

# 2018 Co-Chief Review of JRSO FY17 Operations

26–27 February 2018

*JOIDES Resolution* Science Operator  
Texas A&M University College Station, Texas

## Expeditions (FY17)

### Expedition 363, Western Pacific Warm Pool

Yair Rosenthal, Ann Holbourn

### Expedition 366, Mariana Convergent Margin & South Chamorro Seamount

Patricia Fryer, Geoffrey Wheat

### Expedition 367, South China Sea Rifted Margin

Zhen Sun, Joann Stock\*

### Expedition 368, South China Sea Rifted Margin

Zhimin Jian\*, Hans Christian Larsen

### Expedition 371, Tasman Frontier Subduction Initiation and Paleogene Climate

Rupert Sutherland\*, Gerald Dickens

\*not attending

## Executive Summary

The Co-Chief Scientists who sailed during the 2017 financial year had overall very positive experiences with their expeditions. The *JOIDES Resolution* facility is run at a high level such that the majority of the scientific objectives were achieved. The *JOIDES Resolution* is a well-maintained and constantly improved platform that provides a unique facility to the scientific community to pursue a wide range of Earth science research topics with societal relevance. Personnel involved with the projects before, during, and after expeditions were professional, well qualified, and dedicated. The infrastructure, logistics, and processes associated with expeditions have been consistently upgraded over the past decades, resulting in a highly cost-effective program. This high level of operation results from professional management and solution-oriented planning by all involved and benefits from a productive review process.

# Co-Chief Consensus Recommendations

## 1. Co-Chief Review Process

This is the third year of this co-chief review format of the facility review process. Overall, we appreciate the opportunity to openly discuss potential improvements in a constructive and supportive environment.

### Recommendation

- All Co-Chiefs present see the value of reporting issues following each of their expeditions and collectively to JRSO management.

## 2. Clearances

We recognize the difficulty of working in territorial waters. We very much appreciate the efforts of JRSO and NSF and other personnel in pursuing permissions.

### Recommendations

- We stress the importance of choosing multiple alternate sites (including legacy sites) that have been pre-approved in anticipation of clearance and other issues such as weather.
- We suggest regular reviews of clearance requirements for forthcoming expeditions (also crucial when applying for additional/substitute sites during expeditions, as for 367) and of clarifying clearance requirements for cases of dual jurisdiction over seabed and water column (i.e., Indonesia and Australia).

## 3. Staffing

There remains an overall problem with providing diverse candidate participants (scientific, experience, gender balance) from several of the Program Member Offices (PMOs).

### Recommendations

- We would like to see more options from PMO applicant pools (i.e., there should be more applicants than berths per PMO and applicants with a range of areas of expertise, years of experience, and gender balance).
- There is a need for clearer specifications for staffing from each PMO with regard to postcruise support for work on allocated samples.
- We continue to emphasize to applicants that scientists collect samples for shipboard/shore-based participants and not for external research consortia.

## 4. Pre-expedition Roles and Communication

There were communication issues related to responsibilities among the co-chiefs, expedition project manager, and operation superintendent.

### Recommendations

- During the expedition precruise meeting, emphasize various roles and responsibilities while at sea.
- The staff scientists at TAMU should consider further developing a “calendar” that clearly outlines the timing of tasks throughout and after each expedition. On some expeditions some individuals, particularly scientists sailing for the first time, did not fully appreciate the time constraints of various activities.

- Given that some participants are less versed in shipboard operations and expedition expectations, some expeditions would benefit from a science party pre-expedition video conference, especially those expeditions with complex, multiple objectives.

#### **XRF scanning**

- We recommend discussions pertaining to XRF scanning strategy for analysis at TAMU are agreed upon well in advance of the expedition with updates during operations. The distinction should be clear between measurements that are available as shipboard data (free use of scanner but personnel needed) and personal research (paid by individual research projects).

#### **Access to seismic data**

- Accessibility and availability to the seismic data pertaining to the expedition should be clarified and communicated to all participants before the expedition.

### **5. Improving Technical Capability and Tools**

We acknowledge that minor problems commonly occur during most expeditions that are fixed quickly at sea. However, equipment failures during several recent expeditions (Expeditions 366, 367 and 368) led to abandonment of sites or/and curtailment of operations. Many of these failures have been addressed.

#### **Recommendations**

- On technologically challenging expeditions, we suggest holding an additional meeting after the precruise meeting to verify appropriate parts and tools are available and to educate the co-chiefs as to how they will be implemented.
- Better communication is required between suppliers, JRSO, and co-chiefs and, when feasible, testing of equipment well in advance of the expedition is necessary to meet specific technical requirements. This is independent of third-party tools, for which guidelines already exist.
- During several expeditions the quality of liners was less than ideal. This problem stems from different suppliers. Each batch of liners should be clearly marked as to the suppliers.

#### **Core description**

- The use of DESCLogic on expeditions recovering complex lithologies has raised issues in terms of training and adequately representing the cores. We recommend implementing the greater flexibility in programming that DESCLogic requires to accommodate unusual material, and providing training.

#### **Photomicrographs**

It was not obvious on Expedition 366 how to add scale bars on photomicrographs. Also, the cross-polarizer images of thin sections were uniformly too dark.

#### **Manuals**

Some manuals remain non-existent or incomplete.

### **Recommendations**

- New training manuals are required for using the SRM and its software and the Correlator program. Consider training protocols for scientists unfamiliar with this equipment. There should be someone familiar with the Correlator, especially on paleo expeditions.
- Consider developing videos for each discipline to introduce scientists to the equipment and procedures. We understand that technical staff changes with time, thus up-to-date manuals and new “descriptive” videos are important.
- Expeditions benefited from pre-expedition sedimentology classes at TAMU. Such classes might be expanded to other shipboard positions, especially Stratigraphic Correlator and to using relevant software packages. In addition, one might consider giving course participation priority to shipboard participants sailing on upcoming expeditions.

## **6. IT/software/databases**

In general, a number of software upgrades were made, resulting in teething problems.

### **Recommendation**

- There was a DESClogik issue with repetitive inputs of repetitive observations on a high-recovery expedition. We recommend an easier way to duplicate identical input requirements.

## **7. Logging**

We note that on Expedition 371, because of cutting the wire in an earlier hole, there was insufficient wire to run logging in a later deep hole. On the same expedition, we appreciated being able to reconfigure the logging tools during the expedition.

## **8. Paleomagnetic orientation data**

The problem with incorrect paleomagnetic declination orientations persists. The source of the problem remains unresolved.

### **Recommendation**

- We look forward to resolution of this problem, and we would appreciate communication of progress or updates.

## **9. Outreach**

We strongly recognize the importance of outreach. We also recognize good outreach results require a range in skill sets that may vary depending on the expedition.

### **Recommendations**

- There needs to be a clear and agreeable plan for outreach among the outreach individuals, co-chiefs, and EPM personnel on each expedition. This needs to be determined before the expedition in the context of the broader outreach effort supported by USSSP.
- We understand the need for basic requirements (e.g., classroom calls) for the outreach personnel, but there must be flexibility in scope.
- Inviting the media to participate in “classroom calls” needs to be the norm, not the exception.

- An advantage for outreach during Expedition 371 was that NSF provided access to media materials on its website, providing a foundation for media interactions. This is strongly encouraged before and after each expedition.
- We recommend having bandwidth for the co-chiefs to engage media outlets while at sea.
- We recommend having drones accessible on each expedition for outreach activities.
- Currently, outreach activities are not shared or built upon among expeditions. There seems to be an emphasis on classroom exchange with no quantifiable impact. We suggest a workshop to develop a long-term, overarching goal for substantially expanding outreach including scientists, communicators, and outreach specialists.

## **10. Medical Issues**

During Expedition 371 there was a medical evacuation that was a result of a preexisting condition.

### **Recommendations**

- We recommend that the ship's doctor screen all personnel medical forms a month prior to departure and verify that the ship's doctor can provide adequate routine monitoring for all preexisting conditions during the expedition.
- Consider adding more detailed comments related to evacuation on the medical form provided by participants.