UNOLS FLEET IMPROVEMENT COMMITTEE MEETING
The National Science Foundation
Stafford II - Room 555
Arlington, VA 22230
Monday, October 24, 2011

Meeting Minutes

Appendices

Meeting Summary Report

Call the Meeting: Clare Reimers, FIC Chair, called the meeting to order and provided an opportunity for introductions. The meeting agenda is included as ***Appendix I*** and the participant list is ***Appendix II***.

Fleet Renewal Activities - Agency representatives and FIC meeting participants were welcome to discuss any issues or questions regarding the following facility acquisition efforts:

Regional Class Research Vessel (RCRV) – Bob Houtman reported that NSF's status on the RCRV has not changed since the last FIC meeting. The RCRV project is still in internal review at NSF. The MREFC process has undergone a revamping since the new Director has come aboard. The RCRV will go through the MREFC process.

Discussion:

- Al Hine – Is the timeline for the project known? Bob Houtman – In the next month, the results of the RVRC review and the plan for moving forward should be known.

- Clare Reimers – About a year ago, she understood that the funds were available for the preliminary design effort. Bob Houtman – Yes, the funds are in hand.

Ocean Class Research Vessel (OCRV) - Joe Mackes, Mike Prince, and Chris MacDonald provided slides with information about the OCRV project. The slides are included as Appendix III <http://www.unols.org/meetings/2011/201110fic/201110ficap03.pdf>. The slides include information about:

The OCRV Detailed Design & Construction and schedule. The first design reviews are planned in December 2011. The start of construction is slated for Spring/Summer 2012. The ship deliveries are scheduled for early FY 2015 for the first vessel and mid FY 2015. The construction award was made to Dakota Creek.

Discussion:
- Al Hine – Will the two ships be built side by side. Chris MacDonald – There will be 3-month gap between the two.
- Annette – Has Dakota Creek made ships of this size? Chris – They have built larger vessels, but probably none as complex.

Joe Mackes continued with an overview of the OCRV Design. Joe's responsibilities include making sure that the ship meets the design characteristics. Joe's slides are included as Appendix IV, http://www.unols.org/meetings/2011/201110fic/201110ficap04.pdf .

The slide package includes a:
Comparison of Science Mission Requirements (SMR) to Design
Unique/Novel Features
General Characteristics
Mission Systems
Performance Characteristics

Some of the unique/novel features of the OCRV design include:
- Hull form to divert bubbles from sonar area – no gondolas are needed.
- Controllable Pitch Propellers (CPP's) with variable speed motors for improved efficiency over varying modes of operation
- Cranes, CTD Handling and Starboard Side Handling Systems reach to waterline for improved safety and load control
- Condition based monitoring system for main propulsion, major auxiliaries and ship control equipment
- Centralized fresh water-cooling system
- HVAC variable air volume and regenerative heat

In terms of performance:
- The bubble sweepdown model tests have demonstrated favorable results.
- The dynamic positioning analytical predictions meet requirements.
- The ship has nice turning features.
- The analytical predictions for noise meet the system spec requirements
- The fuel usage isn't expected to be as good as *Melville* and *Knorr*, but better than *Revelle/Atlantis*.

In comparing the OCRV SMRs to the design comparison:

- There will be 24 berths in 12 doubles
- The design Working Deck exceeds the SMRs
- Sea Keeping – meets the SMR
- Station Keeping – meets the SMR
- Track line – meets SMR
- Handling System – Markey will be the vendor for the winches.
- Ice Class – D0
- The ship design length is 238-feet.

Discussion:

- Annette DeSilva – Will the hull form degrade fuel efficiency? Joe Mackes – They were not allowed to use bulbous bows because of the bubble sweepdown issue. There will be some fuel penalties, but this hull form should offer a nice compromise.
- Matt Hawkins – Who is the A-Frame manufacturer? Joe Mackes - Markey is fabricating the winches, but they can't say more.
- Rob Pinkel – Will there be thrusters for station keeping? Chris MacDonald – Yes, there has to be.
- Vernon Asper – Is there provision for user provided hydrophones? Mike Prince – There are three spare sea chest in the forward third and then there is another one aft.

RV *Sikuliaq* Update - Marc Willis provided a report in advance. Construction is on schedule. Delivery to UAF is scheduled for July 2013. The delivery will be followed by another 60 days at the yard for UAF outfitting.

Fleet Improvement Plan (FIP):

Discussion on the need for an update to the document and incorporating the new UNOLS Four Class System into the FIP - Annette DeSilva presented the new UNOLS ship class system and explained that the Full Optimal Year (FOY) definitions are no longer associated with the class. Annette's slides are included as ***Appendix V***. Each ship will retain the FOY that they had in the past. Everyone agreed with this concept. Annette will begin to update the FIP charts with the new class system.

Finalize Appendix on Ocean Acoustics for posting on the UNOLS website (David Bradley) – David Bradley had drafted the Ocean Acoustics appendix for the FIP. David plans to add an applied example to his draft. The example would be consistent with the other science sections of the report. Dave has contacted Peter Worcester for an applied example.

The Appendix can be included in the updated FIP version.

January 1, 2012 was agreed as the date for a final FIC review and comment period.

Early Career Investigator Oceanographic Research Cruise Training Opportunity – Report and assessment of Chief Scientist training cruises - Clare Reimers provided an assessment of the Chief Scientist training cruises. Her slides are included as ***Appendix VI*** <http://www.unols.org/meetings/2011/201110fic/201110ficap06.pdf> and include images from the cruise. Clare thanked Linda Goad for here NSF support of the program and Daryl Swensen for his assistance in carrying out the cruises.

The program goals are to:

- Teach early career marine scientists how to effectively plan for, acquire, utilize and report on time at sea for multi-disciplinary research and education
- Demystify the process of ship operations and fulfill the intent of UNOLS to improve access to existing and future facilities
- Offer new investigators opportunities to test compelling research ideas, work collaboratively and acquire samples critical for developing future oceanographic field programs

The program was funded by the NSF OCE Ship Operations Program. The program title is, "RAPID: Training Chief Scientists for the Ocean Research of Tomorrow" and Clare Reimers, OSU is the PI. The award amount is $99,971 and there were a total of 20 days on *R/V Wecoma.*

The timeline for the entire program was very short. The RAPID proposal was submitted to NSF on 19 Jan 2011 and the grant was approved on 7 Feb 2011. An announcement was posted and distributed on March 1st and applications were due April 15. Fifty-six Applications were received. Information about the participants is included in the slides.

Each cruise was preceded by workshops. Maureen Conte gave an excellent presentation on the pre-cruise and post-cruise process.

At-sea meeting topics that were covered in the cruise included:

- Communicating cruise priorities, team building
- Importance of having a Plan of the Day and relaying/retrieving information from the bridge
- Whose in charge on deck? (Different institutional approaches)
- Requesting the best vessel and equipment for your science needs
- Form and distribution of cruise data, value of a cruise report
- Post-Cruise Assessments-who sees them and how are they used
- When to return to port -reasons to and consequences of quitting early
- Decision processes, conflict resolution, sexual harassment, looking out for all

The first cruise included 14 stations along 4 cross margin transects. The second cruise had 12 stations around Astoria Canyon. Post Cruise Assessment reports have been (or soon will be) submitted for both cruises. Co-chiefs prepared them with input from all participants. Cruise 2 participants have prepared a "Cruise Report".

There is a Post Cruise web-based questionnaire for the participants. It includes 14 multi-choice questions plus room for comments. Sixteen of 28 possible responses have been received to date. Initial feedback has been very positive.

Clare presented recommendations for the future:

- Continue the program with one cruise per year for the next 3 years.
- Continue to use "Intermediates" (big enough but not too big) but rotate host location and enlist new mentors.
- Broaden the announcement circulation – give it more time.
- Improve the application process, include references
- Resolve whether participation is open to non-US scientists
- Track program effectiveness- numbers of participants who submit new ship time requests and are funded

Discussion:

- Sandy Shor – Have you spoke with the Program Managers who are involved with the early career programs. They might have some insight on participants.
- Al Hine – Did you work 24-hour days? Clare – She left it up to the chief scientists. Everyday after lunch they had a meeting about the previous day's activities.
- Al Hine – Was the captain engaged? Clare – Very engaged. *Wecoma* has a new captain.
- Al Hine – Did the co-chief scientists get to talk to the captain. Clare – Yes.
- Miles – Would it make sense to use Regional Ships so that participants would have more experiences as the Chief Scientist? Clare Reimers – There is a trade-off, they wouldn't get the multi-discipline experience.
- Rob Pinkel – Can we track the students? Jon Alberts – Yes, through the STRS system.
- Clare Reimers – The total budget was ~$100k. The shipping costs were higher than budgeted. The $100K didn't include the ship time.
- Dave Checkley – At SIO they have some funds that can be used for student cruise involvement. Was there an agency representative that explained that they would not be a penalty for submitting a proposal with ship time? Clare Reimers – The speakers tried to make this point.

Break

Fleet Planning – Review and discussion of the following areas followed:

Agency recommendation regarding Fleet operations: Prior to the UNOLS meetings, Bob Houtman (NSF) sent a task to the Council: "*UNOLS Council is encouraged to begin a dialogue with the federal agencies on how to reduce the size of the Fleet within the context of the declining demand, utilization, and potential for declining federal budgets."* The task is included as ***Appendix VII***.

Clare Reimers opened the discussion and said that the remainder of the morning discussions would focus on right sizing the fleet.

Discussion:

- Bob Houtman reported that it seems like the agency representatives have been putting most of the focus on right-sizing the fleet. He feels that there needs to be more of a collaboration between the community and the agencies. Bob reported that he doesn't think that the days of high fleet utilization will come back soon. We need to determine what the baseline of days is that can be funded/supported. He suggested that the day total might be 2500 days. Then we can take that day level and overlay the classes of ships and geography of where capability is needed. Based on these estimates, we might have the ability to collectively make decisions about which ships can be taken out of the fleet. The agencies would like to see a reduced number of ships with full utilization, than more ships with lower utilization. They would like to avoid lay-up support; since this takes away from the dollars for science.
- Clare thanked Bob for bringing the community into the mix.
- Bob Houtman – With a better idea of which ships are needed, we will be able to determine which ships to make investments in.

Consortium for Ocean Leadership's "Report of the Working Group to Develop Funding Models for New Ships" – Clare reported that Bruce Corliss, UNOLS Chair, has tasked the FIC to review and provide comments on the report. Information about the project along with the final report is available at: http://www.oceanleadership.org/2011/ocean-leaderships-working-group-to-develop-funding-models-for-new-ships-submits-report-to-the-board-of-trustees/

Clare reviewed the Working Group recommendations. The working group membership and recommendations are included as ***Appendix VIII***.

Discussion:

- Al Hine – What is the initiative for the COL report? Who is driving the initiative at the national level? Jon Alberts – These are two separate problems. Vernon Asper and Jon were invited to participate in the Working Group. Bob Gagosian feels that the system for acquiring new ships is broken. His concern was future acquisition of the ships.
- Al Hine – Is there an effort to make better use of the National fleet? Jon Alberts – The Working Group report focusing only on the academic fleet.
- Vernon Asper reported that he was part of the Working Group. Ocean Leadership was implying that other agencies (atmospheric) can reach Congress and are successful. UNOLS cannot approach the Congress.

It was decided to return to topic later in the meeting.

Fleet Utilization – Past utilization trends and future initiatives and Day Rates and the Apportioning of the Fleet Budget - Annette DeSilva provided a series of slides with Fleet utilization trends and cost data. The slides are included as ***Appendix IX,***
http://www.unols.org/meetings/2011/201110fic/201110ficap09.pdf .

Discussion:

- Marc – All of the new ships that are currently in design or construction are Global or Ocean and will be in the blue area of the pie chart on the last slide. If you add up the FOYs for the new ships you are close to Bob's estimate of a Fleet with a 2500 day operating year.
- Mike Prince – The operating cost for the two OCRVs will replace the *Knorr/Melville* operating cost. It will be a wash.
- Dave Checkley expressed concern over the decline in NOAA's ship time on UNOLS vessels.
- Jon Alberts reported that it is unclear how much ship time will be supported by the Gulf of Mexico Research Initiative (GRI).
- Vernon Asper suggested that instead of the agencies paying for ship's to layup, perhaps they should send *Cape Hatteras* to the Gulf of Mexico to be poised to support work in that area. Instead of lay-up costs, the cost for the transit could be covered.
- Annette DeSilva mentioned that the Interagency Working Group on Facilities Infrastructure (IWG-FI) includes all of the agencies that operate vessels. The IWG-FI is working on an updated Federal Fleet Status Report. This could help as we move forward with right-sizing the fleet.
- Annette asked if the lower Fleet utilization in 2012 resulted in unused funds at NSF. Bob Houtman – No.
- Clare – Are there funded cruises on the Global ships that could go on smaller vessels. Jon Alberts – No, the schedulers and agencies consider that.
- Mike Prince – If NSF goes forward now with the RCRVs, the first ship would come into service in 2018. So we need to be aware of the gap between removing ships from service and new ships coming on line.
- Matt Hawkins cautioned the group to take the SLEP cost estimates with a grain of salt. Vessel operators have different philosophies in developing the estimates.
- Rob Pinkel – From the SLEP Chart, it shows that there are going to be no small vessels in the Pacific.

- Matt Hawkins – You won't see the agencies investing in the smaller vessels. NSF has had a challenging time justifying the RCRV acquisition.
- Sandy Shor – One of the things that should be kept in mind, is that the Navy has indicated hat the Ocean Class vessels would be the last research ships Navy builds.

Service life end dates and investment recommendations for *Pt Sur, Cape Hatteras, New Horizon, Sproul, Wecoma, Endeavor,* and *Atlantic Explorer* - Clare Reimers presented a slide summarizing the SLEP data for the ships listed above. Her slide is included as ***Appendix X***. FIC has been asked to review the Vessel Condition Memorandums from NSF and determine if they agree with the recommended retirement dates. Given limited resources and the current states of both the RCRV and OCRV projects, which vessels should NSF focus on with regard to material investments? FIC should work to develop a better process for revising UNOLS vessel retirement dates. A table that includes the summarizes the SLEP memos is included in the Appendix X, http://www.unols.org/meetings/2011/201110fic/201110ficap10.pdf . The discussion continued after the lunch break.

Lunch

FIC Motions – Clare Reimers requested motions on various topics that were introduced earlier in the meeting**:**

Clare requested a motion regarding the Early Career Training Program.

> A motion was made and passed in favor of establishing a 3 year pilot program for an Early Career Scientist – Chief Scientist Training Opportunity with one cruise training cruise per year (Hine/Bradley).

The program would be modeled after this year's cruise training program. Clare Reimers is willing to continue as the lead PI on this program. She will work with NSF to determine program feasibility and ship/cruise options.

Discussion on SLEP and retirement dates:
- Sandy – How realistic is the 2026 retirement date for Atlantic Explorer. Matt – BIOS has expressed some concerns about this date.
- Al Hine suggested that some of the vessels should be evaluated by their geographic area and utilization. Can the work on *Cape Hatteras* and *Endeavor* could be combined onto one ship allowing the retirement of one vessel. On the West Coast, can the work on *Wecoma* and *Point Sur* be combined eliminate one ship. The same applies to *New Horizon* and *Sproul* – eliminate one.
- Annette suggested that FIC works with the agencies to set the constraints: Establish the parameters – what can be afforded, geographic area, composition. Then we will examine all of the variables in coming up with decisions. Bob Houtman – Determine a realistic projection of the demand and then what is the proper mix to meet the demand?
- Dave Checkley – There are other metrics that should be considered; the value of the science and the investment made.
- Bob Houtman – It is very difficult to promote new ships when we have this over capacity
- Clare Reimers – Would it be of value to get the FIC and Council together for a few days to address just this issue?

A motion regarding Fleet Planning was made and passed:

The Fleet Improvement Committee recommends that the FIC and Council establish recommendations for fleet size and composition based on consideration of key parameters and variables identified below.

1) Parameters: UNOLS (FIC and Council) should work with the Agency Representatives to assemble data on:

- Fiscal operational constraints (projected annual operation budgets),
- Research initiatives and geographic areas of interest,
- A realistic projection of ship demand across classes

2) Evaluate the variables that make up the current and future fleet composition, including:

- Current and planned fleet capabilities Operating range and home ports
- Role of UNOLS in setting Safety Standards
- Operational Costs
- Ship Condition
- Service Life End dates

Strategy for carrying out Fleet Planning activities:

1. Collect data and statistics (Agencies and UNOLS Office)
2. Hold a series of Web/Phone Conferences to formulate recommendations
3. If needed – hold a 2-Day workshop of the FIC, Council, and Agency representatives to finalize the recommendations.
4. Time frame: First Phone meeting – Jan 2012

A motion was made an passed regarding the Consortium for Ocean Leadership Working Group Report (Devol/Checkley):

- Hold phone meetings to review the COL Working Group Report recommendations and to formulate a response.
- Upon completion, forward the FIC response to the UNOLS Council.

Vernon Asper – it is important to look at the COL report and understand that they are suggesting a new strategy for Fleet coordination.

Suggestions for UNOLS/FIC Activities at the 2012 Ocean Sciences Meeting – Annette reported that UNOLS will have a booth at Ocean Sciences. FIC members are encouraged to visit the booth.

R/V *Langseth* – MLSOC/FIC liaison report. Sandy Shor reported that he doesn't think that the FIC/MLSOC liaison position is effective. He has been having difficulties getting info from the MLSOC Chair. The MLSOC chair should be the liaison to FIC.

- Sean Higgins said that he agrees and he feels that it is a one-way street. LDEO would like the input from the MLSOC.
- Sean had a very positive report about the recent *Langseth* operations. They did a CTD cast and it worked well.
- Sandy Shor – The long core repositioning project will be discussed later in the meeting, but there is some concern with the loss of OBS Space on the vessel.

Polar Research Vessel (PRV) SMR Refresh Project status – Jon Alberts reviewed the PRV SMR Refresh Project status. His slides are included as ***Appendix XI*** and include details about the project: < http://www.unols.org/meetings/2011/201110fic/201110ficap11.pdf>.

The PRV Subcommittee has prepared an interim report and Jon is willing to share the report.

Sandy Shor – How difficult is it to have a moon pool on an ice ship? Jon – It is a challenge. Vernon Asper – There were some on the PRVC who were not in favor of the moonpools. They tried to avoid having a long wish list. They were trying to be realistic. Rob Dunbar did a great job in incorporating all of the comments.

FIC Guest Speakers – Clare suggested that FIC identify some special topics and speakers of interest to FIC for the spring meeting. Al Hine suggested someone with geo-acoustics expertise. It would be interesting to hear about the EK60.

Break

New Technologies and System Evaluations:

Long-Coring System- Clare Reimers reported that there are no long core cruises in 2012. There are a couple potential ones in the works for 2013.

Update on Long Core Conceptual Design Study – Sean Higgins provided his report:

LDEO has been approved by NSF to launch Conceptual Design Study with Glosten. They have two other active projects with Glosten on *Langseth* so they wanted to make sure there was not any unnecessary overlap. The focus of LDEO's efforts to date has been working with Glosten to integrate the ongoing winch replacement project work on *Langseth*, to factor in short term project support necessary for an upcoming coring cruise in Spring 2012, and to establish the priority tasks for the Long Core Conceptual Design Study.

The Long Core Study will take a task based, phased approach as there are some fundamental questions tied to understanding the *Langseth*'s stability profile. So, establishing the stability profile will be the first Glosten Task that has just begun. The goal is to identify any possible "big issues" as soon as possible in this design study process. Glosten estimates 4-6 weeks for the completion of this portion of the project.

This stability profile will allow LDEO to evaluate very early on what the potential tradeoffs might be for:

1. The current OBS deck, or topmost stern deck of the Langseth. Does it need to be smaller, possibly replaced with lighter material, left as is, or removed altogether?
2. Possible Fuel Capacity Impacts
3. Removal and/or moving of current Mammal Observation Tower.
4. Impacts on seismic equipment and /or operations.
5. Keeping all or portions of the Long Core System onboard on a permanent basis.

As noted in earlier FIC discussion on the Long Core Facility, outcomes of the stability portion of this study may produce options that are determined to be real "deal killers" in that too many things on *Langseth* would have to be compromised to make the Long Core facility work in a reasonable way in combination with other operations on the vessel. LDEO wants to identify these types of issues ASAP before moving forward. Other key areas that would follow would be further evaluation of *Langseth* DP system and mapping out details of different mission scenarios for seismic and long core.

A kickoff meeting in January 2012 with WHOI, NSF, Glostens, and LDEO is planned after this initial stability profiling work is complete. If results come in sooner than expected, there may be opportunity at AGU to start some initial discussions.

Discussion:

- Candice Major – The plan will depend on the demand. They want to see the feasibility of moving the system before coming up with a plan.
- Sean - Depending on the outcome of some of the other items – the DP will be looked at. But it really depends on the Glosten Study.
- Clare – should *Langseth* be under consideration for the future mix of the fleet. Matt Hawkins – The Glosten findings should definitely be under consideration.
- Sean – There will be tradeoffs for the Long Core System in terms of capability for other systems.
- Candice made the case that there is just one facility in the world. The quality of the cores from the French system doesn't meet those of the WHOI system.

Discuss future user debrief process - Clare Reimers tabled this topic.

Load Handling Systems (LHS):

Update on the performance and capabilities of the *Kilo Moana* handling system - Sandy Shor provided a report. The Caley system is now the primary system on the ship. Since the KM has weight limitations, there cannot be a second winch onboard. Often there will be no back up. On one of the cruises there was a loss of the CTD due to a faulty termination. The Caley system is very complex.

Discussion:

- Dave Checkley – What LHS will the OCRV have? Mike Prince – Markey and others will have an integrated system on the OCRV
- Matt Hawkins – There are now three LHS vendors and this is why there are these other presentations have been added to the agenda.

New CTD handling system on *Revelle* (Markey) - Bruce Appelgate presented Zoltan Kelety's slides that have been included as ***Appendix XII*** <http://www.unols.org/meetings/2011/201110fic/201110ficap12.pdf> . He also presented an animation of the LHS in operation.

New LHS for ROV *Jason* - Matt Heintz provided a set of slides (***Appendix XIII*** http://www.unols.org/meetings/2011/201110fic/201110ficap13.pdf). Matt Hawkins presented the slides.

East Coast Winch Pool Portable winches (MacArtnery) - Dave Fisichella provided a set of slides that are included as ***Appendix XIV*** http://www.unols.org/meetings/2011/201110fic/201110ficap14.pdf. Matt Hawkins presented the slides.

Sikuliaq* LHS (Rapp-Hydema) –** Marc Willis provided a report. His slides are included as ***Appendix XV <http://www.unols.org/meetings/2011/201110fic/201110ficap15.pdf> . The LHS comes through the Baltic Room. The collar can be removed. The boom can be operated independently. Matt Hawkins added that the over the side operations can be done with no one on deck.

Discussion:

- Dave Checkley – What about orientation? Sandy Shor – On KM they have had some problems with kinking. This will be something to watch.
- Al Hine – Does the cost for SLEPs involve new LHS. Clare – no.
- Matt Hawkins – This may be something that Navy will consider in the mid life refits for their vessels.

***Hugh R. Sharp* User Debriefs -** Clare Reimers suggested that this be the last year of the *Hugh R. Sharp* user debriefs and that the data collected be summarized into a report that can be provided to new constructions and technology efforts. A motion was made and passed that this year be the last for the Sharp user debriefs and that a summary report be drafted (Willis/Checkley).

Clare Reimers reviewed the summary of this year's *Sharp* user debriefs. Her slides are included as ***Appendix XVI*** <http://www.unols.org/meetings/2011/201110fic/201110ficap16.pdf> .

Greening the Fleet: Construction, life cycle, and recycling – Bruce Corliss provided a report on plans for a Greening the Research Fleet Workshop on Jan 10-11, 2012. His slides are included as ***Appendix XVII*** and include details about the plans http://www.unols.org/meetings/2011/201110fic/201110ficap17.pdf.

Clare reported that she will be unable to attend the Green Workshop and asked for a FIC volunteer to attend. Al Hine indicated that he would attend.

Other Business - Opportunity for Additional Reports:

Informational Item - Annette DeSilva reported that there is a new initiative, the Multibeam System Optimization Initiative. Her slide provides a brief description and is included as ***Appendix XVIII*** <http://www.unols.org/meetings/2011/201110fic/201110ficap18.pdf>.

Review FIC Action Items and Assignments – A set of slides was reviewed that summarizes all of the motions that came out of this FIC meeting. The slides are included as ***Appendix XIX*** <http://www.unols.org/meetings/2011/201110fic/201110ficap19.pdf> .

Annette presented the motion for moving forward with Fleet planning. Discussion followed:

- Bruce Corliss suggests there be the goal of Fleet Planning for 2012. He added that the Council Ad hoc should be participant to this effort.
- Sandy Shor – Safety should be a consideration into the Fleet planning.
- Mike Prince – We can look at this by different scenarios and various funding levels. Example – if we have $90M – what would the fleet look like? If we have $85M, we could support this much…
- Clare Reimers – There is a need to start planning for new ship now, so they will be ready to go when money comes available.
- Sandy Shor – Start banking money now for new construction
- Miles – How do you weigh the cruise value?
- John Morrison – It is tougher for small boat users to get tech support
- Al Devol/ Sandy Shor – Made a motion to move forward with the strategy.

1600 ***Adjourn***