Alvin Operations Summary

3 Cruises in 2020
• East Pacific Rise (Dec/Jan 2019/2020)
• Gulf of Mexico (Feb 2020)
• Gulf of Mexico/Eastern Seaboard (Feb/Mar 2020)

85 Operating Days
26 Sylvan/Mullineaux/Fornari
  • Microbiology - Superb cruise with concurrent Sentry/Alvin Ops
13 McClain
  • Biology - Excellent cruise although two days lost to fog in-port resulting in no engineering dive time – all remaining dives to science
22 Young
  • Biology - Excellent cruise overcoming many weather and clearance challenges

27 Dives
12 Sylvan (2,500m)
  6 McClain (2000m)
  9 Young (380m – 3300m)

✔ 204 Hours Submerged
✔ 154 Hours on Bottom
✔ 5.43 Hours Average Bottom Time per Dive

image by Lu Lamar
Alvin Highlights

Suspend Alvin operations in March 2020

Overhaul Commenced in March 2020

March 2020 - return to WHOI
April - May 2020 - offload and disassembly
June 2020 - April 2021 - system maintenance
May - July 2021 - vehicle reassembly
August 2021 - dockside testing
September 2021 - Seatrials/6500m Certification
October 2021 - SVE & return to operations

Superb & successful team effort during the COVID 19 Pandemic

Lots of demand for the 6500m Alvin in 2022!
1. **Kelley RCA**
   - Thompson, Single body, 24 hour ops, 2 legs
   - 44 dives 10-1/2 days in water 2904 m

2. **Miksis-Olds ADEON**
   - Neil Armstrong, single body
   - 3 dives, 9 hours in water, 887m
   - 3 engineering dives, 24 hours in water
   - Recovered lost CTD
   - Recovered 2x lost mooring
   - 3 engineering dives

3. **Fornari/Arellano/Mullineaux**
   - EPR-950 Hydrothermal/Larnae-Biofilms/Functional diversity
   - 19 dives, 13+ days in water
   - Max depth 2570m
• Telemetry replacement complete and fully successful
• Propulsion upgrade proceeding
• Sulis 4 k camera interface improved
• Sentry Kongsberg EM 2040 tested successfully on Jason
• Integration of Phins INU for improved navigation and closed loop control
• Sea-log being used extensively, mostly positive feedback
• Recognize concerns and developing transition from VV to Sealog pcar 2020

Thanks Dan!
Sentry Operations Summary

- **36 operating days**
- **1 Cruise Completed 2021**
  - 2021 Fornari
  - 2021 Young (Underway)
- **9 dives**
- **Total survey time:** 200 hrs
- **Total Survey coverage:** 72 km$^2$
- **Vessels:** R/V Roger Revelle
- **COVID-19 Impacts:**
  - 2 Week isolation in San Diego
  - Reduced pre-cruise maintenance due to personnel limits at work.

2021 Fornari cruise - March 2021

Pre-cruise in water testing at WHOI dock March 2021
Sentry Operation Highlights

- **9 Dives** on EPR extending high resolution survey.
- Use of **Kongsberg multibeam**, continues to be robust and we are happy with this investment.
- Integration of Fornari owned 20mpx **OIS camera** including strobe upgrade for improved light output.
- Engineering dive completed during Fornari, testing **new mission controller** opening up new mission survey types.