NOTIFICATION OF PROPOSED RESEARCH CRUISE
(United Kingdom)

Part A: GENERAL

1. **Name of research ship:** ALKOR, cruise AL 319

2. **Cruise dates:** 15. May 2008 - 28. May 2008

3. **A) Operating authority:**
IFM - GEOMAR
Leibniz-Institut für Meereswissenschaften
Düsternbrooker Weg 20
24105 Kiel, Germany
Phone: +49 431 600 4161 / 1542
Fax: +49 431 600 4152
e-mail: tmueller@ifm-geomar.de

4. **Owner:** see paragraph 3

5. **Particulars of ship:**

Name:	Alkor
Nationality:	German
Overall length:	55,20 m
Maximum draught:	3,95 m
BRT:	1000 BRT
Propulsion:	Diesel Electric
Call sign:	DBND
IMO:	8905880
MMSI:	211216570
Phone Inmarsat:	+870 764 549 982
Fax Inmarsat:	+870 764 549 984
E-mail:	master.alkor-b@skyfile.de

6. **Crew:**

Name of master:	Jan-Peter Lass
Number of crew:	11

7. **Chief scientists:**
Prof. Dr. Michael St. John / Dr. Bernd Christiansen
University of Hamburg
Große Elbstraße 133
22767 Hamburg, Germany
Phone: +49 40 42838 6600/6670
Fax: +49 40 42838 6618

8. **Geographical area in which the ship will operate:**
(with reference in latitude and longitude)
Area A: Northern North Sea, delimited by 56°N, 59°N, 001°W, 002°E
Area B: Central/Southern North Sea, delimited by 53°30' N, 55°30'N, 001°E, 005°E

9. **Brief description of purpose of cruise:**
This cruise will focus on investigating how hydrographic frontal systems in the North Sea impact on the distribution of plankton and benthos, thereby also affecting biological interactions. It is a pilot study of the EU project BASIN.

10. **Names and dates of intended ports of call:** None

11. **Any special logistic requirements at ports of call:** None

NOTIFICATION OF PROPOSED RESEARCH CRUISE

Part B: DETAILS

1. **Name of research ship:** ALKOR, cruise AL 319

2. **Cruise dates:** 15. May 2008 - 28. May 2008

3. **Purpose of research and general operational methods:**

a) Purpose of Research
This cruise will focus on investigating how hydrographic frontal systems in the North Sea impact on the distribution of plankton, micronekton and megabenthos, thereby also affecting biological interactions.

The following objectives will be addressed during the cruise:

Determine the location of the tidal fronts in the investigation area and assess their spatio-temporal variability, using the Video Plankton Recorder (VPR)

Resolve the upper micro- to upper mesoscale horizontal and vertical distribution and abundance of key zoo- and phytoplankton in frontal and adjacent non-frontal regions, using the Video Plankton Recorder (VPR) and the Remotely Operated Vehicle (ROV).

Resolve the variability in nutrients, phytoplankton and zooplankton biomass in frontal and adjacent non-frontal regions, using a water bottle sampler, a multispectral fluorescence sensor mounted on the CTD, a WP-2 zooplankton net and a multinet.

Quantify differences in top down effects (predation mortality) on fish larvae and juvenile fish inside and outside of frontal areas.

Investigate a possible direct or indirect effect of fronts on the distribution of benthic megafauna

b) General operational methods
- Water bottles, CTD probes
- Video observation and photography of plankton organisms
- Plankton nets
- Bottom photography and video
- Hydroacoustic recordings

4. **Attach chart showing (on an appropriate scale) the geographical area of the intended work, positions of intended stations / hydrographical sections:**
Sampling will take place within the boxes indicated on the attached map (Fig. 1). The positions of the sampling stations will depend on the actual hydrographic situation

5 a) **Type of samples required:**
Plankton net samples
Water bottle samples
Underwater microscopic video images from zooplankton organisms
Bottom photographs and video footage

5 b) **Methods by which samples will be obtained (including dredge / core / drill techniques):**
- Remotely Operated Vehicle (ROV) for *in-situ* observations of plankton and benthos
- Video Plankton Recorder (VPR), continuous transect undulating tows

- Multiple plankton net, vertical or oblique tows
- WP-2 net, (200µm ring net) vertical tows
- Bongo net (60 cm in diameter, equipped with two 335 µm nets)
- Babybongo net (20 cm diameter, equipped with 150 µm nets and a 50 µm liner)
- Multispectral fluorescence sensor (MFS) mounted on the CTD, vertical profiles
- CTD & water bottle sampler, vertical profiles
- ADCP (Acoustic doppler current profiler) continuous transects
- DOS - Deep-sea observation system (bottom photography)
- Hydroacoustic recordings, Simrad EK 500, 38kHz, on transects

6. **Details of moored equipment:** None

7. **Explosives:** None

8. **Detail and reference of:**
a) any relevant previous / future cruises:
Valdivia cruises 107, 133, 155, 180
Alkor cruises 177, 236, 237, 257, 260, 300
Heincke cruises 180, 211, 225, 228, 237

b) any previous published research data relating to the proposed cruise:
See attached reference sheet.

9. **Names and addresses of scientists of the coastal state in whose waters the proposed cruise takes place with whom previous contact has been made:**
Dr. John Pinnegar
Centre for Environment, Fisheries and Aquaculture Science
Lowestoft Laboratory, Pakefield Road, Lowestoft, Suffolk, NR33 OHT
UK
j.k.pinnegar@cefas.co.uk l

10. **State:**
a. **whether visits to the ship in port by scientist of the coastal state concerned will be acceptable:**
No port call

b. **whether it will be acceptable to carry on board an observer from the coastal state for any part of the cruise and dates and ports of embarkation / disembarkation:**
Yes, Kiel 15. May 2008 / Kiel 28. May 2008

c. **when research data from intended cruise is likely to be made available to the coastal state and if so, by what means:**
- Cruise report 3 month after finishing the research cruise
- Scientific publication within the following 3 years
- Cruise Summary Reports (fka ROSCOP) via the Deutsches Ozeanographisches Datenzentrum (DOD) within 1 month

SCIENTIFIC EQUIPMENT

11. Complete the following table – include a separate copy for each coastal state (indicate „Yes“ or „No“ if applicable) :

Marine scientific equipment used	Water depth (m)	Fisheries research	Distance of research to coast in nautical miles			
			< 3 nm	3-12 nm	12-50 nm	50-200 nm
Water bottles	< 300 m	no	no	no	yes	yes
CTD casts	< 300 m	no	no	no	yes	yes
Plankton nets	< 300 m	no	no	no	yes	yes
Video Plankton Recorder	< 300 m	no	no	no	yes	yes
Remotely Operated Vehicle	< 300 m	no	no	no	yes	yes
DOS	< 300 m	no	no	no	yes	yes

(On behalf of the Principal Scientist)

Dated: 23. January 2008

Operating Authority:

IFM-GEOMAR
Leibniz-Institut für
Meereswissenschaften
Forschungsschiffe
Düsternbrooker Weg 20
24105 Kiel

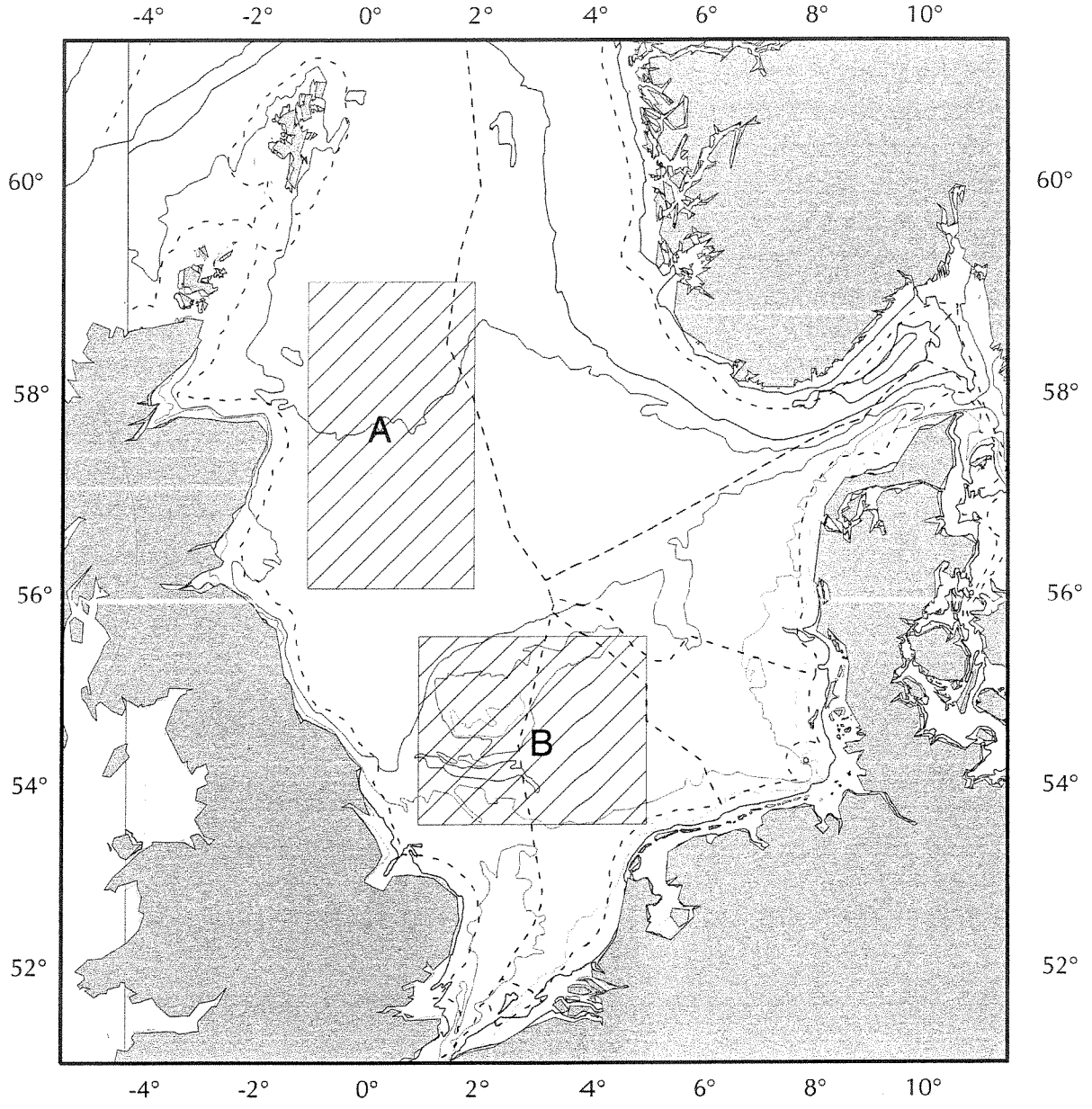

Figure 1: Alkor cruise 319. Principal regions of investigations (hatched area).

Appendix:

Previous published research data relating to the proposed cruise:

Christiansen B (1993) A television and photographic survey of megafaunal abundance in central Sognefjorden, western Norway. Sarsia 78: 1-8

Dalsgaard, J., St. John M.A., 2004: Fatty acids biomarkers: validation of food web and trophic markers using stable carbon isotope labelled fatty acids in juvenile sandeel (*Ammodytes tobianus*) IN PRESS Canadian Journal of Fisheries and Aquatic Science

Dalsgaard, J., M. St. John, G. Kattner, D. Müller-Navarra & W. Hagen, 2003: Fatty acid trophic markers in the pelagic marine environment: A synthesis of applications and critical review of suitability. Advances in Marine Biology 46, 226-340.

Dutz J (1993) Untersuchung zur Vertikalverteilung und tagesperiodischen Vertikalwanderung des Mesozooplanktons auf einer Dauerstation im Skagerrak. Diplomarbeit, IHF, Univ. Hamburg, pp. 100.

Floeter, J., Kempf, A., Vinther, M., C. Schrum, Temming A. 2005: Grey gurnard (*Eutrigla gurnadus* (L.)) in the North Sea: an emerging key predator ? Can J.Fish.Aquat.Sci., 62/8: 1853-1864.

Floeter, J. & Temming, A., 2005: Analysis of prey size preference of North Sea whiting, saithe and grey gurnard. ICES Journal of Marine Science, 62: 897-907.

Floeter, J. & Temming, A., 2003: Explaining diet composition of North Sea cod (*Gadus morhua L.*): Prey size preference vs. prey availability. Can J.Fish.Aquat.Sci. 60. 140-150.

Nielsen, Morten H., St. John M.A., 2003: Inter and intra annual variations in the onset of stratification and the timing and intensity of spring bloom in the Central North Sea in the 90's ICES Journal of Marine Science219: 384-386.

Nielsen, M.H., St. John, M.A., 2001: Modelling thermal stratification in the North Sea: Application of a 2-D potential energy model.. Est. Coast. Shelf Sci.53: 607-61

Peck, M.A., Clemmesen, C., Herrmann J.-P., 2005. Ontogenic changes in the allometric scaling of the mass and length relationship in *Sprattus sprattus*. J Fish Biol 66:882-887

Rückert, C., Floeter, J., A. Temming, 2002: An estimate of horse mackerel biomass in the North Sea, 1991-1997. - ICES Journal of Marine Science, 59: 120-130.

Schrum, C., Siegismund F. , St. John M.A., 2003: Decadal Variations in the stratification and circulation patterns of the North Sea; are the 90´s unusual? ICES Journal of Marine Science 219: 121-131.

St. John, M. A., Budgell P., Nielsen, M.H., Lucas, A., 2003: Resolving variations in the timing and intensity of the Spring Bloom in the Central North Sea during the 90's: A comparison of Remote Sensing and 2-D modelling approaches. ICES Journal of Marine Science. 219:190-199.