



HORIZON 2020
Research and Innovation action
Grant Agreement No. 730965



ARICE: Arctic Research Icebreaker Consortium:
A strategy for meeting the needs for marine-based research
in the Arctic

Deliverable 4.5. Handbook on cruise prerequisites to
access ARICE PRVs

Submission of Deliverable

Work Package	1
Deliverable no. & title	4.5. Handbook on cruise prerequisites to access ARICE PRVs
Version	1.1
Creation Date	04/03/19
Last change	05/08/2019
Status	<input checked="" type="checkbox"/> Draft <input checked="" type="checkbox"/> WP lead accepted <input checked="" type="checkbox"/> Executive Board accepted
Dissemination level	<input type="checkbox"/> PU-Public <input type="checkbox"/> PP- Restricted to programme partners <input type="checkbox"/> RE- Restricted to a group specified by the consortium <input checked="" type="checkbox"/> CO- Confidential, only for members of the consortium
Lead Beneficiary	CSIC-UTM
Contributors	<input checked="" type="checkbox"/> 1 – AWI, <input checked="" type="checkbox"/> 2 – SPRS, <input checked="" type="checkbox"/> 3 – NPI, <input checked="" type="checkbox"/> 4 – ULAVAL, <input checked="" type="checkbox"/> 5 – UAF/CFOS, <input type="checkbox"/> 6 – AP, <input type="checkbox"/> 7 – CSIC-UTM, <input type="checkbox"/> 8 – CNR, <input type="checkbox"/> 9 – WOC, <input type="checkbox"/> 10 – IOPAN, <input type="checkbox"/> 11 – FMI, <input type="checkbox"/> 12 – CNRS, <input type="checkbox"/> 13 – NERC-BAS, <input type="checkbox"/> 14 – DTU-AQUA
Due date	28/02/2019
Delivery date	05/08/2018

1. Abstract

This deliverable addresses the necessary requirements to embark any of the ARICE research vessels as part of the Transnational Access Program. Taking these requirements into account is important to ensure that the embarking parties are properly informed in order to ease the logistic organization. Detailed information on each of the specific vessels is included in the Annex.

2. Requirements to be completed by the Embarking Team

2.1 Personnel information

Research vessels will require a full list of embarking participants. All embarking participants must provide the following information:



ARICE Embarking team

Participant nº	Full name	Nationality	Country	ID	Passport Nº	Pass. date of expire	Date of birth	Place of birth	Gender	Telephone	e:mail	Emergency Contact	Emergency Telef/mail	Food Allergies	Home institution
1															
2															
3															
4															
5															
6															
7															

In addition,

- a passport copy is required for embarking.
- in case of an emergency a contact person with contact details has to be provided.

2.2 Immigration Control

All project participants on board of a particular vessel must check the (visa) requirements needed for the entry into the country of embarkation and disembarkation. This is especially important when embarking/disembarking in USA or Canada, and if non-EU citizens traveling to a European country.

More information regarding visa requirements can be found at:

USA - <https://travel.state.gov/content/travel/en/us-visas.html>

Canada - <https://www.canadianeta-visa.com/es/application>

EU (Schengen) - <https://www.schengenvisainfo.com>

2.3 Medical certificate

Operators of a research vessel may require a medical certificate stating that the participant is in good physical condition. In all cases a medical questionnaire must be completed by each participant, and this questionnaire must contain the relevant information regarding food allergies or special diets among other information.

2.4 Safety & Training

It is not necessary to have any special marine training to embark as a researcher any of the ARICE vessels, although in all of them there will be sessions related to safety on board and the exercises necessary for the familiarization of the personnel with the use of evacuation routes, emergency rafts, evacuation boats, immersion suits, etc.

All personnel working on deck must wear their own safety shoes. Safety gear such as hard hats and personal floatation are provided by the ship.

2.5 Insurance:

Although a special insurance is not required for embarking the ARICE vessels, it is highly advisable to book a (private) accident and international health insurance. In some cases, health or illness problems that require intervention or, in the worst-case evacuation, must be paid by private means. In these cases, having an insurance is essential for participants.

2.6 Cargo Information

All shipped material must be properly packed and prepared on pallets in order to be received and loaded on board correctly. The following actions must take in place:

- The volume and the weight of the goods must be accurate as the information is critical for the safety of the vessel,
- Label each box or parcel (contact the vessel operator for up-to-date labelling information/templates and deadlines),
- Distinguish between export items or reimported,
- Prepare documentation (Invoice/Packing List) as accurate as possible,
- Hazardous material or chemicals should be declared as appropriate and in their MSDS (Material Safety Data Sheet),
- Keep in mind deadlines to provide the shipping documents to the operator.

LIST OF ANNEXES

ANNEX I – IB ODEN

ANNEX II – CCGS AMUNDSEN

ANNEX III – R/V SIKULIAQ

ANNEX IV – R/V POLARSTERN

ANNEX V – R/V KRONPRINS HAAKON

ANNEX VI – MSV FENNICA

ANNEX I - IB ODEN



**SWEDISH POLAR
RESEARCH SECRETARIAT**
POLARFORSKNINGSSEKRETARIATET

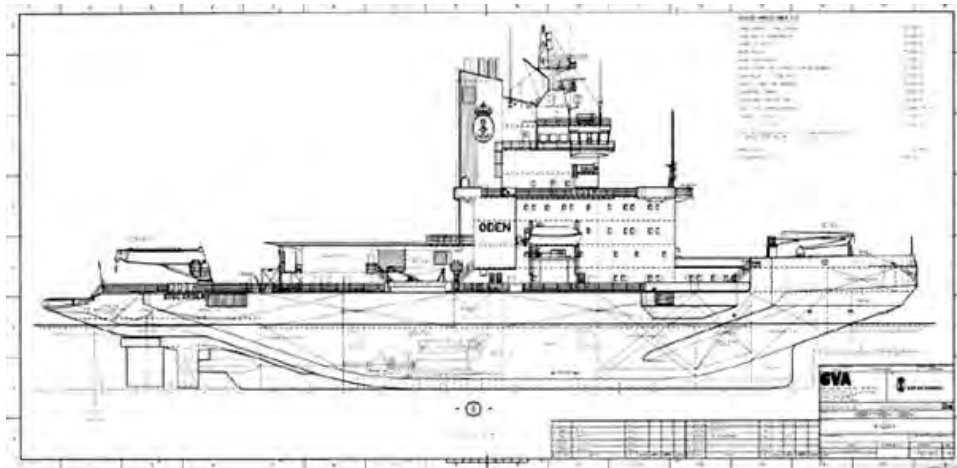
Introduction

Oden is one of eight icebreakers operated by the Swedish Maritime Administration. The vessel is designed for escort, icebreaking and for Arctic research operations with non-limited trade areas. The icebreaker is also a research platform with a very flexible layout and can carry scientific equipment, container/van labs, frozen storage and equipment for geological sampling, oceanography, meteorology and other disciplines.

Götaverken Arendal delivered Oden in January 1989. Oden is built for a service life of 35 years and has carried out icebreaking in the Baltic and in expeditions to the Arctic and Antarctica. Oden has reached the North Pole on several expeditions.

In 2000, extensive work was carried out in order to adapt Oden to scientific expeditions. Amongst other things, a new laboratory and a sea water intake were built. In 2007, an EM 122 multi beam echo sounder was installed for bottom processes and seafloor morphology studies.

1. Main specifications and facilities



Length, LOA 107.7 m
Beam, amidships 25 m
Beam, main reamer 29.4 m
Beam, turning reamer 31.2 m
Draught 7-8.5 m
Displacement max 13 000 tonnes
Gross 9438 GRT
Engine power 18 MW
Max speed 16 knots
Max cruising range 27 000 M/13.5 knots
Crew <22
Icebreaking capability 2 (1) metres at 3 (9) knots
Endurance >100 days
Steel thickness max 60 mm
Arctic ice-class CAN POLAR 20
Computerised engine control (ABB)

1.A Communications on board

A separate document will be issued with detailed instructions on communication, email and telephone to and from Oden.

2. Before Boarding

Person of contact

Åsa Lindgren, PhD

Head of Department

Phone: +46 8 450 25 16

Mobile: +46 70 785 56 01

E-mail: asa.lindgren@polar.se

Ship information at: <https://polar.se/om-polarforskning/isbrytaren-oden/>

2.A Personal information and data

A complete information data set will be required for personal. Information shall be collected prior to the cruise by the cruise leader.

2.B Medical Check-up

Scientists should be of good health to participate and a medical declaration form and health questionnaire will be required. During the cruise there will be a doctor on board, but it is necessary for each researcher to bring any specific medication they may need.

2.C Safety Training

A training certificate it is not mandatory for scientist embarking Oden.

2.D Visa Procedures

Depending on scientists' nationalities, Visas may be required when joining the vessel. As the application process can be quite lengthy in some countries, this requirement should be considered early on in the cruise planning process.

Follow EU (Schengen) - <https://www.schengenvisainfo.com>

2.E Insurance

All expedition participants must have an adequate insurance policy that provides coverage in the event of personal injury.

2.F Cargo. Invoice and Packing List

All the material to be shipped must be properly packed and prepared on pallets in order to be received and loaded on board correctly. Depending the port of embark shipment could change. SPRS will inform in advance where the parcels should be send.

3. After Boarding

3.A Training

Odens safety organisation is described in the Muster List and in the emergency instructions. These are announced on board in the "Odenplan" lobby and on all floors.

No special safety certificate is required for boarding but for your own safety, it's advisable to study the safety organisation and the training manual thoroughly. The training manual is available at "Odenplan" and contains details about how to use the safety equipment.

"Odenplan" will be deliver well in advance of the scientific cruise to IP's.

3.B Medical Facilities and Issues

There is no regular time for visiting the ship's doctor. An appointment can be made when this is necessary. You can call the doctor on tel. 424.

The ship's supply of medicines is based on needs for emergency situations. You cannot expect to get your personal medicine on board if you have forgotten it at home.

3.C Restrictions aboard

Alcohol and drugs

Participants in expeditions are not allowed to bring any alcohol on board.

In accordance with the ship's alcohol policy, the acceptable blood alcohol level is limited to 0.02 % while working and 0.04% during leisure time.

Abuse, possession, distribution and reselling of narcotic drugs are strictly forbidden and will lead to consequences. The Master of the vessel is responsible for taking legal action.

Smoking

Outdoor smoking is allowed on the port side and starboard side, from the entrances to the “Odenplan” and aft, up to where the superstructure ends. Note, there will be restrictions regarding outdoor smoking during air sampling. Indoor smoking is only allowed in the “smoking room”. It is absolutely forbidden to smoke in cabins or containers/vans, due to the risk of fire.

3.D Daily Schedule

A very important part of life aboard are the meals. All meals are served in the mess room, which is situated on the port side of the main deck.

As the space in the mess room is somewhat limited, please avoid loitering after finishing your meal. Please proceed to the lounge on the starboard side for coffee and tea.

Breakfast	07:45-08:15
Coffee	10:00-10:15
Lunch	12:00-12:30
Coffee	15:00-15:15
Dinner	17:45-18:15

In addition to this, there will be leftovers in the refrigerator in the mess room.

There is a bar in the lounge on the starboard side. To pay for the beverages in the bar you have to sign on a list. Before the end of the cruise you will be billed according to what you have signed for. You can preferably pay in Swedish kronor (SEK). Foreign currency (USD) is accepted and exchanged, but at a lower rate. No credit cards accepted, so please bring enough cash!

Plan of the day, POD and coordination meeting

The POD is produced daily after the morning meeting, listing special events, announcements and any changes in the daily routines. The POD is displayed on the Oden information system.

3.E Waste Collection and disposal

In order to preserve the environment, the rules stated in MARPOL 73/78 regarding special areas, is followed on board Oden - even though the Arctic is not specified as a “special area”. All waste produced on the ship is collected in the garbage container.

On all decks there are small waste containers intended for: Paper, glass, plastic and metal.

There are also containers for aluminium cans in the saunas and at “Odenplan”. Containers for other waste are located on the main deck.

Hazardous materials

Do not discharge any dangerous substances or liquids from laboratories into the ship’s sewage system. They must be collected in suitable containers until they can be dealt with in a proper manner. Hazardous materials must be dealt with according to the Laboratory Safety Plan.

3.G Life on board (general)

“Respect” is a keyword during the expedition. The working and living environment on the ship shall be characterised by respect for differences and open respectful communication.

There are many people on board during the expedition. All berths are generally occupied and the cruise is long. Some participants will live in a four-bed cabin, share a bathroom and live close together for eight weeks. This means we have to treat each other with respect. Respect for the ones you share a cabin with, their habits and wishes. Outside the cabin, this goes for your scientist colleagues and crew in all areas of the ship; in the mess, the bar, the sauna, on the bridge, etc. Experience from previous expeditions tells us that things run smoothly most of the time. However, we are all responsible for making life on board as agreeable as possible. Everybody is encouraged to show consideration and the Principal Investigators have an active role in helping the scientists not only to work, but also to live together, with the rest of the crew.

This also means that disrespectful behaviour or harassment of any kind can never be accepted. If there are any indications that someone has been subjected to victimisation, harassment or discrimination, the Captain and the Research Support Coordinator will act immediately. The incident will be investigated and action will be taken.

Cabins

You are responsible for keeping your cabin clean and tidy. During an expedition, everyone aboard will share a cabin with one, two or three other people. This puts the emphasis on an individual's ability to adapt to the situation and to respect others. Also, for safety and hygiene reasons, it is of the utmost importance that the cabins are properly cleaned once a week. There are cleaning lockers on all decks. Sheets and towels are changed in the laundry on Deck 2, there will be a schedule for change of linen. The cabins will be inspected and approved by the crew of the ship before you can disembark.

The toilet system is of a vacuum type and is less robust than a fixed shore system, therefore:

Do not flush any other paper than toilet paper

Do not flush any other objects, including sanitary napkins and tampons.

Cinema

Oden has a cinema on the main deck. A daily programme of films will be shown, according to a schedule announced at "Odenplan". The equipment in the cinema may only be handled by the crew. Cinema capacity is 21 people per performance.

Clothing

In order to make life on board as pleasant as possible for everybody, we need to follow some rules, based on common sense.

Outdoor clothing is to be used outdoors only.

Use indoor shoes, slippers for instance, inside the ship.

Caps and hats are not allowed in the mess room.

Boiler suits or other protective clothing are not allowed in the mess room.

For Saturday dinner we usually dress up a little, in order to have a break in the ordinary weekday routine.

Gym

There are several different facilities for recreation and physical exercise. Oden is equipped with a gym on the main deck. You will find a ping-pong table, rowing machine, treadmill, punch ball, yoga mats, exercise bicycles and other typical weights room items. After using the gym, please don't forget to restore and secure the equipment.

Laundry

Expedition participants and crew use the laundry on Deck 3. The laundry on Deck 2 may also be used by participants and crew, but only between 19.00 and 06.00, since this laundry is the ship's "official laundry", for sheets and towels, during daytime.

Due to limitations on fresh water during expeditions, it is very important to only run full washing machines. Please coordinate your laundry with other participants if you don't have enough laundry to fill up a machine on your own. Detergent is provided at the laundry facilities and there is no need to bring any on board.

Library

Oden has a library with various kinds of books and parlour games. The library is situated on the main deck by the mess room on the port side. Do not stay too long in the library - this is the only place where the crew can read their personal email.

Sauna

The saunas on Decks 1 and 3 will be open daily. Don't forget to sign for the beverages you take from the refrigerator in the sauna area. Before the end of the cruise you will be billed according to what you have signed for. You can preferably pay in Swedish kronor (SEK). Foreign currency (USD) is accepted and exchanged, but at a lower rate. No credit cards accepted, so please bring enough cash!

Special duties

On certain occasions, the galley personnel will need help with various tasks in the housekeeping area. For the sake of keeping the interior tidy, participants in expeditions are expected to assist in the daily cleaning routines. If this will be necessary during your stay on board, the Chief Officer will give instructions.

Ship's shop

The ship's shop opening hours will be announced at "Odenplan". An assortment of sweets, lemonade, hygiene articles, etc. are offered. Before the end of the cruise you will be billed according to what you have signed for. You can preferably pay in Swedish kronor (SEK). Foreign currency (USD) is accepted and exchanged, but at a lower rate. No credit cards accepted, so please bring enough cash!

4. On-board Safety

4.A Safety Arrangements (general)

Odens safety organisation is described in the Muster List and in the emergency instructions. These are announced on board in the "Odenplan" lobby and on all floors.

The Muster List announces all details of what to do in case of an alarm. Remember to put on warm clothes and go to your muster station whenever an alarm sounds. At the muster station, you will receive further orders and, if necessary, get a survival suit.

For your own safety, it's advisable to study the safety organisation and the training manual thoroughly. The training manual is available at "Odenplan" and contains details about how to use the safety equipment.

Familiarisation training for supernumeraries (those on board not belonging to the ship's crew) will take place soon after embarking. During the expedition there will be drills and security briefings. You are a part of the expedition's safety organisation and must, in that capacity, follow the instructions issued by the Master or his deputy.

4.B Alarms

Memorise the shortest way out and to your muster station. You must be able to find these, even if the accommodation is dark and filled with smoke. You must also learn the location of the nearest fire alarm button and fire extinguisher. What to do in case of an alarm is described on the Muster List.

Never lock the cabin door from the inside.

4.C Research Works

Equipment

Prior to installing scientific equipment to the ship's systems (electrical, antennas, water, pneumatic system, etc.) over and above what has been done in conjunction with the pre-expedition mobilisation period, approval must be given by the Electrical Engineer or the Chief Engineer. Before starting equipment that needs a lot of electrical power, you must check if power is available at that time.

Oden is equipped with a standard ship electrical net (AC 220 volts 50 Hz, ground and zero is separated). Please contact the Electrical Engineer or the Chief Engineer if you have doubts whether the equipment is compatible.

Security at work

Procedures for safety during work on deck should be organised between the Chief Officer and the Principal Investigator. The Principal Investigator, or his/her deputy, is always responsible when there is work with dangerous equipment. Routines for the different actions should be drawn up. There will be training for all involved before the different actions are carried out. The ship's cranes are operated only by the crew.

Common rules for all on board

All personnel working with a lifting device must wear a helmet and wear boots with steel toes.

All personnel working on the aft deck at the aftermost part (the deck specially designed for towing ships) must have a lifeline and wear a life jacket/approved flotation suit.

The bridge must be informed before any work takes place on the aftermost part of the ship.

All work on board must follow the security rules and recommendations from the Swedish Work Environment Authority. In short, this means:

Every project group of scientists is responsible for having full knowledge and control, 24 hours a day, of the whereabouts of each and every scientist in their group. This means that everybody in the group must know where colleagues are working and that they are not left alone, unable to call for assistance in case of accident or incident.

In the case of bad weather conditions, there may occasionally be restrictions about how to use the laboratories. This will be specified by the Master.

Scientific work in laboratories

All scientific work in the laboratories, and safety regulations with regard to this, must be organised and taken care of by the scientists themselves and ultimately the Principal Investigator of the project, who has overall responsibility to the Master.

Securing for sea

Oden will roll and pitch in rough weather and the ice will cause vibration during icebreaking. Keeping your personal and scientific gear secured for sea cannot be emphasised enough. Improperly secured gear can cause damage or injure people. The ship does not take any responsibility for improperly stowed/secured gear. If you have any questions regarding proper stowing/securing procedures, please contact one of the deck officers. The transits have, by experience, been found to be especially dangerous.

Limited access areas***Deck area***

The aftermost part of the deck is specially designed for towing merchant ships and has no railing; therefore no one may enter the area without permission from the officer on watch. When working in the aftermost part it is mandatory to use a life jacket and a lifeline. It is forbidden to remain on the aft deck during towing operations.

Bridge

All on board are welcome to visit the bridge. The starboard and port bridge wings are used for the navigation of Oden. Therefore, ask the Master or the Navigating Officer whether it is OK to visit.

Engine area

In order to ensure the safety of the ship and people on board, the engine area must not be accessed without permission from the Duty Engineer.

Helicopter deck

Only authorised helicopter personnel have clearance to remain on the helicopter deck when a helicopter is about to take off or land. Everybody else engaged in the operation must wait in the starboard staircase until they have been given permission to enter the helicopter deck.

Slips, trips and falls

During the expedition there is a risk of slipping, tripping and falling accidents. It's easy to trip on steps, pipes, electrical leads or changes in floor levels on the ship. Slippery surfaces such as polished, wet or greasy floors and ice on deck can be a hazard. Many slips, trips and falls can easily be prevented by awareness and preparedness. Therefore; always use the handrail when using the stairs, be aware of an icy deck, wear appropriate footwear and make sure you know which equipment is needed for performing certain work phases.

Work on the ice

To make sure that all scientific work that involves personnel on the ice is organised and well planned, all activities must be described in the Scope of Work document. All work on ice shall follow the established guidelines. Before setting foot on the ice, permission must be given from the bridge. It is the bridge and the Officer on Watch that decides whether it is safe or not, considering the weather and ice conditions. It is also the Officer on Watch who decides whether firearms for polar bear protection are needed.

ANNEX II – CCGS AMUNDSEN



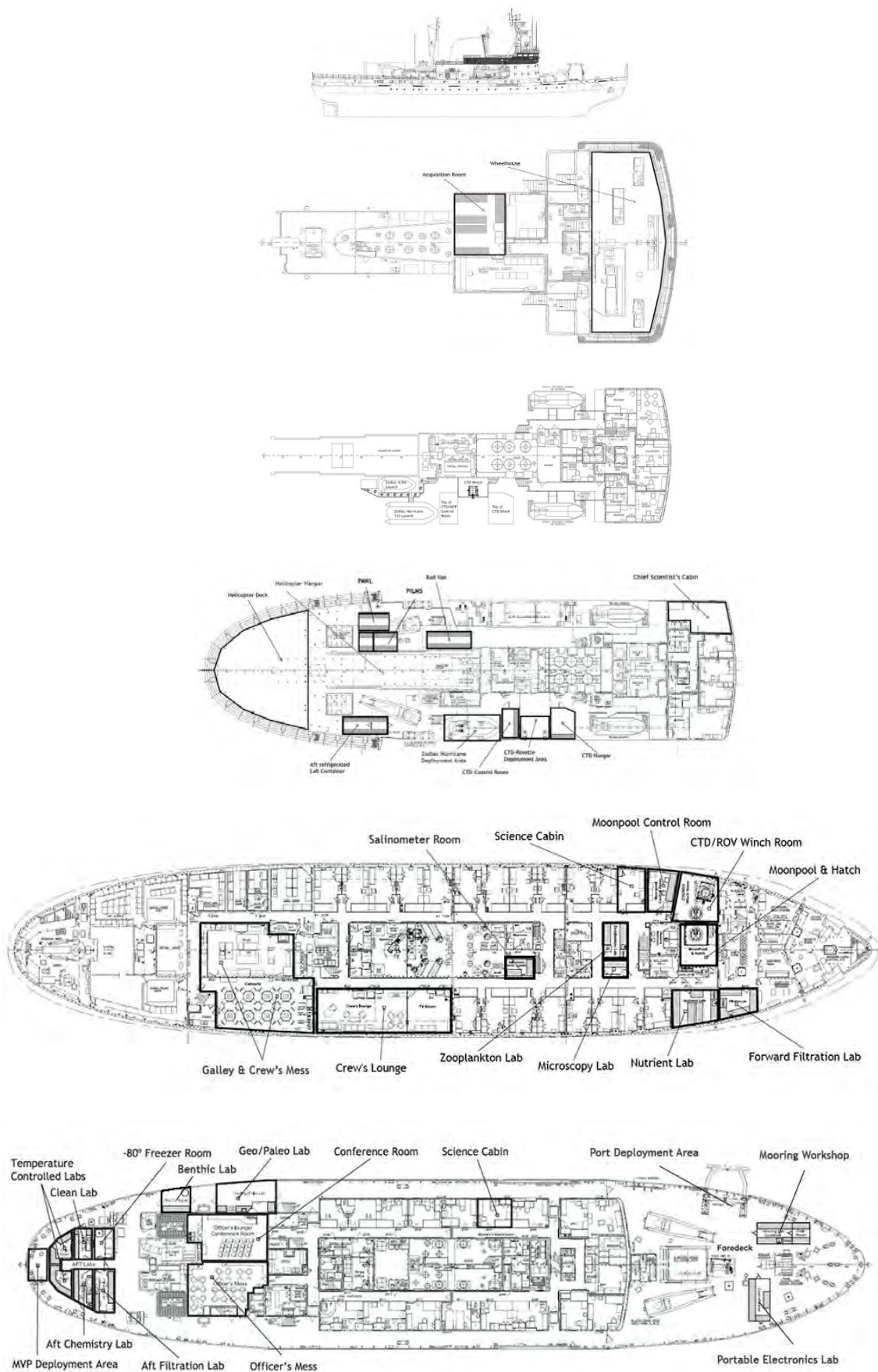
AMUNDSEN
SCIENCE 

Introduction

The Canadian research icebreaker CCGS *Amundsen* is a Class-1200 medium-size icebreaker based in Quebec City, Canada. The electric diesel engines of the CCGS *Amundsen*, which generate 11 155 kW, and the adjusted shape of the hull allows for navigation at 3 knots in more than 1 metre thick ice. The vessel was designed to have great autonomy at sea: it can travel 15 000 nautical miles at cruising speed without calling port. The CCGS *Amundsen* is an efficient, versatile and cost-effective ship to conduct scientific research of international calibre in the Canadian Arctic. For a full description of the ship's facilities and specifications, see the following web site: <http://www.amundsen.ulaval.ca/>

1. Main specifications and facilities

- Name: CCGS Amundsen (formerly the CCGS Sir John Franklin)
- Year built: 1979 (Burrard dry dock, B.C.)
- Year retrofit: 2002-2003 (Les Méchins dry dock, QC)
- Ice class: Arctic class 3
- Overall length (m): 98.33
- Breadth (m): 19.51
- Draft (m): 7.18
- Displacement (t): 5 911
- Power (kW): 11 155
- Propulsion: 6 diesel electric generators 2950 hp (18 000 hp diesel)
- Shaft horsepower: 13 960 hp (15 000 hp with overload)
- Cruise range (nm): 15 000 @ 14 knots
- Maximum speed: 16.5 knots
- Maximum capacity: 80 persons
- Crew: 30 to 40
- Science berths: 40
- Deck cranes: 4
- Helideck/hangar: Yes
- Helicopter: BO 105
- Hydraulic A-frames: 2
- Scientific winches: 5
- Acoustic well: Yes
- Internal moon pool: Yes
- Dynamic positioning system: Yes
- Launches/barge: 3
- Internal communications network
- Internet access: Yes (E-mail at sea system)
- NOAA SCS server system



CCGS Amundsen General Arrangement

1.A Communications on board

PHONE: Every cabin on board is equipped with a phone that can be used to receive calls or make outgoing calls.

When on the Amundsen you can be reached at: 011-88-162-145-4091 (Iridium)

Receiving phone calls on board the Amundsen should be limited to emergencies. The call will first be received at the wheelhouse and then be patched through to you.

Participants will be able to make outgoing phone calls using prepaid Stratos phone PINs (same as prepaid phone cards). These phone PINs will be available at the canteen on board the Amundsen for around 28\$ CAN for 40 minutes.

EMAIL: All incoming or outgoing emails will go through the Email at Sea system. This system uses a satellite bandwidth connection and provides standard Internet access. To send/receive emails, you will need to connect to your Web Access email account (e.g. Outlook Web Access) or use a free Web-mail service like Hotmail or Gmail.

2. Before Boarding

Person of contact:

Alexandre Forest - Executive Director

alexandre.forest@as.ulaval.ca

Amundsen Science 1045 avenue de la Médecine, Local 4075

Université Laval, Québec (QC), G1V 0A6

T: 1-418-656-2340

C: 1-581-305-2344

F: 1-418-656-2334

Anissa Merzouk, Ph.D. - Marine Research Coordinator

Amundsen Science

1045, Avenue de la Médecine

Pav. A.-Vachon, Room 4075

Université Laval, Québec (Qc)

G1V 0A6, Canada

Tel: 1-418-656-2356

Cell:1-581-994-6356

Fax: 1-418-656-2334

Ship information at: <http://www.amundsen.ulaval.ca/home.php>

Equipment specifications and descriptions can be found on the Amundsen Science website at [CCGS Amundsen scientific equipment and labs](#)

2. Operational and logistical meeting

Based on the selected user programs, the recommendations of the User Advisory Committee and the various scheduling constraints, a preliminary expedition schedule and plan are elaborated. In December, an invitation is sent to participating user programs and research teams to participate in the annual expedition planning workshop that is held in Quebec City in late January or early February. The aim of this Planning Workshop is to present and refine the general science plan for the Amundsen Expedition, and it is the occasion for the participants to ensure that the science needs are addressed and that the logistics involved (sampling stations, operations to be carried out, berths...) are discussed. In preparation for the workshop, participants are provided with the following documents, which they are required to review and send back with the relevant information:

- Preliminary Amundsen Expedition Schedule
- Draft Amundsen Expedition Plan

- Preliminary list of sampling stations/sites
- Description of sampling operations at typical stations
- Template of Participants List to submit berths requests for each Leg
- Template for Rosette water sampling requests

2.A Personal information and data. Security clearance

The research icebreaker *Amundsen* is a Canadian Coast Guard ship. The Canadian Coast Guard, in compliance with Canadian Government Security Policy (Standard on Security Screening), requests that all participants of the Amundsen Expedition obtain a “Reliability Status” security clearance before boarding a Canadian Coast Guard Ship (CCGS). The Reliability Status (and the security screening process) is MANDATORY in order to be allowed access to the CCGS *Amundsen*. Apply as soon as you have confirmation that you will participate in the Amundsen Expedition and if possible at least 2 months before embarking on the ship. For Canadians, a “Reliability Status” could be granted within 10 working days of receiving the security clearance application if the documents are sent electronically and there are no criminal records or convictions. However, in cases where participants have been convicted of a prior offence (or your name is the same as a person with a prior conviction), the screening process can take up to two months. The screening process will take longer for foreign visitors or if you have lived abroad. Account for delays in obtaining the police certificates from foreign countries.

Full Guidelines and Form to apply for a Security Clearance will be provided to individual projects.

A Personal Information Form will be provided and must be send as soon as possible, we need to receive the completed Personal Information Form for each member of your delegation. Please save the Form with your family name in the file name (ex: PIF 2019_Merzouk.xlsx) and send it to Alexandre.Forest@as.ulaval.ca and Anissa.Merzouk@as.ulaval.ca.

A Familiarization Guide for Supernumerary Personnel Carried aboard CCG ships is sent to all participants involved in the Amundsen Expeditions and should be read or reviewed before embarking. This document gives information on the preparation before boarding and about life on-board, including many aspects of health and safety, as well as emergency situation procedures.

2.B Medical Check-up

All Fleet personnel must undergo a medical examination; all other personnel will want to know of any medical problems they may have that could be detrimental to their safety. Though each ship has one or several persons on board with first-aid training, access to medical care is generally limited. Should you experience health problems prior to the ship's scheduled departure, please consult a medical practitioner concerning any precautions that should be taken, and ensure that it be made clear that it will not be possible to quickly reach doctors or paramedics during the voyage. Before the ship sails, the Commanding Officer must be notified of any health problem or medication requiring special attention. All supernumerary personnel must fill out and submit a "Statement of Medical Fitness" form before the ship sails.

Statement of Medical Fitness. This form provides a means by which to ensure that supernumerary personnel who are aboard CCG ships are able to endure normal conditions of life at sea and that their health status will not endanger the health and safety of the other people aboard.

2.C Safety Training

The Familiarization Guide sent to all participants involved in the Amundsen Expeditions provides information on the preparation before boarding and about life on-board, including many aspects of health and safety, as well as emergency situation procedures.

All personnel involved in science operations should review the following points with their supervisor or team leader and be familiar with them before boarding the *Amundsen*:

- The location of the major work areas and laboratories.
- Their tasks and responsibilities on-board the ship.

- The plans concerning gear and safety equipment needed for their team's project.

The following training and certifications may be required for scientific participants depending on the tasks and operations they will perform. Participants are responsible of ensuring they fulfil the requirements and certifications for their tasks before they board the ship.

- Helicopter ditching course
- WHMIS training certificate in the use, storage and disposal of hazardous materials
- Radioisotope Training Certificate
- Firearm operation training and license
- Unmanned Aerial Vehicle (drone) operation training and license
- First Aid training
- Fall prevention for scientific personnel (given on-board by a competent person).
- Safe Working Instructions (SWI) Meetings relevant to each science operation.

2.D Visa Procedures

Follow www.canada.ca/en/immigration-refugees-citizenship/services/visit-canada.html

2.E Insurance

All expedition participants must have an adequate insurance policy that provides coverage in the event of personal injury, evacuation or loss of or damage to property.

2.F Cargo Invoice and Packing List

The Scientific Mobilization of the CCGS *Amundsen* is an activity of about two-week duration held every year prior to the departure of the vessel for the Canadian Arctic. During this period, all user programs mobilize their equipment and scientific instruments on-board the vessel in Quebec City, Canada. Mobilizing equipment to the vessel during the expedition while the ship is in the Arctic is not possible. Exceptionally, a second shorter mobilization could be possible in another south Port, like in Dartmouth, Nova Scotia. The exact timing of the mobilization period varies from year to year.

Participants shipping or bringing cargo to the Coast Guard base in Quebec City must:

- Fill in all required fields of the Cargo Manifest indicating the leg on which the cargo will be used, the number of items shipped, the weight of each item (i.e. each box, whether on a pallet or as a stand alone item), the volume of each item (i.e. each box, whether on a pallet or as a stand alone item), and the waybill number if the cargo is shipped.
- If there are any dangerous goods or hazardous materials, list them in Tab 2 of the Cargo Manifest form and indicate where they are located in the shipment (pallet or box #). A Material Safety Data Sheet (MSDS) MUST be provided with the shipment for all dangerous goods listed in the cargo manifest.
- Send a copy of this cargo manifest to my attention before the cargo arrives at the Coast Guard base and before 3 May. A cargo manifest must also be produced for chemicals and gas cylinders ordered and shipped to the Coast Guard base.
- Provide a cargo manifest for all shipments. For instance, if you are sending your cargo in 2 separate shipments, I should receive 2 cargo manifests detailing these shipments.
- Attach a copy of your cargo manifest to your shipment.
- Identify dangerous goods on the cargo manifest and have them shipped according to the Canadian Transport of Dangerous Goods Act. Fragile goods and equipment should also be packaged accordingly and clearly identified.

The reception of goods and equipment must be done without any cost to the CG base in Quebec City (no collect on delivery). The cargo will be securely stored in the Coast Guard warehouse Dépôt 18 until it is loaded on the ship.

EQUIPMENT AND SHIPMENTS WITHOUT A CARGO MANIFEST WILL NOT BE LOADED ON BOARD THE SHIP. THIS ALSO APPLIES TO ALL EQUIPMENT BROUGHT DIRECTLY TO THE SHIP BY LOCAL RESEARCH TEAMS.

Cargo Manifest and Labelling will be provided for individual projects

3. After Boarding

3.A Training

At the beginning of each Leg of the Expedition, a meeting is held with all scientific personnel once everyone is on board the vessel. This meeting includes the following:

- Welcome from the Commanding Officer and Chief Scientist
- Introduction of science participants
 - Presentation by the Chief Scientist including safety on-board
 - Familiarization and Safety Orientation Tours
 - Emergency Drill
 - Safe Work Procedures for scientific operations
 - Safe Working Instructions (SWI) Meetings to review science operations procedures and safety protocols
 - Use and disposal of chemicals, and location of MSDS
 - Helicopter familiarization for those conducting dedicated helicopter operations
- Briefings by Commanding Officer and Senior Officers

3.B Restrictions aboard

Alcohol and Drugs

CCG ships and aircrafts are multi-useable resources that can be assigned, with minimal notice, to conduct an escort, enforce fisheries regulations, limit damages or assist in Search and Rescue (SAR) activities. In view of the importance of these roles and responsibilities, persons are prohibited from carrying out their duties on board a CCG ship or aircraft when under the influence of psychoactive substances. This policy applies to supernumerary personnel as well as to the ship's crew.

- All persons aboard are required to be aware of the rules of conduct and behaviour expected of them. No person shall be impaired by a psychoactive substance at any time while on-board a CCG ship or aircraft.
- No person shall perform, or attempt to perform, any duties while impaired by a psychoactive substance. A person may consume a legal prescription or non-prescription drug, provided it does not cause the person to become impaired.
- Any person found to be in contravention of this policy is subject to disciplinary action up to, and including, discharge.
- The Commanding Officer has the absolute authority to remove any person who is in violation of this policy from the vessel or aircraft.

Alcohol consumption on-board the ship can be prohibited in some instances and one should consult the Commanding Officer's Standing Orders to be aware of the prevailing policy on alcohol for a particular Leg or Expedition.

Smoking

A detailed policy on smoking on board the ship is set down in the Commanding Officer's Standing Orders. Smoking in bed is strictly prohibited and smoking may also be banned on open decks during certain operations. As well, smoking may be banned in certain areas where flammable hazardous materials are stored or used. Check with the ship's authorities for the various bans.

Hazardous materials

The Workplace Hazardous Materials Information System (WHMIS), a nationally regulated program, was established under the Hazardous Products Act. The objective of the system is to ensure that workers who handle hazardous material or who work near such material are able to obtain information and training regarding the use and handling of these materials. The CCG requires that there be material safety data sheets (MSDS), written by the supplier, accompanying all hazardous material used by its employees. The MSDSs are kept in binders provided for this purpose at designated WHMIS stations. For more information on the WHMIS and MSDSs, contact your supervisor.

The ship's authorities must be advised when dangerous merchandise is to be on-loaded so as to be able to comply with the regulation governing the shipping of dangerous goods.

3.C Life on board (general)**Cabins**

Cabins are designated for single or double occupancy. Depending on the circumstances, they can be occupied by two or more persons. The Commanding Officer makes the arrangements in this regard with the scientist-in-charge or the program leader. The Department's policy is to assign the multiple occupancy cabins to persons of the same sex. On large ships, the toilet and shower may be located inside the cabin; otherwise, they are outside the cabin or on another deck.

Clothing

It is customary on Coast Guard vessels to have a Sunday dress code where officers will wear their formal uniform at dinner. Scientists are encouraged to also wear 'dressier' clothing for Sunday dinners: dress or casual pants/skirt, a button shirt/blouse and shoes. For the dinner on 31 August, we recommend a similar (Sunday) dress code, nothing too formal.

Ship's shop

Don't forget to bring some Canadian cash. You will need some for the canteen, the bar, wine service, Amundsen souvenirs, caps, t-shirts, etc. Personal cheques are also accepted at the canteen.

4. On-board Safety**4.A Safety Arrangements (general)**

When you board, the Commanding Officer will ask you to sign the ship's book and one of the officers or a designated crew member will show you around the ship to familiarize you with it and with the applicable safety rules, as well as indicate the location of your lifeboat station.

Try to learn your way around the ship as early as possible, in particular, the area around your cabin and your usual work place, as well as the bridge, the galley, the laundry room, fire extinguishers and lifebuoys. Learn what the best and second-best paths are for you to take to your designated emergency station and take note of means of evacuating inside spaces in the event of a fire.

Read the information posted on the bulletin boards regarding the ship's First Aid Attendants, the meal hours, the use of laundry facilities, etc. You may want to ask if there are any information pamphlets on the ship available for people who have just boarded.

Boat and Fire Drills

Boat and fire drills are held regularly. When an emergency situation arises, or when a drill is held, everyone must follow the established orders. In your cabin, you will find a card near your bunk indicating the location of your muster station, in the event of an emergency. It is important that you fully understand what is indicated on the card. You will also be provided with this information during your initial safety tour of the ship upon your arrival.

Emergency warning signal: an alarm signal that rings continually, at times accompanied by the ship's whistle, when appropriate. Insofar as possible, this signal is followed by an announcement over the PA system (or by another suitable means of communication), indicating the emergency location and providing the crew with brief instructions.

Lifeboat station muster signal: a succession of seven or more short blasts on the ship's whistle, followed by one long blast, accompanied by the general alarm which is sounded in the same sequence. A general announcement may be made over the ship's PA system. All supernumerary personnel are to take part in the drills.

You are responsible for knowing the location of:

Your designated muster station – indicated on the card posted near your bunk. The information that appears on this card should be mentioned to you during initial safety tour of the ship when you first embark.

Your lifejacket – kept in your cabin. It should be equipped with a whistle and a battery-operated strobe light. The lifejacket is a critical safety accessory; do not leave it lying around the ship or use it as a cushion or pillow, etc. If your lifejacket is not in satisfactory condition or if it is missing from your cabin, please notify the mate on duty so that he or she may look into the matter. Knowing the proper way of wearing your lifejacket is vital; remember that you must wear it during all drills and in all real emergency situations.

Immersion suits – their location on the ship varies from one vessel to the other. You should be advised of where they are located during your initial safety tour of the vessel when you first embark.

4.B Personal Safety Gears

Each participant is responsible for bringing his or her own working clothes. Steel toe boots, hard hats and safety glasses are mandatory for working on the open decks of the Amundsen. A CCG approved Mustang type flotation suit is also mandatory for conducting deployment and recovery operations from the ship's open decks. Without Personal Protective Equipment, the Commanding Officer can restrict your access to some sections of the ship. The Canadian Coast Guard recommends the use of CSA-approved, type II hard hats. Good gloves are also very important for working on deck or in the Zodiac/Launch. Immersion suits will be provided to participants who need to use the helicopter, Zodiac and barge.

Security at work

Safe Work Procedures are an essential part of the Amundsen Science program at sea and are designed to assist science staff and students in performing their tasks safely and reliably, and to support the training and orientation of new staff and students.

Amundsen Science Safe Work Procedures follow Canadian Coast Guard (CCG) Health and Safety management and procedures which are required to comply with the International Safety Management (ISM) Code. These codes and regulations cover the management and safe operations of the CCG fleet, including the icebreaker CCGS *Amundsen*, as well as its helicopters and all small crafts launched from the *Amundsen*.

Here are some of the components of the Safe Work Procedures during science operations on-board the CCGS *Amundsen*:

Health and Safety Committee meetings

Meetings of the HSE Committee take place at the beginning of each Leg (transition meeting) and at least once a week during the Leg. The meetings are an opportunity for the people responsible for the day-to-day safety of operations and of their teams to review any incident report or safety issues that arose and ensure the appropriate corrective actions or mitigation measures were put in place.

General Science Meeting

When boarding the vessel for each Leg of the Expedition, all scientific personnel are required to attend the General Science Meeting. The purpose of this meeting is to ensure that personnel are fully familiar with:

- The scope and objectives of the scientific program and of the Leg.
- The roles and tasks of other science teams and the objectives of their projects.

- The health, safety and environment (HSE) procedures and protocols, including an outline of the Safe Work Procedures and their roles and responsibilities within it.

Job Safety Analysis (JSA) for all operations

A JSA is a structured documented process that identifies and assesses basic job steps, specific risks and hazards, and documents specific measures to reduce or eliminate them. The JSA information is continually updated to reflect upgrades and corrective actions identified and reviewed during the task by the workers or their supervisors.

SWI Meetings (presentations to scientists and crew)

The team leader or experienced professional for each component or type of science operations will present the Safe Work Instructions (SWI) for a particular task to all science staff and crew members who will be involved in the task. These meetings will be held at the start of every Leg when changes in personnel, tools or procedures occur, when a new hazard is identified or a new control measure is introduced, and at any time the safety of personnel or the integrity of the equipment is compromised during the execution of the operations.

Toolbox Meetings

A Toolbox Meeting is held prior to every operation, usually 5 minutes before performing the task. It allows to review the safe working instructions, the roles of all participants, the hazards identified for each step or task, and ensures that the control measures and safeguards to minimize the risks are in place, including the verification that all participants are wearing the appropriate personal protective equipment (PPE).

STOP and Think

Stop and Think is a brief individual mental hazard assessment of the environment, of the task and of oneself. It is done by the workers before and during the work. It serves to:

- Focus the worker's attention on the task.
- Self-assess the task and oneself.
- Identify and eliminate unsafe behaviours and hazardous conditions.
- Promote an environment where workers are constantly assessing their own actions and work areas for hazards.
- Support the JSA with real-time hazard identification as the operations take place.

Safe Working Instructions (SWI)

Safe Working Instructions are created for every science operation conducted during Amundsen Expedition. They must be written by a person with sound, hands on experience and knowledge of the science operations being described. They involve the persons who will be using the Instructions as well as involve consultation with a Health and Safety representative. When complete, the Safe Working Instructions should be reviewed by the supervisor and personnel involved in the activity for which the SWI were intended. The SWI should then be signed and dated by the supervisor. In the case the task is carried from a CCG ship, the Safe Working Instructions should be also reviewed, signed and dated by the Commanding Officer in charge. The revised Safe Working Instructions should be displayed prominently and available to all staff, students and crew that may need them.

Safe Working Instructions include the following information:

- Step-by-step instructions for each scientific activity in plain language
- Precautions to be undertaken before commencing the task
- Specific information regarding the hazards and associated risks of the task
- Who is authorized or allowed to carry out the work
- Tools or equipment used in the activity
- Personal protective equipment (PPE) to be worn while undertaking the task

- Description of the environment where the task must be undertaken and associated environmental risks
- Clear instructions for undertaking the task described in a safe manner
- Specific instructions regarding ways of minimizing the risks of the task

Daily reporting

The Chief Scientist can keep a log of all health and safety related issues in the daily reports, which are used to update the Safe Work Procedures specific to science operations.

Limited access areas

Please note that some parts of the ship are reserved for certain designated members of the ship's complement. You should know which sections or rooms are reserved for the officers, for the crew and for any other members of the personnel. You must also remember that when the ship is underway, visitors on the bridge are not allowed to use any navigation or communication equipment located there without the officer of the watch's authorization. The engine room and galley are also restricted areas. Instructions concerning access to the bridge, the engine room and the galley can be found in the Commanding Officer's Standing Orders.

ANNEX III – R/V SIKULIAQ



COLLEGE OF FISHERIES
AND OCEAN SCIENCES

University of Alaska Fairbanks

Introduction

The *R/V Sikuliaq*, pronounced [see-KOO-lee-auk], is a 261-foot oceanographic research ship capable of bringing scientists to the ice-choked waters of Alaska and the Polar Regions. *Sikuliaq*, one of the most advanced university research vessels in the world, is able to break ice up to 2.5 feet thick. Constructed at Marinette Marine Corporation, a shipyard in Marinette, Wisconsin, *Sikuliaq* is home ported in Seward, Alaska, at UAF's [Seward Marine Center](#).

The vessel is owned by the [National Science Foundation](#) and operated by the [College of Fisheries and Ocean Sciences](#) at the [University of Alaska Fairbanks](#), as part of the U.S. academic research fleet. It is used by scientists in the U.S. and international oceanographic community through the [University-National Oceanographic Laboratory System](#). [UAF's Sikuliaq Ship Committee](#) provides scientific oversight of *Sikuliaq*.

Sikuliaq allows researchers to collect sediment samples directly from the seafloor, host remotely operated vehicles, use a flexible suite of winches to raise and lower scientific equipment, and conduct surveys throughout the water column and sea bottom using an extensive set of research instrumentation. The vessel design strives to have the lowest possible environmental impact, including a low underwater radiated noise signature for marine mammal and fisheries work. *Sikuliaq* has accommodations for up to 26 scientists and students at a time, including those with disabilities.

© ARICE Consortium

05/08/2019

1. Main specifications and facilities

General Characteristics

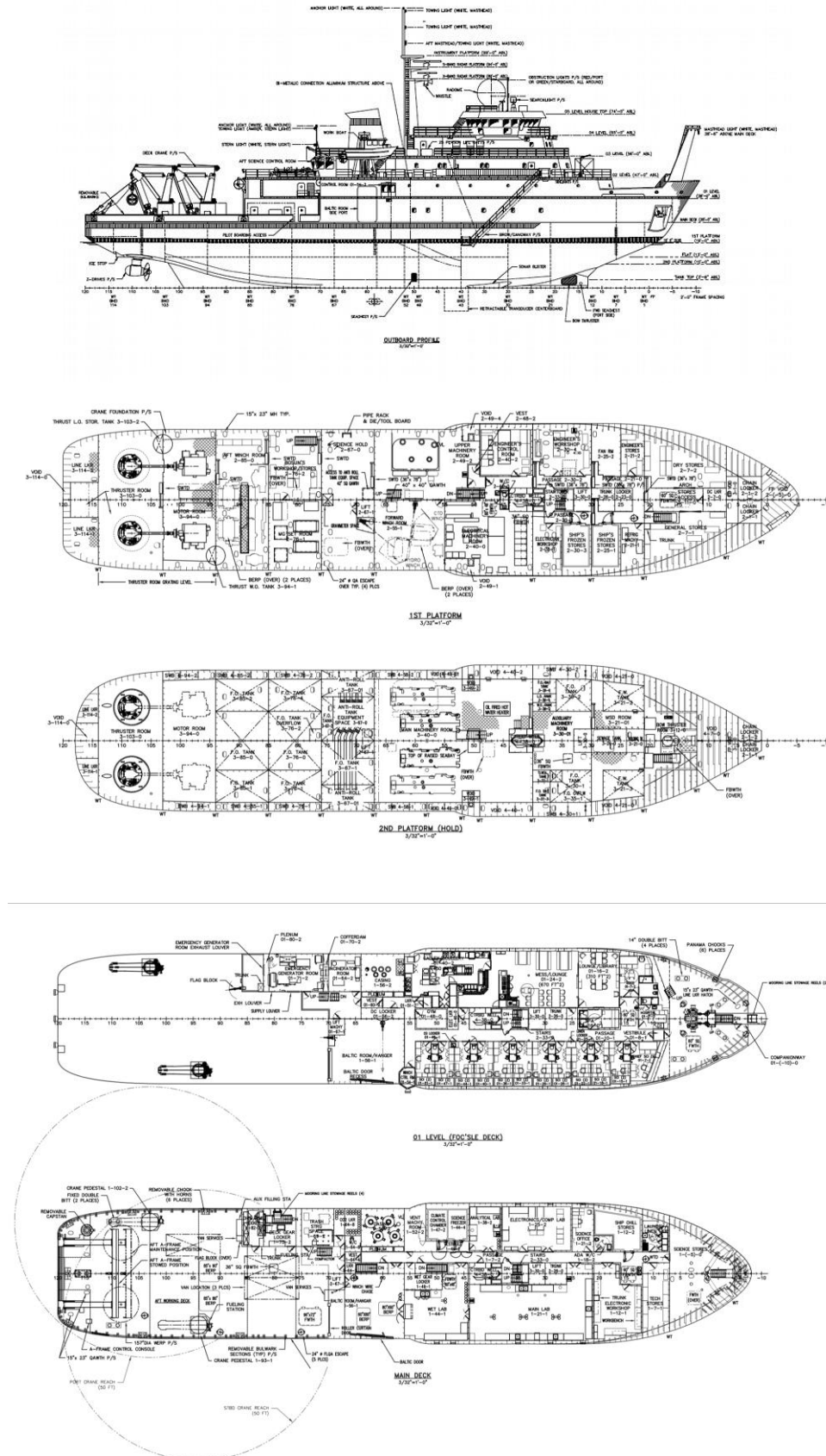
Length, Overall	LOA	80 m
Length, Design Waterline	LWL	72,2 m
Beam, Max across reamer	Bmax	15,8 m
Beam, Max across hull amidships	Bmidship	14,6 m
Depth, Keel to Main Deck	D	8,53 m
Draft, Design Waterline	TDWL	6,07 m
Freeboard, Design Waterline	FDWL	2,71 m
Displacement at Design Waterline		3,665 long tons
Propulsion Power	P	5,750 BHP

Performance

Endurance	45 days	
Endurance, Hotel Only	60 days	
Range	11 knots	9,000 NM preliminary
Cruise Speed	transit speed	10 knots
Max Speed, Calm Open Water	Vcalm	14.2 knots
Max Speed, 4 M Sea (13.1 ft)	Vss 5	12.3 knots
Level Ice at 2 knots	Ice thickness	1 m

Capacities and Working Areas

Science Berths	24
Crew Berths	20 crew plus 2 marine technicians
Science deadweight	100 long tons
Aft Deck 20' ISO Van Services and Twist Lock	3 Fixed locations
Fwd Deck 10' ISO Van Services and Twist Lock	1 Fixed location
Science storage	226 m ³
Science Labs	210 m ²
Deck Working Area	405 m ²



R/V Sikuliaq General Arrangement

1.A. Communications on board**Fleet Broad Band** Geosynchronous (Sailor 500) (Science and Ship Operations)

ICCID	898709908414115131
Voice Number	870773150710
Fax Number	870783155466
ISDN 56 Number	870783155485
ISDN 64 Number	870783150034
Status	Activated
Product	FleetBroadband

Iridium Open Port (low earth orbiting satellite) (Science and Ship Operations)**2. Before Boarding**

Person of contact

Doug Baird – Marine Superintendent

University of Alaska Fairbanks

201 Railway Ave

PO Box 730

Seward, Alaska 99664-0730

Phone: 907-224-5261

E-Mail: ddbaird2@alaska.eduShip information at: <https://www.sikuliatq.alaska.edu>**2.A Personal information and data**

Sikuliatq must report complement information to UNOLS for each science project. This Cruise Personnel Manifest form includes name, institution, role, and gender.

2.B Customs clearance

Please read information provided by the US Customs and Border Protection at

<https://www.cbp.gov/travel/international-visitors>**2.C Medical Check-up**

Science Party Members should be of good health to participate in scientific mission aboard *Sikuliatq*. Your physician can inform you if you are fit for work at sea. *Sikuliatq* subscribes to a shore side medical service. Medical forms are used to provide patient information to shore based doctors. Please bring sufficient medicines to cover your travel and potential delays. It is also recommended that spare glasses and or contacts be brought along on the cruise.

[Medical Form for Domestic Operations](#)[Medical Form for International Operations](#)**2.D Safety Training**

Not required for science personnel

2.E Visa ProceduresSee - <https://travel.state.gov/content/travel/en/us-visas.html>

2.F Insurance

No insurance will be required by UAF, but you may consider that:

- First aid will be provided by ship crew at no charge to the individual
- urgent or emergency treatment will be provided by most expeditious means and location (payment for services by the individual)

2.G Cargo. Invoice and Packing List

Manifests of Science Gear and Cargo

The United States Customs and Border Protection now requires that all Scientific Cargo embarked on *Sikuliaq* must appear on the Scientific Cargo manifest prior to LOADING. An electronic manifest declaring the cargo must be sent to the agency through our shipping agent. Foreign nations may have similar requirements. Thus, science gear and cargo loaded in a US port when the ship is bound overseas must also be manifested. Finally, even a cruise that begins and end in a US port is subject to US Customs and Border Protection inspection upon arrival. Therefore, all Science Cargo Manifests must be sent to the [Port Captain](#) no later than 14 days before the cruise loading (mobilization) date. Please see link to USCBP form below.

[US Customs Form 4455](#)

General Security

1. Science cargo will only be accepted aboard the ship if the Chief Scientist or their designees physically verifies that it is part of the group's expected shipment and that any seals placed on containers or crates are intact.
2. Homeland Security regulations require that a minimum of 5% of all Science Party member's baggage shall be identified and physically searched before being brought on board at the lowest -[MARSEC](#) - security level. If a higher security level is set by the authorities, more or even all oncoming baggage and packages may have to be examined.
3. All unaccompanied baggage shall be inspected and physically searched and the baggage's origin shall be verified upon being brought on board.

2.H Boarding

Normal practice is for science personnel to move aboard the afternoon of the first mobilization day (and are encouraged to be aboard no later than the night before departure), and move off at lunch time of the last de-mobilization day. Science party personnel may eat aboard starting with lunch of the first mobilization day through lunch of the last de-mobilization day.

3. After Boarding

3.A Training

Securing the ship for sea is the responsibility of all personnel On-board. All equipment and personal gear shall be secured. If you require assistance, please contact shipboard technical support or request assistance from the *Sikuliaq* crew.

At the start of each cruise a ship orientation and fire/boat drill will be held. A *Sikuliaq* crew member providing the orientation will welcome on board the science party, provide general ship orientation, introduce science personnel to shipboard safety procedures and muster locations, and conduct fire/boat drill. It is customary for the science party to introduce the objective of the cruise and convey any safety concerns at this time. Fire and boat drills are required by the U.S. Coast Guard and will be held throughout the cruise. Successive fire and boat drills will be held not more than a week apart. Proper clothing for drills consists of a hat, long-sleeved shirt/jacket, long trousers, and enclosed toe and heel shoes.

Orientation

Immediately prior to or immediately after departure, the research party and new crew members, upon hearing the general alarm, gather at a central location with their life jackets. At this time, you will receive an orientation for new people regarding shipboard safety.

The following information is included in orientation for new people regarding shipboard safety:

- An explanation of the general alarm signals and where and how personnel should proceed to assigned stations.
- An explanation of station bill and bunk cards.
- How to don life jackets and survival suits.
- What to do in case of man overboard, fire, and other emergencies.
- Requirements for hard hats, shoes, exposure suits, work vests, harnesses, and safety lines.
- When, how, and who to notify for over-the-side research.
- Discussion of other matters of general safety interest.
- Shipboard drills.

3.B Medical Facilities and Issues

Sikuliaq has small hospital room/infirmary located amidships, forward on the 01 Deck (room # 01-7-0) for treatment of injuries and illnesses. Sikuliaq uses a maritime medical service provider under contract by UNOLS, for professional medical assessment and assistance.

3.C Restrictions aboard**Alcohol and Drugs**

Sikuliaq holds a Zero-Tolerance stance on Alcohol/Drug use and possession aboard the vessel. Narcotics and other "controlled substances" are not allowed aboard. Laws on this matter are severe, and discovery of narcotics aboard can lead to the seizure of the ship. Searches will be made to determine if any controlled substances and/or Alcohol have been brought aboard, and measures taken against offenders which may include termination of the cruise.

Sikuliaq follows the UNOLS directive listed below.

6.4 REQUIRED STANDARDS UNDER RVSS**6.4.1 ALCOHOL USE ON UNOLS VESSELS**

It is the policy of UNOLS, as approved by the UNOLS Council, that all UNOLS vessel operators shall ban the consumption of alcoholic beverages on board UNOLS vessels by crewmembers or embarked members of the scientific party, except as provided below.

Certain exceptions can be approved in writing by institutional management for the purpose of allowing the possession and consumption of alcohol on board UNOLS vessels while in port for receptions, special occasions and entertainment of visiting dignitaries. Participation by ship's crew in these events shall take into consideration scheduled time of sailing and the need for full sobriety at the time of departure.

Possession of alcohol on board UNOLS vessels by crewmembers or embarked members of the scientific party is prohibited, with the exception of transport in bond under the control of the Master as allowed by institutional policies and at the discretion of the Master.

Smoking

Smoking is not allowed inside Sikuliaq for reasons of safety, fire prevention, personal health and comfort. In general, smoking is allowed on open (weather) decks. The Captain may allow smoking in the Baltic room if weather decks are unsafe and it does not effect science operations. By law, smoking is never allowed while the ship is fuelling or loading explosives. Cigarette butts are never to be thrown overboard. Only use proper receptacles for smoking material butts.

3.D Daily Schedule

Sikuliaq's Mess is cafeteria style. Service ware and trays are provided. All members of the science and crew will bus their own dishes. Meals consist of breakfast, lunch, and dinner. Meal schedules are fixed and times are posted aboard the vessel. Persons on watch or relieving the watch have priority in the serving line. Seating arrangements are informal, with crew and scientists sharing the mess area. Within the Mess there is a spike area that supports meal options outside of schedule meal times. As in all shared areas of the vessel it is expected that science and crew clean up after themselves. The Mess is open 24/7 with exception for scheduled cleaning.

3.E Waste Collection and disposal

Hazardous materials

Hazardous materials as covered in section nine of the UNOLS Safety Standards. A hazardous material is any substance or combination of substances that, because of quantity, concentration, physical, chemical, radiological, explosive, or infectious characteristics, poses a substantial present or potential danger to humans or the environment. Generally, such materials are classified as:

- Flammable liquids and solids
- Oxidizing materials
- Corrosive materials
- Flammable and non-flammable compressed gases
- Poisons or toxic substances
- Disease-causing agents
- Combustible liquids
- Explosives and blasting agents
- Radioactive materials
- Other Regulated Materials (ORM) (Department of Transportation (DOT) Hazard Class "ORM"), including hazardous wastes

Hazardous materials will be found among both ship and scientific stores and include such items as organic solvents, corrosives, compressed gases, flammable liquids, and toxic or reactive chemicals. Material Safety Data Sheets (MSDS) contain a list of product ingredients, indicating information about the type of hazard; recommended personnel protection and precautions; spill or leak procedures; and fire, explosion, health (including first aid), and reactivity data; and most importantly, an emergency telephone number for assistance in the event of an accident. Employers are required to inform employees of what hazardous materials are present in the work place and train them, with the aid of the MSDS, in their proper use and handling. (29 CFR1910)

Chief Scientist must provide the *Sikuliaq* with Hazardous Materials Manifest, Material Safety Data Sheets, and Clean Up Plan prior to the ship setting sail. Please reference *Sikuliaq's* Hazardous Material Usage Procedure found in the cruise manual appendices.

3.F Life on board (general)

Cabins

The scientific party is responsible for maintaining the cleanliness of all science staterooms, heads/showers, and laboratory spaces. Cleaning equipment is available. Fresh linen will be provided at the beginning of the cruise. We request that you wash your linen during the cruise. At the end of the cruise laundry bags will be placed in the main deck laundry to collect unwashed linen. The ship's laundry may be used to wash clothes. The use of fresh water should be kept to a minimum by such measures as taking "Navy showers." Excessive use of fresh water may result in rationing. The captain may on occasion decide that weekly sanitary inspections are needed; your participation in this is desirable. Scientific quarters and laboratory areas should be left clean by scientists departing the ship, for the benefit of the next scientific project.

Clothing*Internal to the ship:*

Clothing should be appropriate for work and the type of work being done.

Footwear - Shoes need to have an enclosed toe and heel and are required in the general spaces within the vessel. Slippers, flip flops, sandals, are limited to staterooms. Shoes with non-skid soles are recommended.

Shirts - Are to be worn at all times within the general space of the vessel.

Polar Operations:

General rule of thumb is to dress in layers when visiting the Polar Regions.

Base Layer - Choose a light/mid weight layer of polypropylene, wool or silk to form the base layer next to the skin. These materials wick moisture away from the body.

Intermediate Layer - Choose fleece, down or wool to form the intermediate layer. Fleece top with a hood is a good choice.

Outer Layer/Foul weather Gear – Choose a wind and waterproof outer layer. Please note that it is not polite to wear foul weather gear in the living areas of the vessel.

Boots – Choose a waterproof boot that is insulated. XTRATUF Insulated Neoprene Safety Boot and Arctic Sport Insulated Steel Toe Boot are two of many suitable deck boots. It is considered rude to wear deck boots in the living areas of the vessel. Please bring a practical, enclosed toe and heel shoe for the vessels living areas.

Sunglasses – Choose a polarized pair of Sunglasses. Glare off snow, ice and water can be intense and can be harmful to the eyes.

Head Gear – Hats are essential. Choose a simple, hardhat-friendly, beanie or Peruvian style hat made from wool or fleece. In addition to a hat it is advised that you bring a balaclava.

Socks – Several good pairs of wool socks are recommended. A thin or medium wool sock combined with a Bama Sokket works well with insulated neoprene deck boots. Bama Sokkets wick water away from the feet.

Gloves/Mittens – Hand gear depends on what operation you will be tasked with. Polypropylene liners followed by dishwashing gloves or medical gloves work well for keeping fingers dry and maintain dexterity. This is one solution for operations such as drawing water from the CTD. Atlas Therma Fit and, Ninja ICE with HPT are good deck gloves. Ninja Ice with HPT Fully Coated and Glacier Glove Ice Bay are good waterproof deck gloves. Atlas 495 PVC with liner and Atlas 460 insulated are good General wet work gloves. Multiple pairs of gloves are recommended. Operations on Ice may require gloves/mittens with greater thermal value than those listed above.

Personal Protection Equipment (PPE):

Personal Flotation Device – *Sikuliaq* is provisioned with floatation coats and work suits. These are shared resources and we may not always have the correct sizes for every science endeavour. Work vest are also available.

Hard Hats – *Sikuliaq* is provisioned with sufficient hard hats for crew and embarked science party. All personnel in the vicinity of crane operations, including shore cranes, must wear approved hard hats.

Safety Glasses - Safety glass dispensers are located throughout the vessel

Hearing Protection - Ear plug dispensers are located throughout the vessel

Safety Harness – All personnel going aloft, working over the side, or working on weather decks during inclement weather, must wear safety harnesses and use them properly.

4. On-board Safety**4.A Safety Arrangements (general)*****SIKULIAQ Safe Operations***

Everyone should read the [RVOC Safety Training Manual Chapter One](#) and be familiar with the [UNOLS Research Vessel Safety Standards](#)

General Shipboard Safety

Always remember to let someone know where you will be at all times. Your disappearance for several hours can cause alarm if you don't let someone know your whereabouts. Letting someone know is especially important if you will be in an unfrequented area, for example, working in a lab van or taking a tour of the Engine Room.

Don't go out on deck alone at night or in rough weather. If something does happen, these conditions make it almost impossible to find someone who has fallen over the side.

Wear sensible clothing:

- Shoes with non-skid soles are recommended, especially on deck. Sandals of any kind are not safe.
- Wear a hat, sunglasses, and sunblock if you are working long hours outside. The levels of harmful UV radiation are much higher at high latitudes and at sea than elsewhere.

Be aware of weathertight doors - these doors may swing from the ship's motion and can cause injury. Keep hands and fingers clear. And always be sure to secure all weathertight doors by securely latching (dogging) them.

Deck Safety

Non-essential personnel are to stay clear of all deck operations. During coring and similar over-the-side operations, all personnel must vacate the decks in the vicinity of the wire under load and the winch being used for the operation.

Be aware that lines and wires can part under tension. Do not stand under or near a line or wire while it is under a strain. Never stand in the bight of a line or under a load that is being hoisted.

Working on a moving platform is often dangerous, and requires the attention of everyone to maintain a safe operation. The following rules must be followed when working on deck or in a small boat.

- Wear a float suit, float coat, work vest or other type of personal flotation device when working in a small boat operations, or on the ice.
- Safety harness and tether may be required in areas near open rails such as but not limited to the stern and Baltic room door.
- Wear a safety harness when working over the side, and a hard hat for overhead work such as crane operations.
- Follow all directions of the winch operator or small boat operators. They are responsible for your safety.
- Always notify the bridge before deploying any gear, and do so again when the operation is complete.

SIKULIAQ Operations

Whenever the ship is docking or casting off, all non-essential personnel are to stay clear of the Bridge, weather deck areas forward of the superstructure, and the aft working deck. When doing Zodiac Operations stay clear of the aft working deck as well unless you are part of the operation.

4.B Alarms

An explanation of the general alarm signals will be made during orientation.

4.C Personal Safety Gear

Lifejackets. All vessels are required to carry one Type 1 Adult Lifejacket for every person on board. A Type 1 jacket is designed to turn a person face up in the water. Additional lifejackets are accessible to the engine room, bridge, and science labs in sufficient numbers to accommodate all persons normally on watch or working in these areas.

Ring Lifebuoys. Ring Lifebuoys are the first means of rescue for the person who falls overboard. Lightweight and round, the ring buoy is easy to toss to the victim and will keep him or her afloat until help can arrive. Lifejackets are distributed throughout the crew's and scientists' quarters, providing one lifejacket per bunk, and stowed so that they are readily accessible. All lifejackets are provided with a light, whistle, and reflective tape.

Work Vests. Precautions should be taken to avoid unnecessary lifesaving situations. A work vest may be used by persons working on deck or in small boats where the bulk of a regular Type 1 lifejacket would be confining. The work vest is not a substitute for a lifejacket! When working near or over the water during science operations, a work vest may be the deciding factor in your survival.

Thermal Protective Aids. The Thermal Protective Aid (TPA) is a multi-purpose item of lifesaving equipment. The TPA is a bag or suit made of waterproof material with low thermal conductivity. Its function is to minimize the effects of hypothermia or aid in the recovery of a hypothermia victim. It may be used as an alternative for immersion suits while in a life raft or lifeboat, or a person suffering from hypothermia may be placed inside so that body heat is maintained inside the bag. The TPA does not provide any flotation.

4.D Waterproof Clothing

Immersion (Exposure) Suits. Prolonged exposure to the elements of the sea, especially in cold waters, presents many challenges to an individual's survival, not the least of which is hypothermia-the rapid and continued loss of body heat. Immersion Suits are designed to provide full-body thermal protection similar to a diver's wet suit, as well as built-in flotation, and are required to be on vessels operating in higher latitudes.

4.E PSK (Personal Survival Kit)

Each stateroom has floatation and immersion suits for the occupants.

4.F Research Works

Common rules for all on board

Be quiet near staterooms due to a variety of watch schedules mean that personnel could be sleeping at any hour of the day or night. Be professional and respectful

Securing for sea

Prior to departing the pier/harbour, all gear should be stowed or secured so that ship's movement will not cause it to fall, tip, or get damaged.

Limited access areas

Bridge

Engine Control Room

Slips, trips and falls

While the ship is underway, keep one hand for yourself and one hand for the ship (i.e., if you have to use 2 hands to carry something, ship's movement may cause you to stumble).

Work on the ice

It is essential that UAF be informed of the intent to operate in ice within 60 days of the cruise sailing date. The UAF Marine superintendent will review operations and approve plans.

- Please reference *Sikuliaq* primer to [Navigation in Ice](#)
- Please reference *Sikuliaq* 's On Ice Operations Procedure found in the cruise manual [appendices](#)
- Please reference *Sikuliaq* 's Ship Operations in Ice Policy found in the cruise manual [appendices](#)
- Please reference *Sikuliaq* 's Small Boat Operations in Ice Policy found in the cruise manual [appendices](#)

ANNEX IV – POLARSTERN



Introduction

RV Polarstern was brought into service December 6th, 1982. It is owned by the German government represented by the Federal Ministry of Education and Research, who entrusts the Alfred Wegener Institute (AWI), Helmholtz centre for polar and marine research with utilizing it for German polar research.

Design and characteristics of the ship are dominated by the double function as research vessel and icebreaker in the polar areas of northern and southern hemisphere. RV Polarstern has the task of supplying the German Antarctic station Neumayer III - Station and also enables outstanding research in the polar areas. The ship is an excellent icebreaker and has very good seagoing features thus making scientific work possible in ice covered areas as well as in heavy weather at sea.

1. Main specifications and facilities

<i>General Data of RV Polarstern</i>	
Call signal	DBLK
IMO Number	8013123
Owner	Federal Republic of Germany; Federal Ministry of Education and Research
Operator	Alfred Wegener Institute; Helmholtz Centre for Polar and Marine Research, Bremerhaven
Shipping Company	F. Laeisz G.m.b.H.; District office Bremerhaven
Category of Ship	German Lloyd, GL+100 A 5 ARC 3
Category of Machine	GL+MC ARC 3 AUT
Year of Construction	1982
Shipyard	HDW-Kiel / Nobiskrug, Rendsburg
Overall Length	117,91 m
Length to the Leads	102,20 m
Length of Freeboard	108,77 m
Width	25,00 m
Draught max.	11,21 m
Height of Box Keel	0,50 m
Height of Masts	51,45 m over box keel (funnel mast)
Draught for Docking	10,30 m
Registered Tonnage (RT)	12.614
Net Tonnage (NT)	3.784
Lightweight Tonnage	12012,23 t
Deadweight	5373 t
Operation Crew	43 people
Science Crew	54 people

1.A Communications on board

There is a leased line over 2 installations within the C-Band sector (1024Kbit/s up and down, no data limit). Other sectors such as Ku- or Ka-Band, which are used on other research vessels, are not usable in the Polar Regions where Polarstern usually goes to.

2 systems are available for Iridium usage (per system: 128Kbit/s up and down, 5GB/month data volume; Ø max.100MB/day)

Mandatory regulations for the usage of communication services:

- only professional or private usage within the frame of family and friends
- no public communication (e.g. press, radio, TV, blogs, internet, etc.), except for authorization by the department of communication & media before the journey
- no microblogging e.g. WhatsApp-groups with members apart from family and friends
- no communication in case of emergency, also not in the private surroundings
- communication is limited to the ship's management in case of emergency

Telephone

The ship can be reach by telephone and for data traffic even in Polar Regions. Seven lines with the leased line system and 6 lines with Iridium are available on-board.

One telephone is installed in each of the two telephone boxes (Pantry A-Deck, porter's room E-Deck). These can be used for calling worldwide.

Prepaid Code Bon's are sold on-board for usage of the telephones. The rate per minute depends on the fees charged by the provider on land. Furthermore 0,60 € per minute (incl. value tax) are charged for the usage of the leased line.

Costs for the card (incl. value tax) for usage of the leased line / Prepaid-Code-Bonus is 12 €.

Receiving incoming calls is not possible on these telephones.

Further telephones are located with the captain and the cruise leader, on the bridge and in the communications office. A telefax is also available.

Internet

A bandwidth of 1024kbits/s down and up is available from the leased line. Basically, the data size is unlimited and determined by the usage behaviour of the participants. The bandwidth is shared between all computers, notebooks and other devices on-board for both crew and scientific members.

Internet access is enabled for:

- cruise leader
- several computers in the user room
- captain
- doctor
- system administrator
- communications electronics engineer
- bridge computer for update of nautical charts
- ship's office
- aviation officer
- German Weather Forecast

Two especially prepared notebooks are available for internet usage which show the already transferred amount of data and prevent unintended data transfer (automatic updates). The notebooks are handed out by the communications officer who also controls the used amount of data and settles the bill. The network connectors have to be enabled by the system administrator.

WhatsApp

Limited use of WhatsApp is possible on-board during operation of the leased line. Text messages may be sent and received. This service is free of charge for everybody on-board. WhatsApp usage is not possible during Iridium operation. Then the technically available bandwidths are reduced strongly and the official communication has priority.

2. Before Boarding

Person of contact for the [MOSAIC cruise only](#):

Prof. Dr. Markus Rex

Alfred-Wegener-Institut

Markus.Rex@awi.de

+49-331-2882127 (work)

+49-174-3118070 (mobile)

+49-331-2882139 (Assistant Sabine Helbig)

Dr. Anja Sommerfeld

MOSAIC Coordination Office

Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research

Phone: +49 331 288-2160

E-Mail: anja.sommerfeld@awi.de

Ship information at:

<https://www.awi.de/en/about-us/logistics/information-for-expedition-participants.html>

<https://spaces.awi.de/display/EFPW/Polarstern+-+Wiki>

2.A Personal information and data

https://www.awi.de/fileadmin/user_upload/AWI/Ueber_uns/Logistik/Downloads/Alle_Plattformen/Personalbogen_englisch.pdf

2.B Medical Check-up

- a medical examination according to medical questionnaire (MQ), well before the expedition, is mandatory for all participants.
- the AWI medical officer decides whether a participant is suitable to take part in an expedition.
- the check-up is valid for 12 months and has to be repeated thereafter, if necessary. Irrespective of this, the anamnesis sheet (pages 1-6) must be completed before each expedition and presented to the AWI medical officer.
- the participant is responsible for finishing the check-up - including all additional examinations in accordance with the AWI medical officer - in due time before expedition, which means: not earlier than 6 months and not later than 4 weeks before start of each expedition.
- a participant must not take part in an expedition without the approval of the AWI medical officer.

German participants

- the AWI medical officer is the relevant authority for AWI employees
- all other participants are asked to see the AWI medical officer if possible. Otherwise they can turn to their GP (with MQ) and have to bear the costs themselves.
- please send the MQ and the findings of your GP to the AWI medical officer only (via mail or fax).

Foreign participants

- all foreign participants are recommended to see the AWI medical officer if possible. Otherwise they can turn to their GP (with MQ) and have to bear the costs themselves.

- Please send the MQ and the findings of your GP to the AWI medical officer only (via mail or fax).

Address of the AWI medical service:

Werkarztzentrum Fischereihafen

Am Lunedeich 115

D-27572 Bremerhaven

Tel.: 0471 - 986 931-00

Fax: 0471 - 986 931-01

doc@awi.de

[Download medical questionnaire \(MQ\)](#)

[Download medical questionnaire \(MQ\) MOSAiC](#)

2.C Visa Procedures

Please check whether you need a visa for the departure or arrival harbour. Information are given by the Federal Foreign Office. Non-German participants have to contact their responsible international representation office.

A copy of the visa has to be uploaded to the electronic expedition interface system EIS. Thereby port agencies are able to prepare entry or departure.

Responsibility for the visa lies with the participant. Examination of the contents by AWI will not take place.

2.D Insurance

All participants of expeditions of the Alfred Wegener Institute are automatically protected by an accident insurance and by a travel health insurance. Generally, there no need for further action except for following persons:

- for foreign participants with a permanent residence in their home country and an expedition leading to their home country.
- for expeditions longer than 99 days (180 days for MOSAiC)
- Participants older than 67 years (due date: birthday)

For all joint MOSAiC cruises is highly recommended issue a personal travel insurance, covering transport to/from RV Polarstern.

These expedition members have to register with AWI ship coordination before expedition start.

The detailed conditions of insurance and extension options can be found in the AWI intranet. Please get familiar with this so that you know what you can expect from the insurances just in case.

External expedition members may contact the AWI staff that may give you some relevant information. You may also contact Beate Kuhlman-Treu from the AWI - logistics department.

The ship's doctor has to be informed immediately in case of accident or disease on-board. The insurance company will then be notified. If something happens during journey to or from the destination promptly contact the AWI logistics.

3. After Boarding

3.A Medical Facilities and Issues

A ship's doctor and a nurse ensure the medical treatment of the crew and scientists. The hospital has a treatment room, a surgery, which is used for radiographs as well, and two chambers with cardan suspended hospital beds. Examples of the equipment:

Treatment room:

- pharmacy
- devices for blood analysis

- ECG device
- sonography with printer
- inhalator

Surgery:

- surgery table and surgical light
- surgical instruments
- steam sterilizer
- electro tome
- inhalation anaesthesia
- anaesthesia respirator
- defibrillator with monitor
- X-ray unit
- mobile dental unit

Emergency equipment:

- emergency respirator
- emergency medical kit
- rescue stretcher
- floatable sick transport hammock

3.B Restrictions aboard

Alcoholic drinks such as wine, beer and spirits can be obtained and consumed on-board.

Consume alcohol with caution and according to the regulations onboard. You are on a ship where in case of emergency every cruise member has to help in emergency response. External help or protection may only come late if it comes at all! It is therefore in your own interest to make sure you are in the condition to safely master emergency situations.

The cruise leader may issue stricter rules during the expedition.

Every participant is responsible for himself with respect to customs regulations. Upon entering the harbour not more than 1 litre of high-proof alcohol per person is allowed in the chamber. Special regulations in ports can be found out from the crew.

3.C Life on board (general)

Cabins

The chambers for the scientific participants are occupied with 2 persons. In one chamber 4 persons can be accommodated.

The cruise leader prepares an accommodation plan that - where possible - takes into account the wishes of the participants.

Chambers and bath rooms will be cleaned by the cleaning staff regularly. Please be respectful towards the cleaning staff and support them by ensuring free access to the chambers during cleaning times and removing everything from the floor and storage shelves.

Clothing sheets will be provided. It will be changed every 14 days and washed on-board. You have to put on the sheets yourself.

Towels will be provided, changed weekly and washed on-board. Every person receives a shower towel and a hand towel.

Smoking is prohibited in the chambers of the participants.

Technical defects etc. should be reported to the cleaning staff immediately.

Once during an expedition chambers might be controlled by the cruise leader and the captain in the presence of the inhabitants. If there are striking nuisances the inhabitants have to eliminate them immediately.

Waste of any kind has to be put in the containers assigned for it.
All chambers have a bathroom with a shower, a washbasin and a toilet.
Hygiene products can be purchased once a week in the shop.

Clothing

All participants of Polarstern expeditions will be equipped by AWI with polar clothing. You may choose one of the equipment lists depending on the field of work. Individual clothing with other items is not envisaged.

How to get your polar clothing:

Choose one of the clothing lists available in the Expedition Interface System, fill in your sizes and upload it in EIS. Your list will be checked, signed and handed over to the clothing storehouse.

Afterwards make an appointment with the colleagues in the storehouse for fitting the clothing. The last possible time for fitting is to be found in the schedule.

Fitting the clothing in the storehouse is strongly recommended because some of the polar clothing has an unusual style and may fit badly if not tried on but only ordered by list.

You should plan about 1 hour for fitting. The kit bags with your clothing will be brought on-board for you. Please contact one of the contact persons if you have special demands on clothing.

Laundry

Private clothing can be handed over for washing for a fee in the laundry. You can also wash it yourself and free of charge in the wash room where a washing machine and a drier as well as detergents are available.

Ship's shop

In the shop on-board you may purchase following items:

- Hygiene products (e.g. tooth paste, shower gels, etc.)
- Drinks (soft drinks, beer, wine, spirits)
- Sweets and other snacks
- Souvenirs
- Mineral water with or without gas is distributed free of charge

4. On-board Safety

4.A Safety Arrangements (general)

Safety on-board is ensured by adherence to the safety and work safety regulations. The extraordinary situation on sea requires regulation of emergency such as fire, grounding, and sinking or water ingress.

Clothing and behaviour in case of emergency

The number of the rescue boat assigned to every single participant is shown on the notice board and on the indoor side of the bathroom. If the chamber is shared with other people they are all assigned to the same rescue boat.

The assembly point is on the helicopter deck behind the rescue boats. Escape arrows and pictograms show the shortest way to the assembly point. Every expedition member should follow the escape route from the chamber to the assembly point under normal conditions in order to make sure that one can also find it under dark and smoky conditions.

If an expedition member is trapped in a chamber, the window can be broken with a hammer hanging close to it. There is a firm rope stored under the couch in all chambers which do not allow direct exit to the deck. The rope is fixed at the bottom of the couch chest. It can be lowered out of the window and one can use it for abseiling.

Even in case of emergency one should not depart from the ship without leaving of the ship leadership. All participants should avoid panicking. Dress warm and careful! Do not drink alcohol! Do not jump

into the water but try to get in the rescue boat or life raft dryly! If there is sufficient time take additional drinking water with you!

Communications will be limited (telephone, Email, etc.) because all channels have to be kept free for emergency communication.

Distribution of messages or information about the emergency not agreed on by the captain or the cruise leader is prohibited.

Safety instructions for everyday's life

Fire is one of the biggest dangers on-board. Open fire e.g. candles are prohibited.

Remains of cigarettes and tobacco have to be thrown in the assigned containers. You will find containers labelled „Nur für Asche“. Cigarette butts have to be extinguished and ash trays emptied before leaving the room. Because the ship strongly moves in waves or during ice breaking there is a danger of ash trays falling over and starting a fire. Adhere to the non-smoking areas!

After routing cables in or between laboratories you have to close the cable ducts with mineral fibre cushions available on-board to hinder air circulation in case of fire.

To remain afloat in case of leakage or fire the ship can be subdivided in several watertight sections by hydraulic watertight bulkheads. Do not pass through already closing bulkheads because of danger of life! Escaping from a closed compartment is possible via specially marked emergency exits.

You will find folders with information about the safety measures of RV Polarstern in the mess rooms. Safety plans and fire control plans are present on every deck.

You will find blue helmets and safety vests in the corridor before the working deck. Helmet and vest have to be put back after usage. You must not take them to your cabin or laboratory in order to always have enough helmets and vests for the persons on deck.

4.B Alarms

There are 2 acoustic alarm signals:

GENERAL ALARM: • • • • • — — — — (7 short and a long sound; repeated)

Interrupt your activities and go to the assembly point on the helicopter deck wearing warm clothes, a life vest and the survival suit. You will be received by a crew member and given instructions you need to follow.

SIGNAL FOR LEAVING THE SHIP: • — • — • — • — • — (1 short and 1 long sound; repeated)

Interrupt your activities and go to the rescue boat assigned to you wearing warm clothes, a life vest and a survival suit. You will be received by a crew member and given instructions you need to follow.

Normally there will be a general alarm first. After assessment of completeness on the assembly place the alarm for leaving the ship will be issued eventually by the captain.

4.C Personal Safety Gears

Life vests and survival suits are stored in the cabins below the couch and on the wardrobe. If you cannot reach your chamber in case of emergency sufficient life vests are stored on deck in white chests close to the rescue boats. You will find instructions for safety and information about putting on life vests in your chamber.

4.D Research Works

The ship operator is responsible for the work safety on-board. The required personal protective equipment is present on-board. For the crew's support one of the expedition participants is named as a safety representative for the scientific community.

Safety representatives act supporting in their field of work without fixed expenditure of time. They are the main contact persons for the employees concerning security-related questions. Furthermore, their exemplary function and collegiality should provoke a safety conscious behaviour of the staff. Notably they should observe the workplaces etc. with regard to the presence of protection devices and safety equipment. Safety representatives offer voluntary for the task, which for them is an additional duty to their regular work. Because of their local knowledge and expertise they are able to detect health risks and dangers of accident and react to them adequately.

The main tasks of safety representatives are described in DGUV regulations 1, § 20 and DGUV rule 100-001, 4.2. Further information are to be found in the recent DGUV information 211-042 "Sicherheitsbeauftragte".

Duties:

- keeps contact with the chief scientist and reports regularly
- keeps contact with the 1st representative in case of questions or problems
- keeps contact with the scientific members
- supports the chief scientist in taking measures to prevent occupational accidents and diseases
- support in taking measures to prevent occupational accidents and diseases and other health risks
- checking the presence and usage of the protective equipment
- calls attention to health and accident risks
- exemplary function for colleagues and inexperienced participants

Work on the ice

Information is based on the long-time experience on-board RV Polarstern. There may have been deviations in specific cases but this was not in accordance with the regular behaviour patterns. The procedures in a special case have to be examined and authorised by the chief scientist in accordance with his responsibilities.

The chief scientist is permissible to issue deviations in favour of other regulations. Such deviations must be documented in writing and signed with date and signature (e.g. danger assessments & operating instructions).

In unusual cases of deviation from the good practice the captain will make an entry in the ship's log book.

Regulations of the helicopter operator and ship operator must not be changed. Some rules of the AWI logistics department can only be changed after agreement with the logistic coordinator for instance regarding devices owned by the logistics department.

Always remember that it has to be possible to rescue the persons not aboard with the second helicopter or from the ship itself within a reasonable timeframe. If this cannot be ensured, the operation is not safe and cannot be conducted.

Usual procedures:

Before operation:

- Detailed consultation of the chief scientist with the scientific group about the means of operation, time span, risks and safety measures for the work on the ice.
- Captain, chief scientist and meteorologist have to agree upon the the weather situation and the possibility to work on the ice.
- A survey party determines ice thickness and ice quality in the vicinity of the ship.
- Decision making about the operation by the scientific cruise leadership.

Operation on the ice:

- Record your absence in the respective book.
- A working group consists of 2 persons at least and has a group leader.
- The group leader is responsible for the regular control / assessment of ice thickness and load-bearing capacity.

- Each group has to carry a radio device or an Iridium telephone for distances >1 NM. The typhoon is the on-board emergency signal for operations close to the ship the. It means: EVERYBODY BACK ONBOARD!
- Up to 5 groups are possible in the vicinity of the ship (max.1 NM = ca.45min walking) because of the logistical efforts for rescue in the Arctic and Antarctic and due to the armament of the polar bear watch in the Arctic. The number of groups will be reduced if weapons fail or the helicopter is in use.
- A hand line may be installed e.g. to the gangway of the ship during longer stays in order to find the ship under difficult conditions such as fog or white out.
- Maximum distance by Skidoo is 45 min return time (only 1 skidoo group >1 NM: mandatory are 2 Skidoos with emergency box containing tent, GPS and AIS).
- Operations at night are only possible after early agreement and planning because emergency measures may take place time-lagged.
- Polar bear watch for each group. The dedicated watchman only ensures safety of the group and must not fulfil other tasks. Group members can take turns so there should be at least 2 persons per group with the respective education. There has to be at least one person on the bridge deck that oversees the operations within <1 NM with regard to polar bears and keeps contact to the groups via radio. According to situation, this may require more manpower.
- While working on or close to the open water you need to wear a survival suit probably with warm clothing below. Additionally, the person in questions has to be secured with a line.
- There is only survival gear for helicopter operation. Additional survival gear can be lend from the clothing storehouse.
- Stations on the ice with RV Polarstern leaving the ice edge: max. 6 persons, survival gear, tents, GPS, AIS, Iridium telephone. The ship may move away up to 95 NM.

After operation:

- Return notion in the respective book.

ANNEX V – PRV KRONPRINS HAAKON



Introduction

The research vessel *Kronprins Haakon* has been built to operate in challenging ice conditions, which means it can go further north and south than any other Norwegian research vessel. It is equipped with the very latest high-tech equipment, enabling to perform more complex studies. *Kronprins Haakon* is fitted as a multipurpose platform to do oceanographic, sea ice, fisheries and marine geology research. *Kronprins Haakon* is also fitted with an auditorium and student education laboratory for educational purposes.



Schematic of the main facilities on PRV Kronprins Haakon.

1. Main specifications and facilities

Length over all (LOA): 100,0m

Breadth: 21,0m

Draft: 7.6

Gross tonnage: 9145T

Call sign: 3YYQ

Operation specifications

Maximum cruising range of approx. 15.000 nautical miles

Endurance 65 days at cruising speed

Designed to operate in winter ice with pressure ridges and multi-year ice

Accommodation for 55 persons in 38 cabins (15-19 crew).

Can hold grey and black water for 70 days

Ownership and operation: Norwegian Polar Institute (owner)

Institute of Marine Research (operated in the fleet of research vessels at IMR)

Propulsion system: Diesel electric power

Main engines:

- 2 x 4.1 MW
- 2 x 2.8 MW

Underwater Radiated Noise (URN) ICES 209:

The vessel is specified according to ICES 209

Polar Classification: Ice Class: PC3

Ice load monitoring system:

The system is intended to navigate when the vessel is operating in ice infested waters so that appropriate action can be taken to minimize the likelihood of the vessel sustaining structural damage.

© ARICE Consortium

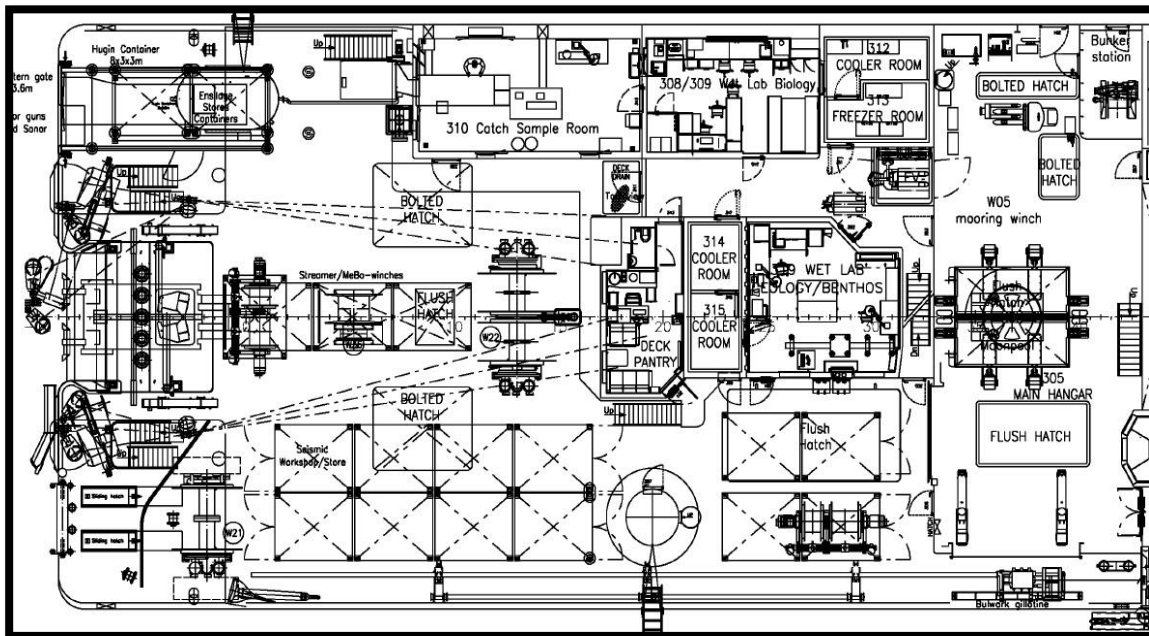
05/08/2019

Research facilities:

15 Laboratories (including a student education lab)
Space for 3 container laboratories
4 refrigerated rooms
2 freezer rooms (lab and storage)
Auditorium (50 seats)

Support capability:

Up to 36 passengers
Space for 20 containers (20')
Cargo hold (1180 cbm)
5 cranes
58 ton bollard pull
Firefighting class 1 compliant
Helicopter facilities: Hangar for two small/medium helicopters. Helicopter deck dimensioned for NH-90 (Coastguard) and Super Puma (Svalbard SAR).



Deck 3 on PRV Kronprins Haakon, the main working deck.

1.A Communications on board

VSAT: +47 55906481
Iridium: +881677752265
Only important private calls
To call out of the ship - 010 + Phone number

2. Before Boarding

General contact

Per Wilhelm Nieuwejaar
Research Vessel Department at IMR
+47 91317465
per.nieuwejaar@hi.no

Ship information at:

<https://kronprinshaakon.hi.no/en/projects/kronprins-haakon/about-the-vessel>

2.A Personal information and data

Personal information shall be collected prior to the cruise by the cruise leader. Personal data is stored at the personnel department of NPI.

2.B Medical Check-up

Cruise participants are required to have a valid health certificate. In Norway this is called a seafarer health certificate.

2.C Safety Training

Depending on port of embarkation. If Longyearbyen is port of departure, there typically is Polar Bear Safety training for everyone who will work or otherwise go out on sea ice. This includes rifle and flare gun handling and shooting practice.

Otherwise participants are required to have done marine safety and rescue training or survival suit training prior to boarding the vessel.

2.D Visa Procedures

Please check the general Visa procedures for entering Norway and Svalbard for your nationality.

2.E Insurance

Health, travel and liability insurances for the duration of the cruise are required from your own employer.

2.F Cargo. Invoice and Packing List

All cargo and invoice need to be sent to and addressed to Consignee:

R/V «Kronprins Haakon»

C/O Bring Cargo Svalbard

9170 Longyearbyen

Ref: cruise name & cruise dates (get from cruise leader)

Contact information BRING:

Bring, dept. Tromsø,

Phone: +47 77 64 80 65

Fax: +47 77 67 53 44

Email: tromso.support@bring.com

When goods are to be sent back from Longyearbyen via Tromsø to its home destination outside Norway it is important to mark the goods with the receiving address in the home country.

If you are transporting dangerous goods or goods that require special handling or storage, check <https://www.bring.no/english/advising/sending-something-with-bring/dangerous-goods>

The invoice for transportation of your goods to/from Tromsø to LONGYEARBYEN and back, including internal handling and temporary storage in LONGYEARBYEN and customs handling and temporary storage and handling in LONGYEARBYEN by BRING will be sent to the Norwegian project or cruise owner, and they will seek reimbursement from you as necessary in accordance with your internal agreement.

Notify the cruise leader that you are sending cargo for the cruise and check beforehand with cruise leader what the deadlines are for shipments to the ship.

2.G Boarding

Boarding is allowed on the first cruise day from 8 am onward. Disembarking should occur on at the last day of the cruise before midnight. Cabins should be left at 8 am and luggage may be kept in the luggage room for the last day of the cruise before disembarking.

3. After Boarding

3.A Training

After boarding general safety instructions are given by the Chief Officer.

3.B Medical Facilities and Issues

There is no doctor on-board. There is a hospital on board, and the Chief Officer and Captain have some (limited) medical expertise.

3.C Restrictions aboard

There are no drugs or alcohol allowed on-board. There is an indoor smoking lounge. Outdoor smoking is restricted to some areas on deck.

3.D Daily Schedule

Breakfast, lunch and dinner times are at 7:30 am, 11:30 am and 5:30 pm respectively. For each day the cruise leader will present the planned schedule for the next day on the evening before.

3.E Waste Collection and disposal

There are general waste bins for passengers in cabins and in labs. Once a week, passengers are expected to clean the labs and dispose waste. Contact the cruise leader and crew in case you have hazardous waste.

3.F Life on board (general)

Crew and scientists will generally work in shifts of 4 + 8 hour shifts.

Everyone is expected to show up on time for the given meal times and eating is only allowed in the mess room.

Besides the labs there is a general conference room where scientists can work on their computers. The ship has a good local network to work on. There is no WIFI.

Internet is available most of the time when operating south of 80°N. Otherwise, if there is no VSAT internet anymore, communication has to occur through Iridium which is limited since it is very costly. Everyone is allowed on the bridge and speak with the officers in charge except when the bridge area is closed typically during leaving and arriving in port.

Everyone should participate in creating a good atmosphere on board and treat colleagues and crew with respect. Any form of harassment is not accepted.

Cabins

Cabins are double bunk cabins with shower, toilet, wardrobe space and a desk. Expect to have to share a cabin. Cabins are cleaned every other day by crew members which requires cabins to be rather tidy (considering personal items/bags/clothes).

Do not throw glass and metal in the garbage. Glass and metal can be thrown in the mess room.

If you do not want to be disturbed in your cabin put a «Do not disturb sign» on the door

Shower cabinet doors can easily fall off

The day you are leaving the ship, you must exit the cabin 0830

Cinema

There is no cinema but there is a lounge next to the mess room where passengers may socialize, read or watch a movie together. Respect that this lounge is shared with the crew.

Clothing

No outdoor shoes are allowed inside, bring indoor shoes.

Bring solid sturdy work clothes and clothes to work in cold weather.

Gym

There is a gym on-board with treadmills, bikes, aerobics and strength training apparatus. Always clean all apparatus after usage.

Laundry

There are several self-service laundromats and dryers on board. Towels and sheets are provided by the ship and are washed by the crew on a 2-day and weekly basis respectively.

Library

There is a small library on-board.

Sauna

There is a sauna and Jacuzzi on-board.

Shop

There is a small shop that is run by the steward a couple of times a week. No alcohol is sold.

4. On-board Safety

4.A Safety Arrangements (general)

Helmet and steel-toed (safety) shoes/Boots are required when working on the main working deck and hangars. Safety is required when working with chemicals.

4.B Alarms

General ship alarms (fire and evacuate ship) will be demonstrated upon leaving port.

4.C Personal Safety Gears

Helmets will be provided by NPI. Please bring your own safety boots. There are lifejackets and survival suits in the places referred in the ship emergency plan: 70 at Musterstation, 3 at Bridge, 3 at Engine room

4.D Waterproof Clothing

Please provide your own waterproof clothing

4.E. PSK (Personal Survival Kit)

This is provided by the ship for each passenger

4.F. Research Works

Each is responsible for their own safety while performing research. In addition, two members of the science team will be appointed to be responsible safety contact persons for the duration of the cruise.

Equipment**Hydrography:**

CTD system with both 12 and 24 bottle rosettes.

LACDP system

Hydroacoustics:

Simrad EM710 MkII (til 2800 meter)

Simrad EM302 (til 7000 meter)

Marine biological acoustics

Simrad EK 80 wide band echo sounder
Simrad SH 90 fishery sonar
Simrad SU 90 fish finding sonar
Simrad MS 70 scientific multibeam sonar
Simrad ME 70 Scientific multibeam echo sounder

Other hydroacoustics

Kongsberg SBP300-6 Sub-bottom profiler
Simrad Topas PS40 Sub-bottom profiler
Teledyne RDI ADCP 38 kHz og 150 kHz
Kongsberg HiPAP 501
Kongsberg EA 600 12 kHz single beam echosounder

Scanmar trawl monitoring
Calypso Giant piston corer
Seismikkskyting 2D/3D
Hugin AUV (equipped for) Coring-systems
Cravity corer
Calypso corer
Surface- subsurface sampling
MeBo mobile coring system

Scientific Diving:

Working boat
Double compressor
Pressure chamber

Underway measurements:

Weather Station
pCO₂
2x Thermoisalinograf
ADCP
Sound velocity probe
Gravimeter
Magnometer
Cufes (fiskeeggoppsamler)

Limited access areas

Deck area (during rough seas)
Bridge (only at some times)
Engine area
Helicopter deck
Slips, trips and falls

ANNEX VI – MSV FENNICA



Introduction

The multipurpose icebreaker Fennica features a large working deck and an A-frame, which make it well-suited to a variety of offshore operations. The ship meets the United States Environmental Protection Agency's (EPA) strict environmental and emission requirements, making it an ideal choice for operations in Arctic areas.

The Fennica has excellent icebreaking characteristics. The ship's Aquamaster Azimuth thrusters are powered by 15-megawatt diesel generators. Thanks to its thrusters and Dynamic Positioning system, the vessel retains excellent manoeuvrability also in difficult conditions.

The Fennica has a versatile service history of operations in various areas, including the North Sea and Brazilian, Alaskan and Greenlandic waters. The ship has seen particularly heavy service in ice management duties on the waters of Greenland. From 2012, the Fennica has been chartered to Shell Offshore for the summer season for similar tasks in the Chukchi and Beaufort Seas.

1. Main specifications and facilities

IMO No. – 904365

Call Sign - OJAD

Type of Vessel - Ice Breaker & Multipurpose Support

Type of Fuel - HFO / DO / ULSDO option

Flag State – Finland

Port of Registry - Helsinki

Owners – Arctica Offshore

Built – 1993

Lightweight - 7.935 T

Deadweight (approx.) - 4.800 T

Displacement - 12 800 T

Gross tonnage - 9392 T

LOA - 118.0 m

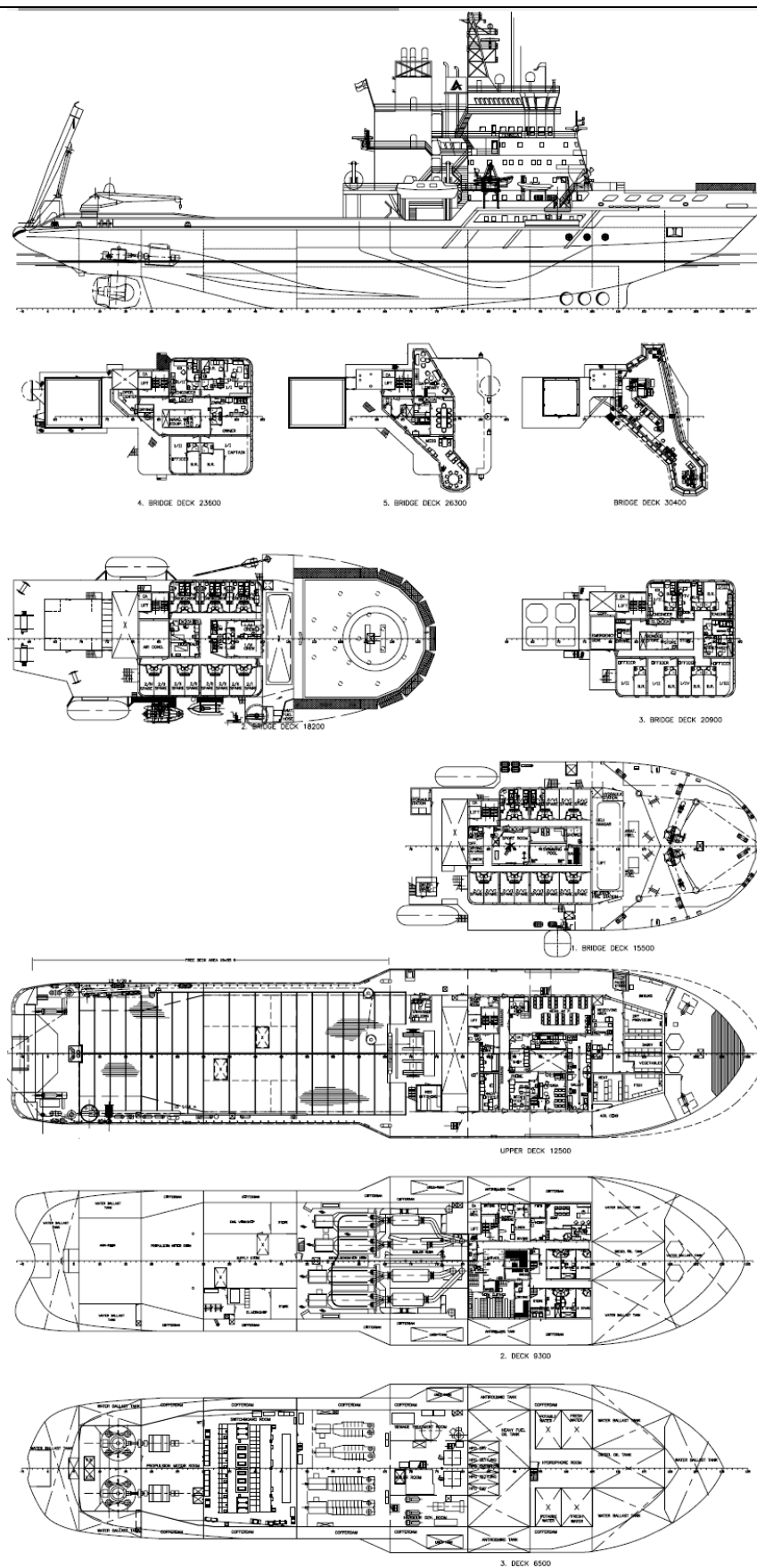
LWL - 96.7 m

Breadth Moulded - 26.0 m

Depth Moulded - 12.5 m

Draught (Scantling) - 8.4 m

Air draft - 38.0 m



Schematic of the main facilities on MSV FENNICA.

2. Before Boarding

Person of contact

Hanna Suutarla

Development Manager

hanna.suutarla@arctia.fi

tel. +358 46 876 7121

Ship information at: http://arctia.fi/wp-content/uploads/2017/01/Fennica_Spec_2016.pdf

2.A Medical Check-up

Health certificate on the basis of Medical Fitness Examinations of Seafarers is requested; if not applicable - further information is needed. All regular medication should be registered when boarding.

2.B Safety Training

Participating to the safety drills on-board is requested. Basic safety training is valued.

3. After Boarding

3.A Restrictions aboard

Dry ship policy, no alcohol

3.B Daily Schedule

3.C Waste Collection and disposal

The waste guidelines are explained in detail when on-board and should be followed.

3.D Life on board (general)

Clothing

Safety gear is requested when outside. Indoors: no overalls or such working cloths should be worn and only indoor shoes are allowed.

Gym

Available for everybody

Sauna

There are two saunas, the working hours are presented outside of the sauna.

4. On-board Safety

The safety is paramount important and the detailed information about the safety procedures will be part of the familiarization.

4.A Personal Safety Gears

Hard hat, safety shoes and high visibility vests should be worn all times when on deck

4.B Warm Clothing

Cold work regulations has to be followed.