

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

MR. SALIZ

1973 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 13

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF:

J W Ramster (NIC)
J A Durance
J Henry
J W Reed
H Chiu) Sandwich Students
C Lee)

DURATION:

Left Lowestoft 1330 h, 4 September

Arrived Lowestoft 1500 h, 21 September

All times are Greenwich Mean Time

AIMS:

1. To service JONSIS stations A and B.
2. As part of the MAFF contribution to the Joint North Sea Data Acquisition Project (JONSDAP) to:-
 - (i) Lay 14 moored current meter stations in the Southern Bight
 - (ii) Release 50 Woodhead sea-bed drifters at each of the moored stations
 - (iii) Take DRCM measurements over a $12\frac{1}{2}$ hour period alongside at least one of the moored stations
 - (iv) Measure temperature, salinity and turbidity over the MAFF trace-metal grid and bring back to Lowestoft water samples for trace-metal analysis.
 - (v) Take part in a 4-ship DRCM exercise across the Straits of Dover.
 - (vi) Track the drift of a parachute drogue through a triangle of current meter stations laid by Dutch participants in JONSDAP.

NARRATIVE

The vessel left Lowestoft at 1330 h, 4 September and reached JONSIS Station A in the early hours of the following morning. At 0500 h three attempts were made to cut the meter wire acoustically but they were all unsuccessful. The rig was then brought in the normal way, serviced and re-launched with two new instruments. By 1315 h the ship had reached the vicinity of JONSIS Station B but with visibility at $1\frac{1}{2}$ miles could not find any surface markers. The acoustic release was called up. It responded immediately and it appeared that at least this part of the rig lay in its original position. During the next two hours attempts were made to cut the meter line acoustically and to

drag for the rig but no part of it reached the surface.

In view of the vessel's commitments to the JONSDAP programme it was felt to be unreasonable to organise a proper search of the area at this stage in the cruise and so the ship set course for the first of the JONSDAP stations, station YS (figure 1), reaching it at 0545 h, 6 September. In quick succession during that day stations YW, YY, XA, XC and XG were also laid and at 0400 h, 7 September the ship put into Lowestoft for an hour to load a further supply of instruments and surface markers. Stations WK, WM, WG and WQ were laid later that day and preparations made for the early hours of the next day when WW and WC were launched.

RV CLIONE then moved to the triangle of moored stations laid by the Dutch participants in JONSDAP to examine spatial variability in a central area of the general network. A parachute drogue was made ready, launched at 1335 h, 8 September and tracked successfully for the next $23\frac{1}{2}$ hours. Then the surface float began to sink and the whole system had to be brought on board to prevent the loss of all components. It was found that the polystyrene floats had absorbed water to a depth of about 0.5 inches. The vessel then moved round the triangle of stations making serial observations at each apex and at a central station before moving on to the vicinity of the JONSDAP inter-comparison moored current meter station that had also been laid by Dutch workers. At 1937 h, a direct reading current meter station began and was carried out without incident for the next thirteen hours.

After a thirty mile steam the vessel reached the eastern end of the northernmost line of the Lowestoft trace metal grid (see Figure 2) and at 1310 h, 10 September surveying work began. Stations were occupied at between 1 and 2.5 hourly intervals for most of the next five days as the ship crossed and re-crossed the Southern Bight on its way to the Straits of Dover. En route the transparency meter belonging to the University of East Anglia developed a fault and had to be withdrawn from use, the ship met RV CARANX in Lowestoft Roads (1230 h, 11 September) and took on some extra gear and lubricating oil, Mr R Durrant was taken ill and transferred to Harwich hospital via the Harwich lifeboat and, following up a message from the Laboratory, the ship contacted the Maas pilot station and arranged to move station WW slightly northwards on Monday, 17 September.

By 0700 h, 14 September the trace metal grid had been completed and the ship moved to Boulogne to take on water. She docked at 1100 h and left at 1000 h the following day in order to take up her station on the Straits of Dover direct reading current meter line in the early afternoon. By 1200 h the ship was anchored in the centre of the south-bound traffic lane (Figure 1) and during the next six hours a rig made up of 5 Plessey meters spaced roughly 8 metres apart was floated off and linked to the after-winch whilst a DRCM and NIO salinity probe were rigged at the hydrographic davit. The vessel was brought on station some 14 hours earlier than required so that all systems could be checked out over two slack waters, one of which would take place during daylight. Various unforeseen developments did occur and had to be taken care of so that the actual readings did not begin until 2000 h, 15 September. The three other vessels arrived on schedule at 0500 h the following morning and the joint exercise then began and continued in excellent weather conditions until 0700 h, 17 September. At each of the early south-west going streams RV CLIONE tended to drag a little and at slack waters various problems concerned with wires getting, or threatening to become, tangled recurred. In each case they were successfully dealt with.

Once the instruments had been brought in an attempt was made to weigh the anchor but it was found to be fast. Various methods of releasing it were tried but eventually, with the 3 knot tide beginning to make quickly, the warp holding the anchor had to be chopped. The vessel then set source for station WW, reached it at 1800 h and by 1920 h had re-launched it a mile

north of its original position. In the early hours of the following morning (18 September) various aspects of the performance of the shipboard acoustic release system were tested at station WG en route for Lowestoft.

The ship lay in the Outer Harbour at Lowestoft for an hour from 1100 h, 18 September whilst the trace metal samples and Mr Henry were landed and an old trawl net brought from the store. The ship next moved to IJmuiden, docking there from 2200-2300 h, so that a surface marker recovered at sea by a Dutch Naval cutter could be picked up and used eventually to re-establish JONSIS Station B. By 1700 h the following day, in fact, the acoustic pinger at Station B had been re-located and a rudimentary survey confirmed the first impression that the pinger lay where it had been laid originally. At the same time an unsuccessful visual search of the region was made.

At 0500 h, 20 September systematic dragging for the rig began and continued without success until 0900 h. The gear for the new station was then made ready and launched at the original site of station B by 1100 h. Shortly afterwards a trawl search began for the lost rig and in the next 8 hours 11 passes through and near the original position of the meter wire were made without any trace of the rig being found. Unfortunately on the previous evening the pinger had not responded to multiple "turn-off" commands and during the day the underwater motor of the shipboard unit began to leak so that it was felt to be too dangerous for any further commands to be tried. Hence the pinger had to be left transmitting its clear, persistent signal. The vessel set course for Lowestoft at 2000 h, 20 September, anchored in Gorleston Roads at 0800 h the next day to await the tide and docked at 1330 h.

RESULTS

- Aim 1. JONSIS Station A was recovered and relaunched; Station B was relaunched but not recovered. All surface markers were missing from the station and direct contact with the underwater part of the rig could not be made. The acoustic release pinger could be heard plainly and had to be left in its active mode. A separate report on this potential loss is being prepared.
- Aim 2.
- (i) 12 moored current meter stations were laid in the Southern Bight since there were not enough toroidal buoys available to meet the planned 14 positions.
 - (ii) 50 Woodhead sea-bed drifters were laid at each moored buoy station and at three points in the Straits of Dover.
 - (iii) 13 hours of DRCM measurements were made alongside the JONSDAP intercomparison station.
 - (iv) Lines G-L inclusive of the Lowestoft trace metal grid were completed with the exception of the Orford Ness station on line I. At each station hydrographic serial observations were made and trace metal samples taken for Dr P G W Jones. At selected stations:
 - a. Nutrient samples and duplicate salinity samples were taken for the Dutch participants in JONSDAP
 - b. Duplicate trace metal samples were taken for Belgian workers
 - c. The University of East Anglia's transparency meter was lowered through the water column as well as being run continuously via the deck hose. Samples being taken

Aim 2. (iv) c. (contd)

every hour. Unfortunately this instrument failed to work after line H.

(v) Thirty four hours of DRCM and 30 hours of associated salinity/temperature measurements were made in the Straits of Dover. Peak streams were of the order of 3 knots. Check surface salinity samples were taken every hour. Of the 5 Plessey instruments put out 3 appear to have provided full records, the tape on the upper two meters springing out of the tape guides at some stage.

(vi) A parachute drogue lying at 10 metres depth was tracked in the vicinity of the JONSDAP spatial variability triangle for 23 hours. Associated hydrographic series measurements were made in the region also.

3. Weather reports on the synoptic hours were compiled by the ship's officers and relayed to the Meteorological Office.

J W Ramster
2 October 1973

SEEN IN DRAFT: MRS

GFL

INITIALLED: AJL

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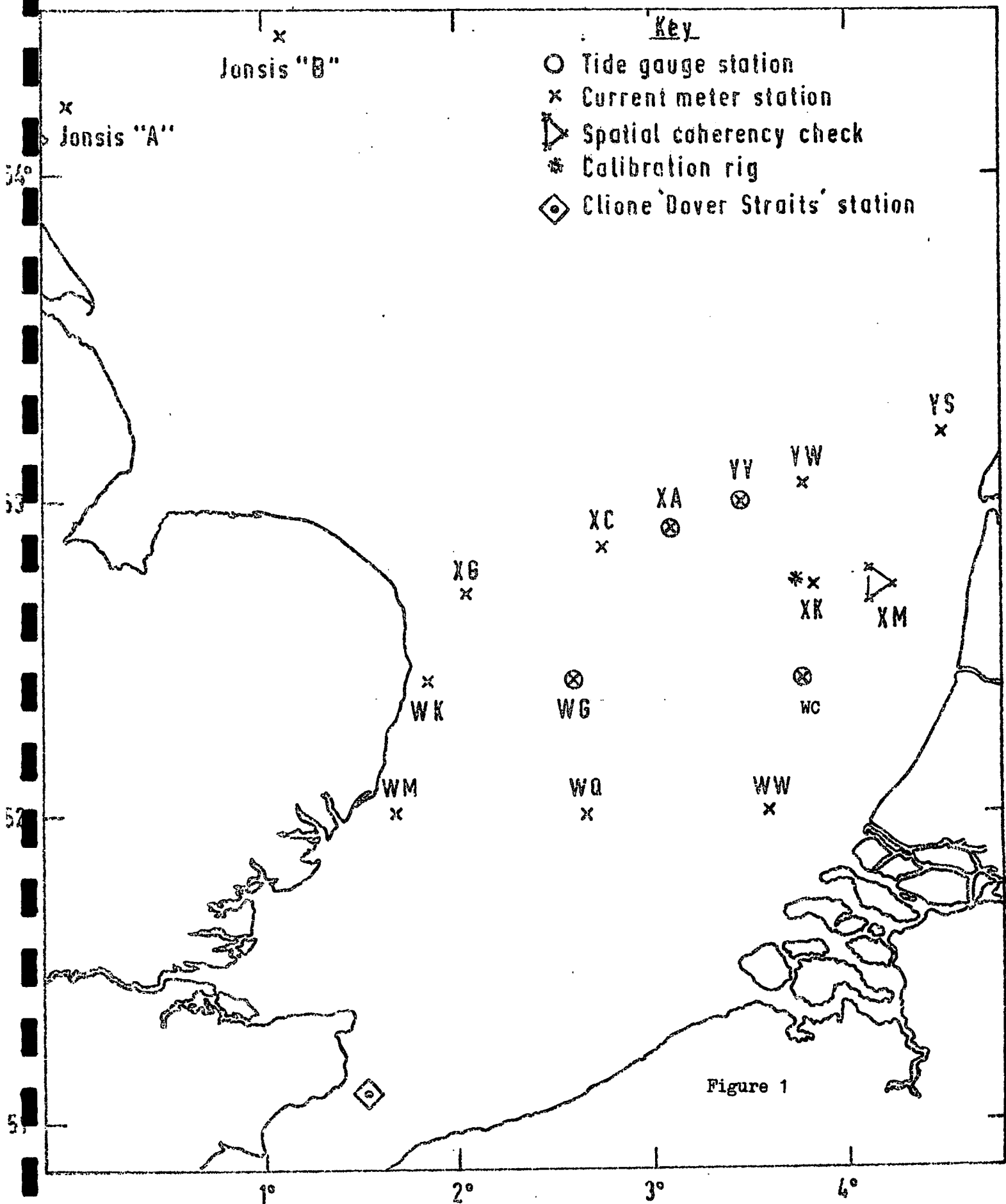


Figure 1

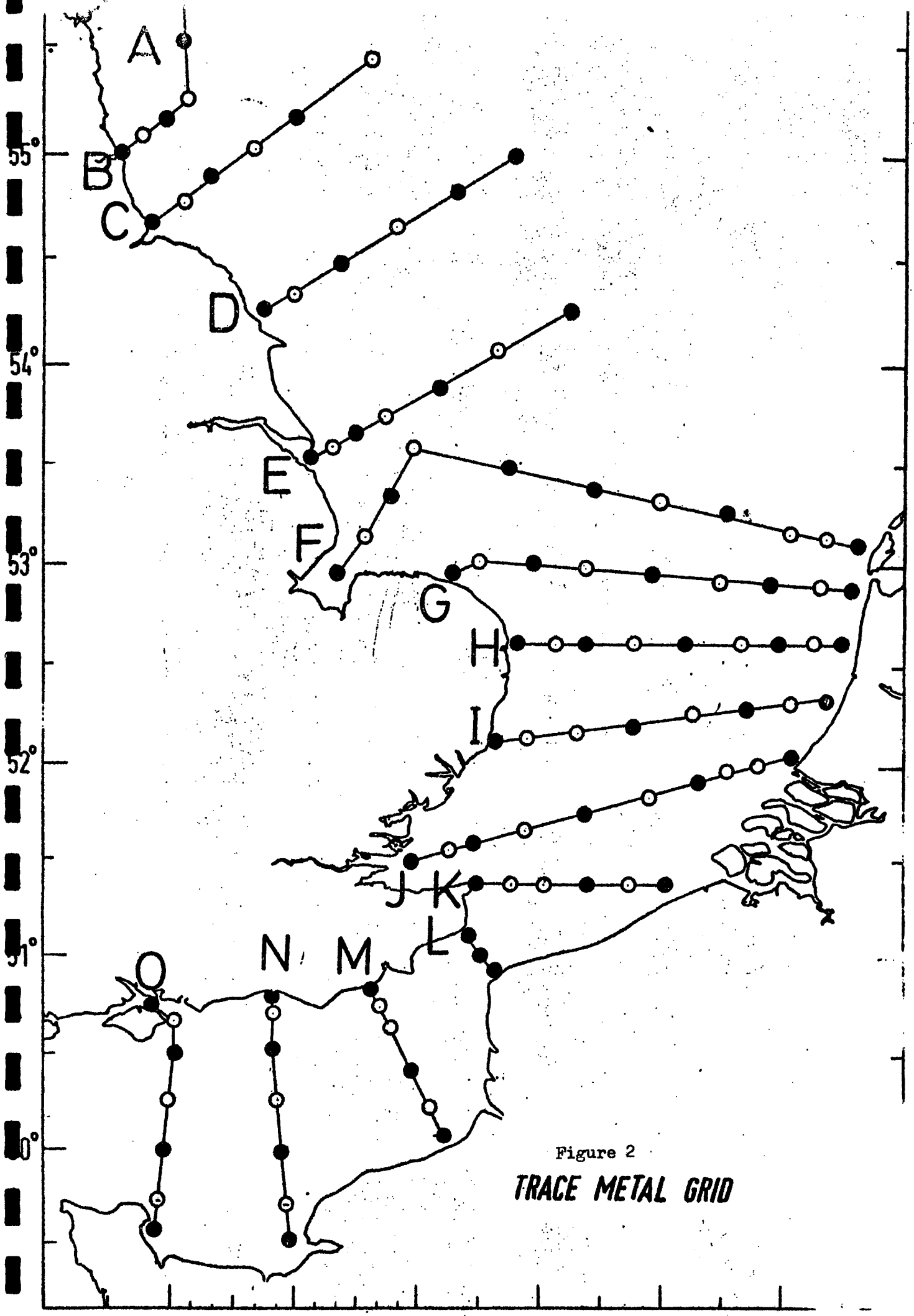


Figure 2
TRACE METAL GRID