

R1/3

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FRV CALANUS

Charter Cruise 9201H

CRUISE REPORT

26 October - 13 November 1992

Personnel

Part 1 26 October - 4 November

R S T Ferro	PSO
F B O'Neill	SO
P J Barkel	PTO
J T M Hunter	PTO
A Lange	Visitor
W van der Hak	Visitor
L Xu	Visitor

Part 2 4-13 November 1992

R S T Ferro	PSO
C D Hall	SSO (in charge <i>Stella</i>)
C W Shand	HSO
J T M Hunter	PTO
W A Harris	ASO
A Lange	Visitor
W van der Hak	Visitor
L Xu	Visitor

Objectives

1. To measure the geometry and loading of a 1/2.75 scale model of a Dutch pelagic trawl towed by FRV *Calanus*, using instrumentation and the remote controlled television vehicle (RCTV).
2. To make similar measurements of a 1/4.5 scale model towed by the launch *Stella*.

Narrative

The fishing gear, instrumentation and television equipment were loaded at Corpach during the afternoon of 26 October 1992. *Calanus* proceeded through the Caledonian Canal to reach Fort Augustus by late afternoon on 27 October. Rigging of the fishing gear and underwater vehicle was completed in time for a successful trial haul on the morning of 28 October.

Trials of the large model net continued during daylight hours until 4 November when the half-landing was taken. The same day the launch, *Stella*, was transported to Muirton, Inverness by lorry and then sailed to Fort Augustus, arriving in the early evening.

On 5 November a new intensified SIT underwater camera loaned by Osprey Electronics was tested using the RCTV on *Calanus* while the smaller model net was rigged and tested successfully on *Stella*.

Trials then continued until 11 November either with the smaller net on *Stella* or, in poor weather, with the larger net on *Calanus*. On 12 November *Stella* sailed for Muirton and was transported back to Aberdeen. A further haul with the large net was made on *Calanus* until the early afternoon when all equipment was dismantled and unloaded at Fort Augustus prior to transport back to Aberdeen on 13 November. *Calanus* sailed for Oban the same day.

Results

A total of 21 hauls of up to eight hours duration were made - 12 with the large model net and nine with the smaller model net. A full set of instrumentation was used on all but the first haul, to measure the sweep tensions, the net and otterboard spreads, the depths of the otterboards and four wing-ends, the headline depth, the mouth opening and towing speed of the net.

Having adjusted the net mouth and wire geometry by altering warp length, towing speed or otterboard size the underwater television vehicle was used with each net on several hauls to obtain sonar images of the net cross-section at specific locations along the net, using a scanning sonar system.

Film of the nets was also obtained although this was limited by the maximum visual range of approximately 4 m. Additional instructive video film was taken to show the shooting and hauling procedures when using instrumentation.

Temperature profiles were taken to a depth of approximately 70 m. The calibration of instruments having pressure or acoustic transducers will take account of temperature and velocity of sound effects.

The data will be analysed thoroughly in the Laboratory to determine the relationships between net drag, net shape and speed.

R S T Ferro
18 January 1993