



Sample Pages of "Annual Report on Oceanographic
Cruises and Data Stations in 1970"

by

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ICES Service Hydrographique



In 1966 the Hydrography Committee recommended that its annual Administrative Report be replaced by a Research Cruise Report. Such reports were therefore, on an experimental basis prepared for the years 1967 (Doc. C.M.1968/C:1) and 1968 (Doc. C.M.1969/C:1).

Research cruise reports will evidently be so much more needed as the data proper are, as a rule, no more published by ICES, so that the reports may, in a way, be considered a continuation of the Data Lists. With this in mind the ICES Bureau in May 1970 decided that these Reports, starting with that covering the year 1969, should be issued as annual publications in the new series "ICES Oceanographic Data Lists and Inventories".

The report covering 1969 ("Report on Oceanographic Cruises and Data Stations in 1969") has been published in accordance with this decision, as No. 1 of the new series.

In the meantime a format, the so-called ROSCOP form, differing considerably from that of the tables in the above mentioned ICES report, was recommended by the IOC Working Group on International Oceanographic Data Exchange for use as an interim inventory form in the initial exchange of marine data. As it would evidently be an unfortunate situation if oceanographers had to complete two different sets of forms for reporting the same material to two different institutions the Statutory Meeting in 1970 decided (C.Res.1970/4:9) that

- " a) ICES' members use the ROSCOP format for the preparation of the "ICES Annual Report on Oceanographic Cruises and Data Stations", beginning with the Report for 1970;
- b) submissions in the ROSCOP format be accompanied by track charts."

In this way completing of one inventory form only is needed for each cruise; the requirements of the WDCs (Oceanography) for copies of the completed forms will be met by the Council's Service Hydrographique.

In accordance with the above decision nearly all contributions to the Report for 1970 have been supplied to us on ROSCOP forms. A list of the ROSCOP forms received by the Service Hydrographique is presented in Appendix A to this document. A few contributions supplied on other forms have been transferred to ROSCOP forms; these contributions are listed in Appendix B. The forms listed in Appendices A and B, together with the corresponding station charts, make out the basis for the "Report on Oceanographic Cruises and Data Stations in 1970".

As decided by the ICES meeting last year plankton information for 1970 has been reported on the ROSCOP forms and will be included in the Report now in preparation. It is understood that the Plankton Committee at its meeting in 1971 will consider whether the ROSCOP form is suitable for reporting information on plankton sampling.

The Report for 1970 is not yet ready for publication. However, a number of sample pages are presented in this document.

Obviously, the completed ROSCOP forms could not be published as received, i.a. because this would give a much too bulky volume. The following procedure was used. The information received was entered into a slightly reduced ROSCOP form (standard size A3). Where it was deemed reasonable to cut away some of the empty blanks, with a view to save space, this was done, and the remaining parts were put together. The forms, as they appear after this technical editing, together with the track charts, constituted the final basis for the Report.

Attention is drawn to a few questions concerning the contents of the Report:-

1. Should the Report be restricted to cover the ICES region in a more limited sense, i.e. the northeastern North Atlantic (incl. the North Sea and the Baltic), or should it include all the oceanographic activities of the member countries, including the ICNAF region and the South Atlantic ?
2. The ROSCOP forms do not allow space for much detail with regard to observations from moored oceanographic buoys. Would it therefore, be useful to continue inclusion of such forms as that shown on p. 8 ?
3. Some member countries include in their report information on observations at fixed oceanographic stations, such as light-vessels and coastal stations; other countries do not. Should such stations be included in future Reports, or will it be sufficient to refer to the IOC volume, now in preparation, on Ocean Data Stations of the World ?

COUNTRY Fed. Rep. of Germany		PERIOD 21 Apr - 22 May 1970	
SHIP OR PLATFORM RV "Meteor"		INSTITUTION OR OPERATING AGENCY Deutsches Hydrographisches Institut	
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. 20 a		SCIENTIST IN CHARGE Prof. Walden	
ICES REF. NO. 7006001	IMS CRUISE NO.	PAGE OF TRACK CHART 4, 5	

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
DESCRIPTIVE OCEANOGRAPHY						
D 1 SERIAL STATIONS	34	a	b	PC	a.	DHI
D 2 STD	292	a	a	RDC	b.	
D 3 OXYGEN	34	a	b	PC	c.	
D 4 PHOSPHATES					d.	
D 5 TOTAL-P					e.	
D 6 NITRATES					f.	
D 7 NITRITES						
D 8 TRACE ELEMENTS						
D 9 pH						
D 10 ALKALINITY						
D 11 SILICATES						
D 12 RADIOACTIVITY						
D 13 ISOTOPE CHEMISTRY						
D 14 OTHER DISSOLVED GASES						
D 15 BATHY THERMOGRAPH (XBT) (NO. OF DROPS)						
D 16 BATHY THERMOGRAPH (MECH) (NO. OF DROPS)						
D 17 TRANSPARENCY (NO. OF OBS.)						
D 18 SOUND VELOCIMETER DATA						
D 19 INSTRUMENTED WAVE RECORDING (✓)						
D 20 TIDES (✓)	3	a	a	PC		
D 21 SEA (✓)						
D 22 SWELL (✓)						
D 23 ICE (✓)						
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)	1	a	a	PC		
D 25 SEA SURFACE TEMPERATURE (✓)	v	a	b	PC		
CURRENT MEASUREMENTS						
C 1 CURRENT METERS	25	a	a	PC, MT		
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)	17	a	a	PC, MT		
C 2 GEK (✓)						
C 3 DROGUES (✓)						
C 4 SWALLOW FLOATS (✓)						
C 5 SURFACE DRIFTERS (NO. RELEASED)						
C 6 BOTTOM DRIFTERS (NO. RELEASED)						
METEOROLOGY						
M 1 UPPER AIR OBSERVATIONS (✓)						
M 2 SURFACE METEOROLOGICAL OBS. (✓)						
M 3 INCIDENT RADIATION (✓)						
GEOLOGY AND GEOPHYSICS						
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)						
G 2 CORES (NO. CORES)						
G 3 SEISMIC—REFLECTION PROFILES (Km)						
G 4 SEISMIC—REFRACTION PROFILES						
G 5 HEAT FLOW						
G 6 GRAVITY (Km)						
G 7 MAGNETIC (Km)						
G 8 CHEMICAL ANALYSIS OF SEDIMENT (✓)						
G 9 PHYSICAL ANALYSIS OF SEDIMENT (✓)						
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM						
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)						
G 12 PALEONTOLOGY (✓)						
G 13 PALEOMAGNETISM AND ROCK MAGNETISM (✓)						
G 14 GEOCHRONOLOGY (✓)						
G 15 MINERAL RESOURCES (✓)						
REMARKS						
C 1 Propeller- and Richardson current meters Depths: 18-548 m						
Marsden nos.						
D 1 217, 218						
D 2 216, 217, 218						
D 3 217, 218						
D 20 218						
D 24 218						
D 25 217, 218						
C 1 218						
C 2 218						

TOTAL KILOMETERS STEAMED, 6150

COUNTRY Fed. Rep. of Germany		PERIOD 28 May - 30 Jul 1970	
SHIP OR PLATFORM RV "Meteor"		INSTITUTION OR OPERATING AGENCY Deutsches Hydrographisches Institut	
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. 20 b/c		SCIENTIST IN CHARGE Prof. Meyer, Prof. Vollbrecht	
ICES REF. NO. 7006002	IMS CRUISE NO.	PAGE OF TRACK CHART 4	

PROGRAMS UNDERTAKEN	TOTAL NO OF Δ STATIONS	Q	F	D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
DESCRIPTIVE OCEANOGRAPHY							
D 1 SERIAL STATIONS							a DHI
D 2 STD							b Max-Planck-Institut für Chemie
D 3 OXYGEN							c Institut für die Physik des Erdkörpers d. Universität Hbg *
D 4 PHOSPHATES	1	a	a		AT		d Geologisches Institut der Universität Köln
D 5 TOTAL-P							e Bundesanstalt für Bodenforschung
D 6 NITRATES							f DOD
D 7 NITRITES							
D 8 TRACE ELEMENTS							
D 9 pH							
D 10 ALKALINITY							
D 11 SILICATES							
D 12 RADIOACTIVITY							
D 13 ISOTOPE CHEMISTRY							
D 14 OTHER DISSOLVED GASES							
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)							
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)	6	a	f		PC		a DHI
D 17 TRANSPARENCY (NO. OF OBS.)							b Max-Planck-Institut für Chemie
D 18 SOUND VELOCIMETER DATA							c Institut für die Physik des Erdkörpers d. Universität Hbg *
D 19 INSTRUMENTED WAVE RECORDING (✓)							d Geologisches Institut der Universität Köln
D 20 TIDES (✓)							e Bundesanstalt für Bodenforschung
D 21 SEA (✓)							f DOD
D 22 SWELL (✓)							
D 23 ICE (✓)							
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)							
D 25 SEA SURFACE TEMPERATURE (✓)	6	a	f		PC		
CURRENT MEASUREMENTS							
C 1 CURRENT METERS							
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)							
C 2 GEK (✓)							
C 3 DROGUES (✓)							
C 4 SWALLOW FLOATS (✓)							
C 5 SURFACE DRIFTERS (NO. RELEASED)							
C 6 BOTTOM DRIFTERS (NO. RELEASED)							
METEOROLOGY							
M 1 UPPER AIR OBSERVATIONS (✓)							
M 2 SURFACE METEOROLOGICAL OBS. (✓)							
M 3 INCIDENT RADIATION (✓)							
GEOLOGY AND GEOPHYSICS							
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)	35	a	d	a	d	RDS	
G 2 CORES (NO. CORES)	7	a	d	e	a	d	RDS
G 3 SEISMIC—REFLECTION PROFILES (Km)	332	a	a			AT	
G 4 SEISMIC—REFRACTION PROFILES	2	c	c			RDS	
G 5 HEAT FLOW							
G 6 GRAVITY (Km)	14700	a	a			RDC	
G 7 MAGNETIC (Km)	14700	a	a			RDC	
G 8 CHEMICAL ANALYSIS OF SEDIMENT (✓)							
G 9 PHYSICAL ANALYSIS OF SEDIMENT (✓)							
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM							
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)							
G 12 PALFONTOLOGY (✓)	42	a	d	e	a	d	RDS
G 13 PALEOMAGNETISM AND ROCK MAGNETISM (✓)	7	d	e	d	e	RDS	
G 14 GEOCHRONOLOGY (✓)							
G 15 MINERAL RESOURCES (✓)							
REMARKS							
D 4 Phosphates continuously (3574 km)							
D 25 Sea Surface Temperature continuously, (3574 km)							
* In collaboration with: Geologisk Institut Aarhus Universitet "Laboratoriet For Anvendt Geofysik"							

continued

continued RV "Meteor", cr. 20 b/c, 1970

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F D	TYPE OF FORMAT AVAILABLE	REMARKS
GEOLOGY AND GEOPHYSICS (CONTINUED)					
G 16 BATHYMETRY—WIDE BEAM (Km)					
G 17 BATHYMETRY—NARROW BEAM (Km)	16335	a	a	RDS	
G 18 BOTTOM RESISTIVITY					
G 19 SOUND PROPAGATION IN SEDIMENT					
G 20 DRILL HOLES (NO. OF DRILL HOLES)					
G 21 BOTTOM TEMPERATURE (≤ 1M FROM BOTTOM)					
G 22 BOTTOM RADIOACTIVITY (✓)					
G 23 SIDE-SCANNING SONAR (Km)					
BIOLOGY					
B 1 PRIMARY ORGANIC PRODUCTION					
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION					
B 3 PARTICULATE ORGANIC MATTER					
B 4 DISSOLVED ORGANIC MATTER					
B 5 NEUSTON AND PLEUSTON					
B 6 BACTERIA AND OTHER MICROORGANISMS					
B 7 PHYTOPLANKTON					
B 8 ZOOPLANKTON	6	e	e	RDS	
B 9 FISH EGGS AND/OR LARVAE					
B 10 MICRONEKTON					
B 11 INVERTEBRATE NEKTON					
B 12 PELAGIC FISHES					
B 13 DEMERSAL FISHES					
B 14 PHYTOBENTHOS					
B 15 ZOOBENTHOS	35	ad	ad	RDS	
B 16 AVES (✓)					
B 17 PINNIPEDIA (✓)					
B 18 CETACEA (✓)					
B 19 BIOLOGICAL SOUNDS (SPECIFY CRUSTACEA PISCES, CETACEA, OTHER) (✓)	35	d	d	RDS	
B 20 SOUND SCATTERING LAYER (DSL) (✓)					
B 21 BIOLUMINESCENCE (VISUAL OR INSTRUMENTED) (✓)					
B 22 FIELD OBSERVATIONS ON BEHAVIOR (SPECIFY GROUP) (✓)					
B 23 BORERS AND FOULERS (✓)					
B 24 BIOLOGICAL POLLUTANTS					
OTHER OBSERVATIONS					
O 1 Sea surf. salinity	6	a	f	PC	
O 2 N ₂ O	27	b	b	RDS	
O 3 CO	27	b	b	RDS	
O 4					

Marsden nos.

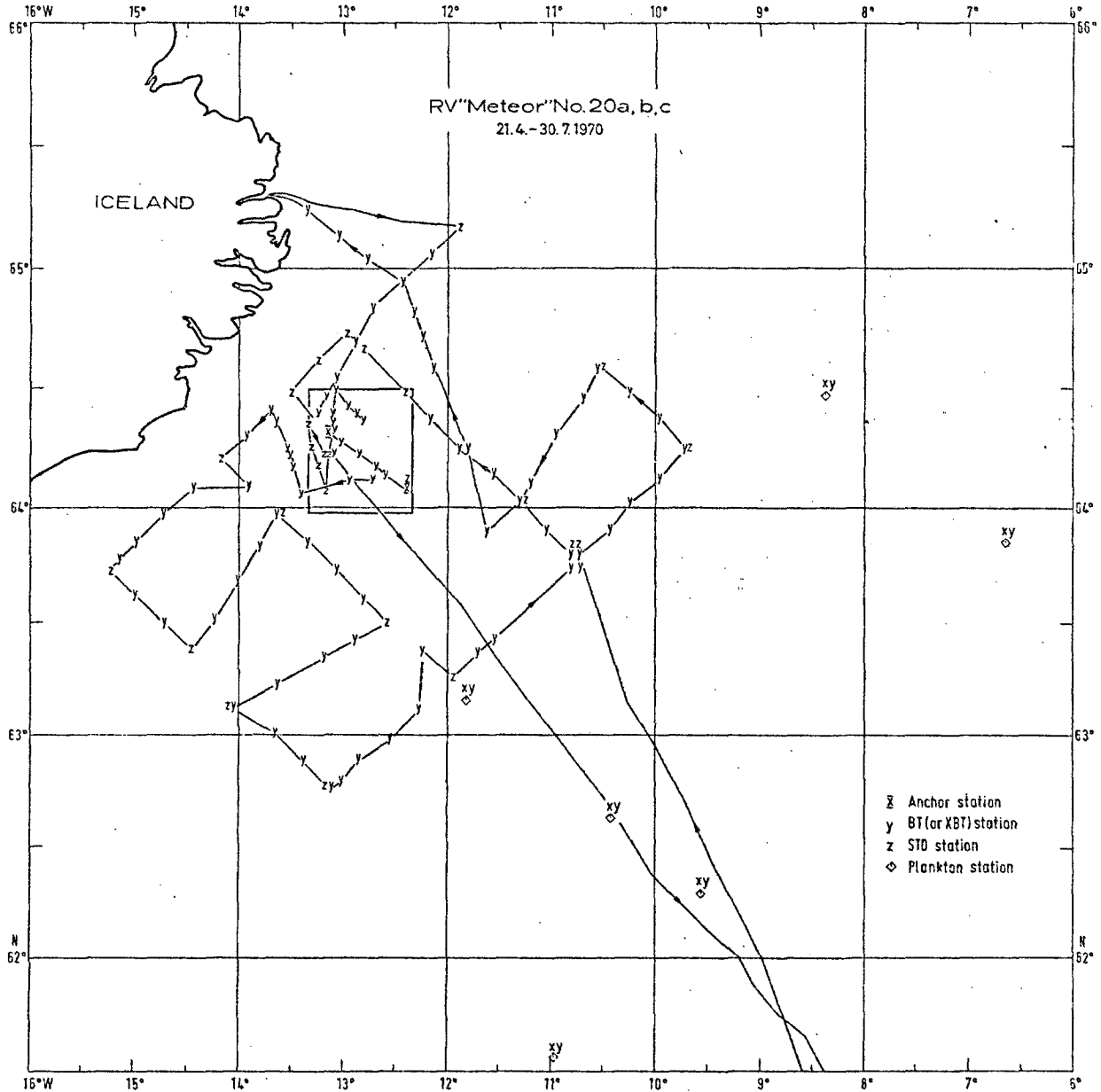
D 4)
D 16) 217, 218
D 25)
G 1)
G 2) 217, 218
G 3)
G 4)
G 6) 216, 217, 218
G 7)
G 12) 217, 218
G 14)
G 17) 216, 217, 218
R 8)
B 15) 217, 218
B 19)
O 1)
O 2) 217, 218
O 3)

TOTAL KILOMETERS STEAMED:

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

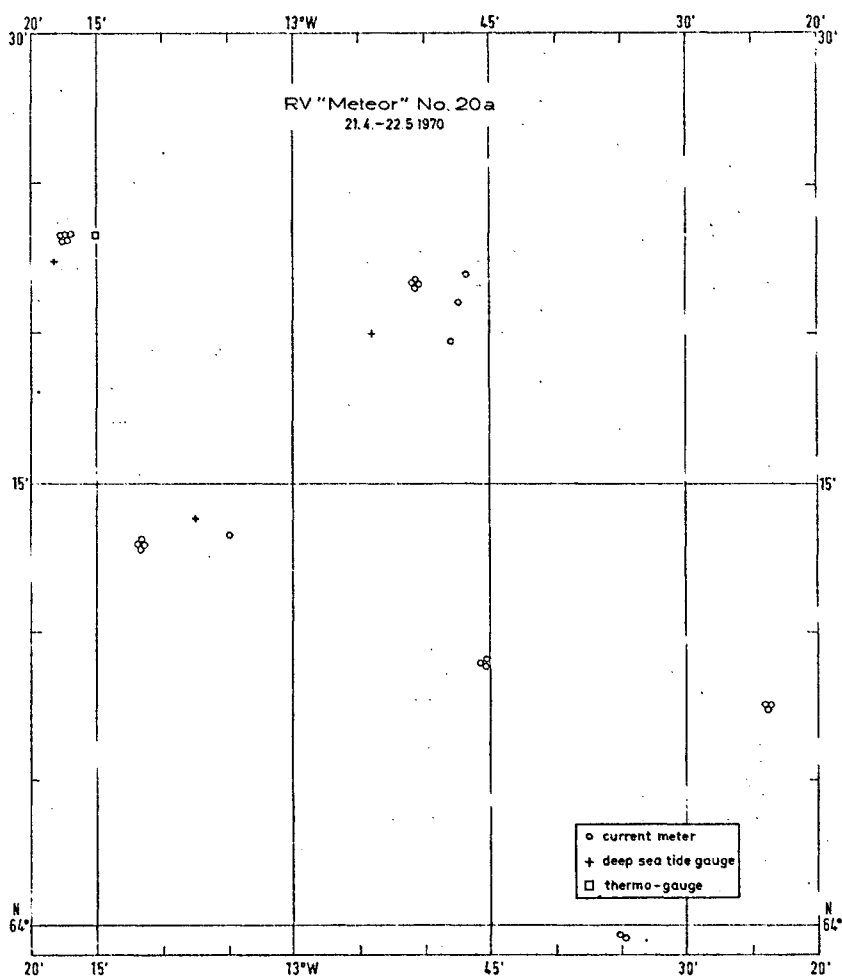
() YES
() NO
() PART (SPECIFY)

Deutsches Hydrographisches Institut, Hamburg



ICES Ref. Nos. 7006001, 7006002

Deutsches Hydrographisches Institut, Hamburg



COUNTRY Canada	PERIOD 26 Jan - 20 Feb 1970
SHIP OR PLATFORM CSS "Hudson"	INSTITUTION OR OPERATING AGENCY Atlantic Oceanographic Laboratory, B.I.
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. 69-50	SCIENTIST IN CHARGE Dr. C.R. Mann

ICES REF. NO. 7018001	IMS CRUISE NO. -	PAGE OF TRACK CHART 9, 10
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PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	a	F D	TYPE OF FORMAT AVAILABLE	a	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
DESCRIPTIVE OCEANOGRAPHY						
D 1 SERIAL STATIONS	16	a	a	PC	a.	Dr. C.R. Mann
D 2 STD	10	a	h	PUB	b.	Dr. E.L. Mills
D 3 OXYGEN	16	a	a	PC	c.	J.M.R. Pilote
D 4 PHOSPHATES					d.	Dr. P.G. Brewer
D 5 TOTAL-P	16	a	a	PC	e.	G. Vilks
D 6 NITRATES	16	a	a	PC	f.	R.L. Edwards
D 7 NITRITES					g.	Dr. E.L. Bousfield
D 8 TRACE ELEMENTS					h.	F. Cooke
D 9 pH						
D 10 ALKALINITY						
D 11 SILICATES	16	a	a	PC		
D 12 RADIOACTIVITY						
D 13 ISOTOPE CHEMISTRY						
D 14 OTHER DISSOLVED GASES						
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)	32	a	h	PUR		
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)						
D 17 TRANSPARENCY (NO. OF OSS.)						
D 18 SOUND VELOCITY/TEMPERATURE DATA						
D 19 INSTRUMENTED WAVE RECORDING (✓)						
D 20 TIDES (✓)						
D 21 SEA (✓)	v	a	a	PC		
D 22 SWELL (✓)	v	a	a	PC		
D 23 ICE (✓)						
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)	16	a	a	PC		
D 25 SEA SURFACE TEMPERATURE (✓)						
CURRENT MEASUREMENTS						
C 1 CURRENT METERS	4	a	h	PC		
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)						
C 2 GEK (✓)						
C 3 DROGUES (✓)						
C 4 SWALLOW FLOATS (✓)						
C 5 SURFACE DRIFTERS (NO. RELEASED)						
C 6 BOTTOM DRIFTERS (NO. RELEASED)						
METEOROLOGY						
M 1 UPPER AIR OBSERVATIONS (✓)						
M 2 SURFACE METEOROLOGICAL OBS. (✓)	v	a	a	PC		
M 3 INCIDENT RADIATION (✓)						
GEOLOGY AND GEOPHYSICS						
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)	15	b	c	PUB		
G 2 CORES (NO. CORES)						
G 3 SEISMIC—REFLECTION PROFILES (Km)						
G 4 SEISMIC—REFRACTION PROFILES						
G 5 HEAT FLOW						
G 6 GRAVITY (Km)						
G 7 MAGNETIC (Km)						
G 8 CHEMICAL ANALYSIS OF SEDIMENT (✓)						
G 9 PHYSICAL ANALYSIS OF SEDIMENT (✓)						
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM						
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)						
G 12 PALEONTOLOGY (✓)						
G 13 PALEOMAGNETISM AND ROCK MAGNETISM (✓)						
G 14 GEOPHONOLOGY (✓)						
G 15 MINERAL RESOURCES (✓)						

F D FINAL DISPOSITION OF DATA
(NATIONAL DEPOSITORY, INSTITUTION, REGIONAL CENTER,
OR WORLD DATA CENTERS)

- a. CODC
b. AOL
c. Dalhousie University, Halifax, NS
d. GEBCO
e. WHOI
f. Trent University, Peterborough, Ont.
g. National Museum of Natural Sciences, Ottawa, Ont.
h. Queen's University, Kingston, Ont.

REMARKS

continued

continued CSS "Hudson", cr. 69-50, 1970

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F D	TYPE OF FORMAT AVAILABLE	REMARKS
GEOLOGY AND GEOPHYSICS (CONTINUED)					
G 16 BATHYMETRY—WIDE BEAM (Km)					
G 17 BATHYMETRY—NARROW BEAM (Km)	6700	c	d	FUB	
G 18 BOTTOM RESISTIVITY					
G 19 SOUND PROPAGATION IN SEDIMENT					
G 20 DRILL HOLES (NO. OF DRILL HOLES)					
G 21 BOTTOM TEMPERATURE (≤ 1M FROM BOTTOM)					
G 22 BOTTOM RADIOACTIVITY (✓)					
G 23 SIDE-SCANNING SONAR (Km)					
BIOLOGY					
B 1 PRIMARY ORGANIC PRODUCTION					
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION					
B 3 PARTICULATE ORGANIC MATTER	15	d	e	Eub	
B 4 DISSOLVED ORGANIC MATTER					
B 5 NEUSTON AND PLEUSTON					
B 6 BACTERIA AND OTHER MICROORGANISMS					
B 7 PHYTOPLANKTON					
B 8 ZOOPLANKTON	50	e	f	Eub	
B 9 FISH EGGS AND/OR LARVAE					
B 10 MICRONEKTON					
B 11 INVERTEBRATE NEKTON	33	g	g	PUB	
B 12 PELAGIC FISHES					
B 13 DEMERSAL FISHES					
B 14 PHYTOBENTHOS					
B 15 ZOOBENTHOS					
B 16 AVES (✓)					
B 17 PINNIPEDIA (✓)					
B 18 CETACEA (✓)					
B 19 BIOLOGICAL SOUNDS (SPECIFY CRUSTACEA PISCES, CETACEA, OTHER) (✓)					
B 20 SOUND SCATTERING LAYER (DSL) (✓)					
B 21 BIOLUMINESCENCE (VISUAL OR INSTRUMENTED) (✓)					
B 22 FIELD OBSERVATIONS ON BEHAVIOR (SPECIFY GROUP) Sea Birds (✓)	v	h	h	FUB	
B 23 BORERS AND FOULERS (✓)					
B 24 BIOLOGICAL POLLUTANTS					
OTHER OBSERVATIONS					
O 1 Nephelometer Lowerings	8	d	e		
O 2					
O 3					
O 4					

TOTAL KILOMETERS STEAMED:

DATA REPORTED ON THIS FORM ARE DECLARED
NATIONAL PROGRAM (DNP): YES NO PART (SPECIFY)

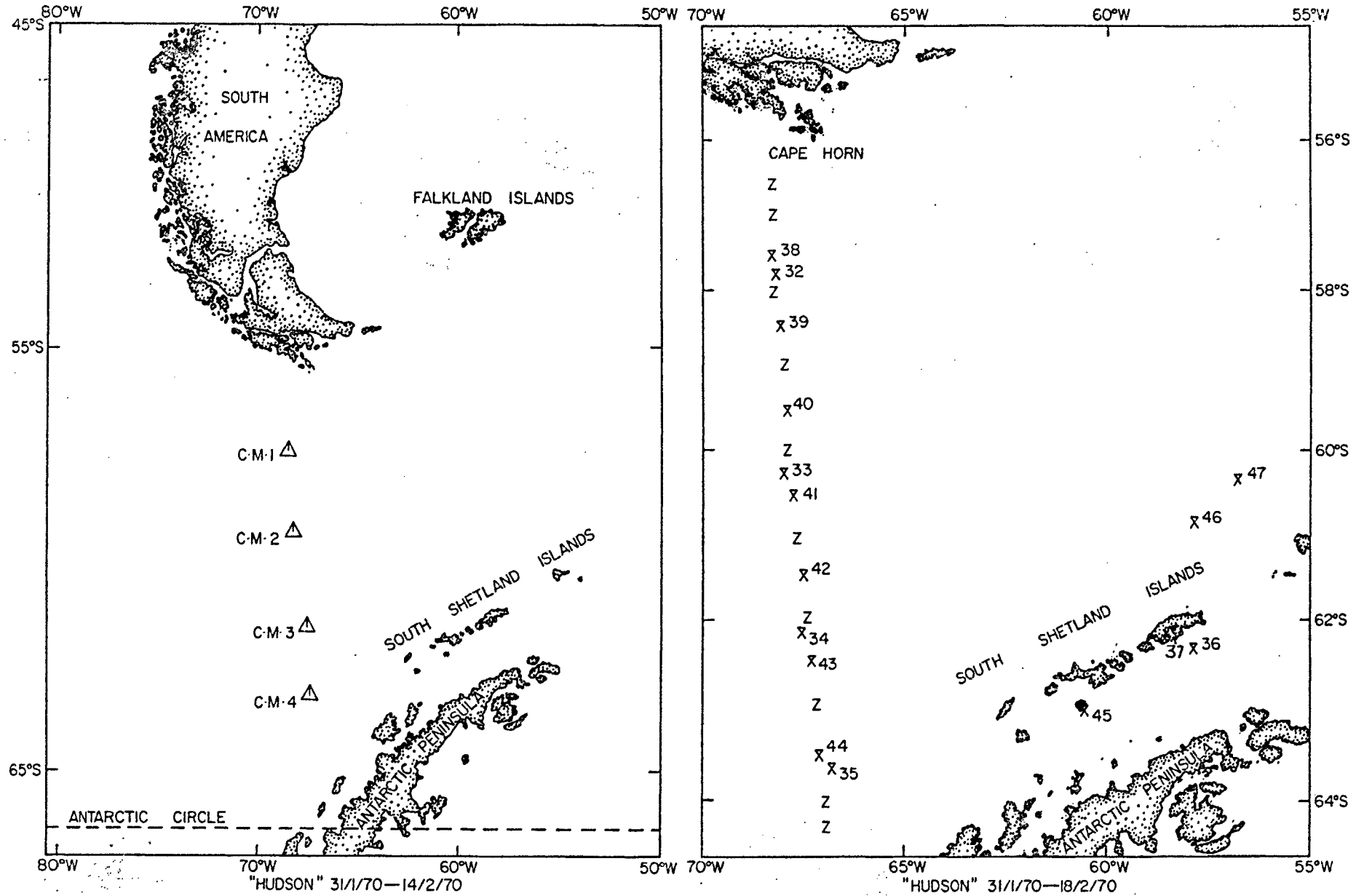
Moored Oceanographic Stations

Year: 1970

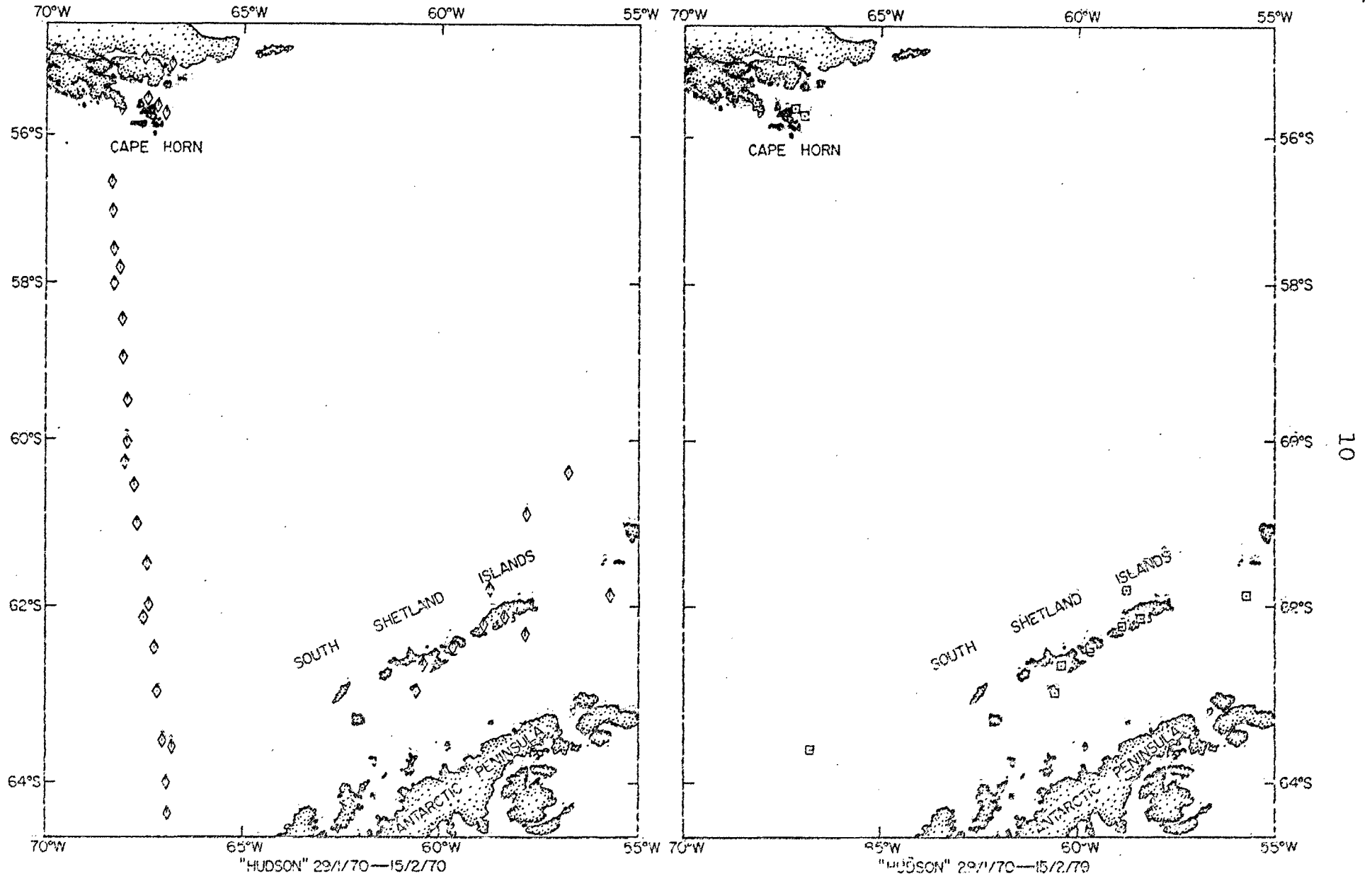
Country: Canada

IMS Cruise No. ---- ICES Ref. No.	Period of observations	Number of instruments	Types of instruments	Depths of sensors or meters	Frequency of observations	Comments	Plotted on page	
7018001	31/1 - 9/2	1	Current Meter	150	20 min.	Mooring 1 . Drake Passage	10	
		1	Thermograph	150	20 "			
		1	Current Meter	1500	20 "			
		1	Thermograph	1500	20 "			
		1	Current Meter	3640	20 "			
		1	Thermograph	3640	20 "			
		1/2 - 10/2	1	Current Meter	140	20 min.	Mooring 2.	"
			1	Thermograph	140	20 "		
			1	Current Meter	1335	20 "		
			1	Thermograph	1335	20 "		
		2/2 - 6/7	1	Current Meter	1490	20 "		
			1	Thermograph	1490	20 "		
		2/2 - 12/7	1	Current Meter	130	20 min.	Mooring 3.	"
			1	Thermograph	130	20 "		
			1	Current Meter	1480	20 "		
			1	Thermograph	1480	20 "		
		2/2 - 8/7	1	Current Meter	3337	20 "		
			1	Thermograph	3337	20 "		
		3/2 - 7/2	1	Current Meter	130	20 min.	Mooring 4.	"
			1	Thermograph	130	20 "		
		3/2 - 13/2	1	Current Meter	1480	20 "		
			1	Thermograph	1480	20 "		
			1	Current Meter	3332	20 "		
			1	Thermograph	3332	20 "		

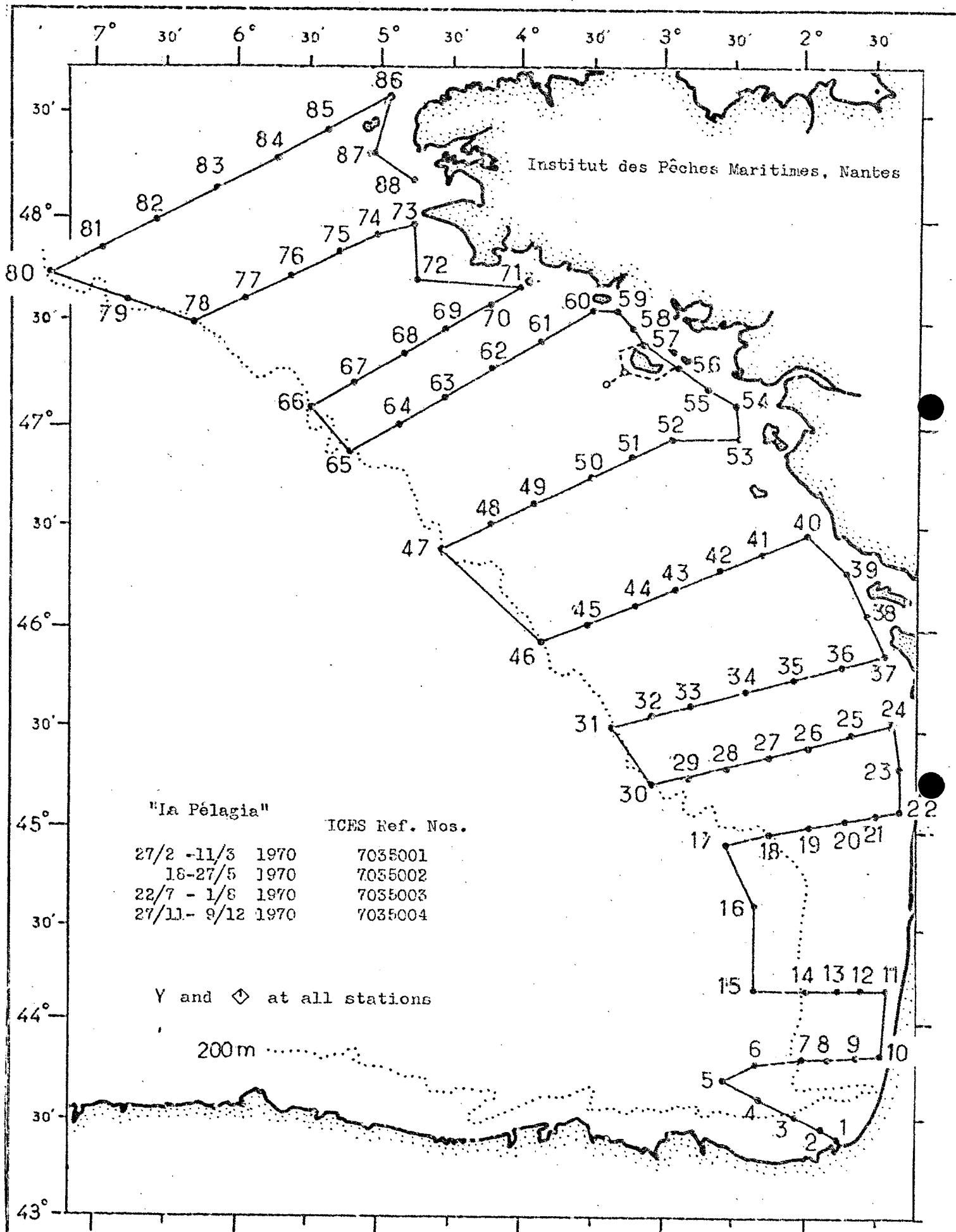
CANADA, ATLANTIC OCEANOGRAPHIC LABORATORY, DARTMOUTH, NOVA SCOTIA



CANADA, ATLANTIC OCEANOGRAPHIC LABORATORY, DARTMOUTH, NOVA SCOTIA



COUNTRY France		PERIOD 27 Feb - 11 Mar 1970 18 - 27 May 1970 22 Jul - 1 Aug 1970 27 Nov - 9 Dec 1970	
SHIP OR PLATFORM "La Félagia"		INSTITUTION OR OPERATING AGENCY Institut des Pêches Maritimes, Nantes	
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO.		SCIENTIST IN CHARGE A. Vincent	
ICES REF. NO. 7035001 7035002 7035003 7035004		IMS CRUISE NO.	PAGE OF TRACK CHART 12
PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F D
DESCRIPTIVE OCEANOGRAPHY			
D 1 SERIAL STATIONS			
D 2 STD			
D 3 OXYGEN			
D 4 PHOSPHATES			
D 5 TOTAL-P			
D 6 NITRATES			
D 7 NITRITES			
D 8 TRACE ELEMENTS			
D 9 pH			
D 10 ALKALINITY			
D 11 SILICATES			
D 12 RADIOACTIVITY			
D 13 ISOTOPE CHEMISTRY			
D 14 OTHER DISSOLVED GASES			
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)			
D 16 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)	88	a	a
D 17 TRANSPARENCY (NO. OF OSS.)			
D 18 SOUND VELOCIMETER DATA			
D 19 INSTRUMENTED WAVE RECORDING (✓)			
D 20 TIDES (✓)			
D 21 SEA (✓)			
D 22 SWELL (✓)			
D 23 ICE (✓)			
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)			
D 25 SEA SURFACE TEMPERATURE (✓)	v		
BIOLOGY			
B 1 PRIMARY ORGANIC PRODUCTION			
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION			
B 3 PARTICULATE ORGANIC MATTER			
B 4 DISSOLVED ORGANIC MATTER			
B 5 NEUSTON AND PLEUSTON			
B 6 BACTERIA AND OTHER MICROORGANISMS			
B 7 PHYTOPLANKTON			
B 8 ZOOPLANKTON	88	a	
B 9 FISH EGGS AND/OR LARVAE	v		
B 10 MICRONEKTON			
B 11 INVERTEBRATE NEKTON			
B 12 PELAGIC FISHES			
B 13 DEMERSAL FISHES			
B 14 PHYTOBENTHOS			
B 15 ZOOBENTHOS			
B 16 AVES (✓)			
B 17 PINNIPEDIA (✓)			
B 18 CETACEA (✓)			
B 19 BIOLOGICAL SOUNDS (SPECIFY CRUSTACEA PISCES, CETACEA, OTHER) (✓)			
B 20 SOUND SCATTERING LAYER (DSL) (✓)			
B 21 BIOLUMINESCENCE (VISUAL OR INSTRUMENTED) (✓)			
B 22 FIELD OBSERVATIONS ON BEHAVIOR (SPECIFY GROUP) (✓)			
B 23 BORERS AND FOULERS (✓)			
B 24 BIOLOGICAL POLLUTANTS			
Q QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO: a. Institut des Pêches Maritimes, Nantes b. c. d. e. f.			
F D FINAL DISPOSITION OF DATA (NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS) a. Service Central Hydrographique, Paris b. c. d. e. f.			
REMARKS Identical information for the four cruises 7035001-7035004			
DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP): () YES (X) NO () PART (SPECIFY)			



COUNTRY United Kingdom		PERIOD 24 Jul - 8 Aug 1970	
SHIP OR PLATFORM "Cirolana"		INSTITUTION OR OPERATING AGENCY MAFF Fisheries Laboratory, Lowestoft	
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. 1/1970		SCIENTIST IN CHARGE A.J. Lee	
ICES REF. NO. 7074001	IMS CRUISE NO. -	PAGE OF TRACK CHART Marsden Nos. 181 d and 217 a	

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
DESCRIPTIVE OCEANOGRAPHY					a.	Fisheries Laboratory, Lowestoft
D 1 SERIAL STATIONS					b.	
D 2 STD	2				c.	
D 3 OXYGEN					d.	
D 4 PHOSPHATES					e.	
D 5 TOTAL-P					f.	
D 6 NITRATES						
D 7 NITRITES						
D 8 TRACE ELEMENTS						
D 9 pH						
D 10 ALKALINITY						
D 11 SILICATES						
D 12 RADIOACTIVITY					F D	
D 13 ISOTOPE CHEMISTRY					a.	
D 14 OTHER DISSOLVED GASES					b.	
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DRGFS)	3	a			c.	
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)					d.	
D 17 TRANSPARENCY (NO. OF OBS.)					e.	
D 18 SOUND VELOCIMETER DATA					f.	
D 19 INSTRUMENTED WAVE RECORDING (✓)						
D 20 TIDES (✓)						
D 21 SEA (✓)						
D 22 SWELL (✓)						
D 23 ICE (✓)						
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)						
D 25 SEA SURFACE TEMPERATURE (✓)	v					
METEOROLOGY						REMARKS
M 1 UPPER AIR OBSERVATIONS (✓)						B 6 Flagellate collections. (SIMCA) O 1 Fishing, Hydrographical and Biological systems
M 2 SURFACE METEOROLOGICAL OBS. (✓)	v					
M 3 INCIDENT RADIATION (✓)						
BIOLOGY						
B 1 PRIMARY ORGANIC PRODUCTION						
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION						
B 3 PARTICULATE ORGANIC MATTER						
B 4 DISSOLVED ORGANIC MATTER						
B 5 NEUSTON AND PLEUSTON						
B 6 BACTERIA AND OTHER MICROORGANISMS	60					
B 7 PHYTOPLANKTON						
B 8 ZOOPLANKTON						
B 9 FISH EGGS AND/OR LARVAE	3					
B 10 MICroneTOW						
B 11 INVERTEBRATE NEKTON						
B 12 PELAGIC FISHES						
B 13 COMMERCIAL FISHES						
B 14 PHYTOZENTHOS						
B 15 ZOOZENTHOS						
B 16 AVES (✓)						
B 17 PINNIPEDIA (✓)						
B 18 CETACEA (✓)						
B 19 BIOLOGICAL SOUNDS (SPECIFY CRUSTACEA, PISCES, CETACEA, OTHER) (✓)						
C 20 SOUND SCATTERING LAYER (DSL) (✓)						
B 21 BIOLUMINESCENCE (VISUAL OR INSTRUMENTED) (✓)						
F 22 FIELD OBSERVATIONS ON BEHAVIOR (SPECIFY GROUP) (✓)						
B 23 BONES AND FOIERS (✓)						
B 24 BIOLOGICAL POLLUTANTS						
OTHER OBSERVATIONS:						
O 1 Sampling Systems tested						
O 2						
O 3						
O 4						

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

() YES

(x) NO

() PART (SPECIFY)

COUNTRY United Kingdom		PERIOD 27 Jan - 9 Feb 1970
SHIP OR PLATFORM "Clione"		INSTITUTION OR OPERATING AGENCY MAFF Fisheries Laboratory, Lowestoft
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. 3/1970		SCIENTIST IN CHARGE J.W. Talbot
ICES REF. NO. 7074006	IMS CRUISE NO.	PAGE OF TRACK CHART - Marsden No. 216 a

PROGRAMS UNDERTAKEN	TOTAL NO. OF STATIONS	C	F	D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
DESCRIPTION: OCEANOGRAPHY							
E 1 SERIAL STATIONS							
D 2 S ^o C							
E 3 OXYGEN							
D 4 PHOSPHATES							
E 5 TOTAL P							
D 6 NITRATES							
E 7 NITRITES							
D 8 TRACE ELEMENTS							
D 9 p _H							
E 10 ALKALINITY							
D 11 SILICATES							
D 12 RADIOACTIVITY							
D 13 ISOTOPE CHEMISTRY							
D 14 OTHER DISSOLVED GASES							
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)							
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)							
D 17 TRANSPARENCY (NO. OF OBS.)							
D 18 SOUND VELOCITY DATA							
D 19 INSTRUMENTED WAVE RECORDING	(✓)						
D 20 TIDES	(✓)						
D 21 SEA	(✓)						
D 22 SWELL	(✓)						
D 23 ICE	(✓)						
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)							
D 25 SEA SURFACE TEMPERATURE	(✓)				V		
CURRENT MEASUREMENTS							
C 1 CURRENT METERS	10						
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)	11						
C 2 COK	(✓)						
C 3 DRAGGERS	(✓)						
C 4 S.W.A. LOW FLOATS	(✓)						
C 5 SURFACE DRIFTERS (NO. RELEASED)							
C 6 BOTTOM DRIFTERS (NO. RELEASED)	100						
OTHER OBSERVATIONS							
O 1 Diffusion studies (Dye Release)	1						
O 2 Suspended Load	5						
O 3 Salinity S ₂	34						
O 4 Turbidity + Water Velocity 1							
FINAL DISPOSITION OF DATA (NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)							
REMARKS							
C 1 PRGM							
O 1 Rhodamine-B							
O 4 Turbidity meter + DRGM							

COUNTRY United Kingdom		PERIOD 27 Aug - 6 Sep 1970				
SHIP OR PLATFORM "Clione"		INSTITUTION OR OPERATING AGENCY MAFF Fisheries Laboratory, Lowestoft				
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. 11/1970		SCIENTIST IN CHARGE R.C.A. Bannister				
ICES REF. NO. 7074015	IMS CRUISE NO. -	PAGE OF TRACK CHART - Marsden No. 216 a, c				
PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
DESCRIPTIVE OCEANOGRAPHY						
D 1 SERIAL STATIONS						a. Fisheries Laboratory, Lowestoft
D 2 STD						b.
D 3 OXYGEN	5					c.
D 4 PHOSPHATES						d.
D 5 TOTAL-P						e.
D 6 NITRATES						f.
D 7 NITRITES						
D 8 TRACE ELEMENTS						
D 9 pH						
D 10 ALKALINITY						
D 11 SILICATES						
D 12 RADIOACTIVITY						
D 13 ISOTOPE CHEMISTRY						F D FINAL DISPOSITION OF DATA (NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)
D 14 OTHER DISSOLVED GASES						
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)						a.
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)						b.
D 17 TRANSPARENCY (NO. OF OBS.)						c.
D 18 SOUND VELOCIMETER DATA						d.
D 19 INSTRUMENTED WAVE RECORDING (✓)						e.
D 20 TIDES (✓)						f.
D 21 SEA (✓)	✓					
D 22 SWELL (✓)	✓					
D 23 ICE (✓)	✓					
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)	✓					
D 25 SEA SURFACE TEMPERATURE (✓)	✓					
BIOLOGY						
B 1 PRIMARY ORGANIC PRODUCTION						REMARKS
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION						
B 3 PARTICULATE ORGANIC MATTER						
B 4 DISSOLVED ORGANIC MATTER						
B 5 NEUSTON AND PLEUSTON						
B 6 BACTERIA AND OTHER MICROORGANISMS	5					D 1/3 Investigation of dead fish reports
B 7 PHYTOPLANKTON						B 7-11 International net
B 8 ZOOPLANKTON						B 13 For tagging and experimental purposes
B 9 FISH EGGS AND/OR LARVAE	1					B 14/15 Petersen grab (Underwater camera in use)
B 10 MICRONEKTON						
B 11 INVERTEBRATE NEKTON						
B 12 PELAGIC FISHES						
B 13 DEMERSAL FISHES	34					
B 14 PHYTOBENTHOS						
B 15 ZOOBENTHOS	19					
B 16 AVES (✓)						
B 17 PINNIPEDIA (✓)						
B 18 CETACEA (✓)						
B 19 BIOLOGICAL SOUNDS (SPECIFY CRUSTACEA PISCES, CETACEA, OTHER) (✓)						
B 20 SOUND SCATTERING LAYER (DSL) (✓)						
B 21 BIOLUMINESCENCE (VISUAL OR INSTRUMENTED) (✓)						
B 22 FIELD OBSERVATIONS ON BEHAVIOR (SPECIFY GROUP) (✓)						
B 23 BORERS AND FOULERS (✓)						
B 24 BIOLOGICAL POLLUTANTS						
OTHER OBSERVATIONS						
O 1 Surface salinity	5					
O 2 Bottom "	5					
O 3						
O 4						

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

() YES
(X) NO
() PART (SPECIFY)

COUNTRY United Kingdom		PERIOD 2 - 19 Mar 1970	
SHIP OR PLATFORM "Tellina"		INSTITUTION OR OPERATING AGENCY MAFF Fisheries Laboratory, Lowestoft	
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. 3/1970		SCIENTIST IN CHARGE P.D. Wallace	
ICES REF. NO. 7074044	IMS CRUISE NO. -	PAGE OF TRACK CHART - Marsden No. 216 a	

PROGRAMS UNDERTAKEN	TOTAL NO OF STATIONS	C	F	D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
GEOLOGY AND GEOPHYSICS							
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)	6					a.	Fisheries Laboratory, Lowestoft
G 2 CORES (NO. CORES)						b.	
G 3 SEISAJC—REFLECTION PROFILES (Km)						c.	
G 4 SEISMIC—REFRACTION PROFILES						d.	
G 5 HEAT FLOW						e.	
G 6 GRAVITY (Km)						f.	
G 7 MAGNETIC (Km)							
G 8 CHEMICAL ANALYSIS OF SEDIMENT (✓)							
G 9 PHYSICAL ANALYSIS OF SEDIMENT (✓)							
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM							
G 11 BOTTOM PHOTOGRAPHY (NO OF CAMERA STATIONS)							
G 12 PALEONTOLOGY (✓)						F D	FINAL DISPOSITION OF DATA (NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)
G 13 PALEOMAGNETISM AND ROCK MAGNETISM (✓)						a.	
G 14 GEODATONOMOLOGY (✓)						b.	
G 15 MINERAL RESOURCES (✓)						c.	

PROGRAMS UNDERTAKEN	TOTAL NO OF STATIONS	C	F	D	TYPE OF FORMAT AVAILABLE
BIOLOGY					
B 1 PRIMARY ORGANIC PRODUCTION					
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION					
B 3 PARTICULATE ORGANIC MATTER					
B 4 DISSOLVED ORGANIC MATTER					
B 5 NEUSTON AND PLEUSTON					
B 6 BACTERIA AND OTHER MICROORGANISMS					
B 7 PHYTOPLANKTON					
B 8 ZOOPLANKTON					
B 9 FISH EGGS AND/OR LARVAE	4				
B 10 MICROBENTON					
B 11 INVERTEBRATE NEKTON					
B 12 PELAGIC FISHES					
B 13 DEMERSAL FISHES					
B 14 PHYTOBENTHOS					
B 15 ZOOBENTHOS					
B 16 AVES (✓)					
B 17 PINNIPEDIA (✓)					
B 18 CETACEA (✓)					
B 19 BIOLOGICAL SOUNDS (SPECIFY CRUSTACEA, PISCES, CETACEA, OTHER) (✓)					
B 20 SOUND SCATTERING LAYER (SSL) (✓)					
B 21 BIOLUMINESCENCE (VISUAL OR INSTRUMENTED) (✓)					
B 22 FIELD OBSERVATIONS ON BEHAVIOR (SPEECH GROUP) (✓)					
B 23 BORERS AND FOULERS (✓)					
B 24 BIOLOGICAL POLLUTANTS					
OTHER OBSERVATIONS					
O 1 Echo Survey	4				
O 2					
O 3					
O 4					

REMARKS

B 9 Observations of herring spawning ground with divers

O 1 Mid-water trawl

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

- () YES
 (X) NO
 () PART (SPECIFY)

COUNTRY United Kingdom	PERIOD 2 - 17 Apr 1970
SHIP OR PLATFORM "Tellina"	INSTITUTION OR OPERATING AGENCY MAFF Fisheries Laboratory, Lowestoft
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. 4/1970	SCIENTIST IN CHARGE R.G.J. Shelton

ICES REF. NO. 7074045	IMS CRUISE NO. -	PAGE OF TRACK CHART - Marsden No. 216-- a
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PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F	D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
DESCRIPTIVE OCEANOGRAPHY							
D 1 SERIAL STATIONS	Y					a.	Fisheries Laboratory, Lowestoft
D 2 STD						b.	
D 3 OXYGEN						c.	
D 4 PHOSPHATES						d.	
D 5 TOTAL-P						e.	
D 6 NITRATES						f.	
D 7 NITRITES							
D 8 TRACE ELEMENTS							
D 9 pH							
D 10 ALKALINITY							
D 11 SILICATES							
D 12 RADIOACTIVITY							
D 13 ISOTOPE CHEMISTRY							
D 14 OTHER DISSOLVED GASES							
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)						F D	FINAL DISPOSITION OF DATA (NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)						a.	
D 17 TRANSPARENCY (NO. OF O3S.)						b.	
D 18 SOUND VELOCIMETER DATA						c.	
D 19 INSTRUMENTED WAVE RECORDING (✓)						d.	
D 20 TIDES (✓)						e.	
D 21 SEA (✓)						f.	
D 22 SWELL (✓)							
D 23 ICE (✓)							
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)							
D 25 SEA SURFACE TEMPERATURE (✓)							
GEOLOGY AND GEOPHYSICS							
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)	Y						REMARKS D 1) No. of stns. not known G 1) O 1 Beam trawling carried out over area of experiment
G 2 CORES (NO. CORES)							
G 3 SEISMIC—REFLECTION PROFILES (Km)							
G 4 SEISMIC—REFRACTION PROFILES							
G 5 HEAT FLOW							
G 6 GRAVITY (Km)							
G 7 MAGNETIC (Km)							
G 8 CHEMICAL ANALYSIS OF SEDIMENT (✓)							
G 9 PHYSICAL ANALYSIS OF SEDIMENT (✓)							
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM							
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)							
G 12 PALEONTOLOGY (✓)							
G 13 PALEOMAGNETISM AND ROCK MAGNETISM (✓)							
G 14 GEOCHRONOLOGY (✓)							
G 15 MINERAL RESOURCES (✓)							
OTHER OBSERVATIONS							
O 1 Oil Sinking Experiment.	36						
O 2							
O 3							
O 4							

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):
 YES
 NO
 PART (SPECIFY)

COUNTRY Sweden		PERIOD 25 May - 11 Jun 1970	
SHIP OR PLATFORM "Skagerak"		INSTITUTION OR OPERATING AGENCY Kungl. Fiskeristyrelsen, Göteborg	
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO.		SCIENTIST IN CHARGE Fonselius/Engström	
ICES REF. NO. 7077006	IMS CRUISE NO. IOC/INF-170	PAGE OF TRACK CHART 23	

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F	D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
DESCRIPTIVE OCEANOGRAPHY							
D 1 SERIAL STATIONS	53	a	a		PUB	e.	Fishery Board of Sweden
D 2 STD						b.	" Dr. Fonselius
D 3 OXYGEN	64	a	a		"	c.	" Mr. Carlberg
D 4 PHOSPHATES	60	a	a		"	d.	" Dr. Ackefors
D 5 TOTAL-P	24	a	a		"	e.	" Dr. Otterlind
D 6 NITRATES	21	a	a		"	f.	National Environment Protection Board, Dr. Hasselroth
D 7 NITRITES	21	a	a		"		
D 8 TRACE ELEMENTS	8	a	b		RDS		
D 9 pH	59	a	a		PUB		
D 10 ALKALINITY	25	a	a		"		
D 11 SILICATES	18	a	a		"		
D 12 RADIOACTIVITY	11	b	b		RDS		
D 13 ISOTOPE CHEMISTRY							
D 14 OTHER DISSOLVED GASES	7	a	a		PUB		
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)							
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)	61	a	b		RDS		
D 17 TRANSPARENCY (NO. OF OBS.)							
D 18 SOUND VELOCIMETER DATA							
D 19 INSTRUMENTED WAVE RECORDING (✓)							
D 20 TIDES (✓)							
D 21 SEA (✓)	v	a	a		PUB		
D 22 SWELL (✓)							
D 23 ICE (✓)							
D 24 BOTTOM TEMPERATURE (≅ 10M FROM BOTTOM)	57	a	a		"		
D 25 SEA SURFACE TEMPERATURE (✓)	v	a	a		"		
CURRENT MEASUREMENTS							
C 1 CURRENT METERS							
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)							
C 2 GEK (✓)							
C 3 DROGUES (✓)							
C 4 SWALLOW FLOATS (✓)							
C 3 SURFACE DRIFTERS (NO. RELEASED)							
C 6 BOTTOM DRIFTERS (NO. RELEASED)							
METEOROLOGY							
M 1 UPPER AIR OBSERVATIONS (✓)							
M 2 SURFACE METEOROLOGICAL OBS. (✓)							
M 3 INCIDENT RADIATION (✓)							
GEOLOGY AND GEOPHYSICS							
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)							
G 2 CORES (NO. CORES)							
G 3 SEISMIC—REFLECTION PROFILES (Km)							
G 4 SEISMIC—REFRACTION PROFILES							
G 5 HEAT FLOW							
G 6 GRAVITY (Km)							
G 7 MAGNETIC (Km)							
G 8 CHEMICAL ANALYSIS OF SEDIMENT (✓)	v	f	c		RDS		
G 9 PHYSICAL ANALYSIS OF SEDIMENT (✓)							
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM							
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)							
G 12 PALEONTOLOGY (✓)							
G 13 PALEOMAGNETISM AND ROCK MAGNETISM (✓)							
G 14 GEOCHRONOLOGY (✓)							
G 15 MINERAL RESOURCES (✓)							
							REMARKS

continued

continued "Skagerak", 7077006

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F D	TYPE OF FORMAT AVAILABLE	REMARKS
GEOLOGY AND GEOPHYSICS (CONTINUED)					
G 16 BATHYMETRY—WIDE BEAM (Km)					
G 17 BATHYMETRY—NARROW BEAM (Km)					
G 18 BOTTOM RESISTIVITY					D 12 Tritium
G 19 SOUND PROPAGATION IN SEDIMENT					
G 20 DRILL HOLES (NO. OF DRILL HOLES)					D 14 H ₂ S
G 21 BOTTOM TEMPERATURE (≤ 1M FROM BOTTOM)					
G 22 BOTTOM RADIOACTIVITY (✓)					G. 8 For Hg-determination
G 23 SIDE-SCANNING SONAR (Km)					
BIOLOGY					
B 1 PRIMARY ORGANIC PRODUCTION	14	a	b	RDS	B 8 1/2 m net
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION	21	c	b	"	B 9 1 m net
B 3 PARTICULATE ORGANIC MATTER					
B 4 DISSOLVED ORGANIC MATTER					
B 5 NEUSTON AND PLEUSTON					
B 6 BACTERIA AND OTHER MICROORGANISMS					
B 7 PHYTOPLANKTON	22	a	b	"	
B 8 ZOOPLANKTON	18	d	a	PUB	
B 9 FISH EGGS AND/OR LARVAE	31	e	b	RDS	
B 10 MICRONEKTON					
B 11 INVERTEBRATE NEKTON					
B 12 PELAGIC FISHES					
B 13 DEMERSAL FISHES					
B 14 PHYTOBENTHOS					
B 15 ZOOBENTHOS	34	e	b	"	
B 16 AVES (✓)					
B 17 PINNIPEDIA (✓)					
B 18 CETACEA (✓)					
B 19 BIOLOGICAL SOUNDS (SPECIFY CRUSTACEA PISCES, CETACEA, OTHER) (✓)					
B 20 SOUND SCATTERING LAYER (DSL) (✓)					
B 21 BIOLUMINESCENCE (VISUAL OR INSTRUMENTED) (✓)					
B 22 FIELD OBSERVATIONS ON BEHAVIOR (SPECIFY GROUP) (✓)					
B 23 BORERS AND FOULERS (✓)					
B 24 BIOLOGICAL POLLUTANTS					
OTHER OBSERVATIONS					
O 1 Oil	4	c	b	RDS	
O 2 NH ₄ -N	21	a	a	PUB	
O 3 Tot.N	21	a	b	"	
O 4 KMnO ₄ = COD	6	c	b	RDS	

TOTAL KILOMETERS STEAMED: 3400

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

(X) YES

() NO

() PART (SPECIFY)

COUNTRY Sweden		PERIOD 17 Aug - 10 Sep 1970				
SHIP OR PLATFORM "Skagerak"		INSTITUTION OR OPERATING AGENCY Kungl. Fiskeristyrelsen, Göteborg				
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO.		SCIENTIST IN CHARGE Fonselius/Svansson/Engström				
ICES REF. NO. 7077C08	IMS CRUISE NO. IOC/INF-170	PAGE OF TRACK CHART 24				
PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
DESCRIPTIVE OCEANOGRAPHY						
D 1 SERIAL STATIONS	95	a	a	PUB	a.	Fishery Board of Sweden
D 2 STD					b.	" Dr. Fonselius
D 3 OXYGEN	88	a	a	"	c.	" Mr. Carlberg
D 4 PHOSPHATES	77	a	a	"	d.	" Dr. Ackefors
D 5 TOTAL-P	49	a	a	"	e.	
D 6 NITRATES	45	a	a	"	f.	
D 7 NITRITES	45	a	a	"		
D 8 TRACE ELEMENTS	11	a	b	RDS		
D 9 pH	90	a	a	PUB		
D 10 ALKALINITY	44	a	a	"		
D 11 SILICATES	33	a	a	"		
D 12 RADIOACTIVITY	15	b	b	RDS		
D 13 ISOTOPE CHEMISTRY						
D 14 OTHER DISSOLVED GASES	15	a	a	PUB	F D	FINAL DISPOSITION OF DATA (NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)					a.	ICES
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)	89	a	b	RDS	b.	Fishery Board of Sweden
D 17 TRANSPARENCY (NO. OF OBS.)					c.	
D 18 SOUND VELOCIMETER DATA					d.	
D 19 INSTRUMENTED WAVE RECORDING (✓)					e.	
D 20 TIDES (✓)					f.	
D 21 SEA (✓)	v	a	a	PUB		
D 22 SWELL (✓)						
D 23 ICE (✓)						
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)	83	a	a	"		
D 25 SEA SURFACE TEMPERATURE (✓)	v	a	a	"		
CURRENT MEASUREMENTS						
C 1 CURRENT METERS						
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)	72	a	b	PT		REMARKS
C 2 GEK (✓)						
C 3 DROGUES (✓)						
C 4 SWALLOW FLOATS (✓)						
C 5 SURFACE DRIFTERS (NO. RELEASED)						
C 6 BOTTOM DRIFTERS (NO. RELEASED)						
METEOROLOGY						
M 1 UPPER AIR OBSERVATIONS (✓)						
M 2 SURFACE METEOROLOGICAL OBS. (✓)						
M 3 INCIDENT RADIATION (✓)						
GEOLOGY AND GEOPHYSICS						
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)						
G 2 CORES (NO. CORES)						
G 3 SEISMIC—REFLECTION PROFILES (Km)						
G 4 SEISMIC—REFRACTION PROFILES						
G 5 HEAT FLOW						
G 6 GRAVITY (Km)						
G 7 MAGNETIC (Km)						
G 8 CHEMICAL ANALYSIS OF SEDIMENT (✓)						
G 9 PHYSICAL ANALYSIS OF SEDIMENT (✓)						
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM						
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)						
G 12 PALEONTOLOGY (✓)						
G 13 PALEOMAGNETISM AND ROCK MAGNETISM (✓)						
G 14 GEOCHRONOLOGY (✓)						
G 15 MINERAL RESOURCES (✓)						

continued

continued "Skagerrak", 7077008

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	G	F D	TYPE OF FORMAT AVAILABLE	REMARKS
GEOLOGY AND GEOPHYSICS (CONTINUED)					
G 16 BATHYMETRY—WIDE BEAM (Km)					
G 17 BATHYMETRY—NARROW BEAM (Km)					D 12 Tritium
G 18 BOTTOM RESISTIVITY					
G 19 SOUND PROPAGATION IN SEDIMENT					D 14 H ₂ S
G 20 DRILL HOLES (NO. OF DRILL HOLES)					
G 21 BOTTOM TEMPERATURE (≤ 1M FROM BOTTOM)					C 1 24 Aug - 4 Nov 1970
G 22 BOTTOM RADIOACTIVITY (✓)					3 current meters in one position
G 23 SIDE-SCANNING SONAR (Km)					2 current meters in another position
BIOLOGY					
B 1 PRIMARY ORGANIC PRODUCTION	19	a	b	RDS	
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION	22	c	b	"	
B 3 PARTICULATE ORGANIC MATTER					
B 4 DISSOLVED ORGANIC MATTER	10	c	b	"	
B 5 NEUSTON AND FLEUSICH					B 4 Organic carbon
B 6 BACTERIA AND OTHER MICROORGANISMS					
B 7 PHYTOPLANKTON	42	a	b	"	B 8 1/2 m net
B 8 ZOOPLANKTON	34	d	a	PIR	
B 9 FISH EGGS AND/OR LARVAE					
B 10 MIZOPLANKTON					
B 11 BENTHIC INVERTEBRATE NEKTON					
B 12 PELAGIC FISHES					
B 13 DEMERSAL FISHES					
B 14 PHYCOPHYTES					
B 15 ZOOSYNTHOS					
B 16 AVES (✓)					
B 17 PINNACULIA (✓)					
B 18 CETACEA (✓)					
B 19 BIOLOGICAL SOUNDS (SPECIFY CRUSTACEA PISCS, CETACEA, OTHER) (✓)					
B 20 SOUND SCATTERING LAYER (SCL) (✓)					
B 21 ENDURANCE (VISUAL OR INSTRUMENTED) (✓)					
B 22 FIELD OBSERVATIONS ON BEHAVIOR (SPECIFY GROUP) (✓)					
B 23 BORERS AND FOULERS (✓)					
B 24 BIOLOGICAL POLLUTANTS					
OTHER OBSERVATIONS					
O 1 Oil	10	c	b	RDS	
O 2 NH ₄ -N	45	a	a	PIR	
O 3 Tot.N	36	a	a	"	
O 4 Chemic. oxyg. dem. K ₂ Cr ₂ O ₇	26	c	b	RDS	

TOTAL KILOMETERS STEAMED: 5560

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

(x) YES

() NO

() PART (SPECIFY)

COUNTRY Sweden		PERIOD 10 - 14 Aug 1970
SHIP OR PLATFORM "Skagerak"		INSTITUTION OR OPERATING AGENCY Kungl. Fiskeristyrelsen, Göteborg
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO.		SCIENTIST IN CHARGE Svansson/Engström
ICES REF. NO. 7077007	IMS CRUISE NO. IOC/INF-170	PAGE OF TRACK CHART 25

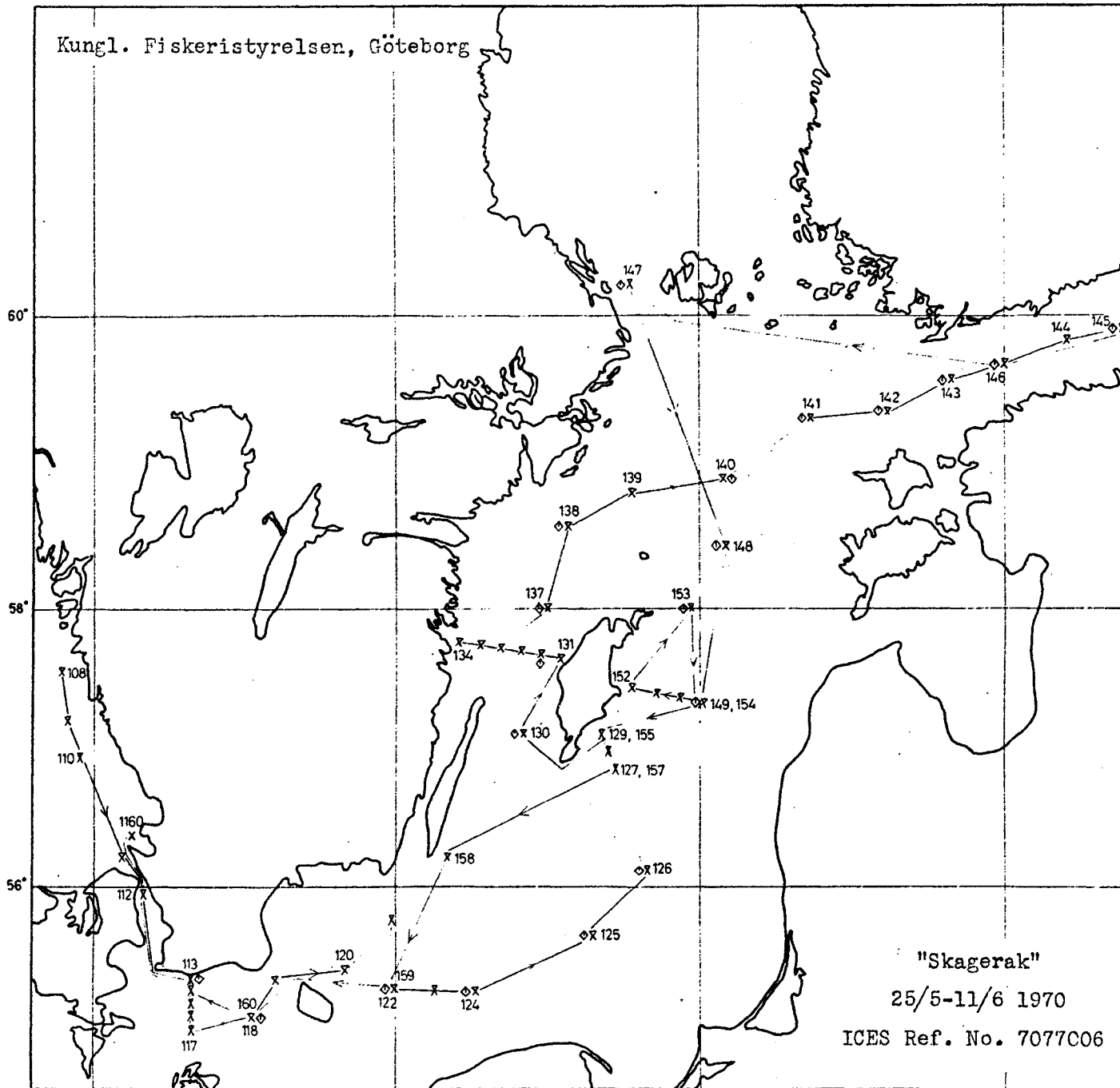
PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F	D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
DESCRIPTIVE OCEANOGRAPHY							a. Fishery Board of Sweden
D 1 SERIAL STATIONS	18	a	a		PUB		b.
D 2 STD							c.
D 3 OXYGEN	18	a	a		"		d.
D 4 PHOSPHATES							e.
D 5 TOTAL-P	11	a	a		"		f.
D 6 NITRATES							
D 7 NITRITES							
D 8 TRACE ELEMENTS							
D 9 pH	2	a	a		"		
D 10 ALKALINITY							
D 11 SILICATES							
D 12 RADIOACTIVITY							
D 13 ISOTOPE CHEMISTRY							
D 14 OTHER DISSOLVED GASES							F D FINAL DISPOSITION OF DATA (NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)							a. ICES
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)	17	a	b		RDS		b. Fishery Board of Sweden
D 17 TRANSPARENCY (NO. OF OBS.)							c.
D 18 SOUND VELOCIMETER DATA							d.
D 19 INSTRUMENTED WAVE RECORDING (✓)							e.
D 20 TIDES (✓)							f.
D 21 SEA (✓)	v	a	a		PUB		
D 22 SWELL (✓)							
D 23 ICE (✓)							
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)	13	a	a		"		
D 25 SEA SURFACE TEMPERATURE (✓)	v	a	a		"		
CURRENT MEASUREMENTS							
C 1 CURRENT METERS							
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)							REMARKS
C 2 GEK (✓)							
C 3 DROGUES (✓)							
C 4 SWALLOW FLOATS (✓)							
C 5 SURFACE DRIFTERS (NO. RELEASED)							
C 6 BOTTOM DRIFTERS (NO. RELEASED)							
METEOROLOGY							
M 1 UPPER AIR OBSERVATIONS (✓)							
M 2 SURFACE METEOROLOGICAL OBS. (✓)							
M 3 INCIDENT RADIATION (✓)							
GEOLOGY AND GEOPHYSICS							
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)							
G 2 CORES (NO. CORES)							
G 3 SEISMIC—REFLECTION PROFILES (Km)							
G 4 SEISMIC—REFRACTION PROFILES							
G 5 HEAT FLOW							
G 6 GRAVITY (Km)							
G 7 MAGNETIC (Km)							
G 8 CHEMICAL ANALYSIS OF SEDIMENT (✓)							
G 9 PHYSICAL ANALYSIS OF SEDIMENT (✓)							
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM							
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)							
G 12 PALEONTOLOGY (✓)							
G 13 PALEOMAGNETISM AND ROCK MAGNETISM (✓)							
G 14 GEOCHRONOLOGY (✓)							
G 15 MINERAL RESOURCES (✓)							

TOTAL KILOMETERS STEAMED: 420

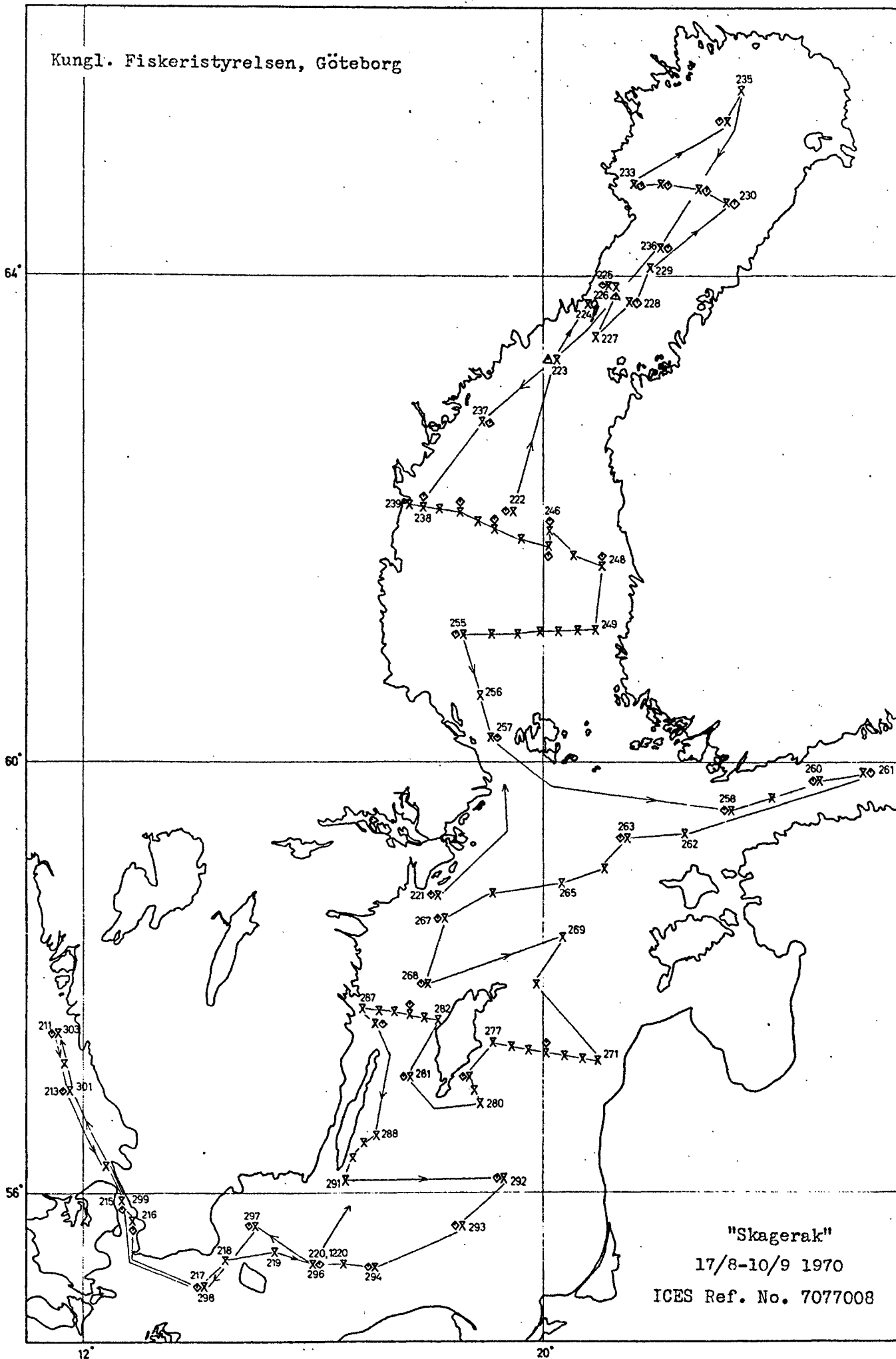
DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

(x) YES
() NO
() PART (SPECIFY)

Kungl. Fiskeristyrelsen, Göteborg

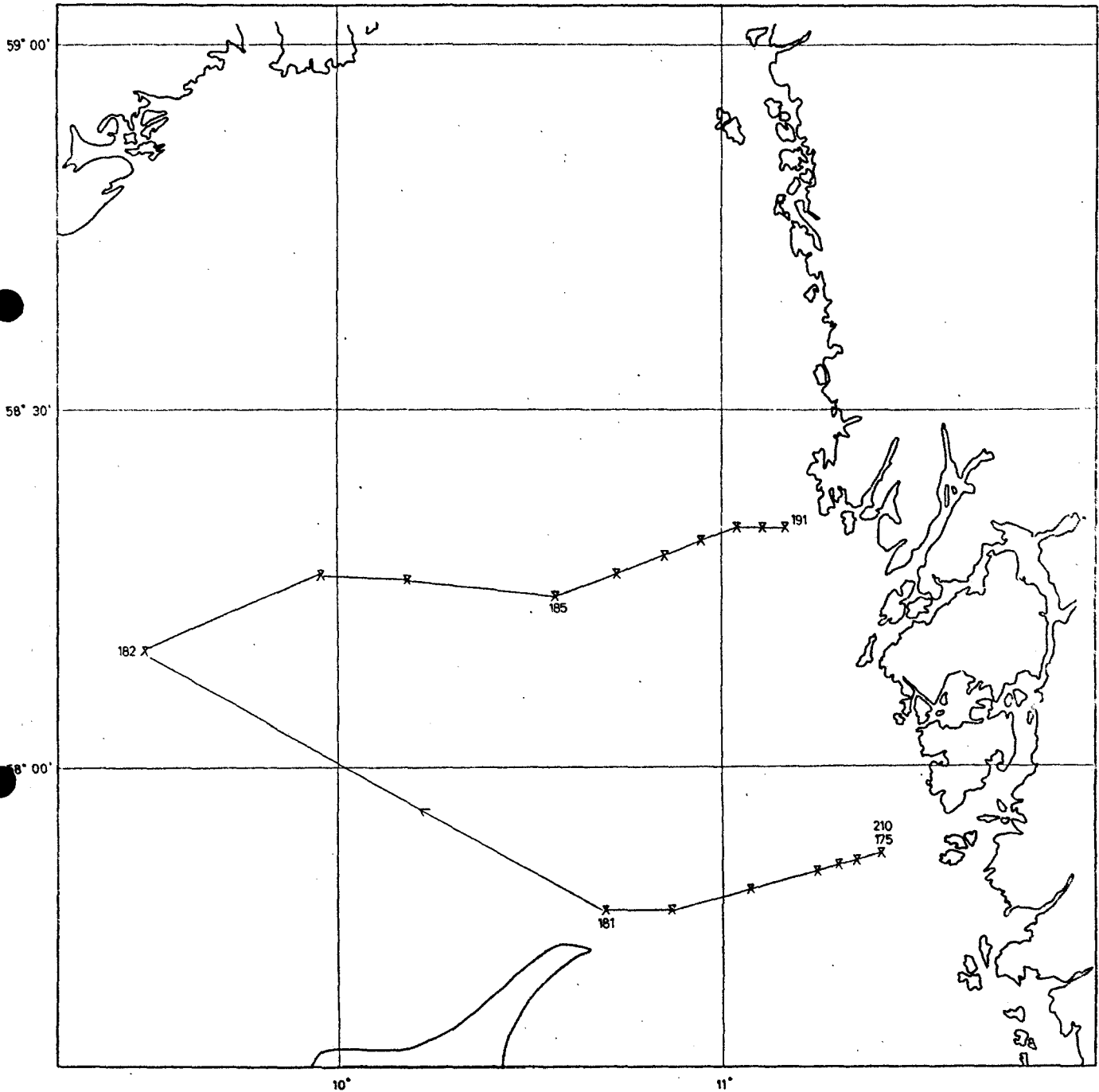


Kungl. Fiskeristyrelsen, Göteborg



"Skagerak"
17/8-10/9 1970
ICES Ref. No. 7077008

Kungl. Fiskeristyrelsen, Göteborg



"Skagerak"

10-11/8 1970

ICES Ref. No. 7077007

Appendix A

List of Reports on Oceanographic Observations in 1970,
Supplied on ROSCOP Forms to ICES Service Hydrographique

Ship and Cruise No.	Period 1970	Descript. Oceanogr.	Current Measurem.	Meteorology	Geology, Geophys.	Biology	Other Observat.	Region
<u>(06) Federal Republic of Germany</u>								
Deutsches Hydrographisches Institut								
"Meteor" cr. 20a	21 Apr-22 May	v v						Iceland
" " 20b,c	28 May-30 Jul	v v			v v v			"
" " 21	8 Sep- 4 Nov	v v			v v			Mediterranean
"Gauss" 166	3 Mar-25 Mar	v v			v v v			North Sea
" " 167	1 Apr- 4 Apr	v v						"
" " 168	6 Apr-17 Apr				v			"
" " 169	20 Apr-24 Apr	v v						"
" " 170	27 Apr- 8 May				v			"
" " 171	11 May-15 May	v						"
" " 172	25 May-29 May	v v			v			"
" " 173	2 Jun-12 Jun				v			"
" " 174	15 Jun-19 Jun	v v						"
" " 175	25 Jun- 6 Jul	v v			v		v	"
" " 176	7 Jul-11 Jul	v v						"
" " 177	20 Jul-28 Jul	v						"
" " 178	24 Aug-28 Aug		v					"
" " 179	31 Aug- 4 Sep				v			"
" " 180	7 Sep-24 Sep	v			v			Flensburg Fjord
" " 181	6 Oct- 7 Oct	v v						North Sea
" " 183	19 Oct-21 Oct	v						"
" " 184	26 Oct- 9 Nov	v						"
" " (186		v			v			"
" " (187								"
"Atair" 25	31 Mar- 3 Apr	v						Baltic
Measuring Pile	1 Jan-31 Dec	v						North Sea
Institut für Meereskunde								
"Alkor" IBY cr. 1	13 Apr-30 Apr	v						Baltic
" " 2	4 Sep-14 Sep	v						Baltic
Bundesforschungsanstalt für Fischerei								
"Anton Dohrn" cr.134	6 Jan-30 Jan	v				v		North Sea
" " 135	5 Feb-20 Feb	v				v		"
" " 136	19 Mar-17 Apr	v				v v		Iceland
" " 137	25 Apr- 8 May	v				v v		Baltic
" " 138	9 May-14 May					v v v		"
" " 139	20 May- 4 Jun	v				v v		"
" " 140	14 Jul- 6 Aug	v				v		S,W,N of U.K.
" " 141	15 Aug-12 Sep	v				v v		Iceland
" " 142	1 Oct-11 Oct	v				v		North Sea
" " 143	19 Oct-12 Nov	v				v v		North.Norway
" " 144	19 Nov-27 Nov	v				v v v		North Sea
" " 145	7 Dec-17 Dec	v				v v		"

cont.

Ship and Cruise No.	Period 1970	Descript. Oceanogr.	Current Measurem.	Meteorology	Geology, Geophys.	Biology	Other Observat.	Region
Fed. Rep. of Germany cont.								
"Walther Herwig" cr. 32	16 Feb-27 Mar	v					v	(Labrador/West and East Greenland
" " 33	2 Apr-15 May						v v	Labrador-Newfoundland
" " 34	8 Jun-14 Aug	v					v	(North America East Coast
" " 35	20 Aug-30 Sep	v					v v	Georges Bank
"Alte Liebe"	1 Jan-31 Dec	v						North Sea
Fixed Station	16 Sep-31 Dec		v					"
<u>(18) Canada</u>								
CSS "Hudson" cr. 69/50	26 Jan-20 Feb	v v	v v	v v	v v	v v		Drake Passage
" " "	26 Aug-30 Sep	v		v	v	v v		North West Passage
" " "	1 Oct-10 Oct	v		v	v			Davis Strait
"A.T. Cameron" 175	6 Jul-16 Jul	v			v	v		Nova Scotia
" " 176	20 Jul-31 Jul	v			v	v		"
"E.E. Prince" 62	28 Jan-30 Jan	v v			v	v		"
" " 63	5 Feb-13 Feb	v v			v	v		"
" " 69	17 Apr-23 Apr	v v			v	v		"
CSS "Dawson" 70-20	29 May- 7 Jun	v v						North Atlantic
" " 70-023	17 Jun- 6 Jul	v				v		"
"Cape Freels" 1	27 Jul- 3 Aug	v	v					Off New Foundland
" " 2	17 Aug-25 Aug	v	v					"
<u>(26) Denmark</u>								
"Dana"	24 Oct- 2 Nov	v						(Kattegat, the Sound Baltic
Greenland vessels	25 Jan-19 Dec	v					v	(Off W. Coast of Greenland
<u>(29) Spain</u>								
"Xauen" cr. x-704-5	10 Apr-29 May	v v					v	Baleares
"Hermandos Tres"	21 Jul-12 Aug	v v						(Ria de Sada, Verano

Ship and Cruise No.	Period 1970	Descript. Oceanogr.	Current Measur.	Meteorology	Geology, Geophys.	Biology	Other Observat.	Region
<u>(34) Finland</u>								
"Aranda"	3 Jun- 5 Jun	v						Baltic and Gulf of Bothnia
"	6 Jun-28 Jun	v		v		v		
"	3 Jul-24 Jul	v				v		
"	23 Oct-17 Nov	v						
<u>(35) France</u>								
"La Pélagia" Golfe } Gascogne } Hydro Pêche }	27 Feb-11 Mar	v					v	Bay of Biscay
	18 May-27 May	v					v	"
	22 Jul- 1 Aug	v					v	"
	27 Nov- 9 Dec	v					v	"
<u>(46) Iceland</u>								
"Hafthor"	27 Aug- 6 Sep	v	v	v				Icel. Waters E.
"Arni Fridriksson" A	1/70 7 Jan-17 Jan	v		v				"
"	A 2/70 26 Jan-26 Feb	v		v				"
"	A 3/70 7 Mar-22 Mar	v	v	v				"
"	A 5/70 18 May-28 May	v		v		v		"
"	A 6/70 5 Jun-21 Jun	v	v	v	v	v		"
"	A 7/70 30 Jun-22 Jul	v		v	v		v	" NE
"	A 8/70 2 Aug- 8 Aug	v		v		v		" W.
"	A 9/70 28 Aug-11 Sep	v		v		v		" W and N
"	A 10/70 20 Sep- 5 Oct	v		v				" NE
"	A 12/70 29 Nov- 1 Dec	v		v				" NE and N
<u>(48) Italy</u>								
"Bannock" GIBRALTAR	20 Aug- 6 Sep	v	v				v	Gibraltar
<u>(58) Norway</u>								
"G.O.Sars" old ship cr.	1 8 Jan- 3 Feb	v					v	Barents Sea
"	2 20 Feb-11 Mar	v					v v	Norwegian Sea
"	3 18 Mar-21 Mar	v					v v	Lofoten
" new ship	1 12 Jun-29 Jun	v					v v	Norwegian Sea
"	2 4 Jun-15 Jul	v		v			v v	Barents Sea

cont.

Ship and Cruise No.	Period 1970	Descript. Oceanogr.	Current Measurem.	Meteorology	Geology, Geophys.	Biology	Other Observat.	Region
Norway cont.								
"G.O. Sars" cr. 3	23 Jul-21 Aug	v				v	v	Norw. Sea-Greenl. Sea
" " 4	23 Aug- 1 Sep	v	v			v	v	Barents Sea
" " 5a	24 Sep-23 Oct	v				v	v	North Sea
" " 5b	4 Oct-30 Oct	v				v		off Ireland W
" " 6	7 Nov-20 Nov	v				v		Barents Sea
" " 7	30 Nov-18 Dec	v				v	v	Norwegian Sea
"Sohan Hjort" 1	6 Jan-18 Feb	v					v	"
" " 2	3 Mar-19 Mar	v	v			v	v	"
" " 3	8 Apr-16 Apr	v		v		v	v	"
" " 4	20 Apr-29 Apr	v		v		v	v	"
" " 5	2 May-15 May	v				v	v	Barents Sea
" " 6	18 May-22 May	v				v	v	Lofoten
" " 7	25 May-28 May	v	v	v		v	v	W Coast of Norway
" " 8	7 Jun- 6 Jul	v				v	v	Skagerrak/North Sea
" " 9	24 Aug- 9 Sep	v				v	v	Barents Sea
" " 10	8 Oct-24 Oct	v					v	Kattegat/Skagerrak
" " 11	30 Oct- 6 Nov	v				v	v	W coastal waters
" " 12	15 Nov-16 Dec	v				v	v	Barents Sea
"Peder Rønnestad" 2	18 Apr-27 Apr	v						Skagerrak
" " 3	5 May- 7 May	v						"
" " 4	22 Oct-28 Oct	v						North Sea/Skagerrak
(64) Netherlands								
"Willem Beukelsz" 5	Jan-15 Jan	v						North Sea, Channel
" " cr. 70-2 9	Mar-13 Mar	v		v			v	North Sea
" " 70-3 27	Apr-28 Apr	v		v			v	"
" " 70-5 1	Sep-16 Sep	v	v				v	"
"Tridens" 15	Jan-18 Feb	v						"
" " 18	Aug-29 Aug	v						"
" " 8	Sep-15 Sep	v						"
" " 2	Oct-12 Oct	v						"
" " 8	Dec-22 Dec	v						"
L.V. "Terschellingerbank" 1	Jan-31 Dec		v				v	Southern North Sea
" "Texel" 1	Jan-31 Dec		v				v	"
" "Goeree" 1	Jan-31 Dec		v				v	"
" "Noord Hinder" 1	Jan-31 Dec		v				v	"

Ship and Cruise No.	Period 1970	Descript. Oceanogr.	Current Measur.	Meteorology	Geology, Geophys.	Biology	Other Observat.	Region
<u>(67) Poland</u>								
"Wieczno"	11 Apr- 8 Jun	v	v	v				Barents Sea
"	10 Jul-19 Sep	v	v	v				Off Nova Scotia
"Birkut"	7 Jan- 9 Jan	v	v	v				Baltic
"	5 Feb-16 Feb	v	v	v				"
"	25 May-30 May	v	v	v				"
"	9 Jun-26 Jun	v	v	v				"
"	26 Jul- 8 Aug	v	v	v	v	v	v	"
"	12 Aug-27 Aug	v	v	v	v	v	v	"
"	14 Nov-30 Nov	v	v	v			v	"
GDy 100	27 Feb- 1 Mar	v	v	v				"
"Birkut"	14 Sep-23 Sep	v	v	v				North Sea
"	19 Oct-28 Oct	v	v	v				Baltic
"	7 Nov-11 Nov	v	v	v				"
"	15 Dec-19 Dec	v	-v	v				"

Ship and Cruise No.	Period 1970	Descript. Oceanogr.	Current Measur.	Meteorology	Geology, Geophys.	Biology	Other Observat.	Region (Marsden Nos.)
<u>(74) United Kingdom</u>								
MAFF "Cirolana"	1/1970	24 Jul- 8 Aug	v	v		v	v	181d, 217a
Lowestoft "	2/1970	20 Aug- 2 Sep	v	v		v		181a, b
"	4/1970	12 Oct-29 Oct	v	v				217a, 252a, c
"Clione"	1/1970	2 Jan- 7 Jan	v			v	v	216a, 181a
"	2/1970	13 Jan-20 Jan	v			v	v	216a
"	3/1970	27 Jan- 9 Feb	v	v			v	216a
"	4/1970	17 Feb-27 Feb	v			v	v	216a
"	5/1970	10 Mar-26 Mar	v				v	216a
"	6/1970	10 Apr-21 Apr	v	v			v	216a
"	7/1970	5 May-27 May	v	v		v	v	181a
"	8A/1970	8 Jun-17 Jun		v		v	v	216a
"	8B/1970	19 Jun-26 Jun	v			v	v	216a
"	9/1970	3 Jul-11 Jul	v			v	v	216a
"	10/1970	17 Jul- 6 Aug	v			v	v	181c, 217a
"	11/1970	27 Aug- 6 Sep	v			v	v	216a, c
"	12/1970	15 Sep- 8 Oct	v	v				181a, b
"	13/1970	14 Oct-31 Oct					v	181d
"	14/1970	6 Nov-23 Nov		v			v	181a, b
"	15A/1970	7 Dec-13 Dec	v	v			v	216a
"	15B/1970	13 Dec-17 Dec					v	216a
"Corella"	1/1970	20 Jan-30 Jan	v			v		216a
"	2A/1970	6 Feb-15 Feb	v			v	v	145c, 181a
"	2B/1970	17 Feb-27 Feb	v	v			v	181a
"	3/1970	10 Mar-25 Mar	v			v	v	181d, 216a
"	4/1970	7 Apr-20 Apr	v			v		181a, 216a
"	5A/1970	28 Apr- 4 May	v			v		216a
"	5B/1970	5 May-14 May	v			v	v	181c
"	6/1970	22 May- 2 Jun	v		v	v	v	181a, b, d
"	7/1970	12 Jun-21 Jun	v			v	v	216a
"	8/1970	30 Jun-10 Jul	v			v	v	181a, 216a
"	9/1970	17 Jul- 5 Aug	v			v	v	(181c, 216a, c 217a)
"	10/1970	1 Nov- 6 Nov	v			v	v	216a
"	11/1970	9 Nov-22 Nov	v	v			v	181a
"	12A/1970	30 Nov- 6 Dec	v			v	v	216a
"	12B/1970	7 Dec-18 Dec	v			v		181a, 216a
"Ernest Holt"	1A/1970	2 Jan-11 Jan	v			v		216a, c
"	1B/1970	12 Jan-21 Jan	v			v	v	216a, c
"	2/1970	6 Mar-20 Mar	v			v		216a, c
"	3/1970	1 Apr-10 Apr			v	v	v	216a, c
"	4/1970	17 Apr-15 May			v	v		219a
"	5/1970	27 May-10 Jun	v			v		181d

cont.

Ship and Cruise No.	Period 1970	Descript. Oceanogr.	Current Measurem.	Meteorology	Geology, Geophys.	Biology	Other Observat.	Region (Marsden Nos.)
United Kingdom cont.								
"Tellina"	1/1970	5 Jan-16 Jan			v		v	216a
"	2/1970	26 Jan-12 Feb				v		181c
"	3/1970	2 Mar-19 Mar			v	v	v	216a
"	4/1970	2 Apr-17 Apr			v		v	216a
"	5/1970	27 Apr-21 May	v			v	v	216a
"	6A/1970	1 Jun-12 Jun				v		181a
"	6B/1970	14 Jun-21 Jun	v				v	216a
"	7/1970	3 Jul-20 Jul	v			v	v	216a
"	8/1970	27 Jul- 5 Aug			v	v	v	216a
"	9/1970	26 Aug-18 Sep				v		216a
"	10/1970	28 Sep-11 Oct	v			v		181c
"	11/1970	22 Oct-11 Nov				v	v	181a
N.E.R.C.								
RRS "Discovery"	Medoc 1970	21 Jan-12 Mar	v	v	v			Mediterranean
"	cr.33	14 Apr-21 May	v	v	v			Azores
"	JASIN	2 Jun-28 Jun	v	v	v		v	Celtic Sea-West
"	GLORIA	11 Jul-19 Aug	v	v	v		v	(Gibraltar-Tyr-
"	cr.36	26 Sep-13 Nov	v	v	v	v		rhenian Sea
"	37	25 Nov-16 Dec	v	v	v			Azores
								Celtic Sea
R.N. Hydrographic Depart.								
"Hecla"	JASIN	12 Jun-22 Jun	v	v			v	North Atlantic
"Egeria"	"	25 Aug	v	v				North Sea
Department of Agriculture and Fisheries for Scotland, Aberdeen								
"Scotia"	cr.1	2 Mar-21 Mar	v	v		v		North Sea
"	2	27 Mar-16 Apr	v	v		v	v	North Channel
"	3	23 Apr- 2 Jun	v			v		North Sea
"	4	15 Jun- 4 Aug		v				North Sea
"	5	12 Aug- 2 Sep	v	v		v		North Sea
"	6	14 Sep-11 Oct	v			v		North Sea
"	7	20 Oct- 7 Nov	v	v		v		North Sea
"	8	16 Nov- 5 Dec	v			v		North Sea
"	9	11 Dec-24 Dec		v				North Sea
"Explorer"	1	8 Jan-26 Jan	v	v	v			Faroe-Shetland
"	3	8 Apr- 2 May	v	v		v		W.of Hebrides
"	4	12 May- 2 Jun	v	v	v			North Sea
"	5	16 Jun-17 Jul	v	v		v		Faroe-Shetland
"	9	28 Oct-21 Nov	v	v		v		(N.and W.of Scotland)

cont.

Ship and Cruise No.	Period 1970	Descript. Oceanogr. Current Measurem. Meteorology Geology, Geophys. Biology Other Observat.	Region
United Kingdom cont.			
"Clupea" cr. 2	26 Feb-24 Mar	v	v
" " 5	22 Apr-12 May		v
" " 8	16 Jul-30 Jul		v
" " 9	18 Aug-28 Aug		v
" " 10	31 Aug-23 Sep	v	v
"Mara" 2	30 Mar		v
" " 3	27 Apr-16 May	v	"
" " 10	25 Nov-10 Dec		v
(77) Sweden			
"Thetis"	2 Mar- 4 Mar	v	v
"	31 Mar- 8 Apr	v	Skagerrak
"	22 Jun-24 Jun	v	"
"	23 Nov-27 Nov	v	"
"Skagerak" IBY	12 Jan-30 Jan	v	v v
"	25 May-11 Jun	v	v v v
"	10 Aug-14 Aug	v	Skagerrak
"	17 Aug-10 Sep	v	v v
"	12 Oct-29 Oct	v	v v
			Bay of Bothnia
			Baltic

Appendix B

List of Reports on Oceanographic Observations in 1970,
Transferred to ROSCOP Forms by ICES Service Hydrographique

Ship and Cruise No.	Period 1970	Descript., Oceanogr.	Current Measurem.	Meteorology	Geology, Geophys.	Biology	Other Observat.	Region
<u>(11) Belgium</u> L.V. "West-Hinder"	1 Jan-31 Dec	v	v					South. North Sea
<u>(29) Spain</u> Coastal Stations							v	(Iberia, Baleares, Canaries)
<u>(45) Ireland</u> L.V. "Coningbeg"	1 Jan-31 Dec	v						Celtic Sea
<u>(58) Norway</u> "Peder Rønnestad" cr. 1 "G.M. Dannevig" "Asterias"	6 Feb- 7 Feb 10 Mar-15 Dec 17 Mar	v v v						Lofoten Skagerrak Lofoten
<u>(74) United Kingdom</u> N.E.R.C.								
"John Murray"	2 Mar- 7 Mar				v			Celtic Sea
"	23 Mar-13 Apr	v			v	v		—
"	23 Apr-20 May			v	v			Bay of Biscay Sea of Hebrides
"	1 Jul-15 Jul				v			Sea of Hebrides
"	30 Jul- 9 Aug					v		(Biscay, Conti- nental Slope
"	19 Aug-21 Sep	v						CINECA area
"	prob. October	v			v			Celtic Sea
"	(November				v			(Bristol Channel,
"	(4 Dec-14 Feb				v			(Isle of Wight
"Surveyor"	23 Jun-13 Jul				v			
"Vickers Venturer"	11 Jul- 1 Aug	v	v	v				Irish Sea
Not specified	17 Apr-15 May	v			v			Cardigan Bay
" "	22 May-20 Jun				v			(Moray Firth, N.E. Scotland

Ship and Cruise No.	Period 1970	Descript. Oceanogr.	Current Measurem.	Meteorology	Geology, Geophys.	Biology	Other Observat.	Region
United Kingdom cont.								
Not specified	29 Jul-17 Aug	v			v			(Dorset Coast,
" "	30 Aug- 2 Sep				v			Irish Sea
" "	1 Oct-18 Oct				v			"
" "	4 Sep-10 Oct				v			(Barra Head, (Hebrides
(90) USSR								
"Akademik Knipovich"	30 May-21 Jun	v		v		v		Norwegian Sea
"	23 Aug- 9 Sep	v						Barents Sea
"F. Nansen"	31 May-18 Jun	v		v		v		Norwegian Sea