

DESCRIPTIVE REPORT MEMO

May 29, 2019

MEMORANDUM FOR: Pacific Hydrographic Branch

THROUGH: CDR Benjamin K. Evans, NOAA
Commanding Officer, NOAA Ship RAINIER



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FROM: Amanda M. Finn
Hydrographic Survey Technician, NOAA Ship RAINIER

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SUBJECT: Submission of Survey F00765

Survey F00765 was conducted by NOAA Ship RAINIER launch 2802 (RA-5) at the request of the City of Santa Barbara. The city Waterfront Manager, Karl Treiberg, requested we investigate the harbor mouth and pier faces for shoaling and scouring. He also requested a survey of the permitted mooring area southeast of the harbor to search for derelict mooring equipment on the seafloor. HSD OPS added F00765 to OPR-L397-RA-18 by email instruction after acquisition was completed. No updated Project Instructions were issued.

The field unit acquired and processed data according to HSSD requirements and standard RAINIER procedures as described in the DAPR. Since no resolution requirement was specified, the field unit determined that object detection was the most appropriate processing standard for this survey. A Ranges variable-resolution multibeam surface was produced for the Pacific Hydrographic Branch. The field unit also collected backscatter data and produced one mosaic for the survey area.

Soundings were referenced to the ellipse and transformed to Mean Lower Low Water (MLLW) using the VDatum separation file "SantaBarbaraHarborPoly_xyNAD83-MLLW_geoid12b.csar" created by the field unit.

All survey systems and methods utilized during this survey were as described in the accompanying 2018 Data Acquisition and Processing Report.

There were no DTONs created for this survey.

All data were acquired by a NOAA or NOAA Contractor field unit

Multibeam echosounder data confirmed the locations of charted underwater pipelines. A least depth was determined for one uncharted submerged feature identified in the multibeam and is included in the Final Feature File. Multibeam data also revealed numerous submerged mooring equipment. It could not be determined whether these were abandoned or in use. There also appears to be scouring in the seabed resulting from the mooring equipment.

Potentially dangerous shoaling can be seen southwest of buoy G-11. Depths as shoal as 1.5 meters (0.8 fathoms) were found between charted 4 fathom 2 foot and 4 fathom 3 foot depths. It appears that the entrance to the pier is actively dredged. The Waterfront Manager has been notified of this information and received a 50-cm single resolution surface with soundings of the Santa Barbara Harbor multibeam data. See Supplemental Records and Correspondences for more information.

Numerous indented scours indicate the presence of small submerged features but none appear to be dangers to navigation. However, an uncharted linear obstruction south of buoy R-12 crosses the harbor channel with a least depth of 1.9 meters (1 fathom).

Limited multibeam coverage was acquired beneath Stearns Wharf, however, the data collected showed evidence of some scouring surrounding the pier.

The variable-resolution object detection surface was run through QC Tools 2 and located 177 holidays.

Aids to Navigation were not examined.

The survey is partially adequate to supersede previous data. The area covered by the inner harbor section of the survey was dredged and re-surveyed by the United States Army Corps of Engineers in Spring 2019. Although this survey was not acquired to charting specifications since the field unit did not acquire crosslines or holidays, the hydrographer believes the soundings in the mooring area to be accurate and that no DtoNs exist within the holidays. The hydrographer recommends that F00765 supersede charted bathymetry data and features in the common area of the mooring field. The hydrographer also recommends that the multibeam data be retained for archival purposes and inclusion in the National Bathymetric Source (NBS) database.

The final surface for compilation and archive is not a variable resolution surface; instead the processing branch developed a single resolution surface gridded at 50cm. In review, the surveyed extents were compared to the most recent US Army Corps of Engineers (USACE) survey data. Where more recent survey data exists from the USACE survey in the common area, gridded depths from F00765 have been removed. As a result, all data submitted for charting is adequate to supersede prior data. The full extent of multibeam data will be archived and included in the NBS.

Metadata for Survey F00765	
Project	OPR-L397-RA-18
Survey	F00765
State	California
Locality	Santa Barbara
Sub-Locality	Santa Barbara Harbor
Scale of Survey	1:20000
Sonars Used	Kongsberg Maritime EM 2040 (MBES)
Horizontal Datum	North American Datum 1983 (NAD83)
Vertical Datum	Mean Lower Low Water
Vertical Datum Correction	VDatum
Projection	UTM 11N
Field Unit	NOAA Ship RAINIER
Survey Dates	10/06/2018
Chief of Party	Benjamin K. Evans, CDR/NOAA
Submission Date	05/29/2019

APPROVAL PAGE

F000765

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NCEI for archive

- Descriptive Report
- Collection of Bathymetric Attributed Grids (BAGs)
- Collection of backscatter mosaics
- Processed survey data and records
- GeoPDF of survey products

The survey evaluation and verification has been conducted according current OCS Specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Approved: _____

Commander Olivia Hauser, NOAA
Chief, Pacific Hydrographic Branch