

UNOLS - FLEET IMPROVEMENT COMMITTEE MEETING
Thursday, 13 May 2021, 0800-1100 PDT

Alice Doyle	Bridget Harrell-Donze	Doug Russell	James Austin
Byron Blomquist	Jon Gutoff	Rob Sparrock	Zoltan Kelety
Rose Dufour	Lee Ellett	Zoltan Kelety	Masako Tominaga
Angelicque White	Suzanne Carbotte	Tim Twomey	Rick Keil
Jim Swift	Ethan Roth	Tim Schnoor	Jim Holik
Mike Prince	Brandi Murphy	Peter Hill	Daryl Swensen
Greg Cutter	Dennis Hansell		

Participants: 26

Welcome and Introduction - Jim Swift and UNOLS Office

Group went around and introduced themselves.

Jim Swift - With Council meeting coming up in ten days, my idea for the meeting today is to focus on what is coming up in the year ahead. Lots of the updates will be covered at the Council meeting, so I would like members of the FIC to listen in on the appropriate parts of the Council meeting.

I would like the agencies to let us know if they have any FIC related news for us.

Agencies –

Opportunity for Agency representatives to informally present and discuss matters of FIC interest. To consider: What would the agencies find valuable from the FIC in its upcoming business?

Rose Dufour – Bob Houtman is not available to join today. I do have to leave and then come back later.

NSF is not looking for anything specific. I feel that we have right-sized the fleet. We have the three new vessels to bring the age of the fleet down. We need to start looking at replacing the Global Class vessels and looking at how to have a vessel that will do science below 60°S.

Jim Swift – the 60°S thing is something UNOLS could look at. Do you think we could build a vessel that would meet Polar Code?

Rose Dufour – I don't know enough about Polar Code. Maybe Jim Holik could help.

Jim Holik – I don't have any idea. We are going to try to core at 8500 meters

Action Item: Jim Swift - REPORT on Coordination for replacement of Palmer and 60S.

Ethan Roth - Sikuliaq meets Polar Code.

Rose Dufour – It does meet the Polar Code, but we can't have Sikuliaq all over the world.

Jim Swift – Rob Sparrock do you have anything to discuss from ONR?

Rob Sparrock –DOD Arctic strategy. CG and National Arctic strategies might be useful as a reference. SMC point to things that are strategic levels of the government are easier to justify.

Seabed will become priority for security. Unmanned Undersea Vehicles (UUV) will play big role in monitoring and security. The Global Class vessels are servicing the UUV. Data is enhanced by integration with buoy networks and UUVs.

Jim Swift – Improve referencing to National level documents in the SMR documents. We need a schedule for how we are going to handle things like that.

Global Class Vessel Refits – *progress report and science systems verification*

Jim Swift – How has it all turned out? Is it ready for the science community?

RV ROGER REVELLE Mid-life – Lee Ellett & Zoltan Kelety - SIO

Slide Show:

Improvements to scientific systems - New and upgraded scientific instruments

- New Hull-mounted acoustics gondola
 - Gondola = Better Sonar Performance
- New EM712 shallow-water multibeam swath bathymetry
- New HiPAP acoustic tracking system
- New EI80 midwater imaging system
- New Continuous underway pCO₂ profiling system
- New Transceiver room, server room, shipboard network, VDI cluster
 - Fiber that is installed in the ships should be high end fiber
 - Switches have lifecycle of 5-10 years
 - Refurbishment of Lab Spaces
 - How much table space vs storage? Varies a lot from user to user.
 - With our new design our things are much more modular
 - We were able to partition off the server room from the human occupied spaces. Server room had to be very cold. Too cold and noisy for humans.
 - VDI Cluster – not enough room on the ship for all the techs. The administrators are more located off the ship.
- Improvements to habitability
 - Flooring in main lab
 - Carpeting in lounges and staterooms
 - Mattresses, linens, blankets
 - Laboratory chairs and bench seats
 - Stateroom bunk curtains
 - Cardio workout room and equipment
 - Weightlifting room equipment
 - Bright work areas due to new LED lighting throughout
 - Quiet inside and out (exhaust, engine room, and bow thruster)
 - Comfortable due to HVAC upgrade and controls that really work

- Commissioning / Calibration Plan
 - Had some issues during testing but were able to correct them.
- Satcoms: Maximum test shot pilot project
 - Moved from owning systems to leasing them. MarLink owns the equipment. Could not keep up with lifecycle replacement if we owned them.
- Acoustics: HiPAP
- Bow Thruster – Quieter, more powerful operation – Forward stateroom habitability greatly improved

RV ATLANTIS Mid-life - Tim Twomey/WHOI

Slideshow:

- Schedule
 - Close to original schedule, looking to be underway 12 July
 - Science Verification Cruise for 8 days after the yard ending in San Francisco
 - Arrive WHOI 2nd week in August
 - ALVIN onload
 - ONR Reception in Baltimore
 - ALVIN SVE
 - Lots to complete prior to getting underway
- System Upgrades
 - Initial electrical verification checks, bow thruster and propulsion tests going well
 - Will have new Kongsberg EM124 transducer array
 - EK80 upgraded
 - Full CAT7 ship wide backbone installed
 - C/KU full sky antenna
 - And 2 KA Fleet express antennas for full time coverage of the sky
 - Many other upgrades with the MLR
 - Habitability improvements

Jim Holik – We are paying for things differently this time. Ship Operations is paying for all the antennae's, maintenance. Tech group is paying for the data time.

Discussion: Tasks for FIC post re-fit assessment review for RV Roger Revelle

Jim Swift - *In past FIC had their own post cruise assessment forms, but the last thing I want to do at the end of a cruise is fill out more paperwork. I was wondering we could have access to the PCARs for a year after the mid-lives to see what the science parties are saying.*

Masako Tominaga – *extra form for PIs would be too much. But I agree with Ethan's comment. The PCARs haven't been working too well when the PIs want to make recommendations. How could we improve the post cruise communications?*

Jim Swift – *Zoltan do you think there is information we should capture as the FIC after these mid-lives?*

Zoltan Kelety – *I try to fix things at the lowest level possible. I don't go outside SCIPPS unless I really have to.*

Tim Twomey – *I agree, we do things the same way. We do follow the PCARs closely and try to address items that are brought up.*

Zoltan Kelety – *the RVOC is the community that solves shipboard problems. I wouldn't bring a shipboard problem to the FIC.*

Jim Swift – *Let's think more about this.*

Mike Prince – *I was thinking the kind of feedback that Zoltan gave in his report is the kind of things that FIC needs to see. Future improvements for fleet wide. Remind Pls that there have been a lot of upgrades and ask them to keep that in mind when they are filling out the PCARS.*

Masako Tominaga – *Brandi, could you please reiterate what you meant by your chat?*

Brandi Murphy – *Not specific for FIC, but I think scientists are coming aboard frequently and they are prepared differently for their onboarding.*

Jim Swift – *PCARs are for the entire science party and not just Pls.*

RCRV Update

Progress Report - Daryl Swensen/OSU

- Ships are no longer being built by same shipyard.
 - GIS Shipyard has been bought by Bollinger.
 - Still going to be built in Houma.
 - Bollinger brings in a lot of resources that GIS did not have. Big changes. Lots of people moving around.
 - Right now, contract delivery of the vessels has not changed.
- Bollinger has agreed they are going to do a deep dive into the schedule process, and they have promised us an updated schedule by June.
- Working with Space Center at URI, to do a complete re-do of our telepresence packages
- Working with the cybersecurity group. Trying to stay ahead of what is needed.

Discussion: Tasks and timing for FIC involvement in science systems performance certification and post-cruise assessments for RV Taani.

Other Vessels and Facilities - Jim Swift and UNOLS Office

- NOAA Class A and Class B vessels

Jim Swift – No other updates for vessel or facilities. We will get updates at the Council meeting. No updates on the USAP research vessel. NSF is addressing the matter and will make a report to UNOLS when they are ready.

- Polar Security Cutter

Jim Swift - AICC is taking quiet steps to see if we can offer any assistance to science capabilities on the Polar Security Cutters.

- USAP Research Vessel

Break (10 minutes)

FIC Support for Coastal/Local Vessels

Roundtable discussion regarding specific tasks the FIC might undertake which would be of benefit to the operators and users of the Coastal/Local vessels. The FIC is interested in seeing recapitalization, balance, and improved capabilities extend to the coastal and local members

of the ARF, but how do we proceed? Identification of FIC members who might be interested in guiding the work.

Jim Swift – How can we improve support for Coastal/Local Vessels? There has been tremendous support from the federal agencies for the Global/Ocean Class vessels. But now we are trying to figure out how to support the Coastal/Local Class vessels. Looking for anyone to comment.

Zoltan Kelety – The nature of the smaller vessels is that there are no classes. There is really no one you can turn to that has had the same issues (unlike the Global/Oceans vessels that have the same vessel in the same class.)

Byron Blomquist – Does UNOLS get PCARs back on the smaller vessels and what is the feedback like?

Doug Russell – We do get PCARs back for the smaller vessels. That would be a good place to look at what improvements are needed. The Marine Operators would tell you that there is no money and no support for these vessels. There is also a problem with technology now. The scientists need the technology on the smaller vessels but there is no support to update the technology. All of the money goes to the big ships.

Zoltan Kelety – Here is an example. The Sproul had a noisy ADCP. There is no knowledge out there on why it is was noisy. The Sproule is the only ship of its kind so there was no one to discuss this with. We had to try to figure out on our own how to fix this.

Jim Swift – I presume that the small operators participate in the RVOC meetings. Maybe we could get 2-3 FIC members to look at the PCARs of the small vessels and see what issues are affecting science. Then we could get a document on what kind of support they could need.

Rick Keil – Could we ask what proportion of the small ships being used for science are actually a part of UNOLS? At UW there are three department that have small ships, and only one is in UNOLS.

Doug Russell – We don't have the data on how these other vessels are being used. It would take a survey to find out that info.

Alice Doyle - What would be your goal for this information Rick?

Rick Keil – I would be data hunting. I have a small ship that isn't used enough. I am told that it is because it doesn't have enough technology on board or because it is too expensive.

Jamie Austin – There is a whole list of small vessels. There are so many. I would be interested in having some of the reps of these vessels come and give us presentations.

Jim Swift – We might want to have an eye on these small vessels when we try to recruit new members for the FIC.

Rose Dufour – This ties into the document UNOLS just released on using non-ARF vessels. We were kicking around an idea of having a short list of vessels that are already in compliance with updated policy.

Alice Doyle – Two thing are being discussed here:

1. What small vessels are out there
2. How to support the vessels that are already a part of UNOLS

Jamie Austin – I agree. There are a lot of vessels out there that don't want to be a part of UNOLS.

Jim Swift – We could have a meeting that could be a forum for the small vessel operators. They could make a presentation. We could provide them with questions that we want answered. Coastal Vessel Forum.

Alice Doyle – I am still a little confused one where we are going with this?

Jamie Austin – What is our end goal? To help the ships that are already part of ARF? Have more vessels become ARF vessels? We need to come up with some short-term goals and then go from there.

Jim Swift – I just don't think we want to focus our business only on the bigger ships. There are a lot of people that use the smaller ships.

Doug Russell – Would it help if we made sure FIC is copied on all the PCARs?

Jamie Austin – We should be looking at the vessels that are heavily used.

Rick Keil – If the university is offering science days, the people come out of the woodwork. But when it comes to requesting days, they are scared of the charges.

Rose Dufour – There is the list of ships that we only support by funding science on the ships. We have spent years right sizing the ARF and we don't want to start adding ships to the ARF.

Jim Swift – I am not suggesting what it sounds like I am suggesting. Angelique might be a good person to work on this issue. She has some ship operations experience. If I can convince her to take this one, is there someone who would be willing to work with her?

Jamie Austin – If we could have some presentation from the UNOLS institutions that have small vessels. The last thing we want to do is make NSF's job harder than it already is.

Action Item: **Jim Swift** – Small Vessel presentations – ASK COUNCIL if they want us to pursue this.

Updates to the Fleet Improvement Plan

Establish a timeline for updating the Fleet Improvement plan and examining additions, modifications, etc. Identification of FIC members interested in guiding the work.

Jim Swift – When was the fleet improvement plan adopted?

Alice Doyle – 2019

Jim Swift – So it needs to be reviewed in 2022. I need two people who are willing to read it over and make recommendations on what has become out of date and what needs to be added.

For instance, cybersecurity may not be addressed in the plan. I really need two people to take this on. If no one volunteers I will harangue people via email.

Suzanne Carbotte – I will be one the people

Masako Tominaga – I would like to help. I am especially interested in the cybersecurity aspect.

Jim Swift – The goal is to have a report to the committee at this time next year.

Action Item: **Suzanne Carbotte and Masako Tominaga** will review and make recommendations on what needs to be improved or updated in the Fleet Improvement Plan.

Fleet Projected Service Life End Dates, Utilization, and FOY Ranges

Alice Doyle and Doug Russell will discuss the latest information on the status of the academic research fleet, including projections through 2021.

Slideshow:

Doug Russell – Utilization is back up, Recovering from COVID. Able to reduce quarantine requirements. Opening up more berthing on the ships. 2022 a lot of demand.

Alice Doyle – Plot of how vessels are utilized. Vessel Class vs Days of use.

Fleet capacity – design life vs extended life vs retired

Happy to share this info if anyone would like to see it more closely.

Roundtable discussion of the impacts on the operators and science users of reduced fleet size.

Is demand outstripping capacity in some aspects? What are the limitations on scheduling - not only the ships? How are technical support capacities affecting scheduling (for example JASON or ODF)? How can the FIC address this in its support for the Academic Research Fleet?

Discussion:

Jim Swift – There seems to be some capacity issues. It seems like more people want to do science than the fleet can support. Is this something we can improve upon?

Rose Dufour – We are probably at the sweet spot of what NSF can afford. So, if you have more capacity, you need more money. Just wanted to remind everyone of that.

Jim Swift – I don't think we need more ships, I think we need to think more about Expeditionary Planning. Have the science be coordinated by where the ships are without moving the ships around so much. Less transit time, more science time. The Germans have been doing it this way for year.

Jamie Austin – The Geophysical community has been doing this with the Langseth for a long time.

Suzanne Carbotte – There has been a regional plan that is put forth at annual meetings that the Langseth has been operating under, but I am not sure how successful it has been.

Jamie Austin – You still have to transit the vessel.

Jim Swift – Does the UNOLS office see this as a FIC issue? Is there anything FIC can do to assist?

Doug Russell – I don't think this is a FIC issue. At times it seems like a capacity issue, but as Rose pointed out it is a matter of funding as well. It is a matter of balance. I don't think it is a FIC issue.

Rose Dufour – I wanted to say that in terms of the Langseth, I think the regional plan has been successful. I don't think it would be successful for other Global ships. I think the process we have right now with the scheduling through UNOLS and the scheduling committee is the way we should keep it going.

Jim Swift – I hear you. But I think it is having an impact on our young scientists. For an established scientist it isn't so bad to wait three years for a ship, but for young scientist this is hard.

Jamie Austin – For a young scientist they have to learn that they can't always have the ship they want. The Scheduling Committee will give them a platform that they can use, even if it isn't their first choice.

Rick Keil – I think many young scientists don't understand how it all works. Communication is key. We have asked the UNOLS office to give a kind of UNOLS 101 to our graduate students. So they can begin to learn how the system works.

Rose Dufour – The Chief Scientist Workshops are another way a young scientist can learn how things work. The CSW are funded by NSF. After we get past the COVID back log we can get back into funding those.

Alice Doyle – We have also thought about creating a webinar of the UNOLS 101 that would be recorded, so people could watch them when they want.

Global Class SMRs (Science Mission Requirements)

Review of the present document. Need FIC volunteer ASAP to address cybersecurity issues. Does the present draft adequately address geophysical/seismic research support? What else, specifically, should still be addressed? Discuss procedure and timing to submit the plan to the UNOLS Council for review and adoption as a living document, perhaps as soon as this month.

Jim Swift – Have to at least do something to at least get cybersecurity in there.

Greg Cutter – Is there a cut and paste we could put in there?

Alice Doyle – We can work with the cybersecurity subcommittee and Masako was anxious to assist.

Greg Cutter – Telepresence is something that needs to be updated as well.

Jim Swift – The question in my mind on the SMRs is will we have something to give to the Council by next week? We would need to meet tomorrow because we need to send it out to the FIC for approval and I don't want to give people just one day to look at it.

Suzanne Carbotte – I know there were some outstanding items on geophysics, but since this is a living document and what is in it comes from the geophysical community, I think that is fine to proceed as it is.

Greg Cutter – I think if we just have placeholders that have the right words, that is what is important. Some things like number of berths need to be spelled out.

Jim Swift – For the Foreign Research Vessel Appendix I suggest we just say that this section is under construction. Telepresence and cybersecurity are more important. Zoltan would like us to further discuss the Sat Comms. There may be just some updates needed there.

Jim Swift – Can I ask someone else to do telepresence?

Jim Swift - Last night I had an idea with regards to small boat operations. What if the science team brought along operators of small boats?

Alice Doyle – How would the operators feel about this?

Jim Swift – How could we do this safely?

Greg Cutter – Some of the automated deployment systems would limit this as well. It isn't an easy task to operate that equipment.

Jim Swift – My impression is that some of the limitations of what we can do at sea is the limited by the crews. This could be an enhancement to the SMR on how we are going to support the ships crews.

Ethan Roth via Chat – Look at the Miranda davits on the Healy. Equipment like that makes it easier for the ship's crew to deploy small boats. FIC should be looking into providing more streamlined equipment like that to make things easier and quicker for the crews.

Action Item: Alice Doyle will take on telepresence

Action Item: Jim Swift will ask Zoltan Kelety what he thinks is missing on the SatComms.

Planning for other upcoming FIC Business – Jim Swift, Alice Doyle/UNOLS Office

Telepresence support recommendations - Are telepresence support recommendations (in FIC documents) appropriate and forward looking? Who will review and report?

Alice Doyle – What do we actually want to say about telepresence?

Jim Swift – Whatever they said about it for the RCRV. Basically, a cut and paste.

Cybersecurity recommendations - Are cybersecurity recommendations (in FIC documents) appropriate and forward looking? Who will review and report?

Jim Swift – I will take a small team on cybersecurity

Jim Swift – I will start working with Masako today about cybersecurity.

Action Item: Jim Swift and Masako Tominaga review FIC documents to make sure cybersecurity recommendations are appropriate and forward looking.

Jim Swift - Very early next week we would go to the committee with a URL and ask for a vote. Rob Sparrock really wants this done, basically because there is money.

Small boat operations - Are FIC recommendations for small boat operations in support of research at sea appropriate and forward looking? Who will review and report?

Action Items: Greg Cutter will add something to SMR about hassle free deployment and recovery. Miranda Davits.

Review of FIC Membership, timing of next meeting – Alice Doyle/UNOLS office

Jim Swift – We need a new member and a new chair. The chair can be a new member or can come from the existing membership. The FIC makes suggestions on new chair and the Council approves the recommendations. I will be rotating off in November at the next Annual Meeting. We would like a new member to be familiar with the coastal or local ships.

Jim Swift – I would now like us to go around the group and everyone say what is most pressing on your minds:

Rick Keil – Good to see everyone. I think we opened a can of worms with the tiny vessels. I would emphasize improved communications to scientists, especially young scientists.

Jamie Austin – Agree with Rick on small boat and communication with younger scientists. Concerning the Right-Sizing of the fleet, I think FIC should continue to monitor, comment on utilization and push for greater capacity if needed.

Suzanne Carbotte – Future goals of the global class ships and trying to get new ones built. We put out the SME but how do we support that?

Jamie Austin – We also do need a geophysical capability.

Byron Blomquist – Feel happy with global SMR, I think it looks fine. I think it is ready to be circulated. I agree next step is to see how we can keep pushing that process along.

I think we just need to keep a laser focus on the research community. The tasks we should get involved with can evolve from that focus. Keep our eyes on the PCARs and how the facilities are being used.

Angelicque White – SMR looks great. Small coastal vessels are excellent platforms for teaching and bringing students to sea. Unapparelled due to cost. Small boat ops off of vessels is a good topic to pursue. The small boats are resources we might need more and more as we move forward.

Ethan Roth – I just wanted to remind everyone I am on the RCRV science oversight committee as the FIC rep. I was able to visit the shipyard last year, prior to COVID. I am working on developing a relationship with Daryl so I can be involved with sea trials. I got my hand slapped for passing on info outside the Science oversight committee. Not sure where that line is on what I can tell FIC and can't. Recently there hasn't been a whole lot to share due to the shipyard slowdowns.

Sikuliaq has been operating for seven years. Made some great strides.

Action Item: Ethan Roth report to FIC at next meeting about Sikuliaq.

Action Item: Ethan Roth coordinate with Daryl Swensen to report on RCRVs at next meeting.

Meeting Adjourn

Action Items:

1. Action Item: Jim Swift - REPORT on Coordination for replacement of Palmer and 60S.
2. Action Item: Jim Swift – Small Vessel presentations – ASK COUNCIL if they want us to pursue this.
3. Action Item: Suzanne Carbotte and Masako Tominaga will review and make recommendations on what needs to be improved or updated in the Fleet Improvement Plan.
4. Action Item: Alice Doyle will take on telepresence
5. Action Item: Jim Swift will ask Zoltan Kelety what he thinks is missing on the SatComms.
6. Action Item: Jim Swift and Masako Tominaga review FIC documents to make sure cybersecurity recommendations are appropriate and forward looking.
7. Action Items: Greg Cutter will add something to SMR about hassle free deployment and recovery. Miranda davits.
8. Action Item: Ethan Roth report to FIC at next meeting about Sikuliaq.
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