

DSV Alvin Pre-Cruise Chief Scientist Checklist

Overview: This pre-cruise checklist is designed to ensure the Chief Scientist, the Alvin Operations Coordinator, and the Alvin Expedition Leader all understand and acknowledge the science requirements and vehicle expectations before starting the cruise. We encourage all Chief Scientists to follow the checklist and to meet all deadlines to improve the Alvin team's ability to meet science objectives and increase the chance for a successful science cruise.

All communications, including questions and needed documentation, for pre-cruise planning should be sent to alvin-precruise@whoi.edu. This email list will ensure the Alvin Operations Coordinator, Expedition Leader & Engineering Leads are part of the planning process.

NOTE: Please include the PI, expedition # and a description of the inquiry, e.g., "AT50-12 Levin, bio boxes", in the subject line.

6 - 12 Months Prior to Cruise

- Send funded proposal to alvin-precruise@whoi.edu to enable the Alvin Team to review the science objectives, cruise location, and proposal details.

- Review website
 - [Alvin Vehicle Tour](#)
 - [Vehicle Specification](#)
 - [Systems, Sensors and Sampling](#)
 - [User-supplied Equipment](#)
 - [Alvin Capabilities](#)
 - Data Deliverable Document (*Link to be provided*)
 - [NDSF Data Policy](#)

- Review Camera configuration
 - If planning > 4500m dives, note PATZ (pan and tilt, zoom) cameras will be removed
(*Image of camera configuration to be provided*)
 - Determine placement of digital still camera
 - Alvin_GoPro2 can be mounted on Basket or Elevator (possibly arm as well) (*Link to user guide*)
 - Alvin does not provide photo mosaicing as part of the standard data product. If planning for photo mosaicing, alternate custom imaging arrangements must be discussed. Please contact alvin-precruise@whoi.edu.

- Science-provided Equipment
 - Determine if anyone in the science party will be bringing equipment (including sensors, sampling gear, cameras, biological boxes) to be installed **on or used in** the submersible (including any science user laptops).
 - Send details of the equipment, sizes, weight (in and out of water), and power requirements to alvin-precruise@whoi.edu. Alvin Operations Coordinator will evaluate all equipment for compatibility with sub systems, and determine if any science equipment needs [toxicity/flammability testing](#), [implodable/explodable testing](#).

- After any required pressure testing, send certifications to alvin-precruise@whoi.edu.
- Develop Alvin Basket plan** (400 lb max max payload in air, 16 sq ft. (48"x48"))
 - Begin to compile a list of basket mounted equipment including pictures, fully loaded wet and dry weights, dimensions and launch configuration.
(Image of basket to be provided)
- Develop Alvin Elevator plan** (if any)
(400-1000 lbs max payload in air dependent on elevator configuration)
(Image of elevator to be provided)
(Information in section below to be completed in MFP).
 - Determine if Alvin elevator operations are required
 - Begin to compile a list of elevator mounted equipment including pictures, fully loaded wet and dry weights, dimensions and launch configuration.

4 - 6 Months Prior to Cruise

- Develop detailed cruise and dive plans prior to the Alvin pre-cruise planning meeting.** (scheduled 4-6 months prior to the cruise). Send to alvin-precruise@whoi.edu a *draft* document containing:
(Information in section below to be completed in MFP).
 - Science Objectives
 - General dive targets to inform navy area clearances
(# of dives, approx. coordinates/ area, expected depths)
 - Intentions for user-supplied equipment
 - Intentions for facility-supplied equipment
 - Basket requirements
 - Elevator needs, if any (details discussed during pre-cruise meeting)
 - Imaging requirements
- Attend pre-cruise planning meeting(s).**
Pre-cruise meeting agenda
 - Overall cruise plan (Chief Scientist)
 - Observer dive briefings (Alvin Operations Coordinator)
 - Daily routine (Dive day schedule, science meetings) (Alvin Operations Coordinator, Chief Scientist)
 - Plans for Pilot-In-Training and any engineering dives (Alvin Operations Coordinator)
- Daily dive plan/launch and bottom targets**
(Information in section below to be completed in MFP).
 - General dive targets to inform daily/ cruise dive area requests at this time
 - Exact coordinates to be provided upon arrival to the vessel
Alvin (decimal degrees: e.g. 42.15188°)
Atlantis (decimal minutes: e.g. 42° 9.1128')
 - [Navy dive area clearance](#) (Alvin Operations Coordinator)
- Underlays/maps format/existing bathymetric and dive planning grids**
(Information in section below to be completed in MFP).

(Link to NDSF Underlay Tutorial page to be provided)

- Discussion of user-supplied equipment (Chief Scientist)**
(Information in section below to be completed in MFP).
 - Confirmation that all pressure, flammability, or toxicity testing needed has been completed or is planned (Alvin Operations Coordinator)

- Confirmation of all Alvin-supplied equipment to be installed on Alvin (Chief Scientist)**
(Information in section below to be completed in MFP).
 - Search Sonar
 - Magnetometer
 - Heat Flow Probe
 - Rock Collection Basket
 - Push Sediment Corers
 - Sm Capacity Slurp Sampler
 - Lg Capacity Slurp Sampler
 - Bio Collection Boxes (12x12x12")
 - Bio Collection Boxes (12x12x14")
 - Sealing Micro Bio Box (12x12x18")
 - Niskin Water Sampling Bottles (1.2 Liter)
 - Major Water Samplers
 - CTD
 - Scoop Nets
 - Temperature Probes

- Basket weight and space (400 lb max payload in air, 16 sq ft. (48"x48"))**
(Image of basket to be provided)
 - Provide a list of basket mounted equipment including pictures, fully loaded wet and dry weights, dimensions and launch configuration.
 - NOTE: If rock sampling is anticipated, recommended maximum pre-launch basket load- out weight should not exceed 300 lbs in air

- Planned Elevator work (if any)**
(Image of elevator to be provided)
(Information in section below to be completed in MFP)
 - Provide a list of elevator mounted equipment including pictures, fully loaded wet and dry weights, dimensions and launch configuration.
 - 400-1000 lbs max payload in air dependent on elevator configuration
 - NOTE: If rock sampling is anticipated, recommended maximum pre-launch basket load- out weight should not exceed 400 lbs in air

- Imaging system configuration** (information to be provided by Alvin team ahead of meeting)

- Alvin Observer Pre-Dive Briefing** which includes observer physical requirements & medical considerations to be shared with the science party.
- Weather/contingency planning
- Any planned media (Photojournalists, Documentary film crew, etc) participation

- Chief Scientist to contact WHOI Communications Department
- Generate action items for both parties with deadlines

No later than 1 Month Prior to Cruise

- Send draft dive plans including locations and coordinates to alvin-precruise@whoi.edu
- Review training videos
 - Alvin Imaging System user guide (AIS) (*link to user guide*)
 - Sealog & AIS training videos (*link to training video*)
- Review additional resources & informational pages
 - [Operations](#)
 - [Alvin Observer Pre-Dive Briefing](#)
 - [Safety information](#)

* This list is for planning with DSV Alvin and does not include the broader overall cruise plan.