DRAFT CRUISE INSTRUCTIONS

ECO-FOCI

NOAA Ship *MILLER FREEMAN*, Cruise MF-07-02
20 Feb. – 01 Mar.
Chief Scientist – Wm. Floering, NOAA/PMEL

1.0 DRAFT CRUISE INSTRUCTIONS

1.1 **Cruise Title –** Ecosystem and Fisheries-Oceanography Coordinated Investigations (Eco-FOCI).

1.2 **Cruise Numbers:**

1.2.1 **Cruise Number** – MF-07-02
1.2.2 **Eco-FOCI Number** – N/A

1.3 **Cruise Dates:** 20 Feb. – 01 Mar., 2007

1.3.1 **Departure** – 1300 hours, 20 Feb., Kodiak, AK

1.3.2 **Arrival** - 1000 hours, 01 Mar., Dutch Harbor, AK

1.4 **Operating Area** – Gulf of Alaska and Shelikof Strait

2.0 CRUISE OVERVIEW

2.1 **Cruise Objectives** – To recover and deploy oceanographic instrumentation moorings in the Gulf of Alaska, Shelikof Strait and Amukta Pass. To sample the physical and biological ocean properties near the mooring sites and across the historical Line 8 sampling stations.

2.2 **Applicability** - These instructions, with ***FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN***, dated March 1, 2005, present complete information for this cruise.

2.3 **Participating Organizations**

NOAA - Pacific Marine Environmental Laboratory (PMEL)
7600 Sand Point Way N.E., Seattle, Washington 98115-6439

NOAA - Alaska Fisheries Science Center (AFSC)
7600 Sand Point Way N.E., Seattle, Washington 98115-0070

2.4 Personnel

2.4.1 Chief Scientist

Name	Gender	Affiliation	E-mail Address
William Floering	M	PMEL	William.floering@noaa.gov

2.4.2 Other Participating Scientists

Name	Gender	Affiliation	E-mail Address
Carol Dewitt	F	PMEL	Carol.dewitt@noaa.gov

2.5 Administration

2.5.1 Ship Operations

Marine Operations Center, Pacific
1801 Fairview Avenue East, Seattle, Washington 98102-3767
Telephone: (206) 553-4548
Fax: (206) 553-1109

Commander Mark Pickett, NOAA
Chief, Operations Division, Pacific (MOP1)
Telephone: (206) 553-1857
Cellular: (206) 390-7527
E-mail: Mark.Pickett@noaa.gov

Larry Mordock
Deputy Chief, Operations Division (MOP1x1)
Telephone – Work: (206) 553-4764
Home: (206) 365-3567
Cellular: (206) 465-9316
E-mail: Larry.Mordock@noaa.gov

2.5.2 Scientific Operations

Dr. Phyllis J. Stabeno, PMEL
Telephone: (206) 526-6453
E-mail: Phyllis.Stabeno@noaa.gov

Dr. Jeffrey Napp, AFSC
Telephone: (206) 526-4148
E-mail: Jeff.Napp@noaa.gov

3.0 OPERATIONS

3.1 **Data To Be Collected** – The standard suite of SCS environmental sensors should be recording to the SCS computer. This includes but is not limited to TSG, wind speed and direction, air temperature, humidity, gps location, ships speed and direction and depth to 500 meters. We will also deploy the SeaBird 9/11 plus CTD and rosette, and the bongo/Seacat combination.

3.2

3.2.1 **Scientific Computer System (SCS)** - The ship's SCS shall operate throughout the cruise, acquiring and logging data from navigation, meteorological, oceanographic,

and fisheries sensors. See ***FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN*** (SOI 5.2) for specific requirements.

3.3 **Staging Plan** – It is our intention to coordinate with the vessel and the MACE group at AFSC to load what we can on the ship in Seattle before it departs for Alaska. The equipment that can not be loaded in Seattle will be shipped in a container to the Kodiak Coast Guard Base prior to the cruise.

3.4 **De-staging Plan** - All PMEL mooring equipment will be off loaded at the end of the cruise in Dutch Harbor and shipped to Seattle.

3.5 **Cruise Plan** – The first operation will be to recover and deploy a subsurface mooring in Chiniak Bay. A CTD cast will be taken prior to recovery and following deployment. A series of 7 stations across Shelikof Strait will be occupied. At each station we will complete a CTD cast and a Bongo tow. A subsurface mooring will be recovered and deployed in Pavlof Bay. A CTD cast will be completed prior to recovery and following deployment. A mooring with a defective release is located approximately 9 miles south of Line 8. We will search for this mooring and attempt to recovery it by dragging or possibly using an ROV to attach a recovery line to the mooring. The mooring was probably moved off station by a fishing vessel and currently sits in 300 meters of water. We are currently negotiating with a contractor to provide a vessel and an ROV to recovery the mooring with the faulty release in Shelikof Strait. There is a slight possibility that the ROV could be deployed from the Miller Freeman on this cruise. If a schedule change is cleared by all concerned we will add a couple days to this cruise to allow recovery and deployment of 4 subsurface moorings in Amukta Pass. This change would include ending the cruise in Dutch Harbor instead of Kodiak. There are 4 subsurface moorings across Amukta pass to be recovered and re-deployed. A CTD cast will be taken at each mooring site prior to recovery and following the deployment.

3.6 **Station Locations** –

3.7 Chiniak Bay 06CB-1A 57 deg. 43.334 N 152 deg. 17.627 W
Line 8 stations
Fox61 57 deg. 43.200 N 155 deg. 15.600 W
Fox60 57 deg. 41.000 N 155 deg. 10.000 W
Fox59 57 deg. 38.500 N 155 deg. 04.200 W
Fox58 57 deg. 36.300 N 155 deg. 00.500 W
Fox57 57 deg. 33.100 N 154 deg. 52.500 W
Fox56 57 deg. 30.900 N 154 deg. 47.000 W
Fox55 57 deg. 28.500 N 154 deg. 42.000 W
Pavlof Bay 06PA-1A 55 deg. 10.866 N 161 deg. 41.191 W
05SSP-2A damaged mooring 57 deg. 29.43 N 155 deg. 11.95 W
06AMP-4A 52 deg. 22.998 N 172 deg. 07.014 W
06AMP-3A 52 deg. 24. 003 N 171 deg. 55.006 W
06AMP-2A 52 deg. 24.991 N 171 deg. 40.009 W
06AMP-1A 52 deg. 25.992 N 171 deg. 27.023 W

3.8 **Station Operations** - The following are operations to be conducted on this cruise. The procedures for these operations are listed in the ***FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN*** (SOI). Operations not addressed in the SOI and changes to standard procedures are addressed below.

- CTD/Water Sample Operations (SOI 3.2.1)

- MARMAP Bongo Tows (SOI 3.2.2)
- Chlorophyll Sampling Operations (SOI 3.2.10)
- ARGOS Satellite Tracked Drifter Buoy Deployments (SOI 3.2.11)
- SIMRAD EK60 Scientific Echosounder Monitoring (SOI 3.2.12)
- Subsurface mooring deployments and recoveries
- ROV deployment and recovery (A slim possibility at this time)

3.9 Underway Operations - The following are underway operations to be conducted on this cruise. The procedures for these operations are listed in the ***FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN*** (SOI). Operations not addressed in the SOI and changes to standard procedures are addressed below.

- Acoustic Doppler Current Profiler (ADCP),
- Scientific Computer System (SCS) data acquisition (SOI 5.2),
- Fluorometer monitoring (SOI 5.3),
- Thermosalinograph monitoring (SOI 5.3).

3.10 Applicable Restrictions – N/A

3.11 Small Boat Operations – N/A

4.0 FACILITIES

4.1 Equipment and Capabilities Provided by Ship

- Oceanographic winch with slip rings and 3-conductor cable terminated for CTD,
- Manual wire-angle indicator,
- Oceanographic winch with slip rings and 3-conductor cable terminated for the SBE SEACAT, for net tow operations,
- Sea-Bird Electronics' SBE 911*plus* CTD system with stand, each CTD system should include underwater CTD, weights, and pinger. A backup CTD and deck unit should be available.
- 10-liter Niskin sampling bottles for use with rosette (10 plus 4 spares),
- Conductivity and temperature sensor package to provide dual sensors on the CTD (primary),
- AUTOSAL salinometer, for CTD field corrections,
- Sea-Bird Electronics' SBE-19 SEACAT system,
- Meter block for plankton tows,
- Wire speed indicators and readout for quarterdeck, Rowe, and Marco winches,
- For meteorological observations: 2 anemometers (one R. M. Young system interfaced to the SCS), calibrated air thermometer (wet-and dry-bulb) and a calibrated barometer and/or barograph,
- Freezer space for storage of biological and chemical samples as well as -80 degree C freezer space.
- SIMRAD EQ-50 echosounder,
- JRC JFV-200R color sounder recorder,
- RD Instruments' ADCP recorded to disk.

- Use of Pentium PC in DataPlot for data analysis,
- Scientific Computer System (SCS),
- Electrical connection between Rowe winch and DataPlot,
- Removable stern platform (in place).
- Laboratory space with exhaust hood, sink, lab tables and storage space
- Access to a minimum of 2 E-Mail/internet computers
- Sea-water hoses and nozzles to wash nets (quarterdeck and aft deck),
- Adequate deck lighting for night-time operations,
- Navigational equipment including GPS and radar,
- Safety harnesses for working on quarterdeck and fantail,
- Ship's crane(s) used for loading and/or deploying.

4.2 Equipment and Capabilities Provided by Scientist

- Sea-Bird Electronics' SBE 911*plus* CTD system, Backup
- Sea-Bird Electronics' SBE-19 SEACAT system, Backup
- PMEL PC with SEASOFT software for CTD data collection and processing,
- Fluorometer and light meter to be mounted on CTD,
- CTD stand modified for attachment of fluorometer,
- Conductivity and temperature sensor package to provide dual sensors on the CTD (backup),
- CTD rosette sampler,
- IAPSO standard water,
- 60-cm bongo sampling arrays,
- 20 cm bongo arrays,
- Spare wire angle indicator
- CalVET net assembly
  Subsurface moorings, floats and intstrumentation.
- Miscellaneous scientific sampling and processing equipment,
- Scientific ultra-cold freezer.
- Cruise Operations Database (COD)

5.0 DISPOSITION OF DATA AND REPORTS

5.1 The following data products will be included in the cruise data package:

- **NOAA Form 77-13d - *Deck Log - Weather Observation Sheets***,
- Electronic Marine Operations Abstracts, corrected.
- SCS backup,
- Calibration Sheets for all ship's instruments used,
- PMEL CTD Weather Observation Logs,
- CTD Cast Information/Rosette Log,
- Autosalinometer Logs,
- ADCP set up and operation log.
- Ultra-cold Freezer Temperature Daily Log (SOI 5.4).

5.2 **Pre- and Post-cruise Meetings** - Cruise meetings may be held in accordance with ***FOCI Standard Operating Instructions for NOAA Ship MILLER FREEMAN*** (SOI 5.5).

6.0 ADDITIONAL PROJECTS N/A

6.1 **Definition** - Ancillary and piggyback projects are secondary to the objectives of the cruise and should be treated as additional investigations. The difference between the two types of secondary projects is that an ancillary project does not have representation aboard and is accomplished by the ship's force.

6.2 **Ancillary Projects** - Any ancillary work done during this project will be accomplished with the concurrence of the Chief Scientist and on a not-to-interfere basis with the programs described in these instructions and in accordance with the ***NOAA Fleet Standing Ancillary Instructions***.

6.3 **Piggyback Projects** - None

7.0 HAZARDOUS MATERIALS

7.1 Inventory

The Field Party Chief shall be responsible for complying with MOCDOC 15, Fleet Environmental Compliance #07, Hazardous Material and Hazardous Waste Management Requirements of Visiting Scientists. July 2002

Lithium Batteries in Instruments
Formalin for preserving Bongo Samples

7.2 Material Safety Data Sheet (MSDS)

Attached to Final Instructions

8.0 MISCELLANEOUS

8.1 **Communications** - Specific information on how to contact the **NOAA Ship *MILLER FREEMAN*** and all other fleet vessels can be found at:

http://www.moc.noaa.gov/phone.htm

8.2 Important Telephone and Facsimile Numbers and E-mail Addresses

8.2.1 Pacific Marine Environmental Laboratory (PMEL):

FOCI - Ocean Environmental Research Division (OERD2):

- (206) 526-4700 (voice)
- (206) 526-6485 (fax)

Administration:

- (206) 526-6810 (voice)
- (206) 526-6815 (fax)

E-Mail: FirstName.LastName@noaa.gov

8.2.2 Alaska Fisheries Science Center (AFSC):

FOCI - Resource Assessment and Conservation Engineering (RACE):

- (206) 526-4171 (voice)
- (206) 526-6723 (fax)

E-Mail: FirstName.LastName@noaa.gov

8.2.3 NOAA Ship *MILLER FREEMAN* - Telephone methods listed in order of increasing expense:

Homeport - Seattle, Washington:

- (206) 553-4589
- (206) 553-4581
- (206) 553-8344

United States Coast Guard - Kodiak, Alaska

- (907) 487-9752
- (907) 487-9753
- (907) 487-4397
- (907) 487-4398

Cellular:

- (206) 790-7594

Iridium:

- (808) 659-5684

INMARSAT Mini-M

- 011-872-761-267-346 (voice/PBX)
- 011-872-761-267-347 (voice)
- 011-872-761-267-348 (fax)

INMARSAT B

- 011-872-330-394-120 (voice)
- 011-872-330-394-121 (fax)

E-Mail: NOAA.Ship.Miller.Freeman@noaa.gov (mention the person's name in SUBJECT field)

8.2.4 Marine Operations Center, Pacific (MOP):

Operations Division (MOP1)

- (206) 553-4548 (voice)
- (206) 553-1109 (facsimile)

E-Mail: FirstName.LastName@noaa.gov

E-Mail to Radio Room: Radio.Room@noaa.gov

9.0 APPENDICES

9.1 Equipment Inventory

1800 # railroad wheel anchor X 6
Mooring spool chain #400 each X 2
75 Khz ADCP in Syntactic foam float 1000# X 4
Misc. mooring instrumentation (SBE39s, MicroCats, Current meters, MTRs
Acoustic releases (6).
Cages for mooring instruments
Tools, cables and spare parts.

9.2 HAZMAT Inventory

See section 7

9.3 Figures (Include any figures, schematics, and/or chartlets.)

9.4 Tables (Include any tables of station locations.)