

T- 12019

T- 12019

NOAA FORM 76-35

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

## DESCRIPTIVE REPORT

Type of Survey ..... Shoreline  
Job No. .... PH-6013 ..... Map No. .... T-12019  
Classification No. Final Map Edition No. 1.....

### LOCALITY

State ..... Alaska .....  
Cook Inlet  
General Locality .. Kelgin Island to Anchorage...  
Locality ..... Tyonek.....

1966 TO 1977

### REGISTRY IN ARCHIVES

DATE .....

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.	
<b>DESCRIPTIVE REPORT - DATA RECORD</b>		TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED	
PHOTOGRAMMETRIC OFFICE Coastal Mapping Division Atlantic Marine Center, Norfolk, VA OFFICER-IN-CHARGE Jeffrey G. Carlen, Cdr.		SURVEY <u>TR T-12019</u> MAP EDITION NO. (1) MAP CLASS Final Map JOB PH- <u>6013</u> LAST PRECEDING MAP EDITION TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED JOB PH- _____ MAP CLASS _____ SURVEY DATES: 19__ TO 19__	
<b>I. INSTRUCTIONS DATED</b>			
1. OFFICE		2. FIELD	
Aerotriangulation Compilation, Supplement 4 9/15/66 9/11/67		Field Supplement 1 6/6/66 8/08/66	
<b>II. DATUMS</b>			
1. HORIZONTAL: <input checked="" type="checkbox"/> 1927 NORTH-AMERICAN		OTHER (Specify)	
2. VERTICAL: <input checked="" type="checkbox"/> MEAN HIGH-WATER <input type="checkbox"/> MEAN LOW-WATER <input type="checkbox"/> MEAN LOWER LOW-WATER <input type="checkbox"/> MEAN SEA LEVEL		OTHER (Specify)	
3. MAP PROJECTION Polyconic		4. GRID(S) STATE Alaska ZONE 4	
5. SCALE 1:20,000		STATE ZONE	
<b>III. HISTORY OF OFFICE OPERATIONS</b>			
OPERATIONS		NAME	DATE
1. AEROTRIANGULATION METHOD: Stereoplanigraph LANDMARKS AND AIDS BY		P. Hawkins	Apr 1967
2. CONTROL AND BRIDGE POINTS METHOD: Manual PLOTTED BY CHECKED BY		L. O. Neterer, Jr. A. L. Shands	Sep 1967 Sep 1967
3. STEREOSCOPIC INSTRUMENT COMPILATION INSTRUMENT: Wild B-8 SCALE: 1:20,000 PLANIMETRY BY CHECKED BY CONTOURS BY CHECKED BY		A. L. Shands R. Smith NA NA	Sep 1967 Sep 1967  
4. MANUSCRIPT DELINEATION METHOD: Smoothdrafted SCALE: 1:20,000 PLANIMETRY BY CHECKED BY CONTOURS BY CHECKED BY HYDRO SUPPORT DATA BY CHECKED BY		A. L. Shands C. Bishop NA NA A. L. Shands C. Bishop	Oct 1967 Nov 1967  Oct 1967 Nov 1967
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		C. Bishop	Nov 1967
6. APPLICATION OF FIELD EDIT DATA BY CHECKED BY		F. Mauldin J. Roderick	Jan 1978 Jan 1978
7. COMPILATION SECTION REVIEW BY		J. Roderick	Jan 1978
8. FINAL REVIEW BY		J. Byrd/C. Blood	May 1986
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		J. Byrd	Sept 1986
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY		P. Dempsey	Oct. 1986
11. MAP REGISTERED - COASTAL SURVEY SECTION BY		E. L. DAUGHERTY	Dec '86

T-12019  
COMPILATION SOURCES

## 1. COMPILATION PHOTOGRAPHY

CAMERA(S) Wild RC-8"L" and RC-9"M"		TYPES OF PHOTOGRAPHY LEGEND (C) COLOR (P) PANCHROMATIC (I) INFRARED		TIME REFERENCE	
TIDE STAGE REFERENCE <input checked="" type="checkbox"/> PREDICTED TIDES <input type="checkbox"/> REFERENCE STATION RECORDS <input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY				ZONE Alaska MERIDIAN 150th	<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> DAYLIGHT
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
* 66 L(P) 6648	8/14/66	08:14	1:40,000	1.6 ft. above MLLW	
** 66 M(I) 280	7/17/66	16:27	1:30,000	19.7 ft. above MLLW	

REMARKS

## 2. SOURCE OF MEAN HIGH-WATER LINE:

\*\*The mean high water line was compiled from the above listed compilation photographs.

## 3. SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE:

\*The mean lower low water line was compiled from the above listed photographs.

## 4. CONTEMPORARY HYDROGRAPHIC SURVEYS (List only those surveys that are sources for photogrammetric survey information.)

SURVEY NUMBER	DATE(S)	SURVEY COPY USED	SURVEY NUMBER	DATE(S)	SURVEY COPY USED

## 5. FINAL JUNCTIONS

NORTH T-12009	EAST No Survey	SOUTH No Survey	WEST T-12018
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REMARKS

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HISTORY OF FIELD OPERATIONSI. ☒ FIELD INSPECTION OPERATION☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	A. Wardwell	4/61 - 7/61
2. HORIZONTAL CONTROL	RECOVERED BY G. Saladin	4/61 - 7/61
	ESTABLISHED BY None	
	PRE-MARKED OR IDENTIFIED BY None	
3. VERTICAL CONTROL	RECOVERED BY NA	
	ESTABLISHED BY NA	
	PRE-MARKED OR IDENTIFIED BY NA	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY None	
	LOCATED (Field Methods) BY None	
	IDENTIFIED BY None	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY BY <input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY None	
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY NA	

## II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

None

2. VERTICAL CONTROL IDENTIFIED

NA

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION

3. PHOTO NUMBERS (Clarification of details)

None

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

5. GEOGRAPHIC NAMES: ☐ REPORT☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

None

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

None

NOAA FORM 76-36C  
(3-72)U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

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## HISTORY OF FIELD OPERATIONS

I. ☒ FIELD INSPECTION OPERATION Premarking ☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	R. Melby	June, 1966
2. HORIZONTAL CONTROL	R. Melby	June, 1966
RECOVERED BY	None	
ESTABLISHED BY	None	
PRE-MARKED OR IDENTIFIED BY	None	
3. VERTICAL CONTROL	NA	
RECOVERED BY	NA	
ESTABLISHED BY	NA	
PRE-MARKED OR IDENTIFIED BY	None	
4. LANDMARKS AND AIDS TO NAVIGATION	None	
RECOVERED (Triangulation Stations) BY	None	
LOCATED (Field Methods) BY	None	
IDENTIFIED BY	None	
5. GEOGRAPHIC NAMES INVESTIGATION		
TYPE OF INVESTIGATION		
<input type="checkbox"/> COMPLETE		
<input type="checkbox"/> SPECIFIC NAMES ONLY		
<input checked="" type="checkbox"/> NO INVESTIGATION		
6. PHOTO INSPECTION	None	
CLARIFICATION OF DETAILS BY	None	
7. BOUNDARIES AND LIMITS	NA	
SURVEYED OR IDENTIFIED BY		

## II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

None

2. VERTICAL CONTROL IDENTIFIED

NA

PHOTO NUMBER

STATION NAME

PHOTO NUMBER

STATION DESIGNATION

66L 6178

MOWK, 1963

3. PHOTO NUMBERS (Clarification of details)

None.

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

PHOTO NUMBER

OBJECT NAME

PHOTO NUMBER

OBJECT NAME

5. GEOGRAPHIC NAMES:

☐ REPORT☒ NONE

6. BOUNDARY AND LIMITS:

☐ REPORT☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

None

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

1-Form C &amp; GS 152

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## HISTORY OF FIELD OPERATIONS

1. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	C. Townsend	Jun - Jul 1975
2. HORIZONTAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	None None None
3. VERTICAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	NA NA NA
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY LOCATED (Field Methods) BY IDENTIFIED BY	None None None
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	None
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	NA

## II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED  
None2. VERTICAL CONTROL IDENTIFIED  
NA

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION

3. PHOTO NUMBERS (Clarification of details)

None

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

5. GEOGRAPHIC NAMES: ☐ REPORT ☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

None

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

- 1 Field Edit Report
- 1 Supplement Field Edit Report

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(3-72)U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

## HISTORY OF FIELD OPERATIONS

I. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	B. Williams	July 1977
2. HORIZONTAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	None None None
3. VERTICAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	NA NA NA
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY LOCATED (Field Methods) BY IDENTIFIED BY	None N. Millett None
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	None
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	NA

## II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

None

2. VERTICAL CONTROL IDENTIFIED

NA

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION

3. PHOTO NUMBERS (Clarification of details)

None

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

5. GEOGRAPHIC NAMES: ☐ REPORT ☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

None

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

1-Field edit report

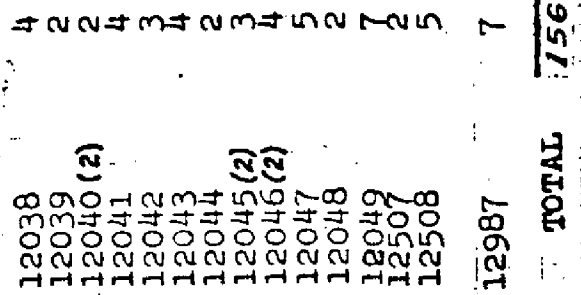
1-Field edit ozalid

NOAA FORM 76-36D (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		
T-12019 <b>RECORD OF SURVEY USE</b>				
<b>I. MANUSCRIPT COPIES</b>				
COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Compilation complete, pending field edit.	10/67	Class III manuscript	None	6/14/73
Field edit applied. Compilation complete.	1/78	Class I manuscript	2/1/78	2/1/78
Final Review	5/86	Final Map		
<b>II. LANDMARKS AND AIDS TO NAVIGATION</b>				
<b>1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH</b>				
NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS	
1		2/6/78	Landmark for charts	
1		2/6/78	Aid for charts	
2. <input checked="" type="checkbox"/> REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: <u>February 6, 1978</u> 3. <input type="checkbox"/> REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: _____				
<b>III. FEDERAL RECORDS CENTER DATA</b>				
1. <input checked="" type="checkbox"/> BRIDGING PHOTOGRAPHS; <input checked="" type="checkbox"/> DUPLICATE BRIDGING REPORT; <input checked="" type="checkbox"/> COMPUTER READOUTS. 2. <input type="checkbox"/> CONTROL STATION IDENTIFICATION CARDS; <input type="checkbox"/> FORM NOS 567 SUBMITTED BY FIELD PARTIES. 3. <input checked="" type="checkbox"/> SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C. ACCOUNT FOR EXCEPTIONS:  4. <input type="checkbox"/> DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: _____				
<b>IV. SURVEY EDITIONS</b> (This section shall be completed each time a new map edition is registered)				
SECOND EDITION	SURVEY NUMBER TP - _____ (2)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY  MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL	
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT		
THIRD EDITION	SURVEY NUMBER TP - _____ (3)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY  MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL	
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT		
FOURTH EDITION	SURVEY NUMBER TP - _____ (4)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY  MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL	
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT		



REVISED 8-24-76 PWW  
REVISED 3-11-77 AG.

REVISED 8-24-76 PWW  
REVISED 3-11-77 AG.



SUMMARY TO ACCOMPANY  
DESCRIPTIVE REPORT

T-12019

This 1:20,000 scale Final shoreline map is one of 44 maps designated as project PH-6013 Cook Inlet, Kalgin Island to Anchorage, Alaska. T-12019 was compiled from photography taken after the 1964 earthquake.

The purpose of this map was to provide contemporary shoreline in support of hydrographic operations and to aid in chart revision.

Field work prior to compilation in the 1961 field season consisted of recovery of horizontal control and limited field inspection. Field work in 1966 consisted of premarking of horizontal control for aerotriangulation.

This area was photographed in August 1966 with RC-8 "L" camera using panchromatic film at 1:40,000 scale, and in July 1966 with the RC-9 "M" camera using infrared film at 1:30,000 scale. The photography was used for bridging, compilation, and hydrographic support.

Aerotriangulation was performed in the Washington office in April 1967.

This map was compiled at the Norfolk office in November 1967.

Field edit was performed for T-12019 during the 1975 field season. Field edit data was applied at AMC in January 1978.

Final review was performed at the Atlantic Marine Center in May 1986.

This Descriptive Report contains all pertinent information used to compile this Final Map. The original base manuscript and all related data were forwarded to the Washington Science Center for final registration.

FIELD INSPECTION REPORT

COOK INLET, ALASKA

PROJECT SP-1-61 1961

USC&GS Ship PATHFINDER

Arthur L. Wardwell, CAPT., Comdg.

MANUSCRIPTS:-

12049, 12046, 12045, 12040, 12031, 12032, 12026, 12027, 12028, 12020, 12021, 12022, 12017, 12015, 12016, 12014, 12013, 12008, 12007, 12006, 12003, 12004, 12005, 12002, 12001, 12000, 12012, 11999, 12011, 11998, 12010, 12009, 12019, 12018, 12023, 12025, 12024, 12029, 12030, 12035, 12034, 12033, 12037, 12036

AERIAL FIELD INSPECTION:-

Areas inspected were as follows: Manuscripts No. 12049, 12046, 12045, 12040, Kenai to Boulder Point, all shoreline and alongshore features. Balance of above listed manuscripts were used only for horizontal control identification.

The area is primarily moderately timbered with spruce, fir, alder and bear claw above the mean high water line. Shoreline varies from fine black silt at the mouth of the Kenai River mouth to large fragmented boulders at Boulder Point. Most of the beachline is sand and shingle interspersed with boulders of varying sizes. Numerous underground springs and some small creeks discharge small quantities of silt and water and are subject to constant change.

The area was inspected by cruising alongshore by launch and by walking the beach and bluff line. Foul areas now indicated on Chart No. 8553 are adequate. Two primary foul areas were noted as follows:

Kenai River Mouth

East Foreland to Moose Point

Quality of photographs was excellent. Areas of shadow were limited to the shoreline east of East Foreland and upper Knik Arm. No attempt was made to sketch in the mean high water line. Enough open areas in shadowed areas are available to adequately delineate mean high water line.

HORIZONTAL CONTROL:-

Four additional second-order triangulation stations were established between Kenai and East Foreland to supplement existing control in the area of hydrography. They were identified as follows:

AUDRY 1961	Manuscript No. 12049	Photo No. 1397
LOUISE 1961	" " 12049	" " 1402
BOO 1961	" " 12045	" " 1420
HELEN 1961	Traverse from East Foreland Light 1960.	

-(2)-

Additional horizontal control recovery was made in upper Cook Inlet in accordance with project instructions. All stations were searched for and approximately 75 percent were recovered. Most of the stations not recovered are considered lost. It is recommended that the next vessel assigned to this project be given a Tellurometer. Simple traverse between recovered triangulation stations would adequately control presently un-controlled flight lines.

In many cases the listed triangulation station was not recovered and a U.S. Engineers' triangulation station was used as a substitute. It appears that the U.S. Engineers could not recover listed C&GS control and substituted their own stations.

Great assistance was rendered by the 5040 Air Transport Squadron at Elmendorf AFB in furnishing helicopter service. Three days of flying enabled personnel to cover shoreline control stations over the greater part of upper Cook Inlet.

If additional control is required in the vicinity of Elmendorf AFB, use can be made of triangulation now being observed by a C&GS geodetic party. Triangulation station DORF 1961 (in the vicinity of LOOP 2) is to be set in the roof of a building on the base. By use of the description written by the observing party, an accurate office identification can be made.

Triangulation not plotted on the Photo Index was identified where it was on photographs. This control was established by G.W.M. in 1959 and H.G.C. in 1960.

#### VERTICAL CONTROL:-

None recovered or established.

#### CONTOURS AND DRAINAGE:-

No contouring was attempted.

Primary drainage features are the Kenai, Matanuska, Little Susitna, Susitna, Beluga, Kustitan, and Drift Rivers. Tidal sweep keeps some of the rivers from building up deltaic features. An extremely flat foreshore on the Matanuska, Little Susitna, Susitna and Beluga rivers give rise to wide deltas that change seasonally. Many small streams discharge around Cook Inlet but have no apparent seasonal change.

#### WOODLAND COVER:-

The major portion of the area is wooded and interspersed with muskeg and open grassy areas. These are easily identifiable on the photographs. In areas of increasing cultural activity, the woodland cover is being removed. No attempt was made to indicate these areas.

#### SHORELINE AND ALONGSHORE FEATURES:-

The mean high water line is adequately delineated on manuscripts 12049, 12046, 12045, 12040. In the area of photo hydro signals IVY and EGG, east of East Foreland, the mean high water line is as follows:

IVY 30 meters inside MHW  
EGG on piles at MHW

- (3) -

Most of the shoreline signals are located at MHW along the beach. Many of the fishing huts set on piles at the base of the bluff were used as signals.

No attempt was made to delineate the low water line. Hydrography in the area should be satisfactory.

The foreshore area is primarily sand, small stones and boulders. The normal gradation from stones at MHW to sand at MLW exists in all areas, except south of the Kenai River. In this area a heavy layer of silt is found in the tide zone.

OFFSHORE FEATURES:-

All offshore features are located by the hydrographer.

LANDMARKS AND AIDS:-

There are two fixed aids to navigation within the limits of the hydrographic project:

EAST FORELAND LIGHT

KENAI RIVER ENTRANCE RANGE

Both are located on Chart No. 8553.

One floating aid is also located on Chart No. 8553. Another can buoy is maintained by the oil company and is located just north of the pier.

One landmark for charts is recommended in the Descriptive Report for SP-1-61. This landmark is identified as follows:

KENAI TANK 1959, located by G.W.M. and identified on Photo No. 60W1400.

BOUNDARIES, MONUMENTS AND LINES:-

None shown.

OTHER CONTROL:-

Photo hydro signals were located in accordance with standard instructions. Signal IVY was found in error and relocated photogrammetrically, then verified by hydrographic cuts. Final location is shown on manuscript 12045.

Final location of photo hydro signals will remain in their relative position with the shoreline. Final compilation will cause a datum shift which will move both hydrography and signals the same relative amount.

DATUM DIFFERENCES:-

Radial plotting of photo identified control stations was made in the field. The following discrepancies were noted between plot positions and geographic positions.

EAST FORELAND LIGHT 1960	Lat. -13.8 meters
	Long. -75.4 meters
BOULDER (USE)	Lat. -37.0 meters
	Long. -45.2 meters
KENAI CHURCH STEEPLE 1909	Lat. -15.3 meters
	Long. -23.6 meters

-(4)-

CULTURAL FEATURES:-

Numerous fishing shacks are located along high water line in the area of hydrography. These huts are subject to damage by winter storms and are in a constant state of transition. No attempt was made to locate current huts.

The Nikiski Oil Pier was under construction at the time of photography. The completed dimensions are available from a blueprint of the structure submitted with descriptive report for Project SP-1-61.

Respectfully submitted,

Robert E. Williams,  
Lieut. Comdr., C&GS

*Gerald C. Saladin*  
Gerald C. Saladin  
LTJG, C&GS

*Arthur L. Wardwell*  
Arthur L. Wardwell,  
Captain, C&GS  
Comdg., Ship PATHFINDER

## PHOTOGRAMMETRIC PLOT REPORT

Job PH-6013

Cook Inlet, Alaska

April 13, 1967

21. Area Covered

The area covered by this report extends from the Redoubt Bay-East Foreland area to Anchorage, Alaska. Included in this area are T-sheets 11998 thru 12001, 12009 thru 12012, 12018, 12019, 12021, 12025 thru 12030, 12038, 12039, 12042 thru 12044, 12047, 12048 and 12987.

22. Method

Five strips were bridged on the C-8 and C-5 stereoplanigraph. Strip #1 (66-L-6602 thru 6623) was adjusted on four triangulation stations with tie points used as checks. Strip #2 (66-L-6629 thru 6634) was adjusted on two triangulation stations plus tie points from Strip #1. Strip #3 (66-L-6641 thru 6653) was adjusted on three triangulation stations plus ties. Strip #4 (66-L-6667 thru 6677) was adjusted on three triangulation stations plus ties. Strip #9 (66-L-6713 thru 6725) was adjusted on three triangulation stations.

23. Adequacy of Control

The control, being premarked, was very good insofar as being able to see it clearly; however, in several cases, the 1:40,000 scale photography completely missed the stations. It should be noted that all strips were adjusted with minimum control, and as such, no positive proof can be provided that the adjustments are correct other than by means of tie points and residuals of adjustment. The tie points and residuals do indicate a good adjustment on all strips. Strip #4 had to be terminated at station SIT 1966 due to lack of control beyond this point. (Port McKenzie could not be seen on the 1:40,000 scale photography.) Attempts were made to provide a tie point for the terminal station on the east end of this strip by bridging three models south of Anchorage, dropping points onto Strip #4. This met with complete failure. Strip #6 had to be terminated on the southern end at station GRAY CLIFF 1909 since the station at East Foreland was not covered by the 1:40,000 scale photography.

#### 24. Supplemental Data

Local USGS quads were used to provide vertical control used in the bridging adjustment.

The coverage of 1966 photography falls short of being sufficient to show the shallow mud areas which are near lower-low water level in the area of the Susitna River Delta. To provide for the delineation of the limiting line of this feature, scale points have been selected which are common to 61M photography which does show the limiting line. Ratios of these photographs will be provided for the graphic delineation of the limiting line only. The compiler should select whatever additional points are necessary for correct delineation. A holiday exists on some of the shoreline along Strip #9. A flight of 60W photography provides coverage and three ratio photos were provided for compilation of this area.

All points on the bridged plates were drilled by PUG methods. Plate 66-L-6719 was broken after bridging. A new plate was provided but it does not contain any drilled points. It is suggested that the models on either side be compiled and pass points be dropped on this plate for compilation.

#### 25. Photography

Photography was adequate as to definition and overlap but was not adequate as to coverage. The 1:40,000 scale photos did not cover either the shoreline or the marked control on the east end of Strip #4 or the southwest end of Strip #9. A portion of the shoreline along the part of Strip #9 which was bridged also lacks coverage.

Submitted by:

*Paul Hawkins*  
by JPO

Paul Hawkins

Approved by:

*John D. Perrow Jr.*  
John D. Perrow, Jr.



## COMPILATION REPORT

T-12019

31. DELINATION:

The B-8 stereoplotter was used. The area west of the town of Tyonek to the limits of the sheet was delineated graphically from infrared photography taken at MHW. The panchromatic photographs do not cover this area.

32. CONTROL:

See Photogrammetric Plot Report dated April 13, 1967.

33. SUPPLEMENTAL DATA:

None.

34. CONTOURS AND DRAINAGE:

Contours are inapplicable.

Drainage was delineated by the Kelsh stereoplotter and by office interpretation of the photographs.

35. SHORELINE AND ALONGSHORE DETAILS:

The shoreline was delineated by office interpretation of photographs taken at 1.6 ft. above MLLW with the aid of infrared photographs taken at MHW. The MLLWL was delineated by office interpretation of the panchromatic photographs taken at 1.6 ft. above MLLW to the limits of photography. (See Item 31.)

36. OFFSHORE DETAILS:

No statement.

37. LANDMARKS AND AIDS:

No landmarks or fixed aids to navigation were compiled. NORTH FORELAND LIGHT was not identifiable on the photographs; it should be located by the hydrographer.

38. CONTROL FOR FUTURE SURVEYS:

None.

39. JUNCTIONS:

Junctions are in agreement with Sheet T-12009 to the north and T-12018 to the west. There are no contemporary surveys to the east and south.

40. HORIZONTAL AND VERTICAL ACCURACY:

No statement.

46. COMPARISON WITH EXISTING MAPS:

Comparison has been made with USGS Quadrangles TYONEK (A-3) and TYONEK (A-4), ALASKA. The scale of both is 1:63,360 and both are dated 1958.

47. COMPARISON WITH NAUTICAL CHARTS:

Comparison has been made with USC&GS Chart 8553 (Cook Inlet, Northern Part), scale 1:194,154, dated May 17, 1965.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

None.

ITEMS TO BE CARRIED FORWARD:

None.

Submitted by:

*A. L. Shands*

A. L. Shands  
Cartographic Technician  
October 1967

Approved:

*Albert C. Rauck, Jr.*  
Albert C. Rauck, Jr.  
Chief, Coastal Mapping Section

## GEOGRAPHIC NAMES

## FINAL NAME SHEET

PH-6013 (Cook Inlet)

T-12019

Bunka Lake

Chuitbuna Lake

Chuitna River

Cook Inlet

First Lake

Indian Creek

Ladd

Moquawkie Indian Reservation

North Foreland

Second Lake

Third Lake

Tyonek

Tyonek Creek

Approved by:

*A. J. Wraight*  
A. J. Wraight  
Chief Geographer

Prepared by:

*Frank W. Pickett*  
Frank W. Pickett  
Cartographic Technician

## FIELD EDIT REPORT

OPR-469-RA-1975

UPPER COOK INLET, TRADING BAY

ALASKA

T-12018 thru T-12019  
T-12025 thru T-12027  
T-12038

NOAA Ship RAINIER

CDR. Charles K. Townsend

Commanding

## INTRODUCTION

The field edit of the Alaskan project, OPR-469-RA-75, Trading Bay, Upper Cook Inlet, was started on June 10, 1975 (J.D. 161) and completed on July 24, 1975 (J.D. 205). The manuscripts had been compiled without field inspection prior to compilation, therefore a complete and thorough field edit was done in the areas that were investigated. Work was carried out on shore and water.

Field edit began at North Foreland and continued southwest to the western edge of Trading Bay. All deletions, additions and corrections to be applied to the manuscripts appear on the T-sheets. All questions on the field edit ozalids were answered on the T-sheets. The T-sheet is an index of all field edit work performed. All field edit notes on the T-sheets which are in violet ink, are verified. Those in red ink are changes. The smooth boatsheets are also master indexes of field work accomplished. All notes on the boatsheets that are in black ink are verified, those in red ink are changes, blue ink signifies features that were not verified. Most of the field edit for this survey was accomplished by hydrographic methods due to the poor quality of the photographs for this area.

Height data on all rocks were estimated; plus or minus one foot. Times were referenced to 0° Longitude.

## ADEQUACY OF COMPILATION

The compilation of the manuscripts was adequate and complete. Compilation of the NMNL was excellent where it was possible to verify.

The MLLW line agreed extremely well with hydrography. There are a few minor discrepancies due to recent construction, these are noted in the Shoreline Summaries. All rocks and offshore features are labeled on the T-sheets.

#### POSITION CONTROL

In many areas of Cook Inlet, such as Granite Point, it is impossible to verify rocks which are on the manuscripts or newly discovered ones, due to the abundance of rocks, without D.P.'s on each rock. Therefore the field edit in this survey received permission (refer to Correspondence in the Separates following the text) and made use of the super-high frequency (SHF) Motorola Mini-Ranger III (range-range system) for position control on detached positions. The system worked satisfactorily during the survey. Mini-Ranger stations were established on existing (BOULDER, 1909) or newly established triangulation stations of third order precision, (BRUCE, GRANITE, KING.) Stations BRUCE, GRANITE, and KING were traversed (closed) with T-2 Theodolites and with a CA-1000 Tellurometer. Refer to the Horizontal Control Report, OPR-469-RA-75, for specific procedures used in establishing these stations.

Daily calibration of the Mini-Ranger system was accomplished by using three-point sextant fixes or by static calibrations which were taken next to pilings 3, 4, and 5 (stations 123, 124, 125) at the North Foreland pier. Use of a signal strength indicator along with the daily calibrations, reaffirmed baseline calibration correctors,

which were used as the correctors for the electronic hydro positioning tapes throughout the survey. Refer to the Electronic Control Report, OPR-469-RA-75, for specifics on the Mini-Ranger III system.

The Mini-Ranger console, serial number 720, and Receiver/Transmitter unit, s/n 727, connected to a 24 volt system were arranged in a tin skiff (RAINIER skiff 2128), making it possible to take D.P.'s next to the rocks.

Each D.P. contains a fix and a check fix by using Mini-Ranger rates, Mini-Ranger and sextant, or three point sextant fixes. Each D.P. was processed by using the PDP 8/e computer and complot system on board the RAINIER, (s/n 1015, DP-3 5445-7 respectfully.) Program AM 602 was used to produce master tapes and corrector tapes from information in the sounding volume, while RK 211, 212, 214 & 215 were used to plot the data on the boatsheets. Each D.P. was plotted twice, once using the fix information, and the check fix was used to confirm the position. A few discrepancies were found due to Mini-Ranger busts or misidentified signals. These were resolved by evaluating the intersection of the M/R rates, comparison of the positions to other rocks and conservative positioning. For printouts of all D.P.'s refer to the Separates following the text.

All final positions were plotted on a field edit boatsheet and then transferred to the master index T-sheet and smooth boatsheets.

The final positions on the RA-20-3B-75 boatsheet (field edit sheet), range from #28 thru #164. These correspond to positions #8028 to #8164 in the sounding volume. Only those D.P.'s which were not

duplicates of themselves nor duplicates of manuscript rocks, were kept and are listed in the Separates following the text.

#### SHORELINE SUMMARIES

##### T-12019

Field edit for OPR-469-RA-75 began at North Foreland,  $61^{\circ} 02' 58''$ N,  $151^{\circ} 09' 33''$ W. The area southwest of there was field edited and verified, everything northeast of this point was not.

The bluff at North Foreland has been cut away ( $61^{\circ} 02' 54''$ N,  $151^{\circ} 09' 55''$ W to  $61^{\circ} 02' 43''$ N,  $151^{\circ} 10' 43''$ W) and this is now the site of the Tyonek Timber Company. A large company pier is being constructed as shown on the T-sheet. The shape and length of the pier was determined by positions obtained for the supporting pilings present at the time of the survey (#8007-9, 8016-18, 8023-25, 8158-160.) This is the field editor's interpretation of how the pier will appear when finished. It is recommended that construction plans be obtained from the company office in Anchorage, Alaska. Six mooring bouys used with the construction, has also been plotted and it is recommended that these are not to be charted since they will probably be removed with the completion of the pier.

Due to the construction, North Foreland Light has been moved several times and it is still not permanently secured. A temporary position ( $61^{\circ} 02' 51.616''$ N,  $151^{\circ} 09' 50.604''$ W) has been obtained by traverse methods, refer to the Horizontal Control Report, OPR-469-RA-75, for further information. However, it is recommended that the light be relocated when the construction is completed.



The MHWL has been verified northeast of 61° 00' 20"N, 151° 29' 33"W. Due to the inaccessability of the MHWL southwest of this point, caused by the extensive mud and sand flats, this area was not field edited nor were any measurements from a photo identifiable object to the MHWL taken. Field Edit Ozalid Note 2 was unable to be fullfilled. This area extends onto T-12026, T-12025 and ends on T-12038.

The foreshore area was field edited and no rocks or dangers to navigation were found.

#### T-12026

The shoreline on this ozalid was also not verified as that mentioned under T-12027. The foreshore area was investigated at low water, no rocks were found which could be a hazard.

There were no cabins nor buildings of any landmark value found.

#### T-12025

The MHWL on this T-sheet has not been field edited (note summary for T-12027.) The foreshore area is void of any hazardous rocks, investigation was completed at low water.

#### T-12038

The unverified MHWL continues until 60° 50' 14"N, 151° 47' 50"W. There were no rocks considered a hazard to navigation, in the foreshore area. Measurements to the MHWL were not taken.

The shoreline between  $61^{\circ} 50' 14''\text{N}$ ,  $151^{\circ} 47' 50''\text{W}$  to  $61^{\circ} 48' 50''\text{N}$ ,  $151^{\circ} 46' 45''\text{W}$ , was field edited. In the approximate vicinity of  $61^{\circ} 48' 50''\text{N}$ ,  $151^{\circ} 46' 45''\text{W}$ , there have been new additions including an airfield, an oil tank farm, a stack and a microwave tower which are of landmark value. The exact positions of these were not obtained.

$61^{\circ} 48' 50''\text{N}$ ,  $151^{\circ} 46' 45''\text{W}$  is the limit of the field edit for OPR-469-RA-75; anything south of here is unverified.

#### RECOMMENDATIONS

In the vicinity of East, West and North Foreland, there are thirteen oil platforms. It is recommended as an aid navigation that each individual platform's name be added to the chart, as an assistance to any vessels in the area and as an aid to navigation. (Refer to Oil Platforms in the Separates following the text.)

It is also recommended that the stack and microwave tower on T-12038 be located as a nonfloating aid to navigation.

Throughout this survey, electronic control was used most of the time for field edit. It is recommended that this control be used in future projects for field edit needs. The electronic control made it easier to accurately plot all D.P.'s on hazards to navigation on all the rough-field boatsheets along with the smooth sheet. This method made it possible to process the acquisition of data with greater efficiency and speed, both in the field and office verification. In maintaining the guidelines set down (see Correspondence in the Separates following the text)

electronic controlled field edit has proven valuable by increasing the speed and proficiency of data acquisition and processing. This will help to decrease the amount of time that it takes to produce a new chart after the survey has been completed.

Respectfully submitted,

*Kathryn Andreen*

Kathryn Andreen, Ltjg. NOAA

## SUPPLEMENTAL INFORMATION

TO

FIELD EDIT REPORT

OPR-469-RA-75

UPPER COOK INLET, TRADING BAY

ALASKA

## Introduction

After the submission of the Field Edit Report, OPR-469-RA-75, with the accompanying data, several questions rose concerning procedures and actual field work accomplished. With the help of this supplemental information, it is hoped that these questions will be answered.

## T-12018

Field edit procedures for locating features throughout the project relied almost entirely on hydrographic methods, i.e. electronic control and visual signals. Many features, such as rocks, could not be located on the photographs. The rocks could not be distinguished from the water, since on the photos they are the same color.

The area from North Foreland to Granite Point was combed by the field editor in a small 16' tin skiff. A Mini-Ranger console was mounted to the skiff, and connected to a 24 volt battery system with the Receiver/Transmitter unit attached to a ten-foot mast.

The area was investigated for three days by the field editor. The shoreline and foreshore area were continuously for any hazard to navigation during all phases of the tidal range. Since Cook Inlet has several days of extreme high tides (over 30 feet) and low tides (about ~~minus~~ five feet), it was on these days that field edit was accomplished. A detached position, i.e. the location, for each hazard was obtained during this time. (Refer to Field Edit Report, OPR-469-RA-75)

At the end of each day, two master tapes were produced to plot by computer all information received that day. One tape contained the information for the fix while the second tape was the check fix positioning. Each of the tapes was then plotted using the complot system to compare the fix and the check fix positioning of each hazard.

Any disagreement was resolved by evaluating the intersection of the M/R rates, comparison of the position to other D.P.'s and notes kept by the field editor on the approximate location of the tin skiff at the time of each D.P.

The position for each plotted D.P. was then compared to the class III manuscript. Any D.P. position which coincided with a rock on the manuscript was considered a verified position for that rock. The height and time data for these rocks were recorded on the Field Edit Ozalid (the cronoflex master index) in violet ink. To avoid duplication between verified manuscript features and the hydrographic detached positions, these rocks and height-time data were deleted from the master electronic tapes. However, all data was still contained in the raw data, field edit, sounding volume now at PMC.

All these deleted detached positions were referred to as "Reject-Manuscript Duplicate" in the D.P. Index. (Refer to the separates following the text in the Field Edit Report, OPR-469-RA-75).

After three days, the area between North Foreland and Branite Point had been thoroughly investigated for hazards to navigation and positions were obtained for all of these. The rocks on the manuscript in green ink, which do not contain height and time data, were thoroughly

search for but not found.

New rocks (i.e. rocks not shown on the class III manuscript before field edit) were transferred by the field editor to the Field Edit Ozalid (the cronoflex master index) because this ozalid was a complete index of all field edit work accomplished. The cronoflex ozalid (T-sheet) is used for the Field Edit Ozalid to avoid undue duplication. It is necessary to locate a hazard on the cronoflex ozalid before it can be transferred to a boatsheet or to the paper "Discrepancy Print," To cut down the duplication from the cronoflex ozalid, to the boatsheet to the "Discrepancy Print," this film ozalid contains all field work accomplished. All questions on the "Discrepancy Print" are answered on the cronoflex ozalid. It is the field editors recommendation that a film (cronoflex) ozalid be used instead of a paper ozalid for the "Discrepancy Print" to avoid any more confusion on this matter.

All data for rocks located by hydrographic methods (electronic master tapes, daily calibrations, and raw data sounding volume) was sent to the Pacific Marine Center for verification.

T-12025, 12026, 12027, & 12038

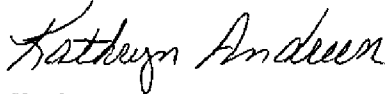
Due to the inaccessability of the MHWL caused by extensive mud and sand flats throughout these T-sheets, it was not verified. It is the field editor's recommendation that the apparent shoreline taken from the photographs be accepted as the MHWL.

In areas of new construction since the 1966 photographs, it is understood from CDR Simmons that revisional photography will be flown to locate features of landmark value.

T-12019, 12038

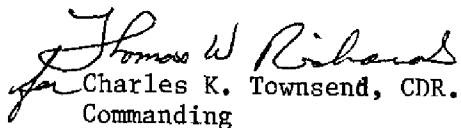
Field edit was only partial accomplished on these two T-sheets. They represent the northern and southern boundaries for hydrography completed during the summer project. OPR-469-RA-75. Field edit on these sheets should be completed during the 1976 field season.

Respectfully submitted,



Kathryn Andreen, Ltjg. NOAA

Forwarded



Charles K. Townsend, CDR., NOAA  
Commanding



T-12018

1. Verification of those rocks which were not verified by the field editor, or by the hydrographer subsequent to edit is required, i.e., all rocks which have not been inked in black on the boat sheet. Included are rocks located in the middle of Beshta Bay mud flats since the range of tide is approximately 14 feet.
2. Copies of photogrammetric manuscripts which include field edit information should be referred to as "Field Edit Sheets" rather than "T-sheets". On future jobs, photogrammetric compilation activities have been instructed to use the designation "Discrepancy Print" rather than "Field Edit Ozalid".
3. New rocks (i.e. rocks which were not shown on the Class III manuscript copies furnished for field use) located by the field editor should not have been transferred to the "T-sheet" (Field Edit Sheet) from the "smooth boat sheet", because the field records are included as a part of the hydrographic survey records. If these rocks are to be shown on the final photogrammetric map, they should be transferred from the verified hydrographic survey sheet - to ensure that the two surveys reflect the same positions.
4. Data for computing the elevations of verified rocks (i.e., rocks shown on the Class III manuscript copies) should have been included in the hydrographic survey records so that the elevations could be computed along with the elevations of "new" rocks (the data for which was included in the hydrographic survey records). The computed elevations for "verified" rocks must be furnished to the photogrammetric compilation activity along with the field edit data - changes in rock symbolization may be required.
5. Field edit report - INTRODUCTION, heading. Red ink was used to show additions as well as corrections.

The statement "All field edit notes on the T-sheets (field edit sheets) which are in violet ink, are verified," is not clear.

Violet ink was used (1) to answer questions included on the field edit ozalids (discrepancy prints); and (2) to indicate verification of rock positions - where the information furnished by the field editor for computing rock elevations is shown in violet ink.

29

Field Edit Report  
Number Three Bay to Miller Creek  
Tyonek to Ivan River  
OPR-469-FA-77

GENERAL

This report covers the following manuscripts:

T-11998 T-11999 T-12009 T-12010 T-12011 T-12019  
T-12020 T-12028 T-12029 T-12030 T-12041 T-12042

Field work is essentially complete on all maps.

The northern shore between North Foreland and Shorty Creek is characterized by sand and gravel beaches, backed by dirt bluffs in some areas, with small mud flats in the vicinity of the Tyonek Timber Company pier and Shorty Creek which are exposed at low tides. The rest of the northern shore is low and gently sloping with marshy areas above high water and extensive mud flats exposed at low tide.

The entire southern shore is littered with rocks and boulders, often to considerable distances from shore. Beach areas are sand and gravel with occasional areas of mud flats, not as extensive as found on the northern shore. Dirt bluffs line most of the beach.

A total of 153 fixes were taken to locate significant features along 44 nautical miles of shoreline. Each was assigned a number with the format DDD-FF, where DDD represents the julian day of the fix and FF represents the sequential fix number for that day.

All fix information is recorded in the field edit data volume. Fix times are given in Greenwich mean time. All height information is noted on the master field edit ozalid. Information on all signals and stations used for control is included with this report. Deletions are noted in green ink, additions and changes in red ink, verifications in violet ink. All are noted on the master field edit ozalid.

METHOD

Field edit along the southern shoreline was done by LTJG Neal Millett and ENS Robert Crowell during the month of June, 1977. Work was performed at low tidal stages using a 17 foot skiff equipped with a Mini-ranger console and transceiver. Copies of the field edit ozalids and corresponding photographs were examined in the field. General features, including the mean high water line, were verified by visual comparison of the field edit ozalid

and the areas concerned.

Detached positions and heights were obtained on the more significant rocks. Control for fixes was by range-range and range-azimuth. In several instances sextant angles were also taken. Heights were estimated by comparison to a boathook of known length.

Field edit along the northern shoreline was done by LTJG Neal Millett and ENS Robert Crowell during the month of July, 1977. Initial field edit was done by helicopter at a low tidal stage. Copies of the field edit ozalids and corresponding photographs were examined in the field. Verification of general features, including the mean high water line, was done by visual comparison of the field edit ozalid and the area concerned. No control was used for this phase.

Follow-up field edit was done in those areas where detached positions were needed. Work was done using a 29 foot launch equipped with Raydist electronic positioning equipment. Control for fixes was a combination of range-range, used to locate the launch, and visual. Three lines of position were determined to each object by taking horizontal sextant angles from the launch. The position of the launch was provided by the Raydist system. Heights were estimated by comparison to nearby objects of known size.

#### ADEQUACY OF COMPILATION

Compilation of the maps is generally adequate. Not all existing rocks on the southern shore were located due to their large numbers. Photography at low tidal stages would best accomplish this.

#### MAP ACCURACY

The positions of horizontal control stations as they plotted on the maps were compared to surrounding features, in some cases by measurement. These comparisons generally gave good results. Fix accuracy, as indicated by check fixes, was good.

#### RECOMMENDATIONS

It is recommended that the maps be revised as noted on the master field edit ozalid and then be accepted as advanced manuscripts. Improved photography, both in coverage and quality, would aid all stages of field edit.

#### INDIVIDUAL MANUSCRIPTS

Details specific to each manuscript are included in the following individual reports.

Map T-12019  
Tyonek

METHOD

Initial field edit revealed numerous rocks. Follow-up work was done to locate them. The height of the church steeple (located photogrammetrically) in Tyonek was determined by estimating its height above the ground and calculating the height of the ground above mean high water barometrically. The Tyonek Timber Company pier was located by horizontal control methods in the process of locating NORTH FORELAND RAYDIST.

MAP ACCURACY

The distances from stations PINK and YELLOW to the apparent high water line were measured. There is evidence of erosion since the manuscripts were compiled. With the exception of the bluff north of station YELLOW, the measurements indicate that it has been less than 20 meters.

AIDS TO NAVIGATION

The North Foreland light was inoperative during the time of field edit. It is scheduled to be moved when construction in the area is complete. Its future position is unknown. Form 76-40 is submitted for this light with its position at the time of the survey.

A white light is located at each end of the Tyonek Timber Company pier. The characteristics were not determined as both were inoperative during the course of field edit.

Submitted by:



Robert B Crowell  
LTJG, NOAA

Approved by:



Bruce I Williams  
Commanding Officer  
NOAA Ship Fairweather

REVIEW REPORT  
T-12019

SHORELINE

61. GENERAL STATEMENT

See Summary included with this Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

Not applicable.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Not applicable.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

The contemporary Hydrographic Survey for the area of this map was not available for comparison at the time of Final Review.

65. COMPARISON WITH NAUTICAL CHARTS

A comparison was made with the following NOS chart:  
16660, scale 1:194,154, 22nd edition, May 8, 1982.  
16664, scale 1:40,000, 18th edition, January 16, 1982.

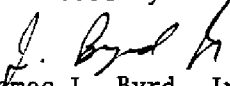
The listed charts compared well with this manuscript.

A Chart Maintenance Print was prepared and forwarded to the Marine Charts Branch.

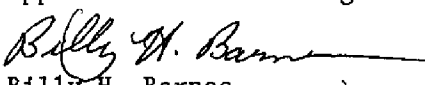
66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

This map complies with the Project Instructions, and meets the requirements for National Standards of Map Accuracy.

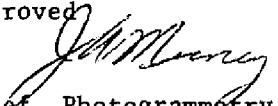
Submitted by

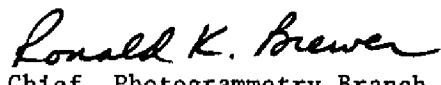
  
James L. Byrd, Jr.  
Final Reviewer

Approved for forwarding

  
Billy H. Barnes  
Chief, Photogrammetric Section

Approved

  
Chief, Photogrammetry Production Sec.

  
Chief, Photogrammetry Branch

Replaces C&amp;GS Form 567.

**NONFLOATING AIDS FOR CHARTS**  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
U.S. DEPARTMENT OF COMMERCE

[illegible]

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	B. Williams
POSITIONS DETERMINED AND/OR VERIFIED	N. Millet
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	F. Mauldin
C. Blood	
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
(Consult Photogrammetric Instructions No. 64,	
<b>OFFICE</b> <b>1. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	<b>FIELD (Cont'd)</b> <b>B. Photogrammetric field positions*</b> require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982
<b>FIELD</b> <b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	<b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 <b>**PHOTOGRAMMETRIC FIELD POSITIONS</b> are dependent entirely, or in part, upon control established by photogrammetric methods.

\*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

NOAA FORM 76-40 (6-74)  
SUPERSEDES NOAA FORM 76-40 (2-71) WHICH IS OBSOLETE, AND EXISTING STOCK SHOULD BE DESTROYED UPON RECEIPT OF REVISION.



Replaces C&amp;GS Form 567.

## NON-FLUORATING AIDS OR LANDMARKS FOR CHARTS

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

## ORIGINATING ACTIVITY

- ☐ HYDROGRAPHIC PARTY  
☐ GEODETIC PARTY  
☐ PHOTO FIELD PARTY  
☐ COMPILATION ACTIVITY  
☒ FINAL REVIEWER  
☐ QUALITY CONTROL & REVIEW GRP.  
☐ COAST PILOT BRANCH  
(See reverse for responsible personnel)

REPORTING UNIT (Field Party, Ship or Office)  
Coastal Mapping Unit  
AMC, Norfolk, VA  
STATE  
Alaska  
LOCALITY  
Cook Inlet, Kalgin Island to Anchorage  
DATE  
May 1986

The following objects HAVE ☒ BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.

OPR PROJECT NO.

JOB NUMBER

SURVEY NUMBER

DATUM

N.A. 1927

## POSITION

LATITUDE  
° / ' " D.M. Meters

LONGITUDE  
° / ' " D.P. Meters

METHOD AND DATE OF LOCATION  
(See instructions on reverse side)

OFFICE

FIELD

T-12019

DESCRIPTION  
(Record reason for deletion of landmark or aid to navigation.  
Show triangulation station names, where applicable, in parentheses)

CHARTING  
NAME

SPIRE

ht. = 126 ft.

61 04

151 08

P-3-6-L  
June 1977

16660

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	B. Williams
POSITIONS DETERMINED AND/OR VERIFIED	N. Millec
	F. Mauldin
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW	C. Blood
ACTIVITIES	
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
(Consult Photogrammetric Instructions No. 64.)	
<b>OFFICE</b> <b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	<b>FIELD (Cont'd)</b> <b>B. Photogrammetric field positions*</b> require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982
<b>FIELD</b> <b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field                      P - Photogrammetric L - Located                  Vis - Visually V - Verified 1 - Triangulation          5 - Field identified 2 - Traverse                6 - Theodolite 3 - Intersection          7 - Planetable 4 - Resection              8 - Sextant  A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	<b>II. TRIANGULATION STATION RECOVERED</b> When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75  <b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75  <b>**PHOTOGRAMMETRIC FIELD POSITIONS</b> are dependent entirely, or in part, upon control established by photogrammetric methods.
<b>*FIELD POSITIONS</b> are determined by field observations based entirely upon ground survey methods.	

