

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

(PAGE 2)

DATE: December 30, 1987

MARINE CENTER: Pacific

OPR:R184

HYDROGRAPHIC SHEET: H-10251

REMARKS: RECOMMENDED ZONING:

1. North of a line formed by 2 points located at 58 55.0' 58 57.5'
160 ~~31.0'~~ 160 39.0'
zone direct on 946-5358. *
2. South of the previous line to a line formed by 2 points
located at 58 ~~51.0'~~ 58 55.5' zone on 946-5358 and apply a
160 ~~31.0'~~ 160 43.0'
X0.96 range ratio to all heights.
50' 30.0"
3. South of the previous line to a line formed by 2 points
located across Hagemeister Strait at 58 49.0' 58 52.5'
160 41.5' 160 48.0'
and then from this point across latitude 58 49.0' to the edge
of the sheet. Zone on 946-5358 and apply a -10 minute time
correction and a X0.90 range ratio to all heights.
4. In Hagemeister Strait, south of the previous line. Zone direct
on 946-5234.
5. On outer Hagemeister Island, south of latitude 58 49.0' zone
on 946-5358 and apply a -20 minute time correction and a X0.90
range ratio to all heights. (NO HYDRO HERE)

* = FROM PHONE CONV. W/ JOE M. ON 1-14-88.

FIELD TIDE NOTE OPR-R184-RA-87

Field-tide reduction of soundings was based on predicted tides computed with program AM 500, Predicted Tide Generator, by using the predicted tides for Black Rock, Walrus Islands, Bristol Bay tide station (946-5182) provided by the Sea and Lake Levels branch of the National Ocean Service (attached). The correctors that were used for Togiak Bay (field sheet RA-20-4-87) are as follows:

Time Correction		Height
<u>High Water</u>	<u>Low Water</u>	<u>Ratio</u>
+0hr 30min	+0hr 30min	x1.06

Tide station information follows:

N.E. SUMMIT ISLAND, ALASKA (946-5283)

Geographic Locale- Lat: 58⁰ 50.0' N, Long: 160⁰ 12.6' W.

Installation Date- June 9, 1987

Removal Date- September 1, 1987

Gage Type- Bristol Bubbler (S/N 64A-11030). There was a backup Bristol Bubbler, (S/N 67A-10292), which was installed at the same time. The gages were placed inside a small wooden shed approximately ten feet above the high water line.

Staff- The staff was constructed from a 12 foot long piece of aluminum angle iron with 4-inch webs. It was secured to a rock ledge 100 feet east of bench mark 5283 D with lag bolts. The scale was standard vitrified mounted to the staff. The staff stop was a stainless steel hex machine bolt located at 18.100 feet on the staff. On June 30, it was discovered that the staff had been blown down in heavy weather and on July 7, the staff was recovered and replaced.

Staff Zero/Gage Zero

Before 7/7: For S/N 64A-11030: 2.0 feet
 For S/N 67A-10292: 3.2 feet

After 7/7: For S/N 64A-11030: 1.5 feet
 For S/N 67A-10292: 3.0 feet

Gage Time- Universal Coordinated Time

Bench Marks- Five bench marks were connected by the initial and final leveling. They are: 5283 A 1986, 5283 B 1986, 5283 C 1986, 5283 D 1986, 5283 E 1986.

Levels- Installation levels were run on June 9, connecting four of the five bench marks mentioned above. On July 7, the levels, connecting all five bench marks, were rerun in conjunction with the replacement of the staff. The new staff placement showed a 0.075m (0.24 ft) change in the elevation of the staff. Removal levels were run on September 1.

Marigram Records-

GAGE # 64A-11030: The marigram records are continuous from 6/10/87 at 0504Z until 6/26/87 at 1530 Z, and from 6/27/87 at 2206Z until 8/1/87 at 2112Z and from 8/1/87 at 2200Z until 9/1/87 at 1800Z when the gage was removed.

GAGE # 67A-10292: The marigram records are continuous from 6/11/87 at 0106 Z until 6/17/87 at 1620 Z and from 6/17/87 at 1741 until 6/29/87 at 2318 Z, and from 6/29/87 at 2330Z to 8/1/87 at 2112Z, and from 8/1/87 at 2200Z to 9/1/87 at 1800Z when the gage was removed.

Station Problems- On June 17, the chart drive(S/N 518515) in gage 67A-10292 was replaced with a new chart drive (S/N 513628) due to a problem with the take-up spool. On June 24, at approximately 0100 Z in gage 67A-10292 a "dip" in the marigram trace was noticed. On June 25, at approximately 0450 Z the marigram record for gage 64A-11030 showed a similar 0.5 ft "dip" near low tide; there was no apparent change in the staff to gage ratios in either of the two cases mentioned above. On June 26, gage 64A-11030 was discovered to have run out of paper. On June 30, the staff was discovered to have been blown down in heavy weather, and on July 7, the staff was recovered and replaced. During the period between June 30 and July 7 no hydrographic surveying was conducted.

WEST SIDE, TOGIAK BAY, ALASKA (946-5359)

Geographic Locale - Lat: 58⁰ 59.2' N Long: 160⁰ 32.5' W

Installation Date- June 7, 1987

Removal Date- August 31, 1987

Gage Type - Bristol Bay Bubbler (S/N 62A-92). Back up gage was a Bristol Bay Bubbler (S/N 68A-9335), which was installed at the same time. Both gages were placed against the face of a bluff approximately 20 feet above the high water line.

Staff - The staff was a 12 foot long 4"x4" aluminum angle iron secured to a rock ledge with lag bolts and supported by 2x4 wooden braces. The staff was located 87 feet southwest of BM A. The staff stop was at 16.871ft on the staff. On August 6 the staff was discovered missing, and was recovered and replaced on August 7.

Staff Zero/Gage Zero-

Before 8/7: For gage 62A-92: 5.0 ft
 For gage 68A-9335: 2.3 ft

After 8/7: For gage 62A-92: 5.0 ft
 For gage 68A-9335: 1.8 ft

Gage Time - Universal Coordinated Time

Bench Marks - Five bench marks were established upon installation of the gage; they are 5359 A 1987, 5359 B 1987, 5359 C 1987, 5359 D 1987, and 5359 E 1987.

Levels - Levels were run connecting the five bench marks upon installation of the gage on June 22. Levels were run between bench marks A, B, and E on August 7, when the staff was replaced. Final levels were run on August 31, upon the

removal of the gage. Installation and removal elevations agreed to within 0.005m (0.016ft). There was a decrease in elevation of 0.013m when the staff was replaced.

Marigram Records -

GAGE # 68A-9335: Marigram records are continuous from 6/26/87 at 2135Z until 7/6/87 at 0455Z when the chart drive ran out of paper, and from 7/8/87 at 0115 Z until 8/1/87 at 1648 Z, and from 8/1/87 at 1718 Z until 8/19/87 at 2227 Z when the paper was changed, and from 8/19/87 at 2308 Z until 8/31/87 at 2224 Z when the gage was removed.

GAGE # 62A-92: Marigram records are continuous from 6/25/87 at 2206 Z until 7/7/87 at 1530 Z when the chart drive ran out of paper, and from 7/8/87 at 0125 Z until 8/1/87 1648 Z and from 8/1/87 at 1718 Z until 8/20/87 at 2048 Z, and from 8/20/87 at 2100 Z until 8/22/87 1706 Z when the paper was replaced due to damp paper, and from 8/22/87 at 1718 Z until 8/31/87 at 2224 Z when the gage was removed.

Station Problems

On August 6, the staff was discovered to have been blown down, and was replaced on August 7. Otherwise there were no significant problems encountered with the station.

EAST SIDE, TOGIAK BAY, ALASKA (946-5346)

Geographic Locale - Lat: 58° 57.2' N Long: 160° 19.1' W

Installation Date - June 20, 1987

Removal Date - September 1, 1987

Gage Type - Bristol Bay Bubbler (S/N 73A-231). Back up gage was a Bristol Bay Bubbler (S/N 68A-9333), which was installed at the same time. Both gages were placed against the face of a bluff approximately 20 feet above the high water line. On 6/25/87 gage S/N 68A-9333 was replaced by gage S/N 67A-1029A due to poor staff to gage comparisons.

Staff - The staff was constructed of a 12 foot long 4"x4" aluminum angle iron with vitrified scale. The staff was bolted to a ledge 140 feet west of BM E. The staff stop was a stainless steel lag bolt at 16.010 feet on the staff.

Staff Zero/Gage Zero-

For gage 68A-9333: 4.3 ft

For gage 67A-1029A: 5.6 ft

For gage 73A-231: 4.6 ft

Gage Time - Universal Coordinated Time

Bench Marks - Five bench marks were established when the gage was installed. They are 5346 A 1987, 5346 B 1987, 5346 C 1987, 5346 D 1987, and 5346 E 1987.

Levels - Levels were run during installation on June 20, and upon removal on

September 1, connecting the five bench marks. The elevations of the bench marks at installation and removal agreed to within 0.005m (0.016ft).

Marigram Records -

GAGE # 68A-9333: The marigram is continuous from 6/21/87 at 0148Z until 6/24/87 at 0550Z when the gage was replaced by gage 67A-1029A.

GAGE # 67A-1029A: The marigram is continuous from 6/25/87 at 2318 Z until 7/21/87 at 1730 Z, and from 7/21/87/ at 1800 Z until 8/1/87 at 1854 Z, and from 8/1/87 at 1930 Z until 9/1/87 at 1627 Z when the gage was removed.

GAGE # 73A-231: The marigram is continuous from 6/21/87 at 01030 Z until 7/21/87 at 1730 Z, and from 7/21/87 at 1812 Z until 8/1/87 at 1854 Z, and from 8/1/87 at 1930 Z until 8/8/87 at 1912 Z when the gage was removed.

Station Problems- The gage 68A-9333 showed poor staff to gage ratios during three hour observations on 6/23/87 and was replaced on 6/25/87 with gage 67A-1029A.

The staff to gage readings for the month of August showed a drop of 0.5 ft for both gages as compared to the previous months. This would indicate a shift in the depth of the orifices. Since there was no movement of the staff the actual reason for the shift is not known.

There were minor problems with the chart drives losing time at this station.

**NORTH END HAGEMEISTER ISLAND, HAGEMEISTER STRAIT, ALASKA
(946-5234)**

Geographic Locale - Lat: 58⁰ 46.6' N Long: 160⁰ 46.6' W

Installation Date - July 19, 1987

Removal Date - September 2, 1987

Gage Type - Bristol Bay Bubbler (S/N 64A-11028). Backup gage was a Bristol Bay Bubbler (S/N 67A-16208), which was installed at the same time. Both gages were placed on top a bluff approximately 30 feet above the high water line.

Staff - The staff was located approximately 100 ft north of 5234 B 1987, and was secured with lag bolts to a rock at the north edge of a ledge. The staff was a 12 ft piece of aluminum angle iron with a 2 ft wooden extension. The staff stop was a machine bolt at 18.250 ft on the staff.

Staff Zero/Gage Zero-

GAGE # 64A-11028: 2.8 ft

GAGE # 67A-16208: 2.3 ft

Gage Time - Universal Coordinated Time

Bench Marks - Five bench marks were established during tide station installation, they are; 5234 A 1987, 5234 B 1987, 5234 C 1987, 5234 D 1987, and 5234 E 1987. All benchmarks are set in bedrock.

Levels - Levels were run, connecting the five bench marks described above, during installation and removal of the tide station. The elevations of the bench marks at installation and removal agreed to within 0.005m (0.016 ft).

Marigram Records -

GAGE # 64A-11028: Marigram records are continuous from 7/20/87 at 0330 Z until 8/1/87 at 2336 Z, and from 8/1/87 at 2354 Z until 8/31/87 at 1525 Z, and from 8/31/87 at 2248 Z until 9/2/87 at 1624 Z, when the gage was removed.

GAGE # 67A-16208: Marigram records are continuous from 7/2/87 at 0330 Z until 8/1/87 at 2336 Z, and from 8/1/87 at 2354 Z until 8/9/87 at 1918 Z, and from 8/9/87 at 1930 Z until 8/23/87 at 1642 Z, and from 8/23/87 at 1654 Z until 9/2/87 at 1624 Z, when the gage was removed.

Station Problems- None.

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TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: December 30, 1987

MARINE CENTER: Pacific

OPR: R184

HYDROGRAPHIC SHEET: H-10251

LOCALITY: West Togiak Bay, Alaska

TIME PERIOD: July 20 - August 22, 1987

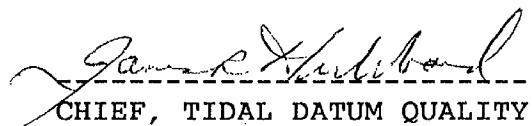
TIDE STATION(S) USED: 946-5234 North End Hagemeister Island, AK
946-5358 West Side Togiak Bay, AK

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 946-5234 = 11.27 ft.
946-5358 = 9.08 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 946-5234 = 8.0 ft.
946-5358 = 9.4 ft.

REMARKS: RECOMMENDED ZONING

1. See page 2.



CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION