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Information for the Fisheries Commission on Escapement and Selectivity Problems
Associated with Use of Strengthening Ropes, Splitting Straps and Codend Floats
(from Scientific Council)

1. Introduction

In compliance with a recent request by the Fisheries Commission (NAFO FC Doc. 84/IX/6, revised, pages 4 and 21), the Scientific Council, at its meeting in September 1986, recommended "that national Scientific Council representatives bring this matter to the attention of scientists in their institutes to determine if data are available concerning the effects of strengthening ropes, splitting straps and codend floats on selectivity of trawls, and present any forthcoming information at the June 1987 Meeting" (NAFO Sci. Coun. Rep., 1986, page 110). No new information on the subject came forward at the June 1987 Meeting, and the only relevant information available was compiled and submitted to the present meeting of the Council by Dr. H. Bohl (EEC).

The Scientific Council acknowledged the worthwhile contribution of Dr. Bohl and agreed to include the information (Section 2 below) in its report of the present meeting.

2. Effects on Trawl Escapement and Selectivity

a) Strengthening Ropes

In the most comprehensive sense, these are load-bearing ropes which are attached to the lestridges and/or any other part of the trawl. When fixed to the lestridges, they are commonly designated as "salvage (selvedge) ropes". The technical terms used here were defined by Bridger *et al.* (1981).

Properly rigged salvage ropes have been shown to improve the selectivity of trawls to a great extent (Bohl, MS 1960). Covered codend experiments in the Baltic Sea yielded selection factors of 2.1 for cod and 2.5 for whiting, when a bottom trawl without these ropes was used. During the same experiments, the lestridges of the trawl were strengthened from the wing tips to the codline meshes by means of manila ropes. This gear modification led to much higher selection factors (3.1 for cod and 4.2 for whiting). These results demonstrate that strengthening ropes enable the meshes of towed codends to be open. An inverse effect, however, may be expected when the ropes are fastened on lengthwise stretched netting, because the meshes would remain closed during towing.

In EC waters, it is, for some unknown reason, prohibited to attach strengthening ropes inside the codend (comp. Commission Regulation (EEC) No. 3440/87 of 6 December 1984).

b) Splitting Straps

Although the effects of splitting straps have not been studied in detail, it can be taken for granted that these devices impede the selectivity of trawls to some extent. Nevertheless, the use of splitting straps has to be tolerated, because, otherwise, side trawlers as well as stern trawlers without raps would not be able to haul big catches on board. For "round straps" (another type of circular strap with a completely different function), it is known that they do not reduce the selectivity, if their

length is not less than 45% of the circumference of the codend (Beltestad, MS 1977). Despite the fact that the length of splitting straps very often corresponds to 40% or less of the codend girth, it would be irrational to introduce a minimum length for them. Relatively short splitting straps are absolutely necessary to lift full codends over the ship's bulwark in case the pulley used for this purpose cannot be placed to a sufficient height.

However, regulatory measures are required with respect to the wristband-shaped chafing pieces which are commonly used in conjunction with splitting straps. These cylindrical pieces of netting, which prevent the straps from cutting the codends, are thought to reduce selectivity to a higher degree than the splitting straps themselves.

When splitting straps and their accessories are used in EC waters, certain rules must be observed, and these are given in Articles 7 and 9 of Commission Regulation (EEC) No. 3440/87.

c) Codend Floats

Especially in coastal fisheries, a single codend float is frequently used to mark the position of the trawl at the surface. Since, in general, such a marker buoy is tethered to the rearmost end of one of the selvage ropes, its influence on trawl selectivity may be considered negligible. Occasionally, codend floats are used as lifting devices, but their effects on selectivity are unknown.

References

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