

Recent Aeromagnetic Surveys Off The East Coast

B.D. Loncarevic, R.F. Macnab, S.P. Srivastava, J. Verhoef and J. Woodside

Atlantic Geoscience Centre, Geological Survey of Canada P.O. Box 1006, Dartmouth, Nova Scotia B2Y 4A2

The GSC Program of Aeromagnetic Surveys was extended in 1982 over the eastern Gulf of Main and Georges Bank. In 1985 offshore surveys were carried out in the Laurentian Channel area between Cape Breton and Newfoundland and also northeast of Newfoundland. In 1987, high-resolution coverage south of Newfoundland was completed, while regional mapping was undertaken over the Newfoundland Basin. A compilation of these new offshore surveys, together with earlier surveys over Nova Scotia and Newfoundland, represents a substantial coverage of the northern terminus of the Appalachian orogenic belt.

A number of "suspect terranes" of unknown origin have coalesced to form the Appalachians as a result of the opening and subsequent closure of the Iapetus Ocean during an earlier phase

of ocean-floor spreading and continental drift. Some of these terranes can be traced using aeromagnetic (and other geophysical) evidence. The new data is thus contributing to the delineation of different zones and the reconstruction of their development in time and space.

Newfoundland and the area to the northeast demonstrate a reasonably clear picture of converging continental margins separated by remnants of the old ocean floor. Cape Breton geology is much more complicated and it is not possible to make a clear connection between different suspect terranes across the Laurentian Channel. In addition to Meguma which occurs only in Nova Scotia and the surrounding offshore, it is postulated that at least one other suspect terrane is present in Cape Breton.