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A NEW SYSTEM OF FISHERIES STATISTICS IN THE FAROE ISLANDS.

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Referring to ICNAF Summ. Doc. 73/2 (Serial no. 2931) page 10, it should be sadly admitted, that the Faroe Islands have no good record in statistical affairs.

Better, than giving apologies for this, is to be able to point out that the record is up to improvement.

By jan. 1st, 1973 there has by law been introduced a statistical system, which should fulfil all requirements for accuracy, promptness and the claim on every statistical system of delivering a realistic picture of the world, in this case the universe of the fishing fleet of Faroe Island.

The system works with two subsystems, one based on the landings of fresh fish in the Faroe Islands, mainly covering Faroese, Icelandic and East-Greenland waters, and one covering the North Sea fleet and the distant water fleet.

This last system is the one, which has interest in the ICNAF area, and shall be described in some more detail. It is based on a combination of the traditional ship's log and a fishing logbook.

THE LOGBOOK.

The lay-out of each side in the logbook is seen in fig. 1, and the maps, covering ICNAF AREA, with faroese system of statistical squares, <sup>in fig. 2 and 3.</sup> The uppermost part of each page is for the general log data, position, course, bearings, events on board etc.

The lower part is a detailed fishing log. For each fishing operation one line is filled up.

According to the variety in type of the Faroese fishing fleet and in order to make the filling up of the logbook so easy as possible, the logbook is in 4 subtypes.

- S 1 for ships using gill-nets, longline and handline.
- S 2 for trawling for human consumption.
- S 3 for trawling for reduction purposes.
- S 4 for purse-seiners.

For the different ship categories this 4 subtypes give data on following items.

1. Date
2. Hour
3. Depth in fathoms at the beginning of the fishery.
4. Statistical area by statistical squares. Each square is 1 degree longitude x 1/2 degree latitude. (see fig. 2 and 3).
5. Effort. For longline number of hooks,  
for gill nets number of nets,  
for handline number of handline x fishing time,  
for trawlers hours the trawl has fished, with an accuracy of 1/4 hour,  
for purse seiners searching time for each catch in hours.
6. Catch of each species given to tons, below, for purse seiners and industrial trawlers, to tons, with one cipher behind the point for trawlers, liners and gill net for human consumption.
7. Discards by species and weight. (tons)

The weight of the catch is estimated on the deck, with exception of the longliners, which give the weight of gutted fish.

Each page in the logbook is in duplo. When the book is filled up, a copy is produced. This copy is taken out along a perforation, and sent to the Fisheries Laboratory in Tórshavn.

The captain in this way keeps the fishing logbook. This book will be of great use to the skilled captain to choose fishing ground and operate the the gear in the most efficient way. It can be said, that the skipper gets a detailed manual of fishing the different<sup>grounds</sup> return for giving the detailed statistics. With the great mobility in the fishing fleet, this should be of great interest.

#### PRACTICAL CONSIDERATIONS.

The ships get the log at the shipping offices, which also control that the books are filled up regularly. The next step of control is at the Fisheries

Laboratory in Tórshavn, each page sent in being inspected. If deficiencies are observed a note is sent to the captain. As the schemes are to be handled by computers, deficiencies in the filling up, later on will be discovered as errors, and the computer will print out a note on that.

The logbook was, in a provisional form, tested on board on the ships in 1972. The experience gained in this test year shows, that a close contact with and a high niveau of information to the fishing fleet is perhaps the most important thing.

By broad-casting, papers and fishery periodicals it has been tried to convince the captains about the need of better statistics, and that it is in the interest of the fishing fleet to get the new system to work.

Further the captains were invited to give their comments on the provisional logbook in the test year 1972.

As a result of this the 4 subtypes now working to a great extent are designed by them, thus securing that the lay out has been suitable.

Thus the combination of cooperation, own interest, and control should secure a very high percentage of return.

It should be born in mind that the introduction of the fishing logbook has not increased the amount of dreary paper work on board, because the new logbook has replaced the traditional one, which the ships former were obliged to have.

#### FURTHER HANDLING OF THE DATA.

In the first place the logbook should fulfil the requirements of the international bodies, ICNAF, NEAFC and FAO, at least procuring data for STATLANT 21 A and B, and ICNAF stat. 4. The data will be punched on cards and come out as computer print-outs.

Faroese statistics will come out in this way for the first time in 1974, covering the year 1973.

A comparison with the proposed format of an international logbook shows, that the Faroese logbook also, at least, will fulfil the requirements of this system.

#### A MODEL OF FACTORS INFLUENCING CATCH.

As a matter of fact the philosophy behind the design of the logbook is that each catch result will depend upon several variables or functions of variables. The items in the logbook should give empirical values to the variables in a model of the catch.

Presumably the model will be much like the model described by Stark (J.Cons. Int.Explor. Mer 133, no. 3. pag. 478-482, 1971).

Through the logbook design information will be got on the following variables.

1. Effort and gear.
2. Ship. (By the identification of ship, the specifications of the ships can be got. The fishing power then will be some function of the specifications).
3. Fishing ground.
4. Time of the year.
5. Time of day and night.
6. Weather. Wind and direction.

The model remains to be built in detail. When this is done it will be possible to test it by means of statistical analysis, and get a picture of the influence of the different factors. Access to advanced computer programs for statistical analysis will be necessary.

#### RESULTS

The results from the test year 1972 are given in tables 1 - 5. In this period the participation in the system was voluntary and the logbook was in a provisional form.

This did not render 100 % coverage, and did not aim to do it, but these partial results should have some interest and could be used to break down Faroese catch on area and gear.

This can be done by comparing the number of ships reporting in each category, and the total number of ships participating in fishery in the ICNAF area given in table 7, together with total catches.

To give a picture of the returns from the final system, introduced by law January 1973, the reports from the stern-trawler "Sjúrðarberg" for the first 4 months in 1973 are given in table 6.

What now still is left to do is to work out a system and computer program for the automatic handling of data.

TABLE 1 FAROESE DATA  
 LONGLINERS, RETURNS, 1972,  
 PROVISIONAL LOGBOOK, FROM 3 SHIPS

CATCH: TONS OF COD ROUND FRESH WEIGHT  
 EFFORT: IN 1000 HOOKS  
 CPE: IN TONS PER 1000 HOOKS

COD												
ICNAF div.	3 M			3 K			2 L			3 P <sub>S</sub>		
Month	CATCH	EFFORT	CPE	CATCH	EFFORT	CPE	CATCH	EFFORT	CPE	CATCH	EFFORT	CPE
Mar.	124.0	654	.19									
Apr.	316.0	1122	.28									
May	588.0	2247	.26									
Jun.	374.0	1639	.23	38.0	255	.15						
Jul.	3.0	40	.08	23.0	205	.11	660	478	.14	204	472	.43
Aug.	174	619	.28							169	449	.38
Sep.	322	1217	.26									
Okt.	122.0	741	.16									
Nov.	33.0	190	.17									

TABLE 2 FAROESE DATA

FACTORY SHIPS

RETURNS, 1972,

PROVISIONAL LOGBOOKS

1. SHIP

CATCH: TONS ROUND FRESH WEIGHT

EFFORT: HOURS THE TRAWL HAS FISHED

CPE: TONS PER TRAWL HOUR

C O D												
ICNAF div.	1c			1D			1D + E			1E		
Month	C	E	CPE	C	E	CPE	C	E	CPE	C	E	CPE
Feb.	302.0	104	2.9	4.0	7.75	.5	69.0	73	.9	1.0	3.25	.3
Mar.	305.0	166.75	1.8	1.0	1.5	.7	130.0	120.5	1.1			
Apr.	518.0	321.25	1.6	7.0	5.0	1.2	25.0	28.25	.9			
May	9.0	13	.7							49.0	24.25	2.0
Nov.	65	88.25	.7	0.0	.75	0.0	30.0	27	1.1			

ICNAF div.	1F		
Month	C	E	CPE
Feb.	36.0	28.25	1.3
May	23	48	.5

GREENLAND HALIBUT

ICNAF div.	NORTH OF 2 G			2 H		
Month	C	E	CPE	C	E	CPE
Oct.	132.5	213.75	.6			
Nov.	75	91.25	.8	23	82	.3

TABLE 3 FAROESE DATA  
 SIDE TRAWLERS  
 RETURNS, 1972  
 FROM PROVISIONAL LOGBOOK  
 3 SHIPS

CATCH: TONS ROUND FRESH WEIGHT  
 EFFORT: HOURS THE TRAWL HAS FISHED  
 CPE: TONS PER TRAWL HOUR

C O D												
ICNAF div.	4 Vs			4 Vn			4 R			4 T		
Month	C	E	CPE	C	E	CPE	C	E	CPE	C	E	CPE
Jan.	88.0	172	.5	377.5	171	2.2						
Feb.	120.5	194	.6				190	71	2.6			
Mar.	322.0	334	1.0									
Apr.							126.5	231	.6	53	88	.6
May				11.0	39	.3	293.5	267	1.1	10.5	27	.4
Jun.				10.1	75	.1						

ICNAF div.	4 W			3 Pn		
Month	C	E	CPE	C	E	CPE
Feb.	1.8	5	.4	175	27	6.5

Additional fishery on Greenland Halibut, and other flatfishes, has not been worked up

TABLE 4 FAROESE DATA  
 STERN TRAWLERS  
 RETURNS, 1972  
 FROM PROVISIONAL LOGBOOKS  
 1 SHIP

CATCH: TONS ROUND FRESH WEIGHT  
 EFFORT: HOURS THE TRAWL HAS FISHED  
 CPE: CATCH PER TRAWL HOUR

C O D, BOTTOM TRAWL												
ICNAF div.	4C			4D			4F			4E		
Month	C	E	CPE	C	E	CPE	C	E	CPE	C	E	CPE
Jan.	230.5	128.0	1.8	91	40.5	2.2						
Feb.	1.0	11.25	0.09	184.5	123.25	1.5	24.0	24.5	1.0	1.1	3.5	.3
Mar.												
Apr.	18.0	25.5	0.7				2.5	24.25	0.1	24.5	32.75	.8
May	2.5	8	0.3	28.5	32.25	0.9	137.5	42.5	3.2	38.5	29.5	1.3
Jun.							33.0	19	1.7	334.5	330	1.0
Jul.	26.5	84	0.3	15.5	26.25	0.6	0.5	10.4	0.05	57.0	128	.4

PELAGIC TRAWL												
ICNAF div.	3 K			3 M			4 T			4 W		
Month	C	E	CPE	C	E	CPE	C	E	CPE	C	E	CPE
Jan.												
Feb.	7.0	18.75	0.4	3.5	12	0.3						
Mar.				20.0	37.5	0.5				128.5	209.5	0.6
ICNAF div.	4 R											
Apr.												
May	24.0	37.5	0.6	1.5	5	0.3	10.5	18	0.6	111.0	190.5	0.6
Jun.				0.0	2	0.0						



TABLE 5 FAROESE DATA  
 GILL NETS  
 RETURNS, 1972  
 PROVISIONAL LOGBOOKS  
 FROM 2 SHIPS

CATCH: TONS ROUND FRESH WEIGHT  
 EFFORT: NUMBER OF NETS  
 CPE: KG PER NET.

	C O D											
KNAF div.	1 C			1 E			1 F			EAST OF 1 F		
Month	C	E	CPE	C	E	CPE	C	E	CPE	C	E	CPE
Jul.	21.0	1215	17	31.0	1680	18						
Aug.				77.0	3000	26						
Sep.							32.0	1560	20	167.0	5250	32
Oct.				107.0	2265	47				79.0	3480	23
Nov.				210.0	2055	102				24.0	840	29
Dec.				147.0	870	169						

TABLE 6 FAROESE DATA

"SJURDARBERG"

STERN TRAWLER, PELAGIC TRAWL  
WETSALTED COD.

RETURNS FROM THE NEW LOGBOOK SYSTEM  
JAN. - APRIL 1973.

CATCH round fresh cod, tons  
EFFORT hours the trawl has fished  
CPE catch per trawl hour, tons

by statistical squares, faroese  
system (see fig.2 and 3.),  
and ICNAF divisions

MONTH	JANUARY			FEBRUARY			MARCH			APRIL			
	AREA	CATCH	EFFORT	CPE	CATCH	EFFORT	CPE	CATCH	EFFORT	CPE	CATCH	EFFORT	CPE
Faroese squares													
AN 60				55.0	61.75	.9	373.0	177.25	2.1				
AP 60				43.5	42	1.0	274.0	269.25	1.0				
AR 60	2.0	2.25	.9				152.0	107.25	1.4	50.0	43.5	1.1	
AV 60				46.0	40.25	1.1	0.0	2.25	0.0	8.0	13.75	.6	
AX 60	103.0	37.25	2.7	127.5	149	.9				.5	3.75	.1	
AN 61				5.5	7.5	.7	44.5	44.75	1.0				
AO 61				49.5	39.25	1.3							
AT 61										150.0	127.25	1.2	
AO 59				72.0	71.25	1.0	11.5	2.25	4.9				
AP 59				16.5	13.5	1.2	9.0	26	.3				
AT 59							48.5	16	3.0				
AO 58							105.0	79.5	1.3				
ICNAF Divisions													
4 R	103.0	37.5	2.7	173.5	189.25	.9	0.0	2.5	0.0	8.5	17.5	.5	
4 Vn	2.0	2.25	.9				152.0	107.25	1.4	50.0	43.5	1.1	
4 Vs				187.0	188.25	1.0	667.5	474.75	1.4				
4 W				55.0	46.75	1.2	44.5	44.75	1.0				
3 Pn							48.5	16	3.0				
3 Ps-4 Vs							105.0	79.5	1.3				
4 T										150.0	127.25	1.2	

TABLE 7 FAROESE DATA

CORRECTED DATA ON FAROESE  
SHIPS FISHING IN ICNAF AREA

SUBAREA 1

1972

	Gross tonnage	H.P.	Size crew
<u>Handliners</u>			
Hvítabjørn	262	330	16
Kongshavn	254	350	22
<u>Small shore handline boats:</u>			
Number:	Average tonnage:	H.P.	Average crew: Total crew:
4	3,5	10-20	4-5 18
<u>Longline:</u>			
Gamli Andrass	272	800	23
<u>Side trawlers:</u>			
Brandur Sigmundarson	1037	1500	41
Magnus Heinason	1037	1500	43
Skálaberg	954	1500	43
<u>Stern trawlers:</u>			
Sjúrðarberg	847	1980	42
Kap Farvel	724	1830	40
<u>Factory ship:</u>			
Stella Karina	834	2200	50
Stella Kristina	834	2200	50
Vesturvón	834	2200	50
<u>Gill nets for salmon:</u>			
Bakur	354	595	15
Leikur	467	770	14
Hvítanes	248	625	13
Vesturland	218	600	11
<u>Prawn trawlers:</u>			
Vesturvarði	190	460	11
Oknin	289	330	11
<u>Gill nets:</u>			
Reynsatindur	252	400	18
Venus	296	500	18

	Gross tonnage	H.P.	Size crew
<u>SUBAREA 2, 3, 4.</u>			
<u>Longliners:</u>			
Gamli Andrass	272	550	20
Mars	264	570	20
Kvikk	256	450	24
Norðaldan	444	960	26
Rasmus Effersøe	421	660	24
Hans Erik	426	900	26
Jógvan S.	268	450	24
Pison	271	450	24
Borðoyarnes	413	800	26
<u>Side trawlers:</u>			
Brandur Sigmundarson	1037	1500	41
Magnus Heinason	1037	1500	43
Skálaberg	954	1500	43
Vágbingur	791	1470	40
<u>Stern trawlers:</u>			
Sjúrðarberg	847	1980	42
Kap Farvel	724	1830	40
<u>Factory ships:</u>			
Stella Karina	834	2200	50
Stella Kristina	834	2200	50
Vesturvón	834	2200	50

**Garna-, línu-, snellu**

Hesin seðil skal verða sendur  
**Fiskirænnsóknarstovuni, Tórshavn Uppgávuseðil S 1**

Skip FDMM Fréfaringsdagur 27/3-73 Komnir á fiskleið 3/3-73 Færni at sigla heim 14/4 Heimkomudagur 18/4

Samdegursfrágreiðing:

Dato: 4.4.73

Kola St. nr. 04 05 06 07	Sett/ Færni undir fakskap Kl.	Dýpi	Drigið/ givni við fiskakapi Kl.	Veidi- nýtsla Í fiskur 01 Salt 02 Kl.	Gamatal Stykkjatal Tal av snellum; enerum	Ætt og vind- megi		Veidi- øki (punta- nr.)	Toskur	Hýsa	Brosma	Lónur	Annab	Útkast tons	Viðmerkingar
						SV2	DN26								
05	2230	100	2230	01	350	SV2	DN26	3,5	0,5	1,5			0,3	0,3	ÚTKAST HÁKELLING

**Trolarar, til matna**

Hesin seðil skal verða sendur  
**Fiskirænnsóknarstovuni, Tórshavn Uppgávuseðil S 2**

Skip MM Fréfaringsdagur 4/1 Komnir á fiskleið 12/1 Færni at sigla heim 5/5 Heimkomudagur 13/5

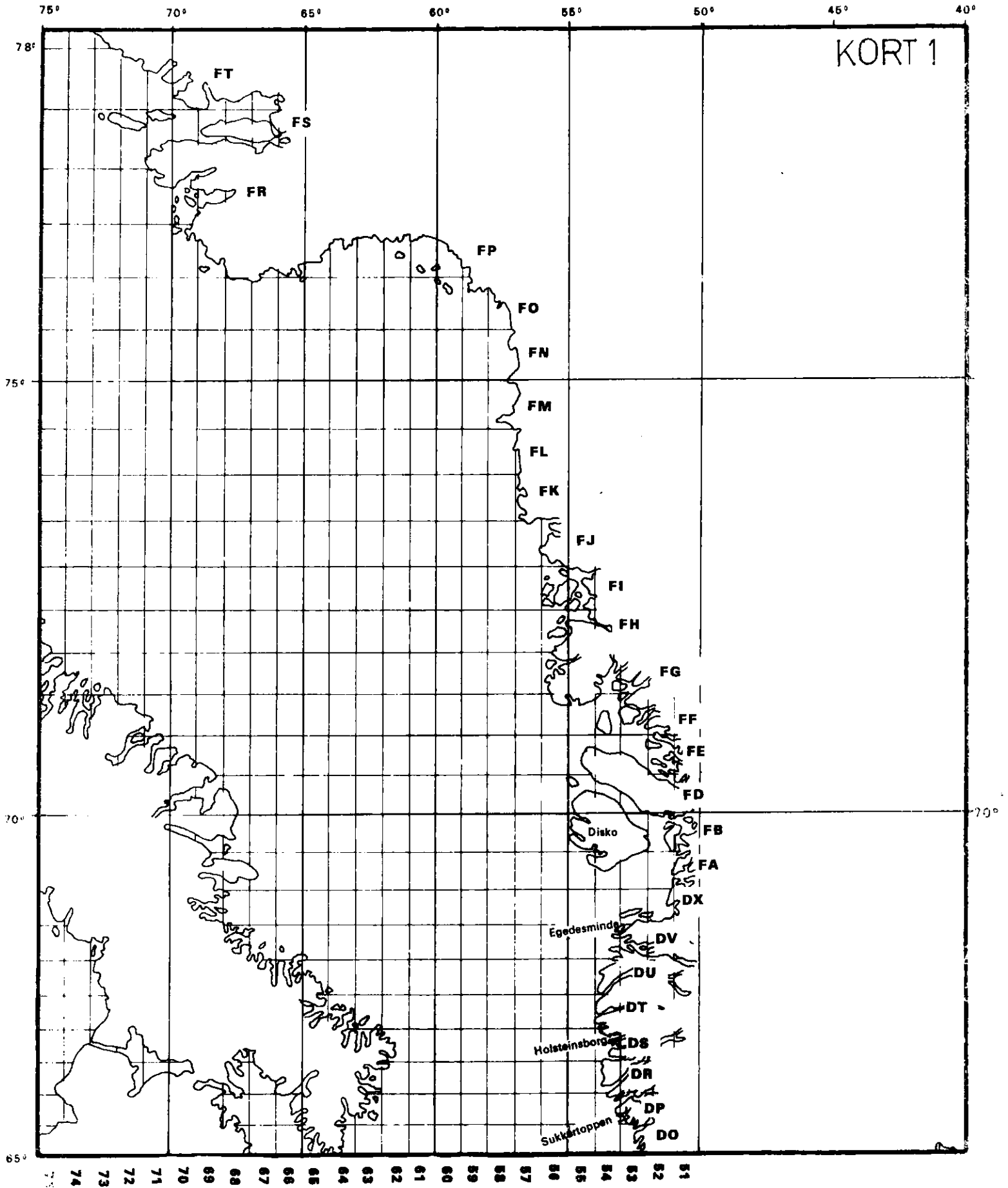
Samdegursfrágreiðing:

Dato: 2.5/2-73

Trol Kola Bonn- 01 Fliði- 02 Reyðu- 03	Trol á botni Kl.	Kós, meðan togað varð (kumpass- strikur)	Dýpi (favnar)	Witur út (favnar)	Trol háleð Kl.	Dýpi (favnar) tá háleð varð	Tóg- ingartíð	Ætt og vind- megi	Veidi- øki (punta- nr.)	Fiskaslog metti		Útkast tons	Viðmerkingar
										Toskur	Hýsa		
01	1230	100	200	540	154	180	3/4	W4	AR52	2,5	3,0	3,0	ÚTKAST SMAUR KRAMPA FISKUR

Undirskrift skil W4

Fig. 1 LAYOUT OF THE FAROESE LOGBOOK



KORT 1

Fig. 2

B 1

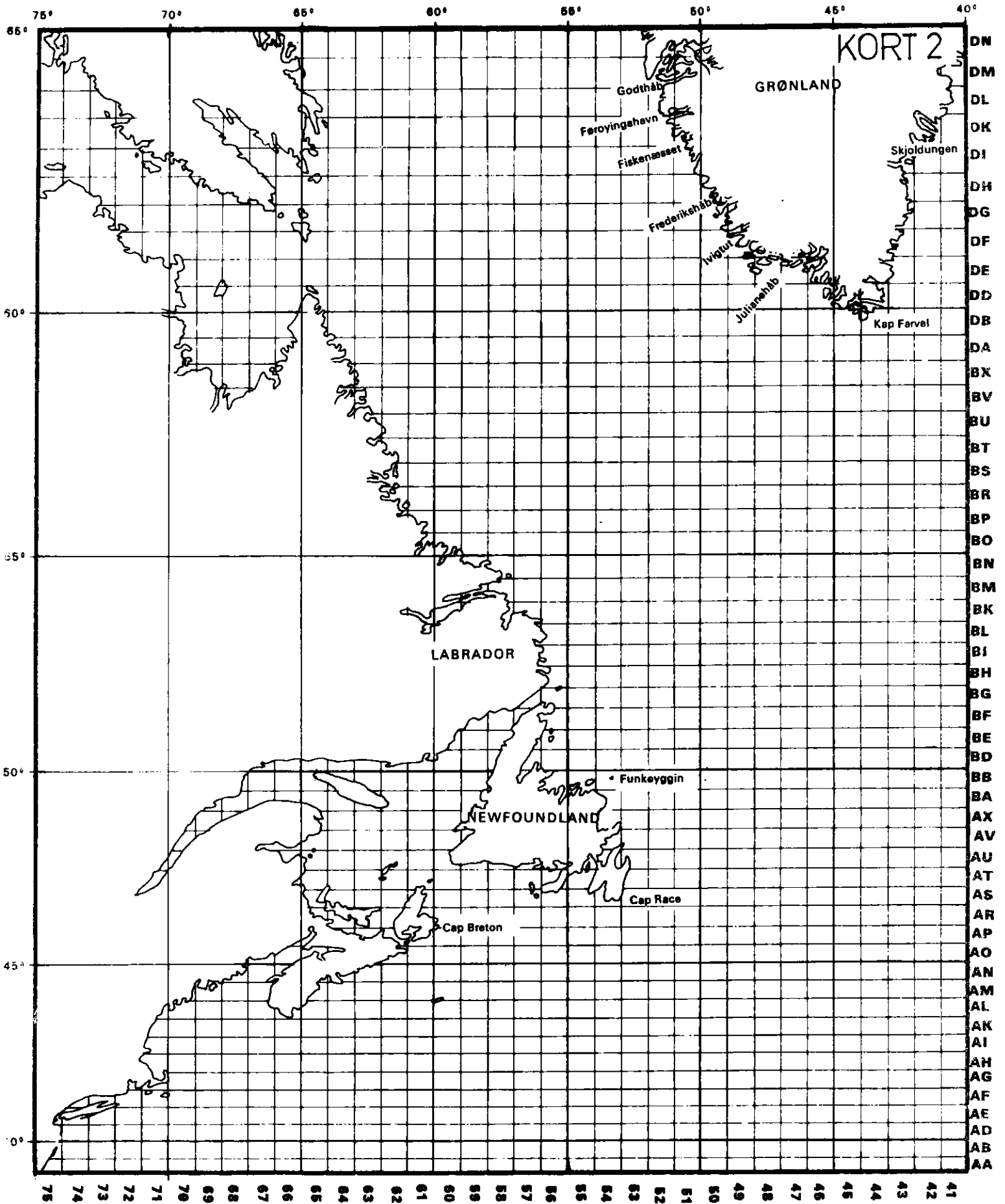


Fig. 3

