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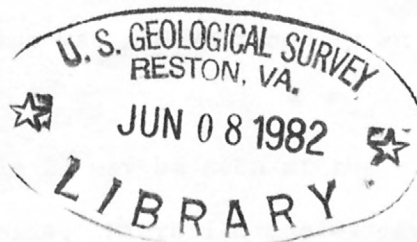
High-resolution Seismic Data and Bathymetric Data from the Central
Region of the Mississippi Fan, Gulf of Mexico

by

Charles E. Stelting and Jack L. Kindinger

Open-file report
(Geological Survey
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HIGH-RESOLUTION SEISMIC DATA AND BATHYMETRIC DATA FROM THE
CENTRAL REGION OF THE MISSISSIPPI FAN, GULF OF MEXICO

by

Charles E. Stelting and Jack L. Kindinger

During the R/V GYRE cruise G-81-7 in May 1981, the U.S. Geological Survey conducted single-channel, high-resolution seismic and bathymetric surveys across the three physiographic units of the Mississippi Fan (fig. 1). These surveys were a continuation of the surveys conducted during R/V GYRE cruise G-81-6. The survey tracks (fig. 2) were selected to complement the USNS KANE deep-penetration surveys (1969), and specific emphasis was directed toward basinward changes in channel morphology as a factor in drill-site selection for a proposed Deep Sea Drilling Project program.

The high-resolution seismic and bathymetric surveys were concentrated in the central part of the fan. The more definitive track lines were run perpendicular to the channel axes. The eight survey track lines totaled 1,045 km. Along these track lines, 1,045 km of 12-kHz bathymetric records, 1,045 km of 3.5-kHz subbottom profiler records, 59 km of 800-joule minisparker records, 57 km of 1600-joule minisparker records, and 863 km of 5-in³ and 40-in³ air-gun records (table 1) were collected. Resolution of the analog records was enhanced by use of seismic-signal amplifiers and band-pass filters. Navigation was accomplished by an integrated navigation system.

The original data (table 2) may be seen at the U.S. Geological Survey office in Corpus Christi, Texas. Microfilm copies may be purchased only from the National Geophysical and Solar-Terrestrial Data Center, NOAA/EDIS/NGSDC, Code D621, 325 Broadway, Boulder, Colorado 80303 (Telephone 303-497-6338).

REFERENCE CITED

Moore, G. T., Starke, G. W., Bonham, L. C., and Woodbury, H. O., 1978, Mississippi Fan, Gulf of Mexico--physiography, stratigraphy, and sedimentational patterns, in Bouma, A. H., Moore, G. T., and Coleman, J. M., eds., Framework, facies, and oil-trapping characteristics of the upper continental margin: American Association of Petroleum Geologists Studies in Geology No. 7, p. 155-191.

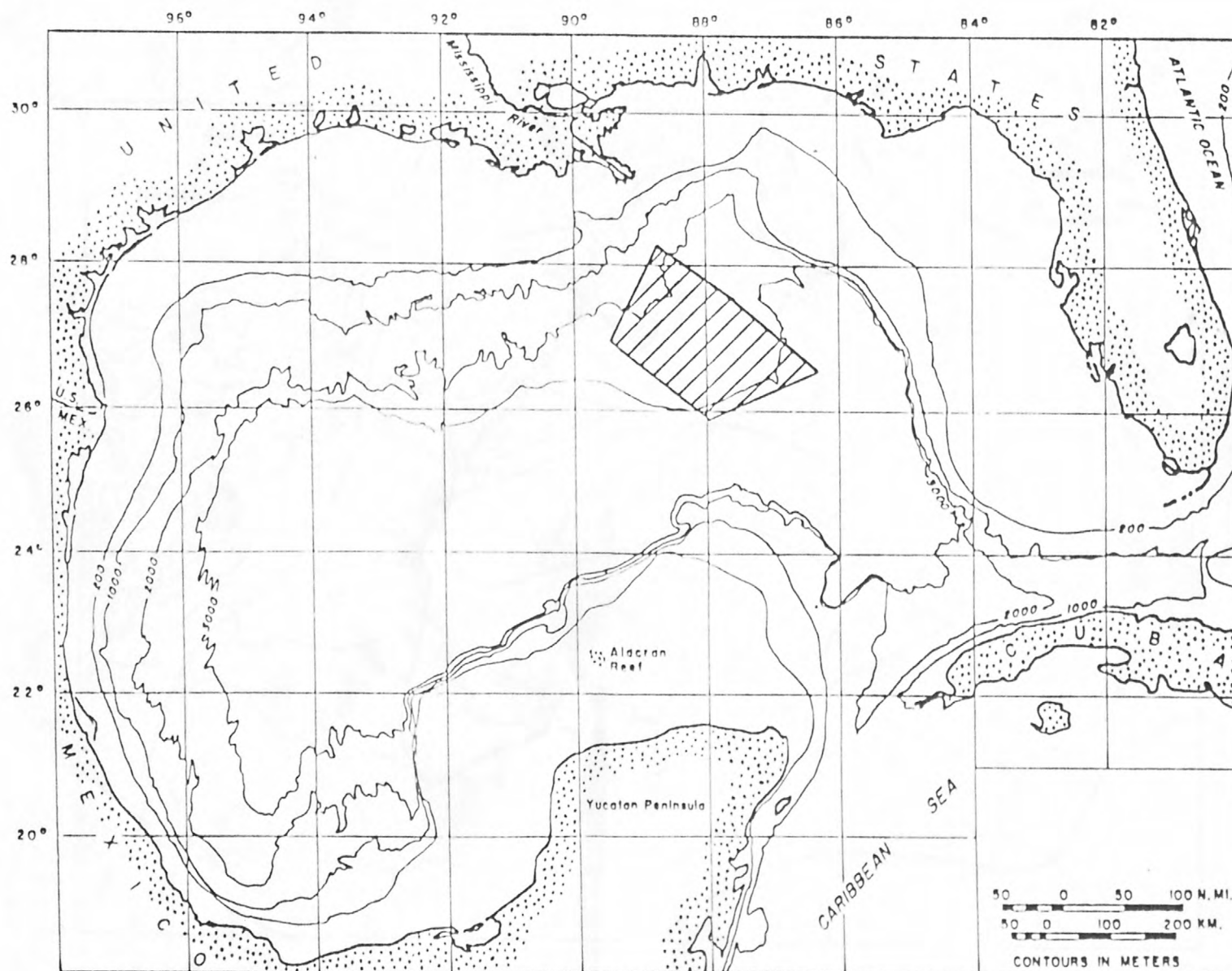


Figure 1. Location of study area, R/V GYRE cruise G-81-7.

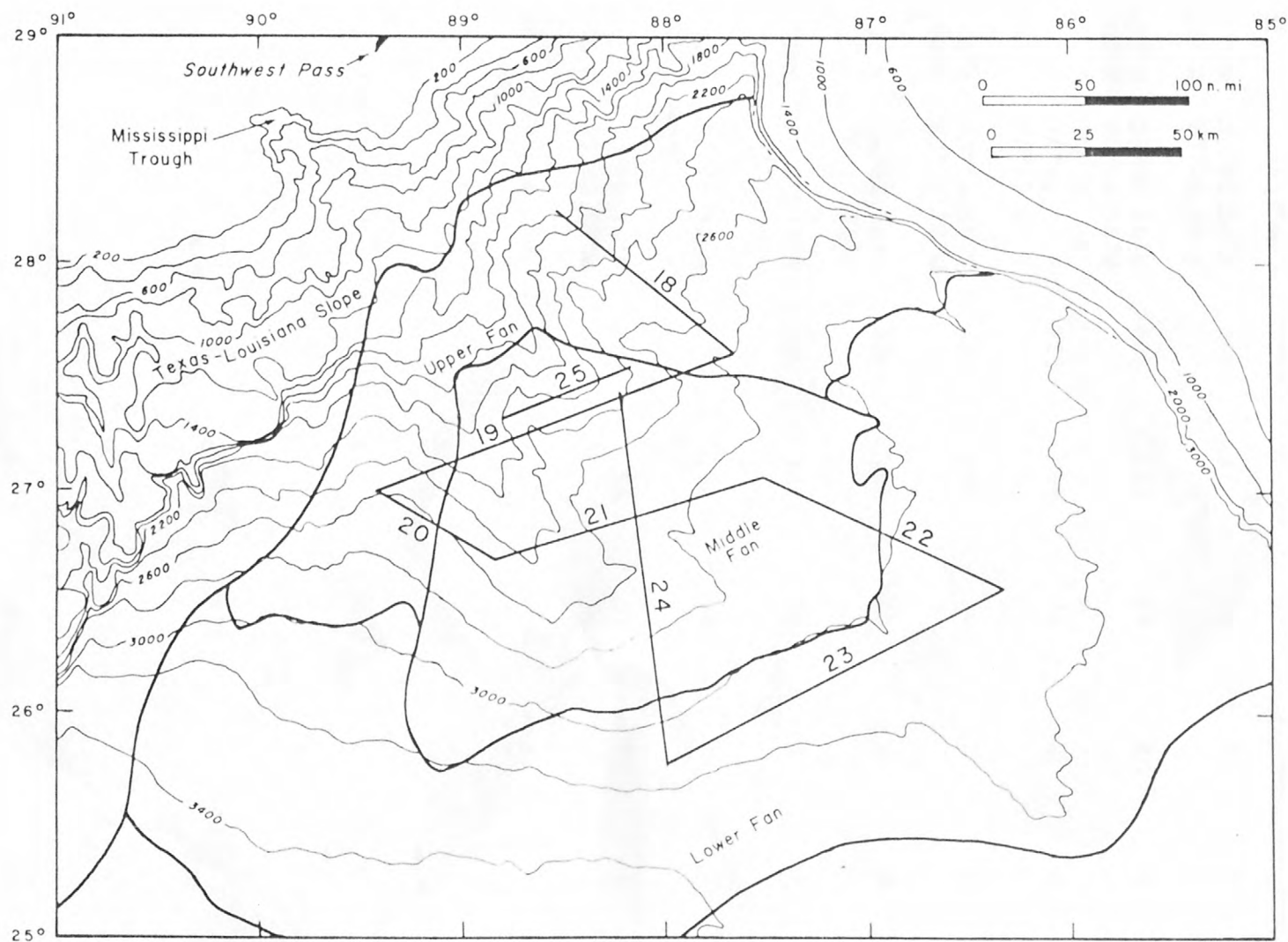


Figure 2. Seismic survey lines across the Mississippi Fan, R/V GYRE cruise G-81-7. Physiographic units of the Mississippi Fan modified from Moore et al., (1978). Contours in meters.

Table 1. Seismic coverage of the Mississippi Fan

Line no.	Start of line	End of line	No. of shot points	Distance		Instrumentation			
				Kilo-meters	Nautical miles	12 kHz	3.5 kHz	Mini-sparker	Air gun
18	28°13.75'N 88°31.92'W	27°36.51'N 87°40.09'W	366	110	59	X	X	X	X
19	27°36.03'N 87°41.09'W	27°00.14'N 89°24.56'W	608	182	98	X	X	No	X
20	26°59.66'N 89°24.47'W	26°41.86'N 88°49.62'W	223	67	36	X	X	No	X
21	26°41.66'N 88°48.99'W	27°04.69'N 87°31.10'W	454	136	74	X	X	No	X
22	27°04.73'N 87°30.13'W	26°34.48'N 86°21.04'W	426	128	69	X	X	No	X
23	26°33.71'N 86°20.52'W	25°48.37'N 87°59.05'W	609	183	99	X	X	No	X
24	25°48.32'N 88°00.18'W	27°25.92'N 88°12.87'W	605	182	98	X	X	No	No
25	27°32.45'N 88°15.76'W	27°19.78'N 88°46.86'W	189	57	31	X	X	X	X

X = data available

No = no data

Table 2. Mississippi Fan - Microfilm of seismic lines

Start of film:

<u>3.5 kHz</u>	<u>Minisparker</u>
Line 18	Line 18
Line 19	Line 25
Line 20	
Line 21	<u>Air gun</u>
Line 22	Line 18
Line 23	Line 19
Line 24	Line 20
Line 25	Line 21
	Line 22
<u>12 kHz</u>	Line 23
Line 18	Line 25
Line 19	
Line 20	End of film
Line 21	
Line 22	
Line 23	
Line 24	
Line 25	

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