

VESSEL R.V. EDWARD FORBES Cruise No. 10/78
 CRUISE PERIOD 4- 14 July 1978
 PERSONNEL D.N. Langhorne SSO (Senior Scientist)
 A.J. Marks HSO
 E.J. Moore HGCD
 P.M. Hooper SO
 P.J. Hardcastle SSO (Installation of Waverider recorder)

ITINERARY 1 - 3 July Travelled to Cromer
 a. Calibrated and set up Trisponder remotes.
 b. Set up and levelled Tide gauge on Cromer
 lifeboat pier.
 4 July Joined R.V. Edward Forbes at Great Yarmouth.
 Set up equipment on board.
 5 July Sailed for N. Haisborough Bank. Layed Waverider
 buoy. Started sandwave survey in area of submarine
 gas pipelines. Abandoned survey owing to adverse
 sea conditions. Returned to Great Yarmouth.
 6 July 0715 sailed for Haisborough Bank. Sea conditions
 bad, returned to Great Yarmouth.
 7 July Remained in Great Yarmouth because of bad
 weather.
 8 July Remained in Great Yarmouth because of bad
 weather.
 P.J. Hardcastle set up Waverider recorder at
 Happisburgh. PM sea conditions moderated. 1800
 sailed from Great Yarmouth. Ship remained at
 sea over night, though too rough to work.
 9 July 0800 - 2330 Survey of the sandwave area.
 10 July 0630 - 2200 Survey of the sandwave area.
 11 July 0700 - 2000 Survey of the sandwave area.
 12 July PM completed survey operations. Returned to
 Great Yarmouth.
 13 July R.V. Edward Forbes sailed for Barry. IOS (T)
 staff recovered tide gauge and Trisponder remotes.
 14 July Completed recovery of equipment. Returned to
 Taunton.

OBJECTIVES Five submarine gas pipelines pass through the sandwave field
 at the N end of the Haisborough Bank. Concern has been
 expressed for the vulnerability of these pipes to damage as a
 result of exposure brought about by sandwave movement. The
 objective of the cruise was to undertake the first of a series
 of surveys of the sandwave field (and the pipes) in relation
 to tide and wave conditions. The results of these surveys
 would be used to study the mobility of the sandwaves and its
 effect on pipe exposure.

PROCEDURE
AND METHODS

A close line (100 m line spacing) echo-sounding and sidescan sonar survey was conducted in the sandwave field at the head of N. Haisborough Bank. A Waverider buoy was laid to the E of the Bank and its recorder installed at Happisburgh Coastguard Station. Survey lines, controlled by sidescan sonar, were run along the individual pipes to study their exposure. Particular attention was paid to sandribbons which were cut by pipes and those which had reformed to cross the pipe tracks.

Horizontal position control:- Decca Trisponder, with remotes installed at Cromer lifeboat pier, Winterton and Happisburgh Coastguard stations.

Depth measurement:- Raytheon DE-719 Echo-sounder interfaced to an Actif digitizer (on loan for evaluation) and Decca Maglog.

Sidescan sonar:- EG + G Dual channel sidescan sonar.

Wave recording:- Datawell Waverider System.


EQUIPMENT
PERFORMANCE

1. Frequent faults occurred on the aged Decca Maglog. This was not only in its operation at sea, but also persistent errors occurred on the mag. tape print out.
2. Decca Trisponder generally performed well. Interference occurred in the area close to the Haisborough Bank Lightvessel. Ranges of up to 33 km were obtained from Winterton remote station. The remote at Cromer failed during the survey. This was found to be due to failure of the power supply unit.
3. The Actif echo-sounder digitizer proved to be effective, but the use of such equipment requires a good data logger and software support.

RESULTS

The survey of the sandwave field was completed, though the records obtained were not good owing to poor sea conditions which introduced a lot of ship motion. It proved to be possible to 'con' the ship along particular pipelines using sidescan sonar. Because of the time lost due to adverse weather, the study of individual pipelines was limited and no sediment sampling nor flow measurement was carried out.

PREPARED BY :

 (D N LANGHORNE)

APPROVED BY :

 (K R DYER)

DATE :

5 MARCH 1980 5 March 1980