

**APPLICATION FOR CONSENT TO CONDUCT MARINE  
SCIENTIFIC RESEARCH IN AREAS UNDER NATIONAL  
JURISDICTION OF THE UNITED KINGDOM**

**Date:** 14.02.2019

***1. General Information***

- 1.1 Ship and cruise number:** Magnus Heinason Cruise 1920
- 1.2 Sponsoring institution:**  
**Name:** Havstovan  
**Address:** PO Box 3051, Nóatún, FO-110 Tórshavn  
Faroe Islands  
**Name of director:** Dr. Eilif Gaard
- 1.3 Scientist in charge of project:**  
**Name:** Dr. Karin Margretha H. Larsen  
**Address:** Havstovan  
PO Box 3051, Nóatún  
FO-110 Tórshavn  
Faroe Islands  
**Telephone:** + 298 353900  
**Telefax:** N/A
- 1.4 Scientist from UK with knowledge of the project:**  
**Name:** Dr. Barbara Berx  
**Address:** SOAFD Marine Laboratory  
375 Victoria Road, PO Box 101  
Aberdeen AB11 9DB
- 1.5 Submitting officer:**  
**Name:** Dr. Karin Margretha H. Larsen  
**Address:** Havstovan  
PO Box 3051, Nóatún  
FO-110 Tórshavn  
Faroe Islands  
**Telephone:** + 298 353900  
**Telefax:** N/A.

## ***2. Description of Project***

### **2.1 Nature and objectives of the project:**

Monitor long-term changes of hydrography and plankton in the waters surrounding the Faroe Islands. CTD sections and ADCP moorings in the Faroe-Shetland Channel are in collaboration with the Marine Scotland (Marine Laboratory in Aberdeen). This work is partly funded by the Danish Ministry of Energy, Utilities and Climate through the Dancea project FARMON II and will contribute to the European Union H2020 project Blue-Action, under grant agreement No 727852.

### **2.2 Relevant previous or future research cruises:**

|      |             |                 |
|------|-------------|-----------------|
| 2017 | 15.02-22.02 | Magnus Heinason |
| 2017 | 18.05-25.05 | Magnus Heinason |
| 2017 | 07.06-14.06 | Magnus Heinason |
| 2018 | 10.02-21.02 | Magnus Heinason |
| 2018 | 16.05-23.05 | Magnus Heinason |
| 2018 | 29.08-05.09 | Magnus Heinason |
| 2019 | 11.02-20.02 | Magnus Heinason |
| 2019 | 05.06-12.06 | Magnus Heinason |
| 2019 | 28.08-04.09 | Magnus Heinason |

### **2.3 Previously published research data relating to the project:**

Berx, B., Hansen, B., Østerhus, S., Larsen, K. M., Sherwin, T., and Jochumsen, K. 2013. Combining in-situ measurements and altimetry to estimate volume, heat and salt transport variability through the Faroe Shetland Channel. *Ocean Sci.*, 9, 639–654, 2013. [www.ocean-sci.net/9/639/2013/](http://www.ocean-sci.net/9/639/2013/). doi:10.5194/os-9-639-2013.

Hansen, B., Poulsen, T., Húsgrarð Larsen, K. M., Hátún, H., Østerhus, S., Darelius, E., Berx, B., Quadfasel, D., and Jochumsen, K.: Atlantic water flow through the Faroese Channels, *Ocean Sci.*, 13, 873-888, <https://doi.org/10.5194/os-13-873-2017>, 2017.

Larsen, K.M., Hátún, H., Hansen, B., Kristiansen, R, 2012. Atlantic water in the Faroe area: sources and variability. doi: 10.1093/icesjms/fss028.

Østerhus, S., Woodgate, R., Valdimarsson, H., Turrell, B., de Steur, L., Quadfasel, D., Olsen, S. M., Moritz, M., Lee, C. M., Larsen, K. M. H., Jónsson, S., Johnson, C., Jochumsen, K., Hansen, B., Curry, B., Cunningham, S., and Berx, B.: Arctic Mediterranean Exchanges: A consistent volume budget and

trends in transports from two decades of observations, *Ocean Sci. Discuss.*, <https://doi.org/10.5194/os-2018-114>, in review, 2018.

Østerhus, S., Turrell, W. R., Jónsson, S., and Hansen, B. 2005. Measured volume, heat, and salt fluxes from the Atlantic to the Arctic Mediterranean. *Geophysical Research Letters*, 32, L07603, doi:10.1029/2004GL022188.

### *3. Methods and Means to be Used*

#### **3.1 Particulars of vessel:**

**Name:** FRV Magnus Heinason **Nationality:** Faroese  
**Owner:** Føroya Landsstýri (The Local Faroese Government)  
**Operator:** Havstovan  
**Overall length:** 44.5 m **Maximum draught:** 4.8 m  
**Net tonnage:** 184.9 **Gross tonnage:** 455  
**Propulsion:** Diesel  
**Cruising speed:** 10 kn **Maximum speed:** 11 kn  
**Call sign:** OW 2252  
**Registered port and number:** TN 407  
**Method and capability of communication:** Radio-telephone  
**Name of master:** Dánial J. Lydersen  
**Number of crew:** 10  
**Number of scientists on board:** 2

**3.2 Aircraft or other craft to be used in the project:** N/A

#### **3.3 Particulars of methods and scientific instruments:**

| Types of samples and data | Methods to be used  | Instruments to be used |
|---------------------------|---------------------|------------------------|
| Water                     | CTD + bottle sample | CTD + Rosette          |
| Plankton                  | Vertical hauls      | Plankton net           |
|                           |                     |                        |

**3.4 Indicate whether harmful substances will be used:** NO

3.5 **Indicate whether drilling will be carried out:** NO

3.6 **Indicate whether explosives will be used:** NO

#### *4. Installations and Equipment*

**Details of installations and equipment** (dates of laying, servicing, recovery; exact locations and depth):

None

#### *5. Geographical Areas*

5.1 **Indicate geographical areas in which the project is to be conducted** (with reference in latitude and longitude):

Generally, CTD observations with water and plankton samples will be occupied along the standard sections shown in the attached chart1 within the area

60°13' N-64°30' N  
08°35' W-01°53' W

On this cruise (1920) we will occupy these CTD stations in British waters:

|     |              |             |
|-----|--------------|-------------|
| S15 | 60° 26.80' N | 4° 36.33' W |
| S16 | 60° 22.85' N | 4° 30.60' W |
| S17 | 60° 17.50' N | 4° 27.50' W |
| S18 | 60° 13.75' N | 4° 17.13' W |

|     |              |             |
|-----|--------------|-------------|
| E09 | 61° 21.00' N | 3° 10.02' W |
| E10 | 61° 13.98' N | 2° 40.02' W |
| E11 | 61° 10.98' N | 2° 25.02' W |
| E12 | 61° 09.30' N | 2° 17.52' W |
| E13 | 61° 07.98' N | 2° 10.02' W |
| E14 | 61° 06.00' N | 2° 01.50' W |
| E15 | 61° 04.02' N | 1° 52.98' W |

**5.2 Attach chart(s) at an appropriate scale showing the geographical areas of the intended work and, as far as practicable, the positions of intended stations, the tracks of survey lines, and the locations of installations and equipment.**

1 chart attached

### ***6. Dates***

**6.1 Expected dates of first entry into and final departure from the research area of the research vessel:**

The ship is expected to be in UK waters for about one day in the period:

Entry: 15.05.2019

Exit: 22.05.2019

**6.2 Indicate if multiple entry is expected:**

No

### ***7. Port Calls***

**7.1 Dates and names of intended ports of call in the United Kingdom:**

No intended port call

**7.2 Any special logistical requirements at ports of call:**

N/A

**7.3 Name/address/telephone of shipping agent (if available):**

N/A

## *8. Participation*

### **8.1 Extent to which UK will be enabled to participate or to be represented in the research project:**

The Marine Scotland Laboratory in Aberdeen (Dr. Barbara Berx) is participating in the project. Additional observers are welcome aboard.

### **8.2 Proposed dates and ports for embarkation/disembarkation:**

Tórshavn, Faroe Islands at beginning and end of cruise.

## *9. Access to Data, Samples and Research Results*

### **9.1 Expected dates of submission to UK of preliminary reports which should include the expected dates of submission of the final results:**

Six months from conclusion of cruise.

### **9.2 Proposed means for access by UK to data and samples:**

By cruise report

### **9.3 Proposed means to provide UK with assessment of data, samples and research results or provide assistance in their assessment or interpretation:**

All data submitted to ICES and direct delivery to The Marine Scotland Laboratory, Aberdeen, c/o Dr. Barbara Berx

### **9.4 Proposed means of making research results internationally available:**

In scientific journals and at ICES Working groups

## *10. Scientific Equipment*

**Coastal State**    United Kingdom

**Port Call**        No

*Indicate "Yes" or "No"*

**Dates**            N/A

| <u>LIST SCIENTIFIC WORK BY FUNCTION</u><br>eg: magnetometry, gravity, diving, seismics, bathymetry, sea bed sampling, trawling, echo sounding, water sampling, u/w TV, moored instruments, towed instruments | Water column including sediment sampling of the sea bed | Fisheries research within fishing limits | Research concerning the natural resources of the Continental Shelf or its physical characteristics | Distance from coast within 12 nms | Distance from coast between 12-200 nm | (Continental Shelf work only)<br>Beyond 200 nm but within the Continental margin |
|--|---|--|--|-----------------------------------|---------------------------------------|--|
| Water sampling   | Yes   | No                                       | No   | No                                | Yes                                   | No   |
| Plankton sampling  | Yes   | No                                       | No   | No                                | Yes                                   | No   |

*Karin Margretha H. Larsen*

Dated 14. February 2019

**NB: 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**

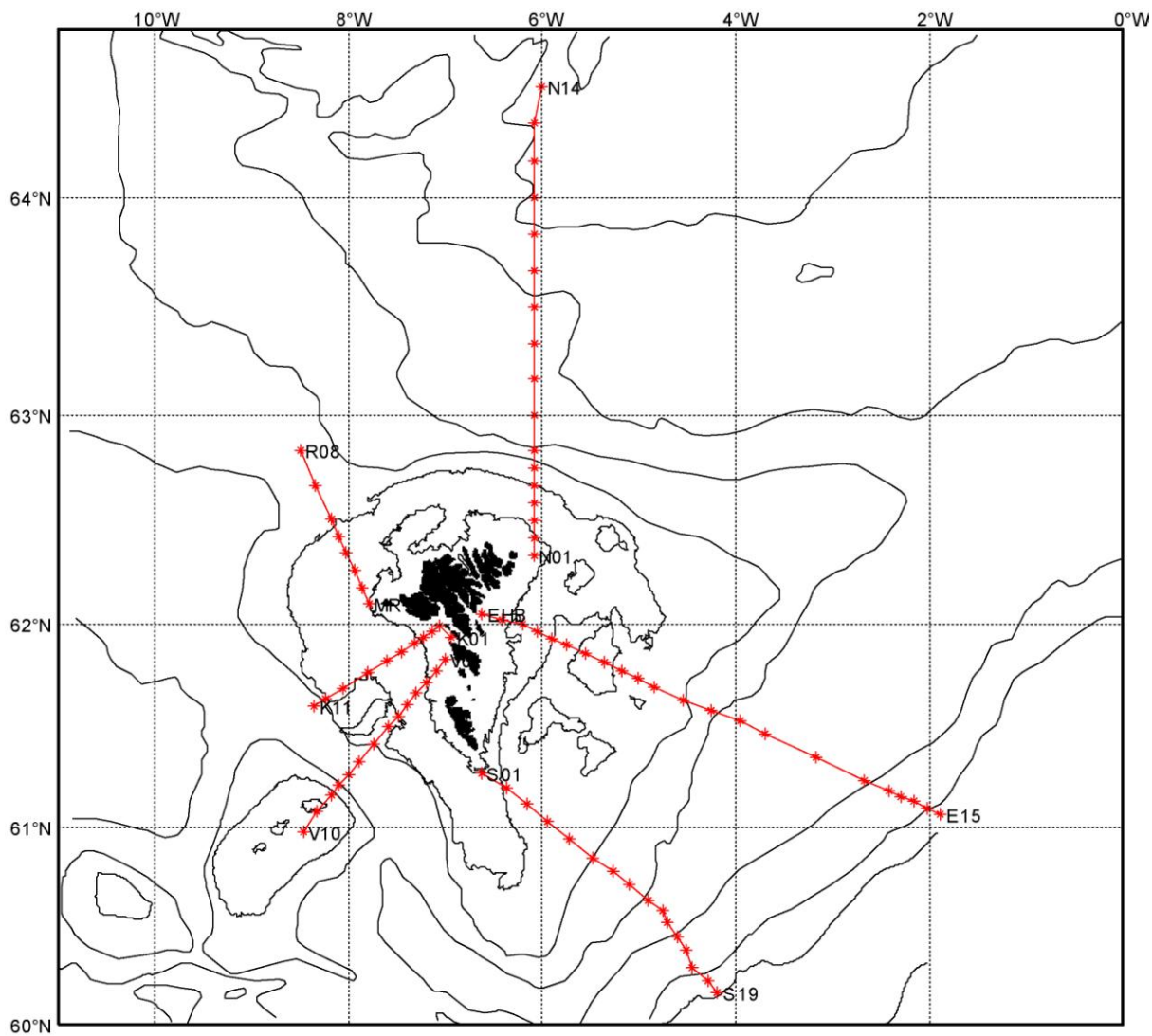


Chart1, showing the standard sections (red lines – red stars indicate stations) along which CTD observations, water and plankton samples are acquired. Start and end stations on each section are indicated.