

SMBA

Dunstaffnage Marine Research Laboratory

Preliminary Cruise Report: RRS Challenger

Cruise 11D/78

Duration: 0800 h 3 September to 0900 h 17 September.

All times GMT. Stornoway to Barry.

Locality: Rockall Trough

Staff:

A. Edwards	(Principal Scientist)
R. Bowers	(Instruments)
D.T. Meldrum	(Instruments and surface TS mapping)
D.J. Edelsten	(Moorings)
N. Pascoe	
C. Currie	(Student)
K. Davidson	(NPS Monterey: Aerosols)
S.C. Ling	(Catholic University of America: Aerosols)
R. Leon	ditto
E.C. Monahan	(University College, Galway: Whitecaps)

- Aims:
- 1) To make an STD survey of the grid of triangles covering the JASIN experimental area.
 - 2) To recover moorings E2 ($58^{\circ}02'N$. $08^{\circ}47'W$.) and E4 ($57^{\circ}30'N$. $12^{\circ}15'W$.)
 - 3) To work the SMFA STD section from Rockall Bank to Barra and the Sound of Mull.
 - 4) To collect samples for Caesium 137 analysis from the surface water on the continental shelf.

- 5) To make droplet flux and aerosol measurements.
- 6) To release surface drifters and make whitecap observations.

Narrative:

"Challenger" left Stornoway on the 3rd of September and started STD work at triangle D4 on the 4th. D3 was omitted because of bad weather. Triangles D2, C2, C3 and C4 were completed by 1800 h 7th September, when this work was interrupted by 24 hours participation in an internal wave experiment which had been proposed by R.V. "Akademik Vernadsky". This experiment consisted of repeated STD casts at one station and was only interrupted by four hours of bad weather during the early morning of the 8th. The ship then returned to the grid of triangles at B2 and finished this work at B4 on the 10th in heavy swell.

The Rockall-Barra section was started at B on Rockall Bank early on the 11th. The confused sea prevented further work until that afternoon when stations DEFGH were worked. Mooring E4 was recovered by 0900 h on the following day in the short interval between dawn and the onset of worse weather. Stations I to O were completed during the rest of the day and the ship then steamed to E2 to successfully recover the mooring by 0900 on the 13th. Course was set for P in increasing wind and on arrival the ship was hove-to at 1700 h 13th.

Because of the forecast of worse weather, P was abandoned at 2200 h and "Challenger" steamed to Barra Head and the Sound of Mull, collecting Caesium 137 analysis samples en route. Conditions improved slightly on the morning of the 14th, and STD stations were worked across the southern end of the Minch and later in the neighbourhood of Rhum and Skye, where a westward line of stations across the Minch was started. Gales on the

evening of the 14th stopped work, the ship weathering them in slow southward passage down the Minch. On the morning of the 15th, with more gales forecast, "Challenger" sailed for Barry where she arrived on the morning of 17th September.

Results:

- 1) Triangle lines D, C and B were adequately investigated.
The ad hoc internal wave experiment used some contingency time which could have been used to work line A had the steadily worsening weather not created a need to augment the contingency time in order to recover moorings.
- 2) The moorings were successfully recovered in rather small weather windows.
- 3) The section was worked piecemeal in the Rockall Trough and in the southern Minch. Elsewhere it was abandoned.
- 4) Caesium samples were all collected as planned.
- 5) Aerosol measurements were made as required.
- 6) Surface drifters were released. Whitecap photographs were taken as required.
- 7) Echo Sounding and logging of sea temperature at 3 metres continued throughout the JASIN area.

Comments:

- 1) Spooling gear for the single core hydrographic conductor cable is spooling excellently but has developed a harsh wire judder when hauling at speed. I suspect that this is caused by wear in the bushes of the traversing pulley. This fault has become noticeably worse during this summer, and therefore needs attention before next year's cruises.

2) A shelter for the hydrographic winch operator was contrived by the chief officer of cruise 11A/78. This has proved most effective and should be continued.

3) The satellite navigator should be made more reliable.

Considerable time was spent in setting it up.

4) Cooking was good. I would like to encourage any attempts to retain the services of good cooks for as long as possible.

5) The hydrographic platform should be provided with chains instead of rope. Rope can easily be chafed by the STD cable and so constitutes a major hazard for the unwary.

6) Accommodation

It is strongly and universally felt by our scientists that the four berth cabin aft offers inferior and inadequate accommodation.

There are many disadvantages:-

- i) Day workers and watch keepers are incompatible because of disturbance of sleep.
- ii) Watch keepers are disturbed by deck operations over their heads.
- iii) One bunk has a cabin ventilator in it.
- iv) The forward bunks are next to the door, and suffer from draughts, light and noise every time it is opened.
- v) The cabin is overcrowded with four occupants.

It may be possible to reorganize all the scientific accommodation in the after end to offer only one and two berth cabins. If this is not possible, I hope that in future the four berth cabin will accommodate a maximum of three people, and an optimum of two: the consequence of this is a reduction in scientific accommodation, to the detriment of prospective visiting scientists. The problem will be exacerbated if any of the single berth cabins forward are lost to scientific use.

7) Docking

I have received the following report about the unloading of the ship:-

Circumstances attending the unloadingRRS Challenger Monday 18th September 1978

1. Unloading commenced at 1045 with the Bosun and 4 Crew; at least three of these including the Bosun and crane operator were so zombie like that I expressed the opinion to the First Officer that they were not fit for work.
2. From 1045 to 1120 about five loads consisting of metal containers were loaded on the lorry, apart from the slow pace, the difficulty in making the Bosun understand what was to be disembarked, the clumsy operation of the crane, nothing untoward happened.
3. At 1120 the crew stated their intention of going to lunch; this was in fact drinking ashore. At 1300 the Bosun was on board and the remainder straggled back in the next fifteen minutes.
4. Work resumed at about 1330; it was clear to me that the Bosun and crane driver were drunk. They had difficulty in standing, they could barely speak; the three other crew members had also had a lot to drink. During the next fifteen minutes three accidents occurred; a chain hit the ship's side, a $\frac{1}{2}$ ton chain anchor was not properly hooked to the crane and fell three feet, and a rope strop on a spar buoy slipped. I again went to the First Officer and expressed concern and he subsequently watched operations from the upper winch control position.

5. Work continued until 1420, when there was a stop for tea, restarting at 1440 and going on until 1515, when there was another stop for tea. Between 1515 and 1530 the First Officer operated the crane and I slung the gear and we completed the remaining half dozen lifts to complete the work.

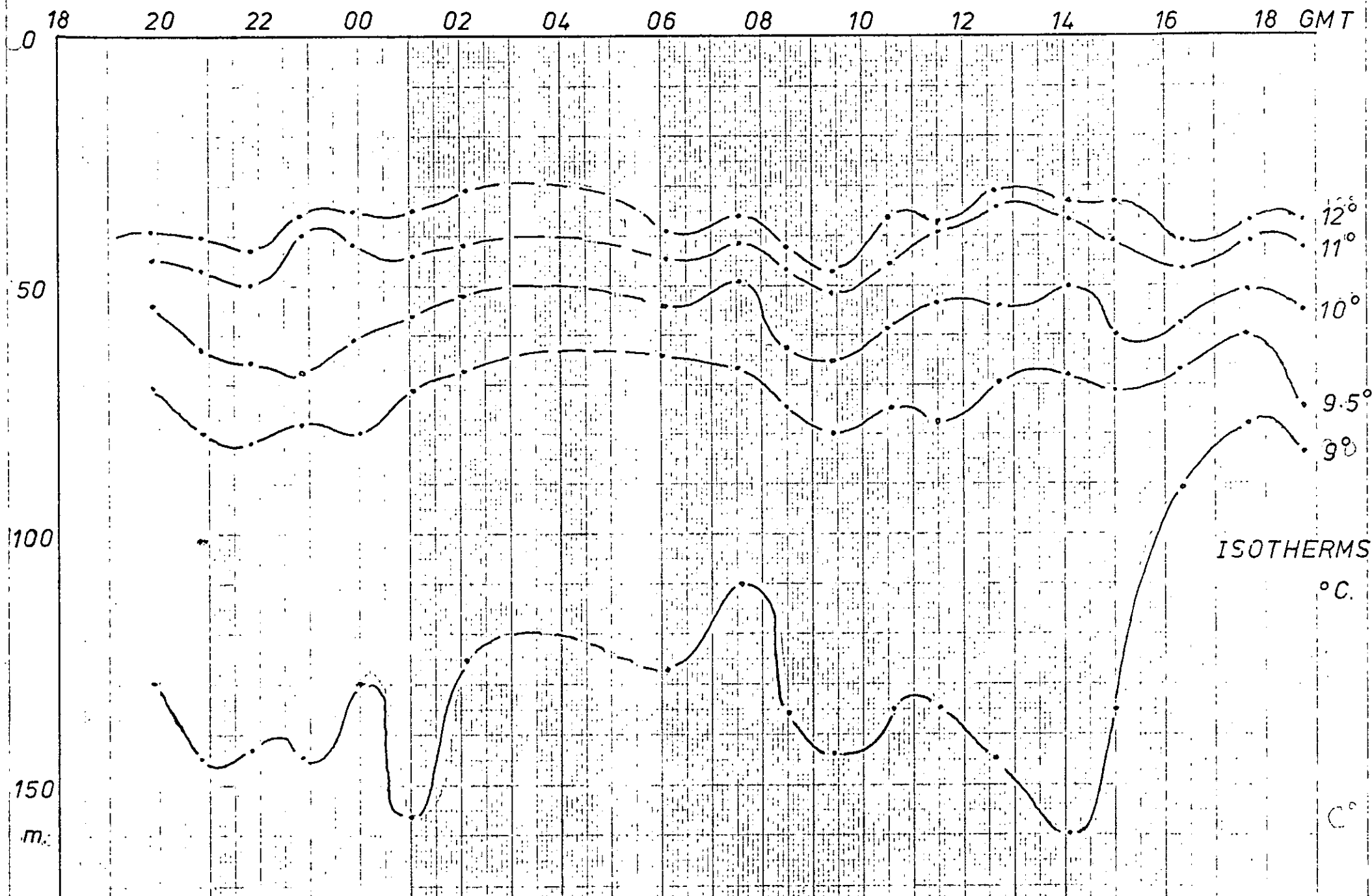
N. Pascoe.

We are grateful to the First Officer and to the lorry driver for the successful unloading. In view of the above account, we are fortunate that the lorry driver did not refuse to work.

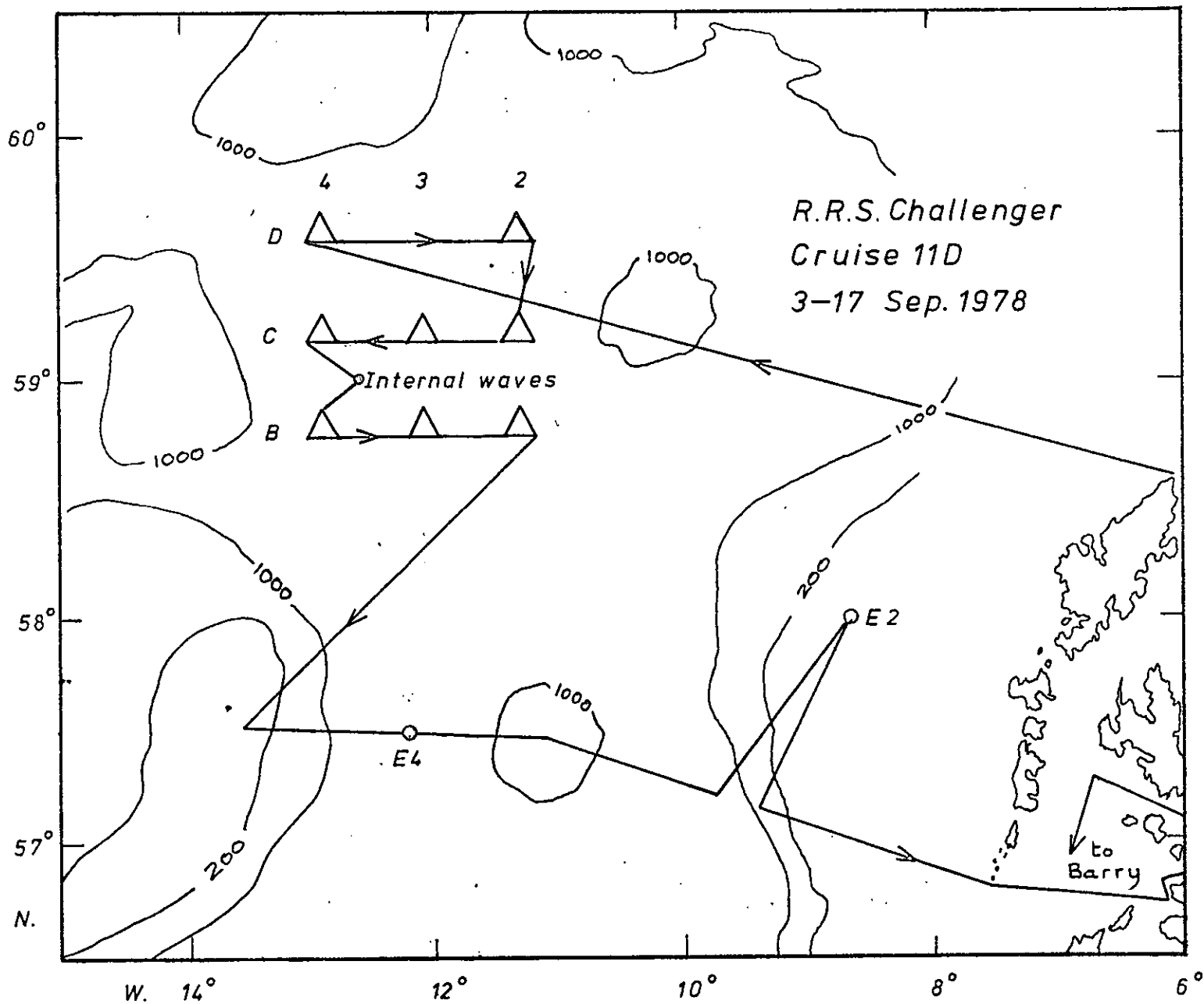
A. Edwards

September 1978.

Internal wave experiment 7-8 Sep 1978. 59°01'N. 12°47'W.



TRACK CHART



MAS 2130