

## Oceanic crust and uppermost mantle to the northeast of the Minami-Tori Shima

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We conducted wide-angle seismic and reflection experiments by S/V Shoyo and S/V Takuyo, Hydrographic and Oceanographic Department, JCG in 2006. The target area is the North-West sea area to Minami-Tori Shima. Ocean Bottom Seismographs (OBS) were deployed with an interval of every 5-10 km. We used a non-tuned 6,000 inch<sup>3</sup> airgun array every 200 m (90 sec) firing for refraction and reflection experiments and a non tuned 700 inch<sup>3</sup> every 80 m (20 sec) firing for reflection experiments. A 200 m single channel streamer cable was used as the reflection seismic receivers.

The low Bouguer anomaly exists on the North-East sea area to Minami-Tori Shima. That would mean the area has a thick crust. So we set the survey line around the Bouguer anomaly area in 2006. The length of this line is about 600 km and 100 OBSs were deployed. As a result that line is parallel to the sea-floor spreading direction.

In 2007, we carried out an additional survey line to check whether the crustal of this area has a seismic anisotropy or not.

The area in the northwestern part 1/3 of the survey line corresponds to the standard marine crust area where the place has a clear magnetic anomaly lineation. The sediment layer in the northwestern area is very thin and two-way travel time is less than 100 ms. At the center area of the line, several seamounts exist and the most southern side of the mountains is a steep cliff. The southeast end area is a flat seafloor. Under the sediment layer, the conspicuous reflection layer can be detected in two way travel time 7.5-8.0 s from sea level.

The speed of the upper most mantle is  $8.15 \pm 0.30$  km/s in the standard crust (Christensen and Salisbury, 1975). However, in this observation result, in the line northwest part, 8.8 km/s a very fast speed is found, and that has never been reported so far.