

CRUISE SUMMARY REPORT

FOR COLLATING CENTRE USE

Centre: DOD Ref. No.:

 Is data exchange restricted Yes In part No

SHIP enter the full name and international radio call sign of the ship from which the data were collected, and indicate the type of ship, for example, research ship; ship of opportunity, naval survey vessel; etc.

Name: PolarsternCall Sign: DBLKType of ship: Research VesselCRUISE NO. / NAME PS70/ ARK XXII/1c

enter the unique number, name or acronym assigned to the cruise (or cruise leg, if appropriate).

 CRUISE PERIOD start 09/07/2007 to 25/07/2007 end
 (set sail) day/ month/ year day/ month/ year (return to port)
PORT OF DEPARTURE (enter name and country) Longyearbyen (Svalbard), NorwayPORT OF RETURN (enter name and country) Tromsø, Norway

RESPONSIBLE LABORATORY enter name and address of the laboratory responsible for coordinating the scientific planning of the cruise

Name: Alfred Wegener Institute (AWI)Address: Am Handelshafen 12, 27570 BremerhavenCountry: Germany

CHIEF SCIENTIST(S) enter name and laboratory of the person(s) in charge of the scientific work (chief of mission) during the cruise.

Dr. Michael Klages (AWI)

OBJECTIVES AND BRIEF NARRATIVE OF CRUISE enter sufficient information about the purpose and nature of the cruise so as to provide the context in which the report data were collected.

RV "Polarstern" cruise PS ARK XXII/1c

Similar to the previous cruise legs of the "Polarstern" expedition ARK XXII/1 the last subleg was also a contribution to the EU funded Integrated Project HERMES (Hotspot Ecosystem Research along the Margins of European Seas). The work concentrated at the deep-sea observatory HAUSGARTEN, a long-term observatory west off Svalbard at 79° northern latitude consisting out of 15 stations sampled at annual basis since 1999. Major aim of the cruise was to contribute to efforts within HERMES to improve our understanding of those environmental and biotic factors influencing biodiversity (species richness and community structure) on European continental margins. In particular, addressed the question why biodiversity should apparently be greatest at mid-slope depths. The cruise was planned in close cooperation with sedimentologists, physical oceanographers and biogeochemists within the HERMES team.

PROJECT (IF APPLICABLE) if the cruise is designated as part of a larger scale cooperative project (or expedition), then enter the name of the project, and of organisation responsible for co-ordinating the project.

Project name: HERMES - IPY ; The Northern MarginsCoordinating body: AWI

PRINCIPAL INVESTIGATORS: Enter the name and address of the Principal Investigators responsible for the data collected on the cruise and who may be contacted for further information about the data. (The letter assigned below against each Principal Investigator is used on pages 2 and 3, under the column heading 'PI', to identify the data sets for which he/she is responsible)

- A. Dr. Michael Klages, Alfred-Wegener-Institut (AWI), Am Handelshafen 12, 27570 Bremerhaven, Germany
- B. Dr. Eberhard Sauter, Alfred-Wegener-Institut (AWI), Am Handelshafen 12, 27570 Bremerhaven, Germany
- C. Dr. Thomas Soltwedel, Alfred-Wegener-Institut (AWI), Am Handelshafen 12, 27570 Bremerhaven, Germany
- D. Dr. Volker Ratmeyer, MARUM at University Bremen, PO Box 330440, 28334 Bremen, Germany
- E. Dr. Anders Tengberg, University of Goteburg, Department of Chemistry, 41296 Goteburg, Sweden
- F. Katja Guilini, University of Gent, Krijgslaan 281/S8, 9000 Gent, Belgium
- G. Dr. Christophe Rabouille, LSCE, BAT 12 – Ave. De la Terrasse, 91198 Gif-sur-Yvette, France

MOORINGS, BOTTOM MOUNTED GEAR AND DRIFTING SYSTEMS

This section should be used for reporting moorings, bottom mounted gear and drifting systems (both surface and deep) deployed and/or recovered during the cruise. Separate entries should be made for each location (only deployment positions need be given for drifting systems). This section may also be used to report data collected at fixed locations which are returned to routinely in order to construct 'long time series'.

PI See top of page.	APPROXIMATE POSITION						DATA TYPE enter code(s) from list on cover page.	DESCRIPTION Identify, as appropriate, the nature of the instrumentation the parameters (to be) measured, the number of instruments and their depths, whether deployed and/or recovered, dates of deployments and/or recovery, and any identifiers given to the site.
	LATITUDE			LONGITUDE				
	deg	min	N/S	deg	min	E/W		
A, C	78	34.81	N	005	02.81	E	D71, B73	Mooring
A, C	78	36.44	N	005	04.62	E	D71, B73	Mooring
A, C	79	43.79	N	004	28.10	E	D71	Mooring
A, C	79	00.82	N	004	20.62	E	D71, B73	Mooring
A, C	79	05.09	N	004	09.08	E	D71, B73	Lander
Please continue on separate sheet if necessary								

SUMMARY OF MEASUREMENTS AND SAMPLES TAKEN

Except for the data already described on page 2 under 'Moorings, Bottom Mounted Gear and Drifting Systems', this section should include a summary of all data collected on the cruise, whether they be measurements (e.g. temperature, salinity values) or samples (e.g. cores, net hauls).

Separate entries should be made for each distinct and coherent set of measurements or samples. Different modes of data collection (e.g. vertical profiles as opposed to underway measurements) should be clearly distinguished, as should measurements/sampling techniques that imply distinctly different accuracy's or spatial/temporal resolutions. Thus, for example, separate entries would be created for i) BT drops, ii) water bottle stations, iii) CTD casts, iv) towed CTD, v) towed undulating CTD profiler, vi) surface water intake measurements, etc.

Each data set entry should start on a new line – its description may extend over several lines if necessary.

NO, UNITS : for each data set, enter the estimated amount of data collected expressed in terms of the number of 'stations'; miles' of track; 'days' of recording; 'cores' taken; net 'hauls'; balloon 'ascents'; or whatever unit is most appropriate to the data. The amount should be entered under 'NO' and the counting unit should be identified in plain text under 'UNITS'.

PI see page 2	NO see above	UNITS see above	DATA TYPE Enter code(s) from list on cover page	DESCRIPTION
				Identify, as appropriate, the nature of the data and of the instrumentation/sampling gear and list the parameters measured. Include any supplementary information that may be appropriate, e. g. vertical or horizontal profiles, depth horizons, continuous recording or discrete samples, etc. For samples taken for later analysis on shore, an indication should be given of the type of analysis planned, i.e. the purpose for which the samples were taken.
A	14	days	H71	Water temperature and salinity with hull mounted sensors of the ship
A	11	stations	H10	CTD casts for conductivity, temperature and depth measurements
A,C,D,G	5	dives	B16, B18	Remotely Operated Vehicle operation for biological and geological sampling
C,F	22	stations	G04	Sediment sampling with Multi corer (100 mm diameter)
A	7	stations	G04	Macrozoobenthos sampling with large box corer (50x50 cm)
C	11	nm	G08	Ocean Floor Observing System (OFOS)
C, E	16	stations	B19, G71	Fish traps and free falling lander
B	5	stations	B19, G71	Bottom water sampling
A	7	stations	B08	Hand nets at surface for phytoplankton collection

TRACK CHART: You are strongly encouraged to submit, with the completed report, an annotated track chart illustrating the route followed and the points where measurements were taken.

Insert a tick(✓) in this box if a track chart is supplied



GENERAL OCEAN AREA(S): Enter the names of the oceans and/or seas in which data were collected during the cruise – please use commonly recognised names (see, for example, International Hydrographic Bureau Special Publication No. 23, 'Limits of Oceans and Seas').

North Atlantic, Fram Strait

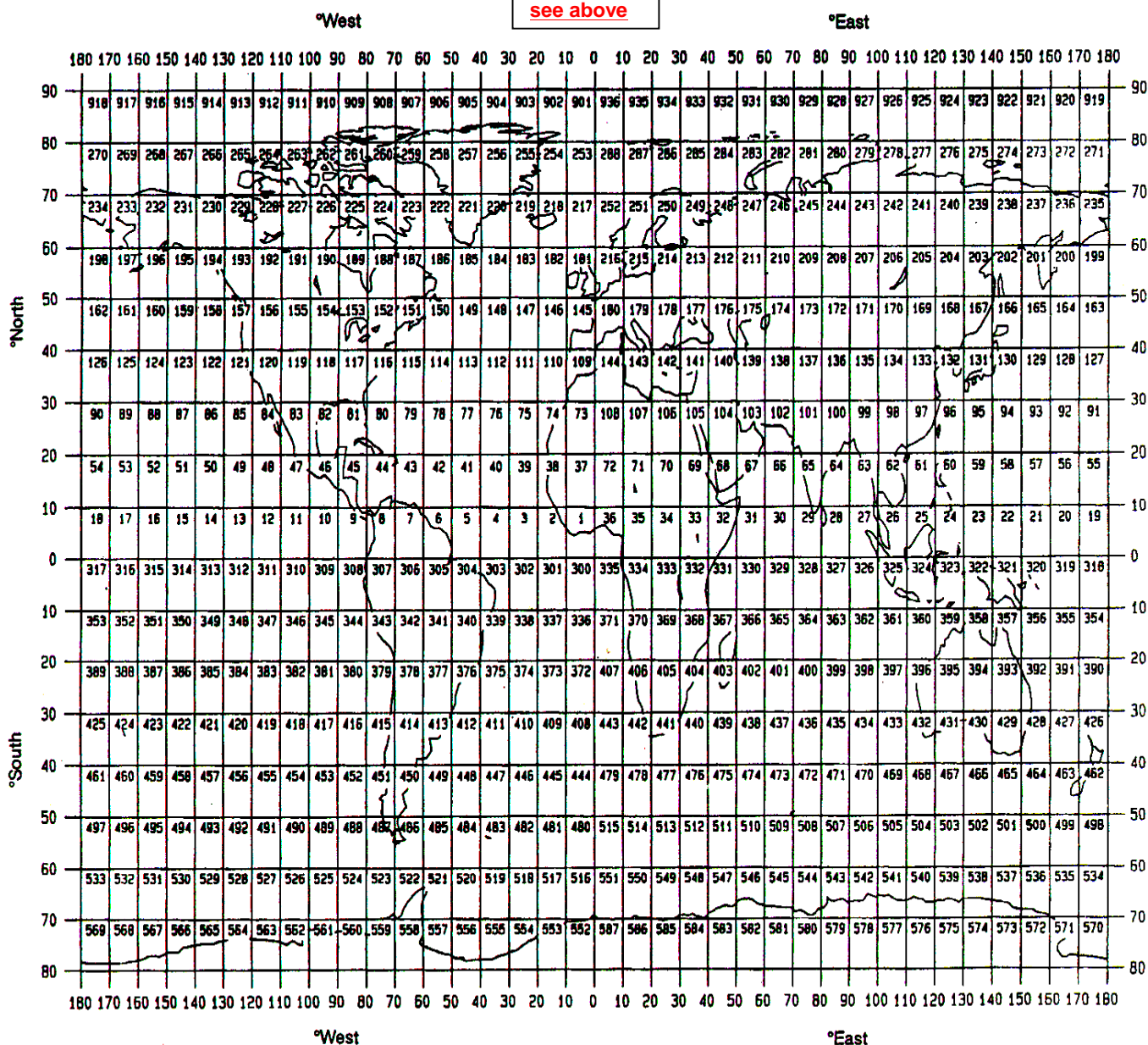
SPECIFIC AREAS: If the cruise activities were concentrated in a specific area(s) of an ocean or sea, then enter a description of the area(s). Such descriptions may include references to local geographic areas, to sea floor features, or to geographic coordinates.

Please insert here the number of each square in which data were collected from the below given chart

288

GEOGRAPHIC COVERAGE - INSERT 'X' IN EACH SQUARE IN WHICH DATA WERE COLLECTED

see above



THANK YOU FOR YOUR COOPERATION

Please send your completed report without delay to the collating centre indicated on the cover page

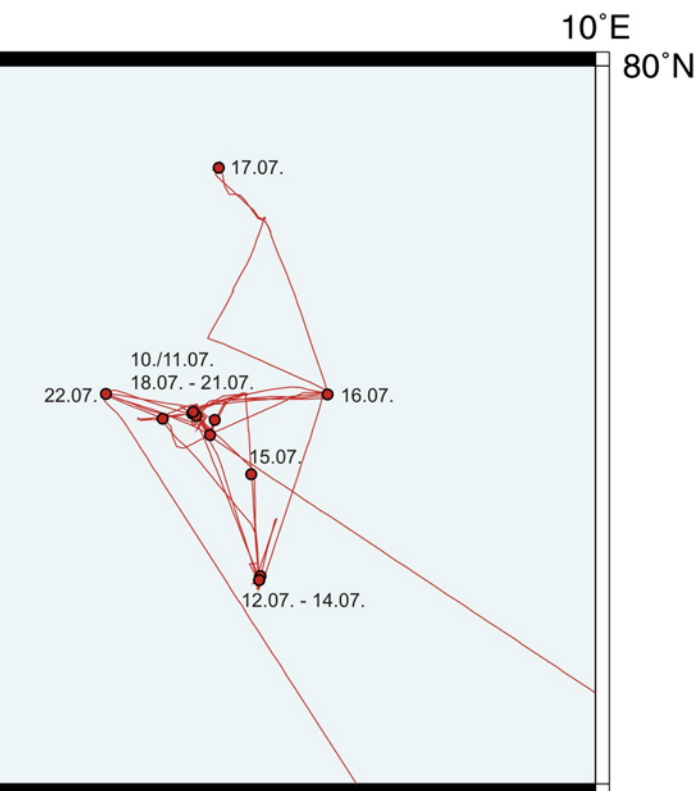
Bremerhaven - Tromsø 80°N

29.05. - 25.07.2007



AWI Hausgarten

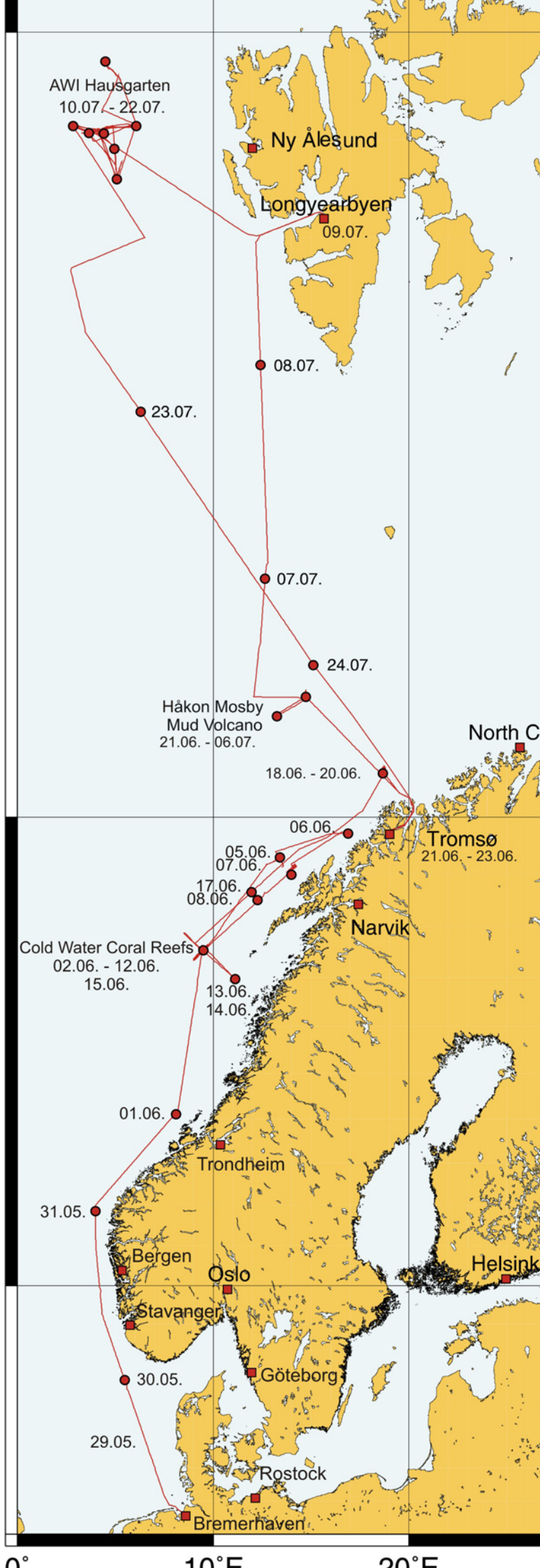
10.07. - 22.07.2007



JAGO



QUEST



CRUISE SUMMARY REPORT

FOR COLLATING CENTRE USE

Centre: DOD Ref. No.:

 Is data exchange restricted Yes In part No

SHIP enter the full name and international radio call sign of the ship from which the data were collected, and indicate the type of ship, for example, research ship; ship of opportunity, naval survey vessel; etc.

Name: PolarsternCall Sign: DBLKType of ship: Research VesselCRUISE NO. / NAME PS70/ ARK XXII/1b

enter the unique number, name or acronym assigned to the cruise (or cruise leg, if appropriate).

 CRUISE PERIOD start 23/06/2007 to 09/07/2007 end
 (set sail) day/ month/ year day/ month/ year (return to port)
PORT OF DEPARTURE (enter name and country) Tromsø, NorwayPORT OF RETURN (enter name and country) Longyearbyen (Svalbard), Norway

RESPONSIBLE LABORATORY enter name and address of the laboratory responsible for coordinating the scientific planning of the cruise

Name: Alfred Wegener Institute (AWI)Address: Am Handelshafen12, 27570 BremerhavenCountry: Germany

CHIEF SCIENTIST(S) enter name and laboratory of the person(s) in charge of the scientific work (chief of mission) during the cruise.

Dr. Michael Klages (AWI)

OBJECTIVES AND BRIEF NARRATIVE OF CRUISE enter sufficient information about the purpose and nature of the cruise so as to provide the context in which the report data were collected.

RV "Polarstern" cruise PS ARK XXII/1b

The Håkon Mosby Mud Volcano (HMMV): Cold seep mud volcano activity and it's anoxic microbial systems

This cruise leg ARK XXII/1b of RV "Polarstern" was part of the EU funded project HERMES (Hotspot Ecosystem Research on the Margins of European Seas), an integrated project aiming at research on ecosystems lying in the deeper ocean section. At the same time it contributes to the coordinated activities carried out during the International Polar Year (IPY) in 2007. The shipboard scientific party consisted out of participants from Belgium, France, Germany and Norway.

Major aim was to further improve our understanding of the cold seep ecosystem at the Håkon Mosby Mud Volcano and to characterise the environment (geological setting, sediment compositions) associated with chemosynthetic communities. Other research objectives were related to the assessment how environmental factors influence species diversity and abundance of microbial, protozoan and metazoan communities. Furthermore, the identification of how chemosynthetic communities respond to variations in fluid chemistry and flux at the sediment interface was in focus. Other objectives aimed at a better understanding of what are the consequences of environmental interactions on substrate modification, benthic diversity and ecosystem production at local and regional scales. The evaluation of the capacity of seep ecosystems to remove carbon from methane sources and the role of this process in global ocean carbon budgets was undertaken.

PROJECT (IF APPLICABLE) if the cruise is designated as part of a larger scale cooperative project (or expedition), then enter the name of the project, and of organisation responsible for co-ordinating the project.

Project name: HERMES - IPY : The Northern Margins

Coordinating body: AWI

PRINCIPAL INVESTIGATORS: Enter the name and address of the Principal Investigators responsible for the data collected on the cruise and who may be contacted for further information about the data. (The letter assigned below against each Principal Investigator is used on pages 2 and 3, under the column heading 'PI', to identify the data sets for which he/she is responsible)

- A. Dr. Michael Klages, Alfred-Wegener-Institut (AWI), Am Handelshafen 12, 27570 Bremerhaven, Germany
- B. Dr. Rainer Knust, Alfred-Wegener-Institut (AWI), Am Handelshafen 12, 27570 Bremerhaven, Germany
- C. Dr. Tomas Feseker, IFM-GEOMAR, Wischhofstr. 1-3, 24105 Kiel, Germany
- D. Dr. Frank Wenzhöfer, Max Planck Institut, Celsiusstr. 1, 28359 Bremen, Germany
- E. Dr. Volker Ratmeyer, MARUM at University Bremen, PO Box 330440, 28334 Bremen, Germany
- F. Carolina Perez-Garcia, Dpt. of Geology, University of Tromsø, Drammsveien 201, 9037 Tromsø, Norway
- G. Benedicte Ritt, IFREMER, Centre Brest, DEEP / LEP, BP 70, 29280 Plouzane, France
- H. Dr. Thomas Pape, RCOM at University Bremen, PO Box 330440, 28334 Bremen, Germany

MOORINGS, BOTTOM MOUNTED GEAR AND DRIFTING SYSTEMS

This section should be used for reporting moorings, bottom mounted gear and drifting systems (both surface and deep) deployed and/or recovered during the cruise. Separate entries should be made for each location (only deployment positions need be given for drifting systems). This section may also be used to report data collected at fixed locations which are returned to routinely in order to construct 'long time series'.

PI See top of page.	APPROXIMATE POSITION						DATA TYPE enter code(s) from list on cover page.	DESCRIPTION Identify, as appropriate, the nature of the instrumentation the parameters (to be) measured, the number of instruments and their depths, whether deployed and/or recovered, dates of deployments and/or recovery, and any identifiers given to the site.
	LATITUDE			LONGITUDE				
deg	min	N/S	deg	min	E/W			
B	67	31.75	N	009	31.06	E	G71	Moored Fish Trap
B	66	58.10	N	011	08.06	E	G71	Moored Fish Trap
B	67	30.03	N	009	24.53	E	G71	Lander with fish trap

Please continue on separate sheet if necessary

SUMMARY OF MEASUREMENTS AND SAMPLES TAKEN

Except for the data already described on page 2 under 'Moorings, Bottom Mounted Gear and Drifting Systems', this section should include a summary of all data collected on the cruise, whether they be measurements (e.g. temperature, salinity values) or samples (e.g. cores, net hauls).

Separate entries should be made for each distinct and coherent set of measurements or samples. Different modes of data collection (e.g. vertical profiles as opposed to underway measurements) should be clearly distinguished, as should measurements/sampling techniques that imply distinctly different accuracy's or spatial/temporal resolutions. Thus, for example, separate entries would be created for i) BT drops, ii) water bottle stations, iii) CTD casts, iv) towed CTD, v) towed undulating CTD profiler, vi) surface water intake measurements, etc.

Each data set entry should start on a new line – it's description may extend over several lines if necessary.

NO, UNITS : for each data set, enter the estimated amount of data collected expressed in terms of the number of 'stations'; miles' of track; 'days' of recording; 'cores' taken; net 'hauls'; balloon 'ascents'; or whatever unit is most appropriate to the data. The amount should be entered under 'NO' and the counting unit should be identified in plain text under 'UNITS'.

PI	NO	UNITS	DATA TYPE	DESCRIPTION
see page 2	see above	see above	Enter code(s) from list on cover page	Identify, as appropriate, the nature of the data and of the instrumentation/sampling gear and list the parameters measured. Include any supplementary information that may be appropriate, e. g. vertical or horizontal profiles, depth horizons, continuous recording or discrete samples, etc. For samples taken for later analysis on shore, an indication should be given of the type of analysis planned, i.e. the purpose for which the samples were taken.
A	14	days	H71	Water temperature and salinity with hull mounted sensors of the ship
A	3	stations	H10	CTD casts for conductivity, temperature and depth measurements
D,E,G	10	dives	B16	Remotely Operated Vehicle operation for biological and geological sampling
D	15	stations	G02	Sediment sampling with Multi corer (100 mm diameter)
B	3	stations	G04	Macrozoobenthos sampling with large box corer (50x50 cm)
H	9	stations	G04	Sediment core sampling with gravity corer
F	8	stations	G04	Sediment core sampling with gravity corer
H	7	stations	G08	Sediment core sampling with autoclave piston corer (keeps in situ pressure)
C	15	stations	G71, 72	Sediment temperature measurements with gravity corer with temperature loggers
A	94	nm	G74	Seafloor mapping with Hydrosweep

TRACK CHART: You are strongly encouraged to submit, with the completed report, an annotated track chart illustrating the route followed and the points where measurements were taken.

Insert a tick(✓) in this box if a track chart is supplied



GENERAL OCEAN AREA(S): Enter the names of the oceans and/or seas in which data were collected during the cruise – please use commonly recognised names (see, for example, International Hydrographic Bureau Special Publication No. 23, 'Limits of Oceans and Seas').

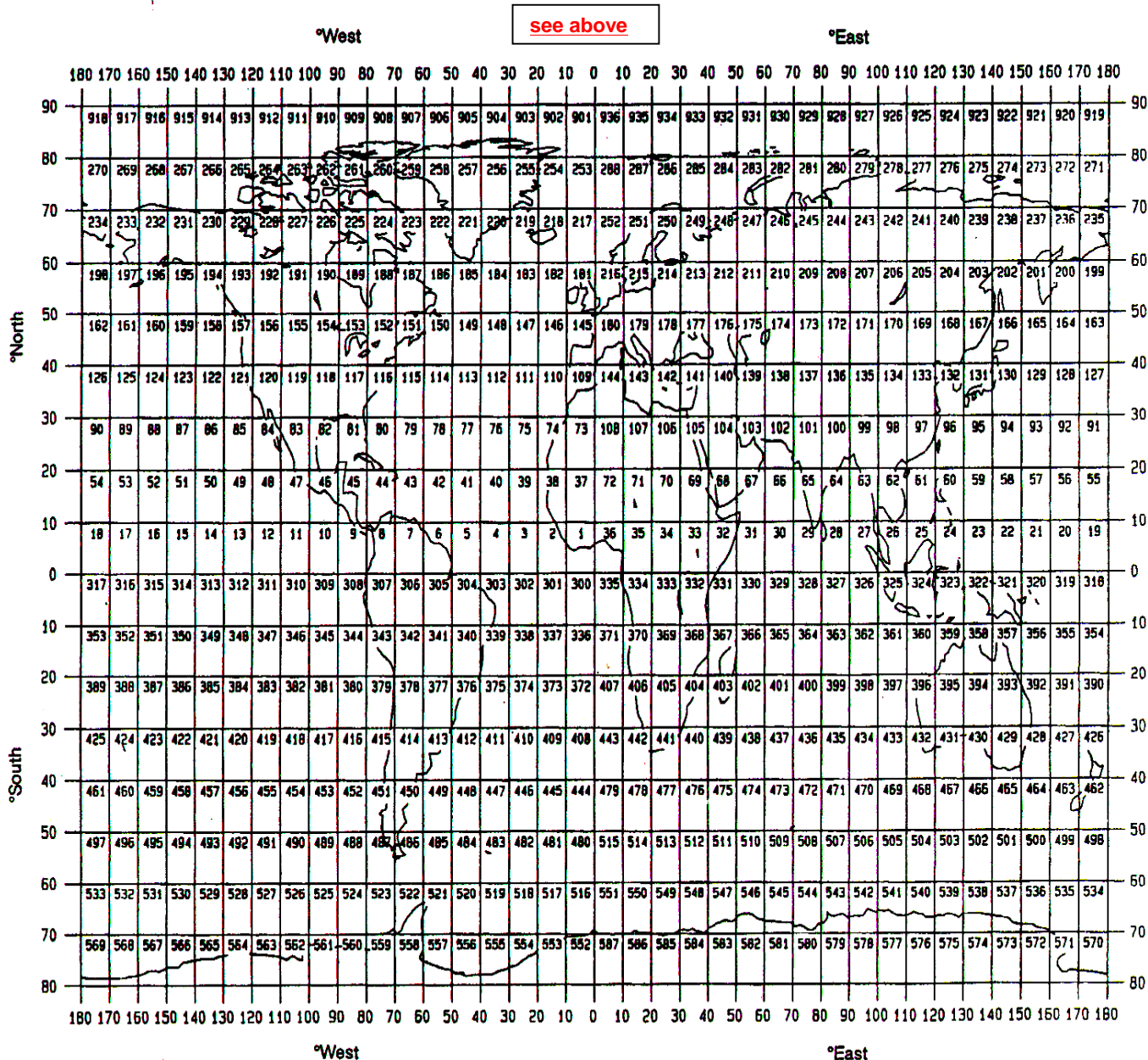
North Atlantic, Norwegian Sea

SPECIFIC AREAS: If the cruise activities were concentrated in a specific area(s) of an ocean or sea, then enter a description of the area(s). Such descriptions may include references to local geographic areas, to sea floor features, or to geographic coordinates.

Please insert here the number of each square in which data were collected from the below given chart

287

GEOGRAPHIC COVERAGE - INSERT 'X' IN EACH SQUARE IN WHICH DATA WERE COLLECTED



THANK YOU FOR YOUR COOPERATION

Please send your completed report without delay to the collating centre indicated on the cover page

