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*N. Soderberg*  
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**CRUISE REPORT**

**MARY LOUISE**

87-1

**APRIL 8-10, 1987**

B. Butman  
U.S. Geological Survey  
Woods Hole, MA 02543

VESSEL: Mary Louise

DATES: April 8-10, 1987

PORTS: Woods Hole to Woods Hole, MA

PURPOSE: Recover 3 tripod systems deployed in Western Massachusetts Bay and conduct side-scan sonar surveys at each mooring location to define the local topography and bottom roughness.

PERSONNEL:

Brad Butman	USGS
John Moody	USGS
Ken Parolski	USGS
Bill Klimm	Mary Louise

SUMMARY AND HIGHLIGHTS:

The instrumentation recovered on this cruise was deployed Feb. 7 from the R/V OCEANUS as part of a study of currents and sediment transport in western Massachusetts Bay. The study complements the MWRA study designed to locate the new Boston Sewer outfall.

All three tripod systems were recovered. They were unfouled. The time-lapse cameras did not fire on deck and apparently malfunctioned. Surface marker buoys and current meters at each site were left on location and will be picked up in late May. The instruments should provide additional current data during the period of major spring runoff.

The results of the side-scan sonar survey was disappointing. Two 100 kHz Klein systems were used. The record quality was poor with only 50 m horizontal range and poor resolution. The cause of the poor data is uncertain; noise in the power on the Mary Louise is one possibility. A strong pycnocline associated with the record spring runoff may also have distorted the sonar signals. Further lab testing of the systems is required. At Station C (.60 m depth), the fish could not be flown close enough to the bottom because of the short, hand-deployed cable to provide good records.

A subsurface mooring deployed at Station A in February was found adrift in Boston Harbor March 4. The current meter and float were recovered, but the release was not. A search for the acoustic release both in the harbor and in Broad Sound on the Mary Louise failed to locate the release. The unit is either damaged, so it will not reply to interrogation, or is in somebody's backyard.

NARRATIVE:

April 8	0600	Depart Woods Hole
	1500	Arrive Site B
		Sidescan setup - problems with data quality
	1630	Recover tripod (Mooring number 319)
	1830	Arrive Pt. Allerton CG Base to pickup second sidescan system
	1930	Depart Pt. Allerton
	2250	Start sidescan, Site B. Marginal sidescan quality

April 9      0128      Complete sidescan, Site B  
              0223      Start sidescan, Site A. Marginal sidescan quality

NARRATIVE:

              0638      Complete sidescan, Site A  
              0730      Recover tripod (Mooring number 317)  
              0930      Arrive Boston Coast Guard. Offload 2 tripod systems  
              1100      Depart Boston Coast Guard  
                     Search for release, mooring 320  
                     Arrive Site C  
              1505      Start sidescan survey. Marginal quality  
              1544      Stop sidescan survey  
              1615      Recover tripod (Mooring 318)  
              1728      Continue sidescan  
              1820      Complete sidescan  
              1830      Underway to Woods Hole

April 10      0230      Arrive Woods Hole

TABULATED INFORMATION:

Days at sea:            3

Moorings recovered:    3

Sidescan:                .50 km (poor quality records)



MEMORANDUM

# United States Department of the Interior

GEOLOGICAL SURVEY

87011  
MAR 27 1987

Date: March 23, 1987 (Use Jan 1 for scientific merit calculations!)

From: Brad Butman *Butman*

Subject: Preliminary Cruise Plan

To: Pre-cruise distribution

MLSE Vessel: MARY LOUISE 87-4

Chief Scientist: Brad Butman

Cruise Area: Western Massachusetts Bay

Departure: Woods Hole, April 8, 1987

Return: Woods Hole, April 10, 1987 (Departure and arrival somewhat dependent on weather)

Intermediate port call: Boston Coast Guard Base to offload tripods (request pending)

Personnel: Butman, Moody, Bothner, (Parolski, Nichols, one to be selected)

Equipment: Klein sidescan sonar with tape, grab sampler, AMF release gear, pickup equipment.

This cruise is to pickup the three tripods deployed in western Massachusetts Bay as part of the Boston Harbor project. A short sidescan sonar survey will be conducted at each site before the tripods are recovered to clearly map the tripod location with respect to bedforms and the surficial sediment texture. This survey will complement the survey conducted when the instruments were deployed in February. The three surface buoys, which mark the tripod sites, and have current meters underneath, may also be recovered. Only two tripods can be carried on the MARY LOUISE (and there are some who think that none will fit). Thus, two instruments will be unloaded during a short port stop at the Boston Coast Guard Base on April 9 (approval pending from the Coast Guard). We will need the flatbed truck, on a one day trip from Woods Hole, to pickup the tripods. Strahle will coordinate the tripod shipping. He will not go on the recovery cruise because we anticipate shipping instruments to California for the Battelle project during the cruise. The third tripod and buoys (if recovered) will come back to Woods Hole on the MARY LOUISE.

cc: Folger Aldrich  
Soderberg O'Brien  
Irwin Newell  
Sexton Barton  
Hally Strahle.