Deployment plan for the Articulating Profiler Subsurface mooring

The Articulating Profiler Subsurface mooring will be deployed using the TSE winch, Armstrong “A” frame, Trawl winch, air tuggers, and a combination of tag lines/stopper lines.

Phase 1 - Finding a target area for the mooring to be deployed, with an optimal depth of 1500m for the anchor landing area.

Phase 2 – Setting up for the mooring deployment. We will go to the anchor target area to calculate the distance to start the set and drift for laying out the mooring behind the ship as we approach the designated target area

Phase 3 – From the starting point that has been calculated with the ship having 1 to 1.5 knots ahead through the water, the 64” sytntactic float with the adcp will be put over the stern through the “A” frame using the trawl winch to lift and lower as the “A” frame moves outboard. Using a quick release the Syntactic sphere will be dropped away from the trawl wire.

The trawl wire will then be used to support a Gifford block that will be guiding the mooring cable coming from the TSE winch.

As the tension picks up on the top end of ¼ “ mooring cable (945 m total length) that is attached to the Syntactic sphere that is in the water we will then attach a microcat, profiler stopper, and the profiler at the upper end of the mooring.

After the instruments are attached to the wire, we will coordinate the TSE winch, trawl winch, and “A” frame to safely lift the profiler off the deck and move outboard over the stern and into the water. After the profiler has been smoothly lowered to the water line, the TSE winch will continue to pay out the remaining mooring cable from the TSE winch.

At the end of the 945m length of 1’4” wire, 1 more microcat and profiler stopper will be attached to the bottom end of the mooring cable. Using a combination of stopper lines with deck cleats, and the TSE winch for back tension, the mooring cable will be connected to a series of glass ball flotation and slowly paid out over the stern of the Armstrong.

At the last set of glass balls, dual edgetech releases will be attached and then stopped off on deck.

A single 20 m shot of nylon rope will be wound onto the TSE winch and then attached to the bottom of the releases. Using the TSE winch and “A” frame positioning we will lift the releases off the deck and outboard over the stern while slowly paying out on the TSE winch. The bottom end of the nylon will remain on deck and stopped off with lines and the TSE winch. We will then bring the mooring anchor into position under the “A” frame and stop it off with safety lines.

At this point the trawl wire will have the west coast quick release attached to it and be attached to the lower part of the chain attached to the anchor. We will then attach the nylon to the anchor chain and transition the load of the mooring over to the anchor. Using the trawl winch and “A” frame will lift the anchor off the deck and outboard over the stern. Once we clear the stern we will lower the anchor to the water line and trigger the quick release, letting the anchor free.

After the anchor has been deployed we will monitor the descent of the mooring and possibly conduct a survey of the anchor position.