

F00512

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

Type of Survey: **Field Examination/ENC
Validation**

Field No.: **S-L919-NRT6**

Registry Number: **F00512**

LOCALITY

State: **California**

General Locality: **Santa Barbara Channel**

Sub-locality: **Santa Barbara and Ventura Harbors**

2004

CHIEF OF PARTY

Edmund Wernicke

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER: F00512
HYDROGRAPHIC TITLE SHEET		
INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.		
State:	California	
General Locality:	Santa Barbara Channel	
Sub-Locality:	Santa Barbara and Ventura Harbors	
Scale:	1:5,000	Date of Survey: November 29 – December 1, 2005
Instructions Dated:	November 7, 2005	Project Number: S-L919-NRT6-05
Vessel:	NOAA Survey Launch S3003	
Chief of Party:	Edmund Wernicke	
Surveyed by:	Navigation Response Team Six Personnel	
Soundings by:	Simrad EM3000 Multibeam Echosounder	
Graphic record scaled by:	N/A	
Graphic record checked by:	N/A	Automated Plot by: N/A
Verification by:	Atlantic Hydrographic Branch Personnel	
Soundings in:	Meters at MLLW	
Remarks: <i>1) All Times are UTC.</i> <i>2) Projection is UTM Zone 11.</i> <i>3)</i>		

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SURVEY F00512

Scale of Survey: 1:5,000

Year of Survey: 2005

NOAA Navigation Response Team 6

Ed Wernicke, Team Leader (Acting)

A. AREA SURVEYED

This survey was conducted in accordance with Hydrographic Survey Letter Instructions for Survey F00512, Santa Barbara Harbor and Ventura Harbor, California. The original instructions are dated November 7, 2005.

The purpose of FY 2005 survey operations on the Santa Barbara Channel include: (1) providing updated bathymetric and ENC's to ensure safe passage through the Santa Barbara Channel, (2) support safe operations of city anchorages or moorings for recreational boaters, as per constant requests obtained by the Regional Navigation Manager.

For complete survey limits, see the chartlets on the following page.

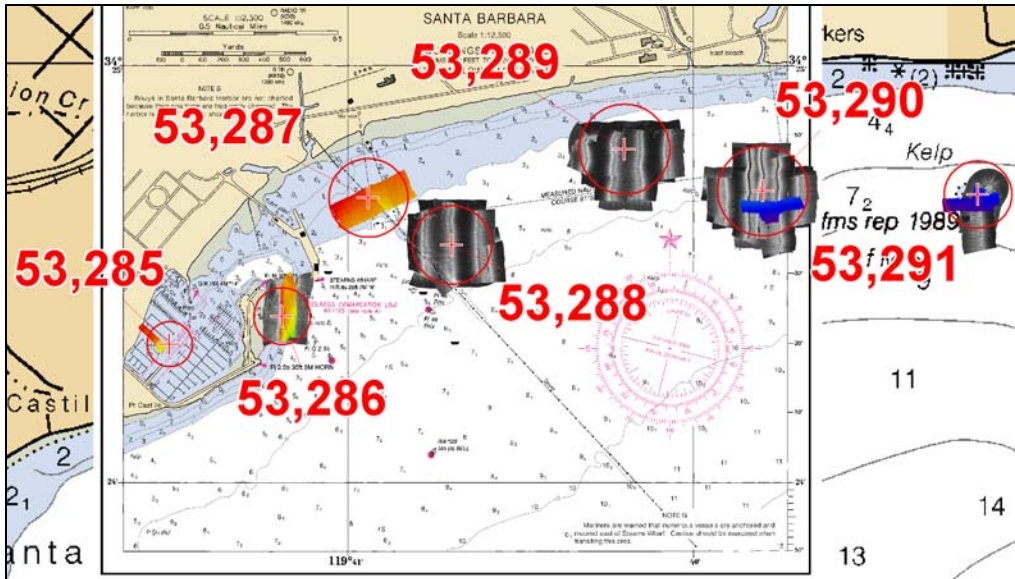


Figure 1a: Santa Barbara Harbor Survey Limits & Data Coverage

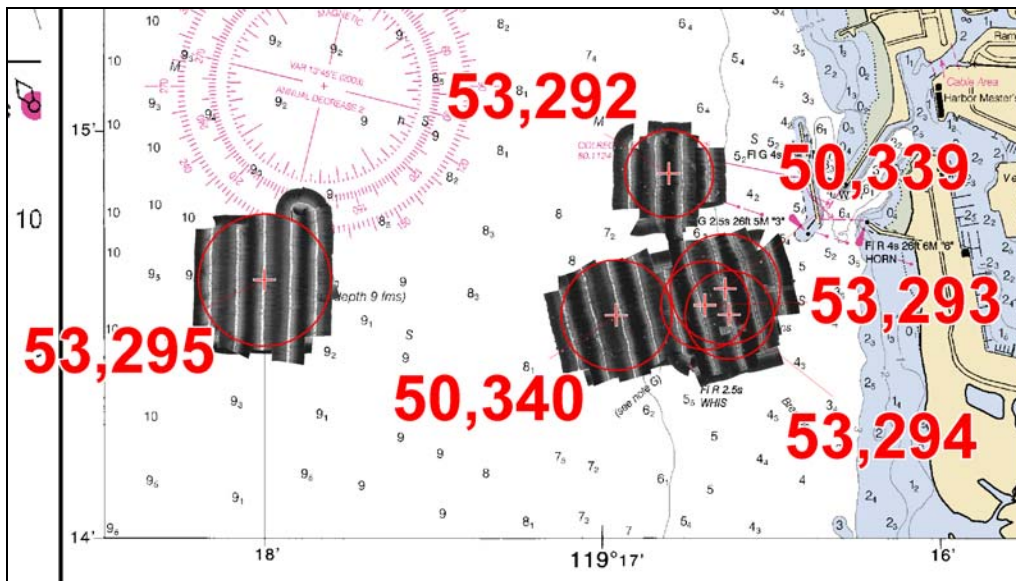


Figure 1b: Ventura Harbor Survey Limits & Data Coverage

B. DATA ACQUISITION AND PROCESSING

B.1 EQUIPMENT

Data were acquired by NOAA Survey boat S3003, which is a 10-meter hydrographic survey vessel with an average transducer draft of 1.1 meters.

NOAA Survey boat S3003 acquired soundings, imagery, and sound velocity profiles. Soundings were acquired by SIMRAD EM3000 multibeam echosounder. Imagery was acquired by KLEIN 3000 side scan sonar. Water column sound velocity data was acquired with a Sea-Bird SBE 19+ CTD.

NOAA Survey boat S3003 positioning and attitude data were determined with a TSS POS/MV 320 Version 3 GPS-aided inertial navigation system.

Refer to the Data Acquisition and Processing Report (DAPR) for detailed equipment and vessel configuration information.

B.2 QUALITY CONTROL

B.2.1 Side Scan Sonar Quality Control

Daily confidence checks were made by observing the outer ranges of the side scan sonar images. A good check consisted of distinguishing contacts or sand waves across the entire range of the side scan trace.

No unusual problems were encountered with the system. Refer to this project's DAPR for detailed discussion of SSS data acquisition and processing.

B.2.2 Shallow Water Multibeam Quality Control

A patch test was conducted on July 14th, 2005 (DN 143) and applied to all multibeam echosounder data. This patch test was later determined to have busted. A patch test was conducted on March 23-24, 2006 (DN 082 and 083) by NRT6, PHB and HSTP

personnel. The results of the March 2006 patch test were applied to the vessel configuration file NRT6_S3003_EM3000_NAD83 which was applied to all multibeam echosounder data for this survey.

A significant positioning artifact was detected in the Santa Barbara section of the survey area, over a charted sewer outfall pipe. The cause of this positioning artifact is not known. This artifact was not observed elsewhere in the survey area. *However, it can be seen from the data that the outfall pipe position appears as charted.*

Refer to this project's DAPR for detailed discussion of SWMB system calibrations, data acquisition, and data processing.

B.2.3 BASE Surfaces

CARIS HIPS BASE (*Bathymetry Associated with Statistical Error*) surfaces, which incorporate each sounding's total propagated error (TPE), were created according to depth intervals. Each finalized BASE surface contains seven layers: depth, uncertainty, density, mean, standard deviation, shoal, and deep. Refer to this project's DAPR for detailed discussion of BASE Surface generation and processing.

The following Fieldsheets were generated as part of this survey:

Table 1: Fieldsheets and BASE Surfaces

<u>Fieldsheet</u>	<u># BASE Surfaces</u>	<u>Resolution</u>	<u>Purpose</u>
F00512	1	2m	Coverage
Wk_Ed	1	0.4m	Item Investigation
Wk_Ed_2	1	0.4m	Item Investigation
Wk_Ed_3	1	0.4m	Item Investigation
Sewerpipe	1	0.5m	Item Investigation
F00512_NW_SSS100	1	1m	Mosaic
F00512a_SSS	2	1m	Mosaic

B.3 CORRECTIONS TO ECHO SOUNDING

All methods or instruments used were as described in the project DAPR.

C. VERTICAL AND HORIZONTAL CONTROL

C.1 VERTICAL CONTROL

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at Santa Barbara Channel (941-1340) was the sole water level station for this project. See Figure 2 for station location and tide zone boundaries.

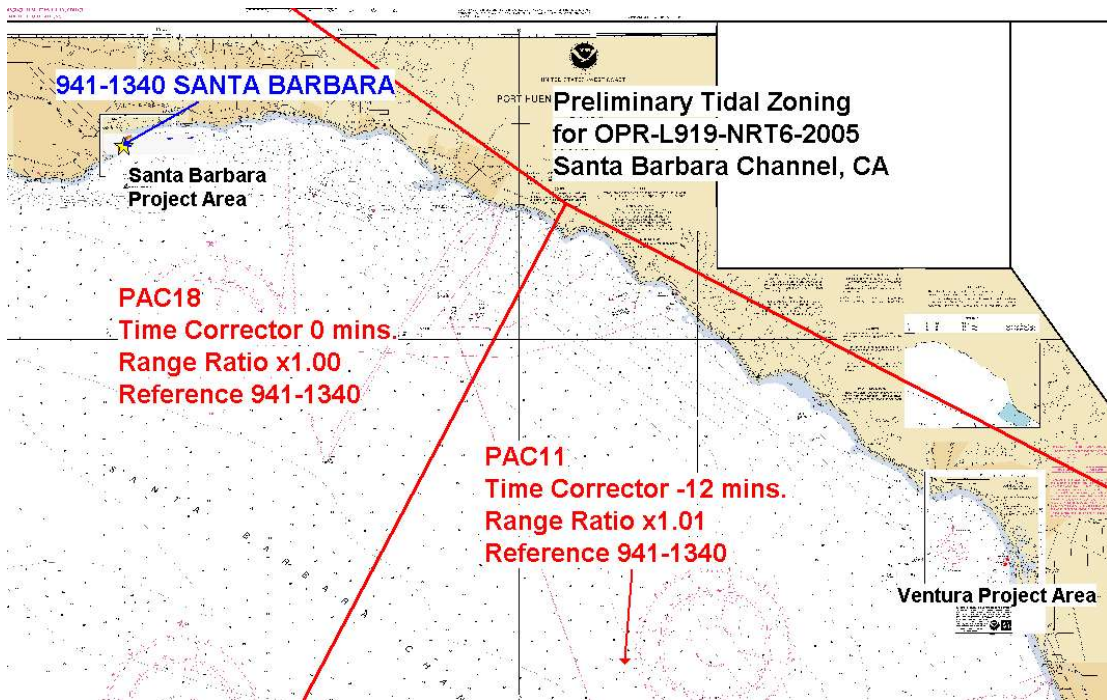


Figure 2: Preliminary Tide Zoning

The preliminary zones and correctors used for this survey are as follows:

Table 2: Preliminary Tide Zones & Correctors

<u>Zone Name</u>	<u>Time Correctors (mins)</u>	<u>Range Ratio</u>	<u>Predicted Reference</u>
PAC11	-12	x1.01	941-1340
PAC18	0	x1.00	941-1340

A Request for Approved Tides letter was sent to N/OPS1 on 21 February 2006 and is included in Appendix IV. Verified water levels from the N/OPS1 CO-OPS website were downloaded on 21 December 2005, and applied to all sounding data with preliminary tide zoning. Refer to the 2005 DAPR for a summary of the methods used to determine, evaluate, and apply tide corrections to sounding data.

C.2 HORIZONTAL CONTROL

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 11.

Horizontal position was determined using the Global Positioning System (GPS) corrected by U.S. Coast Guard differential GPS (DGPS) beacon station at Point Loma, CA (302 kHz). No horizontal control stations were established for this survey.

Horizontal dilution of precision (HDOP) was monitored daily. The observed HDOP values did not exceed 4.00.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

There are two charts affected by this survey:

Table 3: Affected Charts

Number	Version	Edition Date	Scale
18724	1st	03/29/2003	1:20,000
18725	27th	06/07/2003	1:50,000

D.1.1 General Agreement with Charted Soundings

No sounding-to-chart comparisons were performed in the Ventura area of the survey, except as noted in Appendix II, as no bathymetry data were acquired in that region.

Evidence of shoaling was found in the entrance to Santa Barbara Harbor. This is

discussed in section D.1.2.

There is evidence of shoaling in the vicinity of 34°24'42.000" N, 119°39'48.000" W. The 6 fathom contour has migrated seaward. The hydrographer recommends charting present survey soundings. *Concur with clarification. Not enough development was done in order to define the 6 fm contour. Recommend further work be done in this area. The soundings achieved in the area fit in with the soundings currently charted.*

Otherwise, soundings agree with the chart to within 0.5 fm.

D.1.2 Dangers to Navigation (Dton's)

One danger to navigation was found by the field party. There is evidence of shoaling at the entrance to Santa Barbara harbor, in the vicinity of 34°24'23.990" N, 119°41'11.480" W. Surveyed depths range from 1.8 fm to 2.0 fm in charted 3 fm of water. This Danger to Navigation was submitted on June 30th, 2006, and is discussed in further detail in Appendix I. *Concur. The sounding is charted in the latest edition.*

D.1.3 AWOIS Items

Thirteen AWOIS items were assigned to survey F00512. Information pertaining to these AWOIS items is contained in Appendix II of this report. *See Eval Report*

D.1.4 Significant Uncharted Features

One uncharted feature was located during survey F00512. *See Eval Report*

D.1.5 Non-AWOIS Charted Features & Notes

No non-AWOIS charted features were investigated during survey F00512. *Concur.*

D.2 ADDITIONAL RESULTS

D.2.1 Prior Surveys

This survey overlaps seven prior NOAA surveys:

Table 4: Prior NOAA surveys

<u>Registry Number</u>	<u>Scale</u>	<u>Year Surveyed</u>
H11024	10,000	2001
H09740	5,000	1978
H09741	10,000	1978
H09751	5,000	1978
H09752	20,000	1978
H09725	20,000	1977
H09666	5,000	1976

This survey is adequate to supersede all feature items in common areas. Except as noted above in section B.2.2, this survey is adequate to supersede charted depths in common areas. *Concur with clarification. Only one sounding has been selected to replace a charted sounding. All other charted soundings should be retained.*

D.2.2 Aids to Navigation and Other Detached Positions

No fixed or floating aids to navigation were positioned during this project.

D.2.3 Bridges and Overhead Cables

There are no bridges or overhead cables in the survey area.

D.2.4 Ferry Routes

There are no ferry routes in the survey area.

D.2.5 Submarine Cables and Pipelines

A charted abandoned sewer pipe and a charted active sewer pipe were partially surveyed using 100% MBES. Owing to a significant position error in the SIMRAD EM3000 multibeam echosounder, discussed above in section B.2.2, the hydrographer recommends retaining these pipes as charted. *Concur. See Eval Report for image.*

D.2.6 Shoreline

The field party acquired detached positions on the seaward ends of two jetties in the approach to Ventura Harbor. Both surveyed jetties extend past the charted position (Figure 3, red lines). Owing to rough sea state, the field party was unable to survey the landward ends of these jetties. The hydrographer recommends obtaining RSD photogrammetry data to properly represent these jetties on the chart. *Concur.*

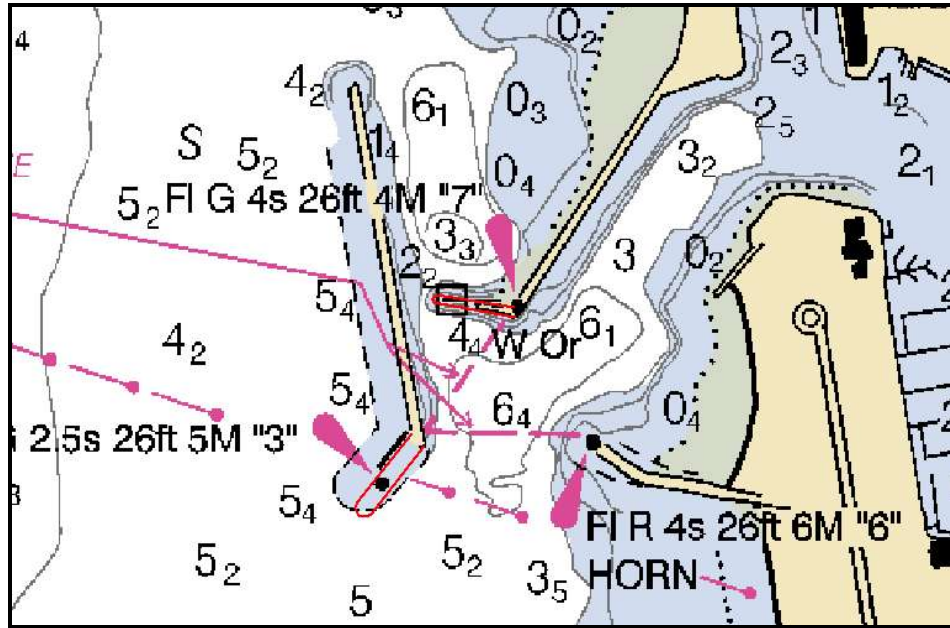


Figure 3: Ventura Jetties

E. APPROVAL SHEET

S-L919-NRT6-05
Santa Barbara Channel
California

Survey Registry No. F00512

Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. All bathymetry models, this Descriptive Report, and all accompanying records and data are approved.


Except as noted in this descriptive report, this survey is adequate to supersede all prior surveys in common areas and for application to the relevant NOS nautical charts.

Also submitted in association with this descriptive report has been a series of reports and data:

- SEPARATES TO ACCOMPANY PROJECT S-L919-NRT6-05, F00512
- S-L919-NRT6-05 HORIZONTAL AND VERTICAL CONTROL REPORT (*March 2006*)
- DECEMBER 2005 DATA ACQUISITION AND PROCESSING REPORT (*Pending*)

Respectfully Submitted:

Approved and Forwarded:



PST Ed Wernicke, NOAA
Acting Chief of Party

APPENDIX I:

DTON

F00512 Danger to Navigation

Registry Number: F00512
State: California
Locality: Santa Barbara Channel
Sub-locality: Santa Barbara and Ventura Harbour
Project Number: S-L919-NRT6-05
Survey Date: 11/30/2005

This report describes a Danger to Navigation found during field examination F00512.

Charts Affected

Number	Version	Date	Scale
18725	27th Ed.	06/01/2003	1:25000
18720	32nd Ed.	01/01/2005	1:232188
18022	34th Ed.	11/01/2003	1:868003
18020	37th Ed.	09/01/2003	1:1444000
501	12th Ed.	11/01/2002	1:3500000
530	30th Ed.	03/23/2002	1:4860700
50	6th Ed.	06/01/2003	1:10000000

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude
1.1	Shoal	3.27 m	034° 24' 23.542" N	119° 41' 11.258" W

1 - Danger To Navigation

1.1) Profile/Beam - 805/124 from f00512 / nrt6_s3003_em3000_nad83 / 2005-334 / newline

DANGER TO NAVIGATION

Survey Summary

Survey Position: 034° 24' 23.542" N, 119° 41' 11.258" W
Least Depth: 3.27 m
Timestamp: 2005-334.17:33:42.379 (11/30/2005)
Survey Line: f00512 / nrt6_s3003_em3000_nad83 / 2005-334 / newline
Profile/Beam: 805/124
Charts Affected: 18725_2, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A chart comparison found evidence of shoaling. Soundings were acquired by SIMRAD EM3000 MBES and corrected to MLLW using verified water levels with preliminary tide zoning.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00512/nrt6_s3003_em3000_nad83/2005-334/newline	805/124	0.00	000.0	Primary

Hydrographer Recommendations

Chart present survey soundings.

Cartographically-Rounded Depth (Affected Charts):

1 ¾fm (18725_2, 18725_1, 18720_1, 18022_1, 18020_1, 530_1)
 3.2m (501_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: TECSOU - 3:found by multi-beam

APPENDIX II:
NAVIGATIONALLY SIGNIFICANT FEATURES

F00512 AWOIS Items

Registry Number: F00512
State: California
Locality: Santa Barbara Channel
Sub-locality: Santa Barbara and Ventura Harbour
Project Number: S-L919-NRT6-05
Survey Dates: 11/30/2005 - 06/29/2006

Charts Affected

Number	Version	Date	Scale
18725	27th Ed.	06/01/2003	1:25000
18720	32nd Ed.	01/01/2005	1:232188
18022	34th Ed.	11/01/2003	1:868003
18020	37th Ed.	09/01/2003	1:1444000
501	12th Ed.	11/01/2002	1:3500000
530	30th Ed.	03/23/2002	1:4860700
50	6th Ed.	06/01/2003	1:10000000

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Wreck	9.69 m	34° 24' 41.551" N	119° 39' 10.630" W	53291
1.2	Wreck	10.24 m	34° 24' 39.422" N	119° 39' 47.039" W	53290
1.3	AWOIS	[no data]	[no data]	[no data]	---
1.4	AWOIS	[no data]	[no data]	[no data]	---
1.5	AWOIS	[no data]	[no data]	[no data]	---
1.6	AWOIS	[no data]	[no data]	[no data]	---
1.7	AWOIS	[no data]	[no data]	[no data]	---
1.8	AWOIS	[no data]	[no data]	[no data]	---
1.9	AWOIS	[no data]	[no data]	[no data]	---
1.10	AWOIS	[no data]	[no data]	[no data]	---
1.11	AWOIS	[no data]	[no data]	[no data]	---
1.12	Wreck	[None]	34° 24' 47.015" N	119° 40' 12.433" W	53289

1.13	Wreck	[None]	34° 24' 37.490" N	119° 40' 43.226" W	53288
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1 - DR_AWOIS

1.1) Profile/Beam - 418/27 from f00512 / nrt6_s3003_em3000_nad83 / 2005-334 / 002_1944

Primary Feature for AWOIS Item #53291

Search Position: 34° 24' 41.470" N, 119° 39' 10.600" W
Historical Depth: [None]
Search Radius: 150
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Survey Position: 34° 24' 41.551" N, 119° 39' 10.630" W
Least Depth: 9.69 m
Timestamp: 2005-334.19:45:34.259 (11/30/2005)
Survey Line: f00512 / nrt6_s3003_em3000_nad83 / 2005-334 / 002_1944
Profile/Beam: 418/27
Charts Affected: 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A search for AWOIS #53291 was conducted using SIMRAD EM3000 MBES and KLEIN 3000 side scan sonar.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00512/nrt6_s3003_em3000_nad83/2005-334/002_1944	418/27	0.00	000.0	Primary
f00512/nrt6_s3003_klein3000_sss200/2005-333/sonar_data051129131100	0001	2.39	241.9	Secondary
SB Awois	AWOIS # 53291	2.63	342.8	Secondary
f00512/nrt6_s3003_klein3000_sss100/2005-333/sonar_data051129130900	0001	4.58	179.4	Secondary

Hydrographer Recommendations

Chart a wreck, least depth 9.7m (5.3 fm) at the present survey position.

Cartographically-Rounded Depth (Affected Charts):

5 ¼fm (18725_1, 18720_1, 18022_1, 18020_1, 530_1)

9.7m (501_1, 50_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 2:dangerous wreck
VALSOU - 9.685 m
WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

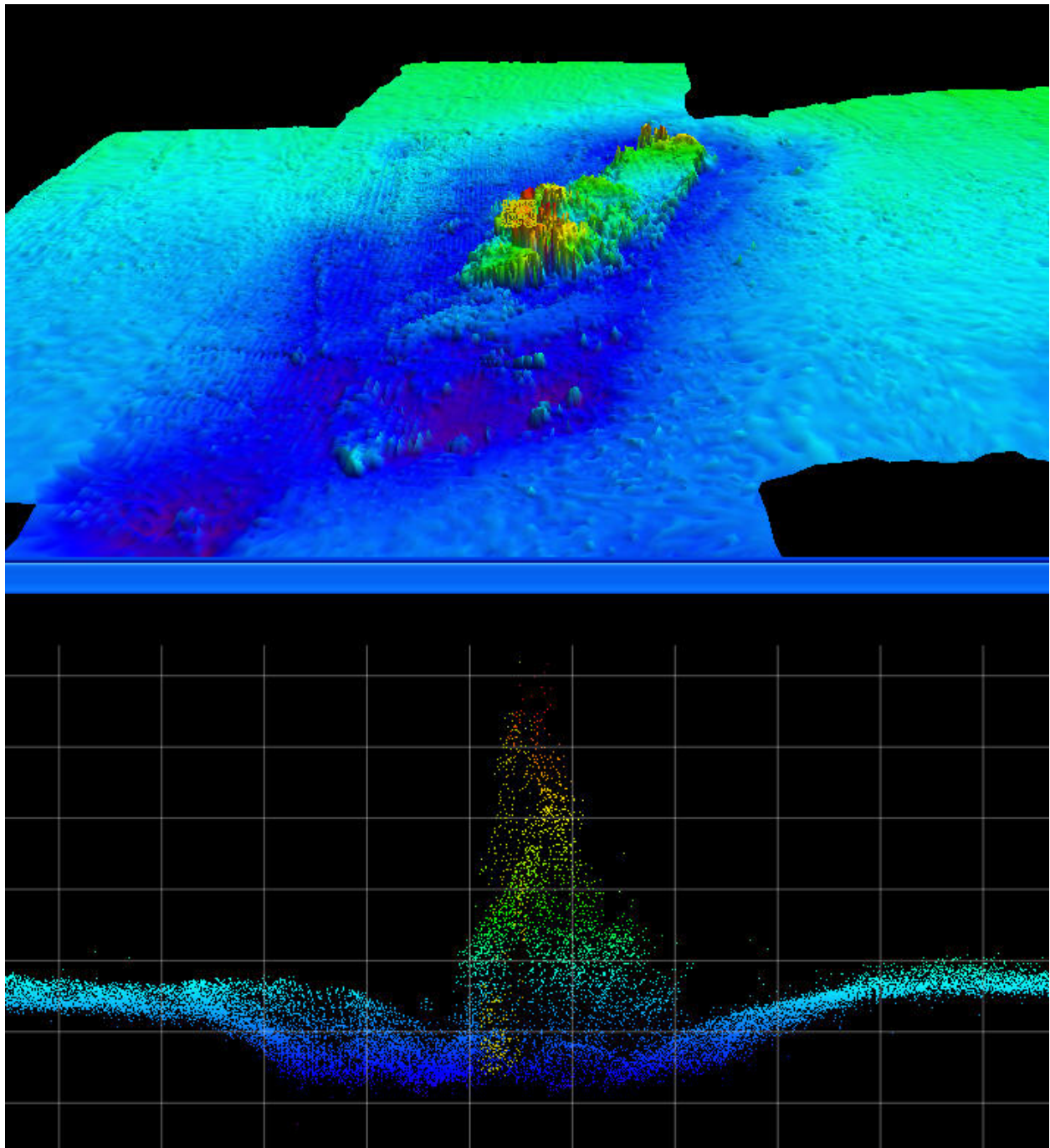


Figure 1.1.1

1.2) Profile/Beam - 113/17 from f00512 / nrt6_s3003_em3000_nad83 / 2005-334 / newlinem

Primary Feature for AWOIS Item #53290

Search Position: 34° 24' 42.000" N, 119° 39' 48.000" W
Historical Depth: [None]
Search Radius: 200
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Survey Position: 34° 24' 39.422" N, 119° 39' 47.039" W
Least Depth: 10.24 m
Timestamp: 2005-334.20:00:34.044 (11/30/2005)
Survey Line: f00512 / nrt6_s3003_em3000_nad83 / 2005-334 / newlinem
Profile/Beam: 113/17
Charts Affected: 18725_2, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A search for AWOIS #53290 was conducted using 200% Side scan sonar and SIMRAD EM3000 MBES. A wreck was found in the surveyed position.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00512/nrt6_s3003_em3000_nad83/2005-334/newlinem	113/17	0.00	000.0	Primary
f00512/nrt6_s3003_klein3000_sss100/2005-333/sonar_data051129135300	0001	3.73	313.0	Secondary
f00512/nrt6_s3003_klein3000_sss200/2005-333/sonar_data051129132800	0001	3.87	243.3	Secondary
f00512/nrt6_s3003_klein3000_sss200/2005-333/sonar_data051129134400	0001	9.98	065.2	Secondary
f00512/nrt6_s3003_klein3000_sss100/2005-333/sonar_data051129131800	0001	10.32	202.7	Secondary
SB Awois	AWOIS # 53290	83.43	162.8	Secondary

Hydrographer Recommendations

Delete charted Wreck PA at position 34°24'42.000" N, -119°39'48.000" W. Chart a dangerous wreck, least depth 10.2m (5.6 fm) at the present surveyed position.

Cartographically-Rounded Depth (Affected Charts):

5 ½fm (18725_2, 18725_1, 18720_1, 18022_1, 18020_1, 530_1)

10.2m (501_1, 50_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 2:dangerous wreck
VALSOU - 10.237 m
WATLEV - 3:always under water/submerged

Office Notes

Concur.

1.3) AWOIS #50339 - UNKNOWN disproved

No Primary Survey Feature for this AWOIS Item

Search Position: 34° 14' 37.210" N, 119° 16' 37.600" W
Historical Depth: [None]
Search Radius: 250
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18725_4, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A 200% side scan sonar search was conducted for AWOIS #50339. An object was found in the search radius, but as this search radius overlaps with that of AWOIS #53293, there is insufficient evidence to classify this object as either AWOIS item.

Feature Correlation

Address	Feature	Range	Azimuth	Status
SB Awois	AWOIS # 50339	0.00	000.0	Primary

Hydrographer Recommendations

Retain as charted.

S-57 Data

[None]

Office Notes

AHB: Do not concur. Item found was less than 1-ft in height and does not appear to be a wreck. Remove dangerous submerged wreck "ED" from chart.

1.4) AWOIS #50340 - UNKNOWN disproved wreck

No Primary Survey Feature for this AWOIS Item

Search Position: 34° 14' 33.010" N, 119° 16' 56.800" W
Historical Depth: [None]
Search Radius: 250
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18725_4, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

AHB: Area swept by 200% side scan. No wreck seen.

Feature Correlation

Address	Feature	Range	Azimuth	Status
SB Awois	AWOIS # 50340	0.00	000.0	Primary

Hydrographer Recommendations

Delete Submerged wreck ED from chart.

S-57 Data

[None]

Office Notes

AHB modified.

1.5) AWOIS #53285 - UNKNOWN disproved wreck

No Primary Survey Feature for this AWOIS Item

Search Position: 34° 24' 20.000" N, 119° 41' 31.000" W
Historical Depth: [None]
Search Radius: 100
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18725_2, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A search of the slip containing the AWOIS item was conducted with SIMRAD EM3000 MBES. No objects were found. During a telephone conversation with the Santa Barbara Harbourmaster's Office on June 30, 2006, the Harbourmaster confirmed that this wreck has been removed.

Feature Correlation

Address	Feature	Range	Azimuth	Status
SB Awois	AWOIS # 53285	0.00	000.0	Primary

Hydrographer Recommendations

AWOIS #53285 is disproved. Delete the charted wreck ED.

S-57 Data

[None]

Office Notes

Concur.

1.6) AWOIS #53286 - F/V GARLAND delete from chart

No Primary Survey Feature for this AWOIS Item

Search Position: 34° 24' 23.990" N, 119° 41' 11.480" W
Historical Depth: [None]
Search Radius: 125
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18725_2, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A partial 200% SSS and MBES search was conducted for AWOIS #53286. The search radius outside the 2fm curve was not completed.

Feature Correlation

Address	Feature	Range	Azimuth	Status
SB Awois	AWOIS # 53286	0.00	000.0	Primary

Hydrographer Recommendations

Retain as charted.

S-57 Data

Geo object 1: Wreck (WRECKS)

Office Notes

Do not concur. Search radius was covered as much as practicable in surf zone. No evidence of wreck was seen. Delete from chart.

1.7) AWOIS #53287 - UNKNOWN delete from chart**No Primary Survey Feature for this AWOIS Item**

Search Position: 34° 24' 40.990" N, 119° 40' 56.480" W
Historical Depth: [None]
Search Radius: 175
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18725_2, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A 200% MBES search for AWOIS #53287 was conducted over the southern region of the search area. The full search radius was not completed.

Feature Correlation

Address	Feature	Range	Azimuth	Status
SB Awois	AWOIS # 53287	0.00	000.0	Primary

Hydrographer Recommendations

Retain as charted.

S-57 Data

[None]

Office Notes

Do not concur. The search radius was completed as much as practicable in surf zone. No evidence of wreckage seen. Delete dangerous submerged wreck and text "ED" from chart.

1.8) AWOIS #53292 - UNKNOWN disproved

No Primary Survey Feature for this AWOIS Item

Search Position: 34° 14' 54.000" N, 119° 16' 48.000" W
Historical Depth: [None]
Search Radius: 200
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18725_4, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A search for AWOIS #53292 was conducted using 200% side scan sonar. No contacts were found by the field party.

Feature Correlation

Address	Feature	Range	Azimuth	Status
SB Awois	AWOIS # 53292	0.00	000.0	Primary

Hydrographer Recommendations

AWOIS #53292 is disproved. The hydrographer recommends deleting AWOIS #53292 from the chart.

S-57 Data

[None]

Office Notes

Concur.

1.9) AWOIS #53293 - OBSTRUCTION disproved

No Primary Survey Feature for this AWOIS Item

Search Position: 34° 14' 34.730" N, 119° 16' 41.070" W
Historical Depth: [None]
Search Radius: 200
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18725_4, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A 200% side scan sonar search was conducted for AWOIS #53293. An object was found in the search radius, but as this search radius overlaps with that of AWOIS #50339, there is insufficient evidence to classify this object as either AWOIS item.

Feature Correlation

Address	Feature	Range	Azimuth	Status
SB Awois	AWOIS # 53293	0.00	000.0	Primary

Hydrographer Recommendations

Retain as charted.

S-57 Data

[None]

Office Notes

Do not concur. Radius was covered with 200% side scan and no significant objects found. Remove "Subm obstns rep ED" from chart.

1.10) AWOIS #53294 - OBSTRUCTION disproved

No Primary Survey Feature for this AWOIS Item

Search Position: 34° 14' 33.430" N, 119° 16' 36.790" W
Historical Depth: [None]
Search Radius: 200
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18725_4, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

The search area for AWOIS #53294 was surveyed with 200% side scan sonar. No features were found in the search radius.

Feature Correlation

Address	Feature	Range	Azimuth	Status
SB Awois	AWOIS # 53294	0.00	000.0	Primary

Hydrographer Recommendations

AWOIS #53294 is disproved. Recommend deleting the charted "Subm obstr. rep ED".

S-57 Data

[None]

Office Notes

Concur.

1.11) AWOIS #53295 - #53295 - Fish Haven retain**No Primary Survey Feature for this AWOIS Item**

Search Position: 34° 14' 37.010" N, 119° 17' 59.400" W
Historical Depth: [None]
Search Radius: 300
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18725_4, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
SB Awois	AWOIS # 53295	0.00	000.0	Primary

Hydrographer Recommendations

Retain as charted.

S-57 Data

[None]

Office Notes**Concur.**

1.12) Contact/Point - 0002/1 from f00512 / nrt6_s3003_klein3000_sss200 / 2005-333 / sonar_data051129140800

Primary Feature for AWOIS Item #53289

Search Position: 34° 24' 48.000" N, 119° 40' 12.000" W
Historical Depth: [None]
Search Radius: 200
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Survey Position: 34° 24' 47.015" N, 119° 40' 12.433" W
Least Depth: [None]
Timestamp: 2006-180.05:46:54 (06/29/2006)
Survey Line: f00512 / nrt6_s3003_klein3000_sss200 / 2005-333 / sonar_data051129140800
Contact/Point: 0002/1
Charts Affected: 18725_2, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A search was conducted for AWOIS #53289. A wreck was found in the surveyed position. There is no least depth for this position.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00512/nrt6_s3003_klein3000_sss200/2005-333/sonar_data051129140800	0002	0.00	000.0	Primary
f00512/nrt6_s3003_klein3000_sss100/2005-333/sonar_data051129140100	0001	9.29	231.2	Secondary (grouped)
SB Awois	AWOIS # 53289	32.42	200.0	Secondary

Hydrographer Recommendations

Delete the charted wreck at position 34°24'48.000" N, -119°40'12.000" W. Chart a dangerous wreck, least depth unknown, at the present surveyed position.

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 2:dangerous wreck
TECSOU - 2:found by side scan sonar
WATLEV - 3:always under water/submerged

Office Notes

Do not concur. Imagery shows item consistent with other insignificant items in area. AWOIS #53289 is disproved.

1.13) Contact/Point - 0002/1 from f00512 / nrt6_s3003_klein3000_sss200 / 2005-333 / sonar_data051129143500

Primary Feature for AWOIS Item #53288

Search Position: 34° 24' 34.200" N, 119° 40' 42.000" W
Historical Depth: [None]
Search Radius: 175
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Survey Position: 34° 24' 37.490" N, 119° 40' 43.226" W
Least Depth: [None]
Timestamp: 2006-180.05:55:31 (06/29/2006)
Survey Line: f00512 / nrt6_s3003_klein3000_sss200 / 2005-333 / sonar_data051129143500
Contact/Point: 0002/1
Charts Affected: 18725_2, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

small wreck found

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00512/nrt6_s3003_klein3000_sss200/2005-333/sonar_data051129143500	0002	0.00	000.0	Primary
f00512/nrt6_s3003_klein3000_sss100/2005-333/sonar_data051129144300	0001	1.99	272.2	Secondary
f00512/nrt6_s3003_klein3000_sss100/2005-333/sonar_data051129144300	0002	2.02	281.4	Secondary
SB Awois	AWOIS # 53288	106.49	342.8	Secondary

Hydrographer Recommendations

Chart dangerous submerged wreck at surveyed position, depth unknown.

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: TECSOU - 2:found by side scan sonar
WATLEV - 3:always under water/submerged

Office Notes

Concur.

F00512 Uncharted Items

Registry Number: F00512
State: California
Locality: Santa Barbara Channel
Sub-locality: Santa Barbara and Ventura Harbour
Project Number: S-L919-NRT6-05
Survey Dates: 06/29/2006 - 06/30/2006

Charts Affected

Number	Version	Date	Scale
18725	27th Ed.	06/01/2003	1:25000
18720	32nd Ed.	01/01/2005	1:232188
18022	34th Ed.	11/01/2003	1:868003
18020	37th Ed.	09/01/2003	1:1444000
501	12th Ed.	11/01/2002	1:3500000
530	30th Ed.	03/23/2002	1:4860700
50	6th Ed.	06/01/2003	1:10000000

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	SSS	[None]	34° 14' 34.414" N	119° 16' 54.494" W	---
1.2	Wreck	[None]	34° 24' 37.494" N	119° 40' 43.274" W	---

1 - DR_UnCharted

1.1) Contact/Point - 0003/1 from f00512 / nrt6_s3003_klein3000_sss200 / 2005-335 / sonar_data051201095200

Survey Summary

Survey Position: 34° 14' 34.414" N, 119° 16' 54.494" W
Least Depth: [None]
Timestamp: 2006-181.02:56:34 (06/30/2006)
Survey Line: f00512 / nrt6_s3003_klein3000_sss200 / 2005-335 / sonar_data051201095200
Contact/Point: 0003/1
Charts Affected: 18725_4, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A 200% side scan sonar search for AWOIS 50340 was conducted over the search area and an object was found. This object is small and there is no bathymetry over the position.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00512/nrt6_s3003_klein3000_sss200/2005-335/sonar_data051201095200	0003	0.00	000.0	Primary
f00512/nrt6_s3003_klein3000_sss100/2005-335/sonar_data051201102700	0001	3.80	013.9	Secondary

Hydrographer Recommendations

Delete the charted wreck ED. Chart a dangerous wreck, least depth unknown, at the present surveyed position.

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 2:depth unknown
 TECSOU - 2:found by side scan sonar
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged
Geo object 2: Wreck (WRECKS)
Attributes: CATWRK - 2:dangerous wreck
 WATLEV - 3:always under water/submerged

Office Notes

Do not concur. The item is too small to be a wreck. 200% side scan disproves the wreck and therefore charted dangerous submerged wreck "ED" should be removed. Chart obstruction, "PA", depth reported 6.17 fms

1.2) Contact/Point - 0001/1 from f00512 / nrt6_s3003_klein3000_sss200 / 2005-333 / sonar_data051129143500

Survey Summary

Survey Position: 34° 24' 37.494" N, 119° 40' 43.274" W
Least Depth: [None]
Timestamp: 2006-180.05:55:06 (06/29/2006)
Survey Line: f00512 / nrt6_s3003_klein3000_sss200 / 2005-333 / sonar_data051129143500
Contact/Point: 0001/1
Charts Affected: 18725_2, 18725_1, 18720_1, 18022_1, 18020_1, 501_1, 530_1, 50_1

Remarks:

A 200% side scan sonar search was conducted for AWOIS #53288. A submerged wreck was located.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00512/nrt6_s3003_klein3000_sss200/2005-333/sonar_data051129143500	0001	0.00	000.0	Primary

Hydrographer Recommendations

Chart a dangerous wreck, least depth unknown, at the present surveyed position.

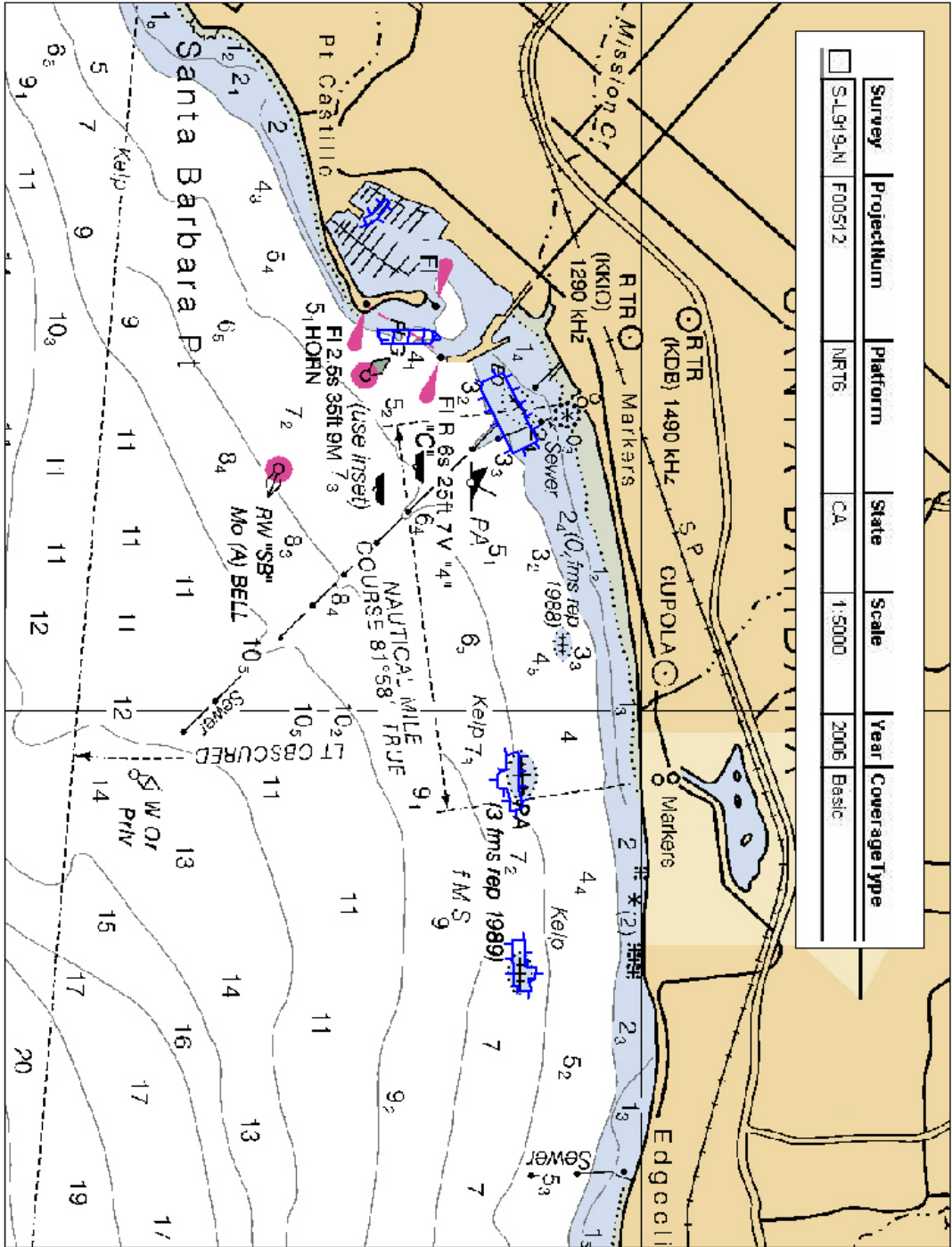
S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 2:dangerous wreck
 CONVIS - 2:not visual conspicuous
 HEIGHT - 1 m
 TECSOU - 2:found by side scan sonar
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

Concur with Clarification. Chart dangerous submerged wreck with the text "PA." Depth 3.0 fathoms.

APPENDIX III:
PROGRESS SKETCH



APPENDIX IV:
TIDES AND WATER LEVELS

February 21, 2006

MEMORANDUM FOR: Chief, Requirements and Development Division, N/OPS1

FROM: , NRT6

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

1. Tide Note
2. Final zoning in MapInfo and .MIX format
3. Six Minute Water Level data (Co-ops web site)

Transmit data to:

NOAA/NOS/Atlantic Hydrographic Branch
N/CS33, Building #2
439 West York Street
Norfolk, VA 23510
ATTN: Chief AHB

These data are required for the processing of the following hydrographic survey:

Project No.: S-L919-NRT6-05
Registry No.: F00512
State: CA
Locality: Santa Barbara Channel
Sublocality: Santa Barbara Harbor and Ventura Harbor

Attachments containing:

- 1) an Abstract of Times of Hydrography,
- 2) digital MID MIF files of the track lines from pydro on CD/diskette

cc: N/CS33

Year_DOY	Min Time	Max Time
2005_334	16:02:34	20:08:30

APPENDIX V:
SUPPLEMENTAL RECORDS AND CORRESPONDANCE

Dton1.txt

To whom it may concern

Chart letter 748/06 and DD7551 have been processed by the Nautical Data Branch and put into Products Branch A's box. This involves shoaling in the area of Sanata Barbara, CA harbor in the vicinity of 34°24'23.542"N 119°41'11.258"W.

This affects the following charts: 18725 (KAPP 1885)
18725 (KAPP 1884)

It also affects ENC Cell US5CA65M.

This was reported by Pacific Hydrographic Branch.

REFERENCES: FO0512
S-L919-NRT6-05

Douglas C. Harpine

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to Accompany
Survey F00512 (2005)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

The following software was used to process data at the Atlantic Hydrographic Branch:

CARIS HIPS/SIPS version 6.1 SP2 HF 1
CARIS Bathy Manager version 2.1 SP1 HF 1-8
DKART INSPECTOR, version 5.0 Build 732 SP1
CARIS HOM version 3.3 SP3 HF8
CARIS S57 Composer version 1.0 HF1

B.2. QUALITY CONTROL

B.2.1. H-Cell

The AHB source depth grid for the survey's nautical chart update product entailed the field's original finalized 1m grids, combined at 1 meter resolution.. The survey scale selected soundings were extracted from this 1m surface. The selected sounding set is approximately 10 to 20 times the number of charted depths. Only one chart scale sounding was collected and is a subset of the survey scale selected soundings. The surface model was referenced when selecting the chart scale sounding, to ensure that the selected sounding portrayed the bathymetry within the common area.

The SAHOB files included sounding selections (SOUNDG), features (SBDARE), and cartographic Blue Notes. The limited and sparcity of soundings precluded the use of META layers. The individual SAHOB files were inserted into one BASE Manager feature layer and exported to S57 format in order to create the H-Cell deliverable.

The completed H-Cell was exported as a Base Cell File (ENC.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart units (ENC_CU.000) with all values measured in fathoms following NOAA sounding rounding rules.

Chart compilation was performed by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

The F00512 CARIS H-Cell final deliverables include the following products:

US500512_CU.000	1:12,500 Scale	F00512 H-Cell with Chart Scale Selected Soundings
US500512_SS.000	1:5,000 Scale	F00512 Selected Soundings
US500512_Bluenotes.000	1:12,500 Scale	F00512 Cartographic Notes

B.2.3. BASE Surfaces

The following Fieldsheets were generated for this H-Cell:

<u>Fieldsheet</u>	<u># BASE Surfaces</u>	<u>Resolution</u>
F00512_1	1	1m Shallow
F00512_2	1	1m Shallow
F00512_3	1	1m Shallow
F00512_4	1	1m Shallow
F00512_5	1	1m Shallow
F00512_Combined	1	1m

All soundings were on items so each item had its own unique fieldsheet.

C. VERTICAL AND HORIZONTAL CONTROL

Sounding datum is Mean Lower Low Water (MLLW). Vertical datum is Mean High Water (MHW). See Descriptive Report C.1 for discussion of Tide Zoning.

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 11.

D. RESULTS AND RECOMMENDATIONS

- D.1 CHART COMPARISON**
- 18725 1 (28th Edition, Nov./06)
Corrected through NM 11/11/06
Corrected through LNM 10/31/06
Scale 1:50,000
 - 18725 2 (28th Edition, Nov./06)
Corrected through NM 11/11/06
Corrected through LNM 10/31/06
Scale 1:12,500
 - 18725 4 (28th Edition, Nov./06)
Corrected through NM 11/11/06
Corrected through LNM 10/31/06
Scale 1:25,000

ENC Comparison

US5CA65M

Port Hueneme to Santa Barbara

Edition 15

Update Application Date 2008-06-24

Issue Date 2008-07-21

References: Chart 18725

D.1.3 AWOIS Items

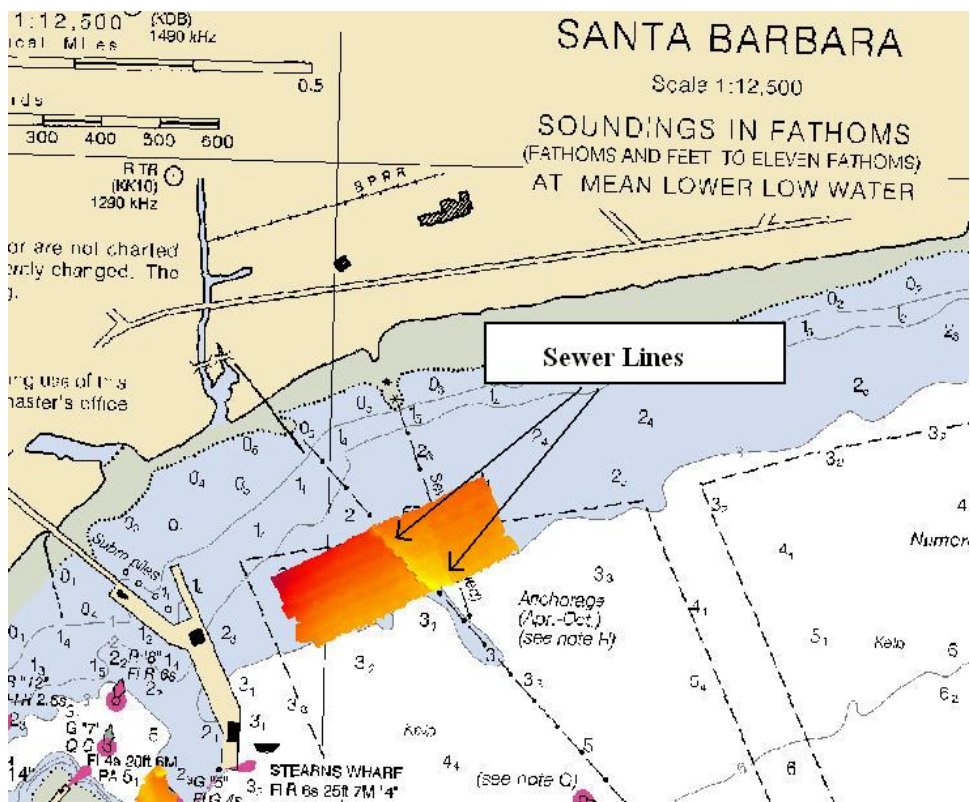
Some AWOIS item investigation search radii were located in the “surf zone” and thus not fully “developed” by the field. The field recommended these items be retained. AHB reviewed these items and concluded that they were disproved. See office notes of AWOIS items in Appendix II of the Descriptive Report for clarification.

D.1.4 Significant Uncharted Features

Two uncharted features were deemed chartable by AHB. They are described in detail in the pdf file “F00512_Uncharted_Report” located in Appendix II of the Descriptive Report.

D.2.5 Submarine Cables and Pipelines

The following image shows the general agreement with the chart as to the position and orientation of an abandoned and active sewer pipeline.



D.2. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Charts and Electronic Navigation Charts (ENC) used for compiling the present survey.

D.3. ADEQUACY OF SURVEY

The present survey is adequate to supersede charted features within the common area. Very little bathymetry was obtained but generally agreed with the present soundings with a couple exceptions. Any features not specifically addressed either in the H-Cell BASE Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : March 30, 2006

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: S-L919-NRT6-2005
HYDROGRAPHIC SHEET: F00512

LOCALITY: Santa Barbara Harbor and Ventura Harbor, CA
TIME PERIOD: November 30, 2005

TIDE STATION USED: 941-1340 Santa Barbara, CA
Lat. 34 24.27'N Long. 119 41.55' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.413 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: PAC18

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

Fa 

CHIEF, PRODUCTS AND SERVICES DIVISION



APPROVAL SHEET
F00512

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, representation of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive reviews per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

Wesley G Kitt
Physical Scientist
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: _____

Shepard Smith
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch