

DSV **ALVIN** Updates

DESSC May 2025

NDSE NATIONAL
DEEP SUBMERGENCE
FACILITY



2024 Operations Summary

5 ALVIN DIVE EXPEDITIONS

• AT50-20 Arellano	EPR 9N	Jan '24
• AT50-21 McDermott	EPR 9N	Feb '24
• AT50-22 Joye	Guaymas Basin	April '24
• AT50-24 Levin	Aleutian Margin	May '24
• AT50-31 Bowles	Southern EPR	Dec '24

'24 DIVE STATISTICS

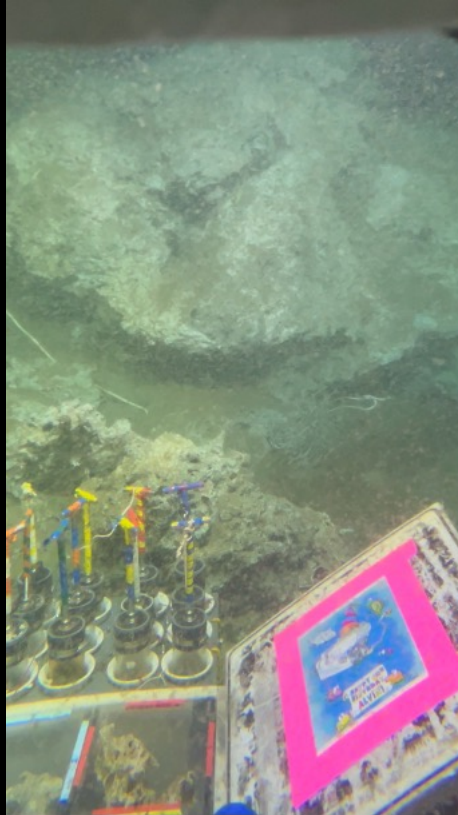
• DIVES COMPLETED	73
• MAX DEPTH	4973 m
• AVG DEPTH	2636 m
• TOTAL TIME SUBMERGED	551 hrs



ALVIN'S 60th BIRTHDAY



Alvin's birthday card
Jim Toomey, "Sherman's Lagoon"



June 5th, 2024 Alvin dive 5282
Aleutian Trench 2076m

DESSC May 2025

2025 Operations Summary

3 ALVIN DIVE EXPEDITIONS

- | | | |
|---------------------|--------------------|-----------|
| • AT50-33 Achberger | EPR 9N | Feb '25 |
| • AT50-34 Michel | San Diego training | Mar '25 |
| • AT50-36 Wozniak | EPR 9N | April '25 |

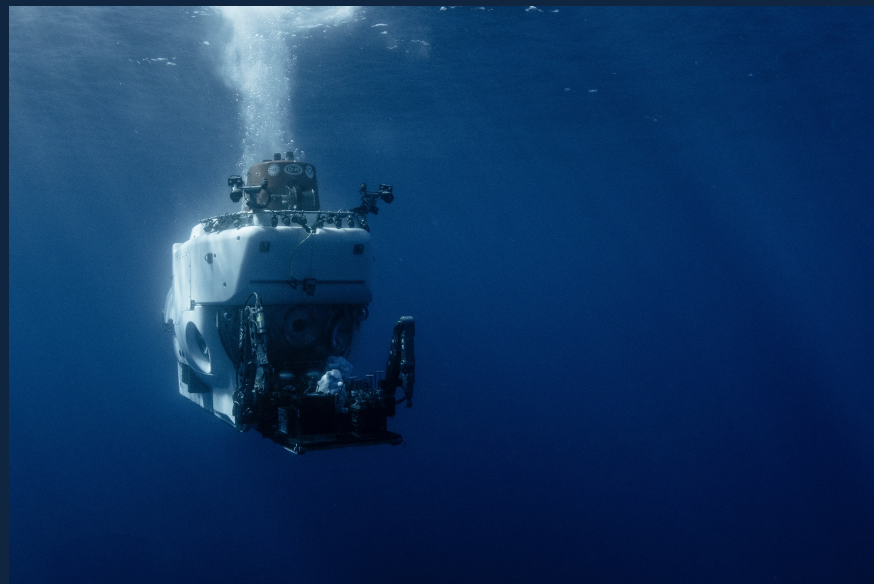
UPCOMING VOYAGES

- | | | |
|----------------------|-------------------|----------|
| • AT50-38 Demopoulos | Aleutian Volcanos | June '25 |
| • AT50-42 McDermott | Juan de Fuca | Sept '25 |

'25 DIVE STATISTICS

as of May '25

- | | |
|------------------------|---------|
| • DIVES COMPLETED | 32 |
| • MAX DEPTH | 4973 m |
| • AVG DEPTH | 2232 m |
| • TOTAL TIME SUBMERGED | 218 hrs |



ALVIN TEAM HIGHLIGHTS

2 - NEW PILOTS

Kaitlyn Beardshear Oct 2024

Benen ElShakhs March 2025

Returning Certification Coordinator

Lisa Smith

WELCOME BACK LISA!!

New ME Section Leader

Benen El Shakhs

New Position - Alvin Life Support Lead
Engineer

Nick Osadcia

New Position - Technical Program Manager

Anthony Tarantino

2 MATE engineering Interns in '24

Noah Bourasa (ME) on McDermott Feb '24

Amelia Topp-Johnson (EE) on McDermott Feb '24

2 MATE engineering Interns in '25

Daniel Silguero (ME) on Demopolis June '25

Kathrine Wade (OE) on McDermott Sept '25



ENGINEERING & TRAINING VOYAGE FEB 2025

HIGHLY SUCCESSFUL 9 DAYS OF OPS

- 8 days of diving with Alvin
- OV in-water testing
- SENTRY Engineering days
- NHHHC collaboration

TRAINING OBJECTIVES

- 8 days of diving
- Crew and PIT proficiency
- Emergency scenarios
- New crew orientation (Alvin and RV Atlantis)

ENGINEERING OBJECTIVES

- Testing of new systems – imaging, communications, data, software
- Evaluate shipboard noise (acoustic/electrical)
- Confirm post-maintenance operations
- Complete 1500m window requirements and
- Progressive controlled dives
- Testing of tactile controllers
- Acoustic modem testing

OBSERVATION VEHICLE TEST DIVES

- In-water testing of Alvin OV as part of our EPR revision effort
- Successfully surveyed the F1 wreck prior to the Alvin dive



THANK YOU NSF & ONR!!

ENGINEERING & TRAINING VOYAGE FEB 2025

WHOI Photogrammetry Collaboration with NHHC Grumman Avenger and US Submarine F1

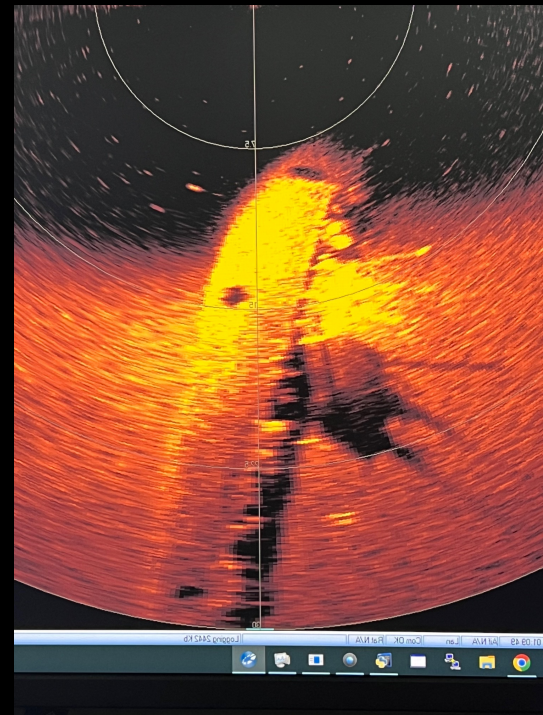


Wreck of Grumman Avenger @ 520m

NHHC & ONR DIVE ON WRECK OF USS F1



ONR & NHHC IN ALVIN ON USS F1
Rob Sparrock & Bradley Kruegar



USS F1 SONAR IMAGE
byALVIN Observation Vehicle

ENGINEERING PROJECTS

HIGHER ENERGY BATTERIES

- Progress made in '24 and into '25
- Investigation of new batteries on standby as we work through overhaul

NEW UNDERWATER TELEPHONE

- WHOI collaboration with Falmouth Scientific
- Replaces EDO 5400 and old SP23 Transducers
- Project nearing completion with further testing in '25

REVISED PENETRATOR DESIGN

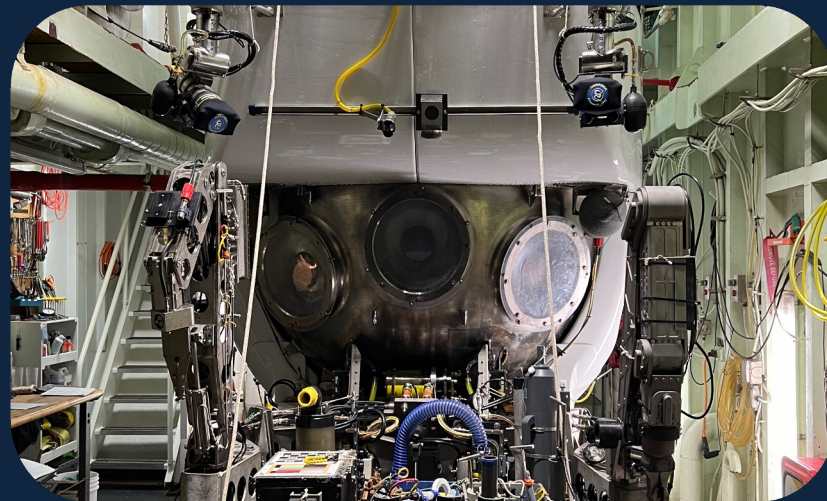
- Optical and electrical
- Project continues – working with NAVSEA to address question
- Integration delayed and not planned as part of the overhaul

REPLACEMENT EBA DESIGN

- Project on hold for now
- Priority effort to stabilize and maintain existing EBA's

TACTILE IMAGING CONTROLLERS

- Two new controllers integrated into imaging system as options
- Tested on Engineering Voyage and Wozniak trip
- Available for use from here on



ALVIN 2025 – 2026 OVERHAUL

REGULAR 5-YEAR MAINTENANCE OVERHAUL

- ORIGINALLY PLANNED FOR '26 or '27
- MOVED TO '25/'26 TO MATCH ATLANTIS 5-YEAR MAINTENANCE
- MITIGATES TWO EXTENDED DOWN PERIODS IN SUBSEQUENT YEARS

PRIMARY GOALS

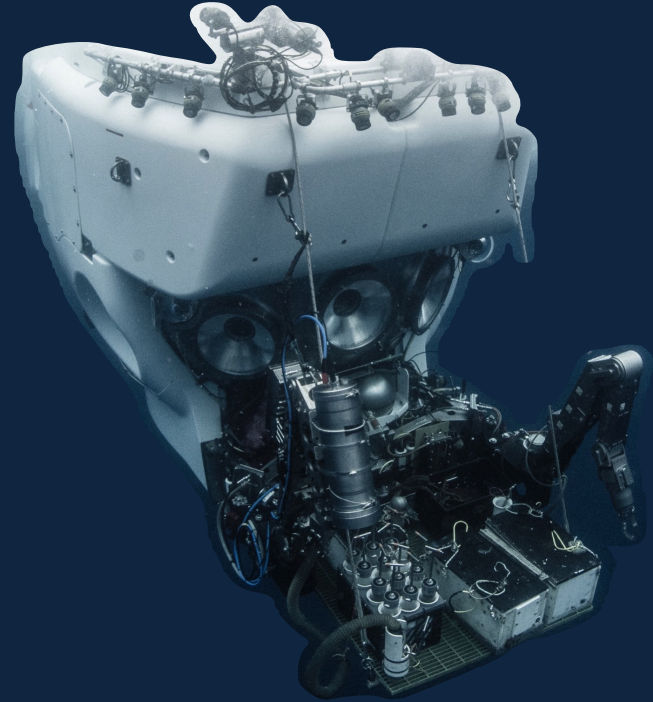
- STANDARD MAINTENANCE & REPAIRS
- MINIMAL SYSTEM CHANGES OR UPGRADES
- STABILIZE EXISTING SYSTEMS FOR RETURN TO OPS

SCHEDULE

- DEMOB IN SAN DIEGO IN EARLY OCTOBER '25
- SET UP AND START OF OVERHAUL MID-LATE OCTOBER '25
- OVERHAUL RUNS FROM NOVEMBER '25 TO MID-MAY '26
- MOB ON ATLANTIS MID-LATE MAY '26
- SEA TRIALS JUNE '26

PROJECT MANAGEMENT

- FORMAL PROJECT MANAGEMENT EMPLOYED
- PROJECT TEAM PLANNING UNDERWAY SINCE APRIL '25
- MATURE PROJECT PLAN AND WORK PLANS NEARING COMPLETION
- RISK ANALYSIS AND MITIGATION DEVELOPMENT IN PROCESS
- COMMITTED TO SUCCESSFUL PROJECT EXECUTION



STRATEGIC PROGRAMMATIC IMPROVEMENTS

- **Major revision to Alvin Management Plan completed– 1st major revision in decades**
 - Helps correct chronic program challenges
 - Creation of Alvin Leadership Team – acts as board of advisors to the Alvin Group Manager
 - Rewrite of position roles/responsibilities
 - New positions - Technical Manager, Project Manager, Training Coordinator, Life Support & imaging Lead
 - Revised Alvin & NDSF Org Charts – clarify reporting, delegated decision making, improve management efficiency
- **Addressing program expertise and sustainability challenges**
 - Creation of new Alvin Operational/engineering ladder – provides career opportunity/awareness for personnel
 - Broaden opportunity to qualify for positions traditionally held by one person
 - Enables strategic succession planning – corrects "Tag your it" promotion of available personnel
 - Enables better retention of personnel and valuable experience/historical knowledge
- **Employing strategies to strengthen team**
 - Detailed training plans/manual and syllabus – provides team with tools for their success
 - Expanded training opportunities (WHOI, Udemy, Seminars, Conferences)
 - Creating a coherent onboarding plan document for new team members – clarifies high-level two-way expectations

ALVIN'S ONGOING MISSION

Continue to provide superb, state-of-the-art access to the deep sea
Implement advanced methodologies and novel technologies
Increase community & public engagement and collaboration
Ensure the legacy of Alvin's discoveries, operational excellence, & safety, continues for many more decades

