TABLE 1.

Date	Station	Position	Approx. Depth	Gear	Remarks
21 June	1	54°40.4'12°22.0'	2886 m	Epibenthic sledge	New 0.5 mm mesh net tested. Good sample.
		54°40.7'12°17.0'		Box corer	Bottom sample ca. 30 cm deep. Supernatant water los during recovery.
		54°41.2'12°17.9'		Plankton net	Townet for decapod larvae. Towing for 1 minute at e of 50 m depth increments from 300 m to surface.
		54°40.6'12°18.0'		Epibenthic sledge	Original 1 mm mesh net used. Good sample.
21 June	2	55°03.7'12°04.2'	2,800 m	Plankton net	As for Station 1.
21 and 22 June		55°03.5'12°03.5'		Multiple corer	5 successful hauls. 2 empty due to failure of corer triggering mechanism on bottom. Fault rectified.
22 June	2	55°04.1'12°03.1'	2,800 m	Spade box corer	Fitted with 5 x 5 subsampling grid. No sample. Ven and spade damaged.
	3	56°38.0'11°11.0'	2,500 m	Spade box corer	2 hauls. No samples.
23 June			2,500 m	Multiple corer	1 haul, 4 core samples.
	4	57°07.5'12°08.5'	2,000 m	Spade box corer	1 haul. Good sample with little disturbance
				Multiple corer	1 haul. 4 core samples.
				Shipek camera	Bottom photographs.
	5 (Anton Dohrn Sea-mount).	57°28' 11°00'	610 m	Spade box corer	1 haul. Good sample but supernatant water lost.
				Shipek camera	Bottom photographs.
				Craib corer	3 hauls, 3 cores.

RRS CHALLENGER Cruise No. 9/76

17-28 June 1976

Report of Proceedings

A. Main objectives

Investigations and sampling of deep sea demersal fish populations using a bottom trawl.

Studies of the deep sea and shelf benthos using an epibenthic sledge, spade box corer, multiple corer and Craib corer.

Plankton sampling for decapod larvae.

B. Geographical area.

Rockall Trough west of Ireland and West Scotland. Anton Dohrn Seamount. Hebridean Terrace. Station positions listed in Table 1 and shown in Fig. 1.

C. Scientific party.

1.	P.R. Barnett	SMBA	17-28	June
2.	Mrs. J. Duncan	SMBA	17-28	"
3.	J.D. Gage	SMBA (joined in Dublin)	18-28	"
4.	J. Gordon	SMBA	17-28	"
5.	K. Hoare	SMBA (left ship in Dublin)	17-19	"
6.	N. Jones	Marine Laboratory, Port Erin, I.O.M. (joined in Dublin)	18-28	"
7.	R.H. Lightfoot	SMBA/University of Newcastle upon Tyne	17-28	"

Table 1 cont.

Date	Station	Position	Approx. Depth	Gear	Remarks
				Water bottle & thermometer	Bottom salinity and temperature.
23 June	5	57°28'11°00'	610 m	Plankton net	As for Station 1
24 June	Trawl No. 15	56°25.2'09°09.8' to 56°33.5'09°08.1'	750 m	Otter trawl	Successful haul Delay in recovery of net due to otter board knocking off winch emergency stop control box.
	6	56°36.9'10°14.0'	2000 m	Spade box corer	No sample. Premature closure
25 June	6	56°36.9'10°12.0'	2000 m	Spade box corer	No sample. Closing pulley wire fouled. Damage to main wire and new soft eye spliced in end.
	6	56°37.8'10°11.0'	2000 m	Multiple corer	1 haul. 4 cores. Bottom salinity and temperature.
25 June	7	56°39.8'09°48.5'	1,800 m	Multiple corer	1 haul 3 core samples. 1 core tube lost due to failu of tube retaining clip during extraction from sedimen Bottom salinity and temperature.
		56°39.8'09°46.0'	1,800 m	Spade box corer	Excellent sample, ca. 40 cm deep and apparently undisturbed. Soft pelagic ooze. Main wire tension up to 5.5 tons on break-out.
	Trawl No. 16	56°22.6'09°19.0' to 56°27.8'09°20.5'	1,000 m	Otter trawl	Successful haul.
	Trawl No. 17	56°25.1'09°25.2' to 56°31.8'09°28.5'	1,250 m	Otter trawl	Successful haul but delays in recovery of net due to problems of warping wire on winch drum.
26 June	9	56°38.2'09°29'	1,400 m	Water bottle	Bottom temperature and salinity.
				Spade box corer	Excellent sample 40 cm deep. Soft pelagic ooze. Breakout strain 3.75 tons.

8.	I. Macrae	Unit of Aquatic Pathobiology, University of Stirling.	17-28 June
9.	G. Swinney	Royal Scottish Museum, Edinburgh	17-28 June
10.	J. Watson	SMBA	17-28 June

D. Sea and weather conditions

Generally very good, the only interference with the work programme occurring on 27 June, towards the end of the cruise, when S.W. Force 8-9 winds, together with gear problems, prevented further spade box coring work on the Hebridean Terrace and delayed the start of the firral trawl by several hours. However, some of this time was used for water bottle and Craib core work on the hydrographic winch.

E. Conduct of the cruise and

F. Scientific equipment operation and handling.

Challenger sailed from Barry at 1000 hrs 17 June to make a courtesy visit to Dun Laoghaire, Eire, before continuing with the scientific programme.

During the passage to Dublin the scientific party was fully occupied in setting up demonstrations and exhibits in the scientific accommodation prior to the reception of visitors to the ship in Eire.

Challenger arrived at Dun Laoghaire at 0900 hrs on Friday 18 June. She lay at anchor in the harbour throughout the visit. The visit was arranged as part of the Dun Laoghaire summer Festival

Table 1 cont.

Date	Station	Position	Approx. Depth	Gear	Remarks
	8	56°39.2'09°40.1'	1,600 m	Water bottle	Bottom temperature and salinity.
				Spade box corer	Excellent sample 35–40 cm deep. Soft ooze. Break-o strain approx. 4.5 tons. Spade closing wire damaged
	10	56°39'09°23'	1,200 m	Water bottle	Bottom temperature and salinity.
				Spade box corer	Excellent sample 30–35 cm deep. Sandy mud overlying sticky clay. Spade closing wire damaged.
26 June	Trawl No. 18	56°21.5'09°43.0' to 56°30.0'09°37.0'	1,500 m	Otter trawl	Net empty. Trial at this depth and trawl had not be on bottom - insufficient warp.
	11	56°38.5'09°13.0'	1,000 m	Spade box corer	Good sample but lost during deck handling.
				Water bottle	Bottom temperature and salinity.
	12	56°39.1'09°07'	800 m	Spade box corer	No sample. Pressure release safety catch not fired. Spadeclosing wire damaged. Further box coring aband due to gear failure and weather.
	13	56°39.5'09°02.1'	566 m	Water bottle	Bottom temporature and salinity.
	14	56°39.5'08°58'	400 m	Water bottle	Bottom temperature and salinity.
26 June	15	56°38.1'09°51.0'	160 m	Water bottle	Bottom temperature and salinity.
27 June	16		160 m	Craib corer	5 hauls but only 1 core. Force 8 with heavy swell.
	Trawl No. 19	56°25.1'09°05.5' to 56°32.4'09°04.0'	500 m	Otter trawl	Good haul.
	A3	56°01.6'07°39.3'	158 m	Plankton net	As for Station 1.
				Craib corer	10 hauls but only 3 cores. Fault in corer.
				Water bottle	Bottom temperature and salinity.

and was intended to provide an opportunity for the public and for Irish scientists to visit the ship and to see something of the research being carried out by NERC/SMBA. There were exhibitions on board of hydrographic, deep sea fishery and benthic research being carried out by SMBA in the Rockall Channel to the west of Ireland and Scotland. One exhibit described the role and activities of RVB, Barry.

We were received by the local organiser of the Summer Festival and by the Second Secretary of the British Embassy in Dublin.

Although the ship was open to public and scientific visitors we were disappointed particularly by the very small number of scientists. We understand this was probably due to inadequate publicity by the Irish authorities. Nevertheless, the visitors who came on board were very enthusiastic and interested in the ship, the facilities it provided and in the scientific programmes.

Challenger sailed from Dun Laoghaire at 1400 hrs Saturday 19 June and arrived at the first station in the Rockall Trough at 0400 hrs Monday 21st June.

The cruise was generally very successful. The station positions, gear worked and success at each station are summarised in Table 1.

The two epibenthic sledge hauls at Station 1 were both very successful and provided a great deal of material. A new 0.5 mm finer mesh main bag was tested successfully for the first time on the first haul. For the second haul, the original 1.0 mm mesh net was used. This haul aroused particular interest since it contained a large specimen of a deep sea spiny crab, subsequently identified by Dr. D. Williamson at Port Erin, I.O.M., as

BOOK No

STATION POSITION LOG

Station No. CHALLENGER SMBA 9/76 Date 28.6.76 Decca 38/m/. Time from

Time BST	Log	POSITION Lat.	POSITION Long.	POSITION Method of Determination	WIND Dir. from	WIND Speed Kts.	Weath. and Vis.	WAVES Dir. from	WAVES Period secs.	WAVES Height ft.	Corrected Barometric Press. mbs.	TEMPERATURE Dry Bulb	TEMPERATURE Wet Bulb	CLOUD Type	CLOUD Amt.	REMARKS AND GEAR USE
												RED		PURPLE		
0016		A3	SHELF	STATION (CONT'D)								21.12	68.96			Craib corer o/B.
0019												21.10	68.88			" " on bottom.
0024																" " i/B not ↓
0027																" " o/B.
0030												21.22	68.80			" " on bottom.
0034																" " i/B not fired
0035																" " o/B
0038												21.22	68.80			" " on bottom
0043																" " i/B. O.K.
0048												21.40	68.92			W/B. Temp. probe o/B.
0055																W/B " " i/B.
0057												21.36	68.98			W/B. Temp probe o/B.
0100																" " " on bott
0106												21.32				" " i/B. C
																Proceeds to Demsta

Paralithodes grimaldii. On both sledge hauls the newly modified door closing and locking mechanisms worked perfectly.

The large spade box corer generally worked successfully at most of the stations sampled with the gear. A total of 14 hauls were taken at 12 stations. These provided 8 samples from 8 stations. No samples were obtained from 4 stations (2, 2, 6 and 12). The empty hauls were due to the spade closing wire fouling parts of the gear and preventing closure of the spade (Stations 3 and 6); damage to the top flap valves (Station 2); premature closing, before penetration, on the bottom (Station 6); and to the pressure release safety catch on release hook failing to operate (Station 12).

The cruise provided an opportunity to test the various modifications that had been made to the box corer since September 1975. In particular, it appeared that the addition of considerably more lead weight greatly improved the penetration of the sampler into the harder, deeper clay layers of the deep sea sediments. This clay formed a very effective 'plug' to the bottom of the sampling box and frequently prevented supernatant water from draining out of the sampler during recovery between the sea surface and deck. On previous cruises this had sometimes been the cause of the loss of material from the surface layers of mud samples. On the present cruise this happened occasionally when the sampler failed to penetrate the bottom adequately (e.g. Station 1).

The multiple corer generally worked well. At the routine seasonal deep sampling station 2 the first two hauls were empty due to a fault in the core valve release mechanism. Once

this had been rectified the sampler was used for five successful hauls yielding 20 undisturbed core samples. The corer also provided four good cores at each of the other stations sampled (Table 1), with the exception of Station 7 when one core tube was lost during extraction from the ooze sediment due to failure of the core tube retaining clip.

The Craib core sampler gave very variable results. On the coarse sand of the Anton Dohrn Seamount (Station 5) it provided three excellent cores from three hauls. By contrast, at Station 16, on the edge of the continental shelf it provided only 1 core from 5 hauls. It was thought at the time that this was due to the bad weather conditions and heavy swell (Force 8) but in the calmer conditions at the routine Station A3, where the corer had worked well previously, it continued to give many blank hauls and there was considerable difficulty in obtaining only three sand cores here. Subsequent examination revealed a slight leak in the top valve mechanism which has now been rectified.

The otter trawling was very successful with good catches of fish at four of the five fishing stations (500, 750, 1000 and 1250 m). At the 1500 m deep trawl Station 18 the trawl was tested for the first time at this depth. However, it was clear that the trawl did not reach the bottom and that the problem was due to the trawl warps on Challenger not being long enough. However, the successful trawls at shallower depths provided further material for the successful seasonal series of samples taken during 1975-76.

The four plankton tows were taken during the cruise (Stations 1, 2, 5 & Trawl No 19, Table 1) by Dr. Jones on behalf of Dr. D.

OPTION A.

CORING TRANSECT ON HEB TERR.

stations @ 200 m depth increments starting @ ca 2000 m.

steaming time (Fan is 60 miles (say) = ~~12~~ 12 hrs. (allowing time to repositioning)

sampling time. ~~9~~ 11 / cores. = ~~300 hrs~~.

~~Total 14 hrs (say 2 days)~~

total 24.5 hrs.

OPTION B

CORING TRANSECT ON ROPC. S.B.

stations @ 200 m depth increments starting @ 400 m.

steaming time (ROPC SB is ~~200~~ miles (say) = ~ 24 hrs. allowing time to repositioning.

sampling time: 19 cores = 67 hrs (2.7 days)

Total 3.7 days. (say 4 days) inc. extra time.

OPTION C

ROPC. A-P.

CORING. At a ~~second~~ 2 ~~(from South to~~ stations into/Rockall Trough ~~and~~ across Feni Ridge & Anton Dohrn

~~across width of Trough in the Rockall~~ as adjunct to HT/BF transect total time was ~~and~~ 21.5 hrs

BOOK №

STATION POSITION LOG

Station No. SMBA 9/76 Date 31st June. Decca. TD/MP. Time from 0400

Time ~~BST~~	~~Log~~ GMT.	POSITION Lat. N	Long. W	Method of Determination	WIND Dir. from	Speed Kts.	Weath. and Vis.	WAVES Dir. from	Period secs.	Height ft.	Corrected Barometric Press. mbs.	TEMPERATURE Dry Bulb	Wet Bulb	CLOUD Type	Amt.	REMARKS AND GEAR USE
												RED.		GREEN.		
0400	1	54° 41.1'	12° 22.8'	Decca.	130	20	0 98	130	2	2	1007.7	F 13	81.	J42	.42	Hove to on stn. Prepar
22												F 13	.75.	J42	.04.	Sledge o'board.
29																75m. out - attached weigh
34																150m attached pinger.
38																Retrieving pinger - [illegible]
0452												F 13	.94.	J42	.00.	Resumed paying out.
0609		54 40.4	12° 22.0.	DECCA.								F 13	.50	J42	.04.	Sledge on bottom
~~36~~												~~F 13~~	~~.33.~~	~~J41~~	~~.96~~	~~Com. hauling.~~
0657.		54 40.3.	12 20.8.	— " —								F 13.	17.	J41	.90.	Com. hauling.
0820		54 39.9	12 17.5	— " —	160	10	0.5 98	160	3	4	1007.4	F 12	.90	J41	.90	
0842												F 11	.7	J 41	.8	Sledge inboard. Retrieving tst
0909		54 39.9	12 16.0									F 11	.45	J 42	.5	Lowering box corer overside
12					170	10	0.4 96	160	3	4	1007.2					20m out. Stopped to attach p
14																Paying out.
1001		54 40.7	12 17.0									F 11	.50	J 42	.85	Box corer on bottom. Commenc
1053																Stopped heaving to detach pin
1057																Box corer inboard!

Williamson of Port Erin in an attempt to find an unidentified decapod larva which has previously been taken in the waters off western Britain. Subsequent examination of the material revealed one such larva from the Station 1 plankton sample.

The IOS-water bottle samples taken at a number of stations were for temperature and salinity determinations to provide environmental data from the bottom sampling stations.

The Shipek camera, mounted on the multiple corer provided photographs of the multiple corer taking samples on the bottom. It was also used to take photographs of the seabed and to record the bottom current direction as indicated by nylon cord streamers and a magnetic compass. This work continued until Station 6 when failure of the battery plug connection prevented further camera work during the cruise.

The scientific programme ended at Station A3 at 0100 hrs 28 June and Challenger berthed at Dunstaffnage at 1100 hrs.

G. Ship performance.

This was generally excellent. For all the vertical wire work we were very impressed, again, by the abilities of the ship's officers to maintain a vertical wire with the ship on station. Furthermore, the station keeping was extremely good. This was, perhaps, made more difficult by the breakdown of the satellite navigator. Nevertheless, the officers provided good Decca fixes, even in difficult areas.

During the fishing programme the skill and experience of the fishing skipper, Mr. Frank Dunning, was again greatly

BOOK No 135

STATION POSITION LOG

Station No. CHALLENGER Date 21-6-76 Decca To MP Time from 1122

Time GST	Log STN	POSITION Lat.	POSITION Long.	POSITION Method of Determination	WIND Dir. from	WIND Speed Kts.	Weath. and Vis.	WAVES Dir. from	WAVES Period secs.	WAVES Height ft.	Corrected Barometric Press. mbs.	TEMPERATURE Dry Bulb	TEMPERATURE Wet Bulb	CLOUD Type	CLOUD Amt.	REMARKS AND GEAR USED
		N	W	Decca Nav			m.					Dr	Wet	Do	Do	Temp a
1122	1	54°41.2	12°17.9	12/42.4	180	06	98	160	3	3	1008.2	F 11.3		J 43.4		Plankton net overside on hyd
1200												f. 11.2		J 43.2		2 - 1/8.
1210	1	54° 42.2'	12° 19.0'	Decca.								f. 11.72		J 43.88		Sledge o/B.
1215																Wts attached.
1230												f. 11.70		J 43.78.		Imager in Comm fr
1400												f. 11.55		J 43.00		
1409		54° 40.6'	12° 18.0'	Decca.								f. 11.70		J 42.70		Sledge on bottom Comm
1516		54° 39.3'	12° 19.8'	-"-								F 13.22		J 41.14		Comm hears in clear
1711												F 17.31		J 38.23		Retrieving imager
1721		54° 37.5	12° 24.0	- . -								F 17.58		J 38.07		Sledge I/B. Proceed
1833																On station ready for Plankton N
2035		55° 03.7	12° 04.2	Decca	240	10	bc 98					E 15.10		B 33.90		Plankton net overside
2100												E 15.5		B 33.5		Plankton net inboard
2115												E 15.0		B 33.9		In position ready to commence mu
2122		55° 03.5	12° 03.5	Decca								F 15.01		B 33.91		Multiple corer overside - paying
2125					250	12	bc 98									Pinger attached.
2159		55 03.5	12 03.5		2							E 15.02		B 33.91		Multiple corer on bottom

appreciated. For the fishing, particularly, there was a marked improvement in the standard of the new Bosun compared with some predecessors. There was also an improvement in the crew during the fishing work.

At the end of the first trawl (Trawl No. 15, Table 1) there was a delay in the recovery of the net when the port otterboard knocked off the emergency winch stop control box. After a short delay this was rectified by the engine room staff. However, it does raise the possiblity of resiting the control in a less vulnerable position on the after deck bearing in mind that it must be in a very accessible position.

The new blocks for the new inner brackets on the sides of the 'A' fraome have still not arrived and this makes the handling of the otter boards more difficult. The new wire, for use with these blocks was provided by SMBA for a cruise in April last. We hope that these blocks will be provided very soon.

Out biggest criticism of Challenger for this cruise was the siting of the additional winch on the after deck for a cruise as far in advance as October. We realise the problems of not being able to berth Challenger where adequate crane facilities would be provided before that cruise. Nevertheless, we ask that this situation be avoided for future S.M.B.A. biological cruises where so many different pieces of gear have to be handled over the stern. That winch makes the interchange of gear extremely awkward, inconvenient and at times rather dangerous. There was a tendency for people to get caught between the winch and the heavy gear being moved and people frequently

BOOK Nº

STATION POSITION LOG

Station No. CHALLENGER Date 21-6-75 Decca 70/Mp IRISH DEEP STN 2. Time from 2202

Time	Log	POSITION Lat.	POSITION Long.	POSITION Method of Determination	WIND Dir. from	WIND Speed Kts.	Weath. and Vis.	WAVES Dir. from	WAVES Period secs.	WAVES Height ft.	Corrected Barometric Press. mbs.	TEMPERATURE Dry Bulb	TEMPERATURE Wet Bulb	CLOUD Type	CLOUD Amt.	REMARKS AND GEAR USED
		N	W									Red Decca		Green Decca		Commenced heaving
2202																
2235																Proper det
2238												E 15.21		B 33.85		Multiple cover inboard FAIL
2253		55°03.5	12 03.5		250	15	Mc 98	200	4	4	1014.9	E 15.05		B 33.90		—·— outside bow
2338		55°03.5	12 04.0									E 15.09		B 33.81		— " — on bottom
2340																Commenced heaving.
0030						22-6-76.						E 15.70		B 34.1		Mult. Cover I/B. 4 Sea
0050		55°03.1	12°04.0			Decca		Insufficient?				E 15.21		B 33.60		Mult. " I/B. Comm.
0142												E 15.28		B 33.50		" " on bottom.
0144																Comm. heave in
0234																m/cover I/B. not fire
0304												E 15.18		B 33.75		m/cover O/B.
0334												E 15.08		B 33.42		" on bottom.
0420		55°03.0.	12°03.3.									E 15.00.		B 33.55.		m/cover I/B.
0442												E 15.06		B 33.67		m/cover O/B.
0519												E 15.00.		B 33.65.		—·— on bottom
0557		55°03.0.	12 04.0.									E 15.35.		B33.55.		m/cover I/B.
0623												E 15.37.		B33.50.		m/cover O/B.

tripped over parts of the winch whilst handling other gear.

It would be greatly appreciated if the sanitary seawater supply in the fish laboratory could be restored. This is an extremely useful facility when people want a small quantity of seawater, without having to ask the engine room to turn on the deck supply.

During the spade box corer work it became necessary to make up new spade closing wires. The efforts of various members of the crew, particularly the bo'sun and Mr. Vik are gratefully acknowledged.

Once again we would like to acknowledge the loan of the Shipek camera from I.O.S. Barry. It is proving a very useful aid to the development of the final design of the multiple corer, for photographing the seabed of the Rockall Channel and for recording the direction of bottom currents. During the passage to Dublin it became clear that a fault had developed in one of the camera batteries. We are grateful for the way in which I.O.S. Barry arranged for replacement batteries to be flown to Dublin.

The provision of facilities for showing feature films on board is greatly appreciated and provides excellent relaxation during off-duty periods. We hope this facility will continue.

Again, we wish to express our thanks to the Chief Engineer and officers for the invaluable help they gave at various times during problems with gear and in carrying out modifications.

Catering on board was, as usual, excellent and we are grateful to the chief steward and staff for their efforts and

BOOK No

STATION POSITION LOG

Time from 0658

Station No. CHALLENGER CRUISE 9 Date 22/6/76 DEEP STN 2 70/MP.

Time GMT.	Log	POSITION Lat. N	Long. W	Method of Determination	WIND Dir. from	Speed Kts.	Weath. and Vis.	WAVES Dir. from	Period secs.	Height ft.	Corrected Barometric Press. mbs.	TEMPERATURE Dry Bulb	Wet Bulb	CLOUD Type	Amt.	REMARKS AND GEAR USED
					R.		G.									
0658		55°03.0	12°04.0	DECCA.	C 15	.30.	B 33	.67								Multi box Bottomed.
0741					E 15	.23.	B 33	.94.								— " — I/B
0752		5504.0.	1205.0		E 15	.20.	B 34	.03.								— " — O/B.
0830		55 04.0	12 04.4	— " —	E 15	.10	B 34	.14								— " — On bottom
0832																Heaving in
0904																Pinger detached
0911					E 14	.96	B 34	.4								Multi corer inboard.
0940		5505.6	1203.4		E 14	.94	B 33	.95								Box corer overside
0943																Pinger attached
0944		5503.6	12 03.4		E 14	.95	B 33	.97								Lowering away
					130	10	c 98	270 180	7 3	4 3	1015.6	12.2	11.2	Cms 7	7	
0952																Stopped heaving, suspected fault, commenced h
1003																Pinger in
1005																Box corer in.
1009																Box corer overside
1011		55 03.8	12 03.6		E 14	.82	B 34	.10								Pinger on: lowering a
1055					E 14	.61	B 34	.20								Corer on bottom.
1056																Heaving in

kindness and for providing facilities for meals during night watches.

It is a pleasure to record with thanks the helpful advice and cooperation of Captain MacDermott. It was always a pleasure to discuss and plan the programme with him and we are conscious of the role he played in making the cruise so successful.

Finally, we wish to record our gratitude to RVB for the help and co-operation in the initial planning of the cruise and for the provision of two extra days at the end of the cruise to allow for cruise time lost because of the visit to Eire.

Peter Barnett.

Peter Barnett
26 July 1976.

BOOK No

Cruise 9/76

STATION POSITION LOG

Station No Challenger Deep Stn 2 and 3 Date 22/6/76 to 23/6/76 Decca 7D Mp Irish and 6C Scottish. Time from 1109

Time BST.	Log STN.	POSITION Lat.	POSITION Long.	Method of Determination	WIND Dir. from	WIND Speed Kts.	Weath. and Vis.	WAVES Dir. from	WAVES Period secs.	WAVES Height ft.	Corrected Barometric Press. mbs.	TEMPERATURE Dry Bulb	TEMPERATURE Wet Bulb	CLOUD Type	CLOUD Amt.	REMARKS AND GEAR USED
		N	W		Decca	Red	Decca	Green								
1109	2.			DECCA	E14.50		B 34.30									Stopped heaving, commenced
1126		55 04.1	12 03.1	"	E14.51		B 34.32									Box corer on bottom – commen
							C	180	4	3						
1155				"	140	15	98	260	6	3	1015.4	12.4	11.4	8	8	
1207																Box corer 1/B. M.T. + d
																Proceeds to Stn 3.
	STATION 3			Decca	Decca 7D Mp Irish Red		Green					Decca 6C Red		Mp Scottish Purple		
2158					C 16.11		F 39.83					H	9.71	H 67.60		Hove to for Station 3
		N	W													
2200		56° 33.0	11° 11.0													Lowering Box corer
2242		56 38.1	11 10.9		C 15.98		F 39.92					H	9.72	H 67.61		Box corer on bottom. Heavi
					160	05	od 98	180	3	2	1011.7	11.0	10.0	~~11.0~~	8 ~~10.0~~	
2325																Pinger in.
2339																Box corer in MT – Not
					7D 23-6-76.							6C				
0027					C 13.68		F 14.75					H.9.7		A 37.6		M/Corer o/B.
30																Pinger attached. Comm
36					C.14.64		F 40.6					H 9.62		A 37.68		Corer on bottom
58																Comm heave in

BOOK No

STATION POSITION LOG

Station No. SMBA 9/76 Date 23.6.76 Decca. TD/6C. M.P.

Time from

Time	Log	Position: Lat.	Position: Long.	Method of Determination	Wind: Dir. from	Wind: Speed Kts.	Weath. and Vis.	Waves: Dir. from	Waves: Period secs.	Waves: Height ft.	Corrected Barometric Press. mbs.	Temperature: Dry Bulb	Temperature: Wet Bulb	Cloud: Type (H)	Cloud: Amt. (A)	C	F	Remarks and gear used
0133	3.			Decca.	190	7	ov. 97	190	2	2.	1011.5	10.7	10.1	9.4	37.3	14.48	40.08	m/ Corer i/B.
0155														9.72	37.2	14.28	40.20	Box Corer o/B
0157	✓													10.42	37.78	-	-	Pinger attached
0240		56° 34.7	11° 02.6	Decca (TD)										10.42	37.78	13.82	41.60	Core on bottom
0241																		Comm heave in
0323														9.12	37.70	13.92	41.84	Box core i/B
0340																		Comp stn. proc
		STATION 4												Irish Decca 6C		Scottish Decca 6C		
				Decca Lat/M										Red	Green	Red	Purple	
0837																		Stopped on station
0850														C	F	A	G	Lowering box corer
0919		57° 07.5	12° 03.5	(from Irish Chain)	150	10	0 97	190	2	2	1010.6	11.7	11.1	3.82	34.41	44.5	63.82	On bottom - heavin
0949														3.82	[illegible]	[illegible]	[illegible]	Box corer on d
1039														3.82	34.6	44.4	63.32	Multi corer over
1111		57° 07.9	12 08.7	(Irish chain)										3.82	34.41	44.4	63.34	— — on b
		57 08.0	12 12.0	(Scottish chain)														
1144																		Multi corer on d

STATION POSITION LOG

BOOK №

Station No. Challenger SAMBA 9/76 Date 23-6-76 Decca 7D and 6C Time from

Time (BST)	Log	Lat.	Long.	Method of Determination	Wind Dir. from	Wind Speed Kts.	Weath. and Vis.	Waves Dir. from	Waves Period secs.	Waves Height ft.	Corrected Barometric Press. mbs.	Temperature Dry Bulb (7D)	Temperature Wet Bulb	Cloud Type (6C)	Cloud Amt.	Remarks and Gear Used
1301.	4	Station 4 (contd)										44.15	34.42	12.86	44.56	M/Cine rig / Camera rig
1303																Camera paying out.
1330												44.28	34.36	12.84	44.56	Rig on bottom
1335												"	"	"	"	62.5 — " —
1339												44.28	34.38	12.82	"	" — " —
1343												44.30	34.35	12.84	44.58	" — " —
1347												— "	—	12.80	44.56	" — " —
1356														12.86	44.6	" — " — Commence heave
1405														4 12.80	5 62.1	Rig I/B. Proceeds to St
														GREEN	PURPLE	
1830		STATION 5														Hove to Station 5.
1850														44.00	55.80	Box corer O/B.
1906																" " on bottom
1915														44.21	55.82	Pinger up
1917														44.22	55.83	Box corer I/B.
1948														44.18	55.90	Camera O/B.
1957																Pinger attached
1959														44.00	56.00	Camera on bottom
KD 1														44.1	56.2	— " — heave

TABLE 2

Times for various activities on cruise 9/76

		Hours
Steaming time Barry–Dublin–1st station	62	
" " final station–Dunstaffnage	10	
" " to & from scientific area	72	72
Time in Dublin		28
Epibenthic sledge	10	
Spade box corer	18.75	
Multiple corer & camera	19.75	
Craib corer	5.50	
Water bottle work	4.75	
Plankton tows	2.00	
Fishing	23.00	
Time lost due to warping problems	4.50	
" " " " weather	2.50	
Steaming between stations	74.25	
Total scientific work	165.00	165
Total cruise time		265

BOOK No

STATION POSITION LOG

Station No. Challenger SMBA 9/76 Date 23-6-76 Decca 6c Scottish Time from

Time	Log	Lat.	Long.	Method of Determination	Wind Dir. from	Wind Speed Kts.	Weath. and Vis.	Waves Dir. from	Waves Period secs.	Waves Height ft.	Corrected Barometric Press. mbs.	Temperature Dry Bulb	Temperature Wet Bulb	Cloud Type	Cloud Amt.	Remarks and Gear Used
		Station 5 (contd.)										Green	Ge/Mp	Purple		
2033																Camera inboard.
2040 ~~2040~~																Corer overside on hydro wire
2053 ~~2144~~	?	N 57°28'	W 11°00·0	apologies for Decca								A44	·10	G 56	·20	Corer on bottom heaving in
																Corer inboard — O.K.
2105																Corer going down
~~2110~~ 2122		57 27·5	11 02·5	— " —	160	30/35	O rr 76	160	150	8	1005·4	A44	·20	G 56	·35	Corer on bottom. Heaving
2144		57 27·8	11 01·5									A44	09	G 56	·45	Corer on bottom. Heaving
~~2152~~																Corer inboard
2157																~~— going down, —~~ wat
2210		57 27·6	11 01·6									A44	·11	G 56	·50	Water bottle on bottom.
~~2221~~																Water bottle inboard
~~223~~																
2230																Steaming at 1k for plankton
2231		57 28·2	10 56·0 (7)									A44	·01	G 56	·41	Net overside.
2254		57 28·0	10 56·0									A43	·91	G 56	·81	Net in. Station compl
																Proceeding to [illegible]
																Fishing stati

DECCA POSITIONS DOUBTFULL (AT TIMES UNLIKELY!)

Cruise 9/76

STATION POSITION LOG

BOOK No BST

Station No. CHALLENGER SHIBA Date 24-6-76 Decca 6c Scottish Time from 2305

Time BST	Log	POSITION Lat.	Long.	Method of Determination	WIND Dir. from	Speed Kts.	Weath. and Vis.	WAVES Dir. from	Period secs.	Height ft.	Corrected Barometric Press. mbs.	TEMPERATURE Dry Bulb	Wet Bulb	CLOUD Type	Amt.	REMARKS AND GEAR USED
											Red	Green		Purple		
2305		STATION 6														Move to on station.
2321		56° 36·9	10° 11·6 W	Decca + Faith							H 5·5	A 34·8		I 51·6		Box corer overside lowering
2323											H 5·3	A 34·7		I 51·6		Pinger on. – going down
2349											H 5·3	A 34·8		I 51·0		Box corer on bottom heaving
.					220	8	6 98	210	7	3/10	1016·8mb	11·8	11·2			
						25-6-76										
0025																Box corer I/B M.T.
0035											H 5·78	A 34·72		I 51·02		" " o/B.
0040											—"—	—"—		—"—		Pinger attached Comm ba
0115		56° 36·9	10° 12·0	Decca.							H 5·46	A 34·84		I 51·35		Box core on bottom Co
0150																Box Core I/B M.T. hauling
																Main winch Snagged
0230																Main wire repaired.
0245																M/Corer O.K.
0247											H 5·48	A 34·82		I 51·26		m/Corer o/B.
0250																Comm bay out
0319		56° 37·8	10° 11·0	Decca.							H 5·40	A 34·68		I 51·10		Corer on bottom Com
0347											H 5·5	A 34·76		I 51·20		Core I/B 0·16 Comp. Stn 7.

BOOK No

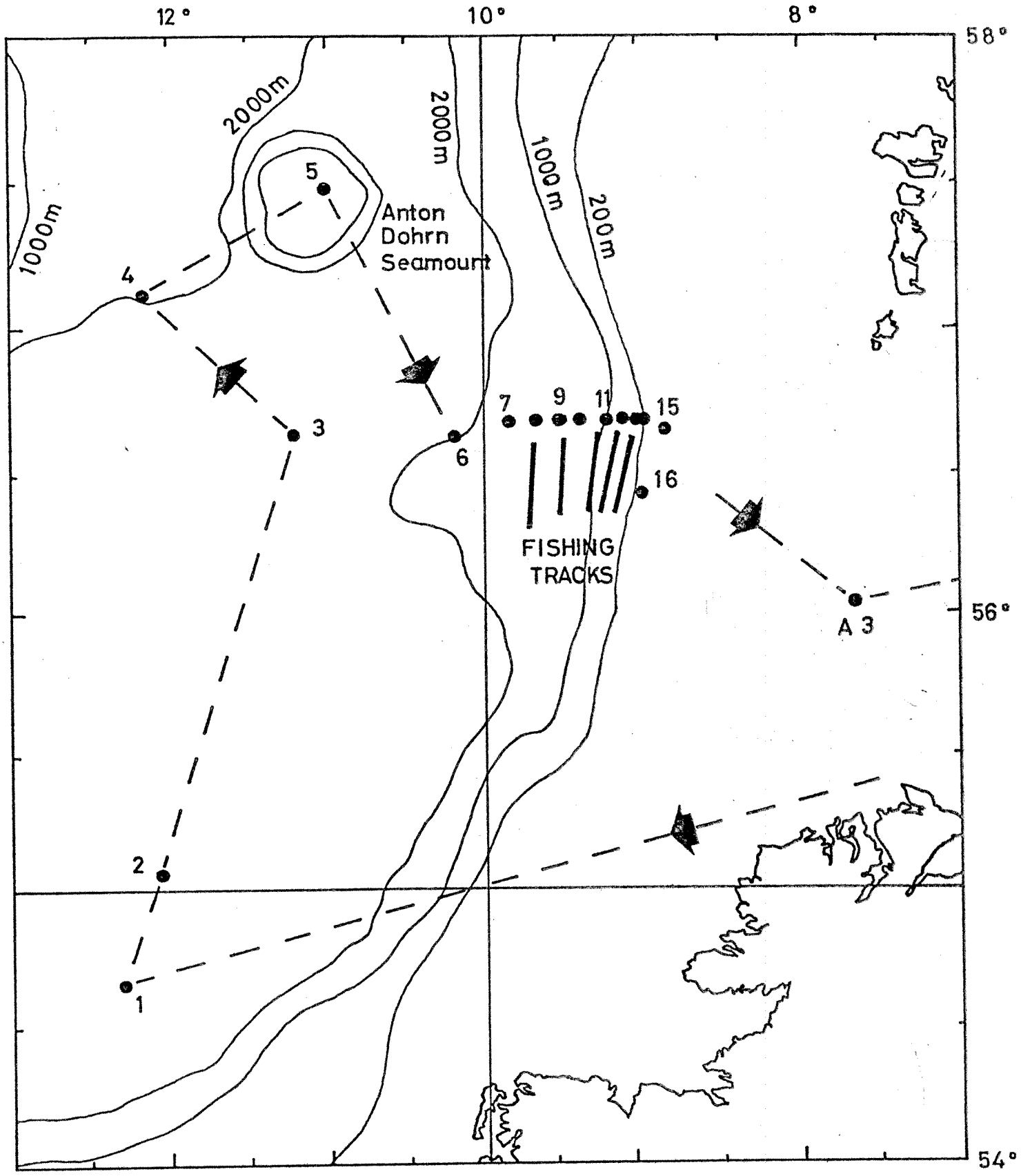
STATION POSITION LOG

Station No. CHALLENGER SMBA 9/76 Date 25.6.76   Decca. 6C/MP   Time from

Time BST	~~Log~~ STN	POSITION Lat. N	Long. W	Method of Determination	WIND Dir. from	Speed Kts.	Weath. and Vis.	WAVES Dir. from	Period secs.	Height ft.	Corrected Barometric Press. mbs.	TEMPERATURE Dry Bulb	Wet Bulb	CLOUD Type	Amt.	REMARKS AND GEAR USED
											RED	GREEN		PURPLE		
0510	7.	56 39.8.	07 48.5	DECCA							H3.73.	A34.17.		I54.90.		Multi-corer O/Board
38											H3.71	A34.15.		I55.20.		— " — on bottom
0604											H3.64.	A34.16.		I55.30.		— " — on board
0718.		56 39.8.	07 46.0.	DECCA							H3.47	A34.10.		I55.45.		Box corer O'board.
0800.											H3.40.	A34.05		I55.65.		— " — Bottomed.
0823																Pingers taken off
0825																Box corer in. Proceeding
		TRAWL No 16 (1000m)														
											RED	GREEN		PURPLE		
1100											G19.1	A31.7		J52.7		Turned north, speed 1k.
1106											G18.1	A31.7		J52.6		Cod end overside.
1139											G18.4	A31.8		J51.7		Doors overside. Speed
1149																A/c 015° G
1200		56°20'N	09°21.5'W	Decca.	240	5	c 98	230	7	6/8	1022.5 mb	12.0	12.5	Cms Cis	7	Stopped paying out. Port warp
											RED.	GREEN		PURPLE.		
1205																A/c. - 020° T. - G. 3.0 Kts
1233		56°22.6'N	09°19.0'W								G19.1	A31.9		I78.7		Stop paying out Comm. trawl
1317																A/c. 015° T.
1323																A/c 010° (G)

FIG. 1

CHALLENGER CRUISE 9 - 76



John Gage

Reference P12/9/76

R.V.B. SAILING INSTRUCTIONS

R.R.S."CHALLENGER" : CRUISE 9/76 : 17 - 28 JUNE 1976

To the Master

1. Ship's Programme

(a) RRS "CHALLENGER" is to sail from Barry on Thursday 17 June with members of the Scottish Marine Biological Association; the University of Stirling; the Royal Scottish Museum, Edinburgh; and the Marine Laboratory, Isle of Man on passage to Dun Laoghaire, Eire, where the ship will make a courtesy visit in connection with the Dun Laoghaire Summer Festival.
On Saturday 19 June RRS "CHALLENGER" is to sail from Dun Laoghaire for a benthic cruise in the north-eastern Atlantic as required by the Senior Scientist.

(b) The outline programme is given below:

Tuesday 15 June	a.m.	: Load bunkers (MFO) from road tankers.
	1700	: Complete maintenance work
Wednesday 16 June		: Load scientific equipment.
Thursday 17 June	0930	: Sail Barry. Proceed on passage to Dun Laoghaire.
Friday 18 June	0900	: Arrive Dun Laoghaire.
Saturday 19 June	1300	: Sail Dun Laoghaire. Proceed west of Scotland as required by the Senior Scientist.
Monday 28 June	a.m.	: Arrive Dunstaffnage.

2. Scientific Equipment

(a) It is required to continue sampling deep sea demersal fish populations and deep sea and shelf benthos in the north eastern Atlantic.
Equipment used will include a bottom trawl, an Epibenthic Sledge, a large box corer, a Craib corer, a multiple core sampler, and a Deep Sea Camera for taking photographs of the surface of the sea bed.

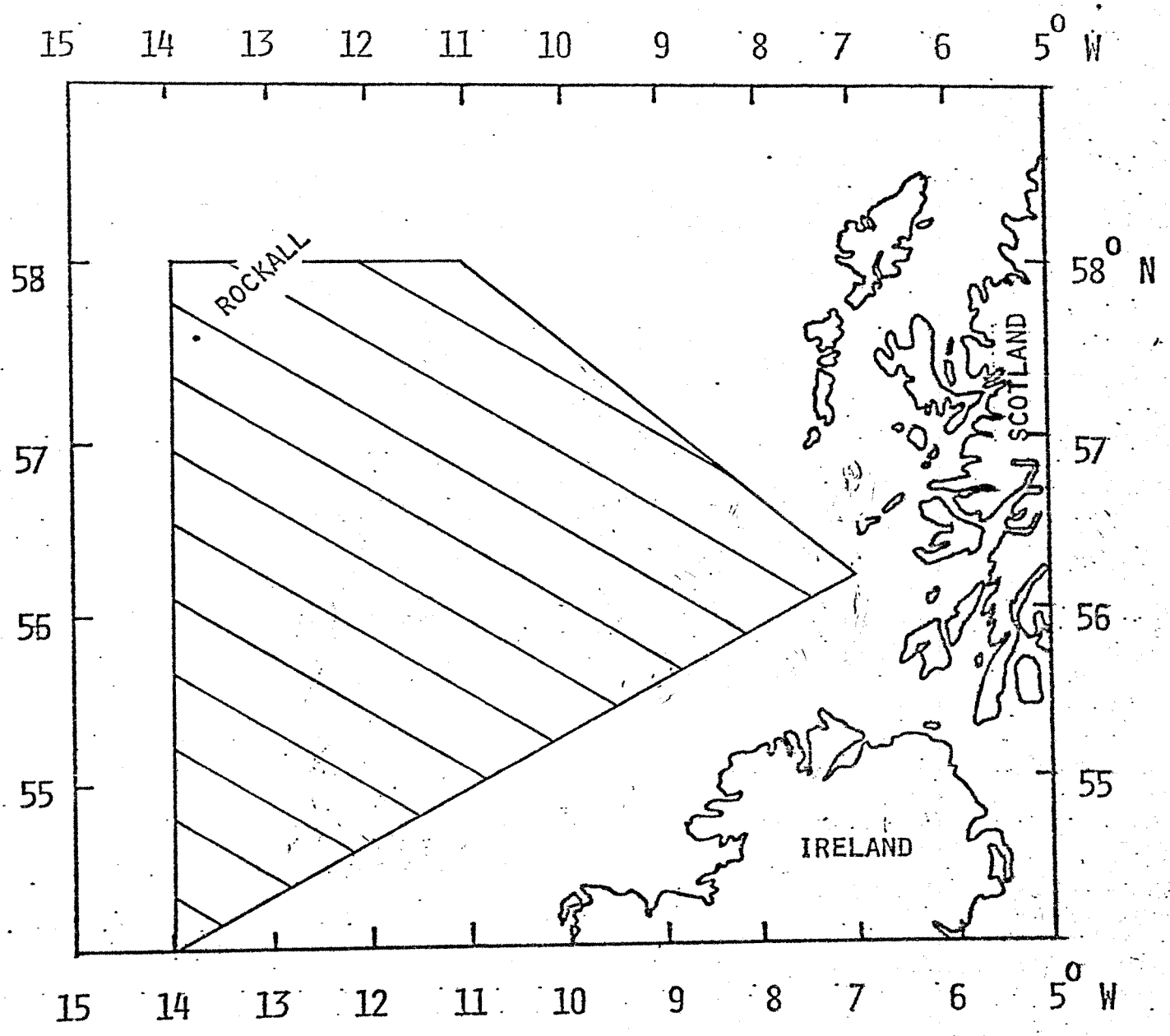
(b) SMBA and IOS Barry equipment will be loaded in Barry on Wednesday 16 June and unloaded in Dunstaffnage on Monday 28 June.

BOOK №

STATION POSITION LOG

Station No. Challenger Stn 8A Cruise 9/76 Date 25-6-76 Decca 6c/MP Time from

Time BST	Log Stn	Position: Lat.	Position: Long.	Position: Method of Determination	Wind: Dir. from	Wind: Speed Kts.	Weath. and Vis.	Waves: Dir. from	Waves: Period secs.	Waves: Height ft.	Corrected Barometric Press. mbs.	Temperature: Dry Bulb	Temperature: Wet Bulb	Cloud: Type	Cloud: Amt.	Remarks and Gear Used
	Fish. 17.	Trawl	17 (contd)								Red	Green		Purple		from 340°T ...
2315											H 00.3	A 32	9	I 63	6	Work continues in wind ...
						26 -		6 - 76								
0005																Trawl warp cleared
–																heave in nets
0025																Cod end i/B.
0107	9.										H 6.0	A 33	6	I 61	6.	Water bottle o/B
0118											H 1.0	A 33	5	I 61	9	Bottom.
0134											H 1.18	A 33	36	I 61	76	W/B i/B.
0204	9	56° 38.2	09° 29.	Decca.							H 0.82	A 33	22	I 61	60	Box core o/B.
0206											H 0.54	A 33	18	I 61	44	Pinger attached Comm...
0230																Core on bottom 3.5 t.
0232		56° 38.2	09° 28.4	-"-							H 0.71	A 33	22	I 61	64	Comm heave in.
0253																Pinger i/B.
0255																Box core i/B. O.K. Co...
																Proceed to Stn 8.



PROPOSED WORKING AREA CHALLENGER CRUISE 9 / 76

SMBA - Barnett

17 - 28 JUNE 1976

BOOK №

STATION POSITION LOG

Station No. CHALLENGER SMBA 9/76 Date 26.6.76. Decca. 6C/MP.

Time from

Time BST.	~~Log~~ STN.	POSITION Lat. N	Long. W.	Method of Determination	WIND Dir. from	Speed Kts.	Weath. and Vis.	WAVES Dir. from	Period secs.	Height ft.	Corrected Barometric Press. mbs. RED	TEMPERATURE Dry Bulb GREEN	Wet Bulb	CLOUD Type PURPLE	Amt.	REMARKS AND GEAR USED
0440.	89	5637.2	0940.1	Decca.							H 2.67.	A 33	.85.	I 57	.30	Hydrographic wire O/B.
											H 2.62.	A 33	.75	I 57	.15.	— — I/B
0500.											H 2.63.	A 33	.70	I 57	.01	Spade Core O/B.
21											H 2.6 3/2.	A 33	.75	I 57	.00.	Spade " bottom.
50.											H 2.61	A 33	.70	I 56	.96	— — I/B.
06.21.		— —	— —	— —												
	STN															
0749.	10.	5639	0923	DECCA.							H 0.25.	A 33	.03.	I 62	.24.	Water Bottle O/B.
0801		56 39	09 23								H 0.26	A 33	.04	I 62	.27	— — on bottom
0815																— — I/B
0826																Box core overside
0828											H 0.20	A 33	.02	I 62	.25	Purge on Lowering away.
0849		5638.9	0922.5	Decca.							H 0.19	A 33	.00	I 62	.2	Box core on bottom. Heaving
0918																— — out of water w
																round swivel.
																Box core on deck. Proceed
0932																to 1500m Piling 5th

Hebrides Terrace / Barra Fan

SBC transect

Target Depths	Est time reqd. (hrs)	total steaming time between stns.	total Est time to depth location
1) 2500	1.5		
2) 2000	1.25		
3) 1800	1.2		
4) 1600	1.1		
5) 1400	1.0		
6) 1200	0.9		
7) 1000	0.8		
8) 800	0.7		
9) 600	0.6		
10) 400	0.5		
11) 200	0.4		
	10 hrs	8.5 hrs	~6 hrs.

30 m. rollers spool. unperturbed.

total time required. = 24.5 hrs.

Feni Ridge • Anton Dohrn

stns.

		time reqd on stn	steaming time (@ 5 kts)	
1) F. Ridge	7000 m	5	16	+ 4 hrs for depth location
2) Anton Dohrn	~600 m.	1.5		

total time required 21.5 hrs!

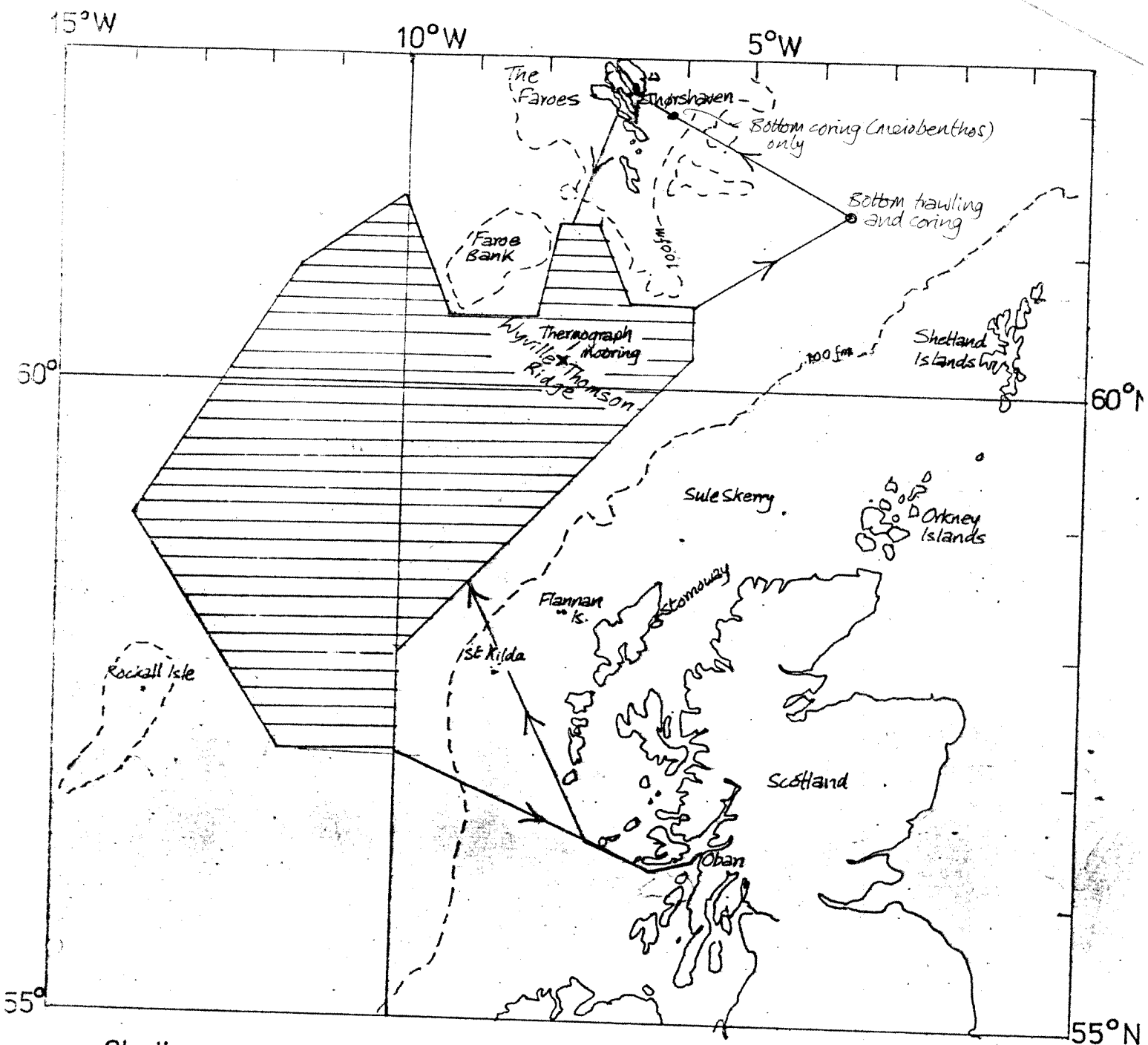
BOOK No

STATION POSITION LOG

Cruise 9/76

Station No. CHALLENGER SMBA Date 26-6-76 Decca 6c/Mp Time from

Time BST	Fish Log STA/B	POSITION Lat. N	POSITION Long. W	POSITION Method of Determination	WIND Dir. from	WIND Speed Kts.	Weath. and Vis.	WAVES Dir. from	WAVES Period secs.	WAVES Height ft.	Corrected Barometric Press. mbs.	TEMPERATURE Dry Bulb	TEMPERATURE Wet Bulb	CLOUD Type	CLOUD Amt.	REMARKS AND GEAR USED
											R50	Green		Purple		
		TRAWL No 18			320	17	0 98	260	7	8	1022.1	12.4	11.0	Cms Cu5	8	
1202	Fish 18.										G 21.0	A 32.3	I 77.3			Cod end overside.
1210																Net o/B.
1232											G 20.28	A 32.26	I 76.10			Doors o/B. Comm pay
1242																c/c 330°(T) 4.0 kts
1302	"															c/c 343°(T) 4.2 kts
1308											G 22.0	A 32.42	I 75.50			c/c 340°(T) 4.1 kts.
1326		56° 21.5	09° 43.0	Decca.							G 22.28	A 32.46	I 72.40			Stop pay out. 343°T. 5.7kts
1501	"	56° 30.0	09° 37.0	— " —	190	17	0z 98	200	4	6.	G 23.9	A 33.86	I 66.8			Comm hauling nets.
1609											H 00.0.	A 32.80.	I 66.05.			Doors I/B.
1635											H 00.2	A 33.00	I 65.30.			Cod end inboard.
	SYN															
1843.	11	56 38.5	07 13.0.								G 22.65.	A 32.70.	I 64.65.			Spade Cover O/B.
1903.											G 22.82.	A 32.70.	I 64.60.			— .. — on bottom
24.											G 22.75.	A 32.60	I 64.80			— .. — I/B.
1932											G 22.75.	A 32.75	I 64.05.			w/b o/B.
54.											G 22.60.	A 32.75	I 65.10.			w/b I/B.



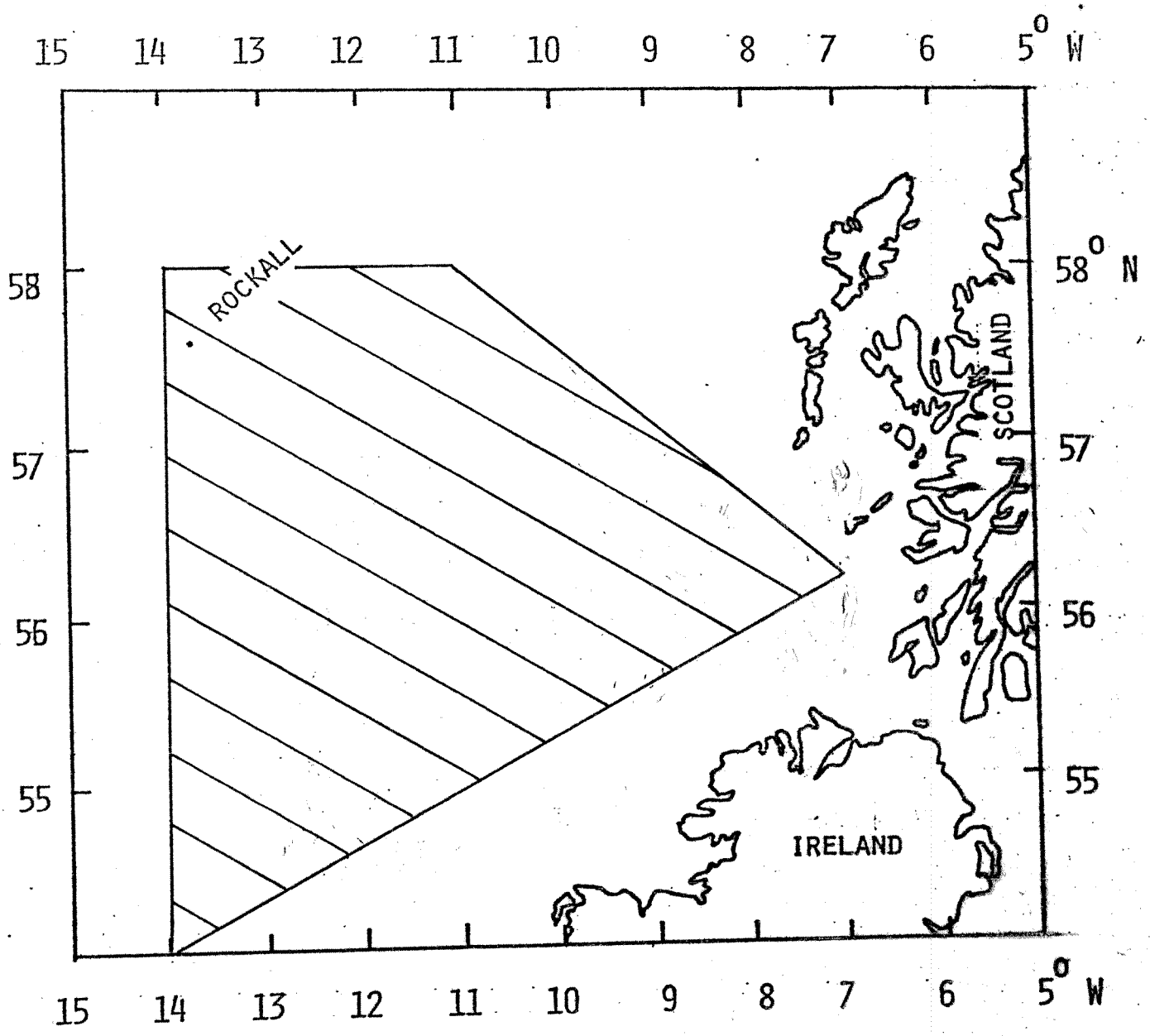
Challenger cruise 10/76, 29 June - 12 July. Proposed working area hatched.

BOOK No

STATION POSITION LOG

Station No. Continuation 9/76 Date 26-6-76 Decca 6c/Mp Time from

Time	Log	POSITION			WIND		Weath. and Vis.	WAVES			Corrected Barometric Press. mbs.	TEMPERATURE		CLOUD		REMARKS AND GEAR USED
		Lat.	Long.	Method of Determination	Dir. from	Speed Kts.		Dir. from	Period secs.	Height ft.		Dry Bulb	Wet Bulb	Type	Amt.	
					210	30	9 93	210	5	7	1021.0	13.1	11.9	Cu	8	
		STATION 12									Rod	Calm		Previous		
2025											c 22.2	A 32.4	L 65.4			Have to on station (9800m)
2033																Box come outside for
2050											c 22.15	A 32.45	L 65.5			— — on bottom
2104																Pinger taken off
2108																Box over side
2113																Water bottle outside
2119		56°39.1 N	09°02 W	Decca							c 22.1	A 32.5	L 65.9			— — on bottom
2130																All gear in
2145		STATION 13									c 21.44	A 32.4	L 66.8			On station
2154																Water bottle outside
2200		56°39.5	09°02.1	Decca							c 21.3	A 32.4	L 66.8			— — on bottom
2212		56°39.5	09°02.1	"												— — released Recovery
2244		~~STATION 14~~														to start gear on deck
2244		STATION 14														Water bottle outside
2252		56.39.5	08°58'	"							c 20.65	A 32.3	L 68.15			— — on bottom
2355																— — in. Station co



PROPOSED WORKING AREA CHALLENGER CRUISE 9 - 76

17 - 26 JUNE 1976

continued book 1 BOOK No.

STATION POSITION LOG

Station No. CHALLENGER 7/76 SMBA   Date 26-6-76 to 27-6-76   Decca Gc Mp   Time from

Time	Log STA 15	POSITION Lat.	Long.	Method of Determination	WIND Dir. from	Speed Kts.	Weath. and Vis.	WAVES Dir. from	Period secs.	Height ft.	Corrected Barometric Press. mbs.	TEMPERATURE Dry Bulb	Wet Bulb	CLOUD Type	Amt.	REMARKS AND GEAR USED
											Red	Green		Purple		
		STATION 15														
2340											G 19.1	A 32.2		I 71	.8	On station
2348		"	"													Water bottle overside
2355		56°38.1	09°51.0	Decca							G 19.0	A 32.1		I 71	.75	— " — on bottom.
2358																All gear in. Proceeding to St
																Thermometer damaged – doing
							27.6.76									
0008																Water bottle overside.
		"														
0013		56°38'	09°51.0	Decca							G 19.1	A 32.1		I 71	.65	— " — on bottom.
0017																W/B I/B Thermometer
0023																W/B o/B
0031											G. 19.15	A 32.20		71	.8	W/B I/B Proceed to S
		STATION 16														
0604											G 16.65			J 52	.8	Grab corer o/B.
0614																— " — I/B (...
24											G 16.65			J 52	.8	Grab corer o/B
30											G 16.65			J 52	.8	— " — I/B
34											— " —			— " —		— " — o/B.
47											G 16.5			J 52	.9	— " — I/B. ...

Challenger Cruises 9 & 10/76.

CRUISE 9

Steaming times (hrs) assuming speed of 9 kts.

OBAN	OS	Heb T.	Por. SB.
OS		18.5	13.5 – 33.5
Heb T.			30 – 50
Por. SB			

PROG A.

CORING TRANSECT ON HEB TERR.

stations @ 200 m depth increments starting @ ca 2000 m.

steaming time (Fan is 60 miles long) = ~~[illegible]~~ 12 hrs. (allowing time to repositioning)

sampling time. ~~[illegible]~~ 11 cores. = ~~[illegible]~~.

~~Total [illegible] hrs (say 2 days)~~

Total [illegible] hrs.

OPTIONAL R

BOOK No

STATION POSITION LOG

Station No. CHALLENGER SMBA 9/76 Date 27-6-76 Decca 30 Mp N. British Time from

Time	Log	POSITION			WIND		Weath. and Vis.	WAVES			Corrected Barometric Press. mbs.	TEMPERATURE		CLOUD		REMARKS AND GEAR USED
		Lat.	Long.	Method of Determination	Dir. from	Speed Kts.		Dir. from	Period secs.	Height ft.		Dry Bulb	Wet Bulb	Type	Amt.	
		A3	SHELF STATION (Contd.)													
2247											Red	Purple				Grab over in - no sam
54											I 20.9	I 68.9				— " — on bottom.
58																— " — in O.K.
2306																— " — over side
2304											I 20.01	I 68.8				" on bottom
2314																" 1/3 no sample
15																" over side
21											I 20.03	I 68.75				" on bottom.
27																" 1/3 - O.K.
33																" over side
35											I 20.05	I 68.6				" on bottom.
40																" 1/3 - O.K.
45											I 21.00	I 68.5				" on bottom
50																" 1/3 - no sample.
0005											I 21.0	I 69.0				Back on station.
0007											I 21.04	I 69.05				Grab over in bottom
0014																" " 1/3 O.K.

	WEDNESDAY	THURSDAY	FRIDAY
p.m. Marlow - Glen Noe			
N	R. Summers - a.m. Run Workshop - p.m. Run		
Creran	R. Gibson L. Feochan Tralee Bay a.m. p.m.	P. Landless - Jura R. Campbell	C. Comely - Port A
Creran	R. Gibson L. Feochan Tralee Bay a.m. p.m.	P. Landless - Jura R. Campbell	C. Comely - Port A
nucknish	a.m. M. Picken - Dunstaffnage Channel	a.m. M. Picken - Firth of Lorne	
t - Hunterston			
Tett	Dr. Stanley →		Sir Frederick Ru ½ day
terston			
och Creran	a.m. Dr. Gibson p.m. L. Feochan Tralee Bay	P. Landless - Jura R. Campbell	C. Comely - Port A
Sandbank	Collect Dr. Wilson from Crianlarich at 08.00	Crewbus at Regent Hotel 09.30 Dr. Wilson to Crianlarich 17.00	Prov. Creas Crianlarich
	Collect Dr. Wilson from Crian. at 08.00	Dr Wilson to Crian. 17.00	Prov. Creas Crian. 18.3
		SCIENTIFIC MEETING	COUNCIL MEETING

S:	MONDAY	TUESDAY	WEDNESDAY
a	OFF	ROAD	
I		a.m. J. Watson - Sandbank p.m. J. Marlow - Glen Noe	
; II		Calanus Crew - Sandbank	
t III		MAIL RUN	R. Summers - a.m. Run Workshop - p.m. Run
over		C. Comely - Loch Creran	R. Gibson L. Feochan Trale a.m. p.
	Plankton daily) Water samples) Blaxter	C. Comely - Loch Creran	R. Gibson L. Feochan Trale a.m. p.
2		a.m. M. Picken - Ardmucknish	a.m. M. Picken - Dunstaffnag Chan
520			
us		Dr. P. Barnett - Hunterston	
Mara		Dr. Barnes/ Dr. Tett	Dr. Stanley
:		A. Gale - Hunterston	
nan	Plankton daily) Water samples) Blaxter	C. Comely - Loch Creran	a.m. Dr. Gibson L. Feochan Tralee
er		Calanus crew to Sandbank	Collect Dr. Wilson from Crianlarich at 08.00
Escort			Collect Dr. Wilson from at 08.00
TORS.			

Challenger Cruise 9/76

Macrobenthos Sampling

1. Continuation of time series at deep station 2

   Position: 54°40'N 12°16'W, 2886 m.

   Approx. time required on station 10 hrs (2 epibenthic sledge hauls), and 2 spade corer drops (3 hrs). Total time 13 hrs.

2. Barra Fan/Hebrides Terrace SBC transect. Single hauls from 11 stations; target depths at 2500, 2000, 1800, 1600, 1400, 1200, 1000, 800, 600, 400 and 200 metres. Total estimated sampling time 12 hrs, total steaming time* from 2500 m stn. on 56°36'N 11°11'W to 56°36'N 08°58'W estimated at 8.5 hrs plus 6 hrs for ship manoevering in order to locate correct depth. Total time 26.5 hrs.

3. Feni Ridge and Anton Dohrn SBC stns. on approx, 57°10'N 12°10'W (Feni Ridge) and 57°28'N 11°06'W (Anton Dohrn) total time required on station, 8.5 hrs (including depth seeking time). Extra steaming time (assuming Feni Ridge and then Anton Dohrn are sampled between the 2500 and 2000 M stations on the BF/HT transect) is 16 hrs. Total time therefore 21.5 hrs.

* based on steaming at 9 knots.

J.D. Gage
12 May 1976.