

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

1974 RESEARCH VESSEL PROGRAMME

REPORT: R V CLIONE: CRUISE 16

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

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DURATION:  
Left Lowestoft 1130 h 4 November  
Arrived Lowestoft 0800 h 12 November

LOCALITY:  
Southern Bight

AIMS:

- 1 To measure the performance of the solid state sector scanning sonar receiver and transducer under various target conditions.
- 2 To carry out first trials of the MAFF high power transmitter.
- 3 To interrogate the long life acoustic tag in the Sandettie area.
- 4 To check the performance of the Loughborough Scanning sonar.

NARRATIVE:

After leaving Lowestoft CLIONE anchored for a short time whilst the rubber boat returned to port for some spares. Course was set for Dover which was reached at 0650 h 5 November. The day was spent in carrying out source level, beam pattern and sensitivity measurements, the rubber boat carrying all measuring equipment. At the same time phasing checks were being made through the whole receiving system. On 6 November source level and beam pattern measurements were made on the mini-scanner transducer whilst its receiver was being phased and checked. The MAFF high power transmitter was used as a driver for the source level measurements. Work was also proceeding to set up the new photo display. On 7 November CLIONE left Dover at 0630 h en route for Margate Roads where she anchored at 0920 h. Poor weather conditions made work difficult in the rubber boat but the required measurements were eventually obtained. Later in the day a number of wrecks were surveyed. Resolution measurements in the horizontal and vertical scanning modes were made in Margate Roads on 8 November. After the equipment had been adjusted further surveys of wrecks were made. The weather conditions were not suitable for small boat work on 9 November so targets attached below a buff were floated away from the anchored ship whilst different combinations of equipment parameters were used and compared. At 0630 h 10 November CLIONE left Margate Roads for the Sandettie area to carry out Aim 3. An unsuccessful search was terminated after 6 h when some wrecks were surveyed off Folkestone. CLIONE then found a sheltered anchorage near Dungeness. A sudden change of gale force winds caused this anchorage to become untenable and at 0200 h 11 November the ship weighed anchor to seek shelter in Margate Roads. Strong winds continued from the south, but a lull came in late afternoon so the opportunity was taken to run the sector

to line recorder in an area of wrecks. Later, when final adjustment had been made to the new scanner further surveys were made of wrecks. At 2130 h CLIONE set course for Lowestoft where she docked at 0800 h 12 November.

## RESULTS

Aim 1. Many source level measurements at ranges from 50 to 200 m showed that a marked deterioration had occurred since June 1974. The same order of loss was found in the receiver sensitivity measurements, pointing to a common factor in the transducer system. Although this deterioration caused a loss of range, the general results with the solid state scanner were extremely good. Improvements suggested by Loughborough University have been incorporated in the MAFF scanner and there is no doubt that these contribute to the quality of the results. In addition to the main scanning equipment tests the low resolution system, its transducer and the MAFF reverberation gain controlled amplifier were used with good results.

Aim 2. The MAFF high power transmitter worked well at full power.

Aim 3. Although an extensive search was made for the long life acoustic tag its signals could not be seen and it must now be presumed dead.

Aim 4. The Loughborough University sector scanner worked well; it has a performance comparable to the MAFF scanner.

R B Mitson  
12 November 1974

SEEN IN DRAFT: JF (Captain)  
HWS (Fishing skipper)

INITIALED: A J L

## DISTRIBUTION:

Basic list

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