MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1970 RESEARCH VESSEL PROGRAMME

REPORT: R V CLIONE: CRUISE 6

STAFF:

R B Mitson		10-17 April only
C R Hood		
J Rous		
J M Mackay	(MOD)	10-17 April only
J C Cook	(ARL)	" " "
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A J Lee		17-21 April only
A C Simpson		17-21 April only
N C Kelland	(NERC Unit of Coastal Sedimentology)	17-21 April only

DURATION:

Left Lowestoft 1145 hours, 10 April
Arrived Lowestoft 0950 hours, 21 April

LOCALITY:

1. Thames Estuary. 2. Shipwash - Inner Gabbard - Sunk

AIMS:

1. In collaboration with HMS ECHO to carry out trials with the ARL Scanner in the Thames Estuary on behalf of the Ministry of Technology's Committee on Marine Technology.

2. To study the sea-bed in marine gravel extraction areas using the ARL Scanner.

NARRATIVE:

CLIONE sailed from Lowestoft at 1145 hours 10 April and proceeded to Harwich, docking there at 1815 hours.

A meeting was held on board to discuss the programme in detail. The ARL Scanner dome was fitted at slack water about 2230 hours. At 0300 hours 11 April CLIONE sailed and the Scanner equipment was switched on at 0645 hours. Interference was so severe that it was impossible to work. A good deal of time was spent in trying to trace the source which turned out to be a ship transmitting as Radio North Sea. Shortly before 0900 hours the transmissions ceased and it was established that due to a breakdown they would not be resumed until the afternoon. HMS ECHO then laid a bottom target which gave good results and was checked to be in the correct attitude on the seabed by divers. Midwater targets were towed by rubber boat.

Interference became severe at 1400 hours and CLIONE moved away from the area surveying a number of wrecks as she worked towards Margate Roads.

On 12 April the weather was too bad for targets to be handled by a rubber boat. ECHO laid a number of targets on the seabed. Trials of range, and resolution of the various targets were made with the ARL Scanner up to sea state 5, then CLIONE anchored off Margate at 2000 hours. Similar work continued on 13-15 April with the addition of a variety of targets lowered by rubber boat which was moved in range as required during the latter part of 14 and 15 April.

On 16 April Mr C Deavin (Plessey Co) joined the ship for the day and work was carried out whilst CLIONE went through the Edinburgh Channels.

Some wrecks were surveyed near the approaches to the channels, then the Tongue Sand Tower was used as a target. The targets off Margate were again surveyed and work finished at 2000 hours. CLIONE proceeded to a point near the North East Black Deep Buoy and anchored until 0830 hours, 17 April.

After the Hi Fix equipment had been aligned a survey was made of sand wave areas. One of the areas was chosen as being suitable for using a bottom target. This latter was dropped by ECHO. After some work on it CLIONE anchored to carry out observations and measurements on a particular area. Further work was carried out on other bottom targets, then sand wave areas were crossed at different angles. The work was completed at 1900 hours when CLIONE set course for Harwich.

Harwich was reached at 2150 hours. Lt Cdr Mackay, Dr Cook and Mr Osborne left the ship and Messrs Lee, Simpson and Kelland joined. The dome cover was inspected and a minor repair made. Various items of equipment were embarked and the ship left Harwich again at 0800 hours, 18 April. She proceeded to the Shipwash area and at 1055 hours began a study of the effect on the sea-bed of marine gravel dredgers. A trailer dredger was working on a bank close south of the Shipwash Lightvessel. Her gear was observed in action using the ARL Scanner and her tracks were detected on the sea-bed. Transects were then made across the bank and the distribution of such tracks plotted.

Dredgers were next seen working at anchor north of the Shipwash Lightvessel. By using the ARL Scanner the gear of one was also observed in action and large holes were detected in the sea-bed. CLIONE anchored for the night off Orfordness.

On 19 April a Scanner survey of the bank north of the Shipwash Lightvessel was made and the distribution of dredger holes observed. Anchor dredgers were again observed in action. The ARL Scanner was also used to con CLIONE on to holes made by dredgers and their depth was measured with a conventional echo-sounder. Dredge samples were taken at key places. At 1850 hours on 19 April CLIONE proceeded to the vicinity of the Sunk Lightvessel and anchored there for the night.

The next day the sea-bed in an area near the Sunk Lightvessel, where two dredgers had been seen working the previous day, was surveyed. This survey was completed by 1138 hours and CLIONE proceeded to a bank to the west of the Inner Gabbard where an anchor dredger was working. This was observed in action and the bank was then surveyed using the ARL Scanner and an echo-sounder. This survey was completed by 1635 hours. Further dredgers were sought in the area, but, none being found, and there being insufficient time to proceed to the more northerly gravel extraction areas, it was decided to finish work and the ship proceeded to Harwich. This was reached at 2235 hours. The dome was taken off and CLIONE sailed at 0200 hours, 21 April. Lowestoft was reached at 0950 hours.

RESULTS:

1. Tests with the ARL Scanner on various targets were carried out and certain wrecks were viewed and sand wave areas studied.

2. The ARL Scanner was shown to be a useful tool for studying marine gravel extraction areas. Both tracks caused by trailer dredgers and holes caused by anchor dredgers can be detected and their distributions determined. Using conventional echo-sounders on holes located in this way their depth was found to be usually about 6 feet, but in the vicinity of the Inner Gabbard holes with a depth of about 15 feet were found. No holes were found in areas that were not known to have been the scene of dredger activity recently.

A J Lee
R B Mitson

23 April 1970

Seen in draft: M R S (Master)

DISTRIBUTION:

Basic list
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Mr Hood
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