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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: December 14, 1987

MARINE CENTER: Pacific

OPR: P180

HYDROGRAPHIC SHEET: H-10242

LOCALITY: Southern Alaska Peninsula, Alaska

TIME PERIOD: May 29 - September 5, 1987

TIDE STATION(S) USED: 945-8471 Poltava Island, AK -0.49
945-8498 Port Wrangell, AK 3.91

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 945-8471 = 3.91 ft.* REVERSE
945-8498 = -0.49 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 945-8471 = 9.7 ft.
945-8498 = 9.7 ft.

REMARKS: RECOMMENDED ZONING

1. East of longitude 156 34.25' zone direct on 945-8471.
2. West of longitude 156 34.25' zone direct on 945-8498.

* = FROM PHONE CONV. W/ JOE M. ON 12-7-87

Bruce R. Hubbard
CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

Field Tide Note
Southern Alaska Peninsula, Alaska
May - September, 1987

Field tide reduction of sounding data was based on predicted tides from Kodiak, Alaska corrected to Port Wrangell and Cape Providence. Tide correctors were interpolated by PDP/8 computer using AM 500. All times are UTC.

SITE	LOCATION	PERIOD
POLTAVA ISLAND 945-8471	57/00/48 N 156/29/00 W	28 May - 5 September
PORT WRANGELL 945-8498	57/03/11 N 156/36/28 W	28 May - 5 September
DERICKSON ISLAND 945-8522	56/59/40 N 156/43/10 W	9 July - 2 September

POLTAVA ISLAND

A Bristol Tide Gage (S/N 73A 235) was installed and operational on 28 May (DN 148). At 2130 UTC 16 June, the orifice broke loose from its anchor due to an exceptionally strong storm surge. FAIRWEATHER divers resecured the tubing and orifice on 18 June (DN 169). At 2000 UTC the gage was observed for a three hour time period and found to be functioning properly. From 0930 UTC 25 July through 1900 UTC 19 August, the tide record was interrupted when the chart drive stopped. (Note that during this time period FAIRWEATHER was working on a project in Cook Inlet and could not tend the gage.) The record was also interrupted between 1715 UTC 4 September and 1910 UTC 5 September, as the paper jumped sprocket holes and was found off track thus producing a time and height uncertainty.

The gage to staff difference was 11.2 feet until 1505 UTC 23 August when the lag bolt anchoring the orifice pulled loose, lowering the height of the orifice opening by approximately one-half foot. The orifice remained stable at this new location through the end of the survey. The mean gage to staff comparision was 11.8 feet from 23 August to 5 September, when the gage was removed.

LEVELS

A difference of 8mm was obtained between opening and closing levels for the segment from the staff to benchmark A. The ending levels agree well with the levels run to the same staff during the 1986 field season; therefore, staff movement is not suspected.

PORT WRANGELL

A Bristol Tide Gage (S/N 72A 235) was installed 28 May (DN 148). Review of the marigram showed an oscillation with a period of approximately 10 minutes and an amplitude of 0.2 feet superimposed upon the normal tide curve. The chart drive was replaced to isolate the origin of the oscillation (i.e., mechanical or chart drive related), but this had no effect. The gage was replaced on 10 July on a recommendation from the Pacific Operations Group. There was no change observed in the characteristic of the curve with the new gage. The source of the curve has never been resolved. It may be due to a local effect in Port Wrangell such as a seiche.

The record for the Port Wrangell gage was interrupted between 0900 UTC 9 July and 0110 UTC 10 July when the chart drive stopped. A new tide gage (S/N 64A 11033) was installed and operational at 1940 UTC 10 July. This gage ran well, but on several occasions stopped recording when the flow of ink was interrupted. The record was interrupted from 1500 UTC 11 July through 1640 UTC 11 July and again 2040 UTC 13 July through 1145 UTC 14 July. While FAIRWEATHER was in Cook Inlet, the chart drive stopped from 1715 UTC 21 July to 1921 UTC 19 August. The ink flow again stopped and the record was interrupted between 1915 UTC 20 August and 1700 UTC 21 August. The paper jammed once at 1715 UTC 1 September, afterwards operating without problem until its removal at 0041 UTC 6 September.

The difference in the gage to staff reading prior to July 10 (DN 191) was 6.1 feet; throughout the remainder of the survey the difference was 7.0 feet. This difference is due to a change of gage on 10 July.

LEVELS

Beginning and ending levels showed excellent agreement.

DERICKSON ISLAND

Two Bristol Tide Gages were installed at Derickson Island: a primary gage (S/N 73A 233) and a backup gage (S/N 73A 229). Both gages became operational at 2100 UTC 9 July. The primary gage operated without problem until its clock stopped from 1000 UTC 25 July to 1633 UTC 19 August while FAIRWEATHER was in Cook Inlet. The backup gage was down from 2140 UTC 21 July to 1830 UTC 19 August for the same reason.

The gage to staff difference for the primary gage averaged 4.6 feet. The gage to staff difference for the backup gage was 2.8 feet. Both gages were removed 2 September at 1945 UTC.

It should be noted that no hydrography was run this field season that requires the use of Derickson Island tide gage data.

LEVELS

Comparison of beginning and ending levels shows a discrepancy of 13mm between the staff and benchmark A. This discrepancy is attributed to the possibility that the staff settled and that two different staff stops were used. For the initial leveling run the staff stop was placed at 2.25 feet. During the final level run the tide was too high to use the original stop necessitating the placement of a second stop at 9.0 feet. The tide level was not sufficiently low before leaving the site to allow for a check on the location of the initial staff stop.

ZONING

Zoning used on the final field sheets for surveys H-10242 and H-10243 (as given in the project instructions for OPR-P180-FA-87) is as follows:

High Water	Low Water	Height Ratio
+ 0 hrs 20 min	+ 0 hrs 40 min	X 1.28