Leigh Storey

NMF

Why have a PS workshop

So we can agree what PI, PS, PSO and CS mean!

To provide information and guidance to PIs to help them achieve the best possible outcome

To clarify the processes and procedures you will be asked to complete and to update you on any changes

To provide you with an opportunity to ask ANY questions you have

To provide you with an opportunity to develop your network and maybe share experiences as you progress

The role of National Marine Facilities

To enable access to Large Research Infrastructure (ships, NMEP, people etc) as determined by NERC's Marine Facilities Programme.

Your supply agreement with NMF is critical – 6 months before you are due to mobilise this should be discussed and finalised. This will determine what we deliver and how we deliver it i.e. what technical support you will have. You should explore options for support but ask for advice regards the risks.

NMF's funding has not increased since 2015. However, we endeavour to maintain all equipment within the NMEP in a 'ready to go' state and to recruit, train and retain enough engineers and technicians to operate the NMEP. We deliver 12-15 expeditions per annum but yours is the most important one!

Post Cruise Assessments

Hugely important feedback.

Review facilitated by a separate PM or senior manager

NMF senior team plus key others (ST, techs, EMs, ships staff if available) spend one day per month reviewing the review – PCA document plus technical reports, Master's report, ST's report etc.

I will write to the PI one month(ish) after the end of the research expedition to provide feedback

Please be our critical friend – be positive where appropriate

CALL FOR NEW MEMBERS

THE MARINE FACILITIES ADVISORY BOARD (MFAB)

The MFAB acquires views from the UK marine science community to provide advice to the National Oceanography Centre on current capability and future development of the National Marine Equipment Pool, including the Marine Autonomous and Robotic Systems (MARS) autonomous equipment.

Further details on role and application

Jackie Pearson
Secretariat
Marine Facilities Advisory Board

Email: jfpea@noc.ac.uk

Tel: 023 8059 6097

CLOSING DATE: 20th JULY 2018

http://noc.ac.uk/about-us/our-national-role/advisory-bodies

Marine Environment Interaction Policy

Assessment of every research expedition from Apr 19 carried out by Environmental Assessment Officer based at the University of Durham (Anna Bird)

Standard and Enhanced EIAs - determined by region e.g. MPA, high latitude, mid ocean and activity e.g. sub seabed imaging, water column sampling, MAS platform)

Marine Environment Mitigation Plan agreed with PI at the supply agreement/6 month planning stage

Aligns with other procedures e.g. Ship Energy Efficiency Management Plans

Thoughts on being the PSO…

Brian King
2018

Thoughts on being the PSO…

Do you deserve to be in charge ?

Thoughts on being the PSO…

Think about all the PSOs you've sailed with. What do you want to do the same ? What do you want to do differently ? Who will you go to for advice, before and during the cruise ?

Have a right hand man (or woman) who will tell you the things other people try to avoid you finding out.

Some scientists will insist they don't know the science plan, no matter how often you tell them. Post clear plans for the upcoming days.

Give precise instructions to the Bridge. This can be as simple as explaining to the Bridge your requirements for station keeping.

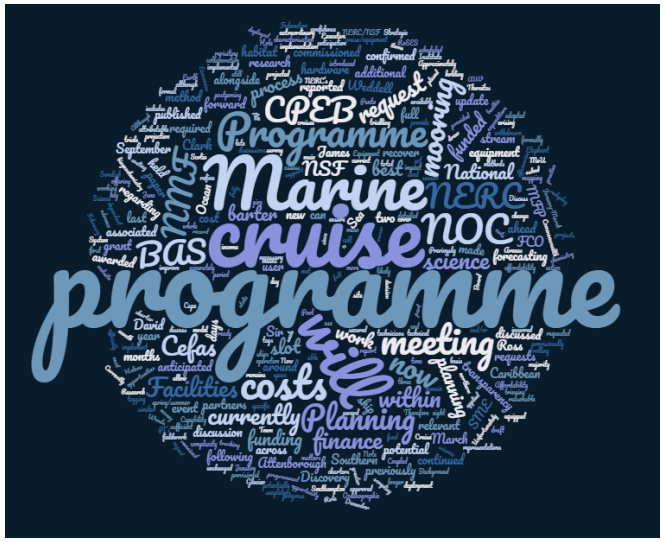
Decide what's really important, and get those things right at the start of the cruise: It's hard to change things once the cruise is underway. Know your scientific priorities. Have flexible plans. Know in advance what you can leave out of you have to. Choose which battles to fight.

Don't expect problems to be solved ashore: plan to solve them on board. If HQ helps, that's a bonus.

Look after the students whose supervisors have unreasonable expectations !

Expect the unexpected, and don't panic when it happens.

Cruise Programming



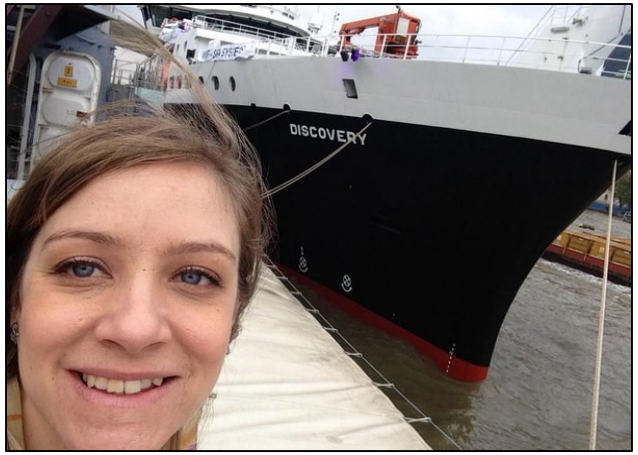
Natalie Clark

Marine Planning, NERC

natcla@nerc.ac.uk

https://nerc.ukri.org/research/sites/facilities/marine/

Quick introduction



- At NERC since December 2014
- MP since January 2016
- National Capability commissioning LRI

- Come and say hello!

Cruise Programming

What really happens….

- Applying for cruises – timeline
- Completing an SME/ADF
- Moorings policy
- Cruise costs
- Confirming funding
- Constructing the programme
- Prioritisation criteria
- Decision making – pre and post publication
- The 19/20 programme
- Who to contact

How to apply for a cruise

Speak to Marine Planning/NMF/BAS

↓

Complete SME/ADF, email MP

↓

Discussions, SME/ADF approved

↓

Costs provided (if needed)

↓

Submit grant proposal

↓

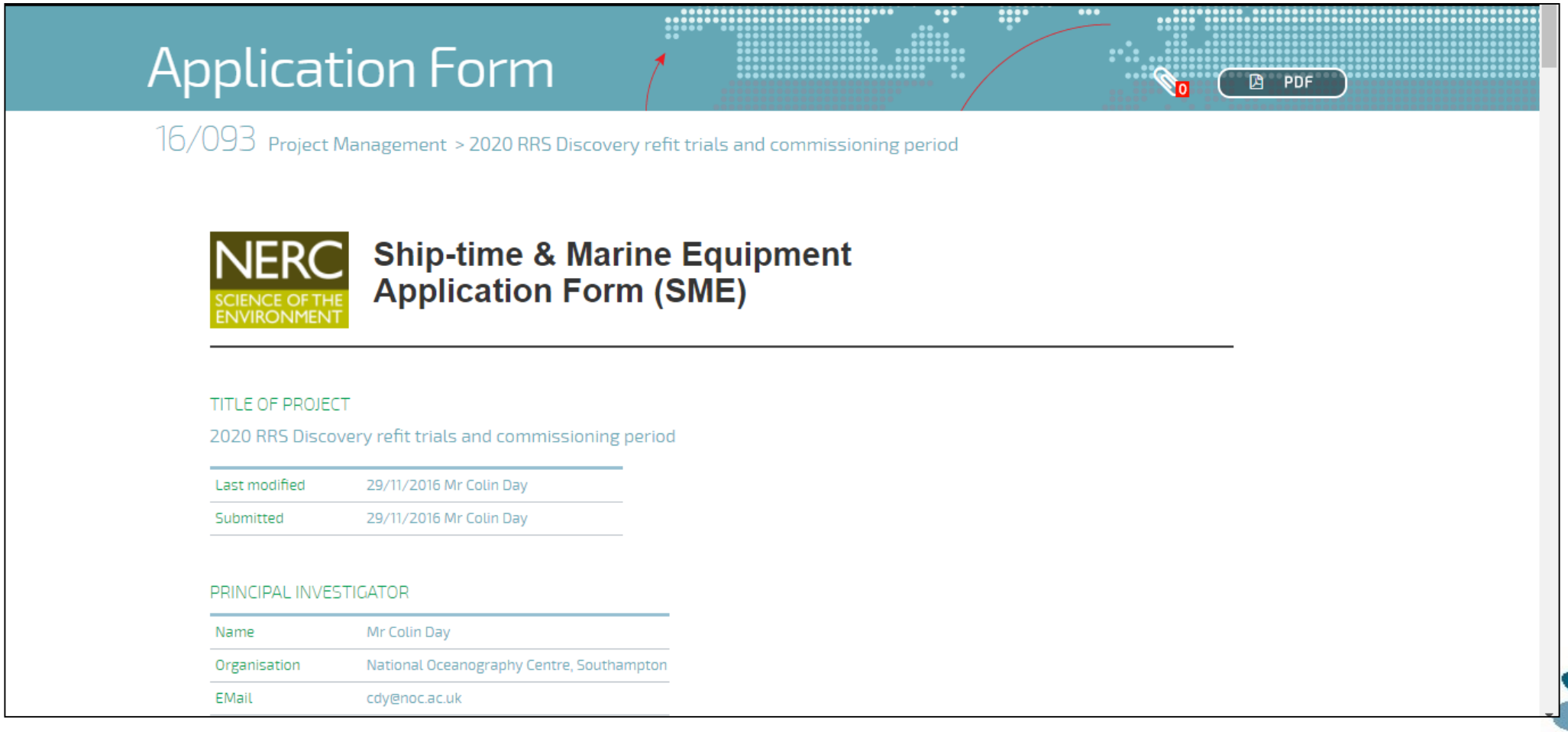
Confirm funding (or delete SME/ADF)

Visit the website -
http://www.nerc.ac.uk/research/sites/facilities/marine/

MFP website

MFP website - https://nerc.marinefacilitiesplanning.com/

The SME/ADF



Application Form

PDF

16/093 Project Management > 2020 RRS Discovery refit trials and commissioning period

NERC SCIENCE OF THE ENVIRONMENT

Ship-time & Marine Equipment Application Form (SME)

TITLE OF PROJECT

2020 RRS Discovery refit trials and commissioning period

Last modified	29/11/2016 Mr Colin Day
Submitted	29/11/2016 Mr Colin Day

PRINCIPAL INVESTIGATOR

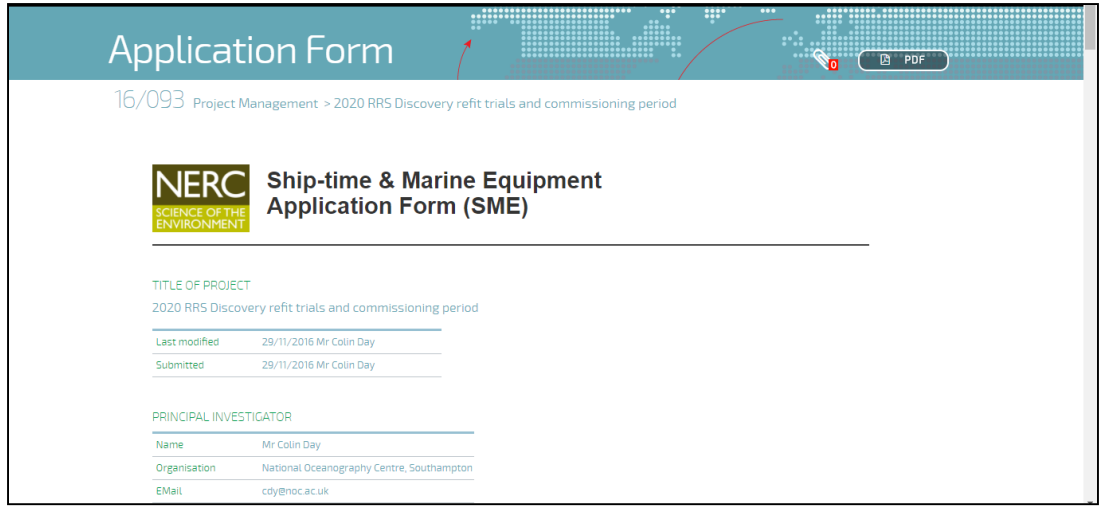
Name	Mr Colin Day
Organisation	National Oceanography Centre, Southampton
EMail	cdy@noc.ac.uk

Completing the SME/ADF

- Contact details
- Description of proposed research
- When? (and why…) How long?
- Where? (we like maps!)
- Which ship/s? (and why…)
- Required berths?
- Equipment? (with details)
- Details of funding
- Submit:
  - 1 month before if no costs
  - 2 months before if need costs

Start early!
Provide details!
Be accurate!
Tell us if you need to update!

Talk to us!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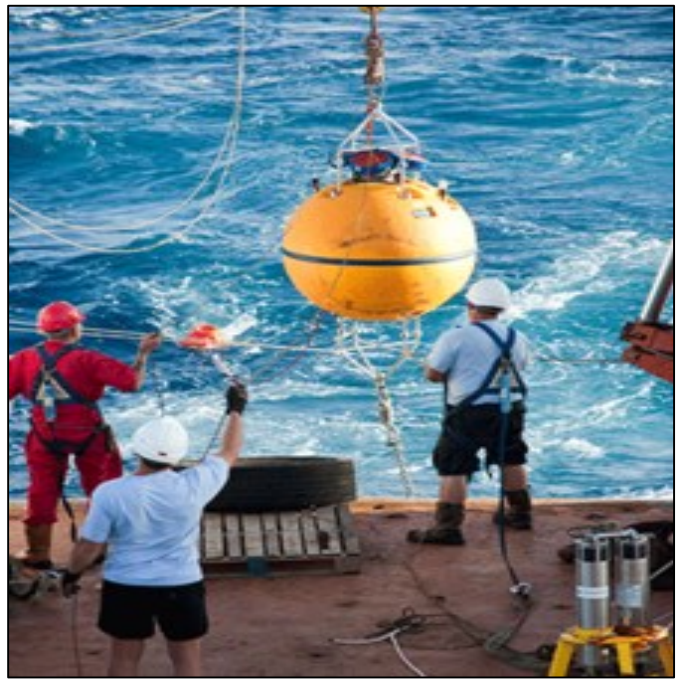
Moorings policy



- NERC website – marine facilities – policy and guidance
- Mooring policy – types, deployment/retrieval, access, risk management
- Talk to Paul Provost, NMF
- Risk management form to be submitted **2 months** prior to the grant deadline
- Must identify how moorings will be deployed/recovered and by whom
- Submit form to Mieke (miewit@nerc.ac.uk)
- Risk > low, assessed by NERC Expert Scientific Moorings Assessment Group
- Potentially modify the plan/suggestion….

Costing cruises

- SME/ADF costs can be provided where needed for proposals, e.g.
  - NERC Large Grant
  - NERC Strategic Research Programme (check AO)
  - Future Leaders Fellowships
  - Non-NERC grant application (costing method may be different)
- Please be clear about the source of funding and deadline on SME/ADF
- Costs **MUST** be requested at least **2 months** prior to the grant deadline
- Discovery science standard grants or IRFs
  - do not include SME costs in funding proposal

We need your completed SME/ADF to provide the costs!

Confirming funding

- SME/ADF must have confirmation of funding to be considered for programming
- Do not assume that having a NERC grant will mean we confirm funding for you!

1st April

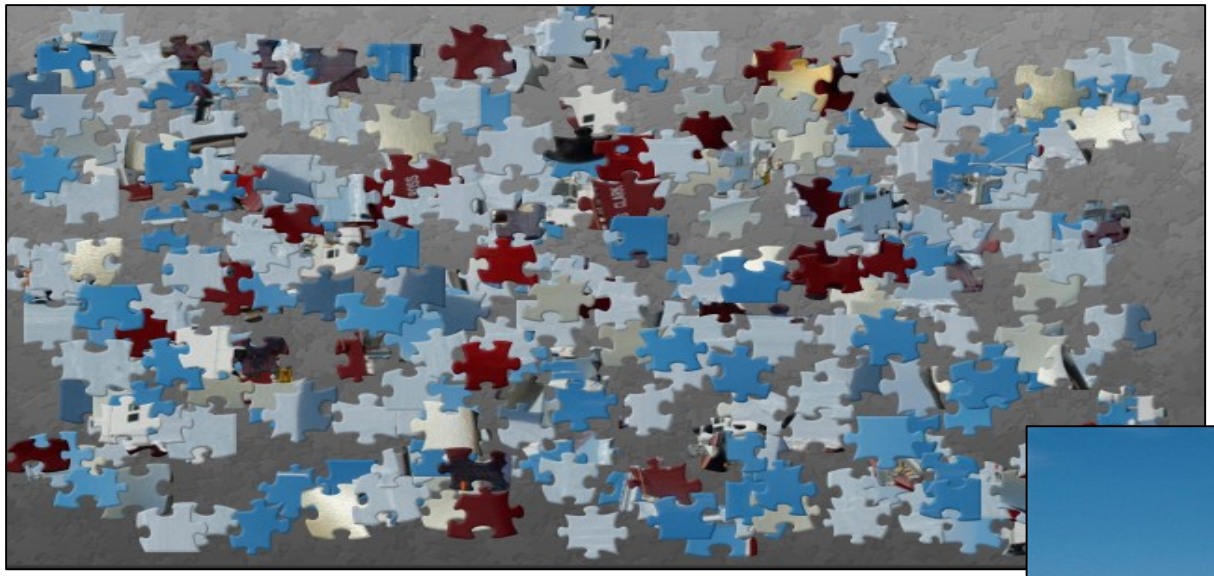
All SMEs must have funding confirmed by this date to be considered for the following cruise programme year

- Beyond that, opportunistic programming depending on availability

Constructing the Programme

- Driven by the SMEs/ADFs submitted

Constructing the Programme



…like a jigsaw puzzle…

Prioritisation criteria

- **Primary criteria**
  1. NERC funded science (DS, RP, NC)
  2. Non-NERC funded science
  3. Commissioned research
- **Secondary criteria**
  1. Opportunity
  2. Time efficiency
  3. Cost effectiveness

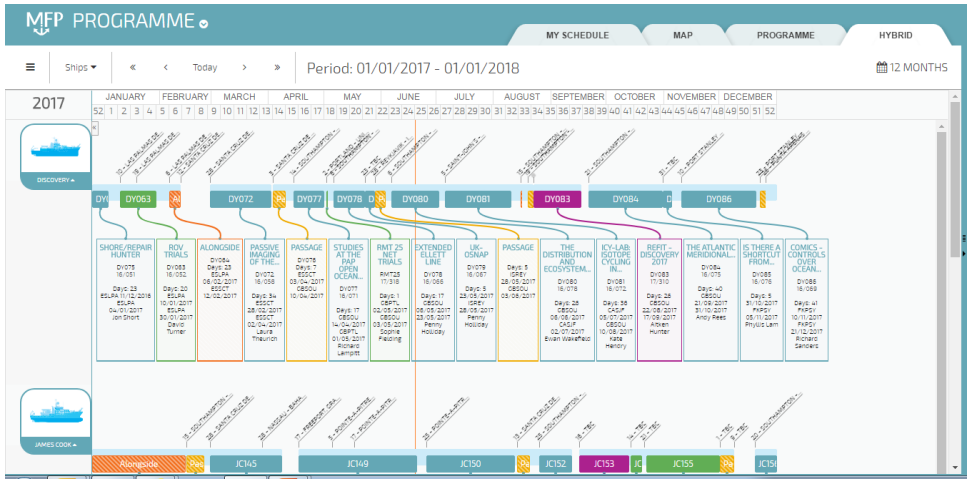
- **Also consideration of**
  1. Previous postponement/carry-over
  2. Bids from barter partners
  3. Long-term time series science

May need to introduce (late-notice) charter cruises into the programme, depending on affordability of the programme

Timetable

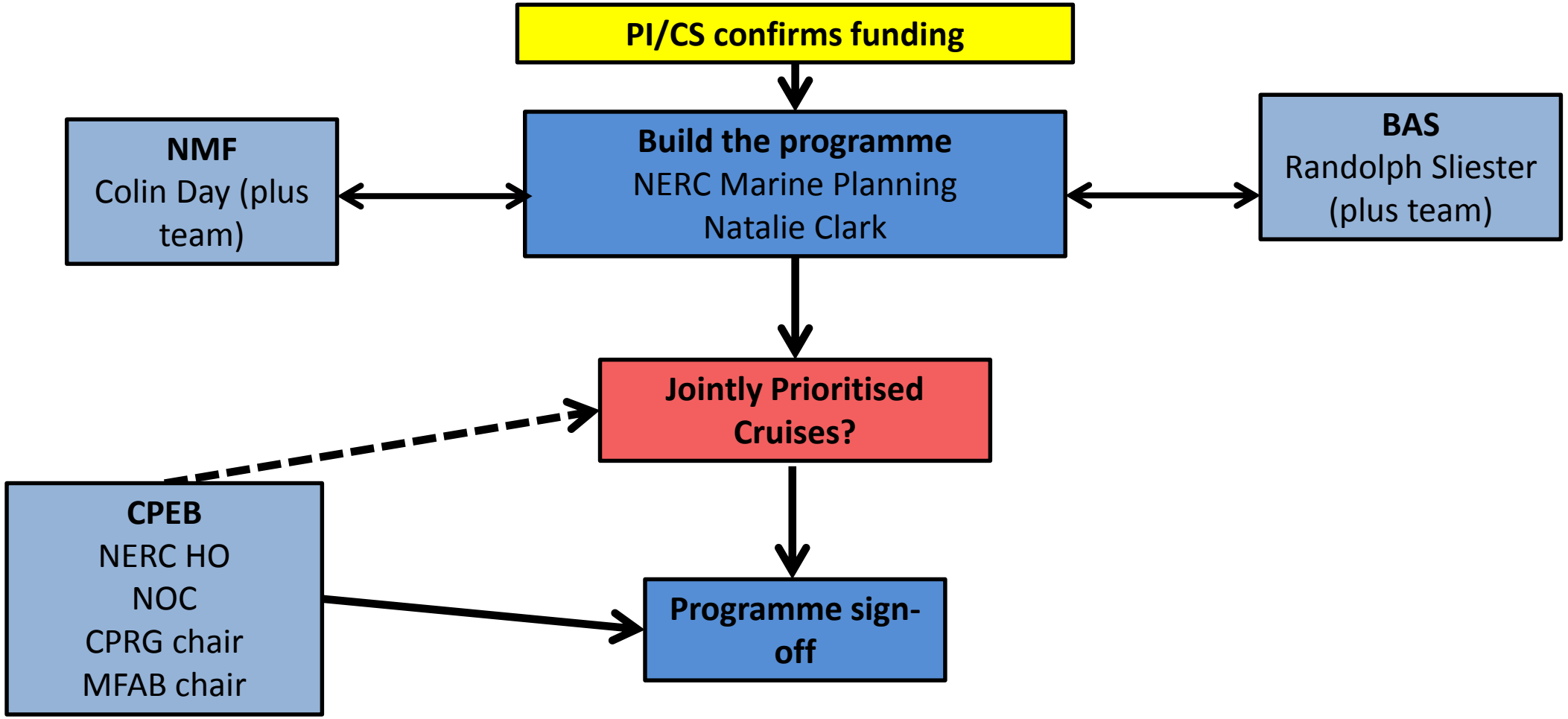
April

April - August

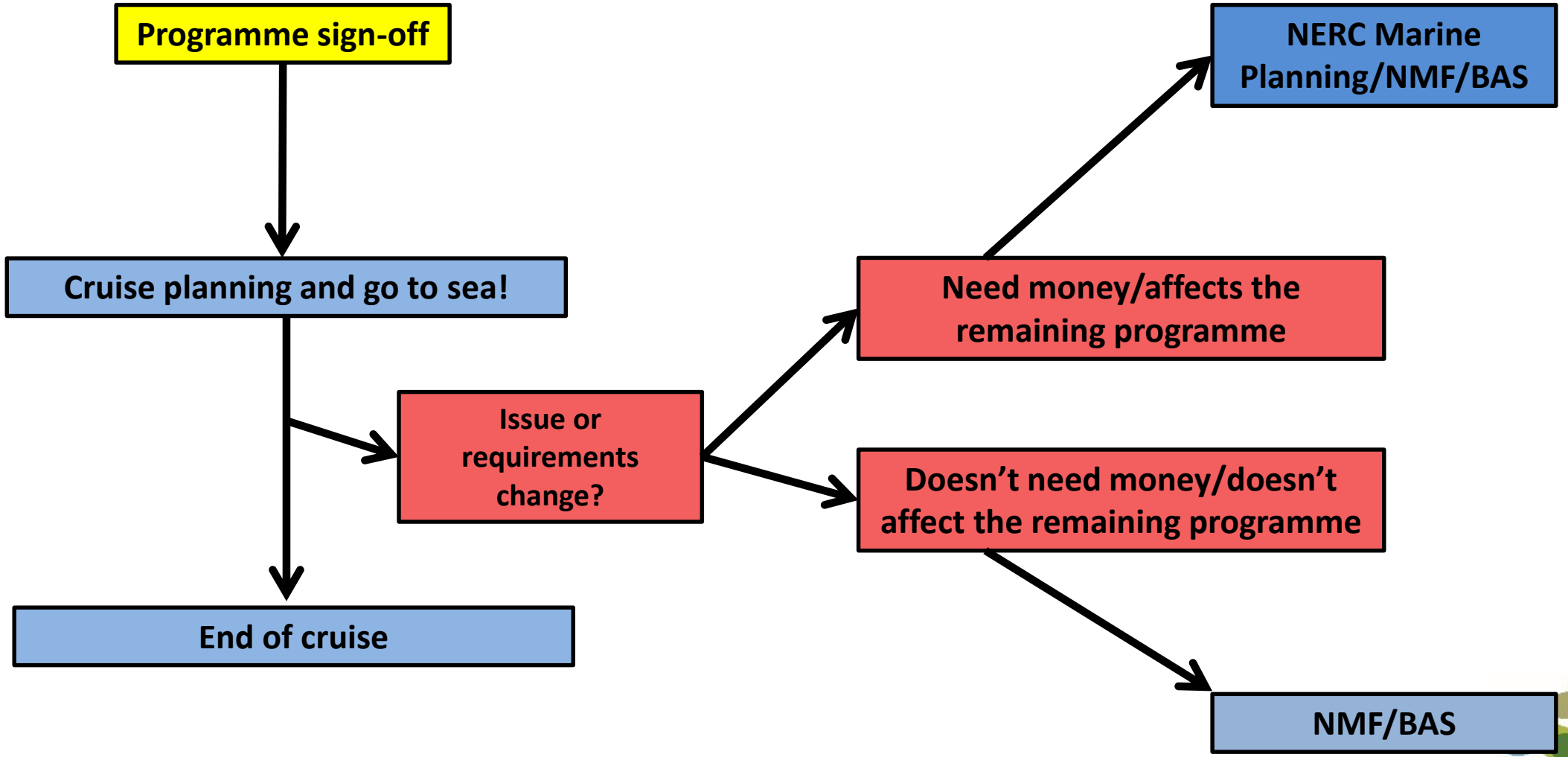


September-October

Decision making: Pre-publication



Decision making: Post-publication



Decision making: Post-publication

- **N.B. diversion for equipment recovery**
- Call to recover equipment
  - Risk of equipment failure/loss
  - Risk of data loss
- Relatively rare
- Across NERC programmes and barter partners

19/20 programme

- **Continued high demand for polar fieldwork**
- North – Changing Arctic Ocean programme
- South – Several requests (including for ORCHESTRA)
- Need to keep contingency time on JCR for SDA

- **More availability for NMF operated ships**
- Potentially programme some ‘polar’ science

19/20 programme next steps

- Provisional cruise dates discussed with CSs
- Tweaks to cruise dates
- Aiming for:
  - discussion at the CPEB meeting in September
  - publication soon after
- Publish 8 months in advance where possible

Barter cruises

- Increased access to facilities and more efficient fleet movement
- Organised and negotiated by Marine Planning
- NMF work with the CS and barter ship operator to assist in the planning process
- The CS must:
  - ensure that all members of the scientific party meet the current requirements of the barter ship operator (e.g. medicals/training)
  - comply with the cruise planning process of the barter ship operator (e.g. providing documentation, attending planning meetings)

oup

– NIOZ (Nethe

Access to other ships

- NSF-NERC bilateral agreement
- 10 research ships and some marine facilities
- Includes access to ships such as the *RV Nathaniel B. Palmer*

Please talk to us!

Natalie Clark
natcla@nerc.ac.uk

Colin Day
cdy@noc.ac.uk

Randy Sliester
ranies@bas.ac.uk

Mieke de Wit
miewit@nerc.ac.uk

- **We are here to help!**
- **Start discussions early!**

Cruise planning

Colin Day

Programme Manager

NMF

Programme delivery / Cruise planning

- NMF cruise planning team
- Cruise planning/delivery timelines
- Cruise offer letter
- NMF cruise costing process
- Cruise planning workflow and tasks

NMF cruise planning staff

Programme & project management team:

- Programme Manager - Colin Day
- Cruise Project Managers - Dan Comben
  - Jez Evans
  - Jon Short
  - Matt Tiahlo
  - Sally Heath (Project & cruise support)

Key Programme group Responsibilities:

- Work with NERC Marine Planning Office on long-term planning and programme construction
- Delivery of the Programme;
  - Production of project plans for MFP activities
  - Delivery of cruise projects across NMF and the science community
  - Cruise cost management and through life cost monitoring
  - Continuous process improvement through the Post Cruise Assessment (PCA) process

NERC SCIENCE OF THE ENVIRONMENT

Cruise planning timeline

NMF Cruise planning milestones:

- Diplomatic clearance process starts ideally 8 months prior to sail date
- Planning meeting ideally 6 months prior to sail date
- Planning stage and supply agreement completed 3 months prior to mobilisation

Why the long timeline?

- We can be working on up to 8 cruises simultaneously, at different stages of planning

  Key time dependent cruise planning activities:

  - Diplomatic clearance and licensing
  - Equipment preparation (Equipment preparation and modification / Instrument calibration)
  - Technician cruise scheduling across the programme
  - Mobilisation planning
  - Hazardous materials (3 months prior to mobilization)
  - Freight requirements (3 months prior to mobilization)

Cruise offer letter

- **When programmed the responsible Chief Scientist (CS) is required to accept the cruise offer letter before the cruise can be programmed, key points are;**

  - The CS must accept the cruise offer along with the cruise cost estimate
  - Barter cruise to be operated according to ship operator procedure & practice
  - Only the first 8 months of the programme are confirmed
  - NERC reserves the right to postpone a cruise at any time
  - Clarification that owner supplier equipment is supplied at the owners risk
  - Dedicated technician training berth made available for each science cruise
  - Change to the CS sailing on the cruise must be agreed in advance with marine Planning office

Cruise offer letter

Further key points……

- Provide diplomatic clearance forms eight months prior to start of your cruise
- Attend a cruise planning meeting with your key collaborating partners
- Complete a post-cruise assessment form to NERC at the end of your cruise.
- Submit a summary cruise report to the British Oceanographic Data Centre (BODC) within seven days of the end of your cruise.
- Submit a final cruise report to BODC within six-months of the end of your cruise, available to view via the inventory of cruises on the BODC web site
- Submit a cruise report to all foreign authorities (and when specified, all cruise data) within the time specified in your diplomatic clearance.
- All cruise data to be archived at the appropriate NERC Data Centre(s) within a reasonable period of time following your cruise.

Differences between BAS/NMF cruise delivery remit

BAS:

- BAS have a dual role;
  - BAS provides the Polar regions research vessel for both the Artic and Antarctic allocating 60 days (currently) for Arctic work each summer during the provision of logistic support to the 5 UK bases in the Antarctic.
  - BAS operates under the remit of the FCO to maintain the British presence in the British Antarctic Territory.

NMF:

- NMF is the primary UK blue water research vessel operator.
- NMF manages and supports the UK National marine equipment pool.

Difference between BAS/NMF cruise costing process

- All cruise applications will be costed using the same process

- BAS provide some technicians & equipment as part of the ‘free at the point of contact’ model comprising;
  - An ICT network administrator,
  - An Antarctic Marine Engineering technician,
  - A data manager (when needed)
  - For the RRS Sir David Attenborough BAS will also provide a Lab manager

- If a BAS NC cruise is scheduled on NMF ship (RRS Discovery/James Cook), any additional equipment or technical support provided over/above that on a BAS ship will be charged directly to BAS NC

- Applications will be costed at three separate points in the process:
  - On submission of the SME
  - On programming the SME
  - On completion of the cruise planning process

Some new functions in the cruise planning workflow

- **Marine Environmental Impact Assessment**

  New questions in the SME:
  - Does your science plan require any items of equipment or waste to remain on the sea bed following the cruise?
  - Do you plan to sample any marine organisms or fauna for processing and/or return following the cruise?

- **Function to upload/download cruise position files**
  - Work areas
  - Transects
  - Science stations

- **Data management Plan**
  - CS required to upload the their Data management Plan (BODC form)

- **CS Data Submission sign-off**
  - CS to sign-off the NMF provision and checking of ship/equipment data

POLAR SCIENCE
FOR PLANET EARTH

BAS Marine Science Support

Your marine science on a BAS vessel.

Randy Sliester
Ship Operations and Programme Manager

Requirements for undertaking your science on-board RRS JCR and ES

Similar to NOC you will be classed as a Seafarer. This includes all of the marine staff, technical support staff, science staff and observers. There for all legislation that applies to seafarers applies equally to all personnel that sail on NERC vessels.

What does that mean for you and your research team?

Every participant that plans to work on the ship will need a PST. This must be from an STCW approved training centre (original copy of course completion needs to be in hand and presented to the master for verification.)

Medical Requirements

- It is a requirement for all cruise participants to be medically and dentally fit, as fixed by the BAS medical unit.

- Prior to joining the vessel all personnel must be medically examined and meet the requirements of BASMU.
- The standard is met by completing a medical questionnaire and certification by a GP and is reviewed and approved by BASMU.

- There are different levels of requirements depending on age, sex, and medical history.

- BAS carry doctors on both ships, this is when ever we are south of 60 degrees and or if we are undertaking science operations.

Dental Requirements

Safeguarding the overall wellbeing of staff working in remote locations for BAS includes establishing thorough dental fitness prior to departing the UK. We therefore request your assistance in assessing and treating the person before you. We would emphasise the need for the restoration of carious lesions and the establishment of a high standard of oral health.

The patient is responsible for the cost of such assessment/treatment and for returning this form back to the BAS authorities.
BAS fully accepts it has no redress against you in the event of this patient encountering dental complications while on deployment in remote locations.

Diversion to a port will come out of the cruise allocation of ships time.

Remit of British Antarctic Survey

1. Supporting UK ocean and terrestrial based research in both the Antarctic and Arctic.
2. Supporting the British presence in the British Antarctic territory and the Antarctic treaty, by providing the logistics for the 5 Antarctic research bases.
3. Maintaining a none military UK presence in the South Atlantic/Falkland Islands.
4. Supporting the South Georgia Government with staff and logistics at King Edward Point

Cruise costing

- BAS funding model means that there is no cost to end user for ship time, for NERC or BAS NC funded science activities

- Use of NMF equipment from the National Marine Equipment Pool comes with additional costs. NOC provide the technical expertise and on-board support for the use of these systems.
- Lab waste generated during Antarctic expeditions is taken care of by BAS environmental.
- If your expedition is not in the Antarctic, cost of removal and disposal of lab waste is incumbent upon the PSO and their home institution.

On-board Support team

Support staff for scientific cruises aboard BAS vessels

- ICT network Admin
- Marine Engineering technician
- Lab Manager
- Data Manager if needed
- Science deck engineer

National Oceanography Centre

National Marine Facilities

Responsibilities of the Chief Scientist onboard

Guy Dale-Smith
Research Ship Manager

SAFETY

- **Safety comes 1st,2nd & 3rd…**
  - **1st - Safety is NMF's and your No.1 priority**
  - **2nd - Safety comes before the ship's programme**
  - **3rd - Safety comes before the science programme**
- **Our primary responsibility is to get you and the ship home safely and in one piece**
- **The Master will not hesitate to stop operations and will have our full backing**

Drugs and Alcohol

- Drugs and Alcohol do not mix with seawater!
- **Current Policy**
  - Alcohol focus
  - Breathalyser Test – Limit 25 microgrammes / 100ml
  - 'For cause and post incident
  - 'Two Tin' rule onboard
- **Proposed Policy (still at discussion stage with TUs)**
  - Testing for Drugs and Alcohol
  - All seafarers (including scientists) and other working onboard
  - Unannounced random testing
  - Alcohol – same limits
  - Drugs - Low cut off thresholds
- **Why change?**
  - Safety of all, Support package, Legal requirement, UKRI D&A Policy alignment
  - Change behaviours – Run ashore, back onboard and morning after

Hours of Rest

- **The Regulations**
  - MCA dictate an Hours of Rest regime for all
    - 10hrs of rest in any rolling 24hrs period
    - 77hrs of rest in any rolling 7 day period
    - Free to work rest of he time but…fatigue v's safety issue
    - Guidance – Max 12hrs work a day guidance - science programme to be based on this
- **Your Responsibilities**
  - Plan science to ensure HoR achieved (Master, CSA, STO)
  - Draw up 'Schedule of Duties'
  - Ensure ISF Watchkeeper records complete weekly
- **Science does not come first**
  - Brief your team accordingly

Selection of Scientific Team

- **Select your team carefully**
  - Medical and dental fitness
  - Suitable experience to handle rigours of a scientific cruise
  - Are there any wider issues that may impact on an individuals well being onboard?
  - Seasickness

- **Impact**
  - Minor or major disruption to scientific programme
    - Medevac
    - Compassionate landing

Bullying and Harassment

- **No place on our ships and must be challenged by everyone**
- **Chief Scientist should be first POC for science team**
- **Master and STO will support /escalate as appropriate**

Finally

- **We are here to help**
  - Assistance
  - Guidance
  - Support

- **Who**
  - Research Ship Management
  - Master and team onboard
  - Programme Manager
  - Cruise Project Manager
  - NMF Engineering / Technical support
  - Logistical support

- **Just ask…**

Phil Harwood – Deputy Research Ship Manager

2018 Principle Scientists Workshop

Diplomatic Clearances - challenges

Application changes and additions: Some countries view additions or changes to the original application as a **new application**. Others have historically taken a long time to process changes. Simple answer is once the application is in - **DON'T** change it. Please be patient - we have experienced over the past 12 months, Diplomatic Clearances not being granted until 24 hours before the ships arrival off the coastal states waters

After an application has been lodged, numerous requests from the Coastal State for extra information, all translated and all supported by photographs ie Brazil - Original application lodged with the FCO in July 2017 and clearance finally granted January 2018

New Coastal States – dialogue opened with the FCO – ie Congo - a new coastal state for us to work with !
The ship may be required to clear inwards and then outwards in some coastal states.

Liaise **EARLY** with Marine Operations, Plan **EARLY** - we can assist you with information.

2018 Principle Scientists Workshop

Changes and updates: Medicals

Are you working with a USA contingent on your expedition ?

We have again seen in the last year, participants from the USA experiencing difficulties in obtaining an **equivalent** to an ENG1 medical certificate. An ENG1 or equivalent is **REQUIRED** to sail on our vessels. A US Coast Guard maritime medical **is not acceptable to the MCA**.

BAS Polar Medicals – **not acceptable as an equivalent ENG1**

You will need to build in the cost of an ENG1 or equivalent into your proposal

Equivalent **Maritime** medical certificates are issued by a number of countries (Marine Operations holds the latest listing). Ie
Norwegian Maritime Medical – numerous doctors worldwide and acceptable to the MCA

Liaise **EARLY** with Marine Operations, Plan **EARLY** - we can assist you with information.

2018 Principle Scientists Workshop

Certification:

Please ensure that **ALL** of your participants arrive on the ship with their **ORIGINAL** certificates. No originals = a real chance that the participant may not be able to sail

Security Awareness

Science Participants will undergo Maritime Security awareness as part of their joining safety briefing.

As Principal Scientist, **you are required** by our flag state (Maritime Coastguard Agency - MCA) to hold a Proficiency in Designated Security Duties (PDSD) certificate as you are noted in the ships security plan as a **Team Leader**.

One further point on Maritime Security, please liaise well in advance if your expedition is anywhere near current ' hot spots' . As a Marine Operator we are required to carry out security risk assessments and if necessary make arrangements to increase security measures on-board if working in ' *at risk areas*'

Liaise **EARLY** with Marine Operations, Plan **EARLY** - we can assist you with information.

2018 Principle Scientists Workshop

Participants dietary needs:

We have over the past year seen an increase in special dietary requests – some of these have been advised to us at a late stage.

With the Discovery being away from the UK for over a year, we are only able to store the ship with items available from the local ships suppliers – and specific items may be difficult or impossible to obtain

We recently had the ships Purser on one ship clearing shelves in a local health food store as we received dietary requests at a late stage – and the relevant dietary items were not available wholesale in the port through the ships suppliers.

If you are aware of your participants dietary requests, please let us know at an early stage. This helps us and the ships catering team in ordering in the relevant provisions.

Liaise **EARLY** with Marine Operations, Plan **EARLY** - we can assist you with information.

Logistics – Tyrone Vernon, NMF Logistics Manager

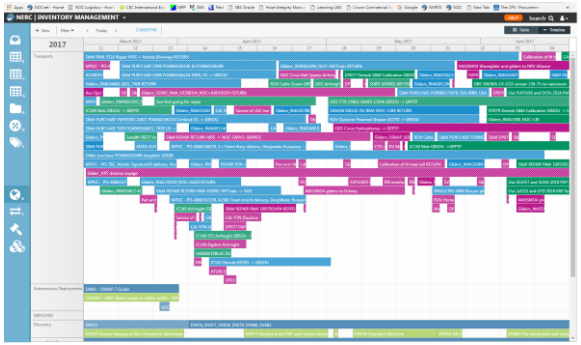
- Co-ordination of freight requirements

- Advise on shipment of Dangerous Goods

- Assist with packaging of Scientist equipment

Logistics

- Inventory Management System
- Scientist Equipment List
- HMRC and Export Licenses



Logistics

- Competitive Freight Services

- Specialist Storage of Samples from Expeditions

Antarctic Travel 2018-19

Polar Operations Support Team

Mike Dinn

British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Planning Dates for Antarctic Travel

Travel plans are available from SOUTH database by late August, Ship itineraries already available

Please note!

Your travel plans are subject to change!

British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Travel Delays & Potential Issues

- Logistical issues with travel
- Additional time at the Gateway
- Late start to your project

If you are going to a BAS facility we will arrange all of your travel requirements!*

British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Your Responsibilities

- **Passport –** Name and validity
- **PST Certificate –** Must have for ship travel
- **Instructions –** Read carefully
- **Luggage –** Check weight and restrictions
- **Money –** Take cash

British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Distribution of flight details

- Tickets are issued at least 2 weeks before planned departure date
- Sent via email
- You MUST acknowledge receipt

British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

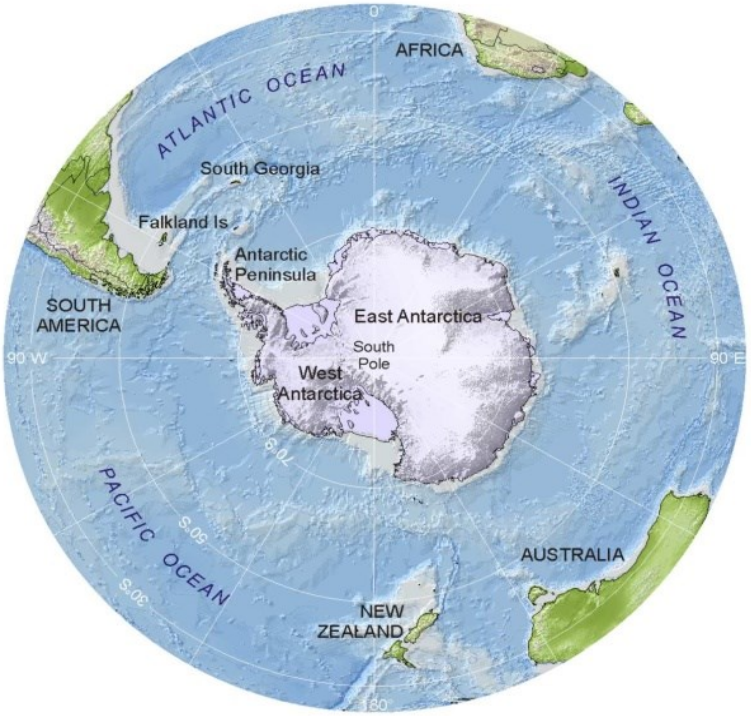
Transport to Airport of Departure

- Transport from BAS to the departure airport is available
- Or, you can make your own way to the airport
  - You may be able to reclaim travel expenses*

British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

The Gateway Destinations

- Falkland Islands
  - For ships and Dash-7 flights
- Punta Arenas, Chile
  - For ships and Dash-7 flights



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Routes from UK

- **For Falklands (MPN)**
  - BZZ-MPN via Cape Verde refueling stop, or from LHR-MPN via MAD, SCL, and PUQ
  - From FI to Z on RRS Ernest Shackleton
  - From FI to R on RRS James Clark Ross or Dash-7 aircraft
- **For Punta Arenas, Chile (PUQ)**
  - LHR-PUQ via either MAD and SCL, or GRU and SCL
  - At least one night in PUQ before onward flight to Rothera on Dash-7 aircraft

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Transit Time Estimates

- From BZZ to MPN: 20 hours (with ~2h refuelling stop in Sal, Cape Verde)
    - From Falklands to Halley on ship will take ~2 weeks
    - From Falklands to Rothera on ship will take ~2.5 weeks
- From London to Punta Arenas: 24 hours (with changes in Madrid/São Paulo and Santiago)
    - Flight from Punta Arenas to Rothera: ~5 hours, depending on weather
    - Flights between Rothera to Halley: One day (very weather dependent!)

Proper Attire for Travel

- **Commercial & MOD flights:** Comfortable clothing is recommended; no high heels, sports clothing, or beachwear allowed on MOD routing
- **Dash-7 flights to Rothera:** Long trousers, waterproof boots, jumper/fleece layer, coat, gloves, hat, and sunglasses are required.

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Baggage Allowances

- **Commercial flights:** 23kg hold bag; 8kg carry-on
- **MOD flights:** 54kg total (hand + hold)
- **BAS flights:** 30kg personal total; kitbag is separate

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Point of Contact at Gateway

- **Falkland Islands:** BAS Stanley
- **Punta Arenas:** AGUNSA (BAS-appointed agents)

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Accommodation & Transfers

- All necessary arrangements are made by the gateway agents, including accommodations
- All transportation needs are arranged by agents as well
- All arrangements are on a full-board basis in CPT and Falklands; Punta Arenas is dependent on your project

Returning from Antarctica

- Planning dates are available on the SOUTH database
- All travel details will be distributed to you from Station Ops approximately 1 week before scheduled departure
- Transfers and accommodation at Gateways arranged
- Transport provided from UK airport to BAS

You also have the option of making your own way home!

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NATURAL ENVIRONMENT RESEARCH COUNCIL

Please remember!

- Read all instructions provided
- Take your passport and original PST certificate
- Be aware of your surroundings and safety
- Take care of your belongings, and watch luggage limits
- Carry sufficient cash
- Be ready to move when instructed
- Be prepared for delays and itinerary shifts!

British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

The Polar Operations Support Team

Find us if you have any questions or concerns!

Rebecca Chisnall

Conference Manager, Air Unit, Finances

Megan Smith

Finances, Travel Policies, Travel

Steph Jones

Travel, SOUTH database, Ship Ops

TBC

Ship Ops, Crew Change, ISM Admin

TBC

Summer Visitor contact, SV invoicing, Travel

National Marine Facilities

Stuart Younghusband – Head of Ship Compliance

Your Safety when embarked remains our prime objective which makes the last financial year in particular of concern……

Personal Accidents	Deck Officers	Deck Ratings	Eng. Officers & ETO's	Eng. Ratings	Catering Team	Scientists	Technicians	Contractors/Other/Cadet	MAIB Report
F/Y 2017~ 2018	0	3	3	0	7	12	3	1	1
F/Y 2016~ 2017	0	8	5	2	3	4	0	1	4
F/Y 2015 ~ 2016	1	6	3	1	6	4	2	2	5
F/Y 2014 ~ 2015	2	9	4	1	1	0	2	1	1
F/Y 2013 ~ 2014	1	10	13	1	5	1	2	1	0
F/Y 2012 ~ 2013	1	7	7	2	2	2	3	1	0
Six Year Total	5	43	35	7	24	23	12	7	11
Six Year Average	1	7	6	1	4	4	2	1	2

Concerns from From 2017/ 18

- Missing Scientist found injured having fallen on the back deck in darkness
- UV Exposure – Five persons
- Fall down stairwell – medivac head and ankle injury- rough weather, motion sickness, fainted- landed hospital Falklands and flown home
- Motion sickness- landed two persons at time of medivac who had been at sea 1.5 days
- Leg Laceration on broken glass (OBS light), walked through Hangar area in high legged shorts- required several stitches
- Hand injury- moving through doors, both hands full and ship moved
- Acid burn to skin – no lab coat etc

Accidents\Near Miss\Hazcom Reports

- Tripped weather door –large step, slips and trips –don't run !!
- Head injury – spatial awareness

Near Miss

- Unsecured equipment breaking loose – if you move it , get your team to re- secure it
- Procedural and design issue scientific equipment- please do not bring kit with you that has ergonomic issues- refer PUWER Regulations
- Incorrect weight stamped on boxed equipment- back injury two mariners who went to lift it

COSHH \CLP –Chemicals and Gasses

- BAS have their own requirements but NOC we will need Chemical lists including Gasses- latest one month, preferably three if achievable

Package Marks/ID	Outer Packing		Inner Packing	Gross		Net		m3		Value	
UN		Class	Packing Group	Tunnel Code	EMS	LQ					
Box bjb_hz_01 / 02	6 X 25 Litres Plastic drum	Containing	6 X 25 Litres Plastic drum		Kg		50 kg		0.05m3		1 LITRES
UN2209	FORMALDEHYDE SOLUTION typically	Class 8	PG III	2(D/E)	F-E,S-D						
	37% formaldehyde; FLASH POINT 56 degrees Celsius										
Box bjb_hz_02-04	4 X 25 Litres metal drum	Containing	4 X 25 Litres metal drum		Kg		50 kg		0.075m3		1 LITRES
UN 1170	ETHANOL (ETHYL ALCOHOL) 100% solution Flash Point — 17 °C (63 °F)	Class 3	PG II	2(D/E)	F-E,S-D						

- COSHH Assessments needed by activity
- Chemicals and samples etc should be suitably packaged and badged as per CLP Regulations – why ??

http://www.unece.org/trans/danger/publi/ghs/pictograms.html

- Exposure to Formaldehyde –unmarked cardboard box thought to be wet from rain water was carried by IP who suffered Dermatological reaction afterwards

So how do we collectively stay safe

Control Measures

- The Chief Scientist\ PI is to ensure Risk Assessments are carried out and submitted
- PI to appoint lab manager and take ownership of the labs, food,PPE
- Toolbox talks are to be held daily and a daily morning meeting
- All members embarking to attend Familiarisation Briefing
- Opening meeting to be held on board ahead of science – two way event. Ships staff welcome your advice as well
- **Greatest Hazards faced often arise from Safe Movement Around the Ship- weather steps, rolling ship, motion sickness- please remind your teams**
- **Suitable footwear**
- PI's are experienced but some of your party will not be
- **One hand for the ship ... and one for yourself**

DRILLS

- It is both important and mandatory that members of science parties attend and take them seriously ……..
- Fire Drill on Discovery – At the Muster one scientist missing……

A fire party was sent back in to the accommodation to find them

They were found wearing noise reduction earphones and playing music so loud they could not hear the ships alarm system.

Given that knowledge had been imparted a drill would take place that day such actions were irresponsible and if it were real would have put lives at risk.

Please help us to help you

Make sure your team come Prepared

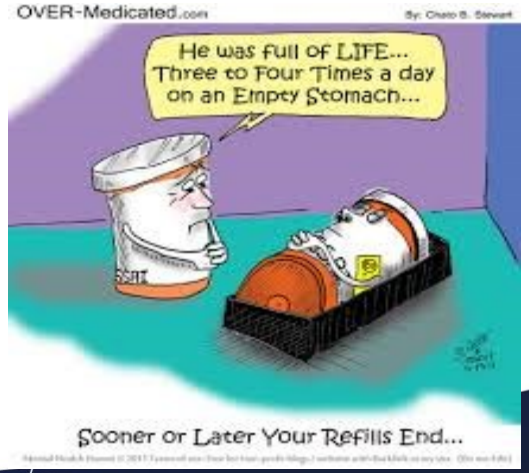
Brief your Team

Systems of work

PPE

Declare Medical needs ahead of expedition

Medication – On a very recent expedition, a PhD student only took 50% of their medication needs with them. They announced this with the ship at sea. By **Pure Luck** for the individual the ship had limited supply on board. Ship is now cleared out of this medicine.



Declare Dietary Needs ahead of expedition

Help is at hand

- Each Expedition has a dedicated Project Manager
- Chief Scientist Guidance Notes
- Marine Operations Team
- Ships Master
- Ships Safety Officer (NOC Chief Engineer)
- Ships Medical Officer (NOC Second Officer)
- Senior Technical Officer
- Ships Safety Management System

- Get to know the ships staff – they are there to help
- Continue to report any ailments or injuries or incidents
- TAKE ONE Before commencing activities

TAKE ONE

NMF Encourages that everyone stops to ‘’Take One’’

This is a one minute risk assessment – to assess a routine task before it is carried out.

Think Safety and the Environment.

Take one minute to check:

Do I know what I am going to do?

Do I know how to do it?

Do I understand the risks associated with doing it?

Do I know how those risks have been reduced to an acceptable level?

Do I know what other tasks are taking place around me?

Do I know how those other tasks might impact upon me/my task?

Do I know if/what PPE is required? (PPE is last line of defence)

If the answer to any of those questions is NO then STOP and ASK SOMEONE.

BAS Health & Safety

Maria White

BAS Ships - Health and Safety

THINK SAFE • DO SAFE
BE SAFE

- Cruise Hazard Register - standard and additional controls
- Chemical Approval Register (CAR) including compressed gas
- Control of Substances Hazardous to Health (COSHH) and Standard Operating Procedures (SOP) – for each activity NOT each substance
- Radioactive isotopes – appoint RPS, provide training certificate and permit
- Identify your team as early as possible
- Lab plans – map work space. Who is doing what and where?
- Plan ahead – chemicals (decant/weigh)
- Personal Protective Equipment – lab coats, hard hats etc

BAS Ships - Health and Safety

THINK SAFE • DO SAFE
BE SAFE

- Get to know the ships staff and operational support – they are there to help
- Ships Safety Officer, Safety Committee
- No eating or drinking in the labs
- Communicate with your team, provide appropriate supervision and support (be mindful of those with less experience working on a ship)
- Monitor hours of rest
- Take action on unsafe acts or conditions
- Accident/incident reporting – within 24 hours
- Provide contact details for collaborators' H&S Advisor

On-board data management

Louise Darroch
British Oceanographic Data Centre (BODC)

Petra ten Hoopen
British Antarctic Survey, UK Polar Data Centre (BAS-UKPDC)

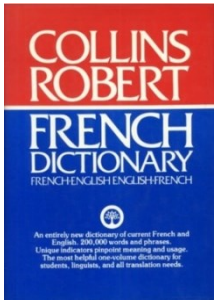
British Oceanographic Data Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

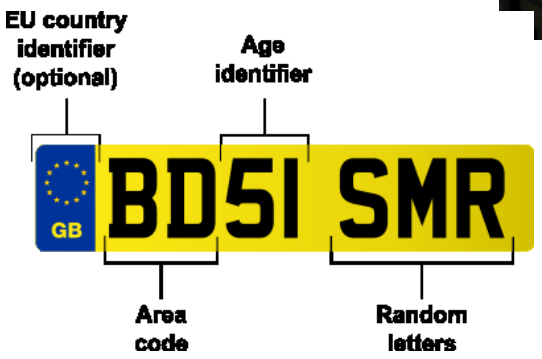
British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

National Oceanography Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

Standardisation

Standardisation everywhere





Standardisation

Helps make NERC data discoverable and long-standing

On-board data management

Data management begins at sea

On-board data management

BODC and the PDC recommends

all events should be recorded and documented by the scientific party on-board…

On-board data management

..and that events are extracted into a detailed scientific event log

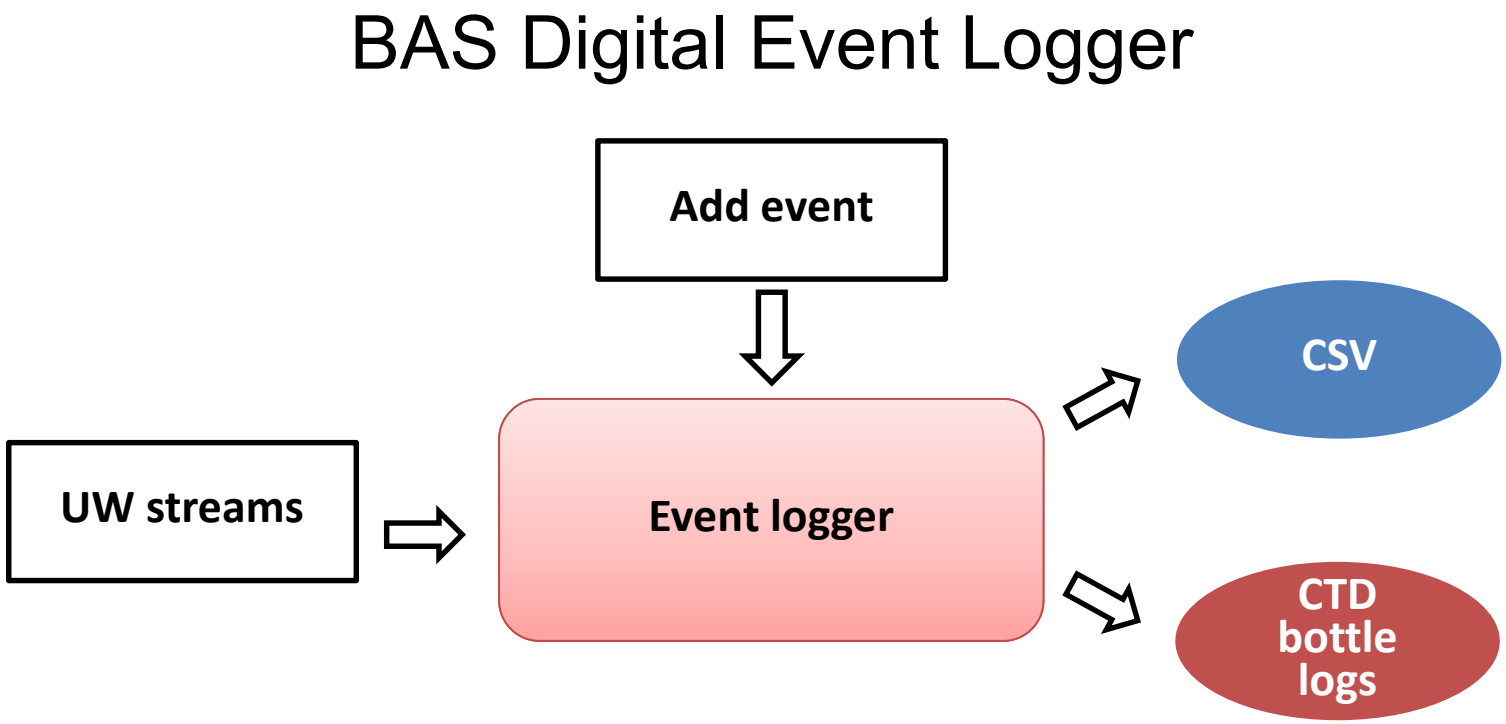
CRUISECODE	STNNBR	SITE	Gear Description	STATION START												At BOTTOM (not applicable to transects)												STATION END												SEA FLOOR DEPTH at bottom (not applicable to transects)		CONTACT for event	COMMENTS	NMF ID
				Date (UTC)	Time (UTC)	Latitude			Longitude							Date (UTC)	Time (UTC)	Latitude			Longitude							Date (UTC)	Time (UTC)	Latitude			Longitude							Uncorr. (m)	Corrected (m)			
DY018	001	CCS	Stainless steel CTD	10/11/2014	05:01	49	24.095	N	8	34.841	W					10/11/2014	05:12	49	24.079	N	8	34.812	W					10/11/2014	05:51	49	24.006	N	8	34.547	W					151		Poulton	Pre-dawn	CTD001
DY018	002	CCS	Stainless steel CTD	10/11/2014	09:00	49	24.007	N	8	34.555	W					10/11/2014	09:11	49	24.008	N	8	34.555	W					10/11/2014	09:31	49	23.994	N	8	34.555	W					150		Amber	Radium	CTD002
DY018	003	CCS	Wirewalker	10/11/2014	10:24	49	23.93364	N	8	34.55892	W																	10/11/2014	10:36	49	23.9069	N	8	34.592	W					148.5		Hopkins	Test (station start = all in, end = on deck)	
DY018	004	CCS	Stainless steel CTD	10/11/2014	12:20	49	23.906	N	8	34.59	W					10/11/2014	12:28	49	23.905	N	8	34.590	N					10/11/2014	13:08	49	23.905	N	8	34.584	W					148		Woodward	Shelf-wide programme/calibration	CTD003
DY018	005	CCS	Zooplankton net													10/11/2014	14:01	49	23.905	N	8	34.584	W																			Giering	130-50m (63 um)/day	
DY018	006	CCS	Zooplankton net													10/11/2014	14:21	49	23.905	N	8	34.584	W																			Giering	50-0m (63 um)/day	
DY018	007	CCS	Zooplankton net													10/11/2014	14:39	49	23.905	N	8	34.584	W																			Giering	50-0 (63 um)	
DY018	008	CCS	Zooplankton net													10/11/2014	14:55	49	23.905	N	8	34.584	W																			Giering	130-50m (200um)/day	
DY018	009	CCS	Zooplankton net													10/11/2014	15:16	49	23.905	N	8	34.584	W																			Giering	50-0 (200um)/day	
DY018	010	CCS	Zooplankton net													10/11/2014	15:25	49	23.905	N	8	34.584	W																			Giering	50-0 (200um)	
DY018	011	CCS	Titanium CTD	10/11/2014	16:25	49	23.998	N	8	34.355	W					10/11/2014	16:35	49	23.998	N	8	34.335	W					10/11/2014	16:49	49	23.999	N	8	34.356	W					150		Lohan	24 bottles fired to soak	CTD004
DY018	012	CCS	NIOZ corer													10/11/2014	18:19	49	23.997	N	8	34.353	W																	151		Bone	1.06t	
DY018	013	CCS	Zooplankton net													10/11/2014	20:24	49	23.972	N	8	34.314	W																			Giering	130-50m (63 um)/night	
DY018	014	CCS	Zooplankton net													10/11/2014	20:44	49	23.881	N	8	34.163	W																			Giering	50-0m (63 um)/night	
DY018	015	CCS	Zooplankton net													10/11/2014	20:48	49	23.847	N	8	34.076	W																			Giering	50-0 (63 um)	
DY018	016	CCS	Zooplankton net													10/11/2014	21:10	49	23.819	N	8	33.911	W																			Giering	130-50m (200um)/night	
DY018	017	CCS	Zooplankton net													10/11/2014	21:19	49	23.777	N	8	33.849	W																			Giering	50-0 (200um)/night	
DY018	018	CCS	Zooplankton net													10/11/2014	21:26	49	23.744	N	8	33.812	W																			Giering	50-0 (200um)	

BAS digital event logger

- Bridge log – basic chronological record of all scientific device deployments (time, unique event number, lat, lon, comment, user)

- Science log – detailed chronological record with relevant data streams (e.g. time, unique event number, deployment (cast) number, lat, lon, water depth, deployment depth, action-open/close/fired, temperature, comment (**purpose**/site), user)

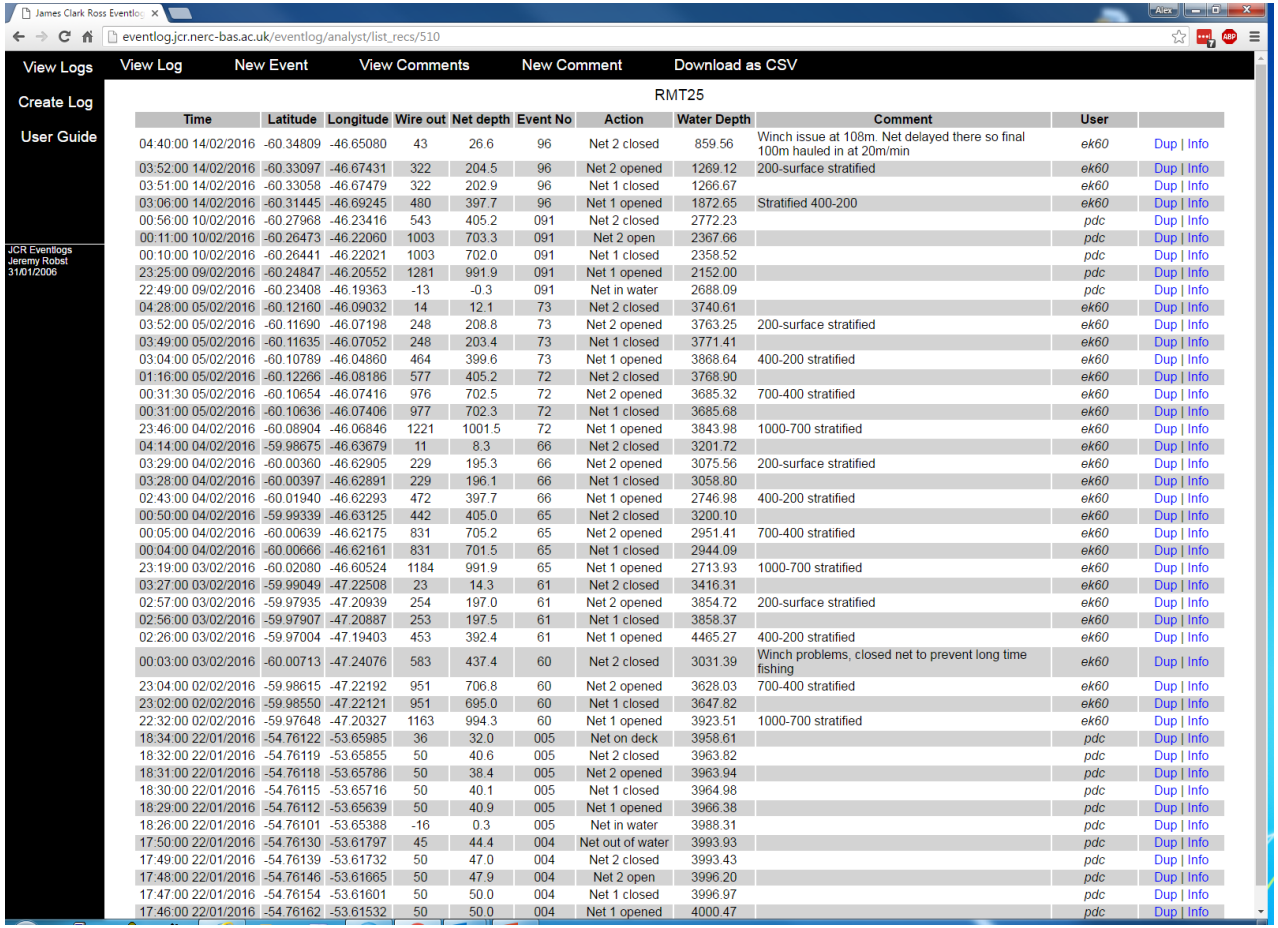
On-board data management



Keeps all event information (from all cruises) in one place

On-board data management

BAS digital event logger



James Clark Ross Eventlo

eventlog.jcr.nerc-bas.ac.uk/eventlog/analyst/list_recs/510

View Logs | View Log | New Event | View Comments | New Comment | Download as CSV

Create Log

User Guide

JCR Eventlogs
Jeremy Robst
31/01/2006

RMT25

Time	Latitude	Longitude	Wire out	Net depth	Event No	Action	Water Depth	Comment	User	
04:40:00 14/02/2016	-60.34809	-46.65080	43	26.6	96	Net 2 closed	859.56	Winch issue at 108m. Net delayed there so final 100m hauled in at 20m/min	ek60	Dup | Info
03:52:00 14/02/2016	-60.33097	-46.67431	322	204.5	96	Net 2 opened	1269.12	200-surface stratified	ek60	Dup | Info
03:51:00 14/02/2016	-60.33058	-46.67479	322	202.9	96	Net 1 closed	1266.67		ek60	Dup | Info
03:06:00 14/02/2016	-60.31445	-46.69245	480	397.7	96	Net 1 opened	1872.65	Stratified 400-200	ek60	Dup | Info
00:56:00 10/02/2016	-60.27968	-46.23416	543	405.2	091	Net 2 closed	2772.23		pdc	Dup | Info
00:11:00 10/02/2016	-60.26473	-46.22060	1003	703.3	091	Net 2 open	2367.66		pdc	Dup | Info
00:10:00 10/02/2016	-60.26441	-46.22021	1003	702.0	091	Net 1 closed	2358.52		pdc	Dup | Info
23:25:00 09/02/2016	-60.24847	-46.20552	1281	991.9	091	Net 1 opened	2152.00		pdc	Dup | Info
22:49:00 09/02/2016	-60.23408	-46.19363	-13	-0.3	091	Net in water	2688.09		pdc	Dup | Info
04:28:00 05/02/2016	-60.12160	-46.09032	14	12.1	73	Net 2 closed	3740.61		ek60	Dup | Info
03:52:00 05/02/2016	-60.11690	-46.07198	248	208.8	73	Net 2 opened	3763.25	200-surface stratified	ek60	Dup | Info
03:49:00 05/02/2016	-60.11635	-46.07052	248	203.4	73	Net 1 closed	3771.41		ek60	Dup | Info
03:04:00 05/02/2016	-60.10789	-46.04860	464	399.6	73	Net 1 opened	3868.64	400-200 stratified	ek60	Dup | Info
01:16:00 05/02/2016	-60.12266	-46.08186	577	405.2	72	Net 2 closed	3768.90		ek60	Dup | Info
00:31:30 05/02/2016	-60.10654	-46.07416	976	702.5	72	Net 2 opened	3685.32	700-400 stratified	ek60	Dup | Info
00:31:00 05/02/2016	-60.10636	-46.07406	977	702.3	72	Net 1 closed	3685.68		ek60	Dup | Info
23:46:00 04/02/2016	-60.08904	-46.06846	1221	1001.5	72	Net 1 opened	3843.98	1000-700 stratified	ek60	Dup | Info
04:14:00 04/02/2016	-59.98675	-46.63679	11	8.3	66	Net 2 closed	3201.72		ek60	Dup | Info
03:29:00 04/02/2016	-60.00360	-46.62905	229	195.3	66	Net 2 opened	3075.56	200-surface stratified	ek60	Dup | Info
03:28:00 04/02/2016	-60.00397	-46.62891	229	196.1	66	Net 1 closed	3058.80		ek60	Dup | Info
02:43:00 04/02/2016	-60.01940	-46.62293	472	397.7	66	Net 1 opened	2746.98	400-200 stratified	ek60	Dup | Info
00:50:00 04/02/2016	-59.99339	-46.63125	442	405.0	65	Net 2 closed	3200.10		ek60	Dup | Info
00:05:00 04/02/2016	-60.00639	-46.62175	831	705.2	65	Net 2 opened	2951.41	700-400 stratified	ek60	Dup | Info
00:04:00 04/02/2016	-60.00666	-46.62161	831	701.5	65	Net 1 closed	2944.09		ek60	Dup | Info
23:19:00 03/02/2016	-60.02080	-46.60524	1184	991.9	65	Net 1 opened	2713.93	1000-700 stratified	ek60	Dup | Info
03:27:00 03/02/2016	-59.99049	-47.22508	23	14.3	61	Net 2 closed	3416.31		ek60	Dup | Info
02:57:00 03/02/2016	-59.97935	-47.20939	254	197.0	61	Net 2 opened	3854.72	200-surface stratified	ek60	Dup | Info
02:56:00 03/02/2016	-59.97907	-47.20887	253	197.5	61	Net 1 closed	3858.37		ek60	Dup | Info
02:26:00 03/02/2016	-59.97004	-47.19403	453	392.4	61	Net 1 opened	4465.27	400-200 stratified	ek60	Dup | Info
00:03:00 03/02/2016	-60.00713	-47.24076	583	437.4	60	Net 2 closed	3031.39	Winch problems, closed net to prevent long time fishing	ek60	Dup | Info
23:04:00 02/02/2016	-59.98615	-47.22192	951	706.8	60	Net 2 opened	3628.03	700-400 stratified	ek60	Dup | Info
23:02:00 02/02/2016	-59.98550	-47.22121	951	695.0	60	Net 1 closed	3647.82		ek60	Dup | Info
22:32:00 02/02/2016	-59.97648	-47.20327	1163	994.3	60	Net 1 opened	3923.51	1000-700 stratified	ek60	Dup | Info
18:34:00 22/01/2016	-54.76122	-53.65985	36	32.0	005	Net on deck	3958.61		pdc	Dup | Info
18:32:00 22/01/2016	-54.76119	-53.65855	50	40.6	005	Net 2 closed	3963.82		pdc	Dup | Info
18:31:00 22/01/2016	-54.76118	-53.65786	50	38.4	005	Net 2 opened	3963.94		pdc	Dup | Info
18:30:00 22/01/2016	-54.76115	-53.65716	50	40.1	005	Net 1 closed	3964.98		pdc	Dup | Info
18:29:00 22/01/2016	-54.76112	-53.65639	50	40.9	005	Net 1 opened	3966.38		pdc	Dup | Info
18:26:00 22/01/2016	-54.76101	-53.65388	-16	0.3	005	Net in water	3988.31		pdc	Dup | Info
17:50:00 22/01/2016	-54.76130	-53.61797	45	44.4	004	Net out of water	3993.93		pdc	Dup | Info
17:49:00 22/01/2016	-54.76139	-53.61732	50	47.0	004	Net 2 closed	3993.43		pdc	Dup | Info
17:48:00 22/01/2016	-54.76146	-53.61665	50	47.9	004	Net 2 open	3996.20		pdc	Dup | Info
17:47:00 22/01/2016	-54.76154	-53.61601	50	50.0	004	Net 1 closed	3996.97		pdc	Dup | Info
17:46:00 22/01/2016	-54.76162	-53.61532	50	50.0	004	Net 1 opened	4000.47		pdc	Dup | Info

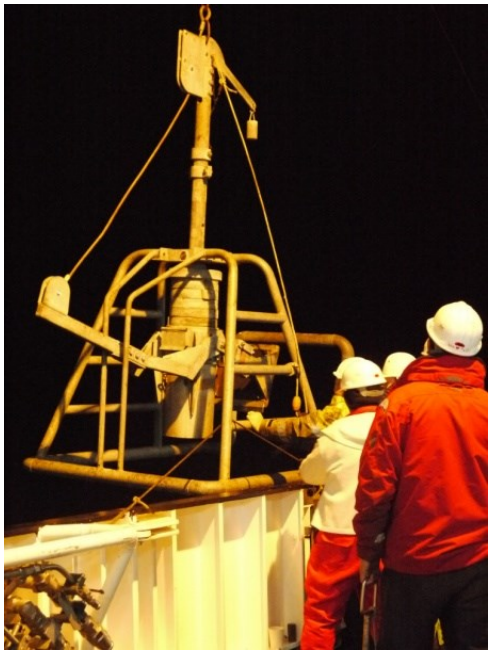
On-board data management

Data management doesn’t have to stop there!

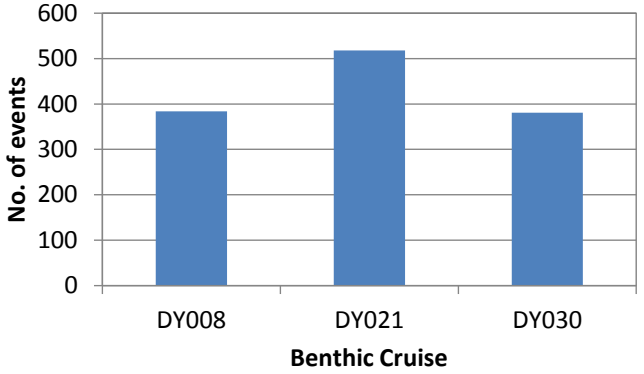
The following examples are techniques that have been used operationally

Examples: Shelf Sea Biogeochemistry

Deck logging



http://www.uk-ssb.org/research_cruises/documentation/



SSB generic corer log

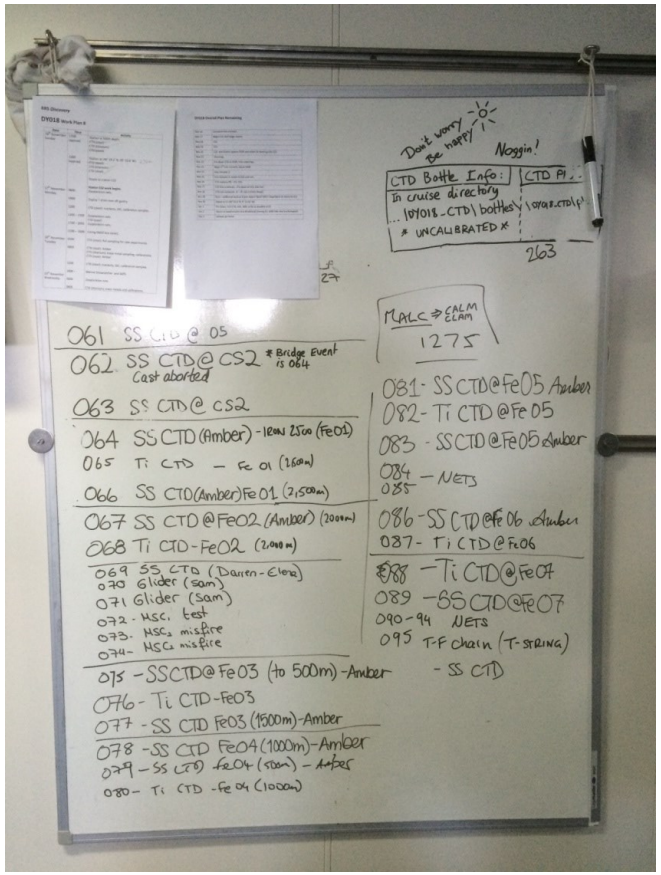
Sheet # 8

Corer	NIOZ		
Cruise	DY008	Sampling site	Benthic H

Station number	Date (UTC)	At bottom: Time (UTC)	At bottom: Latitude	At bottom: Longitude	At bottom: Depth (m)	Pullout tension (t)	Recovery Comments	Sub samples
288	9-4-14	11:52	50.52035	-7.03249	108	0.97	14	BS (1)
289	9-4-14	12:05	50.52035 move 5 m north	-7.03249	108	121	15	CT (W)
290	9-4-14	12:20	50.52040	-7.03250	107	0.90	16	CT (W)
291	9-4-14	12:33	50.52039	-7.03251	108	0.86	17	CT (W)
292	9-4-14	12:45	50.52039	-7.03250	108	0.87	18 corer lining loose	CT (W)
293	9-4-14	13:01	50.52038	-7.03248	107	0.83	19	CT (W)

Examples: Shelf Sea Biogeochemistry

Whiteboard

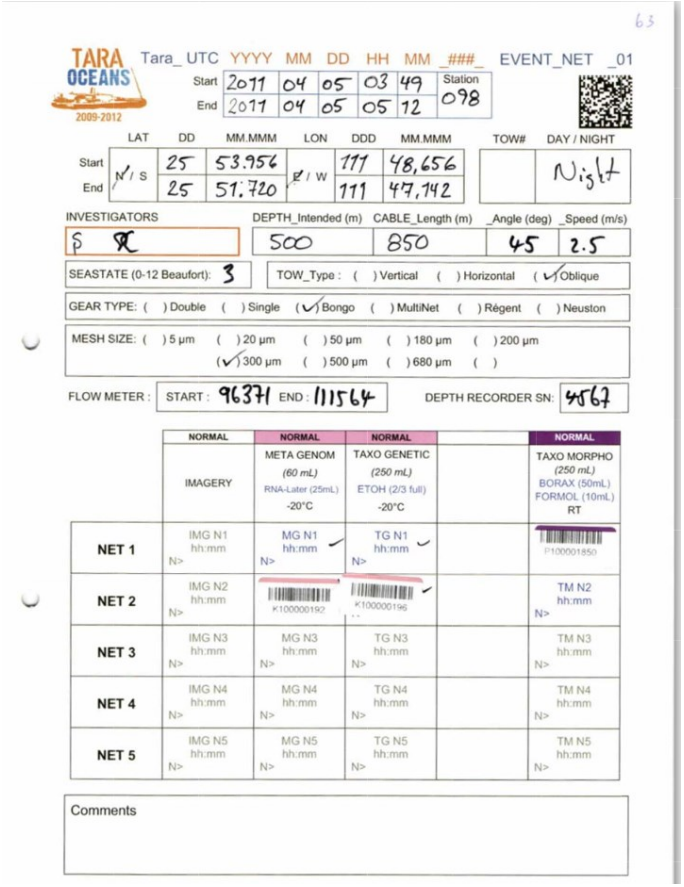


http://www.uk-ssb.org/research_cruises/documentation/

Examples: TARA Ecosystem Biology/Premian programme

Barcodes

- Biological specimens, sediment cores/grabs
- Unique sample barcodes placed on both a sample and logsheet with a specified type of sample analysis
- doi:10.1038/sdata.2015.23
- ISGN barcode (persistent identifier) http://www.geosamples.org/igsnabout



TARA OCEANS 2009-2012

Tara_ UTC YYYY MM DD HH MM _###_ EVENT_NET _01

		Station
Start	2011 04 05 03 49	098
End	2011 04 05 05 12	

	LAT	DD	MM.MMM	LON	DDD	MM.MMM	TOW#	DAY / NIGHT
Start	N / S	25	53.956	E / W	111	48,656		Night
End		25	51.720		111	47,142		

INVESTIGATORS	DEPTH_Intended (m)	CABLE_Length (m)	_Angle (deg)	_Speed (m/s)
S [illegible]	500	850	45	2.5

SEASTATE (0-12 Beaufort): 3 TOW_Type : ( ) Vertical ( ) Horizontal (✓) Oblique

GEAR TYPE: ( ) Double ( ) Single (✓) Bongo ( ) MultiNet ( ) Régent ( ) Neuston

MESH SIZE: ( ) 5 µm ( ) 20 µm ( ) 50 µm ( ) 180 µm ( ) 200 µm (✓) 300 µm ( ) 500 µm ( ) 680 µm ( )

FLOW METER : START : 96371 END : 111564 DEPTH RECORDER SN: 4567

	NORMAL IMAGERY	NORMAL META GENOM (60 mL) RNA-Later (25mL) -20°C	NORMAL TAXO GENETIC (250 mL) ETOH (2/3 full) -20°C		NORMAL TAXO MORPHO (250 mL) BORAX (50mL) FORMOL (10mL) RT
NET 1	IMG N1 hh:mm N>	MG N1 hh:mm N> ✓	TG N1 hh:mm N> ✓		[illegible]100001850
NET 2	IMG N2 hh:mm N>	[illegible]100000192	[illegible]100000196 ✓		TM N2 hh:mm N>
NET 3	IMG N3 hh:mm N>	MG N3 hh:mm N>	TG N3 hh:mm N>		TM N3 hh:mm N>
NET 4	IMG N4 hh:mm N>	MG N4 hh:mm N>	TG N4 hh:mm N>		TM N4 hh:mm N>
NET 5	IMG N5 hh:mm N>	MG N5 hh:mm N>	TG N5 hh:mm N>		TM N5 hh:mm N>

Comments

Examples: Rapid

RAPID-WATCH MOORING LOGSHEET DEPLOYMENT

Mooring **MAR1** Cruise **JC103**

NB: all times recorded in GMT

Date _____ **Site arrival time** _____

Setup distance _____

Start time _____ **End time** _____

Start Position

Latitude _____ **Longitude** _____

ITEM	SER NO	COMMENT	TIME
Recovery line	n/a		
3 x Mini-Trimsyn	n/a		
MicroCAT			
24" syntactic float	n/a		
with Light			
and Argos Beacon		Beacon ID =	
Swivel	n/a		
MicroCAT			
37" Steel Sphere			
with Light			
and Argos Beacon		Beacon ID =	
Swivel	n/a		
MicroCAT			
MicroCAT			
MicroCAT			
MicroCAT			
MicroCAT			
8 x 17" glass	n/a		
Swivel	n/a		
MicroCAT			
MicroCAT			
MicroCAT			
RCM11			
MicroCAT			
8 x 17" glass	n/a		
Swivel	n/a		
MicroCAT			
4 x 17" glass	n/a		
Swivel	n/a		
MicroCAT			
4 x 17" glass	n/a		
Swivel	n/a		
MicroCAT			
4 x 17" glass	n/a		
Swivel	n/a		

Double check mooring sensors

http://www.rapid.ac.uk/

Examples: GEOTRACES

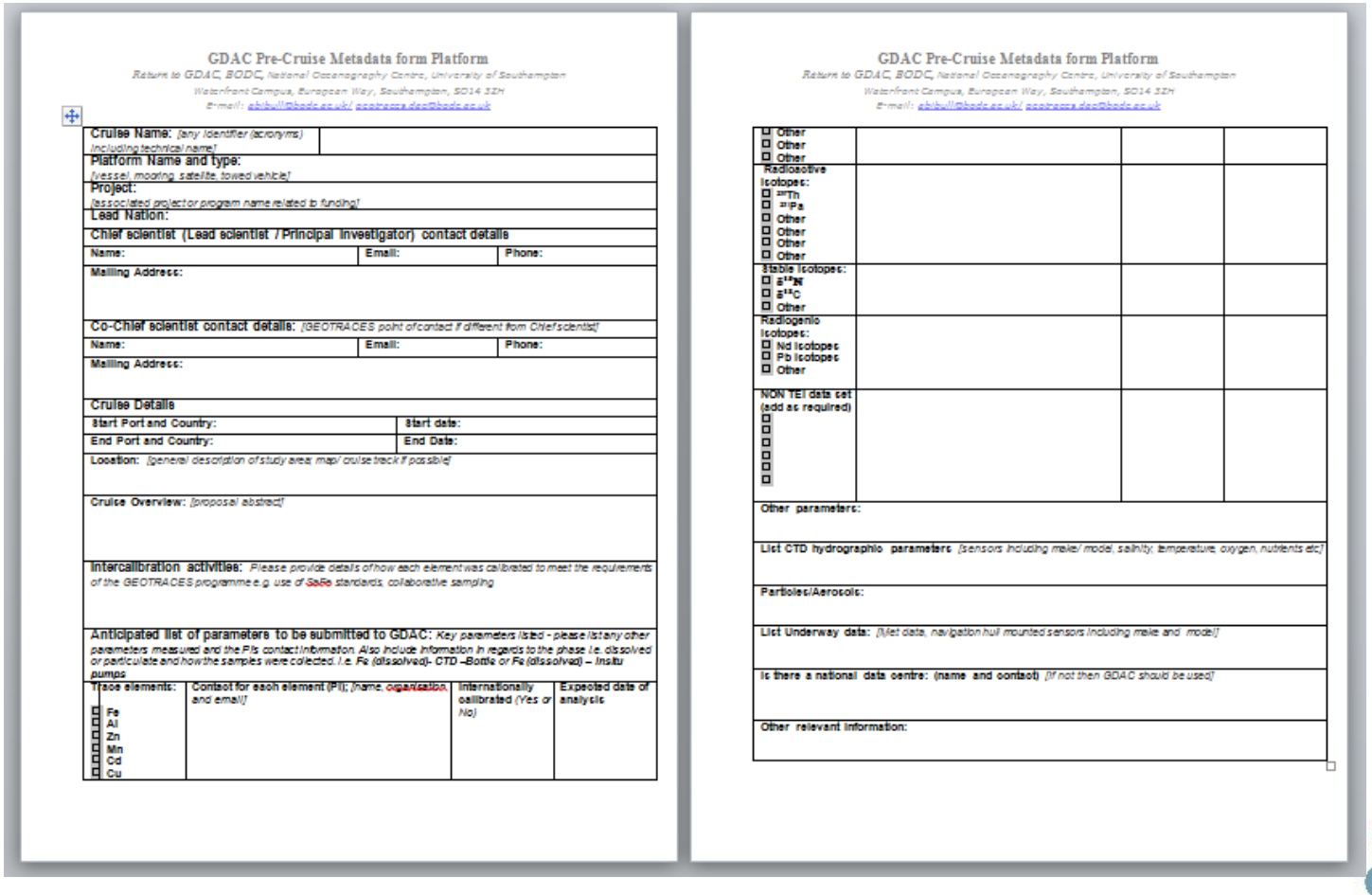
- Seawater resistant
- Low temperature

Sticky labels

http://www.geotraces.org/

Examples: GEOTRACES

Metadata form



GDAC Pre-Cruise Metadata form Platform

Return to GDAC, BODC, National Oceanography Centre, University of Southampton
Waterfront Campus, European Way, Southampton, SO14 3ZH
E-mail: abibull@bodc.ac.uk/ geotraces.dac@bodc.ac.uk

Cruise Name: *(any identifier (acronyms) including technical name)*	
Platform Name and type: *(vessel, mooring, satellite, towed vehicle)*	
Project: *(associated project or program name related to funding)*	
Lead Nation:	
Chief scientist (Lead scientist / Principal Investigator) contact details	
Name: / **Email:** / **Phone:**	
Mailing Address:	
Co-Chief scientist contact details: *(GEOTRACES point of contact if different from Chief scientist)*	
Name: / **Email:** / **Phone:**	
Mailing Address:	
Cruise Details	
Start Port and Country: / **Start date:**	
End Port and Country: / **End Date:**	
Location: *(general description of study area, map/ cruise track if possible)*	
Cruise Overview: *(proposal abstract)*	
Intercalibration activities: *Please provide details of how each element was calibrated to meet the requirements of the GEOTRACES programme e.g. use of SaFe standards, collaborative sampling*	
Anticipated list of parameters to be submitted to GDAC: *Key parameters listed - please list any other parameters measured and the PIs contact information. Also include information in regards to the phase i.e. dissolved or particulate and how the samples were collected. i.e. Fe (dissolved)- CTD –Bottle or Fe (dissolved) – Insitu pumps*	

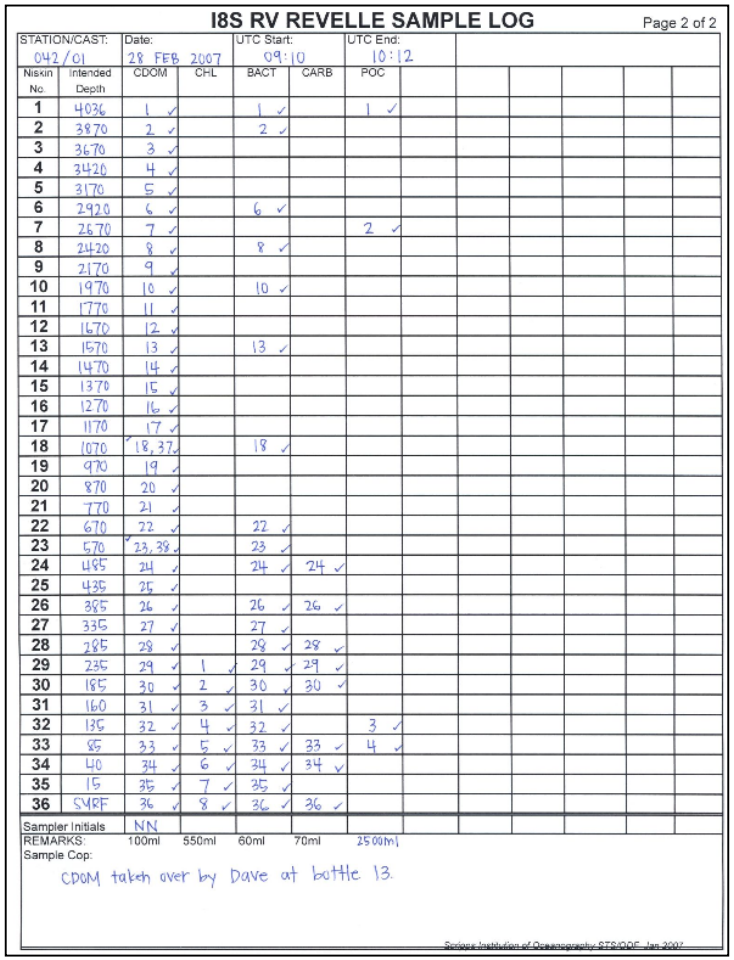
Trace elements:	Contact for each element (PI); *(name, organisation and email)*	Internationally calibrated *(Yes or No)*	Expected date of analysis
☐ Fe ☐ Al ☐ Zn ☐ Mn ☐ Cd ☐ Cu			
☐ Other ☐ Other ☐ Other			
Radioactive Isotopes: ☐ ^{230}Th ☐ ^{231}Pa ☐ Other ☐ Other ☐ Other ☐ Other			
Stable Isotopes: ☐ δ^{114}Cd ☐ δ^{13}C ☐ Other			
Radiogenic Isotopes: ☐ Nd Isotopes ☐ Pb Isotopes ☐ Other			
NON TEI data set (add as required) ☐ ☐ ☐ ☐ ☐ ☐ ☐			

Other parameters:
List CTD hydrographic parameters *(sensors including make/ model, salinity, temperature, oxygen, nutrients etc)*
Particles/Aerosols:
List Underway data: *(Met data, navigation hull mounted sensors including make and model)*
Is there a national data centre: (name and contact) *(if not then GDAC should be used)*
Other relevant information:

http://www.geotraces.org/

Examples: GO-SHIP

Master CTD sample logs



I8S RV REVELLE SAMPLE LOG — Page 2 of 2

STATION/CAST:	Date:	UTC Start:	UTC End:
042/01	28 FEB 2007	09:10	10:12

Niskin No.	Intended Depth	CDOM	CHL	BACT	CARB	POC
1	4036	1 ✓		1 ✓		1 ✓
2	3870	2 ✓		2 ✓		
3	3670	3 ✓				
4	3420	4 ✓				
5	3170	5 ✓				
6	2920	6 ✓		6 ✓		
7	2670	7 ✓				2 ✓
8	2420	8 ✓		8 ✓		
9	2170	9 ✓				
10	1970	10 ✓		10 ✓		
11	1770	11 ✓				
12	1670	12 ✓				
13	1570	13 ✓		13 ✓		
14	1470	14 ✓				
15	1370	15 ✓				
16	1270	16 ✓				
17	1170	17 ✓				
18	1070	18, 37 ✓		18 ✓		
19	970	19 ✓				
20	870	20 ✓				
21	770	21 ✓				
22	670	22 ✓		22 ✓		
23	570	23, 38 ✓		23 ✓		
24	485	24 ✓		24 ✓	24 ✓	
25	435	25 ✓				
26	385	26 ✓		26 ✓	26 ✓	
27	335	27 ✓		27 ✓		
28	285	28 ✓		28 ✓	28 ✓	
29	235	29 ✓	1 ✓	29 ✓	29 ✓	
30	185	30 ✓	2 ✓	30 ✓	30 ✓	
31	160	31 ✓	3 ✓	31 ✓		
32	135	32 ✓	4 ✓	32 ✓		3 ✓
33	85	33 ✓	5 ✓	33 ✓	33 ✓	4 ✓
34	40	34 ✓	6 ✓	34 ✓	34 ✓	
35	15	35 ✓	7 ✓	35 ✓		
36	SURF	36 ✓	8 ✓	36 ✓	36 ✓	
Sampler Initials		NN				

REMARKS: 100ml 550ml 60ml 70ml 250ml

Sample Cop:

CDOM taken over by Dave at bottle 13.

Scripps Institution of Oceanography STS/ODF Jan 2007

http://www.go-ship.org/HydroMan.html

House keeping

- Cruise summary reports (7 days)
- Cruise reports (6 months)
- Data Management Plans required for all NOC cruises
- Resource provision needed for BODC on-board data managers

Summary

- Standardisation helps make NERC data discoverable and long-standing
- Requires good metadata collation at sea
- Recommended by BODC and BAS to log all events
- Many organisations, programmes and collaborations have operational metadata collation techniques
- CSRs, cruise reports and DMPs

More information

If you'd like more information about on-board data management then please contact:

Dr Louise Darroch, BODC (louise.darroch@bodc.ac.uk)

Dr Petra ten Hoopen, BAS-UKPDC (peopen@bas.ac.uk)

British Oceanographic Data Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

PDC and BODC
main differences & few suggestions

Petra ten Hoopen

British Oceanographic Data Centre

NATURAL ENVIRONMENT RESEARCH COUNCIL

British Antarctic Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

UK Research and Innovation

NERC SCIENCE OF THE ENVIRONMENT

Role of BODC and PDC

BODC and PDC are national archives for long-term preservation of UK-funded environmental data

BODC = **domain-specific**

UK archive for oceanographic data

PDC = **region-specific**

UK archive for polar environmental data

BODC and PDC data holdings

BODC	PDC
Raw MARINE data from **NOC marine platforms**	Raw MARINE data from **BAS marine platforms**
Processed MARINE data from UK-funded projects	Raw and Processed POLAR data (MARINE, TERRESTRIAL, ATMOSPHERIC, SPACE WEATHER)

How can PSO help preserve cruise data (before survey)

Involve your data archiving repositories early on

- survey planning meeting
- main survey science meeting
- consider a data management plan (if the survey is not covered by a project DMP)
- consider a data manager in the survey team

How can PSO help preserve cruise data (during survey)

- Collect your metadata from day 1
- Note for each dataset
  - Event IDs (from bridge log, science log)
  - Instrument details (manufacturer, model, SN, modifications)
  - Responsible user
  - Location of stored metadata, data and samples
  - Short- and long-term archiving solution
- Backup your data regularly

How can PSO help preserve cruise data (after survey)

For survey datasets:

- **What** (data type, volume, format)
- **Where** (locations, site names)
- **When** (collection dates, delivery date, embargo)
- **Who** (authors, contact person)
- **How** (instrumentation, methodology)
- **Why** (long-term preservation, publication/DOI)

Info/contact

PDC

- polardatacentre@bas.ac.uk
- https://www.bas.ac.uk/data/uk-pdc/

BODC

- enquiries@bodc.ac.uk
- https://www.bodc.ac.uk/submit_data/