed off the starboard quarter of the vessel, which proved very stable. Distorted images caused by strong tidal currents were seen periodically.

C. Corrections to Echo Soundings

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler, model 19-03, S/N 198671-1477. The manufacturer calibrates this unit once a year. The last Calibration was conducted on January 4, 2005. Data quality assurance tests were performed after each cast. Program VELOCITY was used for computing the correctors.

The lead line for launch 1210 was calibrated using a steel tape on March 02, 2005 (DN: 061). No corrections were necessary. A static draft of 0.5 meters was applied to the sounding plots by the HPS REAPPLY program. The draft was measured by subtracting the difference from a punch mark on the side of launch 1210, 0.6 meter above the transducer, to the water surface.

Settlement and squat measurements for launch 1210 were taken on March 02, 2005 (DN: 061). These measurements were conducted in Savannah, GA using the level method. Settlement and squat correctors were applied to the sounding plots using the Caris program.

There are no heave pitch and roll sensors on Launch 1210.

Field soundings are corrected by unverified actual heights from NOAA/CO-OPS.
The Real Time Actual 6 min Tides are downloaded from:
"http://co-ops.nos.noaa.gov/data_res.html", for all gauges required in the given projects defined by the ZDF file provided in the project letter, and instruction. Tide values are downloaded in blocks of data that covers the Times of Hydrography, and saved in a text file format. The MapInfo program is then used with the "HYDRO_MI" pre-Survey function, of "Create Cowlis”, this function converts the text file into a Caris tide file (.tid).

Values and correctors were applied at the perspective locations of Hydrography from the Port Instructions.