Provisional: not to be quoted without reference to the writer

R.V. TELLINA

Report for Cruise 8(a)/1967

Staff:

J. P. Bridger
I. L. Davies
A. R. Margetts (part-time)
M. R. Vince
W. M. Blacknell
B. P. Thain

Duration:

18-27 September 1967

Aims:

1. To study by the use of divers the shape of the ½ scale Boris Skagen trawl as normally used and when inverted and used in midwater.

2. To progressively build up the original square to make a shelf of netting between the lower bridles.

3. Still and cine camera photographs will be taken of the gear underwater to show each modification.

Narrative:

TELLINA left Lowestoft at 0945 hours, 18th and having been forced into Dover on 19th by bad weather, arrived at Falmouth at 0845 hours, 22nd. The scientific staff travelled by train on the night of 21st/22nd and joined the ship at 0915/22nd.

A trial run to find reasonably clear water and in order that the divers could get in some practice was made that afternoon. Two dives were made off Maenporth beach in 4 and 8 fms respectively. Meanwhile the trawl was inverted and rigged out with floats and bass groundrope weighted with chain.

On Saturday, 23rd, two dives were made off St. Anthony Lighthouse in 21 fms. (Wind S.S.E. 1-2: cloud 1/8: Secchi disc reading 5 fms.) The trawl, now with a 47 ft footrope and a 58 ft headline, carried 17 5-inch floats and 9 lengths of chain each weighing about 2 lbs. 10 fm bridles were used, 3 to each wing, and Coopman doors. 15 fms of warp were used on both hauls at speeds of 1-1¼ knots. Photographs were taken and observations made.

Sunday 24th was very grey; rain and low cloud making any underwater observations impossible so the net was modified on the basis of the previous day's observations. A false footrope, 30 ft in length, was fitted; the bass groundrope was transferred to it, and the space between it and the groundrope (original headline) was filled in with netting.

Monday 25th brought more wind and rain. Diving was impossible, but a number of simple tests and measurements using lengths of string were carried out in Carrick Roads.

Tuesday 26th also began badly with rain and low cloud, but this cleared by 1100 hours and, despite a S.S.W. wind of force 5-6, enough shelter was found off Maenporth beach to get a further two dives completed. When at 1430 hours cloud stopped work, the ship returned to Falmouth and further modifications to the net were made until dark.

Wednesday 27th brought somewhat less wind and good light so two dives and a number of surface observations were made. When the ship returned to Falmouth at 1500 hours enough information to design an 'upside down' trawl had been obtained but there was insufficient time to re-invert it and study it as a bottom trawl.

Results:

1. The Boris trawl when inverted looks very well, there is no undue tension or slackness anywhere in the netting. As used it has a wing-end spread of 22 ft and a gape of 6 ft at the wing tips and 12 ft in the centre. The centre of the groundrope rides some 6 ft forward of the centre of the headline.

2. When a 30 ft false footrope and extra netting is put in to build up the 'lower square', the spread is reduced by 2-3 ft at the same speed.

3. The first 'lower square' was 30 ft wide coming to an 18 in bosom in 16 ft. This proved to be too slack, a pocket of loose netting being formed at the join.

4. When this 'lower square' was reshaped and reduced to 13 ft in length there was still some slack when the wing-end spreads were 20-22 ft. Due to the strong winds and swell we had to work close to the shore in less than 10 fms of water. This meant that 15 fms of warp was the most we could safely use, so that door spreads seldom exceeded 40 ft. If more warp resulting in larger door spreads had been possible, it is likely that some of this slackness would have been taken up.

5. A 56 lb weight on each lower bridle and a 60 in Polyform buff on each top bridle seemed to have only local effect. They did not increase the vertical gape of the net at the centre.

6. The middle bridle, fixed to the selvage extension, was a few inches too short causing some slight distortion in the wing.

7. Measurements using string and the distances estimated by the divers were so close to the theoretical values, using scaled lengths of chain, that it would appear that the headline and foot rope form almost perfect catenaries, thus making tailoring of the 'lower square' relatively easy.

J. P. Bridger

27 September 1967

Initialled: A. J. L.

Seen in draft: W. B.

Distribution:

Dr. Cole
Mr. Lee
Captain Aldiss
Dr. Cushing
British Trawlers' Fed. Ltd.
Mr. Bolster
Mr. Burd
Mr. Hill
Mr. Cattley
Mr. Corlett
Mr. Garrod
Dr. Harden Jones
Mr. Iles
Dr. Jamieson
Mr. Margetts
Mr. Trout
Mr. Holden
Dr. Purdom
Mr. Bridger
Mr. Mitson
Mr. Tungate
Mr. Williams
Mr. Wood
Mr. Adams
Mr. Mills

Mr. Kay
General Lab.
Lab. Registry
Library (2)
Mr. Whiting
Mr. Simpson
Dr. Reynolds
Chief Inspector
All District Inspectors
Fisheries Registry
Skipper Burroughs
Mr. Buchanan Wollaston
Mr. W. Baird, D.A.F.S.
Mr. Glover
Hydrographic Department
Dr. Lucas
Director, N.I.O.
Dr. Peachey
Mr. Shelbourne
White Fish Authority

Mr. Davies
Mr. Vince
Mr. Blacknell
Mr. Thain