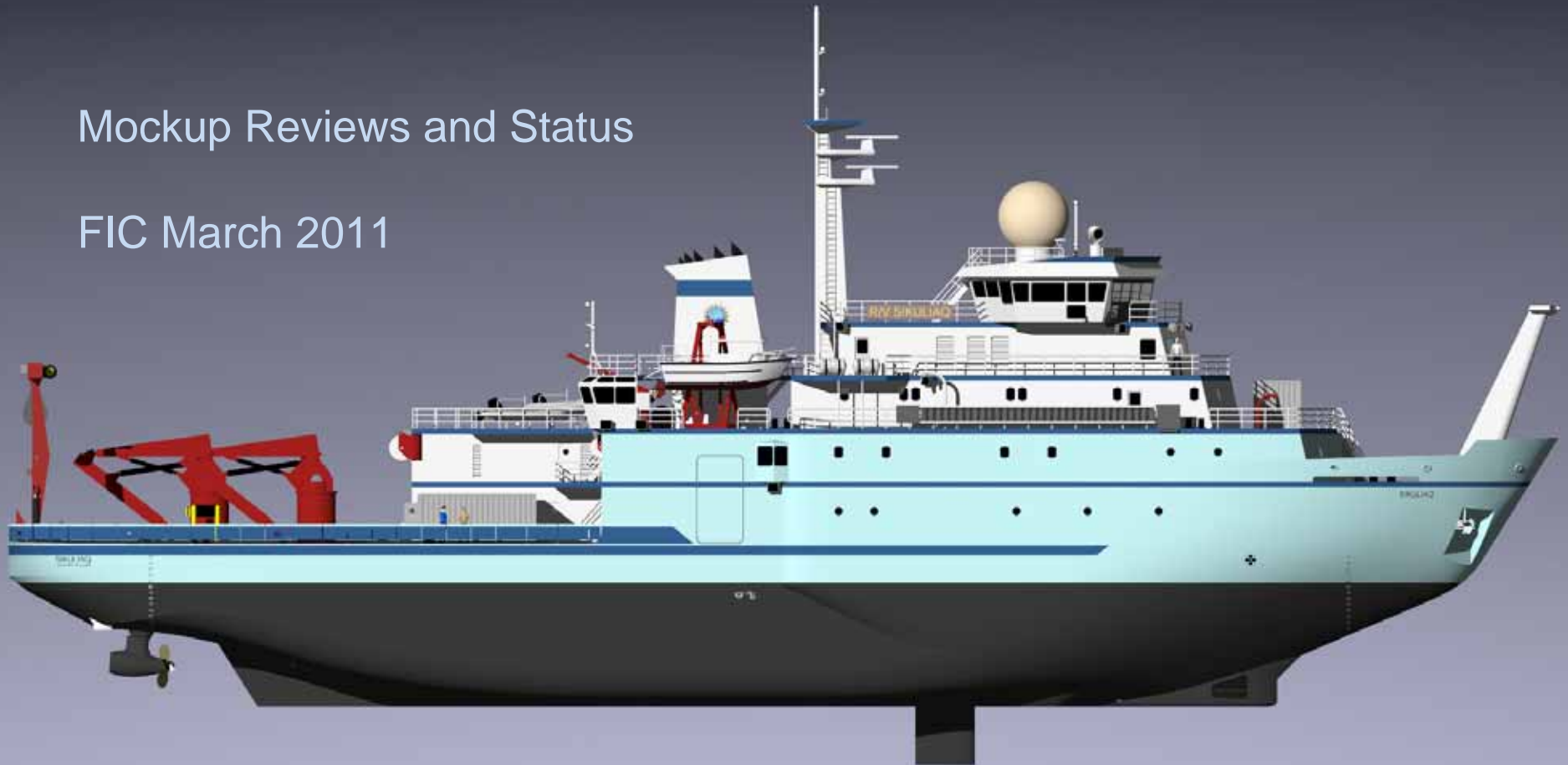


R/V SIKULIAQ

Mockup Reviews and Status

FIC March 2011



Marc Willis, OSU, SIKULIAQ Marine Science Technical Director, Shipyard Office
RVTEC Representative to FIC

RESEARCH VESSEL SIKULIAQ



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Marinette Professional Center
1510 Main St.

-8°F



MARINETTE MARINE CORPORATION SHIPYARD MARINETTE, WISCONSIN



*Trivia: The original
R/V THOMPSON
was built at MMC*



R/V SIKULIAQ

Mockups

- Per Contract, MMC has mocked up Main Deck Labs, Bridge, Science Control Room, Upper Lab and ADA Stateroom
- Mockups to include furnishings, cableways, HVAC, electrical/mechanical systems.
- Structure has been fabricated “life size”
- Labs are located in correct relationship to one another
 - Assess work flow from space to space



Mockup
Warehouse



Mockups



Mockup Reviews

- Review by Ship Captains October 2010
 - Focused on Bridge arrangements, consoles and control layouts
 - Resulted in Bridge Arrangement Change in process
- Review by SIKULIAQ Oversight Committee, November 2010
 - Focused on Lab arrangements
 - Resulted in Lab Improvement Change in process



Other Visitors to Mockup

- Off-site SIKULIAQ Team members
- UAF visitors
- PEO-Ships/ONR Ocean Class Team
- Propulsion/Electrical System Vendors
- Scientific Sonar Integrator
- NSF Annual Review Panel
- NSF Program Personnel



Example Outcomes

- Bridge
 - Console arrangement improved
 - Control arrangements finalized
 - Windows added/changed to improve sightlines
- Labs
 - Computer Lab work areas improved
 - Furniture rearranged to improve work areas



Use of Mockups

- MMC Engineers are ~ weekly visitors
 - Check fit of equipment in space
 - Verify details on drawings and models for design development
- Shipyard Office visits ~ every two weeks
 - Verify details of design development
 - Check arrangements against drawings
- MMC and UAF personnel sometimes meet at mockups to review details



Other Benefits

- Ability to walk through spaces and visualize workflow and identify potential problem areas
- One step beyond 2D drawings and 3D models
- Get a feel for actual sizes of spaces, and size and orientation of equipment
- See and verify arrangements
- Test alternate arrangements before finalizing
- Stimulates a lot of productive discussion



Mockups Under Construction



Bridge



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Bridge



Bridge



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Bridge



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Captains' Review



Labs

Main Deck
Passage
Looking
Forward



Labs

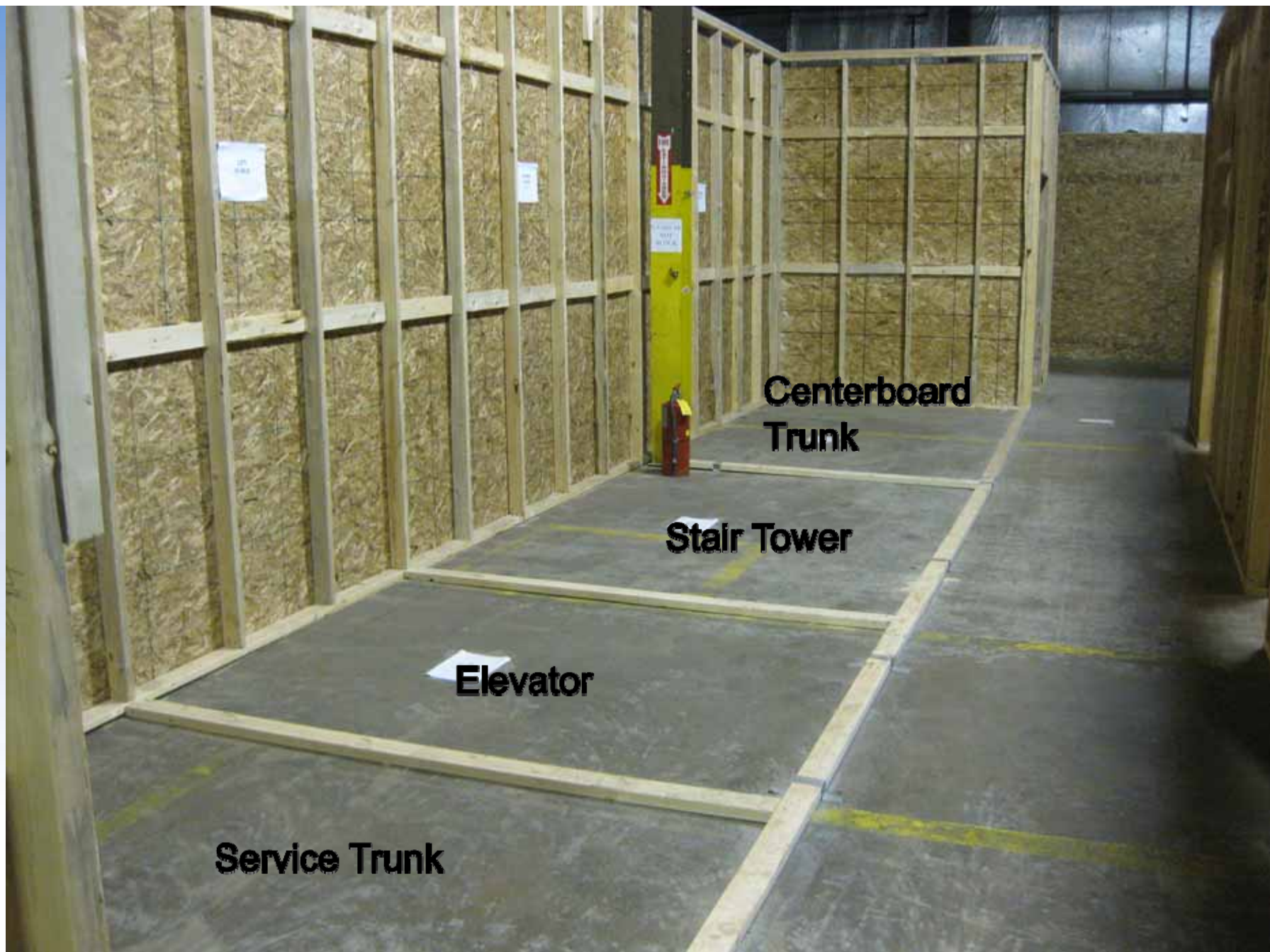
Main

Deck

Passage

Looking

Aft



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Labs

Entering
Main Lab
forward
from
Passage



**Red Tape
Indicates
Unistrut**

**White Strips
Represent plugmold**



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Labs

Main Lab
Looking
Aft

**String is approximate
Height of overhead**

**Tubes represent
Gas Cylinders**



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Labs

Main Lab
Looking
Forward



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Labs

Entering
Wet Lab
From
Main Lab



Labs

Entering
Wet Lab
From
Main Lab



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Labs

Entering
Wet Lab
From
Baltic
Room –
Looking
Forward



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Labs

Entering
Analytical
Lab
From
Passage -
Across
From Wet
Lab



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Labs

Entering
Computer
Lab aft
door
From
Passage



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Labs

Entering
Computer
Lab aft
door
From
Passage-
Looking
forward



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Labs
Entering
Computer
Lab
forward
door
From
Passage-
Looking
outboard



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Labs

Upper
Lab –
Looking
Forward



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Labs

Upper
Lab –
Looking
Aft



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Accessible
Stateroom



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Accessible Stateroom



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Science
Control
Room
"Aft Con"

Arrangement
Still under
development



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Science
Control
Room
"Aft Con"

Looking
Aft



A Great Idea:
Working Scale Model of Working Decks, NOAA FSV – approx. 15:1 scale





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Working Deck Scale Model



Working Deck Scale Model



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Working Deck Scale Model



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Working Deck
Scale Model

View from Bridge
Control Station



What about next time?

- Mock up additional spaces
 - Baltic Room/Hangar, All Control Rooms
 - Example Stateroom, Galley
- Use contract to ensure that Mockups are completed before detailed design begins
 - Consider building some prior to completion of contract design?
 - Save on change orders later
- Include working deck scale model



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