

*Indexed* 86

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

REPORT : RV CLIONE : CRUISE 10

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

STAFF: P O Johnson  
C R Hood  
J Casey  
A M Watson  
S Warnes  
L Goldsmith

DURATION: Left Lowestoft 0900h 14 August  
Arrived Lowestoft 0915h 29 August  
(All times are BST)

LOCALITY: West Central North Sea

AIMS:

- for
1. To carry out an acoustic survey/spawning herring concentrations off the Yorkshire coast and Longstone area using a towed body with 38kHz transducer and echo-integration equipment.
  2. To obtain samples of adult herring by fishing for age, maturity and fecundity studies.
  3. To assess the distribution and abundance of early stage herring larvae over the main spawning grounds using a high speed plankton sampler and measure temperature/salinity profiles in these areas using the CTD recorder.

NARRATIVE

After leaving Lowestoft at 0900h and on passage to the working area a diversion was made around midday to stand-by a coaster which had run aground on the Haisborough Sands. A rescue helicopter was on station when we arrived, but the vessel managed to refloat without assistance, following which we resumed our passage. The acoustic survey commenced that evening at 2130h off Flamborough Head where a fleet of 14 large Dutch trawlers were fishing for herring about 10-12' off the coast. The closure of the grounds between the 6 and 12 mile limits came into effect at midnight on 14 August, when these vessels moved just outside the limits. A second group of about 17 large trawlers was noted close to the 12 mile limit between Robin Hoods Bay and Scarborough. The area between Robin Hood's Bay to a point north of Whitby and up to 15 miles offshore was covered overnight on 14-15 August and during the following day. The area south from here up to 20 miles off the coast from Flamborough Head was next surveyed over the following two days. The towed body was brought aboard at 1630h on 17 August when passage was made to the Longstone area where the survey resumed at 0330h the following morning. The area between Coquet Island and around the Farne Islands was covered on the 18-19 August in very foggy conditions. During this period the towed body collided with a large tree floating in the water, but fortunately no damage was sustained except for a few broken fairing clips on the towing cable. The towed body was raised again at 1315h on 19 August when CLIONE made passage for Sunderland, docking there at 1700h. Repairs to the gyro-compass generator motor were carried out here and fresh water supplies topped up. Sailing was delayed due to a force 9 south westerly gale and CLIONE left at 0700h on 21 August. The acoustic survey recommenced at 1020h to cover the area between Skinningrove and Whitby. The area between Whitby to a point south of Flamborough Head was re-surveyed over the following two days until a severe S'yly gale with winds of 50 knots caused a break in operations in the early hours of 24 August. Anchorage was then made in Scarborough Bay until the weather improved. The anchor was raised at 2200h that day and the survey resumed at midnight. The Flamborough area survey was then completed and over the following days several repeated grids were carried out

between Robin Hoods Bay and Scarborough, off Whitby and finally off Flamborough again. A gale on the night of 27-28 August stopped the survey for a further few hours. An overnight return was made to Lowestoft following completion of the survey at 1920h on 28 August.

Contact was made with the fishery protection vessel HMS JERSEY earlier in the trip to confirm the positions of foreign herring fishing vessels in the area, but did not succeed in making contact later in the trip to pass on information concerning suspected violation of the closed area by foreign vessels at night. Radio contact was also made with the MAFF surveillance aircraft on 28 August and these suspicions passed on to them. Several local fishing vessels also reported catching large quantities of dead herring in their bottom trawls in the areas where the Dutch fleets had operated, notably off Whitby and Flamborough Head.

## RESULTS

1. A total of 1738 nautical miles were acoustically integrated using the SIMRAD QM II and QD systems. Extensive comparability tests were made on the two systems over an extreme range of signal inputs varying from very low density background, to maximum densities of around 30,000 tonnes per Km<sup>2</sup> generated by the massive shoals encountered towards the end of the survey. Optimum settings were determined which gave very good agreement between the outputs of the two units. The APRICOT computer was used to develop a suitable spreadsheet format to process data provided by both the QM and QD units. Additionally a 6809 micro-computer with software kindly loaned by the British Antarctic Survey (NERC), Cambridge, was used as a QD controller and data store. A Racal Decca Lat/Long converter was used to provide positional data.
2. Three main areas of herring concentration were found, these located 7-10 miles N/NE of Whitby 10-12 miles off Robin Hood's Bay and 10-13 miles E/ESE of Flamborough Head. A smaller concentration was also located 5-6 miles ENE of the Longstone.
3. Fourteen pelagic trawl hauls were made with the 800 mesh Engel trawl, which provided eleven samples of herring for length, age, maturity and fecundity. Catches ranged from a few baskets up to 30-50 tonnes.
4. Additional fecundity material was collected for Dr Greer-walker and blood samples from maturity stage V and VI fish for Dr Scott.
5. A large proportion of the fish sampled during the survey were in stage V or V/VI maturity, but on the last haul made off Robin Hood's Bay on 27 August about 75% were ~~reper~~running fish. The average lengths of the samples taken did not vary a great deal between the main concentrations, with an overall value of 27.1cm the standard deviation of the 11 mean values amounting to  $\pm 0.5$ cm. Over the period of the survey there was a progressive increase in the size and density of shoals, and the largest were recorded over the last few days.
6. Aim 3 was not fulfilled due to lack of time and bad weather intervening towards the end of the trip when it would have been carried out.

## GEAR DAMAGE

The 800 mesh Engel trawl suffered bad damage on the last haul made on 27 August. This resulted from an exceptionally heavy catch of herring leading to difficulties in releasing the surplus catch from the cod-end sleeve. The net was steamed astern to release the fish but unfortunately became entangled with

the propellor and the damage resulted from this, and having to cut through the belly and batings to free it.

P O Johnson  
29 August 1985

SEEN IN DRAFT      Master:- M J Willcock  
Fishing Skipper:- R C Newrick

INITIALLED: D J G

DISTRIBUTION

Basic List+

P O Johnson

C R Hood

J Casey

A M Watson

S Warnes

L Goldsmith

