CRUISE REPORT
R/V POLARIS
(May 15--June 20, 1967)
(P.O.P.)

PURPOSE

A. Evaluate the geological conditions prevailing along the shoreline and in the nearshore areas around the communities of Ketchikan, Wrangell, and Sitka in terms of the potential geological hazards which might arise in the event of an earthquake.

B. Recover bottom samples from potential placer deposits within the area of operation for heavy metal exploration.

C. Obtain a series of seismic reflection profiles between Astoria and Coos Bay to extend knowledge of onshore structure seaward.

ACTUAL SCHEDULE

Date	Time (PDST)	Activity
May 15	1540	Depart Redwood City enroute Farallon Island
	2120	Arrive Farallon Island, anchor ¼ mile SE of SE Farallon Island
May 16	0800	Prepare seismic equipment for test at anchor
	1410	Weigh anchor enroute deeper water (600 fthms) WSW of Farallon Island
	1530	On station for deep water test
	1538	Fire and abandon ship drill -- ships boat launched and provisioned in 22 minutes

Date	Time (PDST)	Activity
May 16	1725	Seismic equipment test aborted due to equipment malfunctions, return to SE Farallon Island
	1840	Arrive SE Farallon Island, anchor and check out equipment
May 17	0845	Weigh anchor enroute deep water to complete seismic equipment test
	0940	On station, continuing tests while lying to on sea anchor
	1115	Pull in sea anchor, depart for San Francisco to disembark E.T., Bud Lowry and pickup ship's supplies and check equipment
	1604	Arrive Pier 42 San Francisco; pick up supplies. Electronic Marine Products check out and service Northern Radio Telephone, Triton 712 and Triton 812 fathometer, Bud Lowry leaves ships company
May 18	0528	Depart San Francisco enroute Ketchikan, Alaska
May 19	0130	Onan generator stopped (due to clogged fuel filter) disrupting ships navigational equipment (gyro, radar, autopilot) Independently the spectic tank pump ceased to function

Date	Time (PDST)	Activity
May 19	0943	Arrived Eureka, docked at small boat harbor this unplanned stop was made to facilitate spectic tank and fuel line repairs
May 20	0800	Continue making repairs and picking up parts
	1400	Depart Eureka enroute Ketchikan, Alaska
May 21		Continuing run north, off Oregon Coast
May 22	1207	Off Washington Coast, Deca radar antenna stopped rotating. Decision made to stop in Vancouver, B.C. for radar repair and hence to Alaska via inland passage
	2150	Enter straits of Juan De Fuca
May 23	1230	Arrive Vancouver, B.C., dock at Fifer Float, take on water work on radar and bildge pump motor
May 24	2100	Finish repairs, depart for Standard fuel dock
	2130	Arrive fuel dock, take on diesel, gas and water
	2250	Depart fuel dock enroute Ketchikan via inland passage
May 25		Steaming inside Vancouver Island
May 26	2210	Entered Alaskan waters, Dixon entrance running before gale warnings

Date	Time (PDST)	Activity
May 27	0249	Arrive Ketchikan, dock (a) APA Dock, spend day cleaning up boat, preparing for seismic profiling and picking up equipment
May 28		Checked out and adjusted equipment and ready the POLARIS for tracking
May 29	0851	Depart APA Dock and test seismic gear in Tongass Narrows, hydrophone and boomer over the side
	0915	Launch Boston Whaler over the side, send cook to town to replenish galley stores
	1035	Begin geophysical sampling in Tongass Narrows (as per C&GS Chart 8094, this date)
	1130	Cook returns with Boston Whaler, tie alongside in tow
	1438	Terminate tracking--all seismic equipment brought inboard
	1450	Arrive APA Dock, Ketchikan, take grab sample PG67001 along side APA Dock
May 30	0853	Depart APA Dock, lift Boston Whaler aboard, enroute Helm Bay
	1145	On station begin geological sampling along axis of Helm Bay, beginning at the delta and working toward deeper water (grab samples PG67002-PG67008 were collected as per Chart 8079, this date)

Date	Time (PDST)	Activity
May 30	1830	Arrive APA Dock, Ketchikan
May 31	1013	Depart APA Dock, Ketchikan to take geological samples in Tongass Narrows
	1022	On station begin geological sampling (grab samples PG67009-PG67021 were collected as per C&GS Chart 8094, this date)
	1330	Terminate sampling, embark for deep water (260 fms) off Tattoosh Island
	1445	Launch shore party in Boston Whaler to gather samples in Smuggler Cove and Helm Bay (S. Wolf and L. Jones) while POLARIS conducts equipment tests in deep water
	1521	POLARIS on deep water station conducts static tests of seismic sound sources, drifting ½ mile off Tattoosh Island
	1920	Shore party returns, Boston Whaler tied alongside
	2012	Tests concluded, run to Smuggler Cove
	2047	Anchor in Smuggler Cove for night
June 1	0930	Weigh anchor, depart Smuggler Cove enroute deep water off Tattoosh Island
	0958	On station ½ mile off Tattoosh Island resume seismic equipment test

Date	Time (PDST)	Activity
June 1	2100	Depart deep water station enroute Smuggler Cove
	2145	Arrive Smuggler Cove, anchor for the night
June 2	0745	Weigh anchor, depart Smuggler Cove enroute deep water off Tattoosh Island
	0820	On station ½ mile off Tattoosh Island, resume testing of seismic equipment
	1015	Disembark ships launch (Shooting Star) for run into Ketchikan to pick up mail and supplies (Joslin and Magalhaes aboard)
	1505	Ships launch returns, tied alongside
	1545	Maneuver to check ships drift, proceed to position off Helm Point where testing is resumed, working through the night
June 3	0405	Tests concluded, underway from position off Caamano Point where a southerly drift acting through the night has set the POLARIS, enroute Wrangell; Shooting Star in tow
	1229	Arrive in Wrangell, tie up at Union Oil Dock, take on fuel and water, Bud Lowry comes aboard

Date	Time (PDST)	Activity
June 3	1500	Move to Wrangell Municipal Dock, picked up mail and supplies for Captain R. Stacey aboard the USGS power barge DON J. MILLER in Edna Bay (60 miles SW of Wrangell)
June 4	1248	Depart Wrangell harbor to run seismic tracks
	1252	Boomer and hydrophone over the side
	1348	Commence tracking (as per Chart 8160, this date)
	1720	Power supply burnt out, stop engine, bring boomer and hydrophone inboard
	1725	Run to Wrangell
	1800	Tie up Wrangell Municipal Dock
June 5	1025	Depart Wrangell harbor to run seismic tracks
	1030	Boomer and hydrophone over the side, maneuver to start of Track 12 (Chart 8160)
	1125	Commence tracking beginning on Track 12 (as per Chart 8160, this date)
	1515	Conclude tracking this date, proceed to Station 1 (Chart 8160) for geological sampling
	1540	On Station 1, commence taking grab samples PG67022-PG67030 (as per Chart 8160, this date)
	1800	Terminate sampling, run to Wrangell

Date	Time (PDST)	Activity
June 5	1845	Arrive Wrangell, tie up Wrangell Municipal Dock
June 6	1316	Depart Wrangell enroute Station 9
	1400	On Station 9, commence taking grab samples PG67031-PG67038 (Stations as per Chart 8160, this date)
	1710	Terminate sampling, run to Wrangell
	1730	Arrive Wrangell, tie up Wrangell Municipal Dock
June 7	0917	Depart Wrangell enroute Station 17
	0934	On Station 17 commence sampling
	1341	Conclude sampling Wrangell area (Chart 8160)
	1415	Lift Shooting Star aboard
	1430	Underway, enroute Edna Bay to rendezvous with the DON J. MILLER
	2315	Arrive Edna Bay, anchor 200 yards from DON J. MILLER
June 8	0830	Weigh anchor, maneuver and tie alongside DON J. MILLER
		Deliver motor parts and supplies to DON J. MILLER, exchange vessel tours, Joslin and Jones inspect bottom of POLARIS for growth with SCUBA gear

Date	Time (PDST)	Activity
June 8	1410	Depart Edna Bay enroute Sitka
June 9	0405	Arrive Sitka, dock
		Pick up supplies and mail in town
	1530	Depart Sitka harbor to begin geophysical sampling
	1545	Hydrophone and boomer overboard
	1551	Begin seismic tracking (as per Chart 8244, this date)
	1620	Seismic equipment failure, end tracking return to Sitka harbor
	1635	Hydrophone and boomer inboard
	1645	Arrive Sitka harbor, dock, work on repairs
June 10		Continue repairs, pick up parts in town
	1330	Depart Sitka to begin geophysical sampling, hydrophone and boomer overboard
	1349	Begin seismic tracking (as per Chart 8244 and 8255, this date)
	1708	Terminate tracking, hydrophone and boomer inboard, return to Sitka
	1730	Arrive Sitka harbor, dock
June 11	0837	Depart Sitka to begin geological sampling

Date	Time (PDST)	Activity
June 11	0851	On Station 1, commence sampling (as per Chart 8244 and 8255, this date) Samples PG67049-PG67071
	1616	Complete sampling this area return to Sitka
	1631	Arrive Sitka, dock, top off water tanks, prepare POLARIS for return voyage to San Francisco
June 12	0920	Depart Sitka enroute Astoria via outside waters
June 13		Underway off the Canadian Coast
June 14		Underway off the Canadian Coast
June 15	0800	Underway off Straits of Juan DeFuca
	2145	Arrive Astoria tie up to Bumble Bee net dock, Bud Lowry leaves ship due to illness
June 16		Day spent picking up supplies in town and preparing sparkers and other equipment
	1945	Move up stream ½ mile to Chevron fuel dock, take on fuel and water, spend night at fuel dock
June 17	0730	Depart Astoria enroute Newport, Oregon following the 20 fathom contour along the coastline, where a seismic profile shall be continually recorded

Date	Time (PDST)	Activity
June 17	1015	Hydrophone and sparkers lowered overboard
	1039	On station off Necanicum River, start tracking (as per C&GS Chart 5902 and 5908, this date)
	1442	A second hydrophone lowered overboard
	1909	End tracking off Newport Channel bring all equipment inboard, run into Newport
	1951	Arrive Newport, tie outboard, "Cripple Creek" and "Yaquina" at OSU's dock. Unload equipment for OSU
June 18	0751	Depart Newport enroute Coos Bay via Stonewall Bank to carry out a seismic profile
	0830	Lower sparkers and hydrophone overboard aNd making preliminary tests
	0855	Begin tracking toward Stonewall Bank (as per C&GS Chart 5802, this date)
	2115	Seismic profile recorder developed 60 cycle interference, end tracking pull all equipment inboard
	2145	Run for Coos Bay
June 19	0105	Arrive Coos Bay, anchor for the night
	0630	Put "Shooting Star" overboard and weigh anchor, depart Anchorage for Charleston Yacht Harbor with Steve Wolf following in "Shooting Star"

Date	Time (PDST)	Activity
June 19	0700	Arrive Charleston Yacht Harbor tie at fuel dock, tie "Shooting Star" at Berth 33 to be left behind for Ed Clifton's shore party
	0820	Depart Charleston enroute San Francisco
June 20	2325	Arrive and dock at Port of Redwood City, secure ship, crew disembarks

:I. DESCRIPTION OF OPERATIONS

A total of about 3520 nautical miles were covered in this cruise.

Seismic recording tracks were run over the major structural features :awardly adjacent to the Alaskan Communities of Ketchikan, Wrangell, and .tka using a water backed boomer as a sound source. Bathymetric records :re made concurrent with all seismic profiles. This reconnaissance served delineate areas receptive to geological sampling.

Helm Bay was sampled along its apex in order to retrieve specimens; in is one time gold mining area; for heavy metals analysis.

A total of 71 grab and core samples were obtained with a shipek grab mpler and a gravity corer in the course of this cruise.

The seismic profiles obtained off the Oregon Coast were made using four arkers arching simultaneously: two being towed amid ship with a 30' spread d two being towed astern with a 30' spread.

Position fixes and navigation control were obtained primarily with the ca, Model TM 629 radar.

V. PERSONNEL

Dr. G. A. Rusnak. . . . Chief Scientist

J. Joslin . . . . . Master

E. Magalhaes. . . . . Engineer

B. Valley . . . . . Mate

S. Wolf . . . . . Geologist

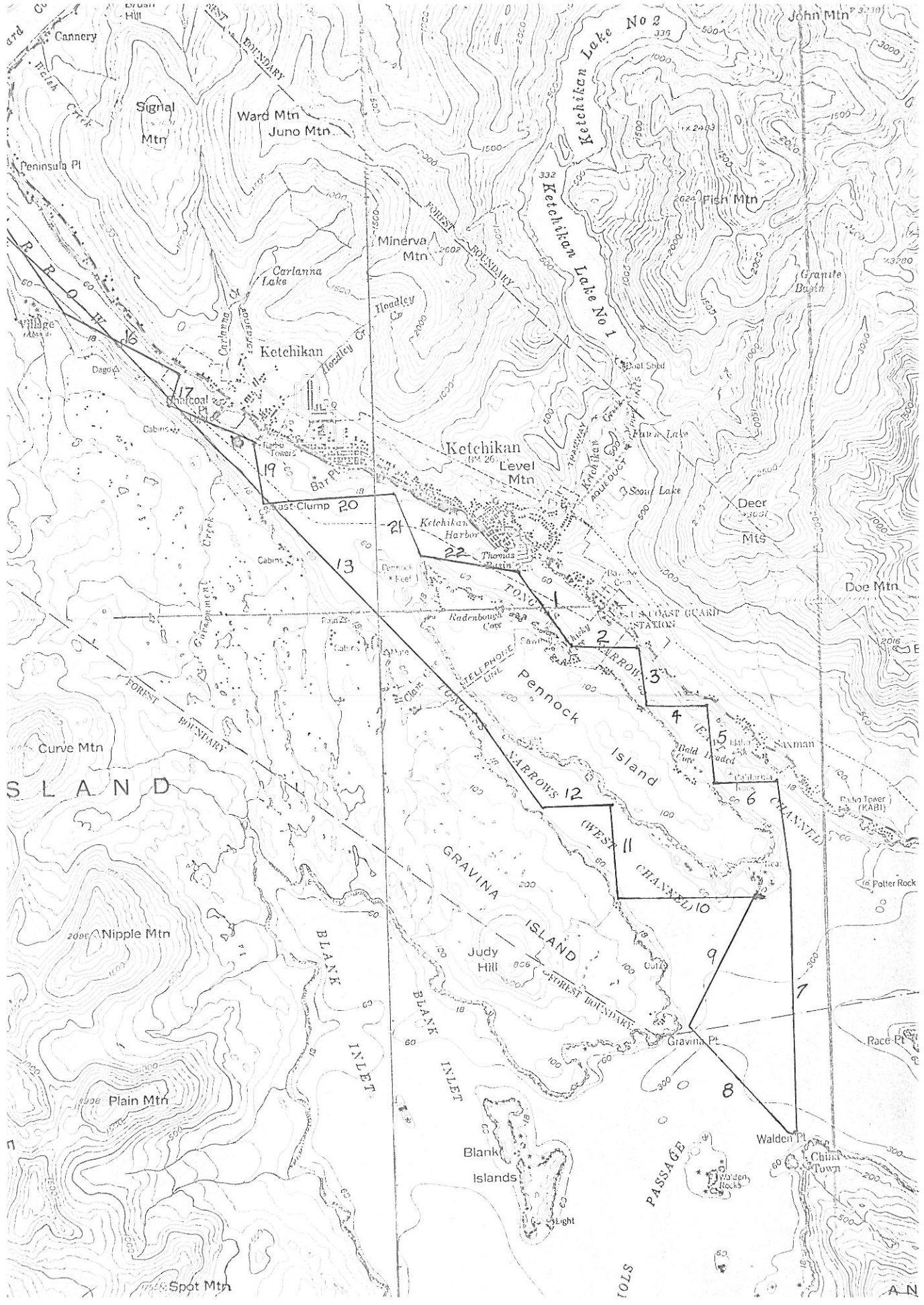
B. Lowry. . . . . Electronic Technician

J. Lee. . . . . Electronic Technician

J. Jones. . . . . Cook

Submitted by:

Jerry C. Joslin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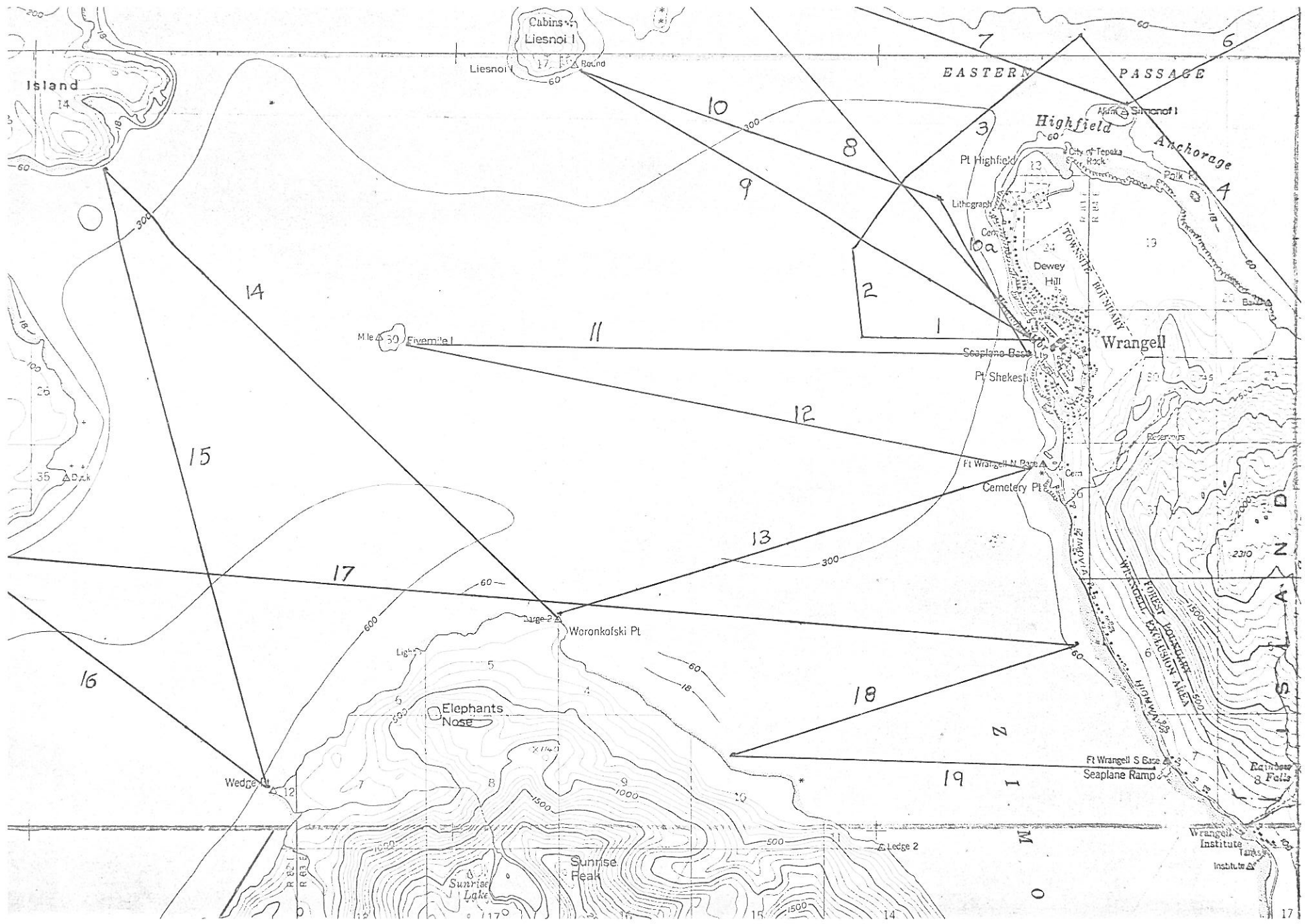
Carlanna Lake
Granite Basin
Village
Ketchikan
Coal Shed
Deer Mts
Level Mtn
Scout Lake
Doe Mtn
Ketchikan Harbor
Thomas Basin
Radenbough Cove
U.S. COAST GUARD STATION
Pennock Island
Curve Mtn
Saxman
Potter Rock
Nipple Mtn
Judy Hill
Gravina Pt
Race Pt
Plain Mtn
Blank Islands
Walden Pt
China Town
Walden Rocks
Spot Mtn
Light
FOREST BOUNDARY
TONGASS NARROWS
GRAVINA ISLAND
BLANK INLET
PASSAGE
(WEST CHANNEL)
(EAST CHANNEL)
R 90 W
R 89 W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WRANGELL FOREST PUBLIC EXCLUSION AREA
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Woronkofski Pt
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Seaplane Ramp
Rainbow Falls
Wrangell Institute
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Smith I
Fritz I
Turning I
Volga I
Mitchell Rk
Harbor Mtn
Kutkan I
Morne I
Breast I
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Cannon I
Minett I
Dove I
Ring I
Guardian I
Ellsworth Cut
Harris I
Gilmore Is
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Cobb I
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Boardkin I
Fassett I
Lucel I
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Belknap Is
Zenobia Rk
Mertz Long I
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Kutchuma Islands
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Martin I
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Camp Cooger Bay
Aleutkina Bay
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