

PHYSICAL OCEANOGRAPHY IN THE MARIANAS ISLANDS AREA,
SPRING AND FALL 1971

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ABSTRACT

Two hydrographic investigations, one in Spring and the other in Fall 1971, were conducted around the Marianas Islands by the Honolulu Laboratory of the N.O.A.A. In the Spring investigation, 30 STD casts were made within the area 15° - 21° N, 142° - 148° 30'E, while in the Fall 31 STD casts were made within the area 17° - 23° N, 142° - 148° 30'E. The data from these two cruises have been analyzed. Geostrophic calculations showed the current structure around the Marianas to be quite variable. In the Spring cruise there existed a shallow, narrow, meandering, eastward surface flow, below which a westward current was found. The Fall cruise exhibited a relatively strong (30 cm/s) westward geostrophic flow between 21° and 23° N. Eddy formations were present during both cruises.

The vertical meridional temperature structure along 142° E consisted of a seasonal and a main thermocline in the Fall, while only a single main thermocline was present during the Spring.

In both cruises, characteristic subsurface tongues of low and high salinity water occurred with core layers of approximately 135 and 370 cl/t respectively. To the south, the 135 cl/t surface sloped upward, while the 370 cl/t surface sloped downward.