

APPENDIX IV. RESULTS OF CONTINUOUS SEISMIC REFLECTION PROFILING SURVEY OFF FIJI ISLANDS IN THE GH78-1 CRUISE

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Preliminary seismic reflection survey was carried out around Fiji Islands, on the way to and from Suva port, using almost the same air-gun system and instrumental conditions with those used in the proper GH78-1 survey area.

Surveyed tracks are shown in Fig. AIV-1, and they were conducted as follows.

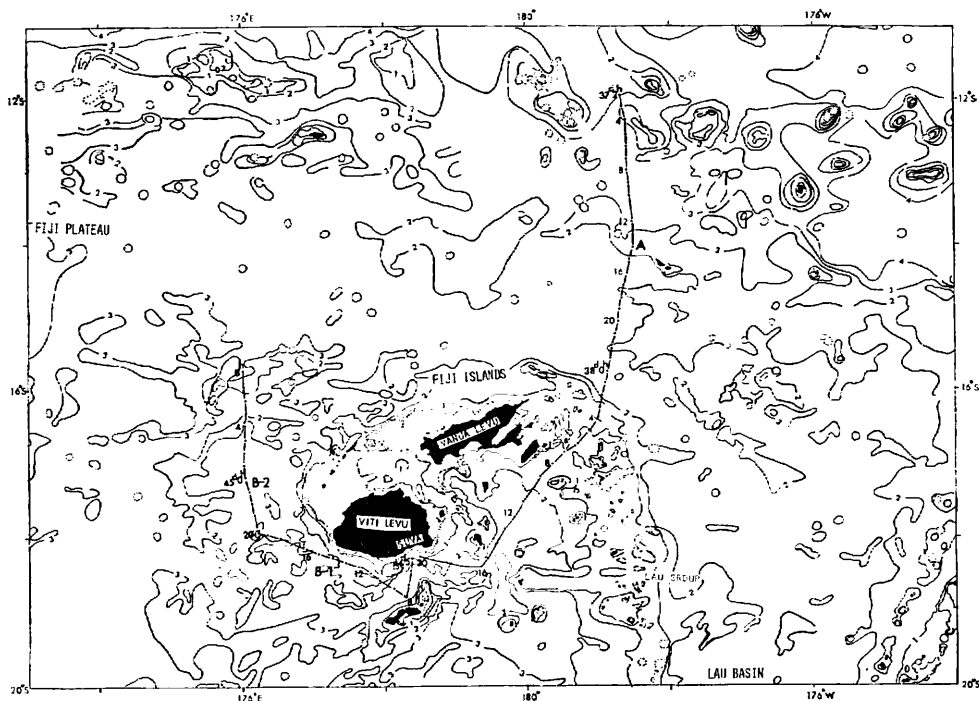


Fig. AIV-1 Seismic reflection survey tracks off Fiji Islands with outlined topography. The depth on the contours is shown in km.

A Line: northeast of the Fiji, $12^{\circ}00'S \cdot 178^{\circ}40'W$ — $16^{\circ}26'S \cdot 179^{\circ}00'W$,
ca. 260 miles. from 02:03, 37th day, 1978 to 04:00, 38th day, 1978,
in GMT.

B Line: west of the Fiji, $18^{\circ}17'S \cdot 178^{\circ}22'W$ — $15^{\circ}58'S \cdot 176^{\circ}00'W$.

ca. 270 miles. from 04:54, 44th day, 1978 to 07:00, 45th day, 1978, in GMT. B-Line is divided into two parts, i.e. B-1 (before 19:44, 44th day) and B-2 (after 19:44, 44th day).

Characteristics of each line are described below, based on the profiles shown in Fig. AIV-2.

A Line: The bottom topography is steep and thoroughly rolled. Water depth is around 2,500 m. Distribution of sedimentary sequence is limited except in the saddles in hilly area, and exposure of the acoustic basement at the ocean floor is not unusual. The basement is presumed to have rather young volcanic origin, according to the data of geomagnetic anomalies and less development of the sediments as mentioned above.

B-1 Line: There is a thick sedimentary layer more than 1 sec. (750 m) forming relatively flat sea bottom at about 2,100 m depth, to the south of the Viti Levu (Suva), along the track part of 05:00–11:00, 44th day. Passing through the area of exposed acoustic basement with shallow water depth (10:00–12:00, 44th day), two sedimentary layers, upper and lower ones, are recognized to the southwest of the Viti Levu (12:00–16:00, 44th day). The upper layer has the thickness of 0.6–0.8 sec, and the lower one is more than 0.2 sec, without record of the acoustic basement revealed.

Acoustic structure in the area, along the track part of 16:00–20:00, 44th day, is similar to that on the A Line. Development of sedimentary sequence is limited there, existing only as layer up to 0.2 sec thick buried saddles.

B-2 Line: The bottom topography is thoroughly rolled, and acoustic structure resembles that on the A Line. Development of sedimentary sequence is much less than that on the A Line. Geomagnetic data and less development of the sediments suggest that the acoustic basement on the B Line also has young volcanic origin.

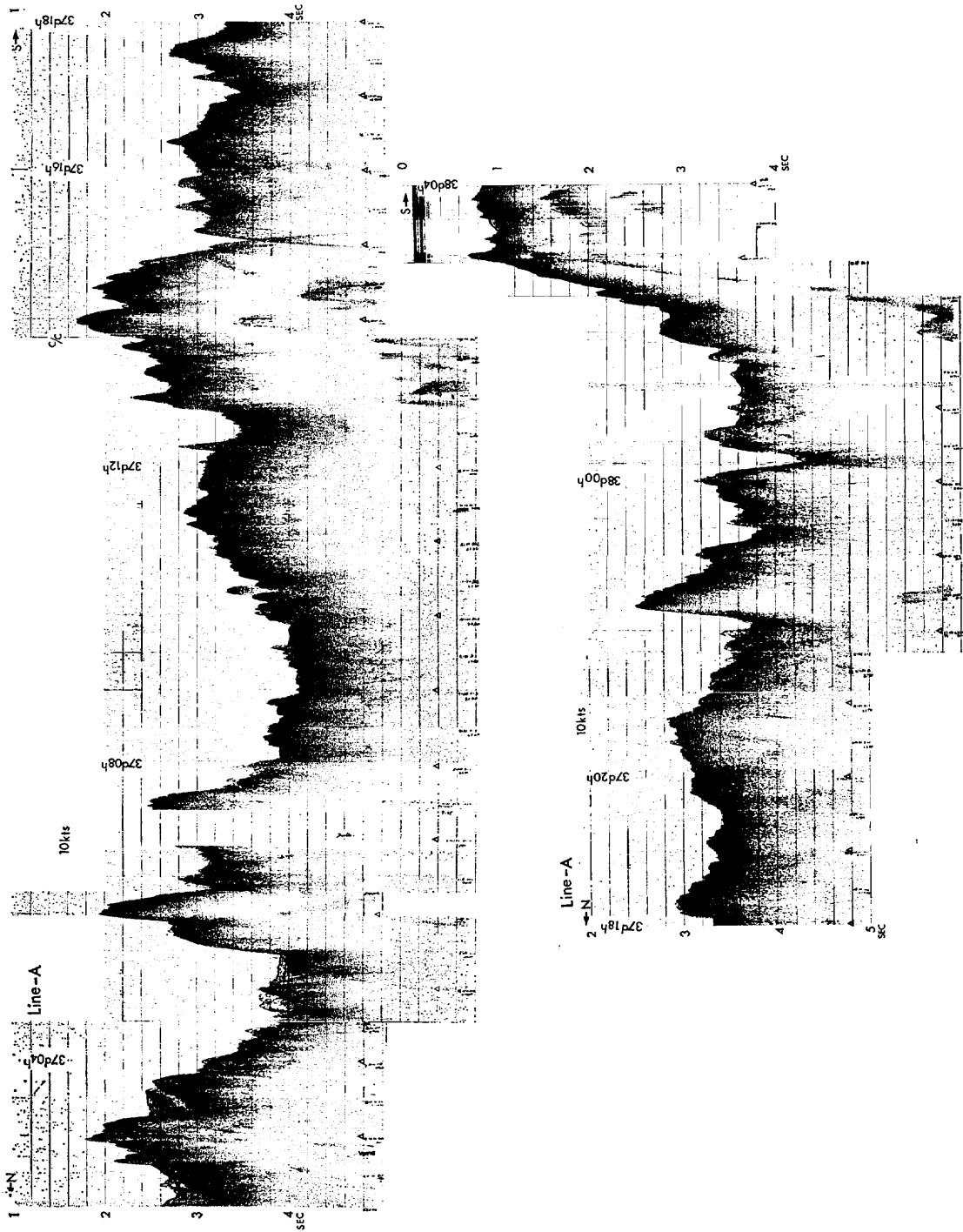
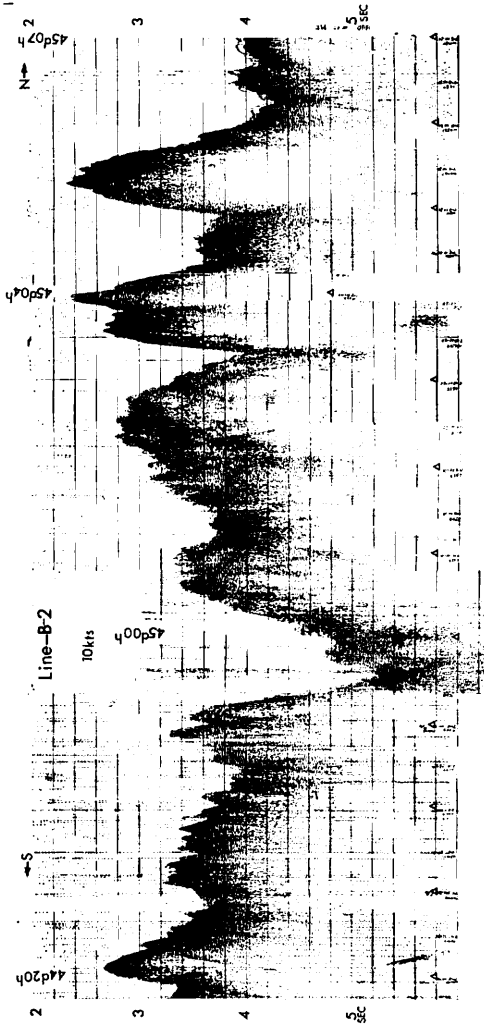
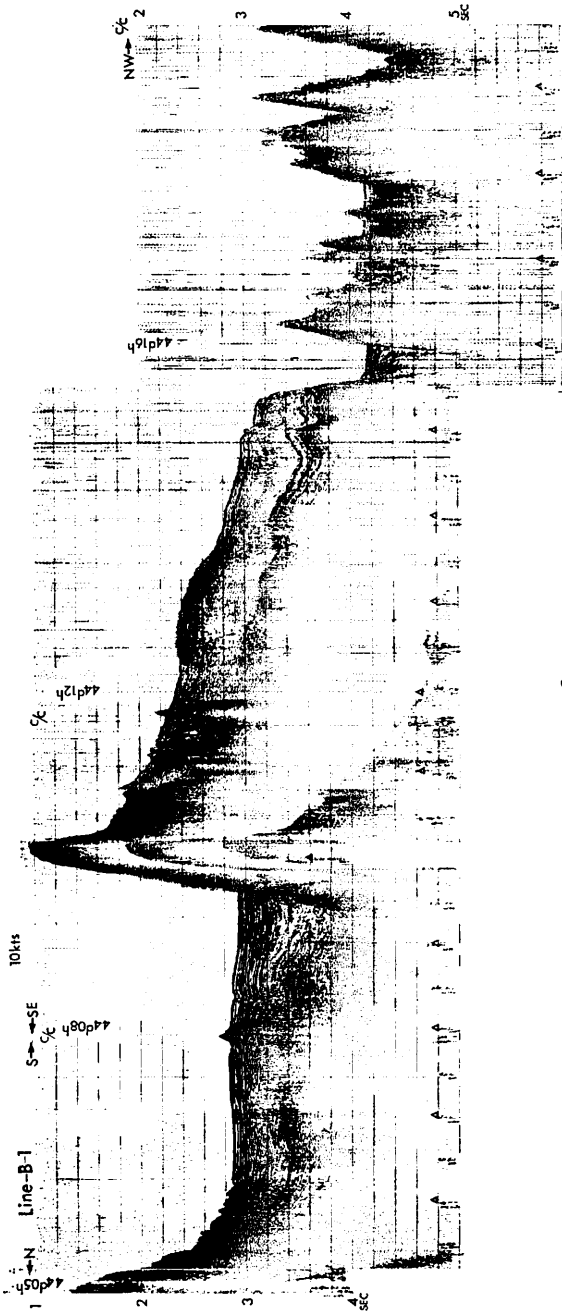


Fig. AIV-2 (1-2) Profiles of seismic reflection records off Fiji Islands. Ship's speed is 10 kt, vertical exaggeration is 1:31.



(2)