Helicopter operation

Quick overview

Key figures for helicopter operation (detailed explanation can be found below):

- CAE-BS/STASS (short term air supply system) briefing mandatory for all passengers (an instruction can be given by the pilots on board for persons that are occasionally flying, but this is not the same as a training ashore and the operator assumes no liability for this on board training)
- HUET (helicopter underwater escape training) training strongly recommended for all frequent flyers
- **5 passengers** maximum plus pilot
- helmet and immersion suit mandatory
- survival bags to be taken on every flight
- only **1 group** out by helicopter in a distance **3-80nm** (**second helicopter** allowed in a distance **up to 3nm** from Polarstern)
- shuttling teams (bringing one team out and taking another one in with one flight) is **not allowed**
- if only **one helicopter is available** due to technical reasons, the maximum allowed distance is **10nm** from Polarstern
- the **standby time on ground/ice** without engines running has to be limited **according to the outside local conditions**
- **operation** below -30°C air temperature is limited, **below -45°C prohibited**

A survival package is taken along for each person and a group survival equipment box for 9 persons. The equipment is present onboard.
The equipment is weight-optimized and planned for an absence of max. 17h. (max. rescue time)
There is no food in the equipment and the fuel bottle for the cooker must be filled on board !

Helicopters:

Type	2 x BK117 - C1
Manufacturer	Bölkow Kawasaki
Engines	2 x Arriel 1E2 engines, 700PS each
Maximum take-off weight	3350 kg
Number of passengers	max. 5
Speed	125 nm/h (225km/h)
Range	240nm (430km) ; 278 l/h fuel consumption
Operating range around the ship	max. 80nm (= abt.17h rescuetime by Polarstern in icecovered waters)
Staff	2 pilots; 2 technicians
Tasks	emergency, ice reconnaissance, scientific services, transport

Helicopter BK117 - Polarstern

(Photo Northern Helicopter)

Helicopters are provided by the shipping company F. Laeisz and operated by Northern Helicopter in Emden, Germany.

The German aviation law for offshore flying is applied. Supervisory authority is the Federal Aviation Office (LBA-Luftfahrtbundesamt) which implements the EU law of the European Aviation Safety Agency (EASA).

Helicopter operations onboard (daylight conditions)

A so called "STASS" or "CA-EBS" - briefing is required for all helicopter passengers.
CA-EBS = Compressed Air-Emergency Breathing System; STASS = Short Term Air Supply System

Without the briefing you are not allowed to use the helicopter. An instruction can be given by the pilots on board for persons that are occasionally flying, but this is not the same as a training ashore and the heli operator assumes no liability for this on board training. Halfday STASS trainings can be completed at one of the training centres mentioned below. Frequent flyer are strongly recommended to take part in a full "Helicopter Underwater Escape Training" (HUET) before the expedition.

Heli-Eins...21-04.pdf

Commercial companies like e.g. "Windguard" or "RelyOnNutec" offer courses.
Please register yourself for any suitable training course on your own costs. (AWI-Logistics does not organize or pay for courses)
You will get training and info on how to behave and how to use the emergency breathing device in case of an emergency landing.

To take part in a training course mentioned above you will have to prove your medical fitness presenting a medical certificate for offshore duties. Information on how to receive such a certificate can be found here: Medical Examination

Helmets must be worn in the helicopter for safety reasons at all times. Immersion suites with a s inflatable life vest are obligatory during flights. The equipment is available onboard.

One helicopter stays onboard or in the close vincinity of the ship (< 3 nm) for safety reasons, while the other is in use.

The used helicopter is flown by a pilot, the other pilot occupies the "Tower" onboard.

Theoretically, there are 7 places available for passengers.
However, only 5 passengers can come along plus the pilot because all 6 persons must be rescu in case of emergency. (Pilot+Doc. + 6 persons of helicopter 1 ==> 8 persons in helicopter 2)
Rescue of all persons on the ice has to be possible with only one helicopter operation so that no one stays behind in case of e.g. a weather deterioration, helicopter crash, break-up of ice floes o polar bear attack.

Only one group will be allowed in the field at the same time due to the above mentioned reasons

Stand-by of a helicopter on site is 45 minutes. If longer stays are required the helicopter goes back to the ship and collects the group later. In this case the group must be equipped with GPS and Iridium telephone. There are 2 Iridium telephones available onboard from the communication electronics engineer.

There will be a meeting of chief scientist, captain, pilot and meteorologist before every flight for discussing the flight plan. The decision if flying is possible or not has to be unanimous. *The pilot always has the final word* . The flight programme must be documented in writing.

The pilot can always abort the operation. This decision is mandatory and must be followed immediately.

If only one helicopter is operational for technical reasons, the other helicopter may operate within 10 NM of the ship only. Thus, in case of emergency rescue measures can be undertaken from the ship in due time.

It must always be expected that the group can not be collected in time because of weather conditions. The position of the working area has to be chosen thus that rescue by the ship or other means is possible in an acceptable time.

It might be that the helicopter operator needs to obtain permissions for take-off and landing before the expedition through local air administrations. Therefore you should announce your flight plans to the chief scientist at an early stage.

Overview helicopter operations
(M. Hirsekorn)

Helicopter fligh...ion 20221012.p

Flight limitations (Northern Helicopter)

picture of group survival equipment (Northern Helicopter)

picture of personal survival equipment (Northern Helicopter)

Examples for load and range:

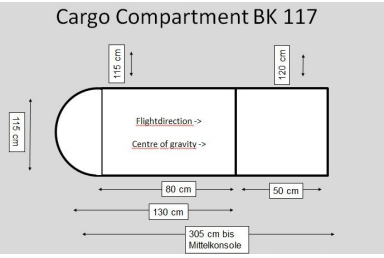
Persons (95kg each)	Load (kg)	Range (nm)
1 pilot + 2 scien.	300	80
1 pilot + 2 scien.	500	60
1 pilot + 2 scien.	600	30
1 pilot + 4 scien.	100	95
1 pilot + 4 scien.	300	60
1 pilot + 4 scien.	400	30

External load (kg)	Range (nm)
1000	max. 15
950	max. 30
850	max. 50

Ask the flight officer about the payloads and external loads of your specific fligh

Anzug PX.pdf

immersion suit (Northern Helicopter)



Size of Cargo Compartment BK117 (Northern Helicopter)

CA-EBS_SOP_Pol..._ENG (002).pdf

Check list CA-EBS Training (Windguard)

Helmet (Pict.:M.Hirsekorn)