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FIRST RESULTS FROM A NEW SEISMOGRAPH NETWORK IN THE CENTRAL NEW HEBRIDES ISLAND ARC

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A 10 station telemetered seismograph network was established during 1978 in an area tentatively identified as a seismic gap for large earthquakes in the central New Hebrides.During 15 days in September the network was augmented by 7 OBS stations located in the arc-trench gap. More than 200 events were located. With the extensive network coverage locations of events within the main thrust zone of the plate boundary can be resolved in relation to events within the descending and upper plates. A magnitude 5 event was caught along with numerous small aftershocks. The main shock has a thrust type mechanism but aftershocks include both inter- and intra-plate events. Combination of these data with data from previous temporary networks operated in the New Hebrides and with focal mechanism solutions for larger events for the past 17 years indicate that the region covered by the new network is unusual. Intraplate activity adjacent to the main zone of thrusting is predominant relative to that within the thrust zone.Also, the region has not had a large thrust type earthquake for at least the past 20-30 years. The possibility thus arises that the predominance of intraplate activity is a transient feature of the cycle of major plate boundary slippage. For example, the events may be related to stress accumulation in a locked section of the plate boundary.

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