AEROMAGNETIC PROFILES NORTHEAST OF ORPHAN BASIN

Geological Survey of Canada Open File Number 1907

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In 1985, the Geological Survey of Canada joined with five oil companies in sponsoring a detailed aeromagnetic survey of the Northeast Newfoundland Shelf and Orphan Basin. Flight lines in this operation were spaced 3 km apart, and were oriented in a NNE-SSW direction for optimum delineation of sedimentary basin structures in the area. Flight altitude was 305 metres above sea level.

Concurrent with this operation, the GSC arranged and paid to have every tenth flight line extended for a distance of 300 nautical miles, in order to obtain regional coverage northeast of the main survey area (see Figure). The data collected in this outer survey area were compiled in 1985-86 by the prime contractor Geoterrex Limited, who produced the map featured in this Open File; it shows profiles along flight lines at a scale of 1:1,000,000. (Field and subsequent compilation procedures are described briefly in marginal notes appended to the map.)

Taken together, the profiles outline sea floor spreading anomalies with much greater clarity than previously possible, permitting the delineation of numerous tectonic features in considerable detail. These new data and their analysis have been described by Srivastava et al (1988a, 1988b).

The digital observations collected during the regional aeromagnetic survey have been gridded and merged with other magnetic data off the east coast of Canada for inclusion in a new magnetic anomaly map of the eastern continental margin of Canada (Geological Survey of Canada, 1988); they have also been released to the public as part of GSC Open File 1504 (Verhoef and Macnab, 1988).

The 1985 regional aeromagnetic survey and the subsequent data analysis were carried out under the auspices of the East Coast Task of the Frontier Geoscience Program of the Geological Survey of Canada. Wim Knappers of the Contract Surveys Group, GSC Geophysics Division, was Technical Authority for the survey.

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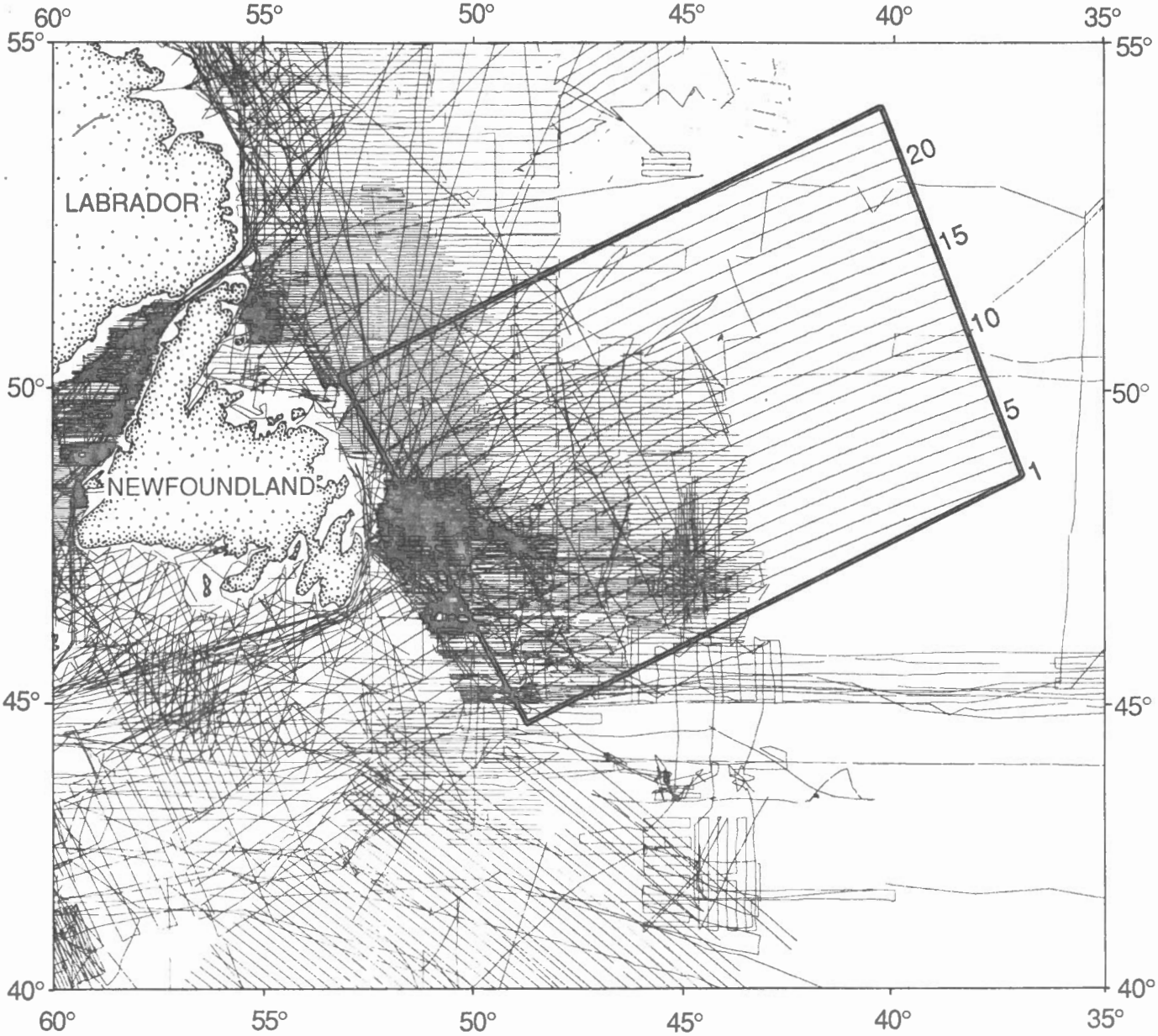

Compilation of ships' tracks and flight lines, showing where magnetic data have been collected by the Geological Survey of Canada and other agencies. The heavy box outlines the area of aeromagnetic operations in 1985; the magnetic profiles in this Open File are located along the flight lines in the NE half of the box.