

DEPARTMENT FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS
CEFAS, LOWESTOFT, SUFFOLK, ENGLAND

2003 RESEARCH VESSEL PROGRAMME

REPORT : RV CEFAS ENDEAVOUR CRUISE 01/03

NARRATIVE:

Endeavour sailed from Lowestoft at 11:55 on 7 May 2003 and steamed directly to the area of the Silver Pits to start fishing at the earliest opportunity.

Fishing commenced at 21:45 and continued through to late evening on 9th May with a standard survey rigged GOV trawl.

Once on board the cod-end was emptied into the fish hopper and the fish processed normally to evaluate the facilities and lighting systems in both the sorting area and wet-lab area.

During the first part of the fishing trials the trawl was fitted with ITI trawl monitoring equipment in the trawl doors and on the headline and Scanmar trawl monitoring equipment fitted to the wing ends and headline.

Fishing was suspended during 9th May whilst the trawl doors were exchanged for those with Scanmar pods fitted. The trawl was also fitted with the Scanmar trawl geometry and trawl-eye sensors. The ITI spread sensors were fitted to the wing ends using the mounting positions previously used by the Scanmar units.

The trawl was shot again, once the gear had settled the Scanmar trawl geometry system was demonstrated successfully, veering and hauling sections of warp and observing the resultant changes in trawl geometry.

The TTN was deployed using the aft A frame and hydraulic docking latch, the operation was smooth and worked well, it is recommended that 2 pumps are used on the A frame to give acceptable speed of frame operation.

At 09:00 9th May a crew change took place at Lowestoft, depositing 5 scientific staff and taking on 2 FSL engineering staff and 2 scientific staff.

Following the crew change Endeavour proceeded south to undertake further trials.

The camera sledge was deployed using the aft A frame and main towed body winch, the sledge was deployed without its camera and electronics pack. The camera proved too light in its un-laden state to turn the cable sheave on the A frame scissors. A 28 inch aluminium block was fitted to the aft A frame gilson hook and the sledge deployed was successfully deployed.

It is not recommended that the Scallop dredge be deployed using the main trawl warps as has been done on the other RVs. The main warp is too heavy and will drag through the ground over which the dredge will follow, this will cause disturbance to the

sampled area and significant wear on the warp. A solution was proposed ; To tow the dredge using the gilson winch fitted with a heel block through the most inboard hanging block on the aft A frame. This method of deployment was trialled using the existing gilson wire, no heel block and the outboard hanging block, it proved very effective. The proposed solution is recommended for this and other similar items of gear deployed in this manner.

The Van Veen grab was deployed from the side A frame using the coring winch. The grab was deployed 5 times, the recovery times and sampling success were recorded, time was taken from the grab lifting from the deck to a sample being deposited in the sample tray:

Deployment No.	Firing result	Time	Sample size (l)
1	Success	3:25	1
2	Success	2:40	0.1
3	Success	2:37	0.5
4	Success	2:35	0.5
5	Success	2:25	0.5

There was a large amount of water in the samples, the jaws of the grab were completely closed on all deployments, the water ingress was attributed to the substrate type (shell/stone/sand/mud).

The day grab was successfully deployed from the side A frame using the coring winch.

The CTD was successfully deployed using the side A frame and CTD winch.

Due to concerns over the water depth the historic wreck off Dunwich was not surveyed, however several wrecks in deeper water were surveyed overnight 9th May using the EM3000 (multi-beam) sounder.

The SH80 scanning sonar was used to good effect in pinpointing the wrecks and steering the vessel over them. A WW2 U-boat wreck was overflown several times to gain information on multibeam operation and tidal constraints.

The ADCP was commissioned and worked successfully.

On 10th May a series of mooring trials were undertaken. All the trials were carried out over the stern, using port half of the upper split net drum as the main lift and for spooling of the wires and chain. The A frame mounted winch was used to lift the buoy in and out of the water despite the fact that the 18mm wire fitted was too heavy to easily lift out to connect to the buoy on recovery.

The preference would be to use the deck mounted gilson winches, winding on a short length of 12mm wire on top of the existing wires, as is done on Corystes.

1. Standard "Smart" buoy on single point mooring.
2. "Smart" buoy with met ring and side lift bridles, on standard mooring.
3. Standard height marker buoy on standard mooring.

All these were performed without any real problems, in largely light winds but substantial tides. The DP system coped well with the requirements of the mooring work.

In addition, a late request from J Rees to recover a wave monitoring "smart" buoy at the Outer Gabbard wavenet monitoring site, and relay it on a "Datawell" rubber cord mooring was successfully carried out.

The Reineck corer was successfully deployed using the side A frame, it was retrieved over the ships rail in the triggered position with sufficient clearance.

The 2m beam trawl was deployed using the side A frame. The trawl was successfully streamed using dynamic positioning to drive the ship to port at 1 knot. This will satisfy a major requirement for use of the 2m beam which up until now has proved difficult to achieve.

At 19:00 on 10th May with the cruise aims completed the ship sailed for Lowestoft.

Achievement of specified aims:

1. Trial scientific gear :
All the requested gear trials were undertaken with exception of the side-scan sonar due to electrical problems within the cable termination.
2. Multibeam Dunwich wreck site:
As described above alternatives to the Dunwich wreck site were surveyed.
3. Multibeam survey of area 222 :
As the EM3000 could not be calibrated due to engineer illness and a lack of experienced staff the area 222 site was not surveyed.
4. Evaluate Scanmar trawl monitoring system :
The Scanmar equipment was evaluated over 2 days fishing. In summary the Scanmar equipment performed very well and provides the data rates required for fishing surveys.

5. Test ITI trawl monitoring system:
The ITI system was tested over 2 days fishing, the ITI data stream was patchy and further investigations will be undertaken to determine the cause.
6. Test and accept TV/Satellite distribution system.
Problems were encountered with the TV system, these have been reported as defects.
7. Continue design of Electronic Data Capture (EDC) unit carriers:
A mock-up EDC carrier was taken on the cruise, evaluated and accepted as a suitable design.
8. Design balance head fittings:
Trial balance head mounting panels supplied by SIGS were taken on the cruise, these panels fit the existing rails and are acceptable. The wet-lab/deck door needs mounting bolts adding to allow a panel to be fitted so that staff measuring large volumes of fish can work next to the disposal chute.
9. Monitor Controlled Temperature (CT) room:
The CT room was monitored over a range of temperatures throughout the cruise, the resulting report is attached at annex 1.
10. Verify below decks winch reeving on gear:
The reeving on gear for the below decks winches appears to be working satisfactorily.
11. Collect biological samples:
Otolith samples were taken on the few opportunities presented :
Cod 10
Whiting 12
Plaice 4
Haddock 1
Lemon Sole 1
12. Recover and Re-Deploy Gabbard buoy:
The Gabbard buoy was recovered at 13:35 on 10th May, it's mooring changed for a wave-rider type mooring and redeployed at 14:35 at position
51 58.883 N
02 04.604 E
13. Work boat davit configuration:
As the weather was too calm for the davit heave compensation configuration it was not undertaken.
14. Test and confirm station logging using IT systems.
The IT systems are incomplete, some data was logged to the Citadel database but station logging was unavailable for testing.

15. Verify fish sorting and wet-lab area lighting levels :

The lighting is generally very good with one dark patch in the sorting area and the need for spotlights within the wet-lab.

16. Verify drainage in wet-lab :

The wet-lab was subjected to reasonable amounts of water and no drainage problems were encountered. It should be noted that there was no fish or sampling debris on the floors or any noticeable ship movement.

Richard Ayers
11th May 2003