

SOME RECENT RESULTS ON THE CONTINENTAL MARGIN
OF EASTERN CANADA

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A geophysical study of the continental margin off Nova Scotia and the Grand Banks was undertaken to investigate the transition region between oceanic and continental crust. The measurements include six seismic refraction lines parallel to these margins which yield velocities and thicknesses for the sedimentary strata and for the crustal rocks beneath. Seismic reflection measurements were made to enable a correlation between seismic velocities and the layers observed on the reflection records. The results show that the transition region between oceanic crust and continental crust is abrupt, less than 70 km wide. There is some evidence that layer 2 is thin or absent within the transition zone and a high velocity layer, 7.4 km/sec, forms the main crustal layer there. A model of magnetic basement rocks beneath the sediments was constructed, based on the seismic results. The computed magnetic anomaly arising from this model shows that the magnetic slope anomaly may be caused by an edge-effect. The model consists of magnetic continental basement rocks about 10 km thick adjoining oceanic layer 2. This model and the seismic results imply that during the initiation of rifting intrusive igneous rocks were injected between the separating continental blocks and that it was not until a separation of about 100 km was reached that the mechanism of oceanic crustal generation produced normal thicknesses of basaltic layer 2. Comparison is made between the Grand Banks fracture zone margin and the Nova Scotia rifted margin.