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International Council for the
Exploration of the Sea

C.M.1982/H:6
Pelagic Fish Committee

REPORT OF THE BLUE WHITING PLANNING GROUP FOR THE
COORDINATED ACOUSTIC SURVEY 1982

Copenhagen, 3-5 May 1982

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REPORT OF THE BLUE WHITING PLANNING GROUP FOR COORDINATED ACOUSTIC
SURVEY 1982

Introduction

The meeting for discussion of survey plans were held at ICES headquarters, Copenhagen, from 3-5 May 1982. The terms of reference were set by the Council's resolution passed at its 69th Statutory Meeting (C.Res.1981/2:23):

It was decided that:

"a Coordinating Group for the Blue Whiting Acoustic Survey in the Norwegian Sea should meet 10-11 May 1982 under the chairmanship of Mr T. Monstad (Norway) at ICES headquarters to draw up plans for the acoustic survey in 1982, including calibration procedures."

Participants

J. Jakobsson	Iceland
T. Monstad (Chairman)	Norway
H.f. Jakupsstovu	Faroe Islands
V. Schleininik	USSR
V. Ryzhov	USSR

Some of the members also attended the Atlanto-Scandian Herring Working Group, which met at the ICES headquarters 4-6 May.

Acoustic Assessment Surveys

For several years, acoustic assessment surveys on the blue whiting stock have been carried out during spring in the area west of the British Isles and around the Faroes (Scotland, Norway, Faroes and USSR (C.M.1981/H:12)). Combinations of the Scottish and the Norwegian results have given estimates of the abundance of mature blue whiting in the area within a particular time period. During these surveys, the major part of the spawning stock has been measured, but still the abundance of the total stock is unknown. The Blue Whiting Assessment Working Group therefore suggested that a coordinated acoustic survey, to measure the major part of the total stock, should be conducted in the Norwegian Sea in August 1982.

Survey Plans

a) Area

Four countries will participate in the acoustic assessment survey, with a total of seven research vessels:

USSR:	"Perseus III"	Primo - 20 July
		and 2 - 20 August
Norway:	"Michael Sars"	2 - 19 August
	"Johan Hjort"	2 - 20 August
	"G.O. Sars"	10 - 20 August

Faroe Islands:	"Magnus Heinarsson"	5 - 18 August
Iceland:	"Arni Fridriksson"	4 - 25 August
	"Bjarne Sæmundsson"	5 - 30 August

The Norwegian Sea will be covered from 60° to 74°N between the Norwegian coast and west Icelandic waters. In Figure 1 the cruise tracks and areas to be covered by the different countries are shown.

The USSR vessel is making two coverages. In July she will survey the central part of the Norwegian Sea between the Faroes and the Jan Mayen area (encircled in Figure 1 by dotted lines). In August she starts from southwest of Bear Island and covers the area along the Polar Front southwestwards to Jan Mayen and further southwards. This will be overlapped by the areas covered by the vessels from Norway and the Faroes, and thus give valuable information of recordings for considering the conversion factors.

The two Icelandic vessels cover the area around Iceland, north to 69°N and east to 9°W. The surveying is combined with O-group investigations nearest to the coast.

The three vessels of Norway cover the area from the Norwegian coast and westwards to 5°W. The surveying of "Michael Sars" is then combined with capelin investigations in the area between Jan Mayen and Greenland.

The Faroes vessel covers the area from 4° - 12°W and from the Faroe Islands to 65°40'N.

In addition to these seven vessels in the acoustic assessment survey, the R.V. "Eisbåhr" of the German Democratic Republic plans to make blue whiting investigations in the Norwegian Sea from 1-30 August. This vessel is not operating an integrator, but will supply information on fish concentrations and data from trawl catches. The R.V. "Anton Dohrn" of the Federal Republic of Germany will operate on blue whiting in East Greenland waters, also in August. No integrator will be operated, but information on blue whiting concentrations can be supplied, and thus enlarge the picture of the overall distribution.

b) Data and procedure

During the survey, a daily radio contact between the vessels will be set to 0900 GMT at 2056 khz. A short report of information will be exchanged, i.e., positions and progression, integrator values and results of trawl catches.

Either before the survey starts, or immediately after, the acoustic instruments should be calibrated against a standard target; a copper-sphere for the 38 khz echo-sounder. Conversion factors related to "G.O. Sars" will then be established, and integrator values of each vessel converted into "G.O. Sars-units".

By use of trawl, frequent samples of blue whiting will be collected, to obtain data on fish length (total size), fish weight, sex, maturity and age. Hydrographical stations will be worked at even intervals.

All of the vessels are using the same standard scale working maps for easier combination of the various plotted data.

After the survey, a meeting will be held at the Institute of Marine Research in Bergen ("Perseus III" will be in Bergen harbour from 20-22 August.

For combining the different vessels' results and preparation of a common report, each participating country should bring along the following set of data to this meeting:

1. Map with cruise tracks, trawl stations, hydrographic stations and navigation log numbers at the stations and track corners.
2. Map with coverage integrator values of blue whiting per nautical mile, plotted along the cruise track for each 5 nautical mile.
3. Map with squares (size: 1° latitude and $2^{\circ}30'$ longitude) containing representative mean integrator values of blue whiting (\bar{m}), mean length (\bar{l}) and mean weight (\bar{w}) for each square covered.
4. Map with temperature plotted at stations for 0 m.
5. " " 200 m.
6. " " 400 m.
7. Results of the blue whiting samples.
8. Length distribution of each sample.
9. Results of calibration of acoustic instruments to the standard copper-sphere, TVG-function and x -value of the echo-sounder used.

As mentioned above, the basis for establishing conversion factors will be the standard target calibration. However, as supporting information, "ship-to-ship" calibration will be done if time and suitable conditions for it are found.

During the survey, "Michael Sars" will be the "central vessel", receiving the daily reports from the other vessels, and thus, if possible, start to combine the various data.

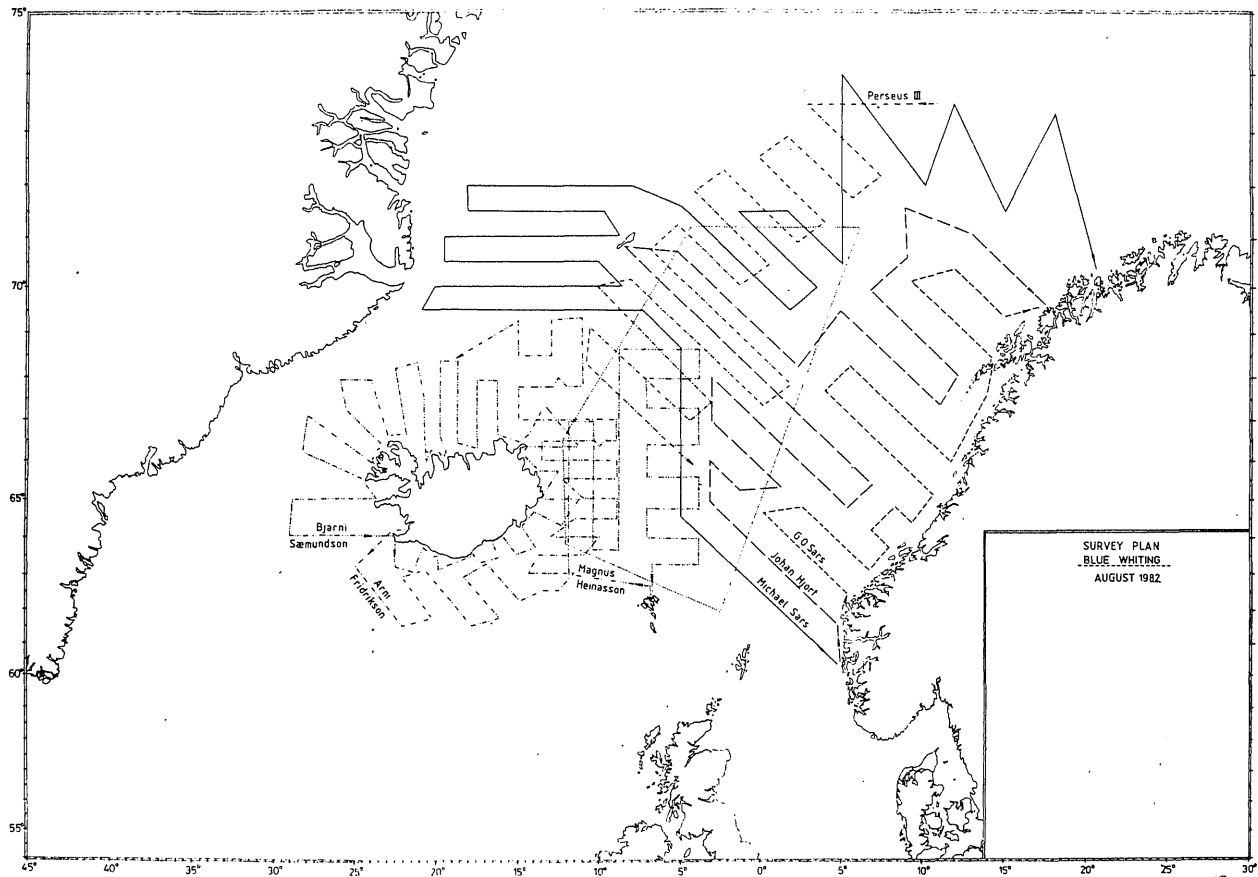


Fig. 1. Planned cruise tracks for the international acoustic assessment survey in August 1982, with names of the participating vessels. The area encircled by dotted lines will be covered by Perseus III in July.