

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

**1995 RESEARCH VESSEL PROGRAMME**

**REPORT : RV CIROLANA : CRUISE 6**

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

**STAFF :**

R J Law	(SIC)
C R Allchin	
PM Hudson	
M Blackburn	(to 15 July)
S Morris	(to 15 July)
Moira Salmons	(to 15 July)
Sonia Cliffe	(to 15 July)
BR Jones	(from 15 July)
Ruth Hamer	(from 15 July)
Sylvia Blake	(from 15 July)
C McLeod	(University of Sheffield; from 15 July)
G Woods	(University of Sheffield; from 15 July)

**DURATION :** Left Lowestoft 1230h 4 July  
Arrived Lowestoft 0700h 25 July  
(All times are Greenwich Mean Time)

**LOCATION :** North Sea, English Channel, Irish Sea.

- AIMS :**
1. To conduct monitoring studies at stations established under the UK National Monitoring Programme (NMP).
  2. To collect water samples for the analysis of HCHs along a transect through the Channel, as part of the continuing monitoring following the loss of MV Perintis in 1989.
  3. To collect water samples from coastal and estuarine areas for surfactant analysis.
  4. To collect water samples from areas of high shipping intensity for analysis of tributyltin.
  5. To collect water and sediment samples from marina areas for analysis of Irgarol 1051, a herbicide used in antifouling paints.
  6. To collect samples of water and fish from the vicinity of gas fields in the Southern North Sea for analysis of linear alkylbenzenes.
  7. To evaluate a microcolumn method for the analysis of trace metals in seawater.

## NARRATIVE :

CIROLANA sailed at 1230h on 4 July and made for the River Tyne in fair weather, the intermediate NMP site off the Tyne being worked *en route* at 0756h on 5 July.. Sampling at the Tyne was undertaken both from the ship at anchor, and within the estuary using the ship's Searider around the afternoon low tide. After sampling at the Tyne the remaining offshore and intermediate NMP station (off Tyne/Tees and off Tees) were sampled prior to anchoring off the River Wear, which was sampled on the afternoon of 6 July. Sampling in the River Tees was undertaken around the morning low tide on 7 July, after which CIROLANA steamed southward. Additional NMP stations (off Humber/Wash, Smith's Knoll, outer Gabbard, Thames (Warp), South Varne, Selsey Bill) were sampled during 7 and 8 July, after which CIROLANA proceeded to anchor in the eastern Solent. Sampling in Langstone Harbour was conducted around the morning low tide on 9 July, after which CIROLANA proceeded to anchor off Poole Harbour where sampling in Poole Harbour was undertaken in the afternoon. Further water sampling in the Channel was conducted during the evening of 9 July whilst in transit to the River Exe, where sampling was carried out on the morning of 10 July. The NMP station off the Tamar was occupied at 1635h on 10 July, before proceeding to anchor in Plymouth Sound in poor visibility. Sampling both from the ship and from the Searider in the Tamar was undertaken during the morning of 11 July, after which CIROLANA proceeded westwards towards the offshore reference station, which was sampled at 0438h on 12 July. Sampling was then conducted on the Haddock Bank, the North West Bank, and the Nymphe Bank in the Celtic Sea, before proceeding via the Celtic Deep NMP station to the Bristol Channel. Before leaving the Bristol Channel CIROLANA was anchored for approximately 3 hours off Swansea whilst a crew member was treated in hospital for a facial cut. Stations in Cardigan Bay and Liverpool Bay were sampled on 13 & 14 July, CIROLANA proceeding to anchor in the Burbo Bight. The Rivers Dee and Mersey were sampled by Searider at low tide during the evening of 14 July, and Morecambe Bay between 0544h and 0621h on 15 July; CIROLANA then steamed to Whitehaven where scientists were exchanged by Searider. Stations off St. Bee's Head and Sellafield were occupied at 1412h and 1641h, *en route* to the Burbo Bight where CIROLANA anchored overnight. Sampling in the Mersey was conducted around the morning low tide of 16 July, after which CIROLANA made for the Solent, anchoring in the Ryde anchorage on the morning of 18 July. One station was worked whilst in transit, to the NW of Cape Cornwall Bank. Despite strong winds and poor visibility sampling in the Hamble and Southampton Water was accomplished during the morning of 18 July, after which CIROLANA steamed to the North Sea where a grid of 8 stations around shipping separation zones was sampled between 0417h on 19 July and 1638h on 20 July. Sampling of sediments and fish around the Indefatigable, Vanguard and Victor gas fields was accomplished on 21 July, and similarly around the Johnston subsea well on 22 July. Estuarine sampling in the Rivers Tyne, Wear and Tees was conducted on 23 and 24 July, finishing off the River Tees at h on 24 July. CIROLANA then made for Lowestoft, docking at 0730h on 25 July.

## RESULTS :

In total 137 stations were worked during this cruise. The weather during the cruise was generally fair, and all planned work was completed. A cruise track is appended to the report.

Aim 1 : Sampling was conducted at 23 intermediate and offshore NMP stations, and from 3 additional stations in the UK sector of the Celtic Sea in preparation for the Irish Sea QSR studies.

Aim 2 : Samples were collected from all 12 stations of the planned Channel transect for laboratory analysis of HCHs (including  $\gamma$ -HCH - lindane).

Aim 3 : Water samples were collected from 45 sites and sediments from 41 sites for GC/MS analysis of alkylphenols and alkylphenol ethoxylate surfactant compounds.

Aim 4 : Samples were collected from 32 sites and extracted for analysis in the laboratory.

Aim 5 : Samples were collected from 32 sites, including a transect along the River Hamble.

Aim 6 : Samples of flatfish and sediment were collected as planned from the vicinity of four gas fields in the southern North Sea. No sampling could be conducted inside the 500m safety zone at two of the fields, in one case because of a drilling rig working on the well location and in the second because permission to operate close to the well was not given by the operator.

Aim 7 : The aim of this study, made in conjunction with scientists from Sheffield University, was to investigate the use of microcolumns containing alumina and chelating resin for the isolation and pre-concentration of trace elements from seawater. Both filtered and unfiltered surface water samples from estuarine, coastal and open sea areas were processed, a total of approximately 250 microcolumns being used. These extracts will be eluted on-line and analysed by ICP/MS immediately after the cruise.

**R J Law**  
25 July 1995

**INITIALLED :** JEP

**SEEN IN DRAFT :** Captain A Guyatt (Master) : AG  
M Reynolds (Senior Fishing Mate) : MR

**DISTRIBUTION :**

Basic list +	RJ Law	M Blackburn
	CR Allchin	A Franklin
	PM Hudson	Moira Salmons
	Ruth Hamer	Sonia Cliffe
	S Morris	BR Jones
	JE Portmann	Sylvia Blake
	C McLeod (U. of Sheffield)	

APPENDIX :

No of locations sampled (5 - 24 July 1995) :

SEAWATER

surfactants	45
trace metals	54
PAH	13
HCHs	48
HCB / HCBd	41
atrazine & simazine	32
Irgarol 1051	32
TBT	32
salinity	114 * (see note below)
CTD profiles	49
STD profiles	51

SEDIMENT

trace metals	14
surfactants	41
organochlorine compounds	8
PAH	7
TBT	7
linear alkylbenzenes	14

FISH

dabs & plaice	9
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\* : surface salinity and temperature were also logged at 10 min intervals throughout the cruise.

# CIROLANA 6 / 95

CIROLANA 6 / 95

**cruise track : 4 - 25 July**

SHOWING :  
CRUISE TRACK  
COASTLINE

