FIELD TIDE NOTE

Field-tide reduction of soundings was based on predicted tides computed with program AM 500, Predicted Tide Generator, by using the predicted tides for the Juneau, Alaska, tide station (945-2210). The correctors that were used for Southeast End of Frederick Sound (H-10256) are as follows:

	Time Correction		Height
	High Water	Low Water	Ratio
Entire Sheet	-0hr 15min	-0hr 10min	0.98

Near the beginning of the survey, and again near the end, leveling was conducted at the Juneau tide station to connect five benchmarks with the staff. The opening levels were conducted by personnel from the RAINIER on October 9, 1987, and closing levels were conducted by personnel from the FAIRWEATHER on October 30 and November 2, 1987. The levels agreed to within 0.014 m.

The following tide stations were installed in the project area:

COSMOS POINT, FREDERICK SOUND, ALASKA (945-1335)

Geographic Locale - 56° 39.8' N, 132° 37.0' W

Installation Date - October 5, 1987

Removal Date - November 10, 1987

Gage Type - Bristol bubbler (S/N: 67A-16205). There was a backup Bristol bubbler gage (S/N: 64A-11028) installed at the same time. The gages were placed on a grassy patch 15 ft above the high water line. The orifices were secured to a steel plate which, in turn, was fastened to a rock face with tiewraps and an eyebolt by divers. The diver installation of the orifice was needed because of the steep bottom slope and the strong current in the area.

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 face with 2 x 4 wooden supports approximately 30 ft southeast of BM E. The scale was standard vitrified mounted to the staff, and the staff stop was a stainless steel hex machine bolt located at 16.630 ft on the staff.

Staff Zero/Gage Zero-
For Gage # 67A-16205: 2.4 ft

For Gage # 64A-11028: 2.4 ft

Gage Time - Universal Coordinated Time

Bench Marks - Three bench marks were recovered: BM 1, BM 2, and BM 3, established in 1962. Two additional bench marks were established for this project: 1335 D 1987 and 1335 E 1987. All five bench marks were set in bedrock.

Levels - Installation levels were run on October 5, connecting the five bench marks

described above. On October 6, levels were run from BM D to the water's edge to establish a water level to gage relationship. On October 7, the staff was connected to the benchmarks. Removal levels were run on November 10. The closing levels revealed a 0.3 m elevation difference of benchmark E compared to the installation levels. The leg from BM D to BM E was rerun and this confirmed that there was a reading error in the initial leveling. With the error corrected, the initial and final levels agreed to within 0.004 m.

Marigram Records -
GAGE # 64A-11028: Marigram records are continuous:

FROM	TO
10/6/87 @ 2124Z	10/14/87 @ 1700Z
10/14/87 @ 1736Z	10/17/87 @ 1230Z
10/17/87 @ 2236Z	10/19/87 @ 1705Z
10/19/87 @ 2348Z	10/30/87 @ 1820Z
10/31/87 @ 1642Z	11/10/87 @ 1806Z

GAGE # 67A-16205: Marigram records are continuous:

FROM	TO
10/5/87 @ 2218Z	10/14/87 @ 1700Z
10/14/87 @ 1712Z	10/27/87 @ 1909Z
10/27/87 @ 1911Z	11/10/87 @ 1806Z

Station Problems- A frequent problem at this installation was that the paper in gage 64A-11028 got moist and consequently jammed in the chart drive. No other significant problems were experienced. Poor lighting and bad weather prevented getting a complete set of pictures of the tide station.

CAPE STRAIT, FREDERICK SOUND, ALASKA (945-1559)

Geographic Locale - 56° 59.9' N, 133° 05.6' W

Installation Date - October 8, 1987

Removal Date - November 10, 1987

Gage Type - Bristol bubbler (S/N 68A-9335) with a backup Bristol bubbler (S/N 62A-92). The gages were placed on a wooden tressel behind the Cape Strait light structure. The orifices were attached to a steel plate and anchored with rocks. The tubing was anchored with rocks up to the surf zone. Above the surf zone, the tubing was secured to the bedrock with eye bolts.

Staff - The staff was constructed from a 12 foot long piece of aluminum angle iron with 4-inch webs, with a vitrified scale attached. It was secured to a rock face with 2x4 wooden braces approximately 50 ft north of BM B. The staff stop was a stainless steel hex machine bolt located at 20.990 ft on the staff.

Staff Zero/Gage Zero-
For Gage # 68A-9335: 1.7 ft

For Gage # 62A-92:

Before 10/14 @ 1936Z: 5.3 ft
After 10/14 @ 1936Z: 1.8 ft

Gage Time - Universal Coordinated Time

Bench Marks - Five benchmarks were established for this station: 1559 A 1987, 1559 B 1987, 1559 C 1987, 1559 D 1987, and 1559 E 1987. The five bench-marks were all set in bedrock.

Levels - Installation levels were completed on October 8, connecting the five benchmarks described above to the staff. Final levels were completed on November 10. The initial and final levels agreed to within 0.003 m.

Marigram Records -

GAGE # 68A-9335: Marigram records are continuous:

FROM	TO
10/8/87 @ 2348Z	11/5/87 @ 1836Z
11/5/87 @ 1900Z	11/10/87 @ 1736Z

GAGE # 62A-92: Marigram records are continuous:

FROM	TO
10/8/87 @ 0600Z	11/5/87 @ 1833Z
11/5/87 @ 1900Z	11/6/87 @ 1712Z
11/8/87 @ 2324Z	11/9/87 @ 2030Z

Station Problems- During the three hour observations, it was discovered that the stylus was not placed in the proper position on Gage 62A-92. Correcting this caused a datum shift of 3.5 ft. Gage 62A-92, which has one of the new fiberglass housings had moisture problems toward the end of the project because up to half an inch of water was constantly sitting in the bottom of the gage. This caused the marigram paper to become damp, eventually causing the chart drive to jam. This caused a loss of approximately 54 hours of tide data (11/6 @ 1712Z to 11/8/87 @ 2324Z) on this gage. No other significant problems were encountered with this station.

Tide Correctors

Tide correctors and zoning for this survey were provided on a chart accompanying the Project Instructions. The correctors apply to predicted tides for Juneau, Alaska (945-2210).

Tide stations were established at Cosmos Point (945-1335) and Cape Strait (945-1559). A request for approved tides has been filed. ~~(Appendix XI)~~. REAL Tides HAVE BEEN APPLIED to the Plotted Smooth Sheet Soundings

Tide Correctors

Applicable Area	Time Correcton		Height Ratio
	High Water	Low Water	
Entire Sheet	- 15 min	- 10 min	x0.98