UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NOAA Marine and Aviation Operations
Marine Operations Center
439 W. York Street
Norfolk, VA 23510-1114

AUG 15 2011

MEMORANDUM FOR: Commander Jeremy Adams, NOAA
Commanding Officer, NOAA Ship *Pisces*

FROM: Captain David A. Score, NOAA
Commanding Officer, NOAA Marine Operations Center-Atlantic

SUBJECT: Project Instruction for PC-11-06
Multibeam Sonar Workshop

Attached is the final Project Instruction for PC-11-06 Multibeam Sonar Workshop, which is scheduled aboard NOAA Ship *Pisces* during the period of 29 August- 02 September 2011. Acknowledge receipt of these instructions via e-mail to **OpsMgr.MOA@noaa.gov** at Marine Operations Center—Atlantic.

Attachment

cc:
MOA1

U S DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

National Marine Fisheries Service

Southeast Fisheries Science Center

PO Drawer 1207

Pascagoula, MS 39568-1207

AUG 15 2011

PROJECT INSTRUCTIONS

NOAA Ship *Pisces* Cruise PC-11-06 (14)

Multibeam Sonar Workshop

Requested by:

for Charles Thompson, Field Party Chief

Date 8/9/11

for Dr. Lisa Desfosse, Director
Mississippi Laboratories

Date 8/10/11

Approved by:

Captain David A. Score, NOAA
Commanding Officer, MOC-A

Date 8/11/11

Dr. Bonnie Ponwith
Director, SEFSC

Date 08/11/11

I. Overview

A. Project Period: August 29 – September 2, 2011

B. Operating Area: The area of operation is the northern Gulf of Mexico from 28º N to 30º N latitude and from 86º W to 89º W longitude.

C. Summary of Objectives:

The overall objective is to familiarize participating scientists with NOAA Ship *Pisces* multibeam echosounder (Simrad ME70) configuration, operation, calibration and data collection and test the sonar's capabilities for a variety of applications. An additional objective is to collect water column and seafloor scattering data using *Pisces* multibeam echosounder and splitbeam echosounders (Simrad EK60) in coordination with measurements being conducted on NOAA Ship *Okeanos Explorer* using KongsbergEM302 multibeam echosounder for comparison between systems.

Specific objectives (not in priority order) are to:

1) Review ME70 configuration options, performance consequences of configuration choices, calibration procedures, and methods of synchronizing ME70 with other acoustic systems for simultaneous operation.

2) Collect acoustic scattering data from schools of fish for school size and shape analysis.

3) Collect acoustic scattering data from individual fish for spectral and directivity estimation.

4) Collect acoustic scattering data from the seabed to estimate bottom roughness and bottom type characterization and to compare with *Okeanos Explorer* EM302 echosounder data at the same survey location.

5) Collect data using ME70 and EK60 echosounders from same water column targets as EM302 echosounder on *Okeanos Explorer*. These targets will be both biological constituents of the offshore Deep Scattering Layer as well as gas bubbles released from natural gas seeps.

6) Calibrate ME70 in each configuration used for data collection.

D. Participating Institutions:

NOAA NMFS Southeast Fisheries Science Center (SEFSC)

NOAA NMFS Northeast Fisheries Science Center (NEFSC)

NOAA NCCOS Center for Coastal Environmental Health and Biomolecular Research (CCEHBR)

In collaboration with:

NOAA Office of Ocean Exploration and Research (OER)

University of New Hampshire (UNH) Center for Coastal and Ocean Mapping (CCOM)

University Corporation for Atmospheric Research (UCAR), Joint Office for Science Support (JOSS)

Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE)

E. Personnel (Science Party): 8/29/2011 – 9/2/2011 (5 sea-days)

Name	Title	Sex	Organization	Citizenship	Watch
Charles Thompson	FPC	M	NMFS-MS Labs	USA	1
Todd Kellison	Fishery Biologist	M	NMFS-Beaufort, NC	USA	1
Warren Mitchell	Fishery Biologist	M	NMFS-Beaufort, NC	USA	1
Laura Kracker	Geographer	F	NCCOS-Charleston, SC	USA	1
Vincent Guida	Fishery Biologist	M	NMFS-Woods Hole, MA	USA	1

F. Administrative:

1. Points of Contact:

FPC: Charles Thompson, NMFS, Bldg 1103 Rm 218, Stennis Space Center, MS 39529. 228-688-2097; charles.h.thompson@noaa.gov

Pisces Ops Officer: LT Tracy Hamburger, NOAA Ship *Pisces*, 504.201.0079, ops.pisces@noaa.gov

2. Diplomatic Clearances: N/A

3. Licenses and Permits: N/A

II. Operations

A. Cruise Plan/Itinerary

Date	Depart/Arrive (Location)	Sea Days
08/29/2011	Depart Pascagoula, MS	
09/02/2011	Arrive Pascagoula, MS	5

B. Staging and Destaging

Staging and Destaging will be conducted in Pascagoula, MS.

C. Operations to be Conducted

- 8/29/11
  - Depart Pascagoula
  - Rendezvous with *Okeanos Explorer* for deep water comparisons
- 8/30/11
  - Commence Gas Seep / Water Column Target Comparisons
    - Targets will be scouted by *Okeanos Explorer* prior to *Pisces* arrival
    - Ships will proceed over targets, at same heading and speed, with approximately ½ hour elapsing between ships passage over target to allow ship wakes to decay and displace
  - Transit to shelf/slope area
  - Conduct survey on slope to locate fish schools during nighttime
    - *Pisces* will execute transects at oblique angles up and down slope to identify location of schooling fish species
- 8/31/11
  - Conduct survey along slope to remain over fish schools during early morning
    - *Pisces* will execute transect following depth contour identified during slope survey
  - Commence seafloor backscatter comparison survey
    - Both ships will survey same areas with homogeneous and non-homogeneous seabed characteristics
- 9/1/11
  - Calibrate ME70 echosounder
- 9/2/11
  - Return to Pascagoula

D. Dive Plan: N/A

E. Applicable Restrictions: N/A

III. Equipment

A. Equipment and Capabilities Provided by the Ship

1. Simrad ME70 Multibeam Echosounder
2. Simrad EK60 Splitbeam Echosounders operating at
    a. 18 kHz
    b. 38 kHz
    c. 120 kHz
    d. 200 kHz
3. Echosounder calibration equipment:
    a. 3 Outrigger poles
    b. 3 Electric downrigger reels
    c. Downrigger control system
    d. 3 Handheld VHF radios for use on deck
4. CTD to measure temperature and salinity to 200m depth
5. Computer with Nobeltec or equivalent navigation software and charts of the operating area.
6. Communications via VHF radio and VOIP with *Okeanos Explorer*

B. Equipment and Capabilities Provided by the Scientists

1. Tungsten Carbide ME70 calibration target sphere

IV. Hazardous Materials

A. Policy and Compliance

The FPC is responsible for complying with MOCDOC 15, Fleet Environmental Compliance #07, Hazardous Material and Hazardous Waste Management Requirements for Visiting Scientists, released July 2002. Documentation regarding those requirements will be provided by the Chief of Operations, Marine Operations Center, upon request.

By Federal regulations and NOAA Marine and Aviation Operations policy, the ship may not sail without a complete inventory of all hazardous materials by name and the anticipated quantity brought aboard, MSDS and appropriate neutralizing agents, buffers, and/or absorbents in amounts adequate to address spills of a size equal to the amount of chemical brought aboard. The amount of hazardous material arriving and leaving the vessel shall be accounted for by the FPC.

B. Radioactive Isotopes: N/A

C. Inventory: N/A

V. Additional Projects

A. Supplementary ("Piggyback") Projects: N/A

B. NOAA Fleet Ancillary Projects: N/A

VI. Disposition of Data and Reports

A. Data Responsibilities

The FPC will make copies of data from echosounder systems periodically during the cruise. The ship is requested to provide all SCS data at the end of the cruise.

B. Pre and Post Cruise Meeting

Pre-Cruise Meeting: Prior to departure the FPC will conduct a meeting of the scientific party to train them in sample collection and inform them of cruise objectives. Some vessel protocols, e.g., meals, watches, etiquette, etc. will be presented by the ship's Operations Officer.

Post-Cruise Meeting: Upon completion of the cruise, a meeting will normally be held at 0830 (unless prior alternate arrangements are made) and attended by the ship's officers, the FPC and members of the scientific party, the Vessel Coordinator and the Port Captain to review the cruise. Concerns regarding safety, efficiency, and suggestions for improvements for future cruises should be discussed. Minutes of the post-cruise meeting will be distributed to all participants by email, and to the Commanding Officer and Chief of Operations, Marine Operations Center.

C. Ship Operation Evaluation Report

Within seven days of the completion of the cruise, a Ship Operation Evaluation form is to be completed by the FPC as well as by the Commanding Officer. The preferred method of transmittal of this form is via email to OMAO.Customer.Satisfaction@noaa.gov . If email is not an option, a hard copy may be forwarded to:

Director, NOAA Marine and Aviation Operations
NOAA Office of Marine and Aviation Operations
8403 Colesville Road, Suite 500
Silver Spring, MD 20910

VII. Miscellaneous

A. Meals and Berthing

Meals and berthing are required for 5-15 scientists. Meals will be served three times daily beginning one hour before scheduled departure, extending throughout the cruise, and ending two hours after the termination of the cruise. Since the watch schedule is split between day and night, the night watch may often miss daytime meals and will require adequate food and beverages (for example a variety of sandwich items, cheeses, fruit, milk, juices) during what are not typically meal hours. Special dietary requirements for scientific participants will be made available to the ship's command at least seven days prior to the survey (e.g., FPC is allergic to fin fish).

Berthing requirements, including number and gender of the scientific party, will be provided to the ship by the FPC at least 7 calendar days in advance. The FPC and Commanding Officer will work together on a detailed berthing plan to accommodate the gender mix of the scientific party taking into consideration the current make-up of the ship's complement. The FPC and Operations Officer are responsible for ensuring the scientific berthing spaces are left in the

condition in which they were received; for stripping bedding and linen return; and for the return of any room keys which were issued. The FPC is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the cruise and at its conclusion prior to departing the ship. A pre-departure inspection of all scientific berthing and laboratory spaces will be conducted by the Operations Officer and FPC.

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The FPC will ensure that all non NOAA or non Federal scientists aboard also have proper orders. It is the responsibility of the FPC to ensure that the entire scientific party has a mechanism in place to provide lodging and food and to be reimbursed for these costs in the event that the ship becomes uninhabitable and/or the galley is closed during any part of the scheduled project.

All persons boarding NOAA vessels give implied consent to comply with all safety and security policies and regulations which are administered by the Commanding Officer. All spaces and equipment on the vessel are subject to inspection or search at any time. All personnel must comply with OMAO's Drug and Alcohol Policy dated May 7, 1999 which forbids the possession and/or use of illegal drugs and alcohol aboard NOAA Vessels.

B. Medical Forms and Emergency Contacts

The NOAA Health Services Questionnaire (NHSQ, Revised: 08/08) must be completed in advance by each participating scientist. The NHSQ can be obtained from the FPC or the NOAA website at http://www.omao.noaa.gov/medical/NHSQ_Final_wi_Instructions_fill.pdf. The completed form should be sent to the Regional Director of Health Services at Marine Operations Center. The participant can mail, fax, or scan the form into an email using the contact information below. The NHSQ should reach the Health Services Office no later than 4 weeks prior to the cruise to allow time for the participant to obtain and submit additional information that health services might require before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of the NHSQ. Be sure to include proof of tuberculosis (TB) testing, sign and date the form, and indicate the ship or ships the participant will be sailing on. The participant will receive an email notice when medically cleared to sail if a legible email address is provided on the NHSQ.

Contact information:

Regional Director of Health Services
Marine Operations Center – Atlantic
439 W. York Street
Norfolk, VA 23510
Telephone 757.441.6320
Fax 757.441.3760
E-mail MOA.Health.Services@noaa.gov

Prior to departure, the FPC must provide a listing of emergency contacts to the Executive Officer for all members of the scientific party, with the following information: name, address, relationship to member, and telephone number.

C. Shipboard Safety

Wearing open-toed footwear or shoes that do not completely enclose the foot (such as sandals or clogs, or crocs) outside of private berthing areas is not permitted. Hard hats are also required when working with suspended loads. Work vests are required when working with any gear near open railings and during small boat launch and recovery operations. Hard hats and work vests will be provided by the ship when required.

D. Communications

A progress report on operations prepared by the FPC may be relayed to the program office. Sometimes it is necessary for the FPC to communicate with another vessel, aircraft, or shore facility. Through various means of communications, the ship can usually accommodate the FPC. Special radio voice communications requirements should be listed in the project instructions. The ship's primary means of communication with the Marine Operations Center is via e-mail and the Very Small Aperture Terminal (VSAT) link. Standard VSAT bandwidth at 128kbs is shared by all vessels staff and the science team at no charge. Increased bandwidth in 30 day increments is available on the VSAT systems at increased cost to the scientific party. If increased bandwidth is being considered, program accounting is required it must be arranged at least 30 days in advance.

E. IT Security

Any computer that will be hooked into the ship's network must comply with the *NMAO Fleet IT Security Policy* prior to establishing a direct connection to the NOAA WAN. Requirements include, but are not limited to:

(1) Installation of the latest virus definition (.DAT) file on all systems and performance of a virus scan on each system.
(2) Installation of the latest critical operating system security patches.
(3) No external public Internet Service Provider (ISP) connections.

Completion of these requirements prior to boarding the ship is preferable.

Non-NOAA personnel using the ship's computers or connecting their own computers to the ships network must complete NOAA's IT Security Awareness Course within 3 days of embarking.

F. Foreign National Guests Access to OMAO Facilities and Platforms N/A