

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

1970 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: 15B/70

(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

R R Dickson

R B Mitson

D J Ellett

B K Clarke

N C Kelland

P Hooper

DURATION

Left Dover 2305 hours 13 December

Arrived Lowestoft 1330 hours 17 December

All times are British Standard Time

LOCALITY

Off Hastings

AIMS

To survey banks due to be exploited for marine gravel.

NARRATIVE

Replacement staff joined ship in Dover at 2300 hours 13 December and CLIONE proceeded immediately to the area of the surveys anchoring in thick fog en route some large fish (sprat?) shoals were observed and filmed using the ARL scanner.

On reaching the survey area two separate surveys were planned. The first and principal survey took the form of a detailed examination of bottom topography and gravel depth in a $1\frac{1}{2} \times 2\frac{1}{2}$ mile plot to the north of Shingle Bank; this plot comprised the MAFF/UCS "test plot" together with its surrounding sea bed to the distance of $\frac{1}{2}$ mile, and the survey was carried out using ARL scanner, 5 kHz boomer and 100 kHz sounder. Owing to interference from the 100 kHz sounder on the scanner display, and due to the fact that the optimum direction of the scanner survey lay at right angles to the optimum direction for the boomer survey it was decided to survey the area twice; the scanner survey was carried out first and the sounder/boomer survey second.

At 1005 hours 14 December the scanner survey began in perfect weather and continued uninterrupted until completion at 1925 hours. Twenty-nine north-south legs were worked at 200 yard intervals giving a total survey mileage of some 45 n.mi. The scanner was kept in horizontal mode, trained due west and filming and video were continuous. In addition, 114 polaroid snaps were taken to give a summary picture of bottom topography over the entire bank, and the Decca position was read on each occasion to give a detailed fix on the accuracy of the Decca track plotter. The bottom topography was seen to consist mainly

of small sand/gravel ripples trending mainly SSE-NNW, but occasionally large ridges of sand were seen at right angles to these features. In small areas of the survey the bottom was featureless suggesting a predominance of gravel. One tight group of anchor dredged holes was seen. Other features of interest were two wrecks (one charted, one uncharted) and what appeared to be the uncharted wreck of an aircraft.

Since the Decca error was known to increase at night, the survey was then discontinued and CLIONE proceeded to investigate three wrecks outside the survey area on behalf of the Hydrographic Department of the Navy. The first was not found at its reported position but the second (MV ELLA SAYER?) and third (HMS GURKHA?) were found and film and polaroid snaps were made. CLIONE then anchored at 2320 hours.

At 0730 hours 15 December CLIONE returned to the "test plot" survey area for the sounder/boomer survey. This was started at 0928 hours and proceeded continuously in perfect weather until 1645 hours when gathering dusk rendered the Decca less accurate. Thirteen east-west legs each $2\frac{1}{2}$ miles long were completed with excellent records on both instruments, and the gravel basement was clearly distinguished. Decca readings were taken every 3-4 minutes as a fix on the track plotter and the wave recorder was run to allow corrections to be made to the observed sand-wave heights.

At 1800 hours CLIONE proceeded for concession areas 2A and 2B (which include Shingle Bank) and eight north-south legs at 500 yard intervals were surveyed by ARL scanner with the scanner-head in horizontal mode trained due east. Filming and video were continuous and 54 polaroid snaps were taken as a summary of bottom topography. A Decca fix was again made at each of the polaroid positions. As regards natural topographic features, the survey area was almost wholly featureless, suggesting continuous gravel, although minor sand ripples were observed in patches and a few large sand waves were observed in the east of the area. The directions of trend of these latter features were as observed on the "test plot". It was apparent however, that a considerable amount of dredging had been carried out in the west of the survey area. The complex of large pits pointed to the work of anchor dredgers, though two trailer dredger tracks appeared to be present in addition to these.

At 2105 hours the "Shingle Bank" survey was completed and CLIONE proceeded to investigate wrecks found in the first survey area (ie, in the "test plot"). Both ship wrecks referred to earlier were found and recorded on film and polaroid. The uncharted wreck was almost flush with the surface, and from the number of cross beams, appeared to be an old wreck of a wooden vessel. The second (charted) wreck was clearly seen to be a more modern cargo vessel. CLIONE then proceeded to the position where the "aircraft" wreck was seen on the first survey. Again this wreck was found and recorded on film and polaroid. It appeared to be the wreck of a large plane (ca. 30 yards long), standing proud of the sea bed in vertical scan. CLIONE anchored at 2255 hours.

At 0905 hours 16 December, CLIONE resumed the uncompleted sounder/boomer survey of the "test plot". The two remaining east-west legs were surveyed as before, four north-south legs were worked across the area along the lines of greatest geological interest (to tie the results of the east-west legs together), and two additional east-west legs were worked in the centre of the survey area to give greater detail in the area of the "test plot" itself.

This work was completed by 1410 hours and CLIONE proceeded once again to the "Shingle Bank" survey area with the aim of investigating in greater detail the dredger pits found the previous day. One transect was worked across the bank using ARL scanner and boomer together, in order to test the depth of gravel in

relation to surface features. The boomer was then brought aboard for ease of manoeuvring, and by the use of the scanner CLIONE was then coned towards individual dredged pits in the gravel. Steering the ship directly over these pits the depth of the holes was accurately recorded on the 100 kHz sounder set at maximum scale. Decca fixes were made every 4 minutes. The pits examined proved to be up to 4 metres deep. An attempt was made to record the depth of a particularly distinctive hole so that re-survey at a future date would allow some estimate of infill-rate. Unfortunately this hole was lost on the scanner and could not be re-located.

With the majority of the work completed CLIONE then sailed at 1600 hours for Boulogne docking at 2158 hours. The dome was removed, and at 2340 hours CLIONE proceeded for Lowestoft.

At 0850 hours 17 December and in worsening weather the final work of the cruise was carried out 5 miles off Southwold. In 15 fm depth a subsurface float was moored 5 fm below the surface and the guillotine cutting-device of the acoustic release was triggered by a cable from the ship. The 1½" circumference mooring wire was cut cleanly and the float and anchor chain were recovered separately. Unfortunately, although the cutting device surfaced with the float, it was lost during recovery through kicking of the float in heavy swell. CLIONE then continued to Lowestoft, docking at 1330 hours. The RN canvas dome cover survived 816 n.mi. without damage (total for cruise 15A and B).

The success of the gravel surveys was due largely to the ability to navigate accurately over long periods along closely spaced survey legs, and the assistance of Captain Sutcliffe and his crew in carrying out this task is gratefully acknowledged.

R R Dickson
22 December 1970

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DISTRIBUTION

Basic List

R R Dickson

R B Mitson

D J Ellett

B K Clarke

N C Kelland

P Hooper

Unit of Coastal Sedimentation

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