

Guidelines for Principal Scientists

1. Background

- 1.1 In providing 'free at the point of use' access to the NERC ships scientists are being provided with considerable additional resource of significant monetary value. It is therefore essential that efficient use is made of this resource. This set of guidelines has been developed to provide a clear indication of the expectations that NERC has on anyone undertaking the role of Principal Scientist.

2. Guidelines

2.1 The role of Principal Scientist

- 2.1.1 The role of Principal Scientist (PS) is to manage the scientific requirement of a cruise – before, during and after - taking responsibility for all members of the scientific party and their activities.
- 2.1.2 Given the high level of responsibility placed on this role the Principal Scientist must be an experienced sea-goer of scientific cruises, and for at least the first time acting as Principal Scientist should be mentored by an experienced Principal Scientist in the cruise preparation stages and preferably during the cruise as well.
- 2.1.3 The named PS is the point of contact for all communications by the ship operators and technical support. If the named PS is unavailable for a period of time during the cruise preparation phase they are required to name a delegate so that planning issues can be dealt with in a timely manner. The PS must ensure that the person delegated to fully understands the responsibility that they are taking on.
- 2.1.4 The PS should identify the key operational and technical people (e.g. NMF and BAS) involved in the management of their cruise, communicating all needs to them and if possible arrange to see them personally. Cruise planning meetings will be arranged at specific points by the ship operators but the PS should also ensure that they are actively progressing the planning of their cruise.

2.2 Preparation for the cruise – Scientific Programming

- 2.2.1 It is essential to develop a rough cruise plan, including deployment, recovery and transit times. You should also look to manage the expectations of your cruise participants according to what it is likely can be delivered during the cruise.
- 2.2.2 As PS you should try to ensure that cruise opportunities are used efficiently. For example, by allocating spare cabins to external scientists who can add value at little extra cost or effort (any requirements beyond that detailed in your SME would need prior agreement with the cruise operator), and checking that data will be collected using standard protocols and can be utilised by others within the scientific team e.g. modellers.
- 2.2.3 Other specific areas that particular attention should be paid to are:
- Timely engagement with diplomatic clearance process (can start up to 8 months before sail date)
 - Timely completion of customs/shipping forms
 - Correct labelling of equipment. This is essential as there may be equipment for other cruises on the ship and on BAS ships this is particularly important as there will also be many tons of cargo destined for the Antarctic.
 - Completion of Health & Safety and COSHH forms. It may be worth delegating this specifically to someone within your team. (Useful advice can be obtained from NMF/BAS)
 - Delivery of user supplied (scientists own) equipment on time
- 2.2.4 Any media involvement, during mobilisation/demobilisation or the cruise itself, must be agreed with the ship operator in good time prior to the cruise taking place and be in accordance with the relevant policies.

2.3 Preparation for the cruise - Personnel

2.3.1 As PS you need to ensure that you are aware of any issues that may impact on your scientific team. This may include:

- Medical issues e.g. diabetes, other long terms illnesses, pregnancy
- Impact of tiredness/sea sickness on individuals
- Dietary requirements and allergies (advise the ship operator as early as possible)
- Balance of experience

2.3.2 You should make certain that your scientific team has all of the necessary documentation:

- Sea survival Certificates (the original must be taken to the ship)
- Medicals (dental checks are often also desirable)
- Passport (where required) with at least six months validity
- Visas (where required) for foreign participants or overseas activities

It is advantageous to keep scanned electronic copies of this documentation for easy reference.

2.3.3 An accommodation plan for living on board the relevant ship should be prepared, including cabin allocations. Cabin allocations should take account of position/noise and where cabins are shared should consider working hours and workings arrangements e.g. avoid putting together supervisor and students or managers and staff, to avoid disturbance and build up of stress.

2.3.4 Laboratory space should be planned and the scientific team informed in advance. Key issues are:

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| - bench space | - temperature controlled area |
| - gas line supply | - wet/dry floor working area |
| - electrical supply | - use of radiochemicals |
| - proximity to fume cupboard/sinks | - work with trace chemicals (clean container) |
| - proximity to deck | - location of hazardous/sensitive activities |

2.4 The Cruise

2.4.1 The PS should arrive at the ship in plenty of time (as agreed with the ship operator) e.g. two days before sailing, along with other members of the team who may have a lot of equipment to set up.

2.4.2 It is advisable to give a welcome talk to your scientific team:

- Lay down simple ground rules e.g. cleanliness, alcohol, food and drinks in work spaces, eating and resting properly, personal respect issues
- Advise on the need for strict adherence to Risk Assessments and Hazard controls
- Detail if a watch system will be used – time periods and station numbering
- Advise on the hours of rest form.

2.4.3 Consider making a presentation of your science to the ship's staff. They are part of your team and some background knowledge of the scientific aims will help the overall mission.

2.4.4 During the cruise it is essential to be very organised. You should provide the Captain, crew, scientific and technical team with an accurate information flow e.g. what is happening, going to happen and waypoints.

2.4.5 Daily plans should be posted at nominated places. Daily meeting (may be informal) with the Master/Officers is recommended to ensure good liaison between the science team and marine staff.

2.4.6 It is advisable to discuss plans with the Co-PIs of your scientific team regularly.

2.4.7 As a senior manager aboard the cruise you have a specific Health and Safety responsibility to ensure that the activities carried out by your scientific team are done so according to the relevant assessments/forms. It may also be useful to delegate responsibility to a member of your team for particular areas e.g. the laboratories, radiochemistry etc.

- 2.4.8 Any problems, scientific or personal, should be handled discreetly. A proactive approach in talking to all staff regularly can help to anticipate and prevent problems getting out of hand and this may be particularly important with inexperienced scientists or students. It also needs to be remembered that problems can appear magnified in the claustrophobic ship environment.
- 2.5 Post-cruise Activities.
- 2.5.1 It is essential to get as much of the Cruise Report completed as you can before the end of the cruise as people's priorities will shift as soon as they leave the ship. Some parts of the report, such as the diary of events, will need to be written on a daily basis during the cruise. The full cruise report should be submitted to the British Oceanographic Data Centre (BODC) within 6-months of the cruise
- 2.5.2 The Cruise Summary Report form/ROSCOP for BODC is critical and should be submitted within 7 days of the end of your cruise, and you will be chased if this is late.
- 2.5.3 The post cruise assessment form must be submitted within 7 days of leaving the cruise. It can be beneficial to complete this off board this ship, to reflect on the whole cruise and not just the last few days.
- 2.5.4 Every biological sample has to be imported legally with a licence from Defra. This is the PS's responsibility. The form is only available on line and takes approximately an hour to complete so can be a challenge using the satellite link.
- 2.5.5 The PS should ensure that relevant equipment and materials have been demobilised and shipped back to the UK. It is particularly important that all chemicals, radiochemicals and biological hazards (including samples and waste) are removed and correctly packed for transport with the correct documentation. Failure to correctly package and label waste chemicals may result in science staff being refused inclusion in future cruises.
- 2.5.6 Laboratories should be checked to ensure that they are clean and tidy and free of any chemical or radiochemical contaminants.
- 2.5.7 Data collected during the cruise should be lodged with BODC as the NERC data centre for Oceanography. On NMF operated cruises NMF personnel will back up the data that is stored on the ship's computer and send this to BODC for security archive. However, this may not include all data collected and is not considered to be the definitive cruise dataset for long term management. Some data sets will only be generated or finalised once the cruise participant is back in the laboratory. It is the grant holder's responsibility to submit definitive versions of all data sets to BODC.
- 2.5.8 A post cruise meeting for the scientific team can often be beneficial in facilitating the delivery of science outputs e.g. papers, particularly in multidisciplinary cruises where the combined outputs can provide additional understanding to the individual science projects.

3. Timetable

Timeline	
1 st April	Marine Planning deadline (funding must be added to SME by this date to be considered for a place in the following years programme)
Monthly	NERC Marine Facilities Programme Published on an 8 month rolling basis (this is the official offer of a place in the programme)
Cruise – 8 months	Diplomatic clearance processes start
Cruise – 8 to 6 months	First planning meeting
Cruise – 3 months	Planning stage and supply agreement finalised
Cruise	
Cruise + 7 days	Submission of post cruise assessment form to ship operator/NERC
Cruise + 7 days	Submission of Cruise Summary Report/ROSCOP to BODC
Cruise + 6 months	Submission of Cruise Report to BODC
Cruise ++	Submission of data to BODC