PROJECT REPORT

VESSEL: NOAA Ship *Oscar Elton Sette* SE-24-01

PROJECT PERIOD: February 19-23, 2024

AREA OF OPERATION: Leeward O‘ahu

TYPE OF OPERATION: Gear trials for SE24-03

ITINERARY:

19 February-Embarked scientists. Transited to leeward O‘ahu. Conducted welcome aboard/safety meeting and drills.

Conducted CTD and Over the side SOP/safety briefings for deck department, survey technicians, and scientists.

We attempted the EK80 calibration operation at night. However, the calibration requires a CTD to measure temperature, salinity, and pressure that is used to calculate sound speed and proper target strength values for the calibration sphere. The primary CTD would not communicate with the ship. Next, we tried the FastCat CTD and then the old '19' CTD to obtain the necessary data and neither of them worked. Because the calibration would not be accurate without the environmental data, we decided to push the calibration operations to the following night with the hope that the CTD would be operational by then.

With the aid of the Konsberg tech who was aboard, we discovered an issue with the EK80 that was installed during the last dry dock. The new 200 kHz General Purpose Transceiver Unit (GPT) was accidentally hooked up to the old 125 kHz transducer hence, the 200 kHz didn’t work. This means the *Sette* didn't have the full suite of EK80 frequencies (18, 38, 70, 120, 200 kHz).

20 February-Conducted Cobb trawl SOP and safety briefing for wardroom, deck department, and scientists. Attempted to put the Cobb net in the water; however, the final transfer lines were tangled on the reel. The net was recovered, unspooled from reel to the deck, untangled, and respooled. The deck department practiced setting and recovering just the Cobb net. They attempted to set the Cobb net and the doors; however, the starboard winch was still broken and could not hold the weight of the hanging door. Engineering replaced the no-return valve. Testing revealed the winch still did not hold the hanging door.

Survey techs and electronic tech fixed the primary CTD by re-terminating and

connecting the correct wires.

The EK80 was calibrated in the evening.

21 February-Engineering adjusted the starboard winch no-return valve setting and the winch still did not hold the weight of the door. Engineering reversed the no-return valve hydraulic hoses and the winch still did not hold the weight of the door.

Successfully tested and trained the deck department on setting and recovering the bongo net, 6' IKMT, and 10' IKMT.

22 February-Engineering removed the assumed functional no-return valve from the port winch and installed it on the starboard winch. During testing, the shackles that attach the wire to the door were jammed into the block. After spending four hours attempting to remove them from the block, it was decided that this could not be done at sea. This ended any further attempts to fix the starboard winch and set the Cobb trawl.

Conducted a 500 m CTD and collected water at 150 m. The water was frozen and returned to PIFSC for calibration of the new fluorometer.

Further trained the ship's crew on setting and recovering the bongo net and 6' IKMT. Set up the Tucker trawl. It did not fit between the A-frame and the trawl ramp. Scientists and the deck department brainstormed possible solutions (e.g., cinching the foot bar, lifting the head bar); however, a solution was not identified.

23 February-Scientists discussed new Tucker trawl solutions with the deck department.

No scientific operations conducted.

Returned to F9 at 1200.

After the ship was secured at F9, the stuck shackles were removed from the block. The starboard winch still could not hold the weight of the door. This indicates that the no-return valve is not the issue or not the only issue with the starboard winch.

MISSIONS AND RESULTS:

A. The objectives of this project are to test and train the ship's crew on the following scientific gear and associated ship winches and equipment. The intent was to have the gear fully tested and operational so SE24-03 would not lose DAS testing and training. Performance is based on conducting multiple deployments of each piece of sampling gear until the ship is comfortable with the operation

1. Cobb trawl. Net alone was deployed and recovered. The broken starboard winch prevented deploying and recovering the entire trawl; therefore, training of the ship's crew. This was considered an unsuccessful operation.
   A contracted Kongsberg tech was aboard to test and train the ship's crew on the net mensuration system. This did not occur because of the broken winch.
2. Tucker trawl. This net did not fit through the A-frame; therefore, training of the ship's crew did not occur. This was considered an unsuccessful operation.
3. Bongo net. This was deployed and recovered twice. The ship considered this appropriate testing and training; therefore, this operation was considered successful.
4. 6' IKMT. This was deployed and recovered twice. The ship considered this

appropriate testing and training; therefore, this operation was considered successful.

5. 10’ IKMT. This was deployed and recovered once. This gear is very similar to the 6’ IKMT. The ship considered this appropriate testing and training; therefore, this operation was considered successful.
6. Surface neuston net. This was not deployed due to lack of time and no changes were made to the gear from its prior deployment.
7. CTD. The CTD was not ready for deployment at the start of gear trials. However, it was fixed and successfully deployed twice. The ship considered this appropriate testing training; therefore, this operation was considered successful.
8. EK80 calibration. Successfully calibrated after the CTD was fixed.

B.

SCIENTIFIC PERSONNEL:

Joseph O’Malley, Chief Scientist, Pacific Islands Fisheries Science Center (PIFSC), National Marine Fisheries Service (NMFS)
Reka Domokos, Acoustician, PIFSC, NMFS
Jessica Perelman, Acoustician, Cooperative Institute for Marine and Atmospheric Research

Submitted by: O'MALLEY.JOSEPH.MICHAEL.1380924141 Digitally signed by O'MALLEY.JOSEPH.MICHAEL.1380924141 Date: 2024.04.26 15:10:17 -10'00'

Joseph O’Malley
Chief Scientist

Approved by: LITTNAN.CHARLES.LOUIS.1100552074 Digitally signed by LITTNAN.CHARLES.LOUIS.1100552074 Date: 2024.08.12 14:03:50 -10'00'

Dr. Charles Littnan
Science Director
Pacific Islands Fisheries Science Center