FIELD TIDE NOTE

OPR-L123-PHP-87

San Francisco Bay, California (Items)

Reductions

Soundings on the field sheet were reduced on the basis of predicted tides for San Francisco, Golden Gate, Presidio, Fort Point, Calif., station number 941-4290. Tide correctors were generated at 0.2 ft intervals using the PDP-8e computer system and program AM 500 "Predicted Tide Generator".

Stations

Three permanent tide stations bracket the survey area. These three stations are operated by NOAA, Pacific Operations Group, N/OMA 1214. The gage at San Francisco, Fort Point 941-4290 is to the southwest of the survey area, Alameda (Alameda NAS) 941-4750 is to the south, and Port Chicago (Concord, Ca.) 951-5144 is to the east. Frequent checks with POG confirmed that there were no significant breaks in the data from these stations. Alameda 941-4750 was disabled by a jammed punch on 8 May 1987 and returned to service on 10 May 1987. This break did not exceed 72 hrs.

The tide station operated by PHP during this survey is:

Mare Island Naval Shipyard, Ca. 941-5218
Position: 38/04/10.5 N 122/15/03.0 W
Digital Record: 20.2 ft.
Duration: 23 August 1985 to present.

Installation, Levels, and Operation:

Mare Island Naval Shipyard, Ca. (941-5218) was installed on 23 August 1985 during survey H-10182 - San Pablo Bay, Ca., Petaluma to Napa River. The station occupies the historic site on pier 35 at the south end of Mare Island. A new staff was installed adjacent to the old one on 27 May 1986. The new staff was levelled the same day. The old staff was discontinued on 6 June 1986 after a period of tandem observations. The same Fischer/Porter ADR (s/n 7404A0407M17), used for the previous survey, was used during this survey. This machine was running well at the end of the previous survey. No changes were made to the well or the ADR at the start Field Exam survey on Chart 18654.

Five historic bench marks were levelled on 18 March 1987. These levels were normal six month maintenance but they acted as beginning levels for Field Exam survey work on Chart 18654. Removal levels at the completion of survey work on this chart were performed on 27 May 1987. The station was discontinued at this time. This station has performed well during the survey. No significant data breaks have occured.

Tide Zone Correctors

Predicted tides from the San Francisco, Fort Point tide gage were adjusted by the application of correctors supplied by NOAA, Office of Oceanography and Marine Assistance, Sea and Lake Levels Branch, Rockville, Md (N/OMA 121).These correctors accompany project instructions OPR-L123-PHP-87, dated 10 Feb. 1987.

The correctors used for this Field Exam Survey are as follows:

CHART 18654

AWOIS 50486 (mistakenly labled 50468 in the project instuctions).
AWOIS 50492, AWOIS 50498, and AWOIS 50499.

+ 1 hr. 10 min. High Water
+ 1 hr. 30 min. Low Water
X 1.05 Height Ratio

AWOIS 50519, AWOIS 50520, and AWOIS 50521

+ 1 hr. 00 min. High Water
+ 1 hr. 00 min. Low Water
X 1.05 Height Ratio

AWOIS 50530 and AWOIS 50531

+ 1 hr. 25 min. High Water
+ 1 hr. 50 min. Low Water
X 1.05 Height Ratio

All gages were installed on substantial and secure foundations. No major problems were encountered with gage to staff movement. All levels were run to third order accuracy using the Leitz B1 Automatic Level s/n 21303 and a Keuffel and Esser 1 cm. Metagrad rod s/n 81-0167.

No survey data was acquired without the required tide support.

Universal Co-ordinated Time (UTC) was used throughout the survey for tidal record keeping at all tide stations. Pacific Standard Time (120 W.) was used at the permanent stations operated by POG N/OMA 1214 - Fort Point, Ca. 941-4290 and Port Chicago, Ca. 941-51454.

Submitted by

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Approved by

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