CRUISE REPORT

Cruise Number: MF96-04
FOCI Number: FOCI-02
NOAA Ship: MILLER FREEMAN
Area of Operations: Shelikof Strait

Itinerary: March 9, 1996 Depart Dutch Harbor
March 13, 1996 Arrive Kodiak

Participating Organizations: NOAA - Alaska Fisheries Science Center (AFSC)
NOAA - Pacific Marine Environmental Laboratory (PMEL)

Chief Scientist: Carol DeWitt **Affiliation: NOAA/PMEL**

Personnel:

William Parker	M/USA	NOAA/PMEL
Dennis Benjamin	M/USA	NOAA/NMFS
Steve DuBois	M/USA	NOAA/NMFS
Dan Twohig	M/USA	NOAA/NMFS

Objectives of Cruise: The Fisheries-Oceanography Coordinated Investigations (FOCI) program is a joint effort by scientists at PMEL, AFSC, and several academic institutions, to understand the biological and physical processes which cause recruitment variability of commercially valuable fish and shellfish stocks in Alaskan waters. The Shelikof Strait FOCI program is presently studying the effects of the biotic and abiotic environment on the early life stages of walleye pollock spawned in Shelikof Strait. There are two aspects to the study: the acquisition and analysis of time-series data, and specific research topics to be covered on a cruise-by-cruise basis.

The main objective of this cruise was to deploy five subsurface moorings in Shelikof Strait, deploy/recover one mooring in Pavlof Bay, and to recover three moorings at Unimak Pass.

Summary of Operations:

Mooring deployments:	6
Mooring recoveries:	2
CALVETs:	2
CTD casts:	5
Seacat casts:	4
Bongos, 60 cm:	2
Bongos, 20 cm	2
Chlorophyll samples:	17
Nutrient samples:	19

Summary of Cruise: There was an approximately 6.5 hour transit to the first mooring site at Unimak Pass. The first mooring, F-95UP-1, was recovered successfully; however, the Sea-Bird Seagauge was not recovered. The Seagauge had been mounted in a cup welded to the anchor. The Seagauge was attached to a stainless steel bar on the release by a stainless steel wire. The hole in the bar where the wire had passed through had either been completely corroded or worn through - allowing the wire to slip through the hole - resulting in the loss of

the Seagauge. The stainless steel attachment bar has been shipped to Seattle, and, upon arrival, further analysis will be completed by the PMEL Engineering Division. Due to time limitations, the next mooring, F-UP95-2, was recovered in the dark. After the mooring was released, the mooring location was determined by using a deck unit to interrogate the release. Bill Parker's efforts in interpreting the release signals and guiding the ship toward the mooring were commendable. The stainless steel bar on this mooring showed minor wear/corrosion - the Seagauge was recovered. This mooring also had an Aanderaa current meter. Although the current meter was recovered, the rotor was missing and there was considerable growth on the mooring. A cast using PMEL's Sea-Bird Seacat SBE-19 was completed after the mooring recovery. The third mooring in Unimak Pass, F-UP95-3, was located and released, but never surfaced. Interrogations to the release indicated that the mooring was vertical. Due to time limitations and darkness, it was decided not to drag for the mooring. Further attempts to recover the mooring will be made on a future FOCI cruise.

A cast using PMEL's Sea-Bird SBE-19 Seacat was completed prior to the Pavlof Bay mooring recovery attempt. There was no response from the Pavlof Bay mooring that had been deployed in February 1995. A second attempt to recover the mooring will be made on a future FOCI cruise. The 1996 Pavlof Bay mooring was deployed without event. A second cast using PMEL's Sea-Bird SBE-19 Seacat was completed after the mooring deployment.

A CTD cast was completed prior to the mooring deployment at F-9618. Mooring F-9618 was deployed successfully. A CTD cast was completed prior to the mooring deployment at F-9616. Mooring F-9616 was deployed successfully.

Originally, the biological work at Line 8 was to be completed next. However, since the weather was good and predicted to decline, the decision was made to deploy mooring F-9601. After an approximately 6.5 hour transit, we arrived at the mooring site fifteen minutes prior to sunset. The weather worsened as the mooring deployment proceeded. Since the ship did not drift as expected, the mooring had to be dragged to the deployment site for approximately 20 minutes. When the mooring was finally released, the top float remained at the surface. Since the mooring did not drift, it was obvious that the mooring was still attached to the anchor. Due to darkness and extremely poor weather conditions, it was decided to leave the mooring until the next day.

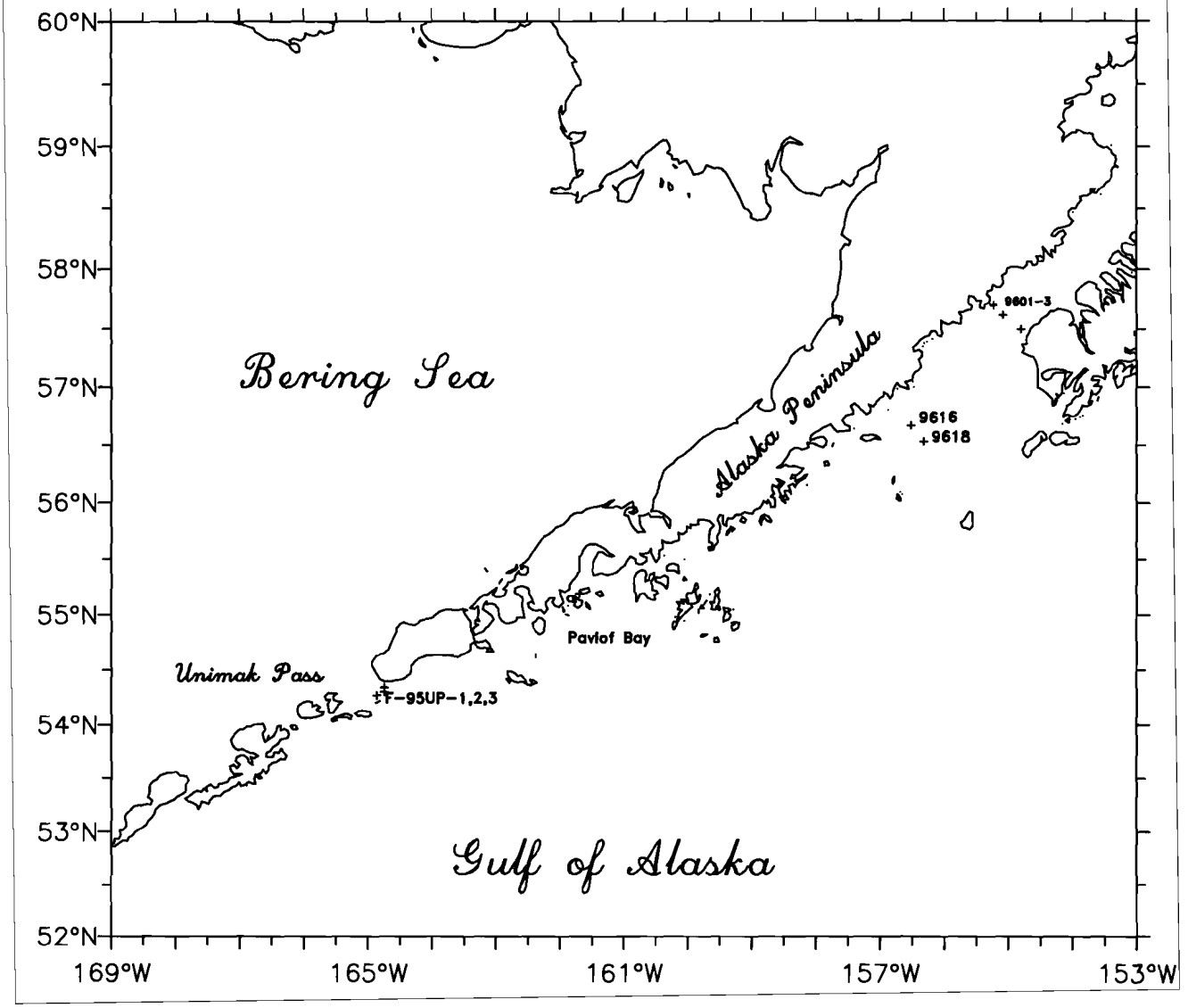
During the night, the CALVET and bongo tows were completed at stations F-9603 and F-9602. Further operations were postponed due to weather. At approximately 10:30 a.m. Local time, mooring operations commenced. Mooring F-9603 was deployed, followed by a CTD with nutrient and chlorophyll samples. Then mooring F-9602 was deployed, followed by two CTDs with nutrient and chlorophyll samples. The mooring at F-9601 was recovered until the slack in the line was removed. The wire for the mooring had been cut too long by approximately 50 m. Due to time limitations, it was decided to remove the top two pieces of wire (approximately 46 m) and one Aanderaa current meter. A CTD was deployed after the mooring deployment, but a severe winch backlash occurred at the surface. Again due to time limitations, it was decided to do a Seacat cast. The CTD was moved to the bow (after cutting the winch wire), and the backlashed wire was respooled and re terminated at a later time.

Captain Clary and his crew were, again, a pleasure to work with. Special thanks are extended to Chief Bosun Rick Pietrusiak and his deck crew for their efforts during mooring operations, the survey department for their arduous work during the biological operations, E.T. Phil Porter for his assistance in repairing a moored instrument, and to the acting Field Operations Officer Todd Bridgeman for his support during this cruise.

ATTACHMENTS

JD	Date (GMT)	Time (GMT)	Alternate Station	Station	Haul	Latitude	Longitude	Depth (m)	Gear
070	Mar-10	03:30	F-UP95-1	1	1	54° 16.62' N	164° 51.82' W	61	Moor
070	Mar-10	05:30	CAT001	2	1	54° 17.96' N	164° 45.96' W	76	CAT
070	Mar-10	06:00	F-UP95-2	2	2	54° 17.96' N	164° 45.96' W	67	Moor
070	Mar-10	08:14	F-UP95-3	3	1	54° 20.33' N	164° 44.53' W	67	Moor
070	Mar-10	20:55	CAT002	4	1	55° 10.96' N	161° 41.95' W	86	CAT
070	Mar-10	22:00	Pavlof Bay	4	2	55° 11.20' N	161° 42.00' W	86	Moor
070	Mar-10	23:00	Pavlof Bay	4	3	55° 11.29' N	161° 41.68' W	92	Moor
070	Mar-10	23:13	CAT003	4	4	55° 11.49' N	161° 41.88' W	78	CAT
071	Mar-11	18:15	F-9618	5	1	56° 31.61' N	156° 18.76' W	216	Moor
071	Mar-11	18:37	CTD001	5	2	56° 31.30' N	156° 19.27' W	215	CTD,PAR,FLUOR,ChlAM
071	Mar-11	21:05	F-9616	6	1	56° 40.34' N	156° 31.79' W	164	Moor
071	Mar-11	21:29	CTD002	6	2	56° 40.05' N	156° 32.21' W	149	CTD,PAR,FLUOR,ChlAM
072	Mar-12	06:47	F-9601	7	1	57° 41.36' N	155° 14.92' W	294	Moor
072	Mar-12	09:31	CALVET001	8	1	57° 30.03' N	154° 48.01' W	212	CALVET
072	Mar-12	10:09	BON001	8	2	57° 29.82' N	154° 48.16' W	212	20/60 Bon
072	Mar-12	11:49	BON002	9	1	57° 29.43' N	155° 04.89' W	251	20/60 Bon
072	Mar-12	12:20	CALVET002	9	2	57° 36.89' N	155° 05.18' W	254	CALVET
072	Mar-12	20:43	F-9603	10	1	57° 36.65' N	154° 47.86' W	207	Moor
072	Mar-12	21:13	CTD003	10	2	57° 36.70' N	154° 47.94' W	196	CTD,PAR,FLUOR,ChlAM, CHL,NUT
073	Mar-13	00:31	F-9602	11	1	57° 41.26' N	155° 04.99' W	250	Moor
073	Mar-13	00:56	CTD004	11	2	57° 40.56' N	155° 04.68' W	248	CTD,PAR,FLUOR,ChlAM, CHL,NUT
073	Mar-13	01:32	CTD005	11	3	57° 29.91' N	155° 04.88' W	249	CTD,PAR,FLUOR,ChlAM, CHL

JD	Date (GMT)	Time (GMT)	Alternate Station	Station	Haul	Latitude	Longitude	Depth (m)	Gear
073	Mar-13	04:00	F-9601	12	1	57° 37.01' N	155° 15.95' W	298	Moor
073	Mar-13	07:04	CAT004	12	2	57° 36.95' N	155° 17.26' W	305	CAT


60°N
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169°W
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157°W
153°W
Bering Sea
Alaska Peninsula
Gulf of Alaska
Unimak Pass
F-95UP-1,2,3
Pavlof Bay
9601-3
9616
9618