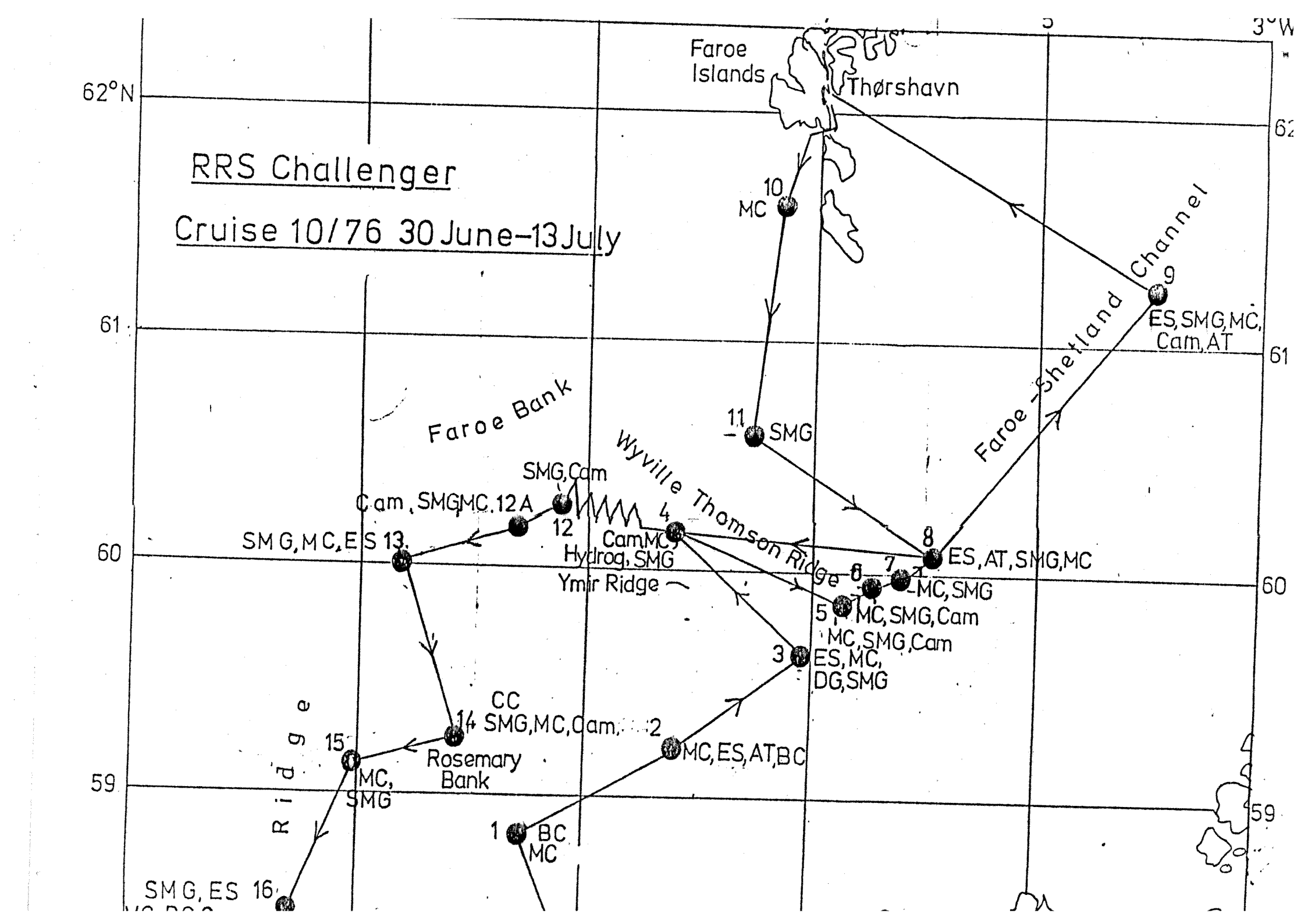
Scottish Marine Biological Association

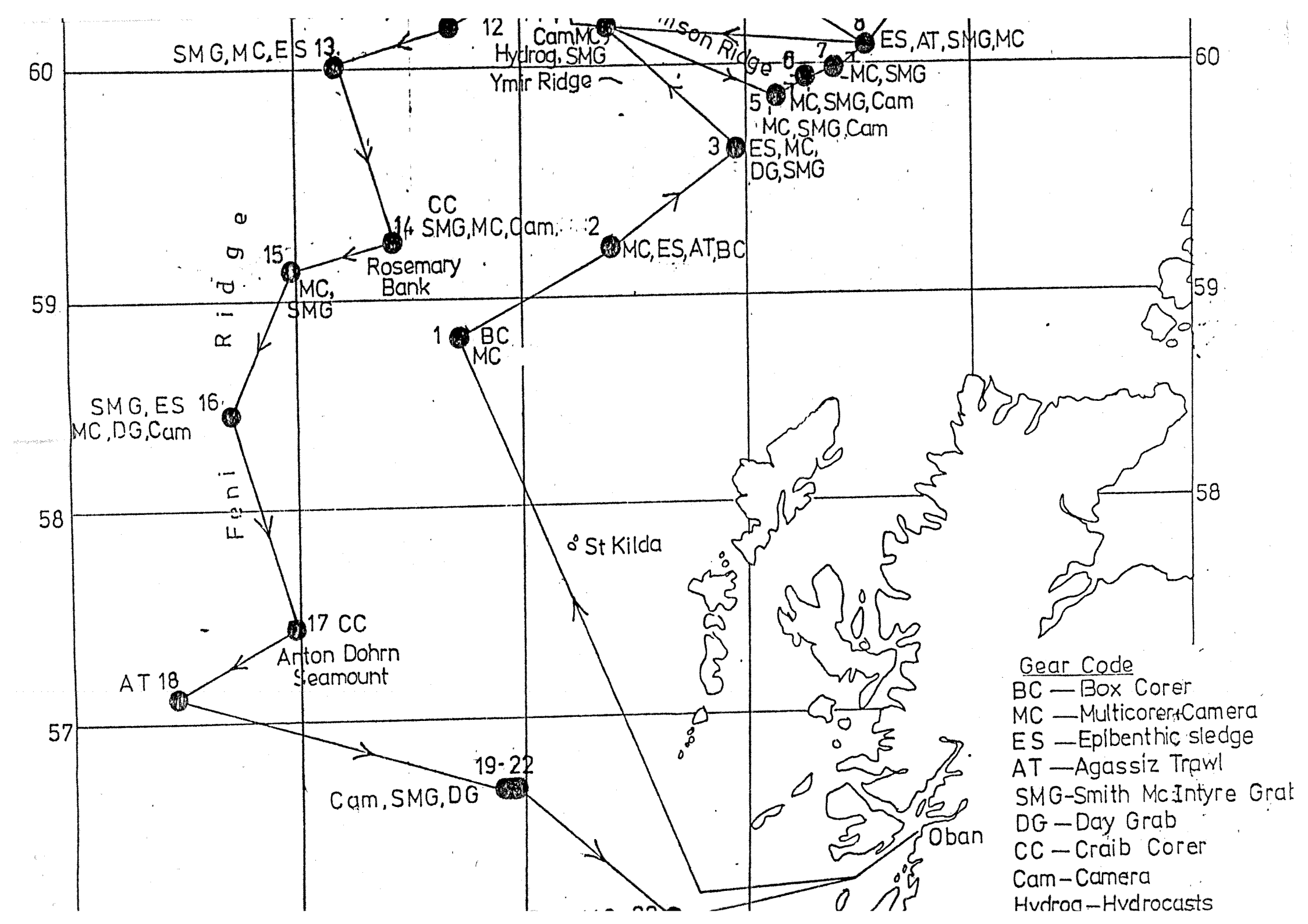
Dunstaffnage Marine Research Laboratory

CRUISE REPORT

RRS Challenger. Cruise No. 10/76

30 June - 13 July '76.


RRS Challenger
Cruise 10/76 30 June–13 July
Faroe Islands
Thørshavn
62°N
61
60
59
3°W
Faroe Bank
Wyville Thomson Ridge
Ymir Ridge
Faroe–Shetland Channel
Rosemary Bank
Ridge
10 MC
9 ES, SMG, MC, Cam, AT
11 SMG
SMG, Cam
Cam, SMG, MC, 12A
12
4 Cam, MC, Hydrog, SMG
SMG, MC, ES 13
8 ES, AT, SMG, MC
7
6 MC, SMG
5 MC, SMG, Cam
MC, SMG, Cam
3 ES, MC, DG, SMG
CC
14 SMG, MC, Cam
2 MC, ES, AT, BC
15 MC, SMG
1 BC MC
SMG, ES 16


60
59
58
57
SMG, MC, ES 13
12
CamMC
Hydrog, SMG
Ymir Ridge
Wilson Ridge
ES, AT, SMG, MC
MC, SMG
MC, SMG, Cam
MC, SMG, Cam
3 ES, MC, DG, SMG
CC
14 SMG, MC, Cam
2 MC, ES, AT, BC
Rosemary Bank
15 MC, SMG
Reni Ridge
1 BC MC
SMG, ES 16 MC, DG, Cam
St Kilda
17 CC
Anton Dohrn Seamount
AT 18
19-22
Cam, SMG, DG
Oban
Gear Code
BC — Box Corer
MC — Multicorer+Camera
ES — Epibenthic sledge
AT — Agassiz Trawl
SMG-Smith McIntyre Grab
DG — Day Grab
CC — Craib Corer
Cam — Camera
Hydrog — Hydrocasts

1) Main objectives.

a) Benthos sampling and seabed camera survey of the Northern Rockall Trough and Wyville-Thomson Ridge area in order to relate benthic distributions and community structure to the 'overspill' from the Faroe Bank Channel, and to make supporting hydrographic observations.

b) To collect large samples of species of benthic megafauna for studies on genetic polymorphism by the Institute of Biologia Animale, University of Padua, Italy.

2) Cruise Track, stn. positions and gear worked.

(See Fig. 1 and Table 1)

3) Sampling and other gear used.

Craib and Multiple corer for meiobenthos sampling, a 0.25 m^2 box corer, Smith McIntyre&Day grabs, and Epibenthic sledge for macrobenthos sampling, Agassiz trawl for collecting benthic megafauna for genetic variability studies, Shipek Series 700 deep-sea camera system for seabed photography and bottom current observations, and IOS-type water bottles/reversing thermometers for hydrographic observations.

4) Scientific Participation

1.	P.R. Barnett	SMBA
2.	A.C.H. Connelly	SMBA
3.	R. Costa	Institute di Biologia Animale, Padua, Italy.
4.	Mrs V. Dunlop	SMBA
5.	J.D. Gage	SMBA
6.	R.H. Lightfoot	SMBA/University of Newcastle Upon Tyne.

7. G. Pearce — University College of Wales, Aberystwyth.

8. Mrs M. Pearson — SMBA

9. J. Watson — SMBA

5) Sea and Weather Conditions

Generally excellent with light easterly winds until 8 - 11 July when winds up to Force 7 - 8 were experienced and a heavy S-SW swell developed which persisted until the end of the cruise.

6) Cruise narrative

'Challenger' sailed on schedule at 1400 hrs 30 June, and after putting the PDR fish overboard in the Firth of Lorne she steamed for the first of a line of bottom sampling stations along a N.E. track across the northern Rockall Trough, the eastern end of the Wyville-Thomson Ridge and into the eastern Faroe Bank Channel and Faroe-Shetland Channel.

Benthos samples were to be obtained with the multiple corer (meiobenthos) and box corer (macrobenthos) along with a seabed camera drop at each station augmented by epibenthic sledge and Agassiz trawl hauls where bottom conditions were suitable. Good cores and a successful camera drop were accomplished at station 1 in approx, 1800 metres depth, and this was followed by a successful multicorer drop at stn. 2. After an unsuccessful box corer drop at this station the corer was, unfortunately, lost on heaving after the second drop. It was surmised that slack wire had somehow fouled the gear after it bottomed and that, on heaving, a sudden increase in wire tension from the normal 'on bottom' load to 2 tons, that as quickly fell back to the 'on bottom' load, represented the shearing load on the wire. Normally, the wire

tension is monitored closely since it tells one immediately the corer settles on the bottom by a drop in tension to a value representing the weight of the now slack wire in water. It always seems necessary to pay out a few extra metres to ensure that the corer is not pulled out again by surge on the wire, and this was done as usual. Once the weight of corer comes off its release hook, it releases allowing closure of the spade by heaving on the pulley wire which can now be pulled through the top of the corer. In this instance it is believed that a bight in the pulley wire released from the corer during spade closure fouled the gear and sheared.

The problem of the wire twisting into 'bights' is perhaps aggravated by the fact that the swivel linking it to the gear becomes less than effective when the load on it is relieved, in this case when the gear bottoms. The outboard end of the wire is usually in rather poor condition since this part sees the most wear and tear. In fact the end of the main wire could be seen to spontaneously kink itself on deck when no load was applied. Perhaps the problem may be at least partially overcome by adding a length of extra wire, linked by a second swivel, to the end of the main wire, but, of course, this cannot be allowed to be wound onto the winch drum and might not even easily pass through the gantry sheave.

Capt. MacDermott did not consider it worthwhile for Challenger to attempt to drag for the lost gear and station 2 was completed with epibenthic sledge and Agassiz hauls. The sledge haul was, however, unsuccessful despite clear evidence of contact with the bottom.

The epibenthic sledge was used again at Stn 3 in 1100 m depth, and this time obtained a satisfactory sample. The station was completed with a successful multicorer drop followed by trials with the Smith McIntyre and Day grabs, good samples being obtained with both. It was therefore decided to substitute these gears for the lost box corer and to continue with the cruise programme as planned.

'Challenger' then steamed north west for the Ymir Trough, between the Wyville Thomson and Ymir Ridges, for a 12 hour programme of hydrographic casts in order to relate water column structure to possible 'overflow' over the Wyville-Thomson Ridge from the Faroe Bank Channel, and to investigate its possible relationship to the prevailing tidal cycle. Grab, multicorer and camera drops were also made on this station, the bottom samples and photographs suggesting the Trough is subject to strong bottom current, with a thin gravel covering over a clay deposit, and a rather curious, though rich, bottom fauna. On completion, 'Challenger' steamed east in order to resume the transect over the eastern Wyville-Thomson Ridge into the Faroe Bank Channel. Successful grab, multicorer and camera drops were made despite the obviously course nature of the sediments encountered. The final station (Stn. 9) on this line was located on 61°13'N 03°59'W in more than 1000 m in the Faroe-Shetland Channel. Here an epibenthic sledge haul obtained a large sample rich in the characteristic cold-water fauna of the Norwegian Sea. On completion of grab, multicorer and camera drops at this position 'Challenger' steamed on schedule for Thórshavn arriving at 1500 hrs on 5 July.

Sailing from Thórshavn was slightly delayed by a need for attention to the ships bowthruster drive coupling and 'Challenger' sailed at 1600 hrs 6 July for Stns 10 and 11 located on the Faroe Islands shelf and in the western Faroe Bank Channel respectively. Although successful multicorer samples were obtained, satisfactory grab samples could not be obtained from the Channel within the time allowed owing to the presence of large stones in the evidently current-swept bottom deposit preventing the jaws from closing properly.

Because of the presence of stones and indications of a rather current-swept conditions on the bottom at Stn. 9 in the Faroe-Shetland Channel, it was decided to reoccupy station 8, just north of the Wyville-Thomson Ridge, where the grab and corer samples indicated that an epibenthic sledge haul, that might prowide a better comparison with the soft oozes in the Rockall Trough, could be obtained. An excellent sledge haul was in fact recovered and this was followed by an Agassiz haul which also obtained a rich sample of typical 'cold water', Norwegian Sea fauna.

On completion at 1523 hrs 7 July 'Challenger' steamed for the Ymir Trough in order to reoccupy the hydrographic station (Stn. 4) over a full tidal cycle with spring tide conditions prevailing rather than neaps as experienced previously. Additional multicorer drops were made between hydrocasts in order to try and relate the meiofauna to any short-term changes in hydrographic conditions. On completion, 'Challenger' steamed west for a brief bathymetric survey of the upper Ymir Gorge in order to try and amplify data, provided by Mr D.J. Ellett, obtained on various previous research ship cruises.

A station was then worked at a depth of 1627 m in the Ymir Deep using the Smith McIntyre grab and seabed camera. The grab obtained samples of a very coarse clean deposit composed almost entirely of the broken plates of a large barnacle species. The bottom photographs seemed to confirm the uniformity of this deposit which indicated severe bottom currents. In order to get some idea of the extent this sort of bottom deposit existed, an additional station (12A) in about 960 m depth and lying about 8.5 miles to the southwest was worked with grab, multicorer and camera. The samples indicated the sediment was gravelly, overlying a clay layer, as in the Ymir Trough. The next station (13) was located at the northern extremity of the Feni Ridge where it was hoped we would find a soft sediment with a benthic fauna subject to thermal perturbation owing to intermittent 'overflow'. Grab multicorer and camera drops were made followed by a very successful epibenthic sledge haul.

On completion 'Challenger' steamed for the Rosemary Bank (station 14) where grab, multicorer and camera drops were made in 466 m depth. The next station (15) was located in the moat off the S.W. slope of the Bank in 1995 m, the grab and multicorer recovering samples of a soft ooze. 'Challenger' then steamed for station 16 on the Feni Ridge in 1573 m depth where another excellent epibenthic sledge haul was obtained. This was followed by successful grab, multicorer and camera drops, despite a deterioration in what had up to then been remarkably excellent sea and weather conditions. By the time 'Challenger' had arrived at her next station (17) on the Anton Dohrn seamount the wind had

freshened up to Force 7 - 8 with a heavy westerly swell, which precluded use of the multicorer on the stern gantry as planned. Instead, attempts were made to obtain cores using the Craib corer on the hydrowire, one good core being obtained before leaving this position at 0239 hrs 11 July.

Because of the bad weather and heavy sea running it was decided to attempt an Agassiz trawl haul on a position between the Anton Dohrn and the Rockall Bank. An excellent samples was obtained which more than satisfied the requirements of Dr Costa, but damage to the main wire between 1600 and 1900 m was noticed. This most probably resulted from an excess of wire on the bottom that was payed out in order to ensure the gear reaching bottom. Sea conditions precluded use of any other bottom sampling gear and 'Challenger' steamed for station 19 on the Hebridean slope in order to obtain grab samples and bottom photographs to augment the limited number of samples obtained in this area on Challenger's preceding cruise (9/76). However, probably because of the heavy swell, only one good samples was obtained from a position in approx. 800 m despite trying both Day and Smith McIntyre grabs with various modifications in technique. Finally during the recovery of the Smith McIntyre grab on the tenth drop, the hydrowinch drive shaft suddenly sheared leaving the grab stranded on about 50 m of wire. Unfortunately, efforts by the ships crew to recover the grab by stoppering the wire with chain parted the wire and the grab was lost. The station was then abandoned, and 'Challenger' reoccupied a station previously established during cruise 9/76 in approx. 1000 m for renewed attempts at obtaining a quantitative bottom sample using the Day grab on the main

wire. On none of the three drops made was a sample obtained. Camera drops then followed until 1800 hrs 12 July when 'Challenger' steamed for the Stanton Banks to occupy Dr Barnett's shelf station A3. Because of the hydrowinch breakdown it was not possible to use the Craib corer and the multicorer was used for the first time on this station with complete success. 'Challenger' then made course for Dunstaffnage, berthing at 1100 hrs 13 July, in order to disembark the scientific party and to unload scientific gear before proceeding to Greenock for repairs to the hydrographic winch.

J.D. Gage.

16 July 1976.

TABLE 1 Station positions and gear worked (* all depths given uncorrected).

Date	Time	Station	Position	Depth*	Gear	Salinity Sample	Bottom temperature	Sample
1 July	13.12-14.30	1	56°42.2'N 09°42.6'W	~ 1800 m	Box Corer			Good
"	14.53-15.43	1	56°42.0'N 09°42.3'W	"	Multicorer/ Camera	✓	✓	3 Good core
"	21.27-22.15	2	59°12.5'N 08°10.9'W	~ 1400 m	Multicorer/ Camera	✓	✓	4 cores
"	22.26-23.15	2	59°11.9'N 08°10.0'W	-	Box Corer			None
2 July	23.20-00.37	2	59°11.33'N 08°08.0'W	-	Box corer lost			None
"	00.55-02.59	2	59°11'N 08°05.5'W	-	Epibenthic Sledge			None
"	03.47-06.30	2	59°13'N 08°01'W	~ 1300 m	Agassiz Trawl			Good
"	14.47-17.00	3	59°39'N 07°12'W	~ 1050 m	Epibenthic Sledge			Good
"	17.22-17.59	3	59°37.1'N 07°00.1'W	~ 1040 m	Multicorer/ Camera	✓	✓	4 cores
"	18.10-18.42	3	59°37.1'N 07°00.1'W	~ 1050 m	Day Grab			Good
"	190.3-19.32	3	59°36.1'N 07°05.1'W	-	Smith McIntyre Grab			None
"	19.42-20.10	3	59°36.1'N 07°05.1'W	~ 1050 m	"			Good
3 July	00.22-00.59	4	60°11.47'N 08°14.01'W	~ 900 m	"			Good
"	03.02-03.22	4	66°09.9'N 08°13.8'W	"	"			Good
"	03.37-07.34	4A	60°09'N 08°13'W	"	Hydrocasts	✓	✓	

Date	Time	Station	Position	Depth	Gear	Salinity sample	Bottom temperature	Sample
3 July	08.02-08.44	4A	60°09.6'N 08°12.5'W	~ 900 m	Multicorer/ Camera	✓	✓	4 excellent cores
"	09.25-09.27	4A	60°10.4'N 08°12.5'W	"	" "	✓	✓	4 excellent cores
"	10.44-11.02	4A	66°09.8'N 08°12.6'W	"	Camera			
"	11.50-13.10	4A	60°10.4'N 08°12'W	"	Hydrocasts	✓	✓	
"	13.14-13.34	4	60°10.3'N 08°12.3'W	-	Smith McIntyre Grab			None
"	13.36-13.53	4	60°10.2'N 08°11.5'W	~ 900 m	"			Good
"	19.55-20.21	5	59°50.1'N 06°43.3'W	~ 800 m	"			Good
"	20.27-20.44	5	" "	"	"			Good
"	20.47-21.26	5	59°50.4'N 06°42.8'W	-	"			None
"	21.32-22.11	5	59°49.8'N 06°43.3'W	~ 800 m	Camera			
"	22.13-22.31	5	59°49.7'N 06°43.4'W	-	Smith McIntyre Grab			None.
"	22.39-23.03	5	59°49.7'N 06°43.7'W	-	Multicorer/ Camera	-	-	None
4 July	00.25-00.33	6	59°54.9'N 06°27.3'W	~ 400 m	Smith McIntyre Grab			Good
"	00.36-00.44	6	" "	"	"			Fair
"	00.52-01.12	6	59°55'N 06°25.6'W	~ 400 m	Multicorer/ Camera	✓	✓	4 Good cor
"	01.17-01.28	6	" "	"	Smith McIntyre Grab			Fair
"	01.34-01.44	6	" "	"	"			Good
"	01.54-02.25	6	59°55.8'N 06°22.8'W	"	Camera			

Date	Time	Station	Position	Depth	Gear	Salinity Sample	Bottom temperature	Sample.
4 July	04.45-05.03	7	59°57.4'N 06°13.9'W	~ 800 m	Smith McIntyre Grab			Good
"	05.06-05.25	7	" "	-	"			None
"	05.27-05.39	7	59°56.7'N 06°14.8'W	~ 800 m	"			V. Small
"	05.42-05.50	7	59°56.7'N 06°14.8'W	-	"			None
"	05.55-06.24	7	59°56.7'N 06°14.8'W	-	Multicorer/ Camera	✓	✓	None
"	08.17-08.45	8	60°05.6'N 05°55.4'W	~ 1100 m	Smith McIntyre Grab			Good
"	08.30-09.20	8	66°04.6'N 05°55.4'W	"	"			Good
"	09.22-09.44	8	66°05.2'N 05°55.7'W	"	"			Fair
"	09.55-10.28	8	60°04.5'N 05°56.1'W	"	Multicorer/ Camera	✓	✓	4 Good cc
"	10.45-11.15	8	60°05.1'N 05°55.8'W	"	Smith McIntyre Grab			Good
"	11.19-11.45	8	60°05.1'N 05°55.9'W	"	"			Good
"	21.41-23.40	9	61°13'N 03°59'W	~ 1050 m	Epibenthic Sledge			Excellen
5 July	23.43-00.09	9	61°14.9'N 03°59.1'W	"	Smith MacIntyre Grab			Fair
"	00.17-00.37	9	61°15'N 03°59.3'W	-	"			None
"	00.41-01.02	9	61°15.4'N 03°58.6'W	~ 1050 m	"			Fair
"	01.07-01.28	9	61°15.3'N 03°58.8'W	-	"			None
"	01.36-02.06	9	61°15.0'N 03°58.5'W	~ 1050 m	Multicorer/ Camera	✓	✓	4 Good c
"	02.16-02.47	9	61°15.1'N 03°58.1'W	"	"	-	✓	4 Good c

Date	Time	Station	Position	Depth	Gear	Salinity Sample	Bottom Temperature	Sample.
5 July	03.15-04.05	9	61°15.4'N 03°57.5'W	~ 1050 m	Camera			
"	04.22-07.01	9	61°17.2'N 04°00.5'W	-	Agassiz Trawl			None
5 July	15.00 -		Call at Thórshavn, Farðe Islands.					
6 July	-16.00							
6 July	20.15-20.27	10	61°36.1'N 07°16.5'W	~ 130 m	Multicorer/ Camera	✓	-	3 Short cor
"	20.42-20.52	10	61°36.2'N 07°16.7'W	"	"	-	-	2 Cores
7 July	03.07-03.31	11	60°35.4'N 07°30.6'W	-	Smith McIntyre Grab			None
"	03.34-04.00	11	" "	-	"			None
"	04.06-04.27	11	60°34.8'N 07°29.0'W	-	"			None
"	10.53-12.34	8	60°05'N 05°55'W	~ 1040 m	Epibenthic Sledge			Small
"	13.00-15.23	8	60°05'N 05°57'W	"	Agassiz Trawl			Very good
"	22.16-01.34	4A	60°10'N 08°12'W	~ 900 m	Hydrocasts			
8 July	01.51-02.19	4A	60°10.6'N 08°12.4'W	"	Multicorer/Camera	✓	✓	4 excellen cores
"	02.42-03.12	4A	60°10.4'N 08°12.3'W	"	" "	-	-	ditto
"	03.33-04.32	4A	60°10.5'N 08°11.7'W	"	Camera			
"	04.58-08.32	4A	60°10'N 08°13'W	"	Hydrocasts			

Date	Time	Station	Position	Depth	Gear	Salinity Sample	Bottom Temperature	Sample
"	10.00-13.10		Bathymetric survey of Ymir Gorge and Deep		P.D.R.			
"	13.30-14.10	12	60°17'N 09°14.3'W	~1630	Smith McIntyre Grab			Good
"	14.23-14.46	12	60°16.8'N 09°16'W	"	"			Good
"	15.03-16.00	12	60°16.9'N 09°15.9'W	"	Camera			
"	17.31-17.49	12A	60°11.2'N 09°37.9'W	~ 950 m	Smith Mcintyre Grab			Fair
"	17.54-18.12	12A	" "	-	"			None
"	18.14-18.34	12A	60°11.3'N 09°37.9'W	~ 950 m	"			Fair
"	18.37-18.59	12A	" "	-	"			None
"	19.04-19.21	12A	60°11.5'N 09°37.2'W	~950 m	"			Good
"	19.28-20.11	12A	60°12.8'N 09°37.2'W	~950 m	Camera			
"	20.23-20.55	12A	60°12.8'N 09°38.5'W	"	Multicorer/Camera	✓	✓	4 excellent cores
9 July	00.27-00.52	13	60°01.6'N 10°41.1'W	~ 1160.m	Smith/Mcintyre Grab			Good
"	00.56-01.20	13	" "	"	"			Fair
"	01.25-01.52	13	60°01.5'N 10°40.3	"	"			Fair
"	02.05-02.39	13	60°01.5'N 10°40.4'W	~ 1160 m	Multicorer/Camera	✓	✓	2 cores
"	02.58-03.37	13	60°00.8'N 10°37.9'W	-	" "	-	-	None
"	03.55-06.01	13	60° N 10°35'W	~ 1160 m	Epibenthic Sledge			Good

Date	Time	Station	Position	Depth	Gear	Salinity Sample	Bottom Temperature	Sample
		(Rosemary Bank)						
9 July	11.27-11.37	14	59°14.6'N 10°11'W	~ 460 m	Smith McIntyre Grab			Fair
"	11.42-11.53	14	59°14.5'N 10°10.2'W	-	" "			None
"	11.55-12.12	14	59°14.5'N 10°10.2'W	~ 460 m	" "			Fair
"	12.21-12.45	14	" "	"	Multicorer/Camera	-	-	None
"	13.04-13.52	14	59°15.1'N 10°09.4'W	~ 450 m	Camera			
"	14.01-14.25	14	59°15.2'N 10°08.8'W	"	Craib	✓	-	Sample
"	14.28-14.42	14	59°15.2'N 10°08.8'W	-	"	-	-	None
"	18.36-19.18	15	59°20.9'N 11°03.2'W	~ 2000	Smith McIntyre Grab			Good
"	19.20-20.07	15	" "	"	" "			Good
"	20.11-21.09	15	59°02.3'N 11°05.5'W	"	" "			Fair
"	21.18-22.15	15	59°02.6'N 11°05.1'W	~ 1960 m	Multicorer/Camera	✓	✓	4 excelle cores
10 July	04.45-07.20	16	58°27'N 12°35'W	~ 1600 m	Epibenthic Sledge			Excellent
"	07.32-08.11	16	58°24.4'N 12°35.6'W	"	Smith McIntyre Grab			Good
"	08.18-09.17	16	58°24.2'N 12°34'W	-	" "			None
"	09.25-10.17	16	58°24'N 12°34'W	~ 1600 m	Multicorer/Camera	✓	✓	3 good cc
"	10.20-10.54	16	58°22.9'N 12°34.2'W	"	Smith McIntyre Grab			Good
"	11.13-11.55	16	58°23'N 12°31'W	"	Day Grab			None
"	12.02-13.06	16	58°22.7'N 12°34'W	~ 1600 m	Camera			

Date	Time	Station	Position	Depth	Gear	Salinity Sample	Bottom Temperature	Sample
		(Anton Dohrn Seamount)						
"	22.33-23.11	17	57°27'N 11°01.1'W	-	Craib Corer			None
-11 July	22.34-00.6	17	57°27.6'N 10°59.3'W	-	" "			None
11 July	00.28-01.00	17	57°26.9'N 11°00.4'W	-	" "			Sample
"	01.07-01.30	17	57°26.7'N 11°00.8'W	~ 600 m	" "			None
"	02.15-02.34	17	57°27'N 11°W	-	" "			Good
		(Feni Ridge)						
11 July	08.33-11.47	18	57°07'N 12°06'W	~ 2000 m	Agassiz Trawl			None
		(Hebrides Terrace)						
"	23.32-23.55	19	56°39.1'N 09°05.8'W	-	Smith McIntyre Grab			None
12 July	00.01-00.21	19	56°38.9'N 09°56'W	-	" "			None
"	00.28-00.46	19	56°36.6'N 09°09.2'W	-	" "			Little
"	00.51-01.12	19	56°38.8'N 09°08.3'W	~ 800,m	" "			None
"	01.14-01.40	19	" "	-	" "			None
"	01.45-02.04	19	56°38.9'N 09°08.4'W	-	" "			Little
"	03.11-03.52	19	56°39.1'N 09°08.7'W	~ 800 m	Day Grab			None
"	03.54-04.25	19	56°39.4'N 09°09.9'W	-	" "			
		(Hebrides Terrace)						
"	05,26-07.10	20			Smith McIntyre Grab Lost			

Date	Time	Station	Position	Depth	Gear	Salinity Sample	Bottom Temperature	Sample
		(Hebrides Terrace)						
12 July	12.20-12.58	21	56°39.4'N 09°12.7'W	-	Day Grab			None
"	13.01-13.37	21	56°39.3'N 09°12.1'W	-	" "			None
"	14.06-14.56	21	56°39.3'N 09°12.1'W	-	" "			None
"	15.08-15.49	21	56°39.1'N 09°16.5'W	~ 1090 m	Camera			
"	16.52-17.12	22	56°39.5'N 09°01.3'W	~ 485 m	Camera			
"	17.36-18.00	23	56°39.4'N 08°59.2'W	~ 135 m	Camera			
		(Dr Barnett's Stn. A3 near Stanton Banks)						
13 July	01.06-01.13	A3	56°01.7'N 07°39.6'W	~ 145 m	Multicorer/Camera	✓	✓	4 good cor
"	01.28-01.39	A3	" "	~ 145 m	" "	-	-	4 good cor

Dr Barnett

RRS Challenger Cruise No. 10/76

Cruise dates: 30 June - 13 July 1976, Dunstaffnage to Dunstaffnage.

(Main objectives, Gear Scientific Participation, Sea and Weather Conditions and a Cruise Narrative are given (Sections 1-6) in the attached SMBA Cruise Report.)

7) Equipment performance.

We were generally favourably impressed with the ships equipment, especially with her present navigational capability. Few problems were encountered with the wire metering on this cruise, but it was felt that the main wire is now in generally poor condition, and that the propensity to 'birdcaging' along the outboard end must have been a contributing factor to the loss of the spade core on this cruise. A fault developed in the HS73 unit which prevented its use for bottom sounding, although it could be used to record pinger signals. The P.E.S. Mk III installed, and the Atlas fishfinder, however, were used for bottom sounding instead. It was unfortunate that the crystal tuning on our most powerful pinger (which we normally use for epibenthic sledge or Agassiz hauls) was incompatible with the P.E.S. Mk III. The hydrographic winch breakdown on 12 July did not seriously interfere with the work programme, but there were difficulties with the spooling gear which, on many occassions, slowed down operations on the hydrowire.

8) Ship Performance.

Despite a heavy work programme, and poor weather towards the end of the cruise, good results were obtained at nearly all the stations occupied. This was in no small part owing to the

cooperation, and sometimes, timely advice, of 'Challengers'' Captain, her Officers and Crew. We were also particularly impressed with the efforts of the catering staff. It should be mentioned that the films provided for our off-duty entertainment were very much appreciated, and we hope that this facility is continued in future.

Although the navigational and station keeping capability of 'Challenger' is now impressive, for repeated vertical wire work on station, it would be much more satisfactory if a way could be found for the satellite fixes to be updated between satellite passes with the data on ships drift from the E.M. rather than the Sal log as at present.

The quite unexpected presence of the large winch and sheave mountings on the trawl deck proved, as on cruise 9/76, to make our heavy gear manipulation on the after deck extremely awkward, and later on in the heavy swell, quite dangerous. I was surprised no injuries worse than badly bruised ankles were sustained as a consequence of trying to manoeuvre our gear around them.

9) Recommendations.

I hope that the practice of mounting large gear on the ship to the requirement of some future cruise will not be allowed to happen again without at least adequate prior consultation with other users of the ship.

J.D. Gage

16 July 1976.