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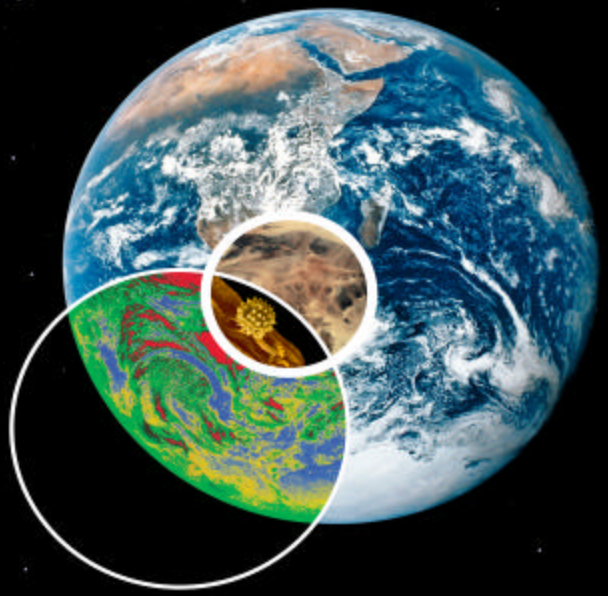

R/V EWING Replacement Vessel: the Process

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The Questions:

How might ***Ewing*** be upgraded to best address the scientific needs of the community?

What additional capabilities should the ship have?

What are the tradeoffs between optimizing seismic capabilities and general-purpose capabilities?

What is practical - reasonable - optimal?

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These questions are being answered in the context of both:

- The evolving science needs of the U.S. community
- The strengths and capabilities of the other vessels within the UNOLS fleet
- The Federal plan for fleet enhancement and replacement over the next 15 years

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The Process

- Solicitation of input from community via EOS ad; direct mailing; requests in community Newsletters
- Establishment of new internal advisory committee
- Establishment of a community-wide steering committee
- Production of extensive set of ‘Technical Option Papers’
- Workshop Activity and production of workshop report
- Formulation of set of feasible options for discussion

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COMMUNITY INVOLVEMENT

22,23 Oct 2002 Dave Hebert of UNOLS FIC attends *EWING* refit and gives presentation on the The Academic Research Fleet Plan. (Tim Cowles, UNOLS Chair and Bob Knox, UNOLS Past Immediate Chair invited to *EWING* Midlife Planning Meeting.)

12 February 2003 Midlife Workshop Report sent to Knox, Cowles, Atkinson

5 March 2003 UNOLS Council meets and *EWING* Midlife Workshop Report is an agenda item

2 June 2003 UNOLS Council meets and *EWING* Midlife is an agenda item. A summary of recent activities related to the EWING Replacement was submitted.

28 Jun-2 Jul 2003 Dave Hebert of FIC joins Director LDEO and Marine Office personnel on visit to the *Western Legend* in Lyngdahl, Norway. *Western Legend* is the vessel identified as a potential replacement and upgrade of the *R/V MAURICE EWING*

15 Aug 2003 Submit seismic ship specific SMRs and revised vessel arrangements to FIC

17 Sept 2003 Presentation at FIC Fall Meeting.

18 Sept 2003 Presentation at UNOLS Council Fall Meeting

8 Dec 2003 Town Hall Meeting scheduled at AGU entitled "The Enhancement of Marine Seismic Capabilities in the US Academic Research Fleet"

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Conversion Oversight Committee established and begins meetings August 2004

MV Western Legend purchased from Western-Geco,

September 2004.

Legend delivered to Quonset Pt. RI October 2004

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Workshop Recommendations:

If the goal is to:

- Tow multiple long streamers
- Improve source repeatability using linear gun arrays

and

- Improve general purpose/OBS capabilities

then

- ***Ewing*** cannot satisfy these needs, and the possibility of securing a used industry vessel should be studied

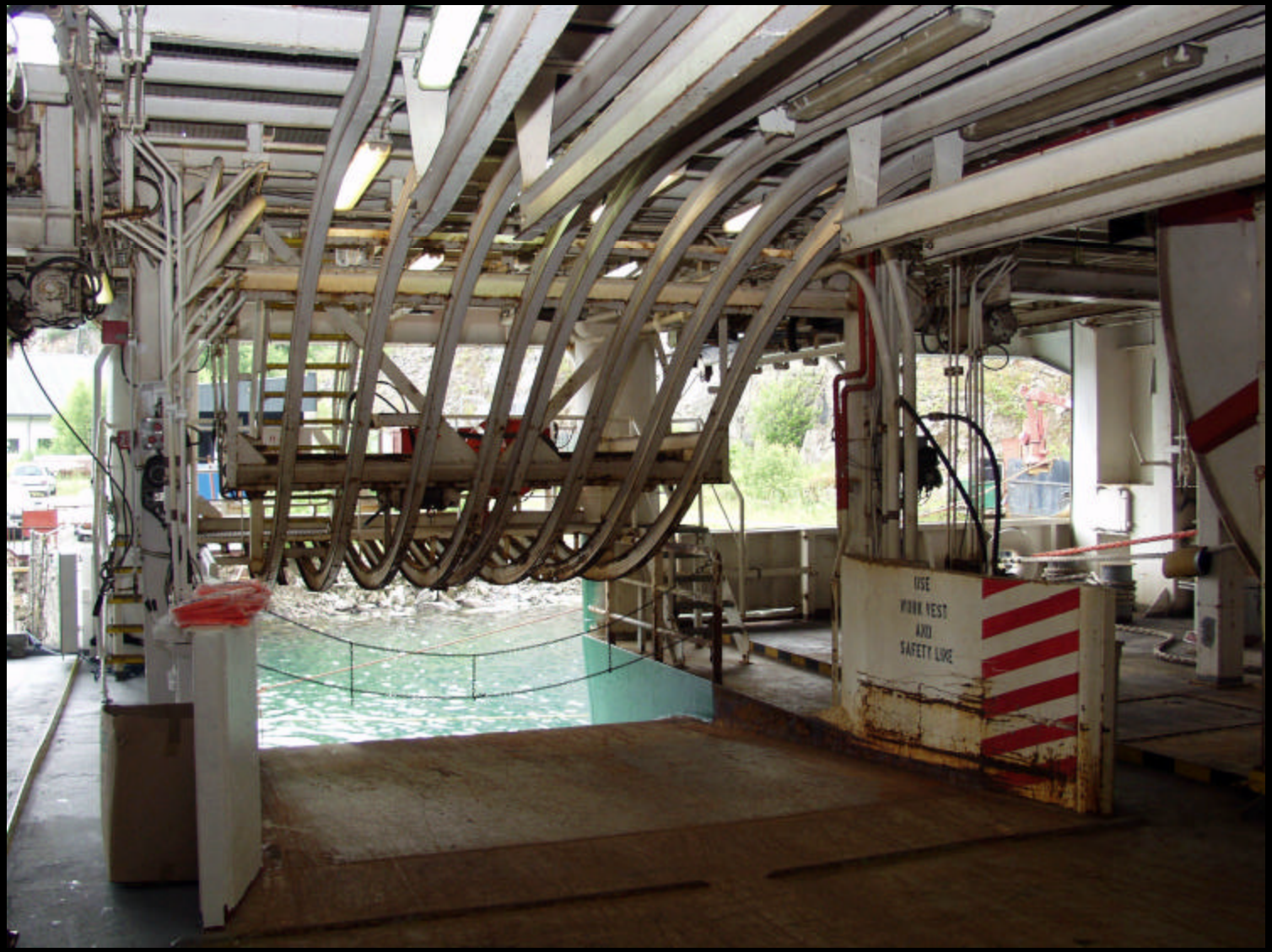
Multiple Streamers

Paravanes – big, and heavy

Streamers – 4 x 6 km, solid state

Linear Airgun Arrays
10 – 15 m long, with “clusters” and floats

Source Array Handling - Trolleys



Seismic Source Handling – Umbilical Winches

M/V Western Legend, October 2004

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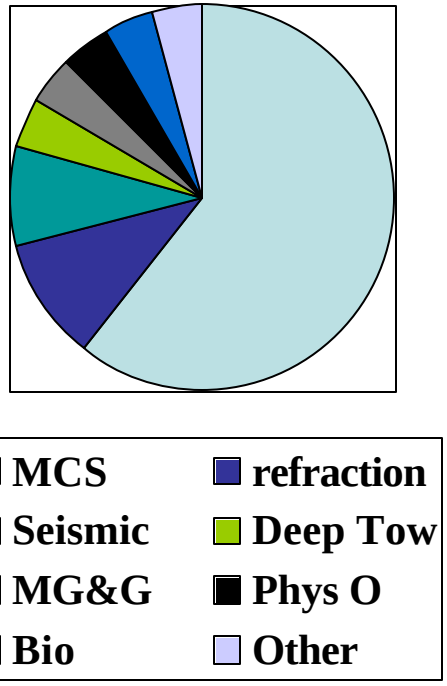
Replacement Vessel

(post-midlife *EWING* in parenthesis)

Length:	235 feet *(237 feet)*
Beam:	56 feet *(46 feet)*
Displacement Lightship Tonnage:	2578 metric tons *(1867 metric tons)*
HP:	7200 HP *(3200 HP)*
Bollard Pull:	86.2 metric tonnes *(20.2 metric tonnes)*
Compressor Capacity:	2x2750cfm *(3x1000cfm)*
Speed Cruising/Max:	12/14 kt *(11/13 kt)*
Ship's Complement/ Minimum Science Party	55/34 people *(50/29 people)*

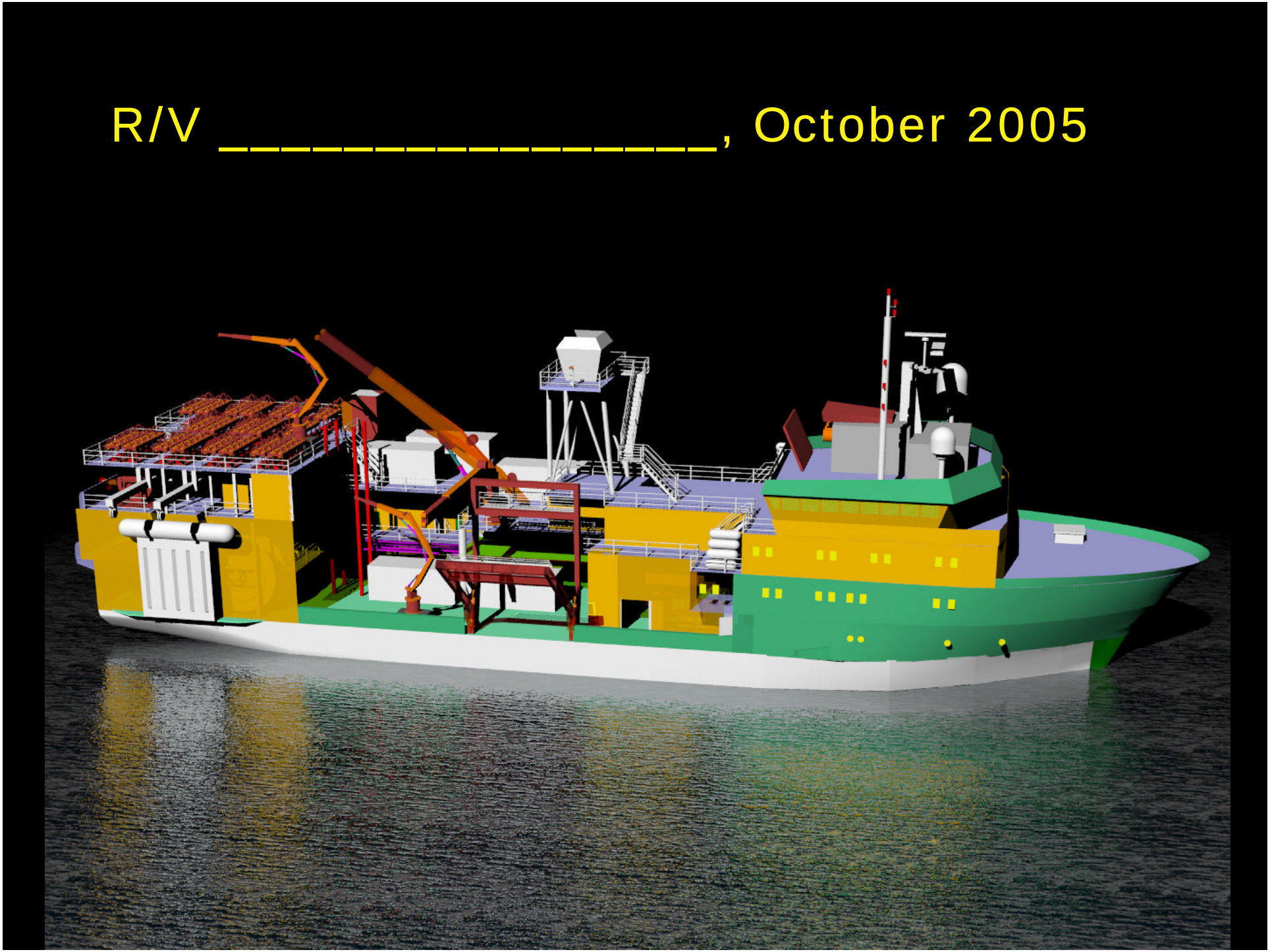
R/V *EWING* use ’97-’02

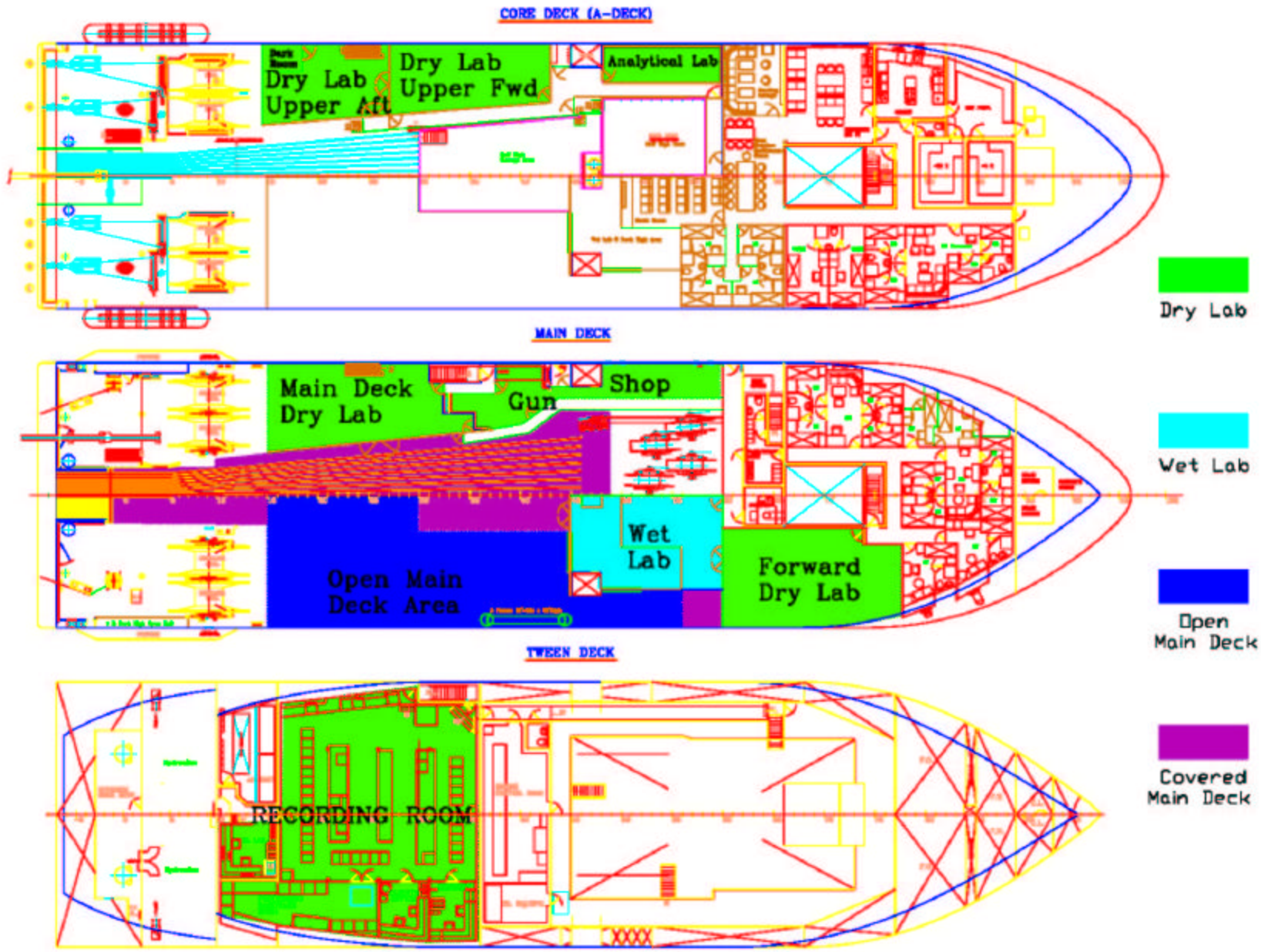
Principal use, by legs



Seismic work alone does not make for a full schedule

R/V _____, October 2005




CORE DECK (A-DECK)
Dry Lab
Upper Aft
Dry Lab
Upper Fwd
Analytical Lab
MAIN DECK
Main Deck
Dry Lab
Gun
Shop
Wet
Lab
Open Main
Deck Area
Forward
Dry Lab
TWEEN DECK
RECORDING ROOM
Dry Lab
Wet Lab
Open
Main Deck
Covered
Main Deck

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Replacement Vessel Science Capabilities

Streamers:	4 Streamers x 4 km (8 km) with separation up to 100m
Sound Source:	4 Linear Gun Arrays
DP:	Twin Screw with Bow Thruster expandable to include forward azimuthing thruster and stern tunnel thruster
Sonars:	Wide Hull for high resolution Deep Sea Multibeam and high resolution medium depth multibeam and subbottom profiler
Over the Side:	Ability to match or exceed Ewing for over the side handling
Lab Area:	Lab area far exceeds Ewing's capacity
Open Main Deck:	More open deck than Ewing
Portable Vans:	5 Van/Container capacity without effecting other operations

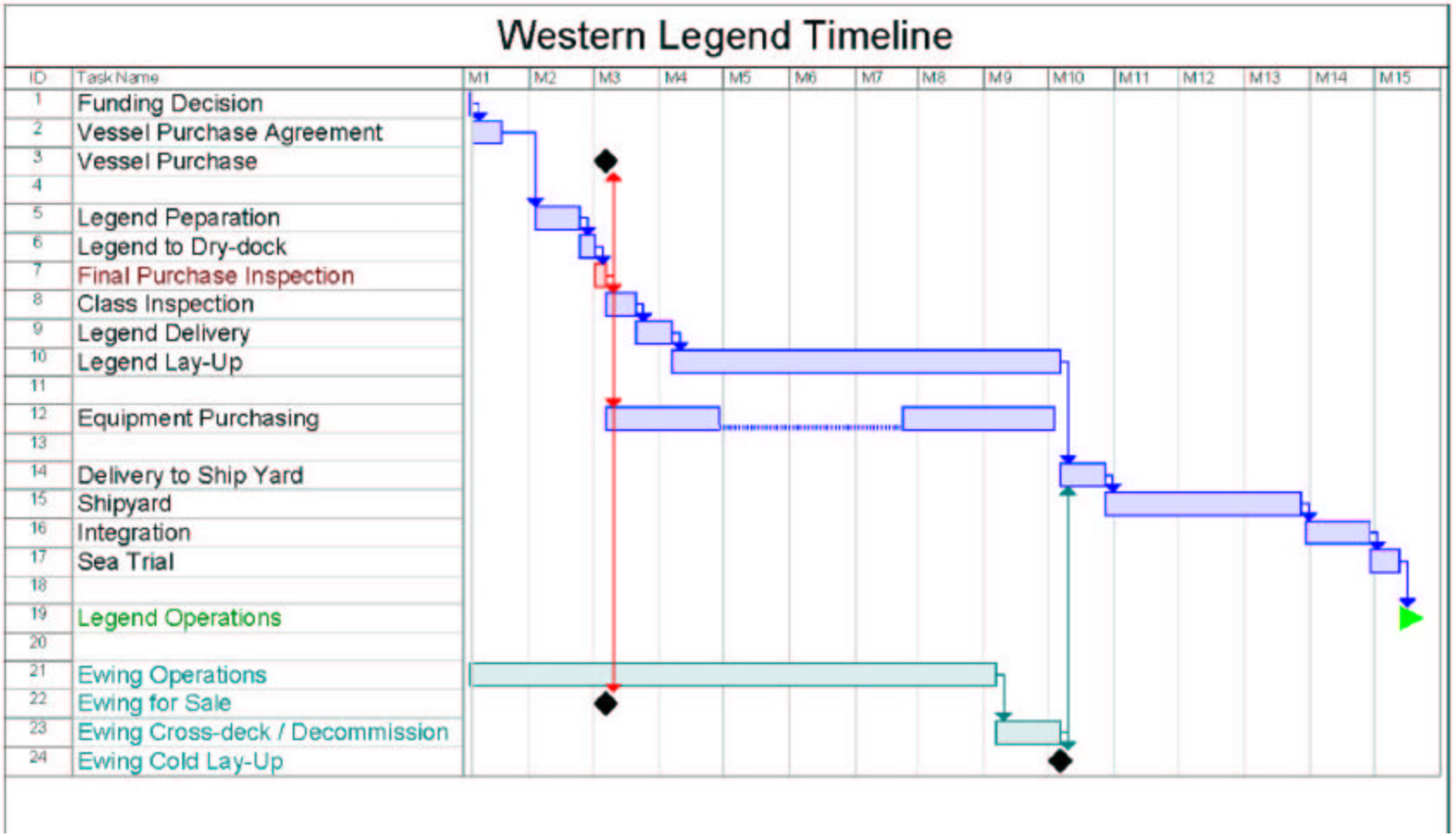
New Equipment:

4 x 10-airgun source arrays
4 x 6 km 480 channel MCS
DP controller
3D QC
Logging Computers
Fiber backbone
1x1 Multibeam
Subbottom profiler
SeaNet
IMet
Marine Mammal Obs. Stn.
Seismic workboat
….etc…….

Cross-deck & Upgrade:

Trawl, CTD & Hydro winches
150 kHz ADCP
POS-MV & various GPS
Gravimeter, Magnetometer
XBT, SeaCat
Plotters & Printers
….etc…..

Western Legend Timeline

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