R.R.S. "SHACKLETON" LIVERPOOL

CRUISE REPORT 4/80 (1)

PASSAGE U.K. - RIO

1. SCIENTIFIC PERSONNEL:

DR. E. J. SHARPLES	-	LIVERPOOL UNIVERSITY
MR. K. MURPHY	-	LIVERPOOL UNIVERSITY
MR. D. LEWIS	-	R.V.S. BARRY
MR. G. KNIGHT	-	R.V.S. BARRY
MR. C. JACKSON	-	R.V.S. BARRY

2. DATES

Departed Barry, R.V.S. Base	06.00	November 6th, 1980
Commenced magnetometer run	16.00	" 16th, "
Completed magnetometer run	10.00	" 20th, "
Commenced stretching new wire	08.00	" 21st, "
Completed stretching new wire	17.00	" 21st, "
Arrived Rio de Janeiro	14.00	" 26th, "

3. NARRATIVE

The cruise was basically a passage from the U.K. to Rio de Janeiro, en route to the southern Ocean for the start of Dr. Barker's scientific cruise. (Birmingham University).

Liverpool University were however given the opportunity to utilize this passage as samples could be collected without interfering with the vessel's progress to Rio.

Atmospheric samples were collected from a position in the ship's bows for the entire passage, weather permitting. The aim of the project was to establish the trace metal chemistry, mineralogy and remanent magnetisation of both soil-sized and total particulates from the lower troposphere over the various regions of the North and South Atlantic. Samples were collected both by mesh technique and filtration, for subsequent analysis in the laboratory at Liverpool.

In addition, a magnetometer survey was carried out across the Mid Atlantic Fracture Zone, from position $11^{\circ}30'N$, $23^{\circ}17'W$ to position $3^{\circ}00'S$, $26^{\circ}55'W$.

Position $1^{\circ}36'N$, $25^{\circ}48'W$ revealed a submarine volcano, with a height different from that charted. I gather the Master has informed the Hydrographer concerned.

4. SCIENTIFIC PERFORMANCE

Unsettled weather and maintenance on the forecastle head made the collection of atmospheric particulates difficult and even impossible at times. Fewer samples were collected than originally anticipated. However, despite this, the samples which were collected appear to be sound.

5. SCIENTIFIC EQUIPMENT

The malfunctioning of the scientific air conditioners in both the gravimeter room and the laboratory caused some problems. The excessive temperature in the gravimeter room affected the running of the computer. The temperature was lowered to some extent by covering the fore deck with water from the non-toxic supply, but even so, the computer could not be run continuously and had to be turned off for a few hours during the mid-day heat. For this reason, Mr. C. Jackson was forced to work during the night when the heat was excessive. I gather one of the two air conditioning units in the gravimeter room was not functioning when the ship left Barry and had not been checked in refit.

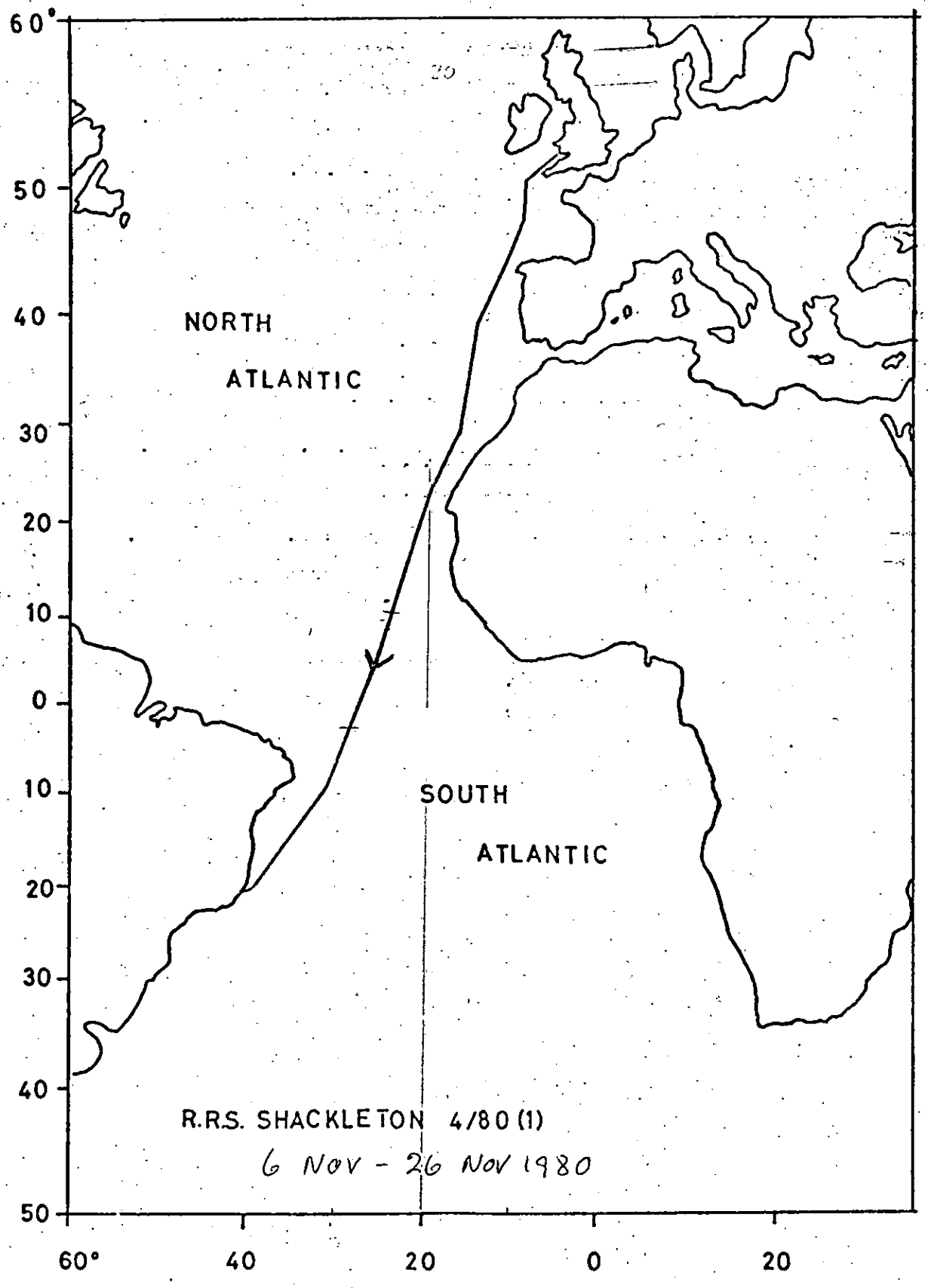
With respect to the laboratory - the foreward unit did not function from the outset. The rear one broke down on November 18th, which meant that the only air conditioning in the laboratory was provided by the ship's normal supply. This proved to be inadequate for the forward part of the laboratory where the electronic equipment was situated. As a result of this, the Satellite Navigator receiver overheated and became unstable.

6. SHIP'S PERFORMANCE

It is a pleasure to thank the Master, Officers and crew of R.R.S. "Shackleton" for their assistance during the cruise and to thank members of the operations office for their help and co-operation in the organization of this initial leg of the cruise.

Despite the initial delay and unsettled weather at certain times, there were no problems in the ship's performance and excellent time was made to Rio de Janeiro.

E. J. Sharples,
9th December, 1980.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6 Nov - 26 Nov 1980