

PROSPECTING BY MAGNETOMETER

Teledyne Exploration Company
P. O. Box 36269, Houston, Texas

The marine magnetometer system operated by Teledyne Exploration, A Teledyne Company, is of the proton precession type, as manufactured by Varian Associates. Its principles of operation are described in the attached extract from a Varian publication.

Surveys of the variations in the earth's magnetic field are widely used as prospecting tools by petroleum and mining companies. The major value of the magnetic information is presented in contour maps of the earth's total magnetic intensity. These maps represent high and low values of the magnetic field strength, much as illustrated in the attached perspective view of magnetic survey results. The two horizontal dimensions of the picture are in common measures such as feet, and the magnetic intensity is mapped in gammas. This must be done to great precision since as few as five gammas are about one thousand millionth part of the earth's total field.

The attached extracts from a publication by Geometrics discuss in detail the kinds of data processing which may be done to magnetic survey results in order to enhance its meaning for prospecting purposes.

Magnetic maps are used by geologists and geophysicists to interpret the most likely position and size of bodies of magnetic rock beneath the surface of the earth or sea. Frequently, areas of shallow volcanic or other igneous