

## NOTIFICATION OF PROPOSED RESEARCH CRUISE

### PART A: GENERAL

1. *NAME OF RESEARCH SHIP* F.S. Alkor *CRUISE NO.* AL221
2. *DATES OF CRUISE* From: 06/06/2003 To: 24/06/2003
3. *OPERATING AUTHORITY* Institut fuer Meereskunde and der Universitat Kiel,  
Dusternbrooker Weg 20,  
D-24105 Kiel, Germany.
- Telephone: +49 431 600 0  
Facsimile: +49 431 600 1515
4. *OWNER*  
(if different from No. 3)
5. *PARTICULARS OF SHIP*
- |  |                 |
|--|-----------------|
| <i>NAME:</i>   | Alkor           |
| <i>NATIONALITY:</i>  | German          |
| <i>OVERALL LENGTH:</i>   | 55.20 metres    |
| <i>MAXIMUM DRAUGHT:</i>  | 3.95 metres     |
| <i>BRT:</i>  | 1000 BRT        |
| <i>PROPULSION:</i>   | Diesel Electric |
| <i>CALL SIGN:</i>  | DBND            |
| <i>REGISTERED PORT &amp; NUMBER:</i><br>(if registered fishing vessel) |                 |
6. *CREW*
- |                        |                |
|------------------------|----------------|
| <i>NAME OF MASTER:</i> | Walter Baschek |
| <i>NO. OF CREW:</i>    | 10             |
7. *SCIENTIFIC PERSONNEL*
- |   |   |
|---|---|
| <i>NAME AND ADDRESS OF SCIENTIST IN CHARGE:</i> | Jens Floeter,<br>Institute of Hydrobiology<br>and Fisheries Science,<br>Hamburg University,<br>Olbersweg 24,<br>D-22767 Hamburg, Germany. |
| <i>TEL NO:</i>                                  | +49 (0)40 42838 6611  |
| <i>FAX NO:</i>                                  | +49 (0)40 42838 6618  |
| <i>EMAIL:</i>                                   | jfloeter@uni-hamburg-de   |
- NUMBER OF SCIENTISTS:* 10
8. *GEOGRAPHICAL AREA IN WHICH SHIP WILL OPERATE*  
(with reference to latitude and longitude)
- 1<sup>st</sup> Cruise leg: German Bight
- |            |             |              |
|------------|-------------|--------------|
| SW corner: | 53deg 35' N | 006deg 25' E |
| SE corner: | 53deg 50' N | 008deg 10' E |
| NW corner: | 55deg 15' N | 006deg 25' E |
| NE corner: | 55deg 00' N | 008deg 10' E |
- 2<sup>nd</sup> Cruise leg: Doggerbank
- |            |             |              |
|------------|-------------|--------------|
| SW corner: | 54deg 30' N | 002deg 00' E |
| SE corner: | 54deg 30' N | 003deg 10' E |
| NW corner: | 55deg 55' N | 002deg 00' E |
| NE corner: | 55deg 55' N | 003deg 10' E |

9. *BRIEF DESCRIPTION OF PURPOSE OF CRUISE*

The cruise will be conducted within the framework of the research projects: "GLOBEC-Germany, Trophische Wechselwirkung zwischen Zooplankton und Fischen unter dem Einflub physikalischer Prozesse" and "LIFECO, Linking hydrographic frontal activity to ecosystem dynamics in the North Sea and Skagerrak: Importance to fish stock recruitment" (EUQ5RS-2000-30183).

This cruise will focus on investigating how hydrographic frontal systems in the North Sea impact the recruitment success of sprat (*Sprattus sprattus*). This ALKOR 221 cruise will be part of a two-ship survey and will be conducted in parallel with cruises of RV Heincke (1<sup>st</sup> leg, German Bight) and RV Dana (2<sup>nd</sup> leg, Doggerbank).

10. *DATES AND NAMES OF INTENDED PORTS OF CALL*

Helgoland, Germany, 15/06/2003

11. *ANY SPECIAL REQUIREMENTS AT PORTS OF CALL*

None

# NOTIFICATION OF PROPOSED RESEARCH CRUISE

## PART B: DETAIL

1. *NAME OF RESEARCH SHIP* F.S. Alkor *CRUISE NO.* AL221
2. *DATES OF CRUISE* From: 06/06/2003 To: 24/06/2003
3. *a) PURPOSE OF RESEARCH*

The cruise will be conducted within the framework of the research projects: "GLOBEC-Germany, Trophische Wechselwirkung zwischen Zooplankton und Fischen unter dem Einflub physikalischer Prozesse" (Funding: BMBF) and "LIFECO Linking hydrographic frontal activity to ecosystem dynamics in the North Sea and Skagerrak: Importance to fish stock recruitment " (EUQ5RS-2000-30183).

This cruise will focus on investigating how hydrographic frontal systems in the North Sea impact the recruitment success of sprat (*Sprattus sprattus*).

This ALKOR221 cruise will be part of a two-ship survey and will be conducted in parallel with cruises of RV Heincke (1<sup>st</sup> leg, German Bight) and RV Dana (2<sup>nd</sup> leg, Doggerbank).

The following objectives will be addressed during the cruise:

- Determine the location of the tidal front in the Doggerbank area and assess its spatio-temporal variability, using the Video Plankton Recorder (VPR), a CTD profiler and an ADCP.
- Determine the location of the tidal front and the river plume front in the German Bight and assess its spatio-temporal variability, using the Video Plankton Recorder (VPR), a CTD profiler and an ADCP.
- Resolve the upper micro- to upper meso-scale horizontal and vertical distribution and abundance of key zoo- and phytoplankton in frontal and adjacent non-frontal regions, using the Video Plankton Recorder (VPR).
- Resolve the horizontal and vertical meso-scale distribution and abundance of sprat eggs and larvae as well as other ichthyo-, zoo- and phytoplankton organisms in the German Bight and at the Doggerbank, using the Video Plankton Recorder (VPR), a Longhurst Hardy Plankton Recorder (LHPR, 200 µm, 50 µm), a 300 µm multinet and an Apstein phytoplankton net.
- Resolve the variability in nutrients, phytoplankton biomass as well as primary and secondary production and grazing rates of key zooplankton species 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 an Apstein phytoplankton net.
- Define the scales of the biological effects of the frontal zones.
- Assess growth and mortality rates of sprat larvae, using otolith and RNA/DNA techniques (analyses of frozen larvae on shore).
- Resolve the spatio-temporal variability in nutritional condition of sprat larvae as well as in lipid biomarkers of zooplankton and sprat larvae, utilizing plankton net samples.

### *b) GENERAL OPERATIONAL METHODS*

*(including full description of any fishing gear trawl type, mesh size, etc.)*

It is planned that scientific work on RV ALKOR will cover intensive fine-scale sampling of phytoplankton, zooplankton and ichthyoplankton as well as deployment of the VPR along a transect - station grid combination (see Figs. 1, 2). The centre of the hour-glass transect schemes will be set around the respective frontal zone. In order to obtain ground truth data for the validation of the VPR plankton data, three blocks of plankton net sampling with the LHPR, the WP-2, Apstein and multinet will be performed in the inshore, frontal and offshore region of each hour-glass scheme. Net sampling will be accompanied by CTD casts and phytoplankton sampling with water bottles. A multispectral fluorescence sensor mounted on the CTD will obtain pigment fluorescence

signatures as an index to the taxonomic structure of phytoplankton communities in the different water masses.

Gear

- Video Plankton Recorder (VPR), continuous transects with undulating tows.
- Longhurst Hardy Plankton Recorder (LHPR, 30 cm diameter, 200 um and 5 cm diameter, 50 um), stepped double oblique tows.
- Multinet (5x opening-closing net, 0.5m<sup>2</sup>, 300 um), stepped double oblique tows
- Apstein net (30 cm diameter, 50 um), vertical tows
- WP-2 net, (200 um ring net) vertical tows
- Multispectral fluorescence sensor (MFS) mounted on the CTD, vertical profiles
- CTD and water bottle sampler, vertical profiles
- ADCP (Acoustic doppler current profiler) continuous transects
- The back-up gear will be a Bongo (60 cm in diameter, equipped with two 335 um nets) and a Baby-Bongo net (20 cm diameter, equipped with 150 um nets and a 50 um liner).

4. ATTACH CHART

*(showing (on an appropriate scale) the geographical area of the intended work, positions of intended stations, tracks of survey lines, positions of moored/seabed equipment, areas to be fished)*

See map

5. a) TYPES OF SAMPLES REQUIRED

*(e.g. Geological/Water/Plankton/Fish/Radionuclide)*

Plankton net samples

Water bottle samples

Underwater microscopic video images of zooplankton organisms

b) METHODS OF OBTAINING SAMPLES

*(e.g. dredging/coring/drilling/fishing, etc.)*

*(When using fishing gear, indicate fish stocks being worked, quantity of each species required, quantify of fish to be retained on board)*

Gear

- Video Plankton Recorder (VPR), continuous transects with undulating tows
- Longhurst Hardy Plankton Recorder (LHPR, 30 cm diameter, 200 um and 5 cm diameter, 50 um), stepped double oblique tows
- Multinet (5x opening-closing net, 0.5m<sup>2</sup>, 300 um), stepped double oblique tows
- Apstein net (30 cm diameter, 50 um), vertical tows
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- ADCP (Acoustic doppler current profiler) continuous transects
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6. DETAILS OF MOORED EQUIPMENT

DATES: None

<u>Laying</u>	<u>Recovery</u>	<u>Description</u>	<u>Depth</u>	<u>Latitude</u>	<u>Longitude</u>
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7. ANY HAZARDOUS MATERIALS

(Chemicals, Explosives, Gases, Radioactive etc)  
(use separate sheet, if necessary)

a) TYPE AND TRADE NAME

Formalin 37% (Borax-buffered)

b) CHEMICAL CONTENT (& FORMULA)

Formalin, Methanol, Methyalaidehyd (CH<sub>2</sub> O/H<sub>2</sub> O), Borax (Dinatriumtetraborat)

**CHEMICAL COMPOSITION**

<u>CONSTITUENT</u>	<u>FORMAT</u>	<u>COMPOSITION BY WT. %</u>
Formaldehyde	HCHO	37.0
Methanol	CH <sub>3</sub> OH	7.0
Formic Acid	HCOOH	0.05 (max)
Water	H <sub>2</sub> O	By balance
Dinatriumtetraborat	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub>	Added to supersaturation

c) IMO IMDG CODE REFERENCE & UN. NO.

IMDG Code (Page no.): 8176-1

IMCO Class: 8

UN No. 2209

d) QUANTITY & METHOD OF STOWAGE ON BOARD

5 litre

Stored in a tightly closed container

Protected against physical damage

Stored in a cool, dry, well-ventilated location under deck

e) IF EXPLOSIVES GIVE DATE(S) OF DETONATION      No explosives

- Method of detonation

- Position of detonation

- Frequency of detonation

- Depth of detonation

- Size of explosive charge in Kgs

8. DETAIL & REFERENCE OF

a) ANY RELEVANT PREVIOUS/FUTURE CRUISES

Previous LIFECO and GLOBEC cruises:

Alkor cruises 180, 189, 205-10

Heincke cruises 147, 161, 168, 174, 180

Future cruises:

German GLOBEC cruises in 2003 and 2004

*b) ANY PREVIOUSLY PUBLISHED DATA RELATING TO THE PROPOSED CRUISE*

Please see attached separate reference sheet

9. *NAMES AND ADDRESSES OF SCIENTISTS OF THE COASTAL STATE(S) IN WHOSE WATERS THE PROPOSED CRUISE TAKES PLACE WITH WHOM PREVIOUS CONTACT HAS BEEN MADE*

Dr. Peter Bromley, Centre for Environment, Fisheries and Aquaculture Science, Lowestoft Laboratory, Pakefield Road, Lowestoft, Suffolk, NR33 0HT, UK

Dr. Martien Baars, Royal Netherlands Institute for Sea Research, PO Box 59, 1790 AB Den Burg, Texel, The Netherlands

10. STATE

*a) WHETHER VISITS TO THE SHIP IN PORT BY SCIENTISTS OF THE COASTAL STATE CONCERNED WILL BE ACCEPTABLE*

Yes

*b) PARTICIPATION OF AN OBSERVER FROM THE COASTAL STATE FOR ANY PART OF THE CRUISE TOGETHER WITH THE DATES AND PORTS FOR EMBARKATION/DISEMBARKATION*

Yes

*c) WHEN RESEARCH DATA FROM THE INTENDED CRUISE IS LIKELY TO BE MADE AVAILABLE TO THE COASTAL STATE AND BY WHAT MEANS*

Yes, 2006, via ICES and DOD

**PART C: SCIENTIFIC EQUIPMENT**

COASTAL STATE: United Kingdom  
 PORT CALL: No port call intended  
 DATES:

11. COMPLETE THE FOLLOWING TABLE - SEPARATE PAGE FOR EACH COASTAL STATE  
 (indicate "Yes" or "No")

LIST SCIENTIFIC WORK BY FUNCTION e.g. MAGNETOMETRY GRAVITY DIVING SEISMICS BATHYMETRY SEABED SAMPLING TRAWLING ECHO SOUNDING WATER SAMPLING U/W TV MOORED INSTRUMENTS TOWED INSTRUMENTS	WATER COLUMN INCLUDING SEDIMENT SAMPLING OF THE SEABED	FISHERIES RESEARCH WITHIN FISHING LIMITS	RESEARCH CONCERNING THE NATURAL RESOURCES OF THE CONTINENTAL SHELF OR ITS PHYSICAL CHARACTERISTICS	DISTANCE FROM COAST		
				WITHIN 12 NM	BETWEEN 12 AND 200 NM	(CONTINENTAL SHELF WORK ONLY)  BEYOND 200 NM BUT WITHIN THE CONTINENTAL MARGIN
	CTD & MFS	No	No	No	Yes	No
	ACDP	No	No	No	Yes	No
	Water bottle-sampler	No	No	No	Yes	No
	Video Plankton Recorder (VPR)	No	No	No	Yes	No
	WP-2	No	No	No	Yes	No
	Bongo	No	No	No	Yes	No
	Baby-Bongo	No	No	No	Yes	No
	Apstein net	No	No	No	Yes	No
	Multinet	No	No	No	Yes	No
	LHPR	No	No	No	Yes	No

(On behalf of the Principal Scientist)

Dated 24 February 2003

**N.B. IF ANY DETAILS ARE MATERIALLY CHANGED REGARDING DATES/AREA OF OPERATION AFTER THIS FORM HAS BEEN SUBMITTED, THE COASTAL STATE AUTHORITIES MUST BE NOTIFIED IMMEDIATELY.**