International Council for the
Exploration of the Sea

C.M.1975/D:2
Statistics Committee

Ref.: Demersal Fish (N) and (S)
and Pelagic Fish (N) and
(S) and Baltic Fish Cttees

REPORT OF THE WORKING GROUP ON EVENTUAL ESTABLISHMENT

OF AN ICES ADP SYSTEM FOR FISHERY STATISTICS

Charlottenlund, 27-31 January 1975

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Report of the Working Group on Eventual Establishment of an ICES ADP System for Fishery Statistics

1. Participants

Mr F Billström	Sweden
Mr H B Becker	Netherlands
Mr A C Burd	U.K. (England)
Mr O A Davidsen	Norway
Mr D de G Griffith	ICES
Mr H Lassen	Denmark
Mr K Laumann	Denmark
Mr K Popp Madsen	Denmark
Mr J A Pope (Chairman)	U.K. (Scotland)
Mr Ø Ulltang	Norway

The General Secretary also took part in the discussions of the Working Group.

2. Terms of Reference

C.Res.1974/2:18 stated as follows:

"It was decided, that:

the ADP Working Group should meet again for five days at Charlottenlund as soon as possible after the results of the trial run become available, with the following terms of reference:

(a) to review the output of the trial run on North Sea Herring data taking into account the comments of the members of the Herring Assessment Working Group for the Area South of 62°N;

(b) to revise and extend the specifications of the software for System c);

(c) to review the input material required for a demersal fish Working Group data file; and

(d) to review progress with the production of the "Bulletin Statistique" by ADP Methods."

3. Results of the Trial Run

3.1 Output from a trial run of a simplified version of parts of the future ICES FISHDAT system* was available at the meeting. Details of this run and certain tables of data compiled from the full output are given in the Appendix which was prepared by Mr H Lassen and Mr K Laumann. The data available for this run relating to catch and biological data on North Sea herring for the year 1972, together with guidelines for processing the data, are described in the Third Report of the Working Group (Doc. C.M.1974/D:5).

3.2 A single computer file of these data was created, this file consisting of records of catch and biological data for each country on a monthly divisional or rectangle basis. One of the differences between the approach adopted for handling the trial run material and the full ICES FISHDAT system proposed by the Working Group was in the use of a single file rather than separate files for catch and biological material. A considerable amount of programming and data handling experiences was gained which will be valuable in setting up the full system. The organisation of files for the trial run is being used for the production of "Bulletin Statistique" tables (1973) data.

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*) In previous Reports called "System c)".

3.3   About 15% of the total North Sea herring catch for 1972 was not specified as to either division or gear. All allocations made during the establishment of the data file were carried out manually. All the biological data (no./kg, % spring spawners, age distributions) were specified by divisions, by herring area, or by statistical rectangle. They were also specified by month and gear, although there were many month/gear/area combinations for which the biological data were incomplete or lacking.

3.4   Where decisions of allocation had to be made, it was necessary to print out the data. Intermediate calculations such as the application of adjacent-month no./kg and the compilation of age distribution tables were in this instance carried out by hand. These calculations could, however, have been handled by the system.

3.5   The computer output consisted of a print-out of all records and a large number of two-way tables giving information on available biological data. At first sight these tables appeared difficult to read because of the amount of coded information given in the table headings, but this is a feature of any general system and is not particular to the OSIRIS system on which the trial run was based. Any system which allows flexibility in the handling of data must contain a large number of options, and a record of all options and filters used preparing a particular item of output is an essential requirement of the system. Thus while some better explanation of the table headings appeared desirable, the members of the Group were of the opinion that one could quickly become familiar with the coded headings and interpret material relatively easily. Some examples of the print-out are given in the Appendix.

3.6   From the computer output, tables were prepared by hand giving catches (in numbers) by ages on a monthly basis. A selection of these are shown in Table 7 of the Appendix. In order to compare the results of the trial run with those obtained by the Herring Assessment Working Group for the Area South of 62°N (Doc. C.M.1974/H:4, Table 2.8) catches on an annual basis were compiled. Table 1 gives these catch figures from both sources (p. 6). It will be seen that although in general terms the agreement is good, the results for Area IVa W show some differences, particularly with regard to the total numbers caught. There are a number of reasons for these differences, the main one being the use of unsatisfactory ratios of numbers per kg in the case of industrial trawl data.

3.7   The trial run is about 36 000 tons short overall compared to the figures of the Herring Assessment Working Group (see Appendix Table 8). This discrepancy is mainly due to the omission of the Faroese catch (48 000 tons). The trial run, however, gives about 500 million fish more than the Herring Assessment Working Group. Adding the 36 000 tons to the total number of fish in the trial run would give a total surplus of about 800 million fish over the number calculated by the Herring Assessment Working Group.

3.8   It is difficult to explain precisely where this difference arises, but since the biological material used by the Herring Assessment Working Group was more extensive and more detailed, their figure for total catch in numbers must be regarded as being the most reliable. The figures produced by the trial run, therefore, should not be taken as an alternative to - or a replacement for - figures of the Herring Assessment Working Group.

3.9   It was felt that the output had shown the trial run system to be a viable and useful tool for stock assessment purposes. The tabulations of age compositions per month per gear were, in particular, considered to be extremely useful. It was noted that the system operates on rules and guidelines drawn up by stock assessment specialists, and that different procedural guidelines would conceivably by needed for different species. The problems encountered during the setting up of the trial run, however, would be very similar to those which would be encountered when designing the full ICES FISHDAT system.

3.10   The Working Group expressed their indebtedness to the Danish Institute for
        Fisheries and Marine Research for the facilities which had been made avail-
        able for the trial run, and in particular to Mr H Lassen and Mr K Laumann
        for the extensive work they had carried out in this connection.

4.   Specification of Further Programs to be Included in ICES FISHDAT System

4.1   The Working Group again considered various aspects of the ICES FISHDAT system.
        The production of the tables for "Bulletin Statistique" by ADP methods is in
        progress, based on a specific file structure set up for this purpose. Input
        to these files in computer-readable form submitted by national offices was
        not considered to be a difficult task. It was noted that the ICES FISHDAT
        system would need to be compatible as far as possible with the system already
        in use by other agencies in the Coordinating Working Party on Atlantic
        Fishery Statistics. The Secretariat was requested to discuss this matter with
        these agencies and with member countries in order to facilitate the submission
        and handling of future data, and in particular to avoid member countries
        having to use different systems when reporting to different agencies.

4.2   The Working Group discussed at some length the flexibility of the OSIRIS
        system (on which the trial run had mostly been based) in order to see if it
        is sufficient to meet all the possible needs of assessment working groups.
        At this stage the trial run system is not expected to fulfill all these needs.
        It was agreed that further experience was needed, and accordingly the ADP
        Working Group recommended that another run be made, using 1973 herring data
        (which were mostly transcribed during the meeting to a form suitable for
        punching). The cost of this was considered not to exceed D.Kr. 1,200, and the
        General Secretary confirmed that this sum would be available. The Working
        Group also felt that the present system would be of use in the assessment of
        demersal fish stocks such as North Sea plaice and invites the North Sea Flatfish
        Working Group to provide a specification for the carrying out of a trial run
        based on the relevant data. The output of the trial run based on 1972 herring
        data for assessment purposes will be presented to the Herring Assessment
        Working Group for the Area South of 62°N at their meeting in February-March.
        1975, for comment

4.3   The ADP Working Group would like to stress as a first priority the importance
        of adding to the system, as soon as possible, programs for improving the
        readability of the output.

4.4   The ADP Working Group also recommended that further studies concerning the
        detailed lay-out of the files and records in the system, and the links between
        files, should be made by the ADP Working Group during 1975/76. The bases of
        these studies should include information on the experiences of the other
        agencies and national offices, and detailed information on the capability of
        the OSIRIS system. While it is envisaged at present that the ICES FISHDAT
        system will be established within the OSIRIS system, a switchover to another
        system would cause no major difficulties in re-arranging the data.

4.5   The ADP Working Group felt that in order to enable the Secretariat to continue
        work on the preparations for the ICES FISHDAT system,a sum of the order of
        D.Kr. 10,000 should be made available.

5.   "Bulletin Statistique"

5.1   The Statistician informed the Working Group of the progress which had been
        made towards the production of "Bulletin Statistique" by ADP methods. The
        1973 catch data were now on tape and the computer programmes to produce
        Bulletin Tables 3, 4 and 5 were being tested with this material. The Working

Group examined a proposal to produce Bulletin Tables 1-6 and 8-11 by offset reproduction of computer print-outs and to replace Bulletin Table 7 by the entire contents of the STATLANT "Statistical News Letter" (offset reproduction of a typescript). The Working Group supported the suggestion of combining the two publications in this way for 1973 data and for the data of subsequent years.

5.2   The lay-out of the tables in "Bulletin Statistique" was reviewed in the light of the suggestions made by the 1973 meeting of the Working Group (Doc. C.M. 1973/D:4), and as discussed by the Statistics Committee at the 1973 Council Meeting. It was noted that the following changes would be implemented in Volume 58 of the Bulletin (1973 data):

Tables 1 and 2:	A complete spread of years from 1962 to 1973 would be given.
Table 6:	Captions to read "Nominal Catch of Selected Species in Principial Fishing Areas 1956-1973". Top row of each species tabulations to read: "All Fishing Areas", and principal areas to follow.
Table 8:	Two columns to be added: "Baltic" and "Total ICES". Freshwater fishes should be included as a separate species item.

5.3   The Working Group invited the Statistician to include in his Report to the next Council Meeting a consideration of the usefulness of Table 10 of the "Bulletin Statistique" in its present form.

5.4   The Working Group commended the inclusion of the new summary table for molluscs and crustacea in the Volume 57 of the Bulletin (Table 4), the need for which had arisen as a result of the inclusion of these groups in the revised Table 5.

6.   Data Security

6.1   The Working Group noted that the Consultative Committee had requested it to consider further, together with the General Secretary, the question of data security. The General Secretary referred to the paragraph on "internal" security in the Group's last report (Doc. C.M.1974/D:5). He said that he felt as a matter of principle that data kept by an intergovernmental organisation in an international data bank should be exchangeable among the organisation's members. He agreed, however, that there were problems of a practical nature which need to be considered and also that guidelines were needed as to how the data in the bank should be handled.

6.2   There was a thorough discussion and the Group agreed to recommend the following guidelines:

6.2.1   The data bank will be mainly established

(a)   for the use of the Secretariat in production of routine publications; and

(b)   for the use of the Council's Working Groups and Committees.

The data as delivered by the originators to the system are, in principle, exchangeable among the Council's members. It will be the responsibility of the General Secretary and the Secretariat to see that if such data had been submitted with certain qualifications ("footnotes"), then these qualifications would be attached to them whenever they were extracted, whether for internal use or for exchange purposes.

6.2.2   It will be necessary for the Secretariat to produce for Working Groups or Committees "trial runs" and transient calculations in accordance with requests from them. The Secretariat may also, on its own initiative, produce such preparatory documents. In all cases, however, these shall be used only for the purpose for which they were intended. They shall not be considered products of their own standing, and will not be delivered to any person or institution other than those involved in the work of the Group.

6.2.3   If the Secretariat shall produce from the data bank any documentation other than the Council's ordinary routine publications or the type of document mentioned under paragraph 6.2.2., this will require authorization by the Council or other competent ICES authority in each case.

6.2.4   Computations based on the ICES FISHDAT system files involving any kind of judgment as to how data should be combined or handled shall not be undertaken by the Secretariat on behalf of individual member countries or others.

6.2.5   It is recognized that some requests for data may give reason to doubt whether they should be complied with or not. It will be the General Secretary's responsibility to seek, in such cases of doubt, the advice of the appropriate ICES authorities which would normally include the Chairman of the Liaison Committee.

6.3   The Group was confident that if these guidelines are followed by all persons who have access to the data files, it would not be too difficult to handle the practical problems which might arise, and that "misuse" of the files would be avoided.

6.4   The Group found it unnecessary to comment further at this time on what had been said in the previous Report (Doc. C.M.1974/D:5) concerning "external security", but agreed that the matter should be kept under observation as the FISHDAT system is built up.

6.5   The General Secretary said that he was in full agreement with the Group's recommendations and views.

7.   <u>Input Material for a Demersal Fish Working Group Data File</u>

The Working Group noted with regret that the participation in this meeting did not include any specialist in the biology of demersal species. The Group felt, therefore, that they were not in a position to deal with this subject (Item (c) in the terms of reference), but in Section 4.2 of this Report the North Sea Flatfish Working Group is invited to provide a specification for a trial run based on suitable data (the North Sea plaice is suggested).

Table 1. North Sea catch in millions of fish by age.

Upper figure: calculated from Trial Run.
Lower figure: calculated by the Herring Assessment Working Group for the Area South of 62°N (Doc. C.M.1974/H:4, Table 2.8).

| Area | Age in winter rings | | | | | | | | | | Total |
	0	1	2	3	4	5	6	7	8	>8	
IVa E	-	47.2	67.2	71.4	1.2	0.5	+	-	-	-	187.5
	-	75.1	91.0	17.8	5.8	0.7	0.1	-	-	-	190.5
IVa W	-	444.3	899.2	211.8	132.5	43.6	12.4	2.1	0.8	1.3	1 748.0
	-	338.9	830.1	176.8	88.6	19.3	4.1	-	0.5	0.4	1 458.7
IVb	907.4	2 951.6	467.8	59.1	65.5	12.0	3.8	0.4	0.1	0.3	4 468.0
	750.4	2 921.8	384.3	119.9	26.9	7.9	0.8	0.2	0.6	-	4 212.8
IVc + VII d,e	0.2	0.7	5.4	78.4	18.3	7.7	3.9	0.1	+	0.1	114.8
	-	4.8	135.1	29.3	9.3	5.0	-	-	-	-	183.5
Total	907.6	3 443.8	1 439.6	420.7	217.5	63.8	20.1	2.6	0.9	1.7	6 518.3
	750.4	3 340.6	1 440.5	343.8	130.6	32.9	5.0	0.2	1.1	0.4	6 045.5

+ = less than 0.05.

TRIAL RUN ON NORTH SEA HERRING DATA FOR 1972

FINAL REPORT

by

Hans Lassen &
Keld Laumann

Introduction

The input data were specified by the Working Group on Eventual Establishment of an
ICES ADP System for Fishery Statistics at its 1974 meeting. The rules for filling
in the forms were evidently not stated precisely enough. The resulting data file
is quite complicated to work with, but most of the problems were eventually resolved
by laborious checking, by further investigations, and (in some cases) by making
certain assumptions.

The work took the following steps:

    1. Specification of input data
    2. Punching of data
    3. Data vetting
    4. Establishment of OSIRIS data file
    5. Attempts to make a general split programme
    6. Processing the data entirely by OSIRIS
    7. Write-out of tables and final calculations by hand

Specification of Input Data

This was drawn up by the Working Group on the Eventual Establishment of an ICES
ADP System for Fishery Statistics and is described in the Report of the June 1974
meeting of the Working Group (ICES Doc. C.M.1974/D:5).

Punching of Data

The ICES Hydrographic Section carried out this task on 80-column punch cards. The
input data are listed in the annex[*].

Data Vetting

Data were checked using the computer facilities at DFH and NEUCC - an IBM 370/165.
Two programmes were written:

    a) Catchcheck - control of catch data
    b) Biocheck - control of biological data

)
Both programmes are listed in the annex[*].

Establishing an OSIRIS File

Data were converted into numerical codes and arranged in a sequential file. The
format of the record is given in the previous report (C.M.1974/D:5, Appendix III)
and as an OSIRIS dictionary in the annex[*] to the present paper. The programme
used, ESTABDAT, is also listed in the annex[*] together with the data file created.
The code list used is given in the next section.

*) The annex consists of 3kg of computer printout. One copy is with the
    Chairman of the ADP Working Group, and another is available for inspection
    at the Secretariat.

Code List

OSIRIS uses numerical codes which require that all alphanumerical codes must be recoded according to the following list:

Division		Sub-division		Gear	
IVa	1	E	1	Trawl	1
IVb	2	W	2	Purse seine	2
IVc	3			Driftnet	3

Country

Denmark	1
UK (England & Wales)	2
Netherlands	3
Germany, Federal Republic of	4
Norway	5
Sweden	6
Poland	7
USSR	8
Iceland	9
Faroe Islands	10
France	11
Belgium	12
Spain	13
Portugal	14
German Democratic Republic	15
Ireland	16
UK (Scotland)	17

Utilization

Consumption	1
Industrial	2

Source of sample

Research	1
Commercial	2

Rectangles

These were given as a number, giving the latitude, and one letter, giving the longitude, e.g. 18C. The letter is converted into a number according to the list:

A	1	G	7
B	2	H	8
C	3	J	9
D	4	K	10
E	5	L	11
F	6	M	12
		N	13

and the final code is found as

$$\text{latitude} \times 32 + \text{letter-code.}$$

The process is performed by the programme ESTABDAT.

Compilation of Catch Tables

The data were tabulated according to the following split:

1. Month
2. Country
3. Sub-division (IVaE, IVaW, IVb, IVc + VIId,e)
4. Gear (Trawl, Purse seine and Driftnet)
5. Utilisation of catch (for trawl only)
6. Are data given by rectangles or grouped into sub-divisions?

An example is given in Appendix Table 9.

From this table the catches were compiled into five separate tables:

Appendix Tables 1-4 for each of the four gear utilisation groups

a) Month
b) Sub-division

Appendix Table 5 Unallocated catch, HELP.

The unallocated catches were of two types:

1. No monthly breakdown available (82 130 tons from Sweden and 1 956 tons from Denmark).

2. A monthly breakdown available but without gear and utilisation specification. This included data broken down by division and also data broken down by sub-division.

Our cry for HELP was heard, see point 8 in the verbatim flow chart (C.M.1974/D:5, Appendix II), and the following rules were applied:

a) The Swedish catch was regarded as being non-existent; 7 366 tons are separately specified as being taken in IVb.

b) Mr Popp-Madsen supplied the monthly breakdown for the Danish consumption catch and allocated it to the trawl fishery.

c) The Icelandic catch allocated to IVa was regarded as being a purse seine catch from IVaW. The catch in IVb was also assumed to have been made by purse seine.

d) Catches by UK (Scotland), France and the Federal Republic of Germany allocated to IVa were regarded as being trawl catches from IVaW for human consumption.

e) The USSR catch allocated to IVaW was regarded as being caught by trawl for human consumption.

f) The UK (England & Wales) catch allocated to IVc + VIId,e was assumed to be trawl catch for human consumption.

By applying these rules, Appendix Table 6 was produced and the numbers were added to Appendix Tables 1-4, giving the total catch of herring in the North Sea in 1972 split by month and gear and for trawls split by utilisation.

Compilation of Catch in Numbers for each Age Group

The OSIRIS system was used to produce the following tables (to be found in the annex) each split by:

        a)   Month
        b)   Sub-division
        c)   Gear
        d)   Utilisation (for trawl only).

        1.   Number of fish weighed
        2.   Weight of above fish
        3.   Percentage of spring spawners
        4.   Number of fish aged in each age group.

Some examples are presented here (Appendix Tables 10-13).

The following rules were applied to the catch data as found in Appendix Tables 1-4:

1. If no biological information was available, data from the month closest in time was used (see 2 for exception). If two months were equally distant in time, the mean was taken.

2. If data on percentage of spring spawners were not available, the percentage was taken to be zero.

3. For IVc, no biological information was available on the trawl catch for industrial purpose (57 tons) and for the driftnet catches (26 tons). We applied the following rules:

   a) The trawl catch for industrial purposes was assumed to be comparable to the catches from IVb using the same gear.

   b) The driftnet catch was assumed to be comparable to the trawl catch for consumption purposes for the same area.

Appendix Table 7 was then produced as the answer to point 16 in the verbatim flow chart (C.M.1974/D:5, Appendix II).

Comparison of Nominal Catches

There are a number of differences between the catches given for the trial run and those used by the Herring Assessment Working Group, and these are shown in Appendix Table 8. The major differences are as follows:

   a) No data for Faroes catches were included in the trial run. The Assessment Working Group used 979 tons taken from IVaE, 37 004 tons from IVaW and 10 460 tons from IVb. The gear in fact was purse seine.

b) The Swedish catch of 82 120 tons allocated to Division IV was excluded from the trial run due to lack of a monthly breakdown. The Herring Assessment Working Group used 7 366 tons allocated to trawl for industrial purposes in IVb.

c) The trial run data allocated 9 205 tons to IVaW for the Netherlands, while the Herring Assessment Working Group used 1 967 tons.

d) For U.K. (Scotland) 3 533 tons have been allocated to the trawl fishery for human consumption in IVaW. It may have been more reasonable to assume this catch to be purse-seine catch. This will not amount very substantially to any difference in catch in numbers between the estimates of the trial run and those of the Herring Assessment Working Group.

e) The catch by the Federal Republic of Germany is about 1 500 tons higher than the catch given in the Report of the Herring Assessment Working Group. Also, the trial run has allocated this catch to trawl for human consumption, with consequently a lower no/kg, while the Herring Assessment Working Group Report stated that apart from 21 tons the catch was for industrial purposes (with a higher no/kg). The two discrepancies work in opposite directions and more or less balance out.

Conclusions

The aim of the present study was to gather information on how to combine the statistics of several nations. This could be done only by applying some rather arbitrary rules to the original data. This is not very encouraging, especially in the light of the fact that the North Sea herring was chosen because it was considered to be well documented. On the other hand, every assessment Working Group faces identical problems and they do produce results. Our general feeling is that without ADP methods we would have had a very hard time to get a picture of what data were available, what the breakdown was and to what extent they could be easily combined.

We looked into the problem of writing a general split programme, but gave up the idea after some work, as we considered the job to be too big for the trial run and making an ad-hoc programme was not worth the effort.

All processing of the data was done using the OSIRIS system, apart from logical control of input data and creating the OSIRIS file. We recommend extensive use of a standard system for the ICES data bank.

Costs

The job was completed in the 6 months from June 1974 to January 1975, and involved punching about 1 000 cards, writing three programmes and processing the data by the OSIRIS system - about 200 runs using about 30 min of CPU time. We have both worked on the job part-time for approximately 6 man-months, of which about 2 man-months were spent on the general split programme. The actual calculations by hand took one day.

Appendix Table 1. 1972 Trawl consumption.
Catches in metric tons.

Figures given in the second row of each month are allocated catches added to unallocated catches according to Table 6.

Month	Division			
	IVaE	IVaW	IVb	IVc
Jan	7	50	–	1 121
	60	5 920	231	1 155
Feb	5	6	18	691
	50	2 968	216	–
Mar	10	52	146	454
	81	410	458	–
Apr	17	94	6	–
	53	194	142	2
May	26	325	7	1
	33	–	163	3
Jun	4	821	467	1
	11	4 529	498	18
Jul	3	1 037	2 348	1
	10	10 373	2 830	6
Aug	26	833	4 558	75
	29	10 044	6 310	–
Sep	4	430	3 021	32
	16	5 637	4 796	–
Oct	6	65	1 494	487
	9	2 220	2 151	–
Nov	4	4 147	16	6 348
	22	5 096	94	6 407
Dec	11	2 871	20	4 272
	90	3 996	363	–

Appendix Table 2. 1972 Trawl industrial purpose.
Catches in metric tons.

No unallocated catch added.

Month	Division			
	IVaE	IVaW	IVb	IVc
Jan	880	1 446	4 675	–
Feb	6 927	5 758	11 063	–
Mar	1 382	6 864	30 735	–
Apr	628	600	1 188	–
May	–	–	587	–
Jun	1 760	245	2 645	41
Jul	2 835	3 426	18 590	16
Aug	2 901	3 407	34 646	–
Sep	914	2 047	23 005	–
Oct	732	2 605	19 163	–
Nov	904	1 146	13 712	–
Dec	582	1 799	2 662	

Appendix Table 3. 1972 Purse seine catches.

Figures given in the second row of each month are allocated catches added to unallocated catches according to Table 6.

Month	Division			
	IVaE	IVaW	IVb	IVc
Jan	–	51	1 487	–
	–	112	–	–
Feb	1	27	14	–
	–	86	–	–
Mar	–	236	2 156	–
	–	236	–	–
Apr	–	–	–	–
	–	66	–	–
May	–	–	–	–
	–	4	–	–
Jun	47	45 292	364	–
	–	47 557	636	–
Jul	5	61 798	12 963	–
	–	64 984	–	–
Aug	–	5 543	–	–
	–	12 829	–	–
Sep	–	859	4	–
	–	7 615	–	–
Oct	–	2 099	–	–
	–	10 002	–	–
Nov	20	97	53	–
	–	4 413	–	–
Dec	–	–	–	–
	–	751	–	–

Appendix Table 4. Drift net catches.

Month	Division			
	IVaE	IVaW	IVb	IVc
Jan	–	–	–	1
Feb	–	–	–	–
Mar	–	–	–	–
Apr	–	–	–	1
May	–	45	–	1
Jun	–	1 028	–	–
Jul	–	1 353	–	–
Aug	–	–	–	–
Sep	–	304	–	3
Oct	–	1	–	17
Nov	–	18	–	–
Dec	–	2	–	4

Appendix Table 5. 1972 Unallocated catches.

Month	IV	IVa	IVaE	IVaW	IVb	IVc
			Division			
Unspecified	82 130	-	367	-	1 589	-
Jan	-	4 956	-	975	-	33
Feb	-	1 880	-	1 114	1	-
Mar	-	152	-	206	2	-
Apr	-	72	-	2	1	1
May	-	7	-	-	1	1
Jun	-	2 265	-	53	272	17
Jul	-	3 497	-	2 841	604	5
Aug	-	7 879	-	3 899	1 737	-
Sep	-	6 050	-	3 540	1 723	-
Oct	-	7 904	-	2 154	642	-
Nov	-	4 317	-	845	1	23
Dec	-	1 074	-	757	11	3
Total	(Disregarded)	40 053	367	16 386	6 584	83

Total IVa + IVaW 56 439

Appendix Table 6. HELP.
Split of unallocated catch.

TrC = Trawl catch for consumption purpose.
PS = Purse seine catch.

Month	IVaE	IVaW		IVb		IVc
	TrC	TrC [3]	PS [1]	TrC [4]	PS	TrC [2]
Jan	53	5 870	61	231	-	33
Feb	45	2 935	59	198	-	-
Mar	71	358	-	312	-	-
Apr	31	8	66	136	-	1
May	36	56	4	156	-	1
Jun	7	53	2 265	31	272 [5]	17
Jul	7	3 152	3 186	582	-	5
Aug	3	4 466	7 286	1 752	-	-
Sep	12	4 138	5 756	1 775	-	-
Oct	3	2 155	7 903	657	-	-
Nov	18	846	4 316	78	-	23
Dec	79	1 080	751	343	10	3
Total	365	56 770		6 533		83

1) Icelandic catch total allocated to IVa.

2) UK (England) allocated to IVc.

3) UK (Scotland), France, Federal Republic of Germany (IVa) and
USSR allocated to IVaW.

4) Danish consumption, France and UK (Scotland).

5) Icelandic catch in IVb.

Appendix Table 7.

The full Appendix Table 7 consists of displays of (a) monthly catch, number in
sample, weight of sample, no/kg, % spring spawners, and catch in number of autumn
spawners; (b) monthly catch per age group, in % and millions of fish, for the
following fishing areas and gear categories:

IVaE - TrC	IVaE - TrI	IVaE - PS	IVaW - Dr
IVaW - TrC	IVaW - TrI	IVaW - PS	
IVb - TrC	IVb - TrI	IVb - PS	
IVc, VIId,e - TrC	IVc, VIId,e - TrI	IVc, VIId,e - PS	

To keep the size of the Report within reasonable limits, a selection of these tables
has been made to provide all the information available for Division IVb. The
resulting six tabulations are presented here, and the complete Appendix Table 7
is available on request to the Secretariat.

Appendix Table 7. Calculation of catch in numbers for each area and each gear. All data from commercial catches.

Area IVb
Gear TrC

Month	Catch tons	Numbers	Weight	No/Kg	% Spring Spawners	Catch in Number Autumn Spawners x 10^6
Jan	231			-	-	5.198
Feb	216			-	-	4.860
Mar	458			22.50	-	10.305
Apr	142			-	-	3.195
May	163			-	-	2.410
Jun	498			-	-	3.521
Jul	2 830			7.07	10	18.007
Aug	6 310			5.97	-	37.671
Sep	4 796			6.31	-	30.263
Oct	2 151			6.91	-	14.863
Nov	94			-	-	0.650
Dec	363			-	-	2.508
Total	18 252			-	-	133.451

Appendix Table 7. Relative age-distribution (%). Catch in numbers x 10^6.

Source of Sample: C   Gear: TrC   Area: IVb

Age / Month	.0	I	II	III	IV	V	VI	VII	VIII	VIII+	Total
Jan			3.494	1.653	0.050						5.198
Feb			3.267	1.546	0.047						4.860
Mar			67.22	31.80	0.97						720
			6.927	3.277	0.100						10.305
Apr			2.148	1.016	0.031						3.195
May			1.083	0.753	0.386	0.109	0.069				2.410
Jun			0.797	1.079	1.094	0.319	0.203			0.029	3.521
Jul			22.63	30.65	31.06	9.05	5.76			0.82	486
			4.075	5.519	5.593	1.630	1.037			0.148	18.007
Aug		0.03	6.16	26.27	49.75	13.79	3.36	0.26	0.07	0.26	2 645
		0.011	2.321	9.896	18.741	5.195	1.266	0.098	0.026	0.098	37.671
Sep			7.08	13.35	67.49	8.39	2.69	0.53	0.20	0.23	2 966
			2.143	4.040	20.425	2.539	0.814	0.160	0.061	0.010	30.263
Oct			19.28	15.12	57.06	5.28	2.37	0.66	0.19		1 514
			2.866	2.247	8.481	0.785	0.352	0.098	0.028		14.863
Nov			0.125	0.098	0.371	0.034	0.015	0.004	0.001		0.650
Dec			0.484	0.379	1.431	0.132	0.059	0.017	0.005		2.508
Total Nos.	-	0.011	29.730	31.503	56.750	10.743	3.815	0.377	0.121	0.345	133.451

Appendix Table 7. Calculation of catch in numbers for each area and each gear. All data from commercial catches.

Area IVb
Gear TrI

Month	Catch tons	Numbers	Weight	No/Kg	% Spring Spawners	Catch in Number Autumn Spawners x 10^6
Jan	4 675			35.91	–	167.879
Feb	11 063			43.07	–	476.483
Mar	30 735			34.28	–	1 053.596
Apr	1 188			21.33	–	25.340
May	587			–	–	12.521
Jun	2 645			–	–	39.358
Jul	18 590			14.88	–	276.619
Aug	34 646			20.26	–	701.928
Sep	23 005			29.28	–	673.586
Oct	19 163			19.61	–	375.786
Nov	13 712			18.84	–	258.334
Dec	2 662			29.80	–	79.328
Total	162 671			–	–	4 140.758

Appendix Table 7. Relative age-distribution (%). Catch in numbers x 10^6.

Source of Sample: C   Gear: TrI   Area: IVb

Age / Month	0	I	II	III	IV	V	VI	VII	VIII	VIII$^+$	Total
Jan		79.75 133.884	20.24 33.979								583 167.879
Feb		91.56 436.268	8.37 39.882	0.06 0.286							1 636 476.483
Mar		87.56 922.528	12.22 128.749	0.20 2.107							1 440 1 053.596
Apr		64.56 16.360	14.96 3.791	6.29 1.594	11.81 2.993	2.36 0.598					127 25.340
May		– 8.083	– 1.873	– 0.788	– 1.479	– 0.295					– 12.521
Jun	– 8.911	– 29.703	– 0.740								– 39.358
Jul	22.64 62.627	75.47 208.765	1.88 5.200								318 276.619
Aug	16.67 117.011	77.54 544.275	5.61 39.378	0.16 1.123							1 853 701.928
Sep	57.02 384.079	41.80 281.559	0.92 6.197	0.12 0.808	0.06 0.404	0.06 0.404					1 629 673.586
Oct	41.83 157.191	55.69 209.275	2.47 9.282								1 255 375.786
Nov	42.70 110.309	56.40 145.700	0.88 2.273								679 258.334
Dec	84.56 67.079	15.43 12.240									149 79.328
Total Nos.	907.207	2 948.640	271.344	6.706	4.876	1.297	–	–	–	–	4 140.758

Appendix Table 7. Calculation of catch in numbers for each area
and each gear.
All data from commercial catches.

Month	Catch tons	Numbers	Weight	No./Kg	% Spring Spawners	Catch in Number Autumn Spawners x 10⁶
Jan	1 487			12.50	–	18.588
Feb	14			–	–	0.165
Mar	2 156			11.11	–	23.953
Apr	–			–	–	–
May	–			–	–	
Jun	636			–	–	7.066
Jul	12 963			–	–	144.019
Aug	–			–	–	–
Sep	4			–	–	0.061
Oct	–			–	–	–
Nov	53			–	–	0.806
Dec	–			15.20	–	–
Total	17 313			–	–	194.658

Appendix Table 7. Relative age distribution (%).
Catch in numbers x 10⁶.

Source of Sample: C   Gear: PS   Area: IVb

Age \ Month	0	I	II	III	IV	V	VI	VII	VIII	VIII+	Total
Jan		12.04 / 2.238	87.43 / 16.251		0.52 / 0.097						191 / 18.588
Feb		– / 0.010	– / 0.143	– / 0.010	– / 0.002						– / 0.165
Mar			85.86 / 20.566	11.95 / 2.862	2.17 / 0.520						92 / 23.953
Apr											
May											
Jun			– / 6.067	– / 0.844	– / 0.153						– / 7.066
Jul			– / 123.655	– / 17.210	– / 3.125						– / 144.019
Aug											
Sep	– / 0.010	– / 0.050									– / 0.061
Oct											
Nov	0.138 / 0.668										0.806
Dec	17.10 / –	82.89 / –									76 / –
Total Nos.	0.148	2.966	166.682	20.926	3.897	–	–	–	–	–	194.658

Appendix Table 8. Nominal catches (tons)

Herring 1972.

Country: Belgium	IVaE	IVaW	IVb	IVc	Total
TrC	—	—	—	1 336	1 336
TrI	—	—	—	—	—
PS	—	—	—	—	—
Dr	—	—	—	—	—
Trial run total	—	—	—	1 336	1 336
Herring Assessment WG total	—	—	—	1 337	1 337

Country: Denmark	IVaE	IVaW	IVb	IVc	Total
TrC	86	367	1 589	—	2 042
TrI	19 624	29 343	162 671	57	211 695
PS	—	—	—	—	—
Dr	—	—	—	—	—
Trial run total	19 710	29 710	164 260	57	213 737
Herring Assessment WG total	19 711	29 711	164 260	57	213 739

Country: Faroe Islands	IVaE	IVaW	IVb	IVc	Total
TrC	—	—	—	—	—
TrI	—	—	—	—	—
PS	—	—	—	—	—
Dr	—	—	—	—	—
Trial run total	—	—	—	—	—
Herring Assessment WG total	979	37 004	10 460	—	48 443

Country: France	IVaE	IVaW	IVb	IVc	Total
TrC	—	236	2 576	11 522	14 334
TrI	—	—	—	—	—
PS	—	—	—	—	—
Dr	—	—	—	—	—
Trial run total	—	236	2 576	11 522	14 334
Herring Assessment WG total	—	888	2 014	9 999	12 901

Country: Germany, Federal Republic of	IVaE	IVaW	IVb	IVc	Total
TrC	1	882	4 656	—	5 539
TrI	—	—	—	—	—
PS	—	—	—	—	—
Dr	—	—	—	—	—
Trial run total	1	882	4 656	—	5 539
Herring Assessment WG total	9	100	2 844	112	3 065

Country: Iceland	IVaE	IVaW	IVb	IVc	Total
TrC	—	—	—	—	—
TrI	—	—	—	—	—
PS	—	31 635	334	—	31 969
Dr	—	—	—	—	—
Trial run total	—	31 635	334	—	31 969
Herring Assessment WG total	1 943	29 721	334	—	31 998

Appendix Table 8 (Continued). Nominal catches (tons).
Herring 1972.

Country: Netherlands	IVaE	IVaW	IVb	IVc	Total
TrC	93	9 205	12 020	12 270	33 588
TrI	—	—	—	—	—
PS	—	—	—	—	—
Dr	—	—	—	—	—
Trial run total	93	9 205	12 020	12 270	33 588
Herring Assessment WG total	40	1 967	11 372	11 450	24 829
Country: Norway					
TrC	—	—	—	—	—
TrI	—	—	—	—	—
PS	53	100 173	17 041	—	117 267
Dr	—	—	—	—	—
Trial run total	53	100 173	17 041	—	117 267
Herring Assessment WG total	50	100 408	17 043	—	117 501
Country: Poland					
TrC	30	1 592	614	—	2 236
TrI	—	—	—	—	—
PS	—	—	—	—	—
Dr	—	—	—	—	—
Trial run total	30	1 592	614	—	2 236
Herring Assessment WG total	—	1 620	615	—	2 235
Country: UK (England)					
TrC	—	78	278	229	585
TrI	—	—	—	—	—
PS	—	—	—	—	—
Dr	—	21	—	85	106
Trial run total	—	99	278	314	691
Herring Assessment WG total	—	74	271	305	650
Country: UK (Scotland)					
TrC	—	3 533	5	—	3 538
TrI	—	—	—	—	—
PS	20	16 898	—	—	16 918
Dr	—	3 793	—	—	3 793
Trial run total	20	24 224	5	—	24 249
Herring Assessment WG total	—	17 227	—	—	17 227
Country: Sweden					
TrC	—	—	—	—	—
TrI	—	—	—	—	—
PS	—	—	—	—	—
Dr	—	—	—	—	—
Trial run total	—	—	—	—	—
Herring Assessment WG total	—	—	7 366	—	7 366

Appendix Table 8 (Continued). Nominal catches (tons).
Herring 1972.

Country: USSR	IVaE	IVaW	IVb	IVc	Total
TrC	–	16 461	–	–	–
TrI	–	–	–	–	–
PS	–	–	–	–	–
Dr	–	–	–	–	–
Trial run total	–	16 461	–	–	16 461
Herring Assessment WG total	–	16 386	–	–	16 386
Country: Total					
TrC	210	32 354	21 738	25 357	79 659
TrI	19 624	29 343	162 671	57	211 695
PS	73	148 706	17 375	–	166 154
Dr	–	3 814	–	85	3 899
Trial run total	19 907	214 217	201 784	25 499	461 407
Herring Assessment WG total	22 732	235 106	216 579	23 260	497 677

TABLE 2.02 • HERRING CATCHES 1972 SPLIT ON MONTH GEAR COUNTRY AND AREAS

BIVARIATE FREQUENCY DISTRIBUTION

ROW VARIABLE NUMBER 1	WEIGHT VARIABLE NUMBER 11	
COUNTRY	CATCH (METRIC TONS)	
ROW SCALF FACTOR IS 1	WEIGHT SCALE FACTOR IS 1	
MD1 = ****** MD2 = 999	1 - 1) FROM REPETITION FACTOR	

COLUMN VARIABLE NUMBER 4
SUBDIVISION*100+GEAR
COLUMN SCALE FACTOR IS 1
MD1 = ****** MD2 = 9999

SELECTING CODES (• MONTH

	10000*	10110*	11111*	11120*	12000*	12111*	12120*	12200*	20120*	20201*
1*	0*	0*	0*	880*	0*	0*	1446*	4675*	0*	0*
2*	48*	0*	0*	0*	0*	48*	0*	0*	0*	0*
3*	0*	2*	7*	0*	0*	2*	0*	0*	0*	0*
5*	0*	0*	0*	0*	0*	0*	0*	0*	51*	1487*
8*	0*	0*	0*	0*	975*	0*	0*	0*	0*	0*
9*	61*	0*	0*	0*	0*	0*	0*	0*	0*	0*
17*	4895*	0*	0*	0*	0*	0*	0*	0*	0*	0*
TOTALS	5004	2	7	880	975	50	1446	4675	51	1487

Column codes xxyyz

xx
10	IVa
11	IVa E
12	IVa W
20	IVb
30	IVc

yy
00	Gear unspecified
10	Trawl
11	Trawl for human consumption
12	Trawl for industrial purposes
20	Purse seine
30	Drift net

z
0	Area not summed over rectangles
1	Area, summed over rectangles

Appendix Table 9. Catch (metric tons) for the month of January 1972 by country (rows – for country codes see Appendix) by division and by gear.

(The table is continued on the next page).

RIVARIATE FREQUENCY DISTRIBUTION

ROW VARIABLE NUMBER 1
COUNTRY 1
ROW SCALE FACTOR IS 1
MD1 = ****** MD2 = 939

COLUMN VARIABLE NUMBER 4
SUBDIVISION#100+GEAR
COLUMN SCALE FACTOR IS 1
MD1 = ****** MD2 = 9999

WEIGHT VARIABLE NUMBER 11
CATCH (METRIC TONS)
WEIGHT SCALE FACTOR IS 1
1 = 1) FROM REPETITION FACTOR

SELECTING CODES (MONTH

Column codes xxyyz

xx
10 IVa
11 IVa E
12 IVa W
20 IVb
30 IVc

yy
00 Gear unspecified
10 Trawl
11 Trawl for human consumption
12 Trawl for industrial purposes
20 Purse seine
30 Drift net

z
0 Area not summed over rectangles
1 Area, summed over rectangles

	30000*	30110*	30111*	30301*	TOTAL
1*	0*	0*	0*	0*	7001
2*	42*	0*	8*	1*	147
3*	0*	984*	795*	0*	1790
5*	0*	0*	0*	0*	1538
8*	0*	0*	0*	0*	975
9*	0*	0*	0*	0*	61
12*	0*	129*	129*	0*	129
17*	0*	0*	0*	0*	4895
TOTALS	42	984	932	1	16536

****** 231 CASES ELIMINATED FROM TABLE 2.02 DUE TO ZERO WEIGHT VALUE

Appendix Table 9 (continued)

COLUMN VARIABLE NUMBER 4
DIVISION
COLUMN SCALE FACTOR IS 1
MD1 = ****** MD2 = 9999

TABLE 9.02   ICES TRIAL RUN   HERRING 1972

BIVARIATE FREQUENCY DISTRIBUTION

USING FILTER 'SOURCE-C'
WEIGHT VARIABLE NUMBER 18
NUMBER OF FISH II-GR
WEIGHT SCALE FACTOR IS 1
1 - 1) FROM REPETITION FACTOR 'GEAR

ROW VARIABLE NUMBER 3
MONTH
ROW SCALE FACTOR IS 1
MD1 = ****** MD2 = 99

SELECTING CODES (

Division codes (column)

11	IVa E
12	IVa W
20	IVb
30	IVc

Gear codes

1	Purse seine
2	Trawl for human consumption
3	Trawl for industrial purposes
4	Drift net

	11	12	20	TOTAL
1	0	29	167	196
2	0	2	0	2
3	0	73	79	152
6	0	242	0	242
7	34	228	0	262
8	0	540	0	540
9	0	371	0	371
10	0	431	0	431
11	0	133	0	133
12	16	49	0	55
TOTALS	50	2098	246	2394

****** 841 CASES ELIMINATED FROM TABLE 9.02 DUE TO ZERO WEIGHT VALUE

Appendix Table 10. Purse seine. - Number of 2-winter ring herring aged, by month (row) and by Division (column), 1972.

Table 1. North Sea catch in millions of fish by age.

Upper figure: calculated from Trial Run.
Lower figure: calculated by the Herring Assessment Working Group for the Area South of 62°N (Doc. C.M.1974/H:4, Table 2.8).

Area	Age in winter rings										Total
	0	1	2	3	4	5	6	7	8	>8	
IVa E	–	47.2	67.2	71.4	1.2	0.5	+	–	–	–	187.5
	–	75.1	91.0	17.8	5.8	0.7	0.1	–	–	–	190.5
IVa W	–	444.3	899.2	211.8	132.5	43.6	12.4	2.1	0.8	1.3	1 748.0
	–	338.9	830.1	176.8	88.6	19.3	4.1	–	0.5	0.4	1 458.7
IVb	907.4	2 951.6	467.8	59.1	65.5	12.0	3.8	0.4	0.1	0.3	4 468.0
	750.4	2 921.8	384.3	119.9	26.9	7.9	0.8	0.2	0.6	–	4 212.8
IVc + VII d,e	0.2	0.7	5.4	78.4	18.3	7.7	3.9	0.1	+	0.1	114.8
	–	4.8	135.1	29.3	9.3	5.0	–	–	–	–	183.5
Total	907.6	3 443.8	1 439.6	420.7	217.5	63.8	20.1	2.6	0.9	1.7	6 518.3
	750.4	3 340.6	1 440.5	343.8	130.6	32.9	5.0	0.2	1.1	0.4	6 045.5

+ = less than 0.05.

COLUMN VARIABLE NUMBER 4
SUBDIVISION*100+GEAR
COLUMN SCALE FACTOR IS 1
MD1 = ****** MD2 = 9999

Column codes xxyyz

xx
10	IVa
11	IVa.E
12	IVa.W
20	IVb
30	IVc

yy
00	Gear unspecified
10	Trawl
11	Trawl for human consumption
12	Trawl for industrial purposes
20	Purse seine
30	Drift net

z
| 0 | Area not summed over rectangles |
| 1 | Area, summed over rectangles |

TABLE 2.02   HERRING CATCHES 1972 SPLIT ON MONTH GEAR COUNTRY AND AREAS

BIVARIATE FREQUENCY DISTRIBUTION

ROW VARIABLE NUMBER 1   WEIGHT VARIABLE NUMBER 11
COUNTRY   CATCH (METRIC TONS)
ROW SCALF FACTOR IS 1   WEIGHT SCALE FACTOR IS 1
MD1 = ****** MD2 = 999   SELECTING CODES (1 - 1) FROM REPETITION FACTOR MONTH

	10000*	10110*	11111*	11120*	12000*	12111*	12120*	12200*	20120*	20201*
1*	0*	0*	0*	880*	0*	0*	1446*	0*	4675*	0*
2*	48*	0*	0*	0*	0*	48*	0*	0*	0*	0*
3*	0*	2*	7*	0*	0*	2*	0*	0*	0*	0*
5*	0*	0*	0*	0*	0*	0*	0*	51*	0*	1487*
8*	0*	0*	0*	0*	975*	0*	0*	0*	0*	0*
9*	61*	0*	0*	0*	0*	0*	0*	0*	0*	0*
17*	4895*	0*	0*	0*	0*	0*	0*	0*	0*	0*
TOTALS	5004	2	7	880	975	50	1446	51	4675	1487

Appendix Table 9. Catch (metric tons) for the month of January 1972 by country

(rows - for country codes see Appendix) by division and by gear.

RIVARIATE FREQUENCY DISTRIBUTION

ROW VARIABLE NUMBER   1
COUNTRY
ROW SCALE FACTOR IS   1
MD1 = ****** MD2 =   939

WEIGHT VARIARLE NUMBER   11
CATCH (METRIC TONS)
WEIGHT SCALE FACTOR IS   1
1 -   1) FROM REPETITION FACTOR

COLUMN VARIABLE NUMBER   4
SUBDIVISION*100+GEAR
COLUMN SCALE FACTOR IS   1
MD1 = ****** MD2 =   9999

SELECTING CODES (*MONTH

*	30000*	30110*	30111*	30301*	TOTAL
*****	********	********	********	********	
1*	0*	0*	0*	0*	7001
*	*	*	*	*	
2*	42*	0*	8*	1*	147
*	*	*	*	*	
3*	0*	984*	795*	0*	1790
*	*	*	*	*	
5*	0*	0*	0*	0*	1538
*****	********	********	********	********	
8*	0*	0*	0*	0*	975
*	*	*	*	*	
9*	0*	0*	0*	0*	61
*****	********	********	********	********	
12*	0*	0*	129*	0*	129
*****	********	********	********	********	
17*	0*	0*	0*	0*	4895
*****	********	********	********	********	
TOTALS	42	984	932	1	16536

****** 231 CASES ELIMINATED FROM TARLE 2.02 DUE TO ZERO WEIGHT VALUE

Column codes xxyyz

xx
10   IVa
11   IVa E
12   IVa W
20   IVb
30   IVc

yy
00   Gear unspecified
10   Trawl
11   Trawl for human consumption
12   Trawl for industrial purposes
20   Purse seine
30   Drift net

z
0   Area not summed over rectangles
1   Area, summed over rectangles

Appendix Table 9 (continued)

ICES TRIAL RUN   HERRING 1972

TABLE   9.02

BIVARIATE FREQUENCY DISTRIBUTION

COLUMN VARIABLE NUMBER   4
DIVISION
COLUMN SCALE FACTOR IS   1
MD1 = ******   MD2 =   9999

ROW VARIABLE NUMBER   3
MONTH
ROW SCALE FACTOR IS   1
MD1 = ******   MD2 =   99

USING FILTER   'SOURCE-C'
WEIGHT VARIABLE NUMBER   18
NUMBER OF FISH I1-GR
WEIGHT SCALE FACTOR IS   1
1) FROM REPETITION FACTOR   'GEAR

SELECTING CODES (

Division codes (column)

11   IVa E
12   IVa W
20   IVb
30   IVc

Gear codes

1   Purse seine
2   Trawl for human consumption
3   Trawl for industrial purposes
4   Drift net

	11	12	20	TOTAL
1	0	29	167	196
2	0	2	0	2
3	0	73	79	152
6	0	242	0	242
7	34	228	0	262
8	0	540	0	540
9	0	371	0	371
10	0	431	0	431
11	0	133	0	133
12	16	49	0	65
TOTALS	50	2098	246	2394

***** 841 CASES ELIMINATED FROM TABLE   9.02 DUE TO ZERO WEIGHT VALUE

Appendix Table 10. Purse seine. - Number of 2-winter ring herring aged, by month (row) and by Division (column), 1972.

TABLE 9.03   ICES TRIAL RUN   HERRING 1972   PAGE 9.03.001

ROW VARIABLE NUMBER 3
MONTH
ROW SCALE FACTOR IS 1
MD1 = ****** MD2 = 99

BIVARIATE FREQUENCY DISTRIBUTION

USING FILTER 'SOURCE-C'
WEIGHT VARIABLE NUMBER 18
NUMBER OF FISH II-GR
WEIGHT SCALE FACTOR IS 1
2 - 2) FROM REPETITION FACTOR 'GEAR

COLUMN VARIABLE NUMBER 4
DIVISION
COLUMN SCALE FACTOR 1
MD1 = ****** MD2 = 9990

SELECTING CODES (

Division codes (column)

11	IVaE
12	IVa W
20	IVb
30	IVc

Gear codes

1	Purse seine
2	Trawl for human consumption
3	Trawl for industrial purposes
4	Drift net

	TOTAL	30	20	12
1	11	11	0	0
2	104	104	0	0
3	484	0	484	0
5	89	0	0	89
7	110	0	110	0
8	334	0	163	171
9	210	0	210	0
10	414	3	292	119
11	96	96	0	0
12	54	54	0	0
TOTALS	1906	268	1259	379

****** 841 CASES ELIMINATED FROM TABLE 9.03 DUE TO ZERO WEIGHT VALUE

Appendix Table 11. Trawl for human consumption. Number of 2-winter ring herring aged, by month (row) and by Division (column), 1972.

TABLE   9.03

ROW VARIABLE NUMBER 3
MONTH
ROW SCALE FACTOR IS 1
MD1 = ****** MD2 = 99

COLUMN VARIABLE NUMBER 4
DIVISION
COLUMN SCALE FACTOR IS 1
MD1 = ****** MD2 = 9990

ICES TRIAL RUN   HERRING 1972

BIVARIATE FREQUENCY DISTRIBUTION

USING FILTER   'SOURCE-C'
WEIGHT VARIABLE NUMBER 18
NUMBER OF FISH II-GR
WEIGHT SCALE FACTOR IS 1
(2 -   2) FROM REPETITION FACTOR 'GEAR

SELECTING CODES (

Division codes (column)

11 IVaE
12 IVa W
20 IVb
30 IVc

Gear codes

1 Purse seine
2 Trawl for human consumption
3 Trawl for industrial purposes
4 Drift net

	12	20	30	TOTAL
1	0	0	11	11
2	0	0	104	104
3	0	484	0	484
5	89	0	0	89
7	0	110	0	110
8	171	163	0	334
9	0	210	0	210
10	119	292	3	414
11	0	0	96	96
12	0	0	54	54
TOTALS	379	1259	268	1906

****** 841 CASES ELIMINATED FROM TABLE   9.03 DUE TO ZERO WEIGHT VALUE

Appendix Table 11. Trawl for human consumption. Number of 2-winter ring herring aged, by month (row) and by Division (column), 1972.

TABLE 9.04

ROW VARIABLE NUMBER 3
MONTH
ROW SCALE FACTOR IS 1
MD1 = ****** MD2 = 99

COLUMN VARIABLE NUMBER 4
DIVISION
COLUMN SCALE FACTOR IS 1
MD1 = ****** MD2 = 9999

ICES TRIAL RUN   HERRING 1972

BIVARIATE FREQUENCY DISTRIBUTION

USING FILTER 'SOURCE-C'
WEIGHT VARIABLE NUMBER 18
NUMBER OF FISH II-GR
WEIGHT SCALE FACTOR IS 1
3 —   3) FROM REPETITION FACTOR 'GEAR

SELECTING CODES (

Division codes (column)

11   IVa E
12   IVa W
20   IVb
30   IVc

Gear codes

1   Purse seine
2   Trawl for human consumption
3   Trawl for industrial purposes
4   Drift net

	11	12	20	TOTAL
1	0	0	118	118
2	0	48	137	185
3	0	20	176	196
4	0	11	19	30
5	0	1	0	1
7	10	0	6	16
8	0	0	104	104
9	0	0	15	15
10	4	0	31	35
11	0	0	6	6
TOTALS	14	80	612	706

***** 841 CASES ELIMINATED FROM TABLE   9.04 DUE TO ZERO WEIGHT VALUE

Appendix Table 12.   Trawl for industrial purposes. Number of 2-winter ring herring aged, by month (row) and by Division (column), 1972.

COLUMN VARIABLE NUMBER 4
DIVISION
COLUMN SCALE FACTOR IS
MD1 = ****** MD2 = 9999

'GEAR'

Division codes

11 IVa E
12 IVa W
20 IVb
30 IVc

Gear codes

1 Purse seine
2 Trawl for human consumption
3 Trawl for industrial purposes
4 Drift net

ICFS TRIAL RUN   HERRING 1972

RIVARIATE FREQUENCY DISTRIBUTION

USING FILTER   'SOURCE-C'
WEIGHT VARIABLE NUMBER 18
NUMBER OF FISH II-GR
WEIGHT SCALE FACTOR IS 1
(4 -   4) FROM REPETITION FACTOR

SELECTING CODES (

TABLE   9.05
ROW VARIABLE NUMBER   3
MONTH
ROW SCALE FACTOR IS 1
MD1 = ****** MD2 =   99

	12	TOTAL
5	110	110
6	333	333
7	120	120
8	204	204
TOTALS	757	767

****** 841 CASES ELIMINATED FROM TABLE   9.05 DUE TO ZERO WEIGHT VALUE

******NO ENTRIES FOR TABLE 10 REPETITION 1

Appendix Table 13.   Drift net. Number of 2-winter ring herring aged,
by month (row) and by Division (column), 1972.