

Report
of the Sub-Committee for Telegraphic Communication of
Oceanographic Observations

During a meeting in the Hydrographical Committee in October 1959 attention was drawn to the great progress which the meteorological science had by telegraphing meteorological observations from land and sea on an international basis, a progress which would have been otherwise impossible. One got synoptic charts of wide areas. This made it easier to study the causal connection between different meteorological factors and the weather in advance. It was further pointed out that certain hydrographic situations influence fisheries in various ways.

If we can predict such special hydrographic situations we can expect to be able to supply the fisheries with valuable information, knowing in advance how certain oceanographic conditions effect the fish and we shall thus know something about how the fishery will turn out.

Taking into account that the number of oceanographical observations has increased tremendously during recent years it was emphasized that it would prove profitable to fisheries and science if all observations were channelled to a center as soon as possible, and redistributed thence by radio to all people interested. These could then be able to get or construct their own charts covering the areas of interest to them. Into such charts they could insert extra information of a local nature, especially concerning the actual fishery, information which may be lost if not gathered in connection with the actual hydrographic situation.

Inference concerning the future can be more soundly based upon a chart of such a wide range than on a small chart embracing only local information. And it is reasonable to expect that oceanographical research will progress as favourable as meteorological research ^{and} when radio diffusion of observations started.

The problems of collaboration between different countries in synoptic oceanography and its application to fisheries were discussed and a Sub-Committee was appointed by the Hydrographical Committee to consider these problems. It turned out that the problems were numerous and not easy to tackle, as could be expected. But some experience and some progress have been made.

It soon proved necessary to have a telecommunication code for sending oceanographic observations of various kind. Such a code was prepared by the Sub-Committee and adopted by the Council.

The code has been found most useful and economic as oceanographic information could be very compressed in telegrams. The code and 2 examples are attached to this Report.

It is quite clear that there is a growing interest in synoptic oceanography in various parts of the world. This interest is furthered by new techniques: Installation on ships of salinometers, facilities for facsimile broadcasting of charts and curves and other speedy methods. An indication of this growing interest is the resolution passed at the 2nd session of the IOC to the effect that problems in Synoptic Fishery Oceanography be considered by the IOC Advisory Committee on Marine Resources Research (ACMRR) as well as by the Working Groups on Communications, Fixed Stations and Data Exchange.

A Working Group of the ACMRR was appointed to consider the problem of the rapid utilisation of synoptic oceanographic data and fixed oceanographic stations with Dr. V.E. Broch as convener and Dr. M. Blackburn, Dr. M. Uda and the chairman of this Sub-Committee as members. From the summary of the Report to ACMRR of this working group may be quoted:-

"On a regional basis the requirement of the fisheries for current synoptic oceanographic maps of ocean climate must be developed. This can best be done by regional working groups.

To the degree that regional situations will permit, these maps of ocean climate should be compatible with those of other regions in the units of time and space employed for averaging and compiling the data. The attainment of compatible standards for these maps will require the attention of a properly constituted working group.

The issueance of such maps should be the responsibility of regional or national agencies concerned with fisheries.

The combination of the regional synoptic maps into ocean-wide maps and maps of the world ocean for research and predictive purposes should be made possible by bringing regional boundaries into juxtaposition where possible".

It was furthermore mentioned that studies of the behaviour of the fish in response to changes in the environment should be continued.

The present Sub-Committee agree that the work concerning synoptic oceanography must be carried out on regional basis and that this can best be done by regional working groups. It may be assumed that the ICES region is that region which has the highest density of observations; this region should then be the most fitted for synoptic fisheries oceanography.

The oceanographical telecommunication code has been used in parts of the ICES region in preparing charts and sections by help of material from different research ships. Material has been received also by radio - telephone, by air mail and in other ways.

Cautious forecasts have been made in some cases which have shown that the system is useable. But considering the many problems involved in the establishing of a practical way of gathering the material, making the analyses and distribute the results, it is quite necessary to have a meeting of the Sub-Committee.

It is recommended therefore that permission be requested and the necessary reservation made to call such a meeting for 2 days in Bergen in the beginning of June 1965. The estimated costs for the attendance of 6 persons are 7000 D.Kr. The members of the Committee are: Dr. E. Bertelsen, Dr. J. Eggvin (chairman) Mr. M. Fedosov, Mr. R.S. Glover, Mr. Helge Thomsen, Dr. U. Stefánsson and Dr. J.B. Tait.

J. Eggvin

Appendix

to

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Code for telegraphic exchange of Oceanographic Observations.

The following scheme for use of oceanographic information given telegraphically is partly in accordance with the WMO codes.

Codeform: OCEAN	YGG	d _s d _s	Q	L _a L _a L _a L _a	L _o L _o L _o L _o	A
If A = 1	followed by groups	d _s d _s T _s T _s T _s				
If A = 2	"	"	"	I _d T _d T _d T _d T _d	and a last group	9S _o S _o S _o S _o
If A = 3	"	"	"	I _d S _a S _a S _a S _a	" " " "	9S _o S _o S _o S _o
If A = 4	"	"	"	I _d T _d T _d T _d T _d	I _d S _a S _a S _a S _a	and a last group 9S _o S _o S _o S _o
If A = 5	"	"	"	I _d T _d T _d T _d T _d	9S _o S _o S _o S _o	and a last group c ₃ ^F f _f S _f S _f S _f
If A = 6	"	"	"	I _d T _d T _d T _d T _d	I _d S _a S _a S _a S _a	9S _o S _o S _o S _o and a last group c ₃ ^F f _f S _f S _f S _f
If A = 7	"	"	"	d _s d _s T _s T _s T _s	" " " "	c ₃ ^F f _f S _f S _f S _f
If A = 8	"	"	"	c ₃ ^F f _f S _f S _f S _f		

Specification of Symbolic letters.

- A = Character of oceanographic observation (code 1).
- c₃ = Description of kind of fish (code 2).
- d_sd_s = Ship's course in tens of degrees.
- F_f = Character of fish shoal (code 3).
- GG = Actual time of observation to the nearest whole hour GMT.
- I_d = Identification of standard depth (code 4).
- L_aL_aL_aL_a = Latitude in tens and units- of degrees and tens and unites of minutes
- L_oL_oL_oL_o = Longitude " " " " " " " " " " "
- Q = Quadrant of the globe, ICES code.
- S_fS_fS_f = Depth of fish shoal in whole meters.
- S_aS_aS_aS_a = Salinity at indicated standard depth in hundredths per mille.
- S_oS_oS_oS_o = Sounding to bottom in whole meters.
- T_dT_dT_dT_d = Sea temperature at indicated standard depth in hundredths of centigrades. Negative temperatures indicated by adding 50,00 (WMO-code).
- T_sT_sT_s = Sea surface temperature in tenths of centigrades. Negative temperatures indicated by adding 50,0 (WMO-code).
- Y = Day of the week, WMO code 4900.

A - character of oceanographic observation

Code 1

- 1 = Sea surface temperature.
- 2 = Sea temperature at standard depths.
- 3 = Salinity of the sea water at standard depths.
- 4 = Sea temperature and salinity at standard depths.
- 5 = Sea temperature at standard depths and fishlocation.
- 6 = Sea temperature, salinity (at standard depths) and fishlocation.
- 7 = Sea surface temperature and fishlocation.
- 8 = Fishlocation.

c₃ - description of kind of fish.

Code 2

- 0 = No fish.
- 1 = Cods.
- 2 = Herrings.
- 3 = Brisling, sardines, anchovies, capelines, etc.
- 4 = Hakes, haddocks.
- 5 = Coalfish.
- 6 = Mackerels.
- 7 = Tunas, bonitos, etc.
- 8 = Crustaceans.
- 9 = Specimen unknown.

F_f - Character of fish shoal.

Code 3

- 1 = Nothing registered on echosounder or asdic, but fishing operation indicates presence of fish.
- 2 = Very small concentration (dotted or scattered).
- 3 = Mostly scattered, but small shoals in between.
- 4 = Small shoals, poor concentration.
- 5 = Big shoals, good concentration.

I_d - Identification of standard depth.

Code 4

- | | | | |
|-----|---------|----------|-----------|
| 0 = | surface | or 200 m | or 1200 m |
| 1 = | 10 m | " 250 " | " 1500 m |
| 2 = | 20 m | " 300 m | " 2000 m |
| 3 = | 30 m | " 400 m | " 2500 m |
| 4 = | 50 m | " 500 m | " 3000 m |
| 5 = | 75 m | " 600 m | " 4000 m |
| 6 = | 100 m | " 700 m | " 5000 m |
| 7 = | 125 m | " 800 m | " 6000 m |
| 8 = | 150 m | " 1000 m | " 8000 m |

1)

Cable

Received : 21.2. 1963

Ocean 40036 07130 31135 00310 10308 20311 30296 40323
50355 60354 70329 80328 00336 10325 90290 13280

The date when the cable is transmitted from the ship will be indicated, and it is supposed that transmission takes place immediate after the observation has been taken.

Deciphering.

Day of the week: Wednesday. Time of observation: 00 hour G.M.T. Ships course: 360°. The figure 0 indicates the north-and easterly quadrant of the globe. Position: NL 71°30', EL 30°13'. The figure 5 (group 4) indicates temperature in standard depths, sounding to the bottom, fish location, description of kind of fish, character of fish shoal and depth of the shoal. 0 m: 3,10°, 10 m: 3,08°, 20 m: 3,11°, 30 m: 2,96°, 50 m: 3,23°, 75 m: 3,55°, 100 m: 3,54°, 125 m: 3,29°, 150 m: 3,28°, 200 m: 3,36°, 250 m: 3,25°. Sounding to the bottom: 290 m. The last group indicates observation of cod in small concentration, but small shoals in between, and at a depth of 280 meters.

2)

Cable

Received: 11.3.1964

Ocean 31224 06727 12175 00470 10464 20466 30487 40594
50604 60632 70667 90150 25050

Deciphering.

Day of the week: Tuesday. Time of observation: 12 hour G.M.T. Ships course: 240°. The north-and easterly quadrant of the globe. Position: NL 67°27', EL 12°17'. The observation include temperatur in standard depths, sounding to the bottom, fish location, description of kind of fish, character of fish shoal and depth of the shoal. 0 m: 4,70°, 10 m: 4,64°, 20 m: 4,66°, 30 m: 4,87°, 50 m: 5,94°, 75 m: 6,04°, 100 m: 6,32°, 125 m: 6,67°, Sounding to the bottom: 150 m. The last group indicates observation of herring in big shoals and good concentration at a depth of 50 meters.