

Magnetic survey aboard R.R.S. Bransfield Dec. 1975 - March 1976

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1. Introduction - The present cruise was an attempt to conduct a full 7-day extra-to-passage time magnetic survey in the Weddell Sea to supplement the data obtained by R.R.S. Shackleton in the 1973-74 season and R.R.S. Bransfield in the 1974-75 season. Due to the difficulties associated with the protracted Halley Bay relief and the "Shackleton Incident", only about 1½ days extra-to-passage-time resulted for the Weddell Sea work. However, some additional useful data were obtained on passage lines within the Scotia Sea; Table 1 lists when and where data were taken and a track chart is appended.

2. Performance of scientific and ship's equipment - a. Redifon RSN-1 satellite navigator. - Once again, the satnav proved to be the most troublesome piece of equipment. In November 1975, soon after leaving Southampton, the machine failed to retain the navigation program in its memory for more than a few hours. It was sent back to Redifon from the U.S.A. and a replacement machine flown to Rio de Janeiro. From there it was transported to R.R.S. Bransfield in Port Stanley by H.M.S. Endurance, arriving on January 4th 1976. The satnav system then worked perfectly until January 21st when a fault developed in the thermal printer unit. Fortunately, the satnav's visual display provided sufficient information to allow fix quality to be assessed for subsequent computer analysis of the fixes back at Birmingham.

Finally, two of the voltage outputs from the power supply unit failed on the return voyage, but this did not affect satnav operation.

The satnav and associated equipment will be thoroughly serviced this summer and hopefully a higher degree of reliability will be obtained next season.

b. Kelvin Hughes MS.38 metric P.D.R. - the P.D.R. has worked satisfactorily this season despite only one of the hull transducers being operational. The electronics has only required periodic attention by the Chief Electrician. Kelvin Hughes have already serviced the P.D.R. and corrected a fault on the second transducer, so the system should be in good working order for next season.

Table 1

<u>Leg No.</u>	<u>From</u>	<u>To</u>	<u>Data taken</u>	
			<u>From</u>	<u>To</u>
			<u>GMT/DAY/YR</u>	<u>GMT/DAY/YR</u>
15	Stanley	South Georgia	1155/008/76	2228/010/76
16	Cooper I. South G.	Diaz Cove, South G.	0708/015/76	0932/015/76
17	Wheeler Glacier South G.	Larvik, South G.	1411/015/76	1602/015/76
18	Jossac Bight, South G.	Signy I..	2057/015/76	0900/017/76
19	Signy I..	Halley Bay	1218/019/76	1136/022/76
20	Halley Bay	Signy I..	0214/044/76	1230/047/76
21	Signy I..	South Georgia	1936/048/76	0710/050/76
22	60°S	South Shetland Islands	2112/068/76	1100/069/76

c. Barringer Oceanographic Magnetometer and clock unit. - The only problem that was encountered with this unit was the oscilloscope which failed on January 8th 1976. Since the oscilloscope's function was solely to display the magnetometer signal, the failure had no effect on the collection of magnetic data.

The clock unit and event marker box have both worked perfectly throughout the season.

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