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

1978 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 15
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

- R B Mitson
- M G Pawson
- B J Robinson
- A M Watson
- B F Riches

DURATION

Left Lowestoft 1200 h, 5 December
Arrived Lowestoft 2000 h, 16 December

LOCALITY

Isle of Wight and Southern North Sea

AIMS

1. Acoustic calibration of the MAFF sector scanning sonar.
2. To obtain recordings from fish shoals by scanning vertically.
3. To measure attenuation through a fish shoal horizontally.
4. To estimate fish size distribution.

NARRATIVE

CLIONE left Lowestoft on 5 December. As a result of weather conditions and the forecast it was decided to anchor off Margate overnight and to attempt a fish and seabed acoustic survey between the Sandettie and Ruytingen banks in daylight on 6 December. However, with conditions worsening and a SE gale 8 imminent the ship moved close inshore to begin the acoustic calibration, which was continued all day. On the 7 December the SE gale reached force 9 around the SE and S coast so the calibration of the scanner system was extended by the use of both passive and active targets whilst the ship remained at anchor close to Margate. There was little change in the weather until midday on 9 December when CLIONE raised anchor to continue the journey to the Western Channel.

Early on 10 December conditions deteriorated to such an extent that the ship was forced to seek shelter off Ryde in the Isle of Wight, remaining there on the 11, 12 and 13 December in winds up to 80 knots. There was no prospect of a change in the weather soon enough to allow the ship to reach the last reported areas of fishing off the Cornish coast, in time to do any work during the remainder of the cruise. It was thought that even if the weather improved sufficiently for the ship to move after 24 hours, the opportunity for fish echo recording from the sector scanner, combined with fishing for identification, would be limited and could be accomplished with two scientific staff. It seemed clear from the weather charts that the wind

would go to the NE. Messrs Pawson, Robinson and Watson therefore disembarked at 1400 h on 13 December to Ryde during a brief lull in the gale, in order to travel by ferry and train back to Lowestoft.

Winds were below hurricane force during the night of 13 December, the forecast indicating a further decrease from force 9 to 7 or 8. After midday on 14 December, CLIONE left Ryde and moved to an anchorage off Bembridge but it was not until 2100 h that conditions were judged to be suitable for passage to the Dover Strait. At 0800 h on 15 December the ship was just south of Dover when the sector scanner was lowered in preparation for a fish and seabed survey across to the Sandettie/Ruytingen channel where 2 transects were worked. No workable fish traces were seen, either on the white line echo sounder recording or the sector scanner. A survey was continued in the direction of the Drill Stone area up to 2130 h but again no fish were detected. Early on the morning of 16 December a NE gale force 8 blew up without warning and CLIONE had to dodge, there was no sign of decrease by midday and with a further warning of gale force 7-8 the ship dodged up to Lowestoft and docked at 2000 h.

RESULTS

Aim 1: Long range calibration of the MAFF sector scanning sonar was accomplished by means of a spherical target on loan from the Admiralty Marine Technology Establishment (AMTE) and a previously calibrated acoustic transponder. For the given electrical calibration of the receiver an acoustic source level of 230dB/ μ Pa/m was obtained at ranges from 120m to 270m. Variation of acoustic power with electrical power was measured and recorded. Sidelobe level was 6dB below the main lobe at full power. Receiving sensitivity of individual elements in the array was -195dB/V/ μ Pa; unchanged from measurements made during Cruise 4/78. The new detector system was calibrated for use with the AMTE digitizer and was shown to have a suitable dynamic range with good linearity. Seabed observations showed a maximum detection range of 320 m at the anchorage off Ryde I.O.W.

Aims

2,3,4 : Unusually severe weather conditions prevented CLIONE from reaching the fish shoals off the SW coast where the work was intended to start. An acoustic survey on the one fine day of the cruise failed to locate any fish.

R B Mitson
29 December 1978

SEEN IN DRAFT: G R Oliver - Master
R Graham - Fishing Skipper

INITIALLED: AJL

DISTRIBUTION:

Basic List
R B Mitson
M G Pawson
B J Robinson
A M Watson
B F Riches