U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Data Acquisition & Processing Report

*Type of Survey*_____Hydrographic_____

*Project No*____OPR-H328-NRT2-06_____

*Time Frame*_____February to April, 2007___ _____

LOCALITY

State _____Florida_____

*General Locality*_____Miami & Ft. Lauderdale_____

2007

CHIEF OF PARTY

David B. Elliott – Team Leader

Library & Archives

DATE _____

Data Acquisition & Processing Report
Title Sheet

*Project No.*____OPR-H328-NRT2-06_____

Date of Project Instructions Apr. 23, 2007_____

*Vessel*_____NOAA Launch 1210_____

*Field Unit*___Navigation Response Team 2_____

*Chief of Branch*___Lt. Jake Yoos_____

*Chief of Party*___David B. Elliott – Team Leader_____

Data Acquisition and Processing Report
For Calendar year 2007

NOAA Launch 1210, Navigation Response Team 2

A. Equipment

The following sections describe major operational systems used to acquire survey data or control survey operations:

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 30-foot SeaArk with a draft of 0.5 meters, was used to collect all survey data. The vessel DGPS was calibrated weekly to a known GPS reference point. There were no unusual vessel configurations or problems encountered with the vessel.

An ODOM EchotracCV Fathometer, Ser # 23031 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.

A Klein 3000 side scan sonar system was used throughout this survey. The Model # 3110 TPU (Topside Processing Unit) Ser# 315 and Model # 3210 Towfish Ser# 414 are part of this system. The side scan sonar equipment was used to conduct dual beam surveying and investigate AWOIS items. The system frequency used was 100 & 500 kHz. The recorder was set on one of either 75/100-meter range scales. The confidence checks were performed daily at 100kHz.

A Trimble DGPS Beacon Receiver (S/N 0220261525) was used as the primary navigation station on launch 1210.

A Trimble Pathfinder ProXRS (S/N 0224010201) and antenna (S/N 0220170250) were used for all ENC high accuracy positioning and establishment of calibration points.

The Instruments used for determining corrections for the speed of sound through the water column were an ODOM Digibar Ser # 98295-020606 and a Seabird-Seacat Velocity Profiler, model 19-03, Ser# 198671-1477.

NOAA / NRB / NRT-2
5/31/2007 17:42:13
NRT-2 / S-1210
Active Software Versions

Name	Version	SP/HF	Remarks
Caris Hips/Sips	6.1	SP-2 / HF-21	Processing
Pydro	7.1.0{1940}		Processing
Velocity	8.84		Processing
MapInfo Professional	8.85		Processing
Hydro_MI	6.10.2		Processing
Vertical Mapper	3.1		Processing
SBE Data Processing	SBEDataProcessing_Win32_V5_37e		Processing
Sea-Term	Seaterm_Win32_V1_56		Processing
Pathfinder Office	3.00		Processing
ArcView GIS	3.20		Processing
Digibar Pro	2.3		Processing
Didson	5.10		Processing
QC Tools	2.1.6.5		Processing Mag Data
Adobe 8.0 Pro	8.0		Documentation
Hypack	6.2.0.32	SP-1 / SEP06	Acquiring / Processing
SonarPro	10.0		Acquiring / Processing
Odom C/V	3.27		Communication
TSIP Talker	2.00		Communication
Trimble DM12/212L	1.71		Acquiring (Firmware)
Trimble XRS Pro	1.70		Acquiring (Firmware)
Fugawi	3.1.4.881		Secondary Navigation
TerraSync	2.41 HPC2000 (ARM)		Acquiring
SeaLink	8.0		Acquiring Mag

Calibrations:

Digibar Pro	s/n: 98295	10 Jan 2007
Sea-Bird SBE 19	s/n: 198671-1477	07 Jan 2007

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.

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.

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.

C. Corrections to Echo Soundings

The instrument used for determining corrections for the speed of sound through the water column was a Digibar-Pro, S/N 98295-011007. (January 10, 2007 last calibrated). Data quality assurance tests were performed after each cast.

The check 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. (January 7, 2007 last calibrated). Data quality assurance tests were performed after each cast.

The lead line for launch 1210 was calibrated using a steel tape on Jan. 4, 2007 (DN: 004). No corrections were necessary.

 A static draft of 0.5 meters was entered into the Caris vessel configuration file for Launch 1210. 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 Jan. 4, 2007 (DN: 004). These measurements were conducted in Cape Canaveral, FL using the level method. Settlement and squat correctors were entered into the Caris vessel configuration file for Launch 1210. 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.

E. APPROVAL SHEET

Data Acquisition and Processing Report
OPR-H328-NRT2-06
Miami & Ft. Lauderdale, FL
For Calendar year 2007

For Accompanying Surveys

The Data Acquisition and Processing Report information and all accompanying records and data are approved.

Submitted by:

David B. Elliott – Team Leader
Navigation Response Team 2