

**LOIS RACS(C) Core Programme**  
**Sea Vigil 10**  
**Cruise Report**  
**27th June-1st July 1994**

**Personnel:**

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Robb Howland (PML)  
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**Monday 27th:** The scientific party mustered on board *Sea Vigil* at 0845 and departed Hull Marina and headed for the mouth of the Humber. At three sites along the Flux Curtain an instrument, measuring conductivity, temperature, suspended particulate load and depth, was deployed. Concomitant readings from a current meter were recorded. Throughout the day surface measurements of conductivity, temperature, pH, dissolved oxygen, suspended particle load were recorded using the NRAs system. The sites were at 2C Lightfloat, Hawke Lightfloat and Bull Lightfloat. The work at the stations commenced at 1230 and finished at 1830. The *Sea Vigil* returned to Hull Marina and unloaded the equipment at 2015.

The party from Plymouth traveled to Hull and started loading their equipment onto the *Sea Vigil* at 2015 and completed setting up at 2130.

**Tuesday 28th:** The scientific party mustered on board at 0800 and completed commissioning the equipment. *Sea Vigil* locked out of Hull Marina at 1000. From 1045 and throughout the day measurements of conductivity, temperature, pH, dissolved oxygen, suspended particle load were recorded using the NRAs system. The nutrient analyser was on-line at 1025 and the survey commenced at 1045 (station 17) continued to 1304 (station 29). Samples were collected for gravimetrics, C/N, Al, chlorophyll, phytoplankton identification and particle size analysis. The UOR was deployed at 1149 (Immingham) and towed until 1814 and recovered at station 30. During the tow, both eastwards and westwards, a series of 7 vertical profiles for optical properties were carried out with the PRR-600 (stations VP1-VP7). Nutrient stations 30-36 and 24-19 were visited on the return journey up the Humber and the nutrient analyser was off-line at 2000 (station 19). The *Sea Vigil* locked into Hull Marina at 2040 and the scientific party disembarked at 2130.

**Wednesday 29th:** The *Sea Vigil* departed from the marina at 0830 for the up stream nutrient survey from Hull to the Aire Confluence. The underway monitoring was as per Tuesdays survey. At 0845 the nutrient analyser was on line and the survey started

at station 16 at 0853. The survey continued until 1145, station 3 (Aire Confluence). The return survey commenced at 1230 and ended at station 14 at 1453. A further set of standards and baselines were then measured. The *Sea Vigil* came along side Corporation Pier at around 1600. Unloading of the nutrient survey and related apparatus took place between 2015 and 2115 after the vessel had returned to the marina.

**Thursday 30th:** Sample bottles were obtained *via* the LOIS laboratory Hull and transferred to the *Sea Vigil*. The scientific party boarded the vessel, at 1100, which then departed the marina at 1200. The UOR was deployed at 1305 (Immingham) and towed down the axis of the Humber. A series of 6 stations (MC1-MC6) had been chosen which were at a tangent to the north-south flightlines of the aircraft. At each station the aircraft was directly overhead and synoptic sampling occurred. At intervals during the UOR tow and including all 6 stations samples were collected for chlorophyll, phytoplankton identification, particle size analysis and salinity determination. This work was completed at around 1530. The UOR was then towed twice across the mouth of the Humber. The first transect was across the flux curtain (Stations N-D) and the second passed through station MC3. At 1722 the UOR was recovered and the vessel headed back to Hull. Due to the tide the *Sea Vigil* tied off at Corporation Pier at 2000 until it could pen back into the Marina. The party left the vessel at 2200.

**Friday 1st:** Contingency day.

All times in this report are BST.

**Notes:** The sixth LOIS Core Programme was its most successful to date. This is particularly true regarding the remote sensing part of the programme.

Following the accident during the previous cruise the NRA had altered the moonpool cover. The cover now lies flat to the deck when the pump is being used. No further problems are expected.

Communications with the aircraft were not ideal. The NRA have introduced a system whereby their aircraft is supplied with a marine band VHF radio. This allows two way communication with the aircraft *via* **the bridge** of the *Sea Vigil*. All contact is then under control of the Master. LOIS should at least look into this procedure.

The programme was altered at short notice to include further work on Thursday. Its success was greatly assisted by the flexibility and advice of Peter Sarjeant and Garath Johnson of the NRA and the generosity afforded by Mike Elliott at the University of Hull.

On Tuesday EMP2000s were deployed at the lightfloats at Hessel Sands and Lower Witton and Light Float 34. An ABP vessel was used for this work. The EMP2000 at Blacktoft Jetty was serviced on Wednesday afternoon and redeployed.