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

1982 RESEARCH VESSEL PROGRAM 3

REPORT: RV CORELLA : CRUISE 4B

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

STAFF:

- E G Shreeve
- J H Nichols
- B F Riches
- B C Mumford
- P Bryan (Grimsby)
- D Amos (Decca Survey Ltd)

DURATION:

Left Lowestoft 0800 h 22 March  
Arrived Lowestoft 0930 h 26 March

All times are Greenwich Mean time

LOCALITY:

Southern Bight

AIMS:

1. To carry out operational trials of the MAFF/Guildline sensor package fitted to a redesigned Lowestoft High Speed Sampler.
2. To evaluate the Decca Survey Ltd tracker equipment as a potential system for monitoring Dumping Vessel operations.
3. To test the new single element, lightweight headline transducer.

NARRATIVE:

CORELLA sailed at 0800 h and proceeded to the Rough Tower dump site to carry out Aim 2. The Decca Survey track monitoring equipment was installed en route and two circuits within the dumping area were completed during the afternoon of 22 March. The Decca Survey engineer, D Amos, was collected by a Harwich Pilot cutter at 1815 h and CORELLA proceeded to deeper water to commence tests under Aim 1.

Initial tows to test and calibrate the MAFF/Guildline 76 cm sampler (MG 82-76) were completed off the Essex coast during the evening of 22 March and continued throughout the following day. The equipment was set up for operational use and a sampling grid was started at 2000 h on 23 March. The grid was successfully completed at 1600 h on 25 March and the ship was made ready for fishing operations.

Two midwater trawl hauls were carried out to test the new headline transducer (Aim 3) during the evening of Thursday 25 March.

CORELLA docked at Lowestoft at 0930 h on Friday 26 March.

**RESULTS:**

Aim 1. After initial trials and teething troubles had been attended to the MAFF/Guildline Plankton sampler (MG 82-76 cm) was calibrated. During this period various combinations of diving plane and or Scripps or kite depressor plus weights were experimented with. The final most satisfactory combination, to achieve acceptable deployment at ships' speed from 3 to 6 knots, was a Scripps depressor plus a dead weight of approximately 60 lbs secured to the diving plane. The system was then put into operational service.

33 plankton stations were successfully completed (Fig 1) in very calm sea conditions. The overall performance of this new 8 channel multiplex system, with MAFF design flow meter sensor and interface, provides current, reliable, technology, which will enable the marine biologist to carry out research measurements with confidence. Some further discussion between engineer and user, regarding analogue recorder scale spans and other discussed customer requirements will be necessary before the complete system goes into service.

Aim 2. The track monitoring equipment (Decca Survey Ltd) was installed en route to the Rough Tower Dump site.

Initial problems with the active receiving aerial unit were overcome, and CORELLA made two circuits at 4 knots within the dump site area. These circuits were recorded on the ships Decca Plotter and on magnetic tape by the track monitoring equipment. The magnetic tape record, sample rate every 20 s, will be analysed at the R/D laboratory of Decca Survey Ltd, Leatherhead.

A print out of the simulated dumping runs was provided at the end of the trials.

Aim 3. The standard magneto strictive headline transducer was used on the first and the new single element ceramic transducer on the second of two trawls hauls with the 800 mesh Engels net. The preserved paper record indicates good results were achieved with the new unit which has a conical beam angle of 60° compared with the 17° x 25° beam of the present standard unit.

E G Shreeve  
31 March 1982

**SEEN IN DRAFT:**

G S

(AV-R C N)

**INITIATED:**

H W H

**DISTRIBUTION:**

Basic List +

- J H Nichols
- B F Riches
- B C Mumford
- T Bryan
- Paul DeLandes
- D Amos
- Dr N Norton