

D. Robb

75026

FAY 005

CRUISE REPORT

U.S. GEOLOGICAL SURVEY
OFFICE OF MARINE GEOLOGY
WOODS HOLE, MASSACHUSETTS 02543

SOUTHEAST GEORGIA EMBAYMENT AREA

RV H.J.W. FAY
CRUISE 05

OCTOBER 31, 1975 - NOVEMBER 7, 1975

FAY 005
KNEBEL

INTRODUCTION

A cruise aboard the RV H.J.W. FAY by the U.S. Geological Survey, Office of Marine Geology, Woods Hole, Massachusetts was conducted within the Southeast Georgia Embayment area from October 31, 1975 to November 7, 1975. The Southeast Georgia Embayment (Fig. 1) is a structural depression which underlies the continental shelf off the coasts of South Carolina, Georgia, and Florida; it is considered a likely area for petroleum exploration in the near future.

This cruise (05) of the FAY had three primary objectives. The first objective was to obtain long vibracores from transects across the shelf in order to deduce the characteristics and ages of the subbottom sediments. Second, short cores were to be collected in order that the relative amounts of Pb_{210} within these cores could be measured and, hence, the ages and accumulation rates of sediments for the past 100 years could be determined. Finally, high resolution seismic systems were to be used to define the shallow subbottom structure near the vibracore transects.

In addition to these primary objectives, two special studies were pursued as well. These studies were: (1) sampling of the suspended sediments near the sea floor and at the water surface, and (2) emplacement of pipes into the sea floor (by the vibracore rig) for use as reference points during subsequent submersible dives.

The cruise began at Woods Hole, Massachusetts at 0600, October 31, 1975 and ended at Charlestown, South Carolina at 0800 November 7, 1975. The ship's Captain was Laurence F. Buell.

In support of these topical studies, the following systems and equipment were used to collect the basic data and samples:

A. Acoustic Systems

1. 3.5 kHz system
2. Minisparker system

B. Sampling Equipment

1. Vibracore rig (20 feet)
2. Hydrostatically-damped gravity corer
3. Suspended-sediment filtering system

Automatic-tracking LORAN C receivers were used for navigational control throughout the cruise.

The 3.5 kHz and Minisparker systems usually functioned quite well throughout the cruise period. The Minisparker records were generally good, but the 3.5 kHz records often showed little or no subbottom penetration. The 3.5 kHz fish was towed at a depth of 7 m.

The coring operations also were quite successful. On one occasion, the vibracore hoses were fouled in the ship's rudder and screw, but only a small amount of time was lost. The vibracore crew headed by James Katsolis did a fine job.

An attempt was made to obtain at least one hydrostatically-damped gravity core at each vibracore station. At a few stations, however, the nature of the sediments (shelly) made recovery impossible.

SCIENTIFIC PERSONNEL

The scientific party during the cruise included the following personnel from the U.S.G.S. Woods Hole:

Harley J. Knebel
W. Mack Ferrebee
Patricia Forrestel

Felicity Oram
Michael Kerkmann

Franchot Scarver
John Dunlavey
Prescott Heald
Stanley Locker

Chief Scientist
Watch Chief
Watch Chief and Specialist for
Navigation and Suspended Sediments
Watch Chief
Specialist for Hydrostatic Gravity
Cores
Specialist for Electronics

The following personnel from Alpine Geophysical Associates, Inc. collected the necessary vibracores and emplaced the reference pipes into the sea floor:

James Katsolis
John Eastlund
Charles Gove
John Ratkowitz
Robert Reynolds
John Ripp

Supervisor

OPERATIONAL STATISTICS

1. 3.5 kHz Records	307 n. miles (568 km)
2. Minisparker Records	307 n. miles (568 km)
3. Sample Stations	22 (No. 4525 to 4546)
4. Bottom Sediment Samples	43
a. Vibracores	22
b. Hydrostatically-damped Gravity Cores	21
5. Suspended Sediment Samples	12
6. Reference Pipes Emplaced in the Sea Floor	3

Figure 2 shows the locations of the sampling stations and the tracklines along which the 3.5 kHz and Minisparker records were obtained.

