



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: October 23, 1997

This tide note is a revision and supersedes that of September 11, 1997.

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-0328-RA

HYDROGRAPHIC SHEET: H-10740

LOCALITY: Northern Stephens Passage, AK.
(Sheet M and Inset Sheet N)

TIME PERIOD: April 10 - April 30, 1997

TIDE STATION USED: 945-2131 Taku Inlet (Middle),
Taku River Entrance, AK.
Lat. 58° 22.0'N Lon. 134° 03.1'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.904 meters

TIDE STATION USED: 945-2141 Annex Creek Entrance, AK.
Lat. 58° 18.7'N Lon. 134° 06.8'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.589 meters

TIDE STATION USED: 945-2249 Young Bay, AK.
Lat. 58° 11.0'N Lon. 134° 35.2'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.690 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: SEA6 & SEA7
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.



Note 2:

Juneau, AK was used as control for datum determination for all subordinate tide stations for this survey. Relative sea level trends show that the areas of Juneau Alaska are undergoing continual uplift. The relative sea level trend observed at Juneau for the time period 1950 through 1993 is -0.0114 m/yr. with a standard error of 0.0005 m/yr. As a result of high rate of sea level change, the 1960 to 1978 Tidal Epoch value of Mean Lower Low Water (MLLW) used as chart datum and reference datum for NOS tidal predictions does not reflect present conditions. The data are under review to determine an updated value of MLLW. An interim value was computed for Juneau, based on the series of data from 1989 to 1991 and controlled by the 1960-1978 Epoch datums at Ketchikan which is more stable. The provided values adjust the chart datum to a more realistic level and in a direction that is more conservative for navigation purposes.


Note 3:

The shoal areas of Taku Inlet beginning at the zone identified as "SEA 6" exhibit different tidal characteristics than areas south of that zone. The effects of drastically changing bathymetry followed by extremely shoal areas, result in extreme phase lags during the falling tide combined with a reduced tide range. In fact, some areas north of and within "SEA 6" may be "dry" at low tide. The characteristics are assumed to be uniform within the entire zone, although this cannot be proven without additional tide stations. South of Taku Inlet Middle, a station at Annex Creek Entrance exhibited a mean tide range (Mn) of 4.114 meters, consistent with other Northern Stephens Passage stations. Taku Inlet Middle exhibited a sudden drop in range at 3.661 meters. Historical records indicate a station north of Taku Inlet Middle at Taku Point exhibited a significantly higher range of tide at 4.298 meters, however, these data are from a 1937 short series with considerable uncertainties. This, combined with expected changes to the bathymetry due to glacial retreating and land uplift occurring since these measurements were taken, the historical range at Taku Pt. is considered to be no longer valid. Only water level data from Taku Inlet Middle (945-2131) should be used to reduce soundings in zone "SEA 6" to MLLW.

However, since hydrography was conducted in zone SEA6 from April 10 to April 12 and from April 22 to April 27 when no data were available for Taku Inlet Middle, a special allowance is made to use data from Young Bay (945-2249) with zoning correctors. This was only possible because of the time periods for which hydrography were conducted were near the periods of neap tides (4/10 - 4/18). The period from 4/22 to 4/27 was not during neap tides, however, the times of hydrography were not at low tide when there is maximum distortion due to the shallow

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water effects. The potential for reduced accuracy exists on April 23, when hydrography was conducted near low tide. For hydrography during April 10 - 12 and 22 - 27, 1997, when data are not available for Taku Inlet (Middle), apply a +6 minute time correction and a X0.97 range ratio to the data from Young Bay (945-2249).



CHIEF, TIDAL ANALYSIS BRANCH