

RESEARCH VESSEL SURVEY REPORT

RV CEFAS ENDEAVOUR
Survey: C END 25 - 2016

STAFF:

Name	Role	Name	Role
Marc Whybrow	SIC	Alison Pettafor	
Sue Ware	2IC	Ben Wood	
Bill Meadows	Tech Lead	Alfie Howat	
Simon Archer	Shift Lead	Elisa Capuzzo	
Samantha Barnett		Haydon Close	
Peter Knight			

DURATION: Monday 5th December – Thursday 8th December

LOCATION: Happisburgh and the Monks, Silver Pit & Off Lowestoft

Primary Aims:

- 100% multibeam acoustic coverage of the site Happisburgh & The Monks (Figure 1),
- Underwater Fibre Camera tests:
 - Setting for video capture
 - Stills camera aberration
 - Forward looking camera
 - Aris acoustic Camera mounted on the fibre camera system
- Sidescan:
 - Responder beacon test
 - Deployment and recovery training
- Multibeam:
 - Testing of new Seapath unit
- Training
 - Opportunity for bespoke training/upskilling technical staff

Secondary Aims:

- Acoustic synchronisation unit between the multibeam, EK60 & EA600 systems
- New Seabird Rosette system training
- Survey Data backup – Create/update documentation
- Water sample at West Gabbard SmartBuoy site
- Zooplankton Sample at the West Gabbard SmartBouy site

NARRATIVE:

Note: The work at Happisburgh and the Monks didn't go ahead.

Sunday 4th December:

Everyone were on board by 23:00hrs ready off sailing at 00:30hrs
Pilot came on board at 23:53hrs.

Monday 5th December:

00:10 we let go and proceeded to make our way through the pair heads. The pilot disembarked at 00:43hrs and we made way for a timed arrival to the survey area for 08:00hrs.

08:00hrs – Welcoming toolbox talk undertaken.

09:00hrs – Fibre cable and camera system testing/training given to the early shift by the Technical Lead

We had some issues with the Aris camera not talking to the camera system, so we had some delay with getting the camera system into the water while we contacted the hire company to resolve the issue. In the meantime, this gave the Technical lead the time to show the late shift the fibre cable and camera system testing/training.

13:15hrs – 13:45 – Fire and abandoned ship drill took place.

14:00hrs – continued to find a solution for the Aris camera

15:15hrs – Camera system deployment and recovery toolbox talk given by Shift Lead

17:30hrs – Communication issue with the Aris camera resolved and we proceeded with a wet test of the camera system. The vis was very poor for the video cameras due to high turbidity in the water, but we were getting good data from the Aris camera. Ceased camera operations till next slack tide the next day.

18:00hrs - Multibeam calibrations/training for the late shift commenced, first finding a wreck at 52° 33.3942 N - 2° 32.68615 E. CTD/SVP training for late shift completed.

23:45hrs – Multibeam calibration complete.

Tuesday 6th December:

06:00hrs – Multibeam calibrations/training for the early shift commenced a 2nd wreck found at 52° 31.2865 N - 2° 27.9152 E CTD/SVP training for early shift completed.

09:00hrs Multibeam calibration ceased so we could deploy the camera system at slack tide. Again, the turbidity was dense and we were unable to see the seafloor but we used the opportunity to give some training on how to operate the system.

11:30hrs - Streamed north to the edge of the survey area to find a clearer station.

13:00hrs – Arrived on station and deployed the camera, again very poor vis. Picked new station just north-west to try again.

14:00hrs – Arrived on station and deployed the camera, this time we had great vis so we continued with the camera system training.

14:20hrs – Swapped the stills camera with the water corrected lens unit.

18:00hrs - Camera work ceased, 6 tow's completed.

18:30hrs - Moved onto Sidescan Acquisition training, but after a few minutes of the fish being in the water we lost comms to the fish, after some troubleshooting with the topside units, we decided recover the fish to check the cabling. Found exposed cables at the wet end and looks like it may have been rubbing against the tow arm while being deployed. This resulted in terminating the sidescan training. And we moved onto multibeam acquisition and processing training.

Wednesday 7th December:

00:00hrs – Multibeam acquisition and processing training completed 12 lines collected.

06:00hrs – Sidescan cable inspected and due to the damage to the cable it looks like water ingress into the cable. A mechanical and electrical termination will be required as a result of this. This will be completed during the maintenance period and it will be used as a training opportunity.

09:15hrs – Camera and Aris system trials commenced at North-West corner of the survey area.

13:00hrs – Camera and Aris system trials complete, over the last 3 days a total 11 camera stations completed

13:00hrs – Seabird Rosette toolbox talk, including gear prep and on desk demonstration

15:00hrs – Seabird Rosette toolbox complete

15:00hrs - Multibeam calibration, processing and creating/inputting lines into Tower training commenced over wreck at location 52° 50.436078 N - 2° 19.440552, CTD completed first.

18:00hrs – Multibeam calibration/processing completed.

18:00hrs – Finished at the survey area, now underway for a timed arrival to the West Gabbard SmartBuoy water and zooplankton sample station for 06:00hrs

Thursday 8th December:

05:45hrs - Arrived at West Gabbard SmartBuoy water station

06:04hrs – Plankton Ring Nets deployed

06:27hrs – Seabird CTD deployed

06:36hrs – West Gabbard SmartBuoy water station complete. Hanging on station till

08:00hrs to go through the Seabird CTD deployment, operation and recovery training. Realised that the SmartBuoy water sample was taken at the wrong position (positions wrong in Texas), these positions have now been corrected and the water sample was taken again including the training.

08:40hrs – West Gabbard SmartBuoy water station commenced.

09:15hrs – West Gabbard SmartBuoy water station including training completed. Now under way to collect water sample off Dunwich for the BEEMS WFD work. This work will be carried out on one of the workboats due to the shallow water, 3 crew and 2 scientific members will be involved.

12:00hrs – Arrived at Dunwich. A toolbox talk for the work held on bridge, with the workboat deployed shortly after.

12:55hrs – beams WFD water sample complete and workboat safely recovered. Sample taken at 12:32 at location 52° 15.996N - 1° 38.503E tide state 1.2Knt direction 188°. Now underway back to Lowestoft for a timed arrival 15:00hrs to pick up the pilot.

15:05hrs – Pilot on board

15:48hrs – Ship alongside and made fast.

Survey complete.

Results:

Underwater fibre camera system and Aris camera testing:

Total of 11 camera tow's were completed, this gave everyone a chance to operate the system, including the right procedures for starting up and shutting down.

Several different tests were carried out to solve the issue with the video being jerky on play back and yet to be analysed, the aberration of the stills camera. The changes made to the stills camera with the water corrected lens seems of improved this.

Aris Camera - Collection of 28GB of Aris acoustic camera footage, including videos of the seabed, seaweed, fish, crabs, the hull of the ship, sediment clouds and empty water columns. This data will assist in the development and training of object detection algorithms. It also highlighted a networking issue when the Aris camera is deployed on the SeaSpyder platform. This has now been documented and resolved.

Multibeam Calibrations:

We completed 3 calibration stations over 3 different wrecks, which everyone was involved and had a chance to see how this is completed.

Total of CTD's casts=6

Total of Multibeam line=34

Sidescan Testing:

We were unable to complete this aim due to the cable being damaged and getting water ingress. Re-termination on the cable will be completed during the maintained period.

Acoustic Synchronisation of multibeam and EK60 Echosounder:

Prewired cabling was traced from the Multibeam PU in the Instrument lab to the GPTs of the EK60 sounder in the sonar room. A misconnection due to changes in wire colour identification was identified and corrected. Whilst the Multibeam was active the signal was measured at the GPT and found to be as expected. The EK60 software was changed to external sync mode (slave). On trying several different connection regimes the GPT could not be made to act on the sync signal, so recourse to the manufacturer Kongsberg will be required to continue further.

Seabird Rosette CTD System:

System testing and training completed at the West-Gabbard SmartBuoy, this included 2 CTD's and 2 Plankton ring nets deployments.

BEEMS WDF Water Sample:

We received a request to collect a water sample for the BEEMS project WDF just of Dunwich, this was due to the boat planned for the work not being in service. Because of the shallow water, we launched one of the work boats to complete this task.

It's been a very successful gear trials and training survey with everyone getting something out of it. A big thank you to the P&O crew for being patient and accommodating for this adaptive survey.

Marc Whybrow
Scientist In Charge
08/12/2016

Master
Senior Fishing Mate

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