

Psychological Aspects

Preamble

This section of the Expedition Manual provides an overview of the psychological aspects of polar expeditions.

It is intended for expedition participants and leaders who are exposed to the special conditions of polar expeditions and who may have their own personal experiences with some of the phenomena listed here.

There is no general patent solution for the described problem, but this text gives first hints and should give assistance with the occurrence of certain symptoms or behaviors.

Psychological aspects of polar expeditions

Especially during longer polar expeditions, humans are exposed to a multitude of special influences, which can be new,

unfamiliar or unknown to them and can affect their mental performance individually or in combination.

Definition:

Psychic stress is understood as the totality of all detectable influences that come from outside and have a psychological effect on a person. The **mental stress** is defined as the individual effect of this stress on the person.

Psychological factors are those influences which demand the mental performance of the human being.

Stress is medically understood as the non-specific reaction of the body to every demand placed on it. In general usage, "stress" is established as an unspecific term for psychological stress and strain.

In general, the effects of psychic stress or psychological factors vary greatly from individual to individual and are not always predictable, as they can depend strongly on the physical and mental capacity, general constitution or life circumstances of the individual.

There is a variety of psychological factors that result from working conditions, of great importance are e.g. the following:

- Work task (e.g. work compression)
- Work organization (e.g. unclear processes, work schedule)
- Workplace design and environment (e.g. noise, climate, lighting)

Psychological emergency

Critical incidents or extremely stressful situations may require professional psychological help from ashore. Therefore AWI logistics has established a two stage system to provide expedition participants in need of psychological support with immediate assistance (see red info box below).

Both experts can be directly contacted by the expedition participants without prior notice to the AWI logistics or expedition lead.

If you are in a **generally stressful time period** and need a person for counseling and receive some guidance on how to deal with it, Mrs. **Ute Seemann** will be the best person to talk to (contact details see box below).

If you experience an **acute stress reaction** which is related to a specific /unusual situation (see list below), the **Federal association for stress management after stressful events'** is the adequate point of contact (see box below).

Such extreme events are, for example

- serious injury or death of colleagues
- Suicide of colleagues
- Operations with many fatalities and injuries
- experiences of violence
- or other events individually experienced as particularly stressful

Methods for achieving and keeping mental health can also be found in the guides provided in the info box Mental Health below.

During longer expeditions to polar regions, further factors result from the special working conditions and the special working environment:

- Polar day / polar night with long-lasting brightness or darkness
- Workload e.g. due to project specifications, schedules, unforeseen events, failures
- Lack of privacy e.g. due to working and living in a confined space over a longer period of time
- Monotonousness due to prolonged use
- remoteness from home due to distance and limited communication



Expedition participants who need **immediate psychological help** can directly contact the following experts

for **counseling & solace** in a generally stressful time period:

Ute Seemann

phone 0049
170 3114268

mail seemann
@baz-hb.de

for **Critical Incident Stress Management** after acute stressful events:

*'Federal association
for stress
management after
stressful events'*

phone 0049
1805 872 862

Critical Incident Stress Management
information sheet

& recommendations in case of critical
incidents:



Critical Inciden...s Manager



Recommendations...l incid

Polar Day / Polar Night

Permanent brightness, as well as prolonged darkness, can have individual effects on the human organism.

Especially the midnight sun of the polar day (long, up to 24 hours brightness) can result in euphoria, good to over-excited mood and overestimation of one's own capability. On the other hand, it can also lead to inner restlessness and insomnia.

As a result, physical and mental capability may be exhausted after a few days under these conditions and problems such as physical and mental exhaustion, reduced performance, reduced ability to concentrate and even complete exhaustion may occur.

In addition to physical fatigue, psychological fatigue can also result in a feeling of fatigue, increased effort for the same performance and an increasing number of errors in the type and frequency of errors. These symptoms affect the quality and quantity of work and, in particular, an increasing number of errors represents a high risk of accidents.

In order to counter this problem, it is important to establish and maintain a regular daily routine with clearly defined working hours, especially during longer expeditions with permanent concentrated work assignment. Breaks, resting and sleeping times should be respected despite the "nice weather", excursions and other leisure activities should be taken in leisure time without shortening the sleeping time and the possibility of having a good night's rest should be considered when planning experiments, field and laboratory work.

If the brightness causes sleep problems, suitable measures should be taken, such as effective darkening of windows, general silence in the sleeping area, mutual consideration (especially in shift operation).

Depending on the individual constitution, permanent darkness during polar night can have an influence on "mood", general well-being, sleeping habits and, as a result, physical and mental capability.

A physical consequence of the long dark period is a disorder of serotonin-melatonin metabolism with decreased serotonin and increased melatonin production in the body. This can lead to symptoms of so-called winter depression. Symptoms may include depression, listlessness, irritability, extreme need for sleep and an extreme appetite for sweets. These symptoms can also be reflected in the quality of work and lead to dissatisfaction and increased mental stress.

In order to counteract psychological problems caused by long periods of darkness, a well-structured daily routine with clearly defined working hours and regular sleeping hours should be established and adhered to.

Furthermore, a lot of regular exercise in fresh air and, if possible, a low-calorie diet with fruit and vegetables (if available) help. Since the problems can be attributed to a lack of light, daylight lamps should be available, which can be used, for example, in general recreation and social rooms or at the workplace / laboratory. The intake of vitamin D preparations, which need to be brought by the participants themselves but will also be available on board in limited amount, can counteract the occurrence of psychological problems during the long phase.

The structured daily routine, which is recommended both on polar day and in polar night, includes, over a longer period of time, sufficient leisure time and regular "social events" such as special days (Sunday, sailor's Sunday, special holidays, games or sports tournaments, etc.), and the possibility to use these (see chapter "Monotony").

Due to the fact that most expedition participants will be replaced after two to three months during MOSAIC, the occurrence of the problems described above is relatively low.

Workload

Expeditions usually involve a heavy workload due, for example, to ambitious plans, tight schedules, pressure to succeed, the will to seize the (unique) opportunity, emerging scientific aspects of the work and unforeseen or unexpected events.

This results in increased psychological stress which can lead to increased mental stress. This demand can cause symptoms such as inattention, fatigue, exhaustion, listlessness, frustration and the like.

On the other hand, an increased workload ("...I still have to get this done...") can also lead to an increased willingness to take risks as well as a reduced safety awareness, and basic safety measures can be deliberately neglected due to time constraints.

In order to prevent this situation, a clean, resilient and realistic time planning and work organization for the project (the scientific work) is required in advance of the expedition. Goals must be set realistically and on time, employees must be informed in advance about their tasks, rest periods, leisure time and possible absences due to illness must be planned.

Furthermore, sufficient "time buffers" for unforeseen events such as loss of working time due to bad weather conditions, polar bear sightings, defect equipment or other unforeseen events should be taken into account in the schedule.

Since experience shows that towards the end of the expedition the time is often "tight", it makes sense to prioritise the tasks to be carried out in order to be able to suspend low priority work if necessary.

If scheduled "time buffers" are not "used up", it makes sense to postpone them to the end of the expedition time in order to relieve the often already tight schedule.

Lack of privacy

The need for privacy is an elementary component of human nature, whereby privacy refers to the non-public area in which a person can freely develop his personality unhindered by external influences.

Conflicts & conflict management

Conflicts on board can come up at any time and due to various reasons. Don't hesitate to ask for help to solve the conflict.

On board: In case of conflicts you have the possibility to contact the cruise leader, persons of trust or doctor and nurse.

Ashore: If you do not want to talk to a person on board you can seek advice and get assistance from the AWI conflict management (<https://intranet.awi.de/verwaltung/alt-personalabteilung/personalentwicklung/konfliktmanagement.html>) or mediation team (<https://intranet.awi.de/verwaltung/alt-personalabteilung/personalentwicklung/konfliktmanagement/mediationsteam.html>).

You can also contact the principal of equal treatment <https://intranet.awi.de/en/directorate/principal-of-equal-treatment.html>

Mental Health

General information for seafarers on mental health can be found on the website of the International Seafarers Welfare and Assistance Network:

<https://www.seafarerswelfare.org/seafarer-health-information-programme/good-mental-health>

Mental health guides:

[Managing-Stress-and-Sleeping-Well-at-Sea-English.pdf](#)

[Psychological-Wellbeing-at-Sea-English_200213_103421.pdf](#)

[Steps-to-Positive-Mental-Health-English.pdf](#)

In the context of a scientific expedition, the privacy of the individual participant is naturally strongly restricted over longer periods of time, whereby here not only the privacy in form of a retreat in leisure time, but also the privacy that the individual participant needs during his or her working hours in order to concentrate and organize is to be considered.

To make matters worse, leisure time and working time on expeditions are often not clearly and neatly separated from each other, and the immediate proximity of the workplace, leisure time and colleagues creates a kind of constant readiness and availability that further restricts privacy.

Lack of privacy due to housing in multi-bed accommodation (chambers) can have a major impact on people's mental capability. One lives in a confined space with one (or more) stranger(s), habitual private rituals cannot be performed, or can only be performed to a limited extent or under observation, and the space to be used privately is strictly limited or "public". Affected people perceive the "being under observation" and the small distance to the roommate as an intrusion into their intimate sphere and may react irritated and rejecting.

This situation can be aggravated by cultural differences in the behavior of the "roommates". Thus, a high conflict potential can develop here, and over a longer period of time "quirks", habits or characteristics of the co-inhabitant can become a strong psychological stress, which can lead to tension, frustration, stress, reduced efficiency, the reduction of consciousness and the cognitive abilities. In the longer term, this can result in hidden or open aggressiveness.

Since privacy is naturally restricted during a (ship) expedition, participants should be informed in advance about these stress factors and symptoms. If possible, the chambers should be occupied as desired and working hours or working group membership should also be considered.

Mutual consideration (e.g. in case of shift change and disturbance on the chamber but also in case of personal habits) should be a matter of course and, if possible, trusted persons and conflict mediators should be named within the group who can be addressed in case of arising symptoms or in case of conflict.

In case of strong personal mental stress on individual participants, there should be the possibility of a "chamber exchange". It would be ideal if in case of psychological stress, e.g. due to external factors (incidents at home, etc.), there were also (at least temporarily) the possibility of evading into individual accommodation.

A certain degree of privacy is also important during work, team and group work certainly offers many advantages, but constant team work can also be counterproductive due to a lack of opportunities for retreat and concentration and lead to lack of concentration, listlessness, loss of performance and irritability. These consequences of psychological stress may lead to a reduction in performance and willingness to perform, which may ultimately result in quality of work, but also in reduced safety awareness and an increased frequency of mistakes and accidents.

In order to prevent this situation, the individual should also have sufficient opportunities for retreat and concentration during work. This can take place, for example, through mutual consideration in the laboratory (e.g. no loud music, meetings not next to working colleagues), but also through measures such as "personal" workplaces (which are then available again in the next shift) and a balance between independent and joint work.

Furthermore, the free time of colleagues should be respected (e.g. postponing questions until the next day instead of disturbing them) and it is recommended to hold meetings and work meetings in a regular and scheduled manner in order to enable regular and concentrated work.

Monotony

Particularly on long expeditions, when a certain routine has set in and the workflow no longer holds any surprises, the psychological strain of monotony can occur.

This can manifest itself, for example, in a drop in performance, lack of interest, boredom with fatigue, reduced alertness, a drop in mental alertness, fluctuations in the ability to perform and react, and consequently in the increased occurrence of errors.

Especially in field and laboratory work, the occurrence of errors can lead to serious accidents with personal injury, so that the consequences caused by monotony are to be prevented.

A structured work plan in which for example, goals and milestones (with subsequent "restart") are defined can be helpful, and in which - if possible - an exchange of tasks and variety in the work processes within the group is planned.

An important means of interrupting monotony during an expedition is also the occurrence of social events that interrupt everyday work and give the participant the opportunity to break out of the routine or to build up a certain anticipation. These can be e.g. special days (Sunday, sailor's Sunday, special holidays, "mountain festival", game or sport tournaments etc.) and in the work flow there should also be the possibility to participate in these (see section Polar Day / Polar Night). Also, days off firmly integrated into the schedule offer the employee the opportunity to break out of the monotony and do something "completely different".

Seclusion / homesickness

The remoteness or long distance to home during polar expeditions represents a special form of psychological stress. This can lead to reactions such as homesickness, sadness and melancholy, but also to depressive mood with reduced performance, reduced attention and demotivation.

This situation can become aggravated by unforeseen personal events or incidents at home (illness or death of relatives, etc.), since an immediate return of the affected person is usually not possible.

This form of stress cannot be ruled out, especially since the effects are very individual, since they depend very much on the personal situation and mental performance as well as on the experience and circumstances of the individual.

The participants should be informed in advance about this problem and be aware of it. If possible, trusted persons should be named who will be available as contact persons in case of symptoms.

In general, boredom is also seen as conducive to homesickness symptoms, which means that distraction, work but also other issues, involvement in a new social environment and regular sport or involvement in a particular hobby can reduce the occurrence of these symptoms.

Furthermore, it is important to have regular and reliable ways of communication with your home; which will generally be WhatsApp, but also the possibility of using a satellite telephone (you need to buy a phone card).

Also, the involvement of all persons in "social events" on board (e.g. also consideration of birthdays) plays an important role in the avoidance of homesickness symptoms, e.g. when planning social events or community projects (e.g. sports programs or the like) it should be considered that they do not always take place when the same people cannot participate due to shift work or work load.