



**National
Oceanography Centre**

NATURAL ENVIRONMENT RESEARCH COUNCIL

**PRINCIPAL
INVESTIGATORS
GUIDANCE
NOTES**

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Principal Investigators Guidance Notes

Dear Colleague

Principal Investigators Guidance Notes

These Guidance Notes have been prepared in order to familiarise you, the prospective senior manager in charge of a research cruise on a NERC research vessel, with your management responsibilities when utilising this major and expensive facility.

The ever-tightening legislative framework within which we and all other shipping organisations are now required to work places a considerable administrative overhead on the planning and operation of each and every cruise. The NERC National Marine Facilities Sea Systems (NMFSS) are aware of this increased workload and have hopefully provided sufficient detail within these Guidance Notes to ensure that you, together with NMFSS and the National Oceanography Centre, Southampton, conduct our activities at sea safely and professionally.

NMFSS operated ships, in common with all other merchant vessels, are accredited to the IMO International Safety Management (ISM) Code and the International Ship and Port Facility Security (ISPS) Code. To achieve and retain this accreditation we have to pay great attention to safety management, vessel security and auditing of all our activities - which involves you and your scientific party in documentation, checklists and, very importantly, risk assessments of all potentially hazardous activities. These risk assessments must originate with the individual or group who will carry out the activity. It cannot be avoided, but we will do all we can to assist you through the whole process.

Our objective is to ensure you achieve the best science you can on your research cruise, by safely and efficiently providing all the supporting services needed to operate the research ships.

Should you have any concerns on any aspect of your research cruise, please contact us at the NMFSS Operations office (t: + 44 (0)23 8059 6800, e: vmt@noc.soton.ac.uk) at the National Oceanography Centre, Southampton or Ship's Master, whichever is appropriate, and we will respond promptly.

Finally, may I wish you every success on your cruise.



Geraint West
Head of NMFSS
NOC

October 2010

SECTION 1 - EXECUTIVE SUMMARY AND CHECKLIST

1.1 PURPOSE

1.1.1 To provide clear and unambiguous guidance to each Principal Investigator, in charge of a research cruise on a NERC ship managed by NMFSS, on the most effective way to plan for the execution of this cruise in order to achieve the maximum potential benefit.

1.1.2 To indicate the clear lines of responsibility of a Principal Investigator in maintaining their management role on board the ship and to provide a reference source for non-marine personnel relating to scientific operations in port and at sea.

1.1.3 To provide a management guide that is complimentary to and in compliance with, the NMFSS Safety Management System (SMS), to meet the requirements of the International Safety Management (ISM) Code and the International Ship and Port Facility Security (ISPS) Code which are mandatory under shipping legislation, and to meet the requirements of The Revised Standards of Training, Certification and Watchkeeping Convention (STCW 1995, as amended) and issued by the International Maritime Organisation (IMO) and ratified by the UK Maritime and Coastguard Agency (MCA).

1.1.4 These Guidance Notes apply to all cruises on NERC research ships ('the ships') managed by NMFSS.

1.1.5 Attention is drawn to the following Policy Statements, which are applicable on the ships:

1. NERC Safety at Sea Policy Statement;
2. NERC Alcohol Misuse at Sea Policy Statement;
3. NERC NMFSS Policy Statement on Harassment and/or Bullying in the Workplace;
4. NERC Pornography Policy Statement;
5. NERC NMFSS Policy on (Non) Smoking Whilst On Board NERC Research Ships;
6. NERC Code of Conduct for Seafarers;
7. NERC Drug Abuse at Sea Policy Statement;
8. NERC Sexual Harassment Policy Statement;
9. NERC Security Policy Statement and
10. NMFSS Non-Smoking Policy.

These policies are quoted in full in the booklet, 'Guidance Notes for All Personnel due to join an NMFSS Managed Vessel' which is available via website link.

For NERC employees, due attention should also be paid to the NERC Health and Safety Documented management system which can be found at <http://www.nerc.ac.uk/about/work/policy/safety/>

1.2 RESPONSIBILITIES

1.2.1 The Principal Investigator shall be responsible to the Master for the safe conduct of all scientific work on board the ship and for the conduct and behaviour of the members of the scientific party whilst on board.

1.2.2 The Master has overall responsibility for the safety of the ship and all those personnel embarked, and shall exercise over-riding authority should the ship, its personnel, its equipment, the environment or other ships personnel be put at risk.

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

1.2.3 The route of communication for the scientific party to the ship's management is through the Master. For practical matters pertaining to the utilisation of crew members the route is through the Chief Officer.

1.2.4 All members of the scientific party shall sign on the ship's Crew Agreement and shall comply with the clauses contained within that document.

1.2.5 All members of the scientific party must be medically fit for the cruise and have attended a Personal Survival Techniques (PST) course. They will be required to present the **original** ENG1 Medical Certificate (or equivalent), PST course certificate and a valid passport to the Master or his representative on embarking. Failure to present these documents may prevent them from sailing on the vessel.

1.3 OVERVIEW OF PLANNING PROCESS

1.3.1 NMFSS PRE-CRUISE PLANNING

The outline timetable in relation to each cruise can be summarised thus:

9 months before the cruise date	<ul style="list-style-type: none"> • Applications for clearance to work in foreign waters delivered to NMFSS Operations office • Contact with Programme Manager at NOCS and on line access to Marine Facilities Planning (MFP) website; http://www.noc.soton.ac.uk/nmf/mfp/mfp.php • Arranged • Assignment of Cruise Manager for your cruise
In the 9 months before the cruise dates:	<ul style="list-style-type: none"> • Detailed cruise planning with Cruise Manager using MFP website; http://www.noc.soton.ac.uk/nmf/mfp/mfp.php • System Questionnaire meeting (may be a 'virtual' meeting) for requirements for and use of NMFSS and ships fitted equipment. • Formal cruise meeting held for technical discussions on cruise details and agreement on resources and support resulting in cruise agreement signed by both parties • Continuous dialogue between PI and Cruise Manager regarding requirements for cruise.
In the 3 months before the cruise dates:	<ul style="list-style-type: none"> • PI to send list of participants to NMFSS Operations with details of requirements and final cruise plans. • NMFSS Operations appoint port Agents and confirm ship's programme.
One month before the cruise dates:	<ul style="list-style-type: none"> • PI to send Risk and COSHH Assessments, scientific equipment lists to Cruise Manager and RRS 12 (Embarkation) Forms to Operations Office. • Cruise Directive prepared and issued by NMFSS Operations and available on the MFP website.
2 or 3 days before Cruise start:	<ul style="list-style-type: none"> • Scientific party attends the vessel to mobilise equipment.
1 day before Sailing:	<ul style="list-style-type: none"> • Scientific party joins the vessel. • Safety training on board before departure.

See also the table at the end of this section.

1.3.2 DOCUMENTS SENT OUT BY NMFSS OPERATIONS

- Principal Investigators Guidance Notes;
- A set of Blank Notification Forms (Annex 1 to PSGN); and
- A set of Cruise specific checklists (Annex 2 to PSGN).

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

Within Annex 2, the PI needs to circulate to cruise participants for completion and return to NMFSS Operations the following documents:

- Embarkation Form (RRS12);
- Risk Assessments for all scientific activities on board;
- Detailed list of all chemicals and/or hazardous goods;
- COSHH assessments for use of any hazardous materials on board; and
- Detailed equipment manifest (equipment list) for items which are not part of the UK Marine Equipment Pool.

The PI should complete the Notification Forms as soon as possible and return to the operations office at NMFSS (See Section 3).

1.3.3 OTHER DOCUMENTATION

In addition to the above, the following will be required one month before the vessel sails:

- Final list of cruise participants;
- Cabin Allocation List;
- Letter of competency to act as Principal Scientist from Line Manager;
- All cruise participants will be required to have a valid passport - with at least six months validity
- All cruise participants are required to credit their shipboard account (by credit/debit card, contacting NOC Finance on +44 2380 prior to them arriving onboard the vessel
- NMFSS Operations will issue a Cruise Directive, using the MFP website for the cruise, which will summarise the cruise requirements prior to the ship sailing. This document also serves to inform other authorities of the brief particulars of the cruise if required.

The Master is responsible for sailing and proceeding on a cruise in accordance with specific marine Sailing Instructions issued by the Head of NMFSS, and progressing the scientific programme in accordance with the requirements of the PI.

The PI should ensure that all participants read the Guidance Notes for All Personnel due to join one of the ships (JPGN) document on the MFP website. This document contains essential information for all members of the Scientific and Technical Support parties and the PI should circulate prior to them embarking on the ship.

Inside the front cover is a table for completion by the individual, which will act as an aide-memoir when completing the necessary paperwork prior to embarking. Members of the Scientific Party should be encouraged to fully read and understand this publication prior to joining the ships.

1.3.3 SIGNING ON CREW AGREEMENT

All members of the Scientific and Technical Party are required to 'sign on' to the Crew Agreement.

1.4.0 SAFETY ON BOARD THE SHIP

1.4.1 The ships are UK registered Class VII Cargo Ships. Because of this, all members of the scientific party are classed as Seafarers and, therefore, must comply with the requirements of the UK MCA for such persons.

As the person in charge of the scientific party on board the PI is responsible for ensuring that all the members of the scientific party are aware of their legal obligations and NMFSS requirements regarding safety.

Full information concerning details of all safety equipment provided on board the ship is contained in the Safety Management System (SMS) and the Ship's Safety Training Manual, which are available on the ships.

1.4.2 SAFETY FAMILIARISATION

As a requirement under ISM and STCW, Ship's Officers will undertake a formal period of pre-sailing safety familiarisation for all scientific staff as soon as practicable after the scientific party join the vessel and before commencing the cruise. This safety familiarization is undertaken as a statutory part of the ISM Code, and is formally recorded.

The PI is requested to ensure that all members of the scientific party are available for this training regardless of whether they have sailed on the vessel before. If this is not undertaken, it is possible that sailing might be delayed until its completion.

All Personnel must, as highest priority, familiarise themselves with the Ship's Emergency Signal and Procedures. Each person must be aware of his or her Muster Point and appointed Lifeboat Station. From time to time emergency drills and exercises will be carried out on board. These are mandatory and necessary for everyone's safety.

1.4.3 PERSONAL PROTECTIVE EQUIPMENT

The supply of protective headgear, protective footwear and proper working apparel for the scientific party is the responsibility of each individual in the party. Additional equipment such as safety harnesses and inflatable (working) lifejackets are supplied, on loan, by the ship. The PS should ensure that all participants are aware of this requirement and that it is complied with. It should be noted that failure to produce and wear the correct Personal Protective Equipment (PPE) when circumstances require will result in personnel being prevented from working.

1.4.4 RESPONSIBILITY FOR SAFETY

The Principle Investigator's responsibilities begin at the earliest planning stage. Particularly with new tasks, or in unfamiliar circumstances, every stage of the proposed work must be thought through and prepared for, and everyone concerned must understand what is expected. A Risk Assessment must be completed for all on board activities related to the science programme for the cruise.

The PI must make an early opportunity to discuss on board with the Master any new or unfamiliar aspects of the scientific programme, so that as far as possible any potential problems are anticipated and solved in good time. During the cruise he should bring to the Master's attention any changes in circumstances, conditions or requirements which may affect the safety or operation of the vessel or persons on board, so that the Master may initiate, through the PI or Chief Officer as appropriate, any changes which may seem necessary to the safety precautions or procedures adopted.

It should be noted that NMFSS has a duty of care for the safe operation of the ships and for the health and safety of its own sea going employees from the moment they leave their homes until they return safely. However, the duty of care for non-NMFSS employees is accepted and discharged by NMFSS at the vessels gangway. No duty of care for the health and safety of non-NMFSS employees is accepted while travelling to and from the vessels, such duty lies with the employee's centre/survey and line management They should ensure that their employees are aware of what legislation applies to them and the person responsible for the duty of care at each stage of their journey.

1.4.5 USE OF DANGEROUS OR HAZARDOUS MATERIALS

It is a legal requirement that new processes or processes that might involve a significant risk to the ship, staff or cause environmental pollution have a written Risk Assessment prepared in advance of the cruise.

Additional any work involving hazardous materials must have an assessment completed in line with the Control of Substances Hazardous to Health (COSHH) regulations 2002.

The Cruise Manager will assist each PI to complete this process, but the legal responsibility is on the scientific party to provide full information in this respect. This information must be supplied at least one month prior to the cruise.

1.4.6 ACCIDENT REPORTING

All members of the scientific party must report any accident, near miss or dangerous occurrence, to an individual or to equipment, to the Master via any of the ships officers no matter how trivial. What may appear to be a minor event at the time may have much wider implications later on.

1.4.7 SECURITY

The vessels comply with the International Ships and Port Facility (ISPS) Code. All members of the ships company are requested to be vigilant at all times with regards to potential security issues and may be required to permit themselves and any personal effects or equipment to be searched prior to embarking.

Further details regarding the ISPS Code and security issues in general will be promulgated during the cruise planning process and during the induction and familiarisation procedures on embarking.

Security systems are in place on the vessels. See Appendix A09 for more details.

1.5 CRUISE REPORT REQUIREMENTS

1.5.1 A copy of your detailed cruise report should be sent to the Marine Planning Office, NERC, Swindon, as soon as possible after the cruise.

1.5.2 The NMFSS service review procedure requires that the Master convenes and chairs a post cruise assessment meeting immediately prior to cruise completion, and the PI is required to complete a Post Cruise Assessment form (PCA) prior to and for discussion at the meeting. The purpose being to discuss the overall effectiveness of the cruise as perceived by the scientific and NMFSS components. The Master will submit the minutes on the PCA form, agreed by the parties present, to the Head of NMFSS for dissemination to senior managers ashore.

1.6 COPIES OF CRUISE DATA

There may be a requirement to submit copies of data to a foreign state in addition to the cruise report. This will usually be specified in the cruise clearance. If it is not, please seek guidance from the NMFSS Operations office.

1.7 REFERENCES

Safety Management System	SMS
Safety Training Manual	SaS - Ship specific
Contingency Manuals	ScM - Ship, and Shore
NERC and NMFSS Safety & Environmental Policies	
NERC Guide to Handling Explosives at Sea (Updated in 1998)	
MS Notices MSN 1765 (M) - Medical and eyesight standards for seafarers	
Department of Transport Code of Safe Working Practices for Merchant Seamen - latest edition	
International Maritime Dangerous Goods Code (IMDG) latest edition	
Ship Captain's Medical Guide - latest edition	
Cruise Directives	
NERC Swindon Seatime Applications documentation	

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

The Revised IMO International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 95 as amended.
Guidance Notes for All Personnel due to join an NMFSS managed Vessel
The International Ships and Port Facilities Security (ISPS) Code
NERC Policies on communications and use of computers
Control of Substances Hazardous to Health Regulations 2002 (as amended)

1.8 DEFINITIONS

BAS	British Antarctic Survey
COSHH	Control of Substances Hazardous to Health Regulations.
EEZ	Exclusive Economic Zone.
ENG1	Certificate issued by the MCA when the requirements for medical and eyesight have been met.
FCO	The Foreign & Commonwealth Office.
ISM	The International Safety Management (ISM) Code as amended.
ISPS	The International Ship and Port Facilities Security Code as amended.
JPGN	Guidance Notes for All Personnel due to Join an NMF SS managed vessel.
MSN	Merchant Shipping Notices
MCA	Maritime and Coastguard Agency
NERC	The Natural Environment Research Council at Swindon
NoK	Next of Kin
NMFSS	National Marine Facilities Sea Systems: managers and operators of RRS Discovery and RRS James Cook, and provision of scientific technical support element in terms of equipment and manpower (from NMFSS) to the UK marine science community.
PI	“Principal Investigator” and refers to the scientist appointed as being in overall charge of the scientific party on board the ship.
PIGN	Principal Investigator’s Guidance notes.
RRS12	NMF SS next of in details form.
SMS	The NMFSS Documented Safety Management System.
STCW 95	Revised IMO International Convention on Standards of Training, Certification and Watchkeeping for Seafarers as amended.
UNCLOS	The United Nations Convention of Law of the Sea
NOCS	National Oceanography Centre, Southampton.

PRINCIPAL SCIENTIST'S CHECK LIST FOR CRUISE PLANNING

RRS..... Cruise No:

Principal Investigator.....

Item	Action required by PS	Deadline
Notification of intention to work in foreign waters	Completion of form	7 months prior to cruise start
Assignment of Cruise Manager and login for MFP website	Contact NMFSS Operations for assignment of Cruise Manager	9 months prior to cruise start
Commence using MFP website	Complete forms on line	9 months prior to cruise start
Complete System Questionnaire on line	Contact Cruise Manager	6 month prior to cruise start
Attend cruise meeting	Contact Cruise Manager	6 month prior to cruise start
Agree supply agreement	Contact Cruise Manager	1 month after CPM
Risk and COSHH assessments for sea going activities. Chemical and scientific equipment lists	Distribute to all cruise participants, collate returns and forward to Ops	1 month prior to cruise start
RRS 12 ENG 1 - medical Dental Guidance notes	Distribute to all cruise participants, collate returns and forward copies to Ops	1 month prior to cruise start
Finalise list of all cruise participants	Confirm to ops	1 month prior to cruise start
Finalise all cruise requirements: Delivery of equipment, flights / joining details, all approvals have been received	Contact ops	1 month prior to cruise start
User equipment manifest	Return to ops	3 weeks prior to cruise start
Cruise directive	Confirm to ops it is correct	10 days prior to cruise start
Join ship. All participants to attend safety briefing	Ensure that all participants attend briefing	Day of joining vessel
End of Cruise		
Customer appraisal	To complete form	On board, prior to cruise debrief meeting
Complaints form	Complete form (if applicable)	2 weeks after completion of cruise
Scientific cruise report	Submit to Director of Science Programmes, NERC, Swindon	No later than 6 months after completion of cruise

SECTION 2 - PRE-CRUISE PLANNING

2.1 INITIAL CONTACT

The initial contact in NERC Swindon is the NERC Marine Planning Officer, Helen Beadman:

Tel: +44 (0) 1793 411520

E-mail: habe@nerc.ac.uk

2.2 DIARY OF EVENTS

2.2.1 (Related to programming year - 01 Jan to 31 Dec - and time in advance of a proposed research cruise).

15 months previously (September):

Promulgation of Announcement of Opportunity and Ship-time & Marine Equipment Application (SME) Forms by NERC Marine Planning Office.

01 April:

Completed applications returned to NERC Marine Planning Office, deadlines 1 April and 1 November. Note: This is in line with the Awards & Training deadlines for Research Grants, on 1 December (peer review and funding decisions in March) and 1 July (peer review/funding decisions in October). Scheduling of cruises will commence after the 1 April deadline. Applications received before/by the 1 November deadline will be incorporated into the programme as soon as funding is confirmed, if this is feasible logistically. If this is not possible, for example, because the required time window has already been allocated to an April application, or because there is insufficient lead time to apply for the necessary diplomatic clearances, then the applicant will be notified by the NERC Marine Planning Officer. The application may be carried forward for consideration in the next years programme, provided that the relevant funding source agrees.

Draft programme prepared by NERC Marine Planning Office.

In June/July:

Adjusting the provisional programme in conjunction with NMFSS with respect to practical constraints, logistics etc. Final confirmation of full superstructure funding from funding sources followed by confirmation of sea time to successful applicants by NERC Marine Planning Office.

Formal release of Operational Version 1 of the programme by the Director of Science Programmes, NERC, Swindon Office. NMFSS operations sends out Cruise paperwork to Principal Scientists

01 January:

Programme commences.

2.3 POINTS OF CONTACT AT NMFSS

2.3.1 Communication Lines

2.3.1.1 Cruise Manager

Each cruise is assigned a dedicated 'Cruise Manager' who will act as a conduit through which information will be passed. You will be advised of the contact details for your Cruise Manager at an early stage of the cruise planning process. The general contact details are:

e: nmfss-progman@noc.soton.ac.uk
t: 023 8059 6284

2.3.1.2 Interactive Website

All cruises are entered on an interactive website from reception of the Ship-time and Marine Equipment Application (SME) Forms by NERC Marine Planning Office to the completion of cruise reports. This website is your 'key' point of reference for monitoring the cruise planning process and it is **essential** that you refer to it at frequent intervals during the cruise planning process:

<http://www.noc.soton.ac.uk/nmf/mfp/mfp.php>

2.3.1.3 NMFSS Operations office Contact details

e: vmt@noc.soton.ac.uk
t: 023 8059 6286
f: 023 8063 5130

2.3.2 Personnel for contact

For all requests for specific cruises or projects please direct queries to the Cruise Manager in the first instance. This person will ensure that any queries the Operations Office cannot answer are passed to group concerned and that a response is forthcoming. Using a single point contact ensures that an up to date record of all queries relating to each Cruise is maintained.

2.4 PROGRAMME CHANGES

For requests to modify cruise dates, ports of call, or policy matters please direct your queries to the NMFSS Operations office.

2.5 LOGISTICS ORGANISATION

2.5.1 Equipment, technical support and logistic support in general, is allocated to the specific project within the ships' programmes on the basis of the information contained in the original SME form and subsequent discussions between you, as project leader, and the NMFSS Cruise Manager.

2.5.2 NMFSS will do its best to satisfy the requirements of each and every project, but this will be on an equitable basis and within its available resources of equipment, manpower and funding.

2.5.3 Prompt use of the website will set in motion a series of actions aimed at ensuring that, as far as possible, the necessary ship's systems, scientific equipment and technical resources managed by NMFSS are put at your disposal.

2.5.4 As is explained in the documentation sent out by the NERC Marine Planning Office for sea time applications, NMFSS resources may not be able to cover every equipment requirement by every Principal Scientist. Many systems require specialist technical staff to accompany them, which will affect the number of scientific berths available, whilst some cruises may require additional marine staff or trainees.

2.6 PRE CRUISE MEETINGS

2.6.1 One of the first actions required once a cruise has been entered into the Cruise Programme is to complete on line a System Questionnaire which is specific to each vessel. Accurate completion will form the basis to the detailed equipment, services and support levels you will receive.

2.6.2 You will be invited to a meeting (normally held at NOCS) to discuss the details of your proposed cruise. Information relating to this meeting, which is normally held up to 6 months in advance of the cruise dates, will be sent to you separately. The travel costs incurred in attending this meeting are for your own account - as advised to you in the NERC Sea time Application documentation.

2.6.3 The agreed minutes from the meeting and the details contained within the system questionnaire will form a "Scope of Supply" applicable to you as the customer and NMFSS and will be detailed on the website as the "Cruise Agreement". This shall be regarded as a baseline contract once signed by both parties. Any subsequent changes may involve additional costs, which NMFSS will identify and only action if written agreement is received from the customer that funding will be provided.

2.6.4 In addition, NMFSS would ideally hold a preliminary meeting with the Principal Scientist to agree at an early stage, the overall format of the cruise, including technical staff numbers.

2.7 NMFSS SCIENTIFIC SUPPORT STAFF ALLOCATION

2.7.1 The team of NMFSS technical staff on board will be led by the ship's Science Systems Technician plus suitably experienced specific dedicated technical engineers to operate and maintain items of 'portable' equipment. This is necessary to ensure that the wide range of ship fitted equipment and facilities are properly maintained for present and future cruises.

If 24 hour operations are envisaged as part of your scientific programme, then it is vital that the staffing implications are discussed to ensure that your cruise is properly supported and your objectives are achievable.

Hence it is necessary that you agree the numbers of scientific support personnel that may be required to attend on your cruise **before** you confirm numbers of scientific berths available for the remaining science team.

2.8 USER'S OWN EQUIPMENT

2.8.1 For operational and security reasons and to meet Customs requirements, details of the User's equipment to be carried on board, with particular reference to the overall weight, as well as the individual weights of specific items where this is significant will be required at an early stage.

2.8.2 To meet Merchant Shipping legislation, all lifting points must be clearly marked and tested with evidence of such testing being available to the ship prior to its loading on board. If no evidence is available, the equipment will **not** be loaded. The provision of test certificates and any special handling or stowage problems will be discussed at the cruise meetings.

2.8.3 Given previous experiences, it would be extremely useful for items, which are required in specific spaces on board, to be clearly marked with any instructions as to stowage location or special handling requirements. This is extremely important for equipment loaded when the 'owner' is not present for the mobilisation.

2.8.4 Risk Assessments for operations involving such equipment will also need to be carried out. Guidance as to how such assessments can be made can be supplied by the NMFSS Operations office.

2.9 TRAVEL ADVICE

2.9.1 For travel queries and advice your questions will be dealt with by the NMFSS Operations office at NOCS once the cruise programme has been finalised.

2.9.2 It should be noted that although NMFSS have a duty of care to all members of the ships company including members of the scientific and technical parties **whilst on board the vessel**, such duty for the health and safety of non-NMFSS employees whilst travelling to and from the vessels lies with the employee centre/survey/employer.

2.9.3 The latter should ensure that their employees are aware of what legislation applies to them and who owes them a duty of care at each stage of their journey.

2.10 INSURANCE

2.10.1 Users of NERC vessels should be aware that NERC is a non-insurance body and does not insure its ships, its staff or the equipment they carry.

2.10.2 Should non-NERC employees require personal insurance for the period they are on board plus transit to/from the ship they should make their own arrangements as deemed appropriate by their employer.

2.10.3 Users who bring their own equipment to sea with them should satisfy themselves and their parent organisation that they fulfil any insurance requirements they deem are necessary, including cover for periods in transit.

2.11 EMBARKATION FORM (RRS 12 NEXT OF KIN) DETAILS

2.11.1 The ship's Master is required by law to enter onto the Ship's Articles personal details of everyone embarked on the vessel. **ALL** participants are required to supply a Next of Kin Form (RRS 12), (see Annex 2) for completion and these must be returned to the NMFSS Operations office no later than **one month** prior to the start date for the cruise.

Please ensure these are completed fully, accurately and legibly prior to dispatch.

2.11.2 It is also suggested that details of each participant's whereabouts are left with the parent employer in the event of an emergency whilst they are embarked upon a ship.

2.12 MEDICAL CERTIFICATION

Prior to joining the vessel all personnel **must** be medically examined and meet the requirements of the UK Maritime and Coastguard Agency Medical Examination Regulations (ENG1). They **must** carry the original certificate with them when they join the vessel. Further details can be found in the JPGN booklet.

2.13 DENTAL FITNESS

Prior to joining the vessel all personnel must be dentally fit. Further details can be found in the JPGN booklet.

2.14 PERSONAL SURVIVAL TECHNIQUES

2.14.1 Prior to joining the vessel all personnel **must** have undertaken a Personal Survival Techniques (PST) Course to meet the requirements of STCW A-VI/1-1. In the UK this involves a one day course with the morning devoted to the classroom including:

Survival Techniques, Survival factors, Equipment, Drill and their value, Emergency signals and actions to be taken, Panic and its consequences, Lifejackets - design, donning and entering the water, Stowage and operation of inflatable liferafts, Boarding liferafts and actions to be taken, Construction of liferafts and ancillary equipment.

2.14.2 The afternoon is the wet drill in a swimming pool doing: liferaft launching & dry boarding; entering the water from a height, swimming in a lifejacket and boarding the liferaft unaided; water exercises, recovering unconscious person into a liferaft, righting a capsized liferaft and finally an exercise in abandon ship drill.

2.14.3 Advice and assistance with finding overseas training facilities can be obtained from the NMFSS Operations office. Alternatively information on foreign training facilities can be found at:

<http://www.imo.org/home.asp>

The **original** certificate demonstrating completion of this training course must be carried with the individual to the ship.

SECTION 3 - DIPLOMATIC CLEARANCE REQUIREMENTS

3.1 NOTIFICATION FORMS

It is a requirement under the UN Convention of Law of the Sea (UNCLOS) that marine research which is undertaken within a state's EEZ or not goes through a formal approval process. A notification form must be completed (see Annex 1). Without such approval, the work cannot be undertaken. This is for the promulgation of information on the vessels works to the Government of the state (assuming the work is not within the UK EEZ). Such approval is sought through the UK Foreign and Commonwealth office (FCO). In addition, the Notification Forms as supplied in Annex 1 once completed are circulated to the following for information:

- Fisheries Authorities (For avoidance of interference)
- Hydrographic Office (For navigation warnings)
- Ministry of Defence (For military exercise areas)
- Coastguards (For areas of high traffic density)
- Naval Authorities

The forms referred to in Annex 1 to these notes must be completed fully and a **separate form** for **each** coastal state in whose waters you wish to work is required with a clear explanation of the aims of your research in non-technical language where possible. This should include details of waypoints and transects and a clear map/chart

All foreign states require a minimum of 6 months notice and to allow time for administration, **all** notifications must be returned to NMFSS Operations 7 months in advance of the cruise.

The form should provide a clear and unambiguous map showing proposed tracks and stations and latitudes and longitudes of the overall area around the perimeter and the outline of the nearest coast, so that maritime limits can be inserted if required. This should be in A4 size.

3.2 APPROVALS FROM A FOREIGN STATE

3.2.1 You should note that the approach to a foreign state varies with the type of research you propose to do:

3.2.2 WATER COLUMN

This includes:

- Moored water column data logging devices.
- Surface data logging devices that are anchored to the seabed.
- Free floating (drifting) devices.
- Sediment sampling of fauna that lives in the top few centimetres of sediment in the larval state which becomes free swimming upon maturity.
- Fishing for non-exploitable resources.

3.2.3 CONTINENTAL SHELF

This covers all research concerning the **natural resources** of the **continental shelf** (or its physical characteristics).

This includes:-

- Echo sounding for bathymetry.
- Gravity measurements.
- If you require the Gravity Meter to be run on passage to port – to facilitate a tie-in ashore.
- Seabed photography.
- Sidescan sonar.
- Magnetometry.
- Seabed sampling of geological deposits.
- Fishing for exploitable resources (in the commercial sense).
- SWATH bathymetry

3.2.4 PORT CALLS

Permission to make a port call is normally requested automatically by NMFSS Operations.

3.3 COPIES

You will receive a copy of the material submitted by NMFSS Operations to the Foreign Office - please check it to satisfy yourself that what has been requested is actually what you intended.

3.4 RESPONSES FROM FOREIGN STATES

3.4.1 The UK Foreign and Commonwealth Office (FCO) normally request our Embassy to run a check on the clearances about a month before each cruise. It is usual for the foreign government to submit a 'Note' giving the response concerning the cruise to the Embassy. This Note is copied to NMFSS Operations and subsequently to the Master of the ship concerned.

If the response is a refusal this must be honoured completely. The Master will not enter waters for which prior entry approval is not held. Conditions set by the foreign state, such as carriage of an observer, or a requirement for the ship to make position/intention reports to the foreign authorities, will be arranged by NMFSS Operations through the ship's Master.

3.4.2 DELAYED APPROVAL

It is sometimes the case that approval is very late in being issued by foreign authorities. NMFSS and the FCO will instigate further chasing action before a cruise if there is no indication of an answer. NMFSS Operations will immediately transmit to the Master in writing any advice received from FCO London concerning verbal approval of cruise clearance. Unless this written approval is received on board the Master is not permitted to enter the waters of a foreign state.

3.4.3 REFUSED OR CONDITIONED APPROVAL

If the response is a refusal this must be honoured completely. The Master will not enter waters for which prior entry approval is not held. Conditions set by the foreign state, such as carriage of an observer, or a requirement for the ship to make position/intention reports to the foreign authorities, will be arranged by NMFSS operations through the ship's Master.

3.5 BERTHS FOR FOREIGN OBSERVERS

3.5.1 Under UNCLOS provisions there is an obligation to offer a foreign state the opportunity of placing an observer on board for any cruise undertaking work within that country's claimed waters. Where the possibility of multiple observers occurs, endeavours will

be made to minimise the berth problem by requesting that a single Observer acts for all countries on a neutral basis. You are advised that some nations will not accept this approach.

3.5.2 PAYMENT TO FOREIGN OBSERVERS

NERC will offer a free scientific berth and free victualling to foreign observers embarked upon NMFSS ships. Observers are expected to settle their travel and subsistence to/from the vessel. NMFSS will not accept responsibility for an observer's additional costs or daily allowances on board. If a foreign state insists upon the costs of travel or daily allowance being paid to observers, NMFSS will endeavour to negotiate through FCO, and hence the Government of the foreign state, to avoid the problem. The Principal Scientist should be aware that if such negotiations fail the costs would have to be added to the account of their particular project.

3.6 MINIMUM NOTICE REQUIRED BY FOREIGN STATES

3.6.1 In this context it means the **date of receipt** by the foreign state.

3.6.2 All foreign states now require a minimum of 6 months notice. NMFSS Operations aim to forward all Notifications within 2 working days of receipt. The FCO require a further week to undertake internal checks. Because other factors inevitably affects foreign clearance applications considerations, such as economic actions and political factors, NMFSS insist that all applications be treated formally.

Therefore all Notifications should be returned to NMFSS Operations at least 7 months in advance of the cruise.

3.6.3 NMFSS Operations will advise upon any notifications that have particular problems or require special treatment.

SECTION 4 - TRAVEL ARRANGEMENTS TO/FROM VESSELS

4.1 NMFSS PREFERENCE

4.1.1 It is preferred that members of the science party should make all of the travel arrangements as far as the arrival airport for foreign ports themselves. However, it is vital that the arrangements made, (names, dates, times, flight numbers etc.) are passed to NMFSS Operations in sufficient time for arrangements for 'meet and greet' at airports, transfers to hotels/ship etc. are passed to the ship's Agents; and the Agent only has one point of contact for travel, thus avoiding potential confusion. It should be noted that the cost for any arrangements made by the Ship's Agent for hotel accommodation, transport, etc. will be recharged to the Principal Scientist once the invoices are received by NMFSS Operations. It should be borne in mind that these costs may not be presented for several months if the Agency disbursement account is complex.

4.2 TRAVEL REQUIREMENTS

4.2.1 The NMFSS Operations office can advise on the necessary visa, vaccination/inoculation and other special requirements pertaining to particular ports. It is a recommendation that all staff have adequate inoculations to cover unexpected diversions of both the ship and aircraft used in travelling to and from the ship. This is especially relevant in areas where Yellow Fever and Malaria are a problem.

4.2.2 In several ports - notably in Middle Eastern countries - the Ship's Agent also has to act as sponsor for all staff joining/leaving a ship and it is vital that all the requisite information is correct. (NB: Please note that in several other countries, South Africa and India amongst them, the Ship's Agent is the route through which all immigration approvals are organised - for all personnel joining or leaving a ship in a working capacity. Even if you are taking a holiday before or after leaving a ship you should notify NMFSS Operations to ensure that the Ship's Agent is informed in advance).

4.3 COSTS / EXPENSES

4.3.1 Although NMFSS may make the required travel arrangements, the responsibility for the payment of expenses incurred on behalf of non-NMFSS staff rests with the PI.

4.3.2 Interim transport other than joining/leaving the vessel will be the responsibility of the individual. The exception to this will be if, at the Master's discretion, the local security situation requires other arrangements to be made.

4.3.3 As the PI you are asked to strongly remind your party that it is their responsibility to obtain proof (by receipt) of taxi use, or ancillary services incurred in joining or leaving ships - especially with ship's Agents.

NMFSS (through the NOCS Finance and accounting system) will recharge expenses, for which no confirmed name is apparent on invoices, to the Principal Investigator. Scientific staff should at least inform the ship's Master and ask him to record such facts if they cannot obtain receipts.

4.4 NON-UK PASSPORT HOLDERS

Non-UK Scientists attached to UK Institutes or Universities must ensure that their Immigration documents permit multiple exits/entries from the UK if they are joining or leaving a ship.

4.5 PRIVATE ARRANGEMENTS

4.5.1 If scientific staff or Technical Support staff, wish to make their own arrangements for holidays in foreign ports, they should be aware that NMFSS will not assume responsibility for any problems they may experience, and would not expect the Ship's Agent to be involved either.

4.5.2 Should an individual change their booking, and this subsequently invalidates any Group discount NMFSS may have gained, then that individual may be liable for the whole of the extra costs NMFSS may have to incur.

4.5.3 Scientific staff should bear in mind that the purchase of discounted fares may be unwise should the ship's itinerary be changed unexpectedly. NMFSS will not accept liability for reimbursement should the ship call at a different port from the one scheduled.

4.6 INFORMING THE AGENTS

If scientific staff make private arrangements to join or leave a ship by air they should inform NMFSS Operations (or the Master) of their flight details so that the ship's Agent can be made fully aware of all staff movements involved with the ship.

4.7 VISAS

When making arrangements for Visas staff are reminded that there are different types of Visa for staff joining ships and staff visiting on business in some countries. The former may limit both the numbers of days one may stay in that country and the freedom one may have to leave the port area. Please ensure that you ask for advice on the correct requirements.

4.7.1 FCO Locate: registration of British nationals overseas:
<https://www.locate.fco.gov.uk/LocatePublic/LoginForm.aspx>

4.8 INSURANCE

4.8.1 It should be noted that **only** NMFSS staff on board are covered for the consequences of accident or illness. Principal Investigators **must** make provision for all their party either by providing commercial insurance cover or by ensuring their NERC Centre/Survey will provide indemnity. This should cover at least the costs of unscheduled port calls, local hospital bills, emergency evacuation (e.g. by helicopter) and repatriation to the UK.

4.8.2 In the event of one of the scientific party suffering an accident on a ship, NMFSS will make every effort to facilitate use of our Agents to assist with arrangements. **All costs incurred will be recharged to the individual** who may then claim it from either the insurance company or his Centre/Survey. All scientific staff are advised to check personally that they possess adequate personal insurance cover and that their parent Institute or University recognises this liability of their insurance policies to allow for these potential costs.

4.8.3 University blanket insurance policies which provide an element of medical cover whilst staff are abroad may also include aspects of hospital cover and repatriation to the UK. Staff should note that the time at which this type of cover is activated will depend upon the arrangements the ship's Master may make in endeavouring to land a member of the scientific party and no University insurance company, or actions of the individual, will override the responsibilities of the Master or Owners. Any remedial actions on the part of the University insurance company will be subject to agreement by the ship's Agent, and the Master, and only actioned once the person concerned has formally left the vessel.

4.9 PRINCIPAL INVESTIGATOR'S LIABILITIES

If an accident occurs, and the PI is deemed to have acted reasonably, and within the guidelines laid down by NERC (See the NERC Safety Policy), then it is likely that NERC itself would accept responsibility and defend any civil action. This would be true whether or not the PI was employed by NERC.

However, if negligence was claimed against an individual then he or she could face a personal prosecution. Any proven liability would then be their responsibility alone to meet.

Where a NERC employed person is acting as PI on a commercial charter contract (on a NERC vessel) then he/she is legally the charterer's representative and the liabilities arising will be set out in the contract document. That person is strongly advised to confirm with NERC Swindon (Contracts Section) that their legal obligations in relation to NERC are properly documented in the contract. NMFSS are not responsible for undertaking this check.

SECTION 5 - CONDUCT OF A RESEARCH CRUISE

5.1 JOINING A SHIP

5.1.1 It is usually the case that the scientific party will join the ship on the day prior to the day of sailing. Until this time you should make arrangements for your party to be accommodated ashore. The reason for this is to permit the ship's catering staff to prepare hotel facilities properly.

5.1.2 There will be an opportunity for scientific staff to attend the vessel prior to actually joining, to facilitate preparation of their equipment.

5.1.3 Once on board all your party will be asked by the Master to complete the formalities required when joining a British ship. The Master will advise you when your staff should be available for this requirement.

5.1.4 You will be required to allocate cabins for your party. You are requested to ensure that a valid list of proposed cabin occupants is passed to the Master in advance of your party joining.

5.1.5 All of your staff will find explanatory 'Welcome Aboard' leaflets about the ship in their cabin. This explains safety, meal routines, domestic facilities, and scientific support services. It is recommended that the scientific party familiarise themselves with this information.

5.2 MOBILISATION

5.2.1 The NERC Research Ships Programme will have included varying numbers of days for mobilisation (and demobilisation) for the cruise. At the Cruise Meeting (see section 2.6) the requirements for mobilisation and demobilisation will have been discussed and an outline plan agreed. Requirements for mobilisation will be discussed with NMFSS Operations and approximately 2 weeks prior to the sailing date a Port Programme will be published and circulated with the Cruise Directive for the cruise. A detailed plan for the mobilisation of the cruise will be included in this document and sufficient copies for all members of the scientific party, which will be dispatched for circulation by the PI.

5.2.2 There will be close liaison between the PI and the Cruise Manager regarding the delivery and loading of 'Users' own equipment and if the mobilisation is elsewhere other than Southampton the best method of delivery of equipment to the port will be investigated. The possibility of 'sharing' transport may be discussed and the possibility of sharing transport costs pro-rata will be considered.

Full detailed lists of 'Users' equipment are required prior to delivery at the mobilisation port (a copy of a suggested equipment manifest is referred to in Annex 2) to enable:

- A detailed deck plan to be drawn up for promulgation to the ships Master to ensure the ship can load the equipment and has adequate stability once loaded
- For UK Customs documentation as the equipment is classified as an export.

This information should be sent to NMFSS Operations;

nmfss-progman@noc.soton.ac.uk

5.2.3 Once all equipment is loaded, the PI will be asked to sign a declaration that the equipment lists supplied are a 'true and representative record of equipment loaded, to the extent that any omissions shall not prejudice the safety of the vessel nor those on board and shall not have the potential to pollute the environment'.

5.3 CREW AGREEMENT

5.3.1 It is a legal requirement that all persons sign on the Crew Agreement.

Valid passports are required for all cruises with a minimum of 6 months validity in place at the end of the intended date of disembarkation.

5.3.2 Staff will be asked to give the Master the following information:

- Their full name
- Their Nationality
- Place and Date of Birth
- Their normal home address
- The name, address and relationship of their next of kin
- The name of the previous BRITISH ship on which they served
- and the date if more than 12 months have passed.
- Their Passport number, place of issue and date of expiry.

This information is normally requested from the PI well in advance of the cruise (by completion of Embarkation Forms (RRS 12) sent out by the Operations office), so that the Master of the ship has an opportunity to complete the documentation prior to the scientific party embarking, and hence ensure that the ship can sail on time. (Annex 2). Embarkation forms should be sent to RRS12@noc.soton.ac.uk

In addition, for payment of goods services purchased on board, credit/debit card details will be required for all personnel. All credit/debit card information will be encrypted to ensure the security of the card details.

If these details are not available in advance of the sailing time, the sailing may have to be delayed to facilitate their completion.

5.4 ACCOMMODATION ON BOARD

5.4.1 The PI will be allocated a single cabin with a day room for use as an office. All other scientific staff will be accommodated in single berth cabins.

Where NMFSS technical staff are embarked on scientific research cruises it has proved beneficial to the efficiency and continuity of the service they provide to ensure that certain cabins are set aside for their exclusive use. The PI is requested to liaise with NMFSS Operations in advance of the cruise to confirm numbers (and cabins) involved.

5.4.2 Keys to cabins will be issued by the Master or Chief Officer when scientific personnel join the ship. Cabins need not be locked when the ship is at sea but they should be locked in port, when the cabin is unoccupied. The catering staff and the Master/Chief Officer/Chief Engineer hold master keys to all the cabins and duplicate keys are held on the ship's Main Keyboard (under the control of the Duty Officer).

All keys must be returned to the chief officer before you leave the ship.

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

For safety reasons the Master normally retains laboratory keys.

5.4.3 All scientific staff have free access to the communal lounge on both the RRS Discovery and the RRS James Cook and to the Mess Rooms on both vessels and it should be noted that all personnel are required to be suitably dressed when using these rooms.

5.5 BRIEFING THE MASTER

5.5.1 It will be necessary for you to brief the Master of the ship at the earliest, mutually convenient, opportunity regarding your cruise intentions, working requirements, tracks, diplomatic clearances, the required employment of all NMFSS technical staff and the crew for your work.

5.5.2 Under the requirements of the ISM Code there is a need for the Master to produce a passage plan prior to departing the embarkation port. As a consequence, the Master will require confirmation of the position of the first scientific station or starting point of a line or transect prior to the cruise mobilisation to allow the Bridge Officers time to plan the vessels navigation. The preference is for NMFSS Operations to be notified regarding details of the positions of stations/waypoints one week prior to sailing date.

5.5.3 You may also be asked to provide a short explanatory talk to the crew about the work you intend to do. The more the Master and crew know about your aims, and the objectives of your research, the more enthusiastic they will be to help you.

5.6 RESPONSIBILITY FOR THE SHIP'S LABORATORIES

5.6.1 The PI is responsible for the general tidiness and cleanliness of the laboratories, ensuring that they are swept regularly and maintained in good order. Untidy or littered spaces are both a fire risk and a safety hazard. Ship's crew will scrub or clean out laboratories at the request of the Principal Investigator (through the Chief Officer).

5.6.2 At the end of a cruise it is the **PI's responsibility** to ensure that ALL the laboratories are left clean and tidy. Bench tops are to be cleared, Stauff rail bolts removed from redundant bench pallets, rubbish stored in plastic sacks, and drawers or cupboards cleared. **See also Section 8, Laboratory Procedures.**

5.7 SHIPS WINCH SYSTEMS

5.7.1 As required under maritime law the vessel operates under certification to the International Safety Management (ISM) Code, which requires that a safety management system exists that:

- provides for safe practices in ship operation and a safe working environment
- establishes safeguards against all identified risks
- allows for continuous improvement in safety management
- ensures compliance with mandatory rules and regulations
- takes into account applicable codes, guidelines and standards.

5.7.2 The NMFSS Documented Management System (DMS) meets the requirements of the ISM Code through external certification by the Maritime and Coastguard Agency (MCA), which is the statutory authority in respect of UK registered vessels.

5.7.3 The use of ? for oceanographic use is not covered by ?. For example, if the manufacturer's stated Minimum Breaking Load (MBL) of the wire or rope is 20 tonnes, the wire can only be used to raise 4 tonnes. This factor is referenced to the manufacturer's stated Minimum Braking Load (MBL) of the wire or rope. Direct application of a FoS of this magnitude would make a number of oceanographic operations illegal as the depths involved result in the wire or cable's own weight exceeding the 5.0:1 limit.

To address this Lloyds approved a proposal by NERC to lower the FoS for ocean research to a minimum FoS 2.5:1 (Safe Working Limits Applied to Oceanographic Cables – LAMH/2/AJS/2074/ES – 1993). It is to this limit that all oceanographic winch operations must be planned. It was acknowledged by Lloyds that the inherently unstable platform provided by a ship at sea would result in it being difficult, if not impossible, to adhere rigidly to this FoS. Therefore a second FoS was introduced to allow for the dynamic forces imposed by the ship's movement. This was set at FoS 2.0:1 and represents the absolute maximum peak load that may be imposed on a wire or cable. **The FoS 2.0:1 is not intended to be used when planning oceanographic operations but exists purely as a 'safety net' to allow for unexpected loading.** It must be appreciated that there is no legislation supporting these FoS and Lloyds can remove the FoS allowance if the stipulated requirements are not maintained. Therefore NMFSS must adhere strictly to the FoS to prevent the removal of this privilege.

5.7.4 As Principal Investigator it is your responsibility to ensure that the proposed oceanographic winch operations do not exceed the allowed FoS. All intended winch operations should be discussed in detail at the Pre-Cruise Planning Meeting. Information required to evaluate the safe operation will include the maximum planned wire out and the weight, surface area and virtual mass of the package. To assist with determining the FoS NMFSS has developed an Excel spreadsheet to calculate the predicted cable loads. This spreadsheet has been tested during winch operations and found to produce results in line with the CLAM system in use on the vessels.

5.7.5 NMFSS can assist in ensuring that the proposed operations are within the safe operating limits of the scientific wires. Any enquires on the FoS involved in proposed winch operations should be directed to the NMFSS Operations office.

5.7.6 The Master of the vessel maintains the right to cancel any winch operation that is deemed unsafe or delay the same until the operation can be shown to be within the approved limits.

5.7.7 At the Pre-Cruise Planning Meeting the PI must also discuss the expected coverage required for winch operations to ensure that sufficient manpower is available in the form of winch operators.

5.8 SHIP'S FACILITIES AVAILABLE

All the facilities of the Research Vessels are to be at the disposal of the Principal Investigator in the furtherance of the scientific programme, conditional upon the safe management and operation of the ship and equipment, and in accordance with the previously agreed Customer Service Level Specification for that cruise.

5.9 COMMUNICATION WITH SHIPS

5.9.1 All NERC ships are fitted with comprehensive communication facilities. They are fitted with satellite facilities, which include voice, fax, e-mail and on-line telex. The ships

have the conventional marine radio communication equipment fitted as well for emergency and inter ship traffic.

5.9.2 The Master routinely communicates with NMFSS via e-mail and daily to report position, progress and requirements.

5.9.3 Private (that is private business, related to science or a scientific department) messages that the PI wishes to send or receive will be charged for. These charges will be passed on to the Principal Investigator's Institute or University by NMFSS.

Private messages are referred to in Appendices 5 and 8.

Universities, Institutes or next of kin who wish to contact scientists at sea on ships operated by NMFSS should contact the Operations office for advice.

5.9.4 Bad News from Home – A Policy for NMF-SS

Bad news from home may include the following situations:

- a. Bereavement
- b. Exceptional domestic reasons

Bad news may be received directly by the individual on the vessel or to the HR Marine or NMF-SS Research Ship Group team.

1. The individual should advise and discuss with his/her line manager, or directly with the Master at the soonest opportunity, the receipt of any bad news received from home. Any receipt of bad news directly from home should be communicated to the [Research Ship Manager (or duty senior manager) or his nominated deputy] [NMF-SS] and to HR Marine group as an early warning of a possible repatriation situation.
2. The discussion should include an honest assessment by both parties as to the welfare of the person affected and their ability to cope with the situation. These discussions should be recorded and passed to HR Marine and the Research Ship Manager or deputy.
3. Where it is determined that the best option is to repatriate, the Master, if not already apprised of the situation, should prepare a diversion plan, including an assessment of nearest suitable port, likely eta and time lost to the scientific programme and discuss the situation with the Principal Scientist.
4. The Master and Principal Scientist should agree the diversion plan.
5. Where agreement is reached, the Master should provide NMFSS with the diversion plan and an assessment based on the suggested parameters indicated below. In this circumstance, a deviation will generally be approved and arrangements will be put in place for repatriation.
6. Where an agreement is not achievable, the Master should contact NMFSS, and provide the diversion plan and the reasons why a diversion is not agreed to. He should also provide an assessment based on the suggested parameters indicated below. NMFSS and HR Marine, in conjunction with NMFSS senior management team as appropriate, will make an assessment of the situation and agree an appropriate course of action.
7. The action will be communicated to the Master at the soonest opportunity and arrangements will be put in place for repatriation.
8. In all cases NMFSS will advise HR Marine, NERC Marine Planning Manager and senior management team at NMFSS of any intended diversion.

The decision making process needs to consider, among other issues, the following:

- Duty of care and welfare of the individual;
- Who is affected: partner, children, parent?
- The objectives of the scientific cruise;

- Impact on the science cruise including loss of science time;
- Amount of time required for diversion;
- Best timing for diversion taking into account existing and forecast weather conditions and eta;
- Availability and costs of travel;
- Sourcing and additional cost of replacement staff if available;
- Limitations on subsequent manning;
- Adverse welfare issues of keeping a person on board to the continued stability of the cruise and operation of the vessel; and
- The manner in which the 'bad news' has been received;

This is not a subject where clear guidance based on a table can be identified or where a n impact level policy can be constructed. Bad news from home generally, and news of bereavement in particular, are often very difficult situations to deal with although they do not occur that frequently. However, any assessment should be based on the circumstances of the situation at the time and the decision making process used which is fair and reasonable to all those affected.

Details of how to make direct contact with an NMFSS ship are given in Appendix A5

5.9.5 Please be aware of the requirement for all E-mail traffic to be in English, to comply with current legislation, and to allow for management discipline in the use of these facilities.

5.10 LIMITED ACCESS WITHIN THE SHIP

5.10.1 There are certain areas of the ship that are not normally available for free access by the scientific personnel on board. These include the Bridge, the Engine Control Room and propulsion machinery spaces, the galley, crew accommodation and the Crew Mess Room, steering gear, auxiliary machinery spaces, non-scientific storerooms and engineering workshops. This constraint is for obvious safety reasons and also to permit the crew to have privacy in their own accommodation.

5.10.2 Should scientific staff wish to visit the Bridge they are requested to ask the Officer on watch to check that they may do so, and then ensure that they do not interfere with the activities going on. Ask questions by all means, but please bear in mind that the Duty Officer has a legal obligation for the ship's safety. If your visit is not convenient at that time please do not be offended by a refusal. When entering or leaving port, the Bridge is not accessible to non-marine staff. When coming up to a scientific station or when the ship is in bad weather are particularly critical times for the Bridge and your party are requested to avoid the area.

5.10.3 The engine room is a hazardous area and no one is allowed in this area unless an Engineer Officer accompanies him or her. Control Rooms are also out of bounds - unless a visit has been arranged through the Chief Engineer. The marine staff will be very happy to organise such visits if so requested.

5.10.4 It should be noted that all scientific staff are responsible for maintaining their cabins and shared bathrooms in a suitably clean and hygienic condition. The ships catering staff will maintain the cleanliness of shared and public rooms to facilitate cleaning.

5.10.5 Under the Merchant Shipping Regulations the vessels Master is required to inspect all areas of the vessels accommodation at least once per week and any defects discovered including cabins left in an un-hygienic condition will be reported to the individual and the Principal Scientist and should be remedied as soon as possible.

5.11 RELATIONS WITH THE CREW

5.11.1 It should be appreciated that the marine staff on the ship normally serve on board for considerably longer periods than most scientific staff. The ship is their home for up to 6 months at a time and, consequently, scientific staff should respect the privacy of their accommodation.

5.11.2 Because of the greater sea going experience of the marine staff, especially the Chief Petty Officers, it is likely that the deck staff may advise the scientific party that certain activities on the weather decks of the ship are unsafe. Please accept that they have a responsibility for the safety of scientific staff as well as their own and are only acting in the best interest of all staff. Entertaining of the ratings in scientific accommodation is not permitted without the Master's prior approval.

5.11.3 The inappropriate entertaining of ship's staff in scientific accommodation is not permitted on board. The inappropriate presence of scientific staff in marine staff accommodation is also not permitted.

5.11.4 Should you require assistance from the ship's deck staff you are asked to direct your requests via the chief or duty officer to avoid any misunderstandings concerning their working regime.

5.12 TECHNICAL SUPPORT STAFF

5.12.1 The Technical Support staff, if embarked, are present to maintain, operate and/or supervise the safe operation of the scientific equipment and generally to assist the Principal Scientist in the successful conduct of the cruise.

5.12.2 Whilst Technical Support staff shall supervise operations within their particular area of expertise, it should be noted that NMFSS has a responsibility to maintain its equipment in a safe working order for use on subsequent cruises.

5.13 SCIENCE SYSTEMS TECHNICIAN

The small permanent Technical team on board the vessel (Science Systems Manger, Deck Engineer and CPO Scientific) are supplemented by specialist technical engineers who embark to meet the requirements of each cruise. The Science Systems Technician is Head of Department for the technical team and will normally be the primary contact to the PI. However, this role is new and there is still a requirement for familiarisation of personnel in all aspects of the roles and hence a **Scientific Technical Officer (STO)** will be designated for each cruise (where such support staff are embarked).

5.14 TIREDNESS AND WORKING ROUTINES

5.14.1 The PI is responsible for arranging the scientific work programme so that nobody has to work unduly long hours. However, it is everyone's responsibility to take proper rest during off-duty time, so as to be able to work safely and efficiently when required.

5.14.2 The operation of ILO 180 is mandatory on board all ships. This is a convention agreed by the International Labour Organisation to attempt to provide a framework for seafarers hours of work and the UK Maritime and Coastguard Agency (MCA) who are responsible for enactment and enforcement of legislation for UK registered ships, have

determined that the 'Hours of Rest' formula is the most appropriate method and hence all UK ships will operate to this part of the legislation.

See also section A1.10

5.15 HEALTH AND HYGIENE

5.15.1 Personnel are required to undergo a medical examination to MCA approved standards prior to embarking in a NERC Ship. A dental check is strongly recommended.

5.15.2 Everyone on board is responsible for looking after their own health and fitness. High standards of personal cleanliness and hygiene should be maintained. Whilst the Master has overall responsibility for the medical facilities on board, the Second Officer is usually the person designated to deal with non-emergency medical requirements and First Aid.

All medical problems must be communicated to the Second Officer at an early stage in order that treatment or other action can be most effective. Drugs and medicines will only be issued under control and will not be available on an ad-lib or self-help basis.

5.15.3 Good health depends on an even and thoughtful balance of work, rest and exercise, on sensible and regular meals, on adequate sleep and on an avoidance of excesses of rich food, alcohol and tobacco.

5.15.4 On board ship, simple infections can easily be spread from one person to others. Thus preventative measures, as well as easily effective treatment, are essential.

5.15.5 Cuts and abrasions should be cleansed at once and given first aid treatment as necessary to protect against infection.

5.15.6 It is essential that all cruise participants are inoculated and vaccinated against any likely diseases found in the region where the ship is operating.

5.15.7 High humidity and heat can lead to heat exhaustion and heat stroke, which may be fatal. When working in these conditions it is advisable to drink at least 4.5 litres (8 pints) of cold (but not iced) water daily.

In tropical areas especially, exposure to the sun during the hottest part of the day should be avoided as far as possible. When it is necessary to work in very strong sunlight, appropriate clothing offering protection to both head and body should be worn, whatever the degree of acclimatization may be. Use of a high factor sun cream is essential for exposed skin. Reflected glare from the sea surface can cause eyestrain and the use of sunglasses is recommended. Please note that dependent on the operations being undertaken sunglasses may also be required to meet the standards of protective eyewear.

5.16 SEASICKNESS

Seasickness impairs a person's judgement and a reduction in alertness and efficiency in performing tasks will result. The extent to which individuals are affected varies greatly; generally individuals are affected early on in a cruise and in severe weather. Taking fresh air on deck generally helps but if you are badly affected, leaning over the ship's rail is dangerous and must be avoided. Do not go and hide away, there is no shame attached to being seasick. Many professional seafarers suffer from time to time. The Principal Investigator, STO and other experienced personnel should look out for members of their team suffering from seasickness and ensure that they are safe.

5.17 TIDINESS AND CLEANLINESS

It is everyone's responsibility to make sure that any equipment used is properly stowed and secured. Loose items should not be left lying about. Keeping things in their proper places makes for efficient and safer working. Cabins should be kept in a reasonable state of tidiness and cleanliness. The Master, or an Officer deputising for the Master, is required to inspect all accommodation at intervals not exceeding 7 days.

5.18 END OF CRUISE ARRANGEMENTS

5.18.1 CABINS

At the end of the cruise scientific staff should vacate their cabins within 12 hours of arrival in port (unless the Master has agreed that they may continue living on board). They should ensure that any defects in the cabin are reported to the Chief Officer as soon as they are noticed and the cabins left in a clean and tidy condition ready for the next occupant.

5.18.2 EQUIPMENT

All your own equipment should be packed, **each package individually marked** and ready for unloading **before** the ship arrives at the final port, due to the short turn round time normally available.

If shipping your samples and equipment back to your parent Institute or University you should ensure that each case or box has a typed list of its contents **INSIDE** it, with a copy made available for the Customs. These lists must show for each item:

- Its weight in KGs;
- Its value in sterling; and
- Its country of origin.

Label each package clearly with the address to which it is to be dispatched. The Science Systems Technician is the conduit through which all requests for shipment of equipment should be passed. Please note that costs of shipment will be recharged to the Principal Investigator. When shipping freight to the UK arrangements must be made for the entire journey otherwise goods will be delayed at Heathrow airport awaiting onward instructions. If you are intending to stay on in the country after your cruise for a holiday you must ensure that someone from your University or Institute is aware of the freight arrangements.

5.18.3 If NMFSS facilities are used to ship your equipment the same requirements apply. Please ensure that this issue is considered during the Cruise planning stage.

5.18.4 If you are making your own arrangements to ship your equipment you should liaise with the ship's Agent through the Master - as he will be able to ensure that you ask the right questions and that you receive answers. Under the Dangerous Substances in Harbours Regulations of 1987 it is required to notify the authorities at the port of arrival of any hazardous items onboard. You are requested to pass this information to the Master well in advance of the end of the cruise.

Should you wish to request that your scientific equipment is carried as 'cargo' at any time other than on the cruise for which it was loaded, and in lieu of using commercial methods, you must make a formal request to the Marine Operations Manager via the Operations office well in advance of the

period of carriage required. NMF SS reserve the right to make a charge for the responsibility of carrying unaccompanied scientific equipment as 'cargo'.

Samples fall within the same requirements for Non Hazardous and Hazardous goods transportation. The quality of the packing will also be germane for the safe delivery of the samples. Requirements for refrigerated or temperature controlled shipments should be referred to the Cruise Project Manager. Samples including animal remains that fall within the Convention on International Trade in Endangered Species will require an import licence and it is your responsibility to obtain it.

5.18.5 DOMESTIC ARRANGEMENTS

Changes to the manner in which financial transactions are conducted on the ship were introduced in 2006. Details on these new arrangements are contained in Appendix 09. All personnel must ensure that they understand how these changes will affect issues like paying for bar tabs and other financial transactions.

All personnel must remove all personal effects from scientific cabins and laboratories, and dispose of rubbish. They should check with the Master that he knows what the travel arrangements are, so he can ensure that the Agent can arrange for immigration formalities and supplies necessary transport.

Further information on domestic facilities onboard is given in Appendix A4 & A9

See Appendix A6 for further information on Agents.

SECTION 6 - CRUISE REPORT REQUIREMENTS

6.1 NERC SWINDON REQUIREMENTS

A copy of your detailed cruise report should be sent to

Marine Planning Office
Natural Environment Research Council
Polaris House
North Star Avenue
Swindon
Wiltshire SN2 1EU

as soon as possible after the cruise. Failure to comply with this could affect the allocation of future sea time.

6.2 NMFSS REQUIREMENTS

6.2.1 The NMFSS service review procedure requires that the Master convenes and chairs a post cruise review meeting immediately prior to cruise completion; the purpose being to discuss the overall effectiveness of the cruise as perceived by the scientific and NMFSS components. The Master will submit the minutes, agreed by the parties present, to the Head of NMFSS for dissemination to senior managers. These minutes will be incorporated on the Post Cruise Assessment (PCA) form.

6.2.2 The PCA form will be forwarded to the Research Ships Manager and to the Head of NMFSS. The PCA will be copied to the Marine Planning Office at NERC Swindon and also be reviewed at the periodic meetings of the Marine Facilities Review Group.

6.2.3 Following a Service Review Meeting involving NMFSS Managers, a response will be sent to each Principal Investigator with advice on any corrective actions taken or explanations arising from, points made in the above documents.

6.2.4 Two copies of your full Scientific Cruise Report should also be sent to:

Director of Science Programmes,
NERC Swindon,

as soon as possible after the Cruise.

6.3 FOREIGN & COMMONWEALTH OFFICE (FCO) REQUIREMENTS

6.3.1 If the ship has been undertaking research in the waters of a foreign state, it is usually necessary to forward a copy of your Cruise Report to that state as a condition of clearance for the cruise. Although the United Kingdom is not a signatory to the UNCLOS Convention (which is not yet in force even between signatories) it has been agreed that compliance with the spirit of the Convention will be exercised. This is because, at the present time, the UNCLOS Convention is the only internationally acceptable form of words, which covers marine science activities.

6.3.2 All non-UK states insist on granting approval for other nations to undertake research in their waters - and you are asked to bear in mind that failure to comply may have a detrimental effect on subsequent applications to work in those waters. One of the copies of

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

your Cruise Report that you are asked to send to NMFSS Operations will be forwarded to the FCO, for them to pass on to the foreign state concerned. (In the case of NOCS Cruises there is an arrangement whereby the Library automatically include the FCO on the mailing list for Cruise Reports).

6.3.3 If the ship has carried a foreign observer for your cruise it is a courtesy to send a copy to that observer.

6.3.4 The onus is on you, as Principal Investigator, to ensure that you comply with these requirements. Sending a copy to your scientific colleagues is not sufficient - a copy must also be sent via the official channels.

6.3.5 If it is likely that the processing of your data will take longer than 6 months, or the scientific programme is a long term series of cruises, you should ensure that an interim progress report is submitted to NMFSS Operations for passing to the Foreign Office. It is a fact that more suspicion is created within a foreign state by lack of cruise reports than by any other omission and, consequently, certain states are reluctant to process subsequent cruise applications until they receive reports from previous cruises.

6.4 COPIES OF CRUISE DATA

6.4.1 There may be a requirement to submit copies of data to a foreign state in addition to the Cruise Report. This will usually be specified in the cruise clearance. If it is not, please seek guidance from the NMF Sea System Operations office.

6.4.2 You should, however, be aware that most foreign observers will request copies of data from a cruise.

6.4.3 In most cases the foreign state expects you to supply this copy data at **your** cost, not theirs.

6.5 BRITISH OCEANOGRAPHIC DATA CENTRE (BODC) REQUIREMENTS

6.5.1 BODC require a Cruise Summary Report form plus a track chart as soon as possible after your cruise is completed.

6.5.2 BODC also requires a copy of your full Cruise Report and, subsequently, the cruise data and documentation that they may request from you for data banking.

The address of BODC is:

British Oceanographic Data Centre
Proudman Oceanographic Laboratory
Joseph Proudman building
6 Brownlow Street
Liverpool
L3 5DA
UK
T: +44 (0) 151 795 4884
F: +44 (0) 151 795 4921

SECTION 7 - COMPLAINTS, COMPLIMENTS AND CUSTOMER APPRAISAL PROCEDURES

7.1 FORMAL COMPLIMENTS PROCEDURE

7.1.1 It is the aim of NMFSS to facilitate the achievement of the scientific objectives set by the Principal Investigator for each cruise.

7.1.2 The PI can use the Post-Cruise Assessment form to record positive feedback and/or identify the persons involved. The use of this form allows for review and formal assessment of the service provided to the scientific community.

7.2 FORMAL COMPLAINTS PROCEDURE

7.2.1 Under normal circumstances any difficulties, or complaints, arising from any of the NMFSS services should be reported to the head of the appropriate on board department as soon as possible after the difficulty or complaint has been identified, or via the summary minutes of the cruise de-briefing meeting held on board by the Master and the end of each cruise. It is always very much easier to satisfactorily deal with a difficulty or complaint at the time rather than after the event. Additionally, difficulties or complaints that are not directly to do with the on board services can be reported via the summary minutes of the cruise de-briefing meeting held on board by the Master at the end of each cruise.

7.2.2 A copy of a blank Formal Complaint Form is available on board from the Master in addition to a form supplied in Annex 2. This should be completed by the complainant and sent to the Head of NMFSS within 28 days of the event. A response will be sent within a further 28 days.

7.3 INFORMAL COMPLAINTS

7.3.1 Less formal complaints, specifically those arising on board ship should be directed through you, as the PI, and thence to the ship's Master. The Master will ensure that your problem is either overcome immediately, if this is possible, or he will inform NMFSS management and request guidance.

7.3.2 It is obvious that good communication between staff onboard a ship will enable the majority of minor complaints to be solved with mutual satisfaction without recourse to formal procedures.

7.4 POST CRUISE ASSESSMENT (PCA)

7.4.1 Each Principal Investigator is required by NERC as part of the funding agreement to complete a PCA at the end of each cruise and submit it, following discussion at the on board cruise debrief electronically via the Master to the NMFSS operations office. These forms are used to analyse the quality of service provided and form an essential part of the customer's feedback channels in the management system. They are also discussed at meetings of the Marine Facilities Review Group. A blank form is sent to each PI with the other paperwork when the annual programme is confirmed. An electronic version will be sent to you towards the end of the cruise and a hard copy form is contained in Annex 2.

SECTION 8 - LABORATORY GUIDANCE NOTES

8.1 INTRODUCTION

8.1.1 The aim of these Guidance Notes is to advise users of the laboratories aboard the vessels managed by NMFSS of safe and correct working practices and of individuals' responsibilities within the laboratories. Working within any laboratory presents the user with a responsibility for not only their own health and safety but also that of others.

8.1.2 The laboratories on board the vessels present an enclosed, often unstable work environment that creates unique hazards for laboratory work.

This section provides an overview of the measures that should be implemented to ensure safe systems of work in these laboratories.

However, these Notes do not give detailed instructions relating to specific processes or individual chemicals or other hazards.

The notes should be used in conjunction with other documents to undertake risk assessment, and specific process assessments under the COSHH regulations.

8.1.3 Anyone carrying out work in a laboratory on board a NMFSS managed vessel must be familiar with these Guidance Notes and also carry out the appropriate COSHH risk assessments on the particular piece of work that they are undertaking. On completion of their work all hazardous material must be safely disposed of and the laboratory must be left in a clean and safe condition.

8.1.4 The NMFSS Transportation of Hazardous Goods procedure requires you to identify your hazardous cargo and to establish if it is proscribed for transport. This will be established via the manufacturer's MSDS. Once it is established that the cargo is hazardous, NMFSS has a simple program for you to select the product and its related legal data already prepared in the documentary format required by the authorities. The goods must also be packed to meet the regulations. Only trained people can offer hazardous cargo for shipment. Any queries about hazardous cargo status should be referred to the Logistics Manager.

All accidents, incidents and near misses must be reported to the Ships Safety Officer and fully documented

8.2 RESPONSIBILITIES FOR HEALTH AND SAFETY

8.2.1 Most of the legislation governing laboratory work in the United Kingdom has no formal application at sea. However NERC accepts the principle that UK legislation should be followed as closely as possible on board the vessels.

NMFSS vessels subscribe to the spirit of the Health and Safety at Work etc. Act 1974 and all operations undertaken on board should be conducted with this legislation in mind.

8.2.2 All members of the scientific party shall sign on the Crew Agreement and shall abide by the NMFSS and NERC policies that are applicable for seafarers. NMFSS also adheres to the regulations laid down in the MCA Code of Safe Working Practices for Merchant Seamen.

8.2.3 The Principal Investigator is responsible to the Master for the safe conduct of scientific work on board the ship and for the conduct and behaviour of the members of the scientific party whilst on board as described in the Principal Investigators Guidance Notes.

8.3 RESPONSIBILITY FOR THE SHIP'S LABORATORIES

8.3.1 The PI is responsible for the general tidiness and cleanliness of the laboratories and must ensure that they are maintained in good order. Untidy or littered spaces are both a fire risk and a safety hazard generally. Ship's crew may be requested to clean out the laboratories by the PI through the Chief Officer.

8.3.2 At the end of a cruise it is the Principal Investigator's responsibility to ensure that ALL the laboratories are left clean and tidy. Bench tops must be cleared, Stauff rail bolts removed from redundant bench pallets, rubbish stowed in plastic sacks, and drawers and cupboards cleared.

8.4 SPECIFIC ROLES IN HEALTH AND SAFETY

All users of the laboratory, whether a NERC employee or not, have certain responsibilities under Health and Safety Legislation:

- a. You must take reasonable care for the health and safety of yourself and of other persons who may be affected by your acts or omissions at work
- b. You must co-operate with your employer in complying with health and safety requirements.
- c. You must not intentionally or recklessly interfere with or misuse anything provided in the interests of health and safety.
- d. You must report all accidents, incidents, 'near misses' or deterioration in health related to work.

The most critical aspect of laboratory safety is that:

All laboratory users are responsible for their own health and safety, and that of others who may be affected by their actions.

To comply with this it is essential (indeed compulsory) that you make an assessment of any risks that may arise from your work in the laboratory before you commence that work. This formal Risk Assessment is a legal requirement and no work may be undertaken in any NMFSS such has been undertaken and approved.

NMFSS operates a 'no-blame' accident, incident and near miss reporting system that enables lessons to be learnt from hazardous occurrences. All staff working on the ship must use this system to report such events.

Any accidents, incidents or near miss occurrences (AINM) must be reported to the PI and the Ships Safety Officer as soon as possible after the event and details will then be entered into the Accident Book.

8.5 THE EMPLOYERS RESPONSIBILITY FOR HEALTH AND SAFETY

8.5.1 Current Health and Safety legislation outlines the responsibilities of the employer.

While NMFSS is not the employer of the scientific party it does recognise a **duty of care** to all personnel aboard its vessels.

The ship's Master has overall responsibility for safety on board. The Master is supported by the Marine Safety Manager (MSM) who is ultimately responsible to the Head of NMFSS. On board the Safety Officer (Chief Engineer) is responsible for day-to-day safety matters.

8.5.2 Some aspects of laboratory safety may fall outside the areas of competence of ship's staff. For this reason the Principal Investigator is responsible for health and safety aspects of all scientific work and personnel, within the overall frame work of the shipboard safety management system.

The ship's Master retains the authority to call a halt to any work that he considers is being carried out in an unsafe manner or which he considers to be following an unsafe procedure.

8.6 SAFE WORKING PRACTICES

Although a risk assessment is required before commencing work on any particular project, there are general safety aspects that apply to any work undertaken in laboratories. These are basic common sense and should be adhered to in an effort to reduce the risk to all personnel working in the laboratories or elsewhere on the vessel.

8.7 SAFE LABORATORY PRACTICES

8.7.1 Personnel working in, or visiting any laboratory area **must** observe the following rules:

- Any appropriate personal protective equipment (PPE) must be worn in the correct manner.
- No food or drink shall be taken into, or consumed within the laboratory areas.
- No smoking is allowed within the laboratory areas.
- Hands must be washed before leaving the laboratory areas.
- Label all sample, specimen and reagent containers with details of the contents and use the relevant chemical hazard label.
- Return all chemicals and reagents to their storage spaces after use.
- Dispose of all chemical and biological wastes in the correct manner.
- Discard disposables, such as sharps, into an appropriate container.
- Clean up any spills immediately. Warning signs should be displayed until the deck is dry.
- Wash up glassware immediately after use and stow safely
- On completion of a work project, remove all equipment, chemicals and samples, clean your work area thoroughly and check to ensure that the work area is free from contamination.
- These common sense rules should be familiar to anybody with even a small amount of laboratory experience, however strict adherence to them will go a long way to insuring a safer work environment for all.

8.7.2 Many laboratory users may not be so familiar with the special conditions that apply to scientific work undertaken on board a ship. Conditions on board research vessels are not comparable to those in a shore based laboratory environment.

Even tasks, situations and hazards that are regarded as common ashore, need careful re-evaluation when applied to laboratories on board.

The main points to consider are:

Unstable working platform

NMFSS provide well found and sea worthy vessels. However, as with any ship in a seaway, they can be prone to a wide variety of motions. Any proposed laboratory process must take into account the current and predicted weather conditions.

Laboratory space is restricted and must fulfil several functions

Some procedures, which would normally be carried out in separate spaces may need to be performed in the same area. The laboratories on board are likely to see more through movement of personnel than is considered normal ashore. The work areas are also close to living and recreational accommodation.

Isolated location

Dependent on the area of the cruise, the vessel can be considered effectively isolated from outside assistance. Situations that would be inconvenient in a shore laboratory can have wide reaching safety, or possibly even life threatening, consequences at sea.

Fatigue and sea-sickness

The motion of a vessel can induce levels of fatigue beyond that encountered while working on the equivalent task ashore. Seasickness or any seasickness medication taken can have a significant effect on alertness and concentration. Adverse weather may mean that little beneficial effect is received during rest periods.

Working excessive hours

The need to collect as much information as possible within the boundaries of the cruise length can cause a temptation to work excessive hours contributing to fatigue problems. The MCA has issued Regulations covering Hours of Work and these are detailed in the Principal Scientists Guidance Notes.

Manual Handling

Manual Handling covers any transporting or supporting of a load by hand or bodily force where effort is required to move or hold the load. This includes lifting, setting down, pushing, pulling, carrying or moving.

The hazards associated with manual handling are dramatically increased at sea in proportion to the severity of weather conditions. Consideration of the current and predicted weather forecasts must be allowed for when undertaking any manual handling tasks. A separate risk assessment for any manual handling tasks must be completed.

Therefore the following needs to be taken into account when performing laboratory work on board.

- i. Constant awareness of the vessels potential for movement. Ensure all hazardous materials and apparatus are securely stowed to withstand the ship's motion under any conditions. Re-stow equipment as you use it.
- ii Decant chemicals into small 'user friendly' containers while still ashore before the cruise. Bring only what you need to the laboratory, leave the rest stored in its original packing in the hold or in the chemical lockers
- iii Ensure that there is a secure means of transporting chemicals around the ship. Be aware of tripping hazardous such as deep coamings and steep stairways.
- iv Take adequate steps to contain any spillage, using trays and absorbent material as necessary.
- v Be aware that personnel off watch may be trying to rest nearby. Maintain a courteous approach to noise levels while working.
- vi. If you have not been to sea before seek the advice of those who have

If you have any doubts ask the Principal Scientist, Ships Safety Officer or the Chief Officer.

8.8 WORKING ALONE

Working alone is to be discouraged in laboratories. Lone working exposes an individual to increased risks, both from a lack of supervision and the difficulty of obtaining help in an emergency situation.

Because of the unusual hours worked on board the vessels it is acknowledged that there may be occasions when lone working is required.

Should this be the case the PI must supply the Master and NMFSS Operations with a risk assessment and a Safe System of Work before the commencement of the cruise. These must cover such points as the nature of the work being undertaken and a reporting schedule for the lone worker.

Some activities should be considered as incompatible with lone working, including the following:

- a. Radioactive isotopes and lasers
- b. Cryogenic liquids and dry ice
- c. Oxidising agents or asphyxiating gases
- d. Hazardous chemicals i.e. concentrated acids, cyanides
- e. Manual handling of heavy or awkward loads

8.9 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.9.1 Scientists are expected to supply any PPE that they may need while performing laboratory work in addition to that required for work on deck (hard hats, safety shoes etc)

8.9.2 PPE brought on board should where applicable conform to the regulations laid down in the Merchant Shipping Notice MSN 1731 (M+F) as amended. Otherwise PPE should comply with the relevant shore regulations.

PPE should always be regarded as the 'last resort' to protect against risks to safety and health; engineering controls and safe systems of work should always be considered first.

8.9.3 Remember that PPE only protects the person wearing it, and not others in the work environment. You should also remember that PPE can be awkward to wear and may introduce new risks to certain activities.

The responsibility to ensure that adequate PPE is being worn correctly rests with the Principal Scientist.

8.10 FUME CUPBOARDS AND SAFETY EQUIPMENT

Fume cupboard placement varies between the two vessels.

RRS Discovery

A permanent fume cupboard is located in the Chemical Laboratory

RRS James Cook

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

A filter style fume cupboard is located in the Chemical Laboratory

Extra Fume Cupboards

A fume cupboard is carried in the Radionuclide container.

Fume cupboards must be used when working with reagents that create harmful vapours, gases or fumes. The safe storage of chemicals is facilitated by hazardous chemical cupboards in some labs.

First Aid kits are provided in all laboratories. Any First Aid treatment must be reported to the Ship's Safety Officer (Chief Engineer) or the Officer on Watch.

There is a mobile eye wash station for use in any laboratory and appropriate fire extinguishers and fire blankets are provided in each laboratory.

8.11 RISK ASSESSMENTS

8.11.1 Health and Safety legislation requires that a risk assessment is carried out to identify the risks to health and safety to a person arising out of, or in connection with, work or the conduct of their undertaking. It should identify how said risks arise and how they could impact on those affected. A risk assessment must involve identifying the hazards present in the working environment and evaluating the likelihood of these hazards being realised to understand the extent of the risks involved.

A Hazard is defined as:

Something with the potential to cause harm (this can include articles, substances, plant or machines, methods of work, the working environment, people and other aspects of work organisation)

A Risk is defined as:

The likelihood of potential harm from the hazard being realised. The extent of the risk will depend on:

- i. the likelihood of that harm occurring
- ii. the potential severity of that harm, i.e. of any resultant injury or adverse health effect
- iii. the population which might be affected by the hazard, i.e. the number of people who might be exposed.

8.11.2 Most scientists will be familiar with risk assessments and should already have a risk assessment in place for the work involved in their shore laboratory.

Such risk assessments need to be reviewed and updated to take into account the additional hazards presented by laboratory work on board, as laid out in this Code of Practice and other relevant legislation.

8.11.3 The process of risk assessment must be carried out by suitably experienced personnel using specialist advice where appropriate. NMFSS has blank risk assessment forms available from the Operations office to assist scientists in complying with this requirement.

8.12 COSHH RISK ASSESSMENTS

8.12.1 A COSHH risk assessment is required for the use of any substance that is hazardous to health as set out in the COSHH Regulations.

These risk assessments should be in two parts,

1. A risk assessment form covering the hazardous material involved including a safe system of work for its use and any further safety information i.e. safe stowage requirements.
2. A product safety data sheet for the hazardous material.

8.12.2 Such risk assessments must take into account the added hazards that working with chemicals at sea involve. Points to be covered should include safe delivery to the vessel, the safe transportation of chemicals between their storage place and the ships laboratories. Also covered must be dangers to the vessel and the environment in the case of a spill, and the potential increased hazard should a fire occur or damage to the vessel (from grounding, collision etc).

Where relevant the risk assessment must include information such as the United Nations Number (UN No.) and the Class or Division of the hazardous material as laid down in the International Maritime Dangerous Goods Code (IMDG Code).

8.12.3 All such risk assessments must be delivered to the NMF SS operations office in good time prior to the cruise commencing. NMFSS has blank COSHH assessment forms available from the Operations office to assist scientists in complying with this requirement

8.12.4 Certain substances are not covered by the COSHH regulations, but are covered by other legislation. These include lead, asbestos and some substances that are only harmful because of their physical properties such as radioactivity, flammability or risk of explosion.

8.12.5 Some substances may be harmful through both their chemical and physical properties and so may require more than one risk assessment. For example radio-labelled sulphuric acid would require both a COSHH risk assessment and a radioactive risk assessment. COSHH risk assessments created for previous cruises must be properly reviewed and amended before they can be used for a current cruise

No chemicals or other hazardous materials will be accepted on board an NMF SS managed vessel unless sufficient safety data has been supplied.

8.13 HAZARDOUS MATERIALS

8.13.1 A list of all Hazardous Materials being loaded on the vessels must be provided by the PI to NMFSS Operations Office one month prior to the cruise start date. The list must include the quantities involved.

8.13.2 Any hazardous chemicals must be accompanied by a Material Safety Data Sheet (MSDS). As MSDS are required for any chemicals used ashore this should not present a problem for the scientific party.

See Annex 2 for a hazardous goods list template.

8.13.3 It is a legal requirement that the use of all hazardous materials, new processes or processes that might involve significant risk to the ship, staff or for environmental pollution have a written risk assessment prepared in advance of the cruise. NMFSS Operations will

assist each PI to complete this process, but the onus is on the scientific party to provide full information in this respect.

Please refer to NMFSS Operations before making any commitments to supply hazardous materials to a ship.

8.13.4 The Ship's Safety Management System and the NERC Guide to the Handling of Explosives all contain references and explanations that are relevant. The IMO International Maritime Dangerous Goods Code (IMDG) is the predominant marine legislation and gives UN numbers for all registered materials carried by sea and is the standard reference for all freight, transport, packing and stowage purposes. NMFSS Operations and all ships hold current copies.

8.13.5 The following is a break down of hazardous materials used on board the vessels that are subject to specific precautions. The following is not intended to be an exhaustive list and if you have any doubts it is recommended that you seek advice from the Health & Safety Executive or from your Local Safety Advisor.

Notification of the proposed use of any hazardous materials on board the vessels forms part of the pre-cruise planning and must be raised at these meetings.

8.14 CHEMICAL HAZARDS

8.14.1 All chemicals brought on board an NMFSS managed vessel must be correctly labelled as per the relevant legislation. Advice on this can be obtained from the Chemical (Hazard Information and Packaging for Supply) Regulations, COSHH Regulations, and the Hazard Data Sheet supplied with the chemical.

8.14.2 Your COSHH risk assessment must identify the possible routes of entry into the body and indicate the necessary PPE and containment measures required to prevent exposure. If you make up any reagents or preparations or transfer chemicals from the suppliers' container, they must be labelled with the correct chemical hazard symbol, chemical name and concentration/quality as well as your own name and date.

8.14.3 Some chemicals will have Work Exposure Limits. The details of these can be found on the Hazard Data Sheets or listed in the Work Exposure Limits booklet issued by the Health and Safety Executive. Any such limits must be adhered to by all personnel working with chemicals.

A COSHH risk assessment must be undertaken before the cruise for any procedure using hazardous chemicals.

8.15 BIOLOGICAL HAZARDS

8.15.1 As with chemicals, a risk assessment must be completed prior to the cruise commencing for any biological agents. This must identify the possible routes of entry into the body and address the measures to be taken to prevent exposure.

Biological agents are classified into four hazard groups:

Group 1 unlikely to cause disease i.e. cyanobacteria, algae.

Group 2 can cause human disease and may be a hazard to employees;

unlikely to spread through the community and effective prophylaxis or treatment is usually available i.e. Actinomyces ssp., Clostridium ssp, Escherichia coli (pathogenic strains).

Group 3 can cause severe human disease and may be a hazard to employees; may spread to the community but effective prophylaxis or treatment is usually available i.e. Salmonella typhi, Hepatitis viruses.

Group 4 can cause severe human disease and pose a serious hazard to employees; is likely to spread through the community and there is usually no effective prophylaxis or treatment available i.e. Ebola viruses, Lassa fever virus.

The handling of group 3 or 4 organisms is prohibited in all NMFSS laboratories.

8.15.2 As well as the requirements laid down in the COSHH regulations, biological material may also be regulated by the Ministry of Agriculture, Food and Fisheries (MAFF) or Genetically Modified Organisms (GMO) legislation and may require further control procedures and containment under these regulations.

8.16 FLAMMABLE LIQUIDS

8.16.1 The main hazard arising from the use of flammable liquids are fire and explosion, involving either the liquid or the vapour it emits, especially if the flashpoint is below room temperature. Awareness of this flashpoint, storage requirements and specific fire fighting methods must be addressed in your COSHH risk assessment.

8.16.2 Precautions when using flammable liquids should be the same as for a shore laboratory, however the added hazards present on board must be addressed i.e. vessel motion, transfer of liquids, limited storage facilities.

Remember – fire is one of the greatest hazards on board a vessel

8.17 COMPRESSED GASES

8.17.1 Both vessels have dedicated storage areas for compressed gas cylinders. The gas can then be piped in to the laboratory spaces. The storage of compressed gases other than in these areas is not permitted.

8.17.2 Fitting of any regulators, control valves or any pipe work must only be carried out by a competent person and all control measures as laid down in the COSHH risk assessment must be followed.

Never use soapy water, oil, greases, solvents or PTFE thread tape on compressed gas cylinders as some gases may react violently with these.

8.18 ELECTRICAL EQUIPMENT

8.18.1 Electrical equipment may be in the form of high-voltage equipment, fixed installations, portable or fixed, free standing equipment, bench-top or hand-held equipment and sources such as batteries and capacitors.

8.18.2 All electrical equipment brought on board must be marked, as having undergone Portable Appliance Testing (PAT) and such testing must be in date.

8.18.3 As ashore, the use of multiple adaptors or long cables should be avoided. Ensure you have undertaken a risk assessment, and read and understood the correct operating procedures before you use electrical equipment.

8.19 IONISING RADIATION

8.19.1 Radioactive chemicals shall not be stored and used within the ship's permanent structure or laboratories. The provision of containerised, or other specific facilities, and a risk assessment for the process must be discussed with NMFSS at the cruise planning stage. This is to avoid both contamination of the ship's structure and a risk to ship's staff should they have to deal with a fire or emergency in the vicinity.

8.19.2 Where very low level, or sealed sources are required to be used in a ship's laboratory, the method of handling shall be agreed with NMFSS before the cruise. All containment, packaging, devices and storage must be correctly labelled with the relevant warning signs, and controlled access must be imposed if practicable.

8.19.3 Decontamination survey is available from the Master for completion by the competent person and returned to the Master at the end of the cruise.

It is the responsibility of the scientific party to provide the necessary monitoring instrumentation on the cruise. NMFSS can advise on the requirements.

8.20 OTHER HAZARDOUS MATERIALS

Other hazardous materials in common use on board include:

- Cryogenic Substances
- Ultrasonic Equipment
- Pressure and Vacuum Systems
- Ovens and Furnaces
- Centrifuges

Risk Assessments and a Safe System of Work for all Hazardous Materials or Hazardous Procedures must be supplied to the NMFSS Operations office in good time prior to the cruise commencing.

8.21 DISPOSAL OF HAZARDOUS ITEMS

8.21.1 Ship's Drains

NO radioactive substances, toxic compounds, chemicals or biological specimens are to be disposed of via laboratory sinks.

8.21.2 Plastic Waste

No polythene or plastic material of **any** kind is to be thrown overboard. The Marine Pollution Regulations for British ships prohibits disposal of this material at sea. Ships, which are fitted with an incinerator facility, are able to burn plastics in limited quantities - and you are

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

requested to discuss this with the Chief Engineer. However it may not be possible to incinerate such material and hence you should be prepared to store waste material on board for subsequent disposal at the next port of call.

8.21.3 Explosives

Please note that there are very few commercial ports that now permit the loading of explosives. As this aspect may involve passage to a specific loading port, you are advised to take these extra costs in to account when planning a cruise, which requires explosives to be loaded.

Please refer to the relevant sections of the NERC Guide to Handling Explosives, and the Ship's Safety Management Manual.

8.21.4 Chemicals

Many hazardous chemicals in seawater solution require shore disposal under licence. You are asked to ensure that you supply adequate containment facilities to allow for the quantities involved and discuss the required disposal arrangements with NMFSS at the Cruise planning stage.

All waste or redundant chemicals must be cleared from the ship after every cruise. Failure to do this will result in NMFSS arranging shore disposal and this will be recharged to the Principal Scientist's parent organisation. No chemicals may be left onboard without prior agreement for both their stowage and subsequent disposal.

8.21.5 Radio Active Material

At the end of a research cruise during which radioactive substances have been used, the laboratory and all the equipment therein must be surveyed for any residual spillage and contamination. A Certificate of Radioactive Decontamination is available from the Master for completion by the competent person and returned to the Master at the end of the cruise.

It is the responsibility of the scientific party to take any necessary monitoring instrumentation on the cruise. NMFSS will advise on the requirements.

8.21.6 Sharps / Glass

The NMFSS vessels do not carry containers suitable for the disposal of sharps or contaminated glassware. These must be supplied, and disposed of by the scientific party in accordance with current legislation.

For further information on the management or disposal of hazardous materials contact the NMFSS Operations office.

APPENDIX A1 - HEALTH AND SAFETY ON BOARD

A1.1 INFORMATION

A1.1.1 Full information concerning details of all safety equipment provided on board the ship is contained in the Safety Management System, and the Ship's Safety Training Manual, copies of which are held throughout the vessel.

A copy of the NERC Safety at Sea Policy Statement and other safety related information can be found within the booklet; 'Guidance Notes for All Personnel due to Join an NMFSS Managed Vessel' (JPGN), including details of Personal Protective Clothing/Equipment. For NERC employees, guidance on Health and Safety, Risk Assessments etc. can also be found on the NERC website at: <http://www.nerc.ac.uk/about/work/policy/safety/>

A1.1.2 Outline details of safety requirements are also given in the 'Welcome Aboard' brochures in each cabin.

A1.1.3 As the person in charge of the scientific party on board you are responsible for ensuring that all the members of the scientific party are aware of their legal obligations and requirements regarding safety. To meet the requirements of the International Safety Management (ISM) Code a formal letter certifying the competence to act as PI for a cruise is required from your Head of Department. More details can be obtained from the NMFSS Operations office.

A1.1.4 As a requirement under ISM and STCW 95, Ship's Officers will undertake a formal period of pre-sailing safety familiarisation for all scientific staff as soon as practicable before commencing the cruise. The fact that this is undertaken is a necessary part of the ISM Code, and will be recorded.

A1.1.5 The Principal Investigator is requested to ensure that all members of the scientific party are available for this familiarisation - regardless whether they have sailed on the vessel before. If this is not undertaken, it is possible that sailing may be delayed until its completion.

A1.2 EMERGENCY PROCEDURES

A1.2.1 All Personnel must, as highest priority, familiarise themselves with the Ship's Emergency Signal and Procedures. Each person must be aware of their Muster Point and appointed Lifeboat Station. From time to time Emergency Drills and exercises will be carried out on board. These are mandatory and necessary for everyone's safety.

A1.2.2 Fire is perhaps the most serious danger. Even a small fire can quickly fill the accommodation with dark, choking smoke cutting visibility to nothing.

The ships are fitted with automatic fire detection and alarm systems, but in the event of discovering a fire, first raise the alarm then, if you have been appropriately trained, attempt to fight the fire as appropriate using fire extinguishers etc, until the Ship's emergency parties take over.

If areas of the ship are filling with smoke, personnel should evacuate without delay. It may be necessary to crawl on hands and knees since a pocket of clear air may be found close to deck level.

A1.3 PERSONAL SAFETY EQUIPMENT

A1.3.1 An approved Lifejacket is supplied in each scientific cabin. Ship's Officers will give full instruction on their use.

A1.3.2 Protective headgear, protective footwear and proper working apparel for the scientific party are the responsibility of each individual in the party.

A1.3.3 The ship supplies additional specialised equipment such as safety harnesses and inflatable (working) lifejackets. A demonstration in the proper use of such equipment will be given during the safety familiarisation on board.

A1.4 SAFETY PROCEDURES

A1.4.1 NMFSS insists upon maintaining high standards of ship and personal safety. To this end there are various procedures, which all staff on board must follow. Full details will be given in the safety familiarisation and briefing undertaken by ship's staff when you embark.

A1.4.2 The ship's Safety Officer is the **Chief Engineer**, assisted by the **Chief Officer**. These Officers, as well as all Marine and Technical Support staff embarked, are there to assist scientific staff undertake their work in a safe and effective manner.

A1.4.3 As Principal Investigator you will be co-opted on to the ship's Safety Committee for the period you are embarked. This forum, chaired by the Master, has a mandate under the Merchant Shipping Act, to discuss, and formally report on all aspects of the occupational Health and Safety on board ship.

A1.4.4 In the interests of safety, the PI is required to maintain an overview of all scientific operations and shall agree with the Master the responsibilities for safe use of over side equipment.

A1.4.5 The Principal Investigator's responsibilities begin at the earliest planning stage. Particularly with new tasks, or in unfamiliar circumstances, every stage of the proposed work must be thought through and prepared for, and everyone concerned must understand what is expected. This will include the writing of Risk Assessments and Safe Systems of Work.

A1.4.6 The PI must make an early opportunity to discuss on board with the Master any new or unfamiliar aspects of the scientific programme, so that as far as possible any potential problems are anticipated and solved in good time. During the cruise he should bring to the Master's attention any changes in circumstances, conditions or requirements which may affect the safety or operation of the vessel or persons on board, so that the Master may initiate through the PI or Chief Officer as appropriate, any changes which may seem necessary to the safety precautions or procedures adopted.

A1.5 GENERAL SAFETY CONSIDERATIONS AT WORK ON BOARD

A1.5.1 No over side work is to be started without permission from the Officer of the Watch.

A1.5.2 The Principal Scientist should liaise with the Master or Chief Officer with regard to all winching and crane operations concerned with scientific work.

A1.5.3 Safety helmets and safety boots must be worn in all operations involving use of a crane and overhead loads. Safety helmets should be checked to confirm that they are in

date prior to use and the headbands on the helmets should be adjusted to properly fit the wearer.

A1.5.4 Following the completion of a Risk Assessment, safety harnesses **must** be worn whenever working within the vicinity of open trawl or side gates or outboard of the normal safety rails.

A1.5.5 Safety footwear shall be worn whenever working on the open deck whether at sea or in port.

A1.5.6 No person may go aloft without completion of a Permit to Work and a full risk assessment. Specific permission on each occasion from the Officer of the Watch is required and a safety harness must be used and tools must be secured so that they cannot fall. Appropriate precautions must be taken to prevent the use of radio or radar transmitters while work is being performed aloft. The Officer of the Watch must be informed when the work aloft has finished.

A1.5.7 Bench mounted laboratory equipment must be adequately secured at the start of the cruise.

A1.5.8 For all load-bearing applications, shackles, rings and wire terminations must be proof tested and certified. They must be suitable for the load to be borne. Copies of any test certificates must be presented to the Chief Officer prior to usage.

A1.5.9 The vicinity of wires or ropes in use is one of especially high risk and should be avoided at all times unless directed by operational necessity. Extreme caution should be exercised. No personnel are permitted to pass under any wire that is under load. If necessary the ship's crew will cordon off the restricted areas. Personnel may be required to use an alternative route through the ship's interior if the deck access route is restricted.

A1.6 SCIENTIFIC OPERATIONS ON BOARD INVOLVING DEPLOYMENT OF GEAR OVERSIDE

A1.6.1 All operational procedures that are drawn up for specific activities aboard shall be the subject of a risk assessment, which is to be completed by the person responsible for that operation.

All personnel engaged in the specific operation shall be properly trained and must make themselves familiar with the specific procedures for the operation laid down in the assessment and in any work instruction which describes the activity.

A1.6.2 Prior to any operation, the Master, Deck Officers, Deck Ratings, Technical Support Engineers and Scientists involved in the deployment or recovery operations of scientific gear must be made aware of the demands on the vessel's resources, nature of the gear, and of any difficult procedures likely to be involved, so that these may be discussed and provided for. The owner of the equipment to be handled must discuss with the Master before operations begin, the procedure for handling and operating the ship and the equipment.

A1.6.3 A person shall be nominated to be in charge of the operation on deck.

A1.6.4 The suitability of weather and sea conditions for deployment or recovery work must be assessed in terms of the most hazardous part of the operation. The Master of the vessel will have the final say in this matter after consultation with the PI and the person responsible for deck work.

A1.6.5 The limiting factor likely to determine whether or not launch or recovery operations can be undertaken in poor weather conditions is the control of the gear that can be achieved by the coordinated efforts of the winch and crane drivers and the handling party on the recovery deck. If there is any doubt as to their abilities in the prevailing conditions, particularly at night, the operation should not be undertaken. If the operation has already commenced then it should be terminated or the procedures involved modified accordingly. If conditions deteriorate rapidly during launch or recovery operations, it may be safer to leave the equipment in the water until conditions improve rather than to attempt immediate recovery. Any such decisions must be communicated to the Principal Scientist and the Master either direct or via the Officer of the Watch.

A1.6.6 Only essential personnel may remain in the area of operation.

A1.6.7 There must be clear unambiguous communications between the working area, bridge, winch/ crane driver and laboratory and these must be checked before the start of operations.

A1.6.8 All deck equipment such as buoys, chain, net weights etc must be stored in such a way as to minimise the hazards associated with moving this equipment about the deck during a sequence of deployments when the ship may be rolling and pitching.

A1.6.9 At the completion of working with equipment on deck all equipment, cables and wires etc are to be properly secured and care taken to ensure that they do not obstruct passageways or present a hazard to personnel or other deck machinery.

A1.6.10 Decks must be clean of oil, mud or material to avoid personnel slipping. Any spillages must be carefully cleaned up as soon as is practically possible.

A1.7 OPERATING FROM SMALL BOATS

On occasion, there may be a requirement to utilise the ships Rigid Inflatable Boats e.g. for gathering remote samples from the ships. In this eventuality the Master is responsible for all operations and he shall appoint a suitably qualified person as Coxswain. Small boat operations are covered in the Safety Management System.

A1.8 SCIENTIFIC WORKSHOPS

The vessels have a space dedicated as a Scientific Workshop on board. A member of the NMFSS Science Department supervises the safe operation of these and use of the machinery in the workshop is to be strictly managed by this person.

A1.9 ACCIDENT REPORTING

All members of the scientific party should report any accident, near miss or dangerous occurrence to the Master via any of the officers no matter how trivial. What may appear to be a minor event at the time may have much wider ramifications. Copies of any accident reports will be passed to the person-involved employers.

A1.10 HOURS OF WORK

Under the guidelines laid down by the Maritime and Coastguard Agency (MCA) on the implementation of the Merchant Shipping (Safe Manning, Hours of Work and Watchkeeping) Regulations which implement STCW 95 for UK registered ships, every operator of a ship and every employer of personnel on board a ship is obliged to ensure that all seafarers on board do not work more hours than is safe in relation to the performance of their duties and the safety of the vessel. Operators are also required to ensure that a schedule of duties is produced and made available setting out the hours of work and rest periods for all personnel on board.

Personnel may or may not be required to work a watch keeping system while working on an NMFSS vessel; the scientific programme being undertaken normally determines this. Although it is not always possible to predict such requirements in advance, the workload will be addressed at the cruise-planning meeting, ashore and on board.

A1.10.1 OBJECTIVE

This schedule of hours of work and its limitations is designed to allow sufficient flexibility within the overall objective of staff working for an average of 12 hours per day to cope with the variations in demand for their services during duty at sea. It is of course the responsibility of everyone to ensure that they work in a safe manner, particularly in the potentially hazardous environment of a research ship.

A1.10.2 WORKING ARRANGEMENTS

Both for watchkeepers and non-watchkeepers, the maximum period of duty for any individual shall not exceed an average of 12 hours per day not exceeding 77 hours per week whichever is the least.

The hours of rest shall provide for a minimum of 10 hours rest in any 24 hour period and 77 hours in any 7-day period.

Note: Hours of rest may be divided into no more than 2 periods, one of which should be at least 6 hours long, and the interval in between should not exceed 14 hours.

A record of all hours worked/at rest shall be maintained by all staff on board - this is a legal requirement.

It is recognised that occasions arise where it might be appropriate to exceed a working period of 12 hours. Staff may undertake duties arising under certain circumstances. Details can be found in section A01 of this document.

Under these rules, every operator of a ship and employer is obliged that all personnel on board do not work more hours than is safe in relation to the performance of their duties and the safety of the vessel. Operators are also required to ensure that a schedule of duties is produced setting out the hours of work and rest periods.

A1.10.3 PATTERNS OF WORK

Staff may or may not be required to work a watch keeping system while working. The scientific programme being undertaken will determine this. Although it is not always possible to predict such requirements in advance, the workload will be addressed at the cruise-planning meeting.

A1.10.4 WATCHKEEPING

When a scientific programme requires a regime of watchkeeping to be established this will be arranged so that the maximum period of watch keeping duty for any individual does not exceed an average of 12 hours per day.

The watch keeping rota adopted shall be commensurate with the duties at hand and assessed at the time taking due regard for health and safety.

Marine personnel watch keeping times are usually standardised as follows:

0000 - 0400, 0400 - 0800	
0800 - 1200, 1200 - 1600	All ship's time.
1600 - 2000, 2000 - 2400	

The ship's routines are based on these timings and any different watch rotas should take into account that meal times will not be altered.

A1.10.5 NON WATCHKEEPING

Where the scientific programme does not require watch keeping to be established, staff working hours are not to exceed an average of 12 hours per day.

A1.10.6 FLEXIBILITY

It is recognised that occasions arise where it might be appropriate to exceed a working period of 12 hours. Strictly subject to the provisions of paragraph A1.10.7 below, staff may undertake duties arising in such circumstances.

A1.10.7 LIMITATIONS

The hours worked by any individual should not exceed an average of 12 hours daily, or 77 hours weekly whichever is the least. In other words, should it be necessary to exceed 12 hours on a particular occasion, the excess time worked must be redeemed within that cruise.

Any decision to exceed 12 hours working lies with the individual concerned and is to be made with due consideration for health and safety issues.

The Master may declare an emergency situation, involving the safety of the vessel, threat to the life of a person, or the threat of pollution of the environment. In these circumstances, the Master may require duties to be carried out irrespective of the above schedule. Any excess hours so worked will need to be recorded and the Master will record the reason for them.

A1.10.8 RECORDING OF WORKING HOURS

It is the duty of the Principal Investigator to manage the working hours of all of the science party during a cruise, with each individual monitoring their own hours and with the PI ensuring that time sheets are correctly and properly completed. For NMFSS staff, this will be done by the Science Systems Manager.

A suggested form layout for detailing the hours of rest/work can be provided by prior to the cruise and this issue will be further discussed at the Cruise Planning Meeting.

APPENDIX A2 - DANGEROUS GOODS AND HAZARDOUS ITEMS

A2.1 DELIVERY TO THE SHIP

A2.1.1 Your requirements for any items classed as hazardous under the appropriate regulations will have been discussed with NMFSS during the cruise planning stage. It is nevertheless important that you ensure that NMFSS is advised of any particular arrangements you may have made with external suppliers.

A2.1.2 Certain items are not permitted to be shipped by sea or by air due to commercial rules. Please ensure that external suppliers sending consignments direct to the ship notify NMFSS Operations of the details. Last minute deliveries, or changes, may occur whilst you are en route to join the ship, and it is important that NMFSS Operations notify the ship's agents of freight consignments, so they are able to prepare Customs facilities.

A2.2 USE OF HAZARDOUS MATERIALS ON BOARD

A2.2.1 It is vital that full details of any hazardous materials in any quantity are passed to NMFSS Operations well in advance of the cruise start date. This is to ensure safe shipment to the vessel, safe on board stowage in suitable spaces and ensuring the Master knows the type, quantity and location of any hazardous materials on board.

The NMFSS Documented Management System contains references and explanations that are relevant. The IMO International Maritime Dangerous Goods Code (IMDG) gives UN numbers for all registered materials carried by sea and is the standard reference for all freight, transport, packing and stowage purposes. NMFSS Operations and all ships hold current copies.

A2.2.2 Staff who are accustomed to handling of potentially hazardous materials, such as chemicals, in a shore laboratory may find that an environment presents them with particular problems with which they may be totally unfamiliar.

A2.2.3 It is a formal requirement under the ISM Code for the PI or a designated responsible person to provide risk assessments for operations involving non - NMFSS equipment that pose significant risks to either the ship, other staff onboard, or to the process itself due to the particular environment of a ship and for COSHH Risk Assessments for chemicals, gases etc. to be used during a cruise.

Please note that, in your risk assessment, you should allow for all aspects of the process INCLUDING transport from your laboratory to the ship, actual loading and use onboard, and unloading, and subsequent disposal or transport back to your laboratory.

Guidance as to how such assessments should be made can be supplied by NMFSS Operations and can assist you in preparing risk assessments by offering advice. However, as the user or practitioner of the process it is legally your responsibility to prepare them, as it is assumed you are in the best position to understand your own requirements.

Blank copies of forms with a suggested layout are included within Annex 2.

A2.2.4 Any chemicals delivered to, or subsequently removed from the ship must comply with the current legislation relating to Packaging and Labelling Regulations and be packed in approved IMO containers - viz: Safepacks or similar. The ships carry small stocks of hazard labels for emergency use only - see the Chief Officer - but it is the scientist's responsibility to supply sufficient stocks for their own use. Please bear in mind that the Carriage regulations

apply as much to transport from or to your laboratory ashore as they do across port authority controlled areas.

A2.2.5 It cannot be stressed too strongly that safety precautions on a ship must be **double** checked before work is undertaken. Prior discussions with NMFSS Operations and the marine and technical staff on board may save you time and effort during the cruise.

A2.2.6 If chemicals and hazardous items are to be carried by the ship during a passage or a previous cruise, it is the Principal Investigator's responsibility to ensure that stowage arrangements and temperature constraints are agreed with the Master **in advance**. NMFSS will **not** take responsibility for the subsequent condition of such items if this agreement has not been sought in advance. **In addition, the ship's Master has a requirement to decline any material about which he lacks proper information; it is not safely packed, or, in his opinion, other safety aspects preclude its carriage.** A Risk and COSHH Assessment for such over carriage will also be required.

A2.3 DISPOSAL OF HAZARDOUS ITEMS

A2.3.1 SHIP'S DRAINS

Please refer to the notices in each working area onboard, and to the advice received regarding ship's drainage systems and disposal of waste material.

No radioactive substances, toxic compounds, chemicals or biological specimens are to be disposed of via laboratory sinks.

A2.3.2 EXPLOSIVES

Details of explosives required for your cruise will have been discussed at the cruise planning stage. The NMFSS approved Shotfirer is responsible to the Master for the safe deployment of explosives and is jointly responsible with the Chief Officer of the ship for the safe storage and handling of the material on board. Please note that there are very few commercial ports that now permit the loading of explosives. As this aspect may involve passage to a specific loading port, you are advised to take these extra costs in to account when planning a cruise, which requires explosives to be loaded.

Please refer to the relevant sections of the NERC Guide to Handling Explosives, and the Ship's Safety Management Manual.

A2.3.3 CHEMICALS

The responsibility for the safe handling of all chemical supplies for use in the scientific programme lies with the PI. If it is necessary to provide antidotes or special stowage's for specific substances you should ensure that NMFSS Operations and the Master have copies of the lists before you join the ship. Should you require advice on this topic you should refer to the Health & Safety Executive or your local Chemical Advisor.

Many hazardous chemicals in seawater solution require shore disposal under licence. You are asked to ensure that you supply adequate containment facilities to allow for the quantities involved and discuss the required disposal arrangements at the Cruise planning stage.

All waste, or redundant chemicals must be cleared from the ship after every cruise.

NMFSS reserves the right to arrange shore disposal and will recharge the Principal Investigator's parent organisation if chemicals are left onboard without prior agreement for both their stowage and subsequent disposal.

A2.3.4 RADIOACTIVE MATERIAL

Radioactive chemicals **shall not** be stored and used within the ship's permanent structure or laboratories. The provision of containerised, or other specific facilities, and a risk assessment for the process should be discussed at the Cruise planning stage. This is to avoid both contamination of the ship's structure and a risk to ship's staff should they have to deal with a fire or emergency in the vicinity. Where very low level or sealed sources are required to be used in a ship's laboratory, the method of handling shall be agreed before the cruise. All containment, packaging, devices and storage must be correctly labelled with the relevant warning signs, and controlled access must be imposed if practicable. A responsible and competent person must be appointed by the PI to be in charge of all radioactive chemicals during the cruise and a formal log recording materials and usage must be completed.

General purpose (GP) main filters are to be used at all times when the Astecair Sensair 20 fume cupboard is used in conjunction with carbon-14 labelled CO₂.

The following information will be useful when assessing air filter requirements for fume hoods installed on board the vessels.

GP filters are the most widely used in the filter range and are primarily for solvent fume removal. They are manufactured from coconut shell based activated carbon of 5-10 mesh size (carbon component diameter in millimetres) with a contact surface area of up to 1300m²/gm. Filtration is achieved by physical adsorption of molecules in the pores of the activated carbon by Van der Waal's force.

Activated carbon will adsorb any chemical with a molecular weight above 30 and a boiling point above 60°C. Some compounds, which do not come into this bracket, are also well adsorbed because of their molecular size and structure (e.g. acetylene). Carbon dioxide (CO₂) is not one of these gases. The molecular weight of CO₂ is 28.

Although the filters are not efficient for containment of O₂ there is still a case for installing the filters in the fume hood during C¹⁴ labelled CO₂ operations. Ideally CO₂ should only be used in small quantities. The main benefit of using filters is that the fume hood gas concentration will be considerably lower than the input gas concentration due to temporary containment within the filter matrix. The ability to contain the gas and release it at a reduced concentration over a period of several hours is advantageous as C¹⁴ labelled CO₂ activities on our vessels are normally carried out in batch mode. The filters slow the release of the gas to the atmosphere, allowing for a more effective dispersal.

At the end of a research cruise during which radioactive substances have been used, the laboratory and all the equipment therein must be surveyed for any residual spillage and contamination. A Certificate of Radioactive Decontamination survey is available from the Master for completion by you and return to the Master at the end of the cruise. The purpose of this is to ensure that the next Principal Investigator does not have his or her data corrupted by the effects of your cruise.

It is the responsibility of the scientific party to take any necessary monitoring instrumentation on the cruise. NMFSS will advise on the requirements.

A2.3.6 GASES

It is the scientist's responsibility to supply any special fittings that the instrumentation may require to reduce the gas pressure for use in the ship's laboratory. Each ship carries an oxygen monitor to check the conditions of a safe atmosphere in a compartment. If additional monitoring devices are likely to be required by the operational requirements of a specific scientific function it is the Principal Investigator's responsibility to provide them and to ensure that they are provided with a current calibration certificate.

Full pressure gas bottles are not permitted in laboratories (except for special cases of pure air, which are subject to prior agreement and the supply of special release arrangements)

The Scientific party should also supply the necessary piping to carry gases to particular instruments in the laboratory. NMFSS will supply special racks on the external decks, to secure gas bottles, providing the requirements are discussed at the cruise planning stage. Adequate protection must be supplied for bottle regulators to avoid impact damage whilst the bottles are being handled.

APPENDIX A3 - MEDICAL & TRAINING REQUIREMENTS

A3.1 MEDICAL

To ensure compliance with The Merchant Shipping (Medical Examination) Regulations, the ISM and STCW 95 Codes, all participants should ensure that the original ENG1 (or equivalent) medical certificate is carried with them when joining the vessel. It is suggested that this certificate is kept with the owner's passport.

For scientific staff who do not have a UK MCA approved medical practitioner in their own country, NMF SS will discuss ways of ensuring that the same standards are met, for example, by supplying details of the ENG1 requirements for a local medical Doctor to perform the examination and issue a statement to confirm that the applicant complies with the requirements. The legislation under which these standards are required is contained in the MS Notice MSN 1822(M) Medical and Eyesight Standards for Seafarers (<http://www.mcga.gov.uk/c4mca/mcga-mnotice.htm?textobjid=868E009DB136F799>) and will be further be further discussed at the Cruise Planning meeting.

A3.2 DRUGS

A3.2.1 If scientific staff are taking prescribed drugs for minor ailments at the time they expect to join a ship or, whose course of medication has been approved by their general practitioner **at the time** of their ENG 1 examination, they should inform the PI before they join, and the Master when they join and take a sufficient supply of any special medication for the whole cruise plus the time it will take to return to their home. It is important to remember that some prescription medicines may be illegal in other countries. If scientists are leaving the vessel overseas they must ensure that any prescription drugs they have are legal in that country.

A3.2.2 NERC operates a **zero tolerance** policy towards the use of banned drugs. Anyone found infringing this policy will be liable to disciplinary measures being taken against them, which may include dismissal from the vessel and police involvement

A3.3 PREGNANCY

A3.3.1 In normal circumstances NMFSS would **not** expect pregnant personnel to undertake a scientific cruise due to inherent additional dangers associated with living within a shipboard environment – i.e. staff being more likely to suffer injury due to falls arising from vessel motion and the possibility of seasickness affecting the overall well-being of individuals.

However, it is recognised that in some cases it may be necessary for a pregnant individual to take part in a scientific cruise. In this event a written risk assessment to be completed by the persons line manager and sent for review to NMFSS Operations by the Principal Investigator. The risk assessment may need to be discussed with and agreed by, the individuals own GP. These actions need to be completed well in advance of the cruise commencement date.

The risk assessment must take in to account a wide range of risks including, but not limited to:

- Lone working

- Potential evacuation ashore
- Bad weather
- Working practices
- Term of the pregnancy
- Impact of limited medical facilities onboard (only in practice first aid)
- Heavy manual labour
- Geographical area
- Use of hazardous materials
- Age of the individual
- The need to involve shore authorities if anything untoward occurs.

A3.3.2 The PI is requested to advise NMFSS of the situation as soon as it has been identified and the circumstances will need to be discussed with the Master of the vessel. The Head of NMFSS and the ship's Master have the ultimate decision as to whether or not the individual concerned will be allowed to participate in the cruise. The matter will be handled as discretely and sensitively as possible. NMFSS reserve the right to obtain independent Occupational Health advice if they believe it relevant to the particular case and make an assessment of conditions which might result in an ENG1 not being issued.

A3.4 PROVISION OF A DOCTOR

For operations in distant waters and Polar Regions, NMFSS may include a qualified Medical doctor in the ship's marine complement. If a medical Doctor is included within the scientific complement, and arranged by the Principal Investigator, NMFSS reserves the option of noting the Doctor's professional advice but also taking advice from other sources as considered necessary. Notwithstanding patient confidentiality, the Master shall retain the right to be fully informed about all aspects of a patient's condition regardless of the appointment of a medical Doctor.

A3.5 SAFETY TRAINING COURSES

A3.5.1 It is a requirement under the STCW convention that all members of the scientific party, as seafarers, have attended a Maritime and Coastguard Agency approved Personal Survival Techniques (PST) Course. These are run by commercial training colleges in various parts of the United Kingdom (and some overseas), and details of these colleges can be obtained from the NMF SS Operations office.

APPENDIX A4 - DOMESTIC FACILITIES ON BOARD

A4.1 ALCOHOL POLICY

The NERC Policy for Alcohol Abuse applies on all NMFSS vessels, a full copy of which is contained in the JPGN.

The policy is rigorously enforced on board the vessels.

A.2 ALCOHOL - PRIVATE SUPPLIES

A4.2.1 All staff on board are reminded that NERC does not permit any personnel to bring alcohol, in any form, suitable for internal consumption, on board the vessels managed by NMFSS. Additionally, it is not permitted for any alcohol to be stowed in cabins or any other ship's compartments, unless it forms part of personal allowances permitted under the Customs regulations as a Duty Free allowance, is shown as such on the official paperwork held by the Master and will be removed from the vessel at the next port of call.

A4.2.2 A bonded stores system is operated on board the vessels and NMFSS will arrange, where appropriate, the supply of alcohol to the vessel and provisions for the management of the bond system on board.

A4.2.3 In operating areas which may involve port calls in Islamic countries it is even more crucial that any consumable alcohol, of any kind, is retained under the direct control of the Master, in the bonded store on board. If the Master receives written approval from local authorities to relax this rule then he has discretion to vary this requirement.

A4.2.4 All staff should be aware that Customs authorities worldwide take a very serious view of abuses of alcohol allowances and, especially in Islamic countries, any infringement of their regulations can result in automatic arrest for both the offender and possibly the Master. There can be very heavy penalties imposed, which can result in large fines and or imprisonment. If the offender has already left the vessel the Master (and others) may face whatever penalties are imposed. Additionally, the vessel may be delayed which could place her future cruise programme in jeopardy.

A4.2.5 It should also be noted that the illicit shipment of alcohol in scientific equipment is strictly forbidden, as consignment packing lists must show the true contents and the import / export of alcohol to certain countries is banned.

A4.2.6 These rules are not designed to the inhibit social amenities on board but to ensure that NERC, its vessels and its staff is not exposed to unnecessary risks; particularly in areas where the local culture has a different attitude to alcohol tolerance.

A4.3 BAR FACILITIES

A4.3.1 Scientific staff are invited to avail themselves of the facilities of the bar in the Officer's/Scientist's or Communal lounge. The bar is **a voluntary operation** run by the Officers/Ships staff at the discretion of the Master - who supplies the contents, **and the guidelines for consumption of units of alcohol as described under the policy and bar rules.**

A4.3.2 As will be explained on board, any misuse of bar facilities will result in the withdrawal of the right to use it.

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

A4.3.3 On ships serving outside UK waters it may be possible to have duty free facilities available - subject to supply and customs regulations. The provision of duty-free goods at the end of a cruise (docking bottles) is entirely at the discretion of the Master and in compliance with current Customs allowances. It should be noted that the landing allowance is **only** applicable when the vessel has made a port call to a Non-EU country during the course of the cruise.

A4.4 THE MANAGEMENT AND OPERATION OF SHIPS BARS

MANAGEMENT

1. The bar shall be managed by the Master and Purser with the support of a committee.
2. The Master has overall responsibility for the implementation of these rules and the monitoring and compliance by all seafarers on board. The term seafarers, for the purpose of the operation of the bar, shall include Officers, Ratings, Technical support, Scientists, Contractors and NMF-SS Shore personnel.
3. The Purser shall be the Administrator and the role shall include:
 - Monitoring and maintaining appropriate levels of bar stock in accordance with the levels of alcohol units recommended by the UK Department of Health,
 - Monitoring the bar Electronic Cash Register (ECR) on a weekly basis,
 - Providing a weekly report from the Cashless System (Instant Drilldown), to the Master and Marine Operations Manager.
 - Identifying and highlighting occasions which indicate a use of alcohol units over and above the recommended levels,
 - Controlling consumption in accordance with the NERC NMF-SS Policy for Alcohol Misuse at Sea.
 - Ensuring awareness and compliance with health and well-being recommendations, relevant NERC policies and the bar rules.
4. The standing members (Master and Purser) of the bar committee shall include three representative from the embarked personnel.
This committee will assist the Purser in his role by:
 - Stock taking and movement of stock from storage to bar,
 - Ensuring all users of the bar comply with the alcohol policy and bar rules,
 - Ensuring the cleanliness and tidiness of the bar and fittings,

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

- Ensure all users of the bar are appropriately dressed.

OPERATION

1. The bar shall be operated in accordance with the bar rules indicated in the annex to this document. The Bar Rules shall be displayed in the bar.

A4.5 RULES FOR THE USE OF THE SHIPS BAR.

CONSUMPTION OF ALCOHOL

1. The bar facilities on board the vessels are available to Officers, Ratings (hereafter termed 'crew'), and technical support staff, scientific participants, contractors and other NMF-SS staff travelling on the vessel (hereafter termed 'special persons').
2. The bar will only operate once a full bar committee has been approved by the Master.
3. The bar is only for use by crew and special persons who are off duty.
4. All purchases must be for the personal consumption of the individual. It is prohibited to buy 'rounds' of drinks.
5. The opening hours for the bar shall be 1700 – 2300. This will be common to both vessels.
6. The bar shall be closed in port.
7. Arrangements for opening and closing the bar will be determined and agreed by the Master, Purser and bar committee. There will be no exceptions to these times without the approval of the Master acting in consultation with shore management.
8. Exceptional events such as the PI's RPC may be held. The PI will be exceptionally allowed to pay for up to one day's issue of units. All consumption must be taken from the daily allowance of units. No additional units will be issued.
9. The following guidelines from the UK Department of Health shall be used to determine the units associated with various alcohol products. Where any person is unable to determine the appropriate units, the Purser will provide clarification or request assistance from the Marine Operations Manager.

Type	Strength	Size	Units
Low Alcohol Beer, Lager & Cider	2%	330ml	0.7
	2%	440ml	0.9
'Normal' Beer, Lager & Cider	4%	440ml	1.8
	5%	440ml	2.2

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

	6%	440ml	2.6
Wine	10%	175ml	1.75
	11%	175ml	1.9
	12%	175ml	2.1
	13%	175ml	2.3
	14%	175ml	2.5

A4.4 CASH

A4.4.1 The system for settling bar bills and other cash transactions is managed using a 'cashless card system' – See Appendix A09.

A4.5 HOTEL SERVICES

A4.5.1 As part of a rationalisation of catering services on board there is a requirement for the scientific and technical complement and the majority of the marine complement to maintain their own cabins to a satisfactory standard of cleanliness, hygiene and safety and to leave their cabins at the end of a cruise prepared for the next occupant.

The remaining Steward will clean the public and shared areas of the accommodation to a weekly schedule i.e. they will clean specific areas of the ship on specific days of the week. Therefore co-operation by all onboard will be important to clean up spillages, rubbish etc as they appear or they may remain hazards for several days. Working boots and dirty overalls **must not** be worn in the accommodation.

A4.5.2 All personnel are expected to be appropriately dressed in clean clothes in the Saloon - working gear is not permitted. Please ensure your staff arrive promptly in attending for meals - the catering staff have to feed a considerable number of people. If staff are late they may be delayed in being served and in extremes may not be able to be served.

It should be noted that there is no Duty Mess facilities on board the vessels and **all** meals must be taken in the saloon.

A4.5.3 It is recommended that you advise NMFSS Operations of any 'special' dietary requirements (e.g. vegetarians, vegans etc.) for members of your party as early as possible prior to embarkation.

Please note that there is a section on the embarkation form to state your dietary requirements.

Eating or keeping food in the laboratories is not permitted at any time.

A4.5.4 LAUNDRY

All NMFSS ships are fitted with automatic type domestic washing machines and ironing facilities for use by scientific staff. Tumble dryers are fitted, and drying rooms are available. These facilities receive very heavy use and staff are asked to be considerate in their demand to use them.

A4.5.5 Cabin linen (towels, bed-linen and soap) are supplied by the ship and are changed weekly and at the end of every cruise.

A4.6 MAIL

A4.6.1 TO A SHIP

Personal mail may EITHER be sent care of NMFSS Operations who send regular mail consignments to the ship via the Agents. In this case mail only requires to have normal UK stamps on it.

OR - mail may be sent direct to the ships Agents in the next port of call. The address can either be obtained from the Cruise Directive or by contacting NMFSS Operations.

A4.6.2 FROM A SHIP

The Master will accept unstamped letters prior to arrival in a non-UK port if normal posting facilities are not available. He then gives them to the Agent for stamping and posting. The Agent gives the Master a summary of stamp charges against names and the Master will recover the costs from individuals at the end of the cruise. Mail accounts will be closed prior to arrival in port for departing Scientists.

A4.7 POWER SUPPLIES FOR PRIVATE USE

A4.7.1 Cabins are fitted with 230 - 240 volt AC domestic power sockets, of the 13 amp, 3-pin UK type. All private radios etc. must be fitted with the correct type of plug and secured against the motion of the ship. Please check with the ETO before use.

Standard shaver sockets are fitted as well. No person may interfere with power sockets in any way. Any problem with power sockets must be brought to the attention of the ship's Chief Engineer.

A4.7.2 Electrical power is generated aboard ship at 415 volts 3-phase 50Hz. The design of the system is such that there is no neutral or earth. This should be kept in mind when isolating electrical items for maintenance or other purposes. **(This 415v supply is used for all motors, heavy duty loads and container outlets).**

To obtain a 230 volt supply at a socket outlet, transformers are connected across 2 phases i.e.

red - yellow

red - black

black - yellow

(This means that the live and neutral pins have a voltage relative to earth of 115 volts).

SAFETY

To ensure that each electrical item can be effectively isolated from the system the following safety items are fitted to ships fixed outlets.

1. All circuits are protected by double pole MCB's.
2. All switched socket outlets, spur boxes are double poles switched.

Please ensure that if extension leads are brought for use on board that they are of the double pole switch type; any other type will not allow for safe isolation and personnel will be discouraged from using them.

SUPPLY**Socket outlets**

230v dirty supplies - 50Hz	UK square pin
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230v clean supplies - 50Hz	UK square pin
115v dirty supplies - 50Hz	Round pin sockets to BS 4343 (yellow) 2 pin and earth.
115v clean supplies - 60Hz	US flat pin (labs only)

Heavy duty socket outlets

230v 16amp - 50Hz	To BS4343 (blue)
230v 32 amp - 50Hz	2 pin and earth
415v (3 phase) 63amp 50Hz	To BS4343 (red)
415v (3 phase) 125amp 50Hz	3 pin and earth

(Refer also to the Ship's Safety Management Manual)

A4.8 VESSEL COMMUNICATIONS

A4.8.1 PRIVATE SATELLITE TRAFFIC

Scientists are permitted to make private Inmarsat telephone calls, or send faxes/telexes/electronic mail - subject to the permission of the Master and in accordance with the Wireless Telegraphy Act. Private and personal traffic will be charged to the individual at the prevailing rate, and staff are strongly advised to acquaint themselves with the likely costs before they send the traffic.

A4.8.2 ELECTRONIC MAIL TO AND FROM THE SHIP

On RRS Discovery, E-mail is a ship initiated facility - the ship contacts NOC and activates collection and deposition of electronic mail. The shore CANNOT dial the ship to transfer E-mail. Because the system utilises a satellite to communicate there is a charge for the time used on the satellite to take messages from the shore to the ship. This means that the person on board the ship who is receiving the E-mail may have to pay for it, as well as paying for E-mail being sent from the ship.

RRS James Cook has a permanent Internet connection effectively allowing 'on line' e-mail facilities.

Individual private e-mail accounts may be set up on embarking on the vessel- there is no charge for this service provision.

A4.8.3 Please note that ship's communication systems are not 'secure' in the terms that they are encrypted. In terms of electronic mail, there is no greater level of security than there is ashore. NMFSS reserves the option of checking communication contents to ensure that current legislation is complied with and that any material detrimental to the compliance management policies is not dispatched. This should not be construed as an invasion of privacy.

A4.8.4 Use of private mobile telephones on board NMFSS vessels is at the Masters discretion. See also Section 10.

A4.9 SHIP'S SANITARY SYSTEMS

A4.9.1 All NMFSS vessels ships are fitted with biologically controlled waste disposal systems for toilet and sink outlets. The system stores waste material prior to rendering it biologically safe before disposal overboard.

Therefore **only biodegradable** waste products are to be disposed of via toilets and sinks. NMFSS supplies the toilet paper grade suitable for the system. Sanitary towels, soap, tissues, cotton-wool, cigarette ends or **any** plastic material **must not** to be disposed of via toilets or sinks. Alternative methods of disposal are provided onboard.

A4.10 USE OF COMPUTERS

A4.10.1 Use of private personal computers is permitted providing that they are electrically safe and properly connected to the mains supply. All usage of computers, networks and systems must conform to the requirements of the Regulations Governing use of Computing Facilities within NERC.

A4.10.2 Use of unlicensed software on ship's 'official' computers is NOT permitted. Game software is only allowed to be installed on computers allocated specifically for the purpose.

A4.10.3 Advice should be sought from the STO on board before any personal computer is utilised on a ship to avoid potential damage both to the computer the ship's systems and avoidance of virus contamination. Personal computers for use for formal data logging will be discussed at the Cruise Planning meeting prior to the cruise.

A4.10.4 Removable media for use in transmitting private electronic mail messages via the ship's satellite communication system should be certified as virus free for incorporation in the traffic transmission.

A4.11 VIDEO and DVD MATERIAL

A4.11.1 Each vessel carries a stock of video/DVD films for leisure viewing. These are under the control of the Master.

A4.11.2 There is no objection to the use of private material by scientific staff, providing that no material classed as obscene is utilised. Due care shall be taken to ensure that the video facilities are not damaged by improper use.

APPENDIX A5 - HOW TO CONTACT NMFSS SHIPS

A5.1 BY SATELLITE VOICE TELEPHONE AND FAX

Direct dialling:

Via Atlantic East satellite	00 870
Via Atlantic West satellite	00 870
Via Indian Ocean satellite	00 870
Via Pacific Ocean satellite	00 870

then the ship's identifier number. (For example, the sequence would be 00870 323 388210 for Discovery). Direct access to the ship is available for voice traffic.

A5.2 SHIP IDENTIFIER NUMBERS

JAMES COOK	764538468	for Voice
	764538470	for Fax
DISCOVERY	773204014	for Voice (Bridge)
	783020041	for Fax

Access is virtually instantaneous.

(RRS JAMES CLARK ROSS and RRS ERNEST SHACKLETON: For details of how to contact these ships, contact The BAS Communications Office on 01223 251400.)

APPENDIX A6 - LIAISON WITH SHIP'S AGENTS

A6.1 THE LEGAL POSITION OF THE AGENT

A6.1.1 As a shipowner NERC, through NMFSS as the ship's marine manager, requires a local organisation to act on behalf of the Owner in each port at which our vessels call. Such organisations are usually commercial companies and have a general term - Agents.

A6.1.2 Ship's Agents have a unique and binding obligation to act on the shipowner's behalf. They have the legal authority to look after the shipowner's interest both from compliance with local law, as well as from international shipping rules and conventions.

A6.1.3 NMFSS Operations appoints Agents well in advance of each port call upon behalf of the ship's Master. NMFSS are the Principals for that Agent hence they will seek authority for **any** expenditure or request that the ship's Master, or anyone else, may make in relation to the ship.

A6.1.4 The Agent is the Owner's servant in law and has every right not to act unless the Owner (or the Master as the Owner's representative) has given authority to do so. In extremis, the Agent has a lien on the ship **and her goods** (meaning equipment) for non-payment for duties performed. In practice this is most unlikely because NMFSS have well established arrangements to advance funds to Agents.

A6.2 AGENT'S CHARGES

A6.2.1 Agents levy charges based on the services they perform. These charges are paid by NMFSS and include an attendance fee - often a fee for every time they attend the ship - and a handling charge for most actions that they are requested to undertake.

A6.2.2 All requests for the Agent to take specific actions **must** be passed to the Master when embarked or NMFSS Operations during the cruise planning phase, this includes requests made in advance of the ship's arrival. See 11.3 for further details.

A6.3 ORDERING SERVICES FROM THE SHIP'S AGENTS

In order to facilitate repayment and tracing of goods or services required by scientific parties on the ships, there is a requisitioning system for use by scientists and non-marine staff on board. Requisition forms are available on board and are to be utilised for **any** services or supply of materials and need to be authenticated by the Ship's Master -who will undertake to initiate action on the Ship's Agents.

Examples of items to be covered by these requisitions are dry-ice, airline tickets, and transport of goods, spares or locally purchased items in a port.

By signing a requisition there will be an undertaking to repay any invoiced charges incurred, and NMFSS will forward a copy of the requisition and the relevant invoice to the originator once the Agency disbursement accounts are received. Please note that there may be a delay of several weeks or even months between receipt of the service or goods and receipt of the invoices.

A6.4 RELATIONSHIP WITH THE AGENT

A6.4.1 It must be remembered that most Agents are not familiar with the peculiar requirements of our vessels and hence there is a need to maintain a proper working relationship to ensure the requirements of the vessels in port are met.

A6.5 UNSCHEDULED PORT CALLS

A6.5.1 Unscheduled port calls, by which is meant any port calls not scheduled on the current annual NERC Ship Programme, made at the request of the Principal Investigator will involve agency costs. All costs incurred must be reimbursed by your organisation and this will be agreed prior to the event.

A6.5.2 Transfers of equipment or staff by shore or ship's boat are likely to require the services of an Agent, especially in a foreign state, due to the immigration and Customs laws. In many countries, staff travelling from, or to, a ship are under the responsibility of the Owner (in this definition meaning the Owner's Agent) whilst in that country.

A6.5.3 If scientific staff elect to take holidays in a foreign country en route to or from a NERC ship, they may not utilise the ship's Agent's services for private purposes.

A6.6 SCIENTIFIC USER'S OWN EQUIPMENT MOVEMENTS

A6.6.1 Where members of the scientific party have specific requirements to transport their own equipment independently of NMFSS arrangements, they shall ensure that all necessary documentation and booking details are copied to the NMFSS Operations office so that the appointed Agents in the port concerned can be notified to speed Customs and delivery processes. The fact of not doing this may lead to problems, extra costs to the scientist and the inability to ensure proper follow up actions when the ship, or scientist, has left the port.

APPENDIX A7 - LOSS OF / OR DAMAGE TO SCIENTIFIC EQUIPMENT

Note: Reference should be made to the NMFSS Safety Management System in this eventuality.

A7.1 In the event of the loss of, or extensive damage to scientific equipment, other than trivial and consumable items, the Principal Investigator is required to inform the relevant authority within NMFSS without delay. At sea this is normally done via the Master. Depending upon the equipment and the circumstances, a full explanatory report may then be required in writing. This is in order that approval action may be taken to write-off the item.

Significant damage is defined as; 'damage which renders the equipment unusable for the remainder of the cruise'.

In order to ensure that a valid record is maintained of all losses, to preserve the interests of NERC as the shipowner, a report shall include the following information:

- Name of vessel
- Date and time of incident
- Geographical position
- Location on vessel
- Description of equipment/goods
- Owner of goods (if known)
- Identification marks (if any)
- Description of incident
- Action taken to recover or effect repairs (if any)
- Serial numbers (if applicable)
- Any additional facts pertinent to the incident

This information is to be sent to NMFSS Operations as soon as practicable after an incident.

The reason for this requirement is to meet the vessel obligations under ISM for environmental pollution.

A7.2 Masters have been instructed to record the position of loss of equipment as accurately as possible and, if feasible, to mark it with a view to relocation and recovery. It is recommended that you consider fitting acoustic beacons and other devices to valuable equipment to assist in relocation and confirm that a marking facility is available before the cruise starts.

A7.3 It would be appreciated if NMEP items removed as defective be so labelled and a note made on the spares list in the box prior to return.

A7.5 If, during a cruise, vital items of scientific equipment are lost overboard, and recovery is crucial to the continuation of the cruise, the PI is not permitted to take commitment action involving expenditure of public funds to engage commercial assistance (e.g. divers) without the prior approval of NMFSS. In such cases the PI should liaise with the Master to determine the options available to the ship prior to informing NMFSS shore managers.

A7.6 In cases where commercial interests are involved, or the vessel is operating in licensed exploration areas, the requirements of the "Clean Seabed" policy require that a detailed Loss Report be produced for potential insurance criteria. The Master has details.

Please contact NMFSS on +44 (0) 2380 596800 for assistance.

Refer also to the ship's Safety Management Manual.

APPENDIX A8 - COSTS RECHARGEABLE TO THE PRINCIPAL INVESTIGATOR

A8.1 ADDITIONAL PORT CALLS

Additional port calls at the Principal Investigator's request that are outside the agreed cruise programme will be recharged to the PI's parent organisation. There follows below some potential additional costs that might be liable if an additional port call is made during a cruise.

Please note that costs of landing scientific staff for compassionate reasons may be recharged to the individual's employer.

APPENDIX A9 - VESSEL SECURITY AND CASHLESS CARD SYSTEMS

A9.1 CHANGES TO FINANCIAL TRANSACTIONS

A new system for vessel security and payment for goods on board has recently been implemented on board the vessels. The system incorporates 'smart' cards that will fill a dual role of access control to the vessels and cashless payment system.

A9.2 SECURITY

A9.2.1 As required by the Ships Security Plan, cards are issued to provide ID, restrict access to the ships and to record who is on board at any given time for both safety and security reasons. The system encompasses ships marine staff, scientific users and visitors when in port.

A9.2.2 All personnel embarking on or disembarking from the vessels are checked on to and off the vessels by a gangway security officer specifically appointed for this task. This includes members of the ships company (all NMFSS personnel; seafarers, technical engineers and scientists sailing on board the vessels) and any visitors.

A9.3 CARD DISTRIBUTION

A9.3.1 All permanent NMFSS employees are issued with a unique Identification Card (ID) with an image of the person to whom it is issued so that they can be clearly identified.

A9.3.2 Each scientific cabin on board the vessel has a clearly marked uniquely numbered ID allocated to it for use of the scientific party embarking for the cruise.

A9.3.3 **Each casual visitor** to the vessel (e.g. port officials, port agents, visiting scientists, contractors working on board etc.) is issued with a Visitors Card by the Gangway Security Office prior to boarding. Each card must be returned to the Gangway Security Officer on completion of business on board or at the end of the working day.

A9.4 CASHLESS SYSTEM

Whilst on board the vessel you will be required to pay for your drinks, cigarettes, tobacco, and any items you purchase from the ship's shop. The Ships operates a cashless accounting system. You will be allocated a swipe card during your initial safety briefing onboard. The same swipe card also doubles as a security I.D card for access to the vessel. This card is unique to you and records purchases you make in the ship's Bar and the Bond. Please ensure you return this card before leaving the vessel. Instructions for the use of the card are posted in the Ship's bar. Use of the system also 'standardises' on board accounting methods to meet the NERC audit criteria. Payment is not taken onboard.

The shipboard security I.D cards must be '**charged up**' with credit prior to joining the vessel. This will be done by charging your credit or debit card and the credit being transferred onto the Shipboard Security ID card.

To pre charge your Ship I.D card, you are instructed to telephone the Financial Assistant (Amy Pike) on +44 2380 596 316 Monday to Friday between the hours of 10am and 3pm with your full credit or debit card details. A minimum amount is suggested of £50 to be credited to your Ship I.D card per cruise. When this credit runs out, the Purser on board the vessel will contact you to arrange a suitable time to 'top up' your credit on the Ship I.D card. Any remaining balance on your account at the time of disembarkation will be credited back to the same credit or debit card you used initially. This will be done 10 working days after the cruise has finished.

Failure to provide your credit or debit card details will result in withdrawal of your entitlement to purchase any items from the Vessel Bar and Bond.

All credit/debit card information will be encrypted to ensure the security of the card details. All transactions on foreign bankcards will be converted into GBP at the exchange rate at the end of the cruise.

A9.5 CASH ADVANCES

There is no facility for obtaining cash on board our Vessels. It is your responsibility to make the necessary arrangements before boarding and it is advisable to take currency, sufficient for whatever you think you might need to spend between joining the ship and actually sailing. You should also ensure that you have enough ready cash when you leave the vessel for your journey home.

APPENDIX A10 - PIGN ANNEXES

A10.1 BLANK NOTIFICATION FORMS

Blank Notification Forms for foreign clearance – Application for Consent to Conduct Marine Scientific Research in Areas under National Jurisdiction (UNCLOS – Diplomatic Clearance forms). These will be dispatched by email from NMFSS Operations. On completion, these are to be returned to Operations for submission to the UK Foreign and Commonwealth Office (FCO), including electronic charts of the work area, for application to undertake scientific work. Failure to do so may result in your cruise being delayed or cancelled if diplomatic clearance can not be obtained in time.

Once your notification forms have been returned to the Operations office, the next phase of your cruise will automatically be put in to action.

A10.2 BLANK FORMS

Within the Introduction and Executive Summary section, there is Checklist. This will give details of the forms you will receive for completion, actions that you will have to undertake and dates that everything is required by the Operations office. In Annex 2 to these Guidance Notes there are a number of forms to be completed and returned to NMFSS Operations no later than four weeks prior to the sailing date of your cruise. Failure to do this may result in delay to the cruise start date.

APPENDIX A11 - SAFETY MANAGEMENT OF CRUISE

This statement, demonstrating understanding of the safety management responsibilities of the Principal Investigator must be signed and returned to NMFSS Operations four weeks prior to the cruise along with the other cruise documentation.

1. GENERAL STATEMENT

Working at sea exposes individuals to hazards additional to those present in normal work ashore. Cruise scientists therefore should maintain constant vigilance regarding actions by themselves and their colleagues in order to minimise the potential risk of human error exposing people or equipment to risk. It is the responsibility of the Principal Investigator to ensure that all risk assessments for this cruise are prepared and consulted for all scientific activities. In particular, the COSHH regulations and safe working practices relating to processes involving hazardous substances to be used during this cruise, must be referred to and acted upon before undertaking the scientific research programme of this cruise.

The general deployment and recovery of scientific equipment must be undertaken in safety, and certain basic principles must be adhered to. Foremost of these is familiarisation with the area of work and safe working practices in operations covering the deployment and recovery of scientific equipment. Many of these are covered as part of the ISM (International Safety Management) package and in particular the documented NMFSS Safety Management System and Principal Investigators Guidance Notes (PIGN). These documents detail general principles of scientific operations from NMFSS operated vessels and offers guidance on procedures and safety. Copies are available on board.

2. TRAVEL TO AND FROM THE VESSEL

Participants should pay particular regard to fatigue arising from travel to and from the vessel, and should travel according to NERC guidelines. Guidance notes on driving hours and behaviours (NERC, H&S news 2/99, Appendix 5) should be consulted if this is planned as part of an individual's journey. Rest and recuperation time should be allowed after international flights across time zones.

3. CONDUCT ON BOARD THE VESSEL

All activities must be in accordance with approved NMFSS and NERC policies modified, where necessary, by requirements laid down by the Master.

4. LOADING OF GEAR AND EQUIPMENT

4.1 Manual handling

- i) appropriate protective gear must be worn at all times. Whilst working on the outside decks hard safety hats and steel toe-cap boots must be worn,
- ii) staff should be aware of, and implement, safe lifting techniques

4.2 Mechanical lifting

- i) staff should comply with the vessel's code of guidance for handling heavy loads, and all manual handling regulations
- ii) staff should be aware of the dangers associated with moving loads overhead and the possibilities of loads swinging at all levels.

5. INSTALLATION AND OPERATION OF SCIENTIFIC AND ELECTRICAL EQUIPMENT

5.1 Electrical and electronic equipment

- i) all equipment should be checked and tested in the UK prior to installation on board the ship, according to Portable Appliance Test (PAT) Regulations
- ii) installation to be with consultation and advice from the ship's scientific deck officer or a technician with relevant qualification.

5.2 Mechanical equipment

- i) to be installed in accordance with sound seamanship practices, and with consultation of the ship's personnel
- ii) to be installed so as to permit safe and effective operation.

6. ACTIVITIES AT SEA

Particular attention should be paid to the safe stowage of chemicals and equipment. This should be in accordance with regulations governing storage and separation of hazardous chemicals on board the ship and must be carried out according to the IMDG (International Maritime Dangerous Goods Code).

Ship's motion can at times be violent and there are inherent dangers in gear that is not made secure. Prior to sailing, all equipment and any hazardous chemicals should be safely and correctly stored away and secured to avoid any risk or injury to the ship's complement. Laboratories need to be kept in a tidy and seaman-like state at all times to minimise potential risks.

6.1 Dry Laboratory spaces

- i) all activities must be in accordance with safe working, with the added risk that full regard must be taken of vessel motion
- ii) reference should be made to the Laboratory Guidance Notes (PIGN Section 08) for a generic assessment of laboratory work

6.2 Wet Laboratory spaces

- i) the basic requirements for dry laboratories must be adhered to
- ii) when in use, chemicals and equipment must be handled in such a way as to minimise the risk of injury or hazard to the individual or vessel
- iii) the floors and decks of the Wet Laboratories are likely to become wet and slippery with use, consequently precautions need to be taken and appropriate footwear worn at all times

6.3 Deck operations

- i) participants should also be familiar with general codes of guidance on safe working practices onboard ship as advised by the Ship Safety Officer or other nominated person.
- ii) overside operations must only be undertaken with prior approval and guidance from the Officer of the Watch. No operation or deployment of any piece of equipment over the side shall be carried out without the Bridge giving clearance
- iii) the ship's decks are likely to become wet and slippery, consequently precautions need to be taken and appropriate footwear worn at all times.
- iv) Safety harnesses must be worn by all personnel involved in overside operations within the 'red zones' when the ship's rails are lowered.

6.4 Navigation Bridge

all activities must be in accordance with safe working practices as agreed with the Officer of the Watch

6.5 Handling of scientific equipment whilst at sea

all equipment must be handled carefully, paying full regard of avoidance of:

- potential injury situations to any of the ship's complement
- damage to the equipment
- hazard to the vessel

Suitable personal protective equipment, in accordance with instructions from the Master or Officer of the Watch must be worn at all times.

7. USE AND STORAGE OF CHEMICALS

- i) all COSHH assessments should be completed prior to departure from the home Laboratory or Institute. In the event that, during the cruise, the duties of a participant change, relevant COSHH assessments must be completed prior to commencement of the new activity
- ii) all chemicals must be stowed in appropriate lockers according to the IMDG regulations, with due account for likely vessel motion.

8. TRAINING

Adequate safety training must be given to all personnel, paying due regard to new techniques and the presence of individuals who have had little or no previous experience on cruises.

9. REVIEW

The cruise Principal Investigator will assess risks associated with all aspects of the work during the cruise and encourage all participants to inform him/her immediately of any activities which provide cause for concern.

10. OVERALL ASSESSMENT OF RISK FOR THE CRUISE

There is a broad range of activities taking place within the cruise and it is necessary to consult the individual risk assessments that are being produced for specific information on each activity. However, although some activities are potentially quite dangerous, suitable precautions are taken to reduce the residual risk to a low level.

Assessment completed by Date
(Principal Investigator)

Assessment approved by Date