1950

International Commission
for the
Northwest Atlantic Fisheries

1970

RESTRICTED

Serial No.~~2242~~
(B.g.18)

ICNAF Comm.Doc.70/15

ANNUAL MEETING - JUNE 1970

Report of Third Meeting of ICES/ICNAF Joint Working Group on Selectivity Analysis
Charlottenlund, 5-9 January 1970

Report of the 3rd Meeting of the ICES/ICNAF Joint Working Group on Selectivity Analysis

Introduction

At the 1969 Statutory Meeting of ICES it was recommended that the ICES/ICNAF Joint Working Group on Selectivity Analysis be wound up and a new Working Group be set up with the following terms of reference (C.Res.1969/3:6):-

"1. to extend the work of the 1969 ICES/ICNAF Joint Selectivity Analysis Working Group to include data relating to NEAFC Region 2 and ICNAF Areas 4 and 5;

2. to investigate further all factors (including physical properties of net twines, biological factors, etc.) which cause, or may cause, differences in mesh selection;

3. to examine the adequacy of the present system of mesh differentials used by NEAFC and ICNAF in relation to the principle of equivalent selectivity".

The Working Group met at Charlottenlund from 5th to 9th January 1970, and the following participants attended the meeting:-

Dr. A. I. Treschev, Convenor	U.S.S.R.
Mr. M. J. Holden, Secretary	U.K.
Prof., Dr. A. von Brandt	German Fed.Republ.
Dr. H. Bohl	German Fed.Republ.
Mr. M. Portier	France
Dr. J. Reuter	Netherlands
Dr. W. Strzyzewski	Poland
Mr. S. Prüffer	Poland
Mr. J. A. Pope	U.K.
Mr. M. D. Grosslein	U.S.A.
Mr. V. Belof	U.S.S.R.

Mr. A. R. Margetts, ICES (Chairman, Gear and Behaviour Cttee.)
Mr. J. Møller Christensen, ICES (Secretary to Liaison Cttee.).

Part I

Analysis of Data

Before the meeting all member countries of both ICES and ICNAF were sent copies of their published selectivity data and were asked for corrections and additions of unpublished data. Not all member countries were able to reply before the meeting started.

All selectivity data for all species in NEAFC Region 2, ICNAF Sub-Areas 4 and 5 and also for ICES Division Vb, which had not been considered at the previous meetings, were tabulated. However, there were only sufficient data from the following stocks to warrant an analysis:

1) Cod — ICNAF Sub-Areas 4, 5
2) Haddock — ICNAF Sub-Areas 4, 5
3) Haddock — NEAFC Region 2
4) Haddock — ICES Division Vb
5) Whiting — NEAFC Region 2.

The Working Group followed the same procedure as at their previous meetings:-

1) All experiments made at the same time with the same cod-end mesh and twine were grouped;
2) If no duration of haul was shown it was assumed to be 60 minutes, unless there were evidence to indicate that it should be shorter or longer; such estimated values are shown in parantheses in Tables 1 to 4.;
3) All doubtful experiments (for example, selection factor shown in parantheses in original data) and all those with insufficient data for analysis were excluded.

For each stock the different types of material, braiding and gear were considered separately, that is, the Working Group considered seine cod-ends made of each material separately and for trawls single- and double-braided materials were considered separately. The data considered are shown in Tables 1 to 42.

Mean selection factors were calculated by four methods, unweighted mean, weighted by number of hauls, weighted by number of hauls and number of fish in selection range (or by number of fish/species studied in the cod-end if this was not available) and weighted by the inverse of the variance. An average of the four means was taken to give a mean selection factor and from these averages equivalents were calculated using double manila, trawl, as a standard (Tables 43 to 46).

The selection factors and equivalents listed in Tables 43 to 46 are joint estimates derived from varying numbers of experiments of different accuracy. It is not possible, however, because of inadequate available information, to evaluate precisely the statistical variances of the estimates derived by the different methods of analysis. Adequate estimates of variances, based on assumptions as to the variance of a single determination such as given by Pope (1969) may, however, be derived for each method of analysis. Unfortunately there was not sufficient time during the meeting to make such calculations for every value, but from a relatively small number of calculations it seems reasonable to assume a standard error of at least $\pm$ 0.07 for each average selection factor and one of at least $\pm$ 0.08 for each equivalent. Ninety-five percent confidence limits for an estimate are obtained by adding and subtracting twice these figures to the estimate. Thus the 95% limits for an average selection factor of say 3.30 would be 3.30 $\pm$ 0.14, i.e. 3.16 and 3.44, while the limits for an equivalent of say 1.16 would be 1.16 $\pm$ 0.16, i.e. 1.00 and 1.32. Such confidence limits for equivalents are given in Tables 43 to 46 for those materials and gears for which there were four or more sets of experimental data. The degree of overlap of the confidence limits together with the present equivalents are shown in Figure 1 for the data analysed at this meeting, and in Figure 2 for the data analysed previously.

The number of sets of data considered for each stock is given in Table 47, and the range of selection factors for each stock in Tables 48 to 52.

Part II

The Working Group was asked to investigate further all factors (including physical properties of net twines, biological factors etc.) which cause or may cause, differences in mesh selection.

Physical Properties of Net Twines

To date very little data on the physical properties of the net twines used in selectivity experiments have been published. The Working Group, therefore, did not have data from which it could make an analysis of the relationship between physical properties of net twines and selectivity, and for future development there is an urgent need to establish a better understanding of the results of selectivity experiments with the properties of the netting twine used for trawls.

The analyses of selection experiments presented in the first report of this Working Group and of those contained in the present report indicate that the large variations in the selection factor for polyamide may be due to variations in the elongation introduced in manufaction. Elongation of netting twine depends on two factors, the type of fibre and the way of constructing the netting twine. An example may illustrate this point: starting with the same type of fibre a double-twisted twine has less elongation than one which is cable-laid (three times twisted). This is due only to the last (third) twist of the twine. This also means that it is impossible to judge twine properties without considering the construction of the twine, particularly with polyamide fibres.

The Working Group considers that an international experiment (details of which are given later) should be undertaken to determine whether high elongation and high selectivity are positively correlated or whether there is no correlation between them.

In textile research the following properties of netting twine and netting are considered highly important:

Netting Twines:

- Kind of material (PA, PE, PES, PP)
- Type of fibre (multi-filament, monofilament, staple fibre, split fibre)
- Construction of the twine (twisted or plaited)
- Coefficient of twist (soft, medium and hard lay)
- Designation (Tex and R.tex)
- Treatment (untreated, thermo-fixed, chemical treatment etc.)
- Breaking strength (wet weaver's-knot breaking strength)
- Load-elongation-curve (up to half of the value of the wet weaver's-knot breaking strength).

Netting:

- Method of manufacturing (hand or machine-made, knotted or knotless, single- or double-braided)
- Treatment (untreated, thermo-fixed, chemical treatment etc.)
- Mesh-size (wet mesh-size measured with ICES mesh-gauge).

The items mentioned above must be determined as far as possible according to the ISO standards for testing of netting twine and netting.

It is quite probable that other of the above-mentioned properties, either alone or in conjunction with each other, influence the selectivity of trawls. Further, there is the possibility that other physical properties not mentioned above also influence the selectivity of trawls; for example, some investigators have pointed to flexibility and elongation of the netting twine.

Biological Factors

Some of the biological factors which may influence selectivity of the same species are:-

1) Daily, seasonal, annual and long-term variations in the length/girth relationship;
2) Diurnal and seasonal variations in behaviour;
3) Behaviour changes in the net associated with the size of the catch and/or the presence of other species;
4) Differences between stocks.

This list does probably not include all biological factors affecting selectivity.

The Working Group was unable to examine the effect of behaviour on selectivity because there are too few data. Also there are no data from which diurnal variations can be studied (time is not included on the standard selectivity reporting forms).

For the majority of areas there were insufficient data to examine seasonal variations in selectivity and even in those instances for which there were many observations inspection showed that the majority of the experiments were carried out in a limited number of months; for example, in NEAFC Region 1 and in ICNAF Sub-Areas 1, 2, and 3 for experiments with double manila there were 71 sets of data for cod, 61 of which were for the months of July and August; for haddock there were 42 sets of experiments of which 32 were for June, July and August. Only three sets of experiments for both species were carried out in the period September to February.

Similarly there is a lack of data for comparison of selectivity between stocks of the same species. The only species for which there are any comparable data are for haddock, for ICES Division Vb, NEAFC Region 2 and NEAFC Region 1 combined with ICNAF Sub-Areas 1, 2 and 3, and then only for the twine material polypropylene.

In NEAFC Region 2 experiments with synthetic twines were done mainly after manila was no longer used, and possible long-term changes in selectivity may invalidate comparison between manila, as a standard, and other materials when determining equivalents.

To summarize, the Working Group considered that it was impossible to assess at this time the effect of physical properties of the twine material and biological factors on selectivity.

The present selectivity data incorporate all factors, biological, constructional, technological and environmental, and so one set of data is not strictly comparable with another; for example all the selectivity experiments for double manila twine for haddock in ICES Division Vb were carried out in December. However, they are the only data in existence from which to evaluate differentials.

Proposed Experiments

1. To obtain a new standard selection factor for each species

If the new standard polyamide is to be used in the same manner as manila has been used, it will be necessary to obtain as much data with the new standard polyamide as quickly as possible.

It is suggested that whenever possible research vessels should use cod-ends made of the new standard polyamide and collect selectivity data so that a large number of selection factors covering all species, seasons, areas etc., be obtained as quickly as possible, from which a standard selection factor for all species can be evaluated.

(It is realised that this standard will be no more than a reference point because there may be long-term changes in selection factors for a given species).

2. Investigations of factors affecting selectivity

Although many selectivity experiments have been conducted in which only one factor was varied, there are insufficient data from which to draw conclusions on the factors which affect selectivity. In all future selectivity experiments the experimental material should always be compared with the standard polyamide and only those factors varied, which it can be definitely shown have no effect on selectivity.

3. Evaluation of the relationship between elongation and selectivity

This experiment is a special case of 2 (above).

To minimise all sources of error the research vessels of all countries engaged to make this experiment must work with the same trawl. This means that the vessels must have the same net of the same material and of the same construction. In other words:-

(i) all vessels have the same forenet (this means the trawl without the cod-end), made of the same material, of the same mesh-size (machine-made netting), of the same construction and made by the same netmaker.

(ii) all vessels must have at least 3 different cod-ends:

a) made of the proposed standard twine (with an average elongation of about 24%);

b) made of polyamide netting twine with an average elongation less than 20%;

c) made of polyamide netting twine with an average elongation of more than 40%.

The twine of the three cod-ends has to be made by one factory from the same type of polyamide fibre and must differ in the construction only to get the wanted differences in elongation of the netting twine. The cod-ends have to be made just like the forenet by machine-made netting of one manufacturer and supplied by the same netmaker.

It can be expected that the price for trawls, and especially of the cod-ends, will be above average, because only small quantities of special-made netting will be needed for these important experiments.

For the realisation of these tests a new special programme must be worked out. Moreover, it is proposed to use headliner recorder to prove comparable behaviour of the bottom trawl.

It is desirable that each country should take part in the experiments to be conducted in the area where it is fishing.

Part III

Adequacy of the Present System of Differences of Mesh Differentials used by NEAFC and ICNAF in relation to the Principles of Equivalent Selectivity

Tables 53 and 54 show the mesh-sizes which are effective now in NEAFC and ICNAF, correspondingly. The last columns of the Tables show what acceptance of the average equivalents might imply in terms of mesh-sizes. (The averages are based on unweighted values/simple aritmethic means).

(The distinction made between polyamides A and B is that distinction made in the first report of the Working Group and this difference is not accepted by the Delegates of both the Federal Republic of Germany and of the Netherlands).

The data in Table 1 to 42 are from many experiments which have been conducted over a long period of time in many fisheries but which have not been conducted systematically. They serve as a useful guide but no two mean figures are really strictly comparable. In making comparisons it is best to compare the bands of values for each material category as given by the confidence limits derived from the variation within and between experiments (Figures 1 and 2). In only some of the experiments were more than one type of cod-end tested at the same time under the same conditions. Thus even the bands of values for mean selectivities and the calculated selectivity equivalents are subject to variation from biological causes, fishery conditions, net construction and the way the net is used, and to features of the twines other than their basic chemical nature.

The full information about the twines used in the experiment, which is needed if a proper investigation is to be made of the causes of the observed selection diffferences, is not available. But, using the summary figures and making allowance for their reliability, it appears that the polyamide fibres as used in several fisheries have had higher selectivities on average than other twines, especially manila. The bands of selectivity values of many twines overlap considerably, indicating that any observed selection differences may not be due to the fibre type only.

The Working Group had no clear information as to why the average selectivity of polyamides was higher than that of manila or polyethylene, for example. There are indications that twine extensibility was perhaps the most important controlling factor, and the Working Group recommends that an experiment as detailed in Part II shall be conducted as soon as possible.

The accumulation of evidence from selectivity with more and more twine types (both basic chemical material and construction) indicates that the distinction between groups of twines with different selectivities is by no means as simple as it appeared to be when differentials were first considered and introduced into fisheries legislation. In particular, it is still not known with any certainty which feature or features of a twine are of primary importance in determining its selectivity. Thus, although

the selectivity of some of the twines tested appears to be higher on average than that of other twine types, the Working Group cannot attribute a very reliable value to the measure of difference and has insufficient evidence to decide to what extent this apparently higher selectivity is due to the chemical nature of the material itself or to attributes of extensibility and flexibility which can be very substantially varied by such factors as the method of twine construction and choice of filament type.

The present system of mesh differentials is based mainly on the chemical nature of the fibres from which the cod-end was made. In view of the absence of other data on physical properties, discussed when considering the second term of reference, the Working Group considered that in the present state of knowledge it could not recommend any departure from the present system except that there would appear to be no basis for the distinction made between trawls and seines in all areas and between single- and double-braided cod-ends in NEAFC Region 2. Differentials should be based solely on the chemical nature of the twine from which the cod-end is made and not take into account the type of gear (seine or trawl) or the braiding of the twine (single- or double-braided). (For seines the present differential is based on experiments with cotton cod-ends and the differential was then given to the type of gear and not to the cod-end material because cotton was the only material used. The differential has been extended into other areas on the basis of the experiments in NEAFC Region 2 because there are no seine-net data for other regions).

These changes would mainly affect NEAFC Region 2. The Working Group considers that the data indicate that the present system of mesh differentials in other areas needs improvement also.

Table 1. Manila. Trawl. Cod. ICNAF Sub-Areas 4 and 5.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh gauge	Mean Mesh-size (mm)	50% Length (mm)	Selection		No. of Selection Range	Total No.
	Material construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end & Cover	Cod-end and Cover
VII 1953	Double		91	Cover	2	90		ICNAF	112	385	3,5	60		903
VIII 1953	"		91	"	3	90		"	129	430	3,3	100		1670
IX 1953	"		91	"	2	90		"	129	400	3,1	120		1049
VI 1954	"		101	"	10	45		"	125	410	3,3	110		142
VI 1954	"		101	"	18	45		"	112	375	3,4	120		1576
VIII 1954	"		101	"	9	45		"	109	350	3,2	100		2334
VIII 1954	"		101	"	14	45		"	117	410	3,5	120		2660
VIII 1955	"		151	"	11	60		"	168	580	3,4	100		293
IX 1955	"		151	"	12	60		"	112	375	3,4	90		4189
VII 1956	"		101	"	3	90		"	114	395	3,5	100		2115

Table 2. Polyamide. Trawl. Cod. ICNAF Sub-Areas 4 and 5.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh gauge	Mean Mesh-size (mm)	50% Length (mm)	Selection		No. of Selection Range	Total No.
	Material construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end & Cover	Cod-end and Cover
VIII 1956	Double		161	Cover	14	90		ICNAF	112	420	3,8	70		2961+
VIII 1956	"		161	"	5	90		"	122	465	3,8	(90)		2259+

Table 3. Cotton. Trawl. Cod. ICNAF Sub-Areas 4 and 5.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh gauge	Mean Mesh-size (mm)	50% Length (mm)	Selection		No. of Selection Range	Total No.
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end and Cover
VII 1954	Single			Cover	16	45		ICNAF	119	445	3,6	80		1291
VIII 1954	"			"	4	45		"	102	370	3,6	80		470

Table 4. Polyamide. Trawl. Cod. ICNAF Sub-Areas 4 and 5.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh gauge	Mean Mesh-size (mm)	50% Length (mm)	Selection		No. of Selectinn Range	Total No.
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end and Cover
VII 1955	Single		252	Cover	29	60		ICNAF	122	475	3,9	60		2261
VII 1965	"		252	"	28	60		"	119	460	3,9	60		2112
VIII 1955	"		252	"	12	60		"	112	440	3,9	80		2895
VIII 1955	"		252	"	16	60		"	107	410	3,8	60		5754
IV-VI 1965	"	17000	60	"	9	90	3.0-3.5	"	124	452	3,4	107	979	4946

Table 5. Manila. Trawl. Haddock. ICNAF Sub-Areas 4 and 5.

Date	Cod-end			Method	Hauls		Speed of tow (knots)	Mesh gauge	Mean mesh-size (mm)	50% length (mm)	Selection		No. in selection range	Total No.
	Material construction	R. Tex (g/1000 m)	Runnage (m/kg)		No.	Average duration (min)					Factor	Range (mm)	Cod-end and cover	Cod-end and cover
X 1952	Double		101	Cover	5	(60)		ICNAF	109	341	3.1	53	609	3666
X 1952	"		101	"	9	(60)		"	112	367	3.3	84	2603	5576
X 1952	"		101	"	3	(60)		"	114	366	3.2	86	434	2006
V 1953	"		101	"	8	(60)		"	127	399	3.3	70	1422	3110
VI 1953	"		91	"	8	60		"	107	318	3.0	40	166	3647
VII 1953	"		91	"	10	60		"	113	368	3.3	61	917	5422
IV 1955	"		91	"	10	56		"	140	491	3.5	113	2705	5500
IV 1955	"		91	"	10	54		"	154	528	3.4	143	2579	4536
IV 1955	"		91	"	10	60		"	167	547	3.3	106	1204	3447
VI 1953	"		151	"	14	60		"	75	243	3.3	45	8881	22039
VI 1952	"		101	"	7	72		"	92	290	3.2	-	6368	
VI 1952	"		101	"	5	67		"	105	323	3.1	-	3380	
VI 1953	"		151	"	5	60		"	76	245	3.2	49	4524	9854
VI 1953	"		151	"	9	60		"	76	245	3.2	39	4371	12585
VII 1953	"		91	"	10	77		"	113	368	3.3	64	967	5432
VII 1953	"		91	"	3	90		"	112	350	3.1	90	4031	
VIII 1953	"		91	"	6	90		"	129	400	3.1	120	5421	
IX 1953	"		91	"	4	90		"	132	435	3.3	110	4550	
X 1955	"		151	"	12	60		"	112	355	3.2	90	1126	
VII 1956	"		101	"	2	90		"	114	340	3.0	90	8560+	
VII 1956	"		101	"	3	20		"	113	338	3.0	67	93	590
VII 1956	"		101	"	3	40		"	113	352	3.1	58	231	950
VII 1956	"		101	"	3	60		"	113	373	3.3	62	399	1721

continued ...

(continued)

Table 5. Manila. Trawl. Haddock. ICNAF Sub-Areas 4 and 5.

Date	Cod-end			Method	Hauls		Speed of tow (knots)	Mesh gauge	Mean mesh-size (mm)	50% length (mm)	Selection		No. in selection range	Total No.
	Material construction	R. Tex (g/1000 m)	Runnage (m/kg)		No.	Average duration (min)					Factor	Range (mm)	Cod-end and cover	Cod-end and cover
VII 1956	Double		101	Cover	3	80		ICNAF	113	386	3.4	71	444	1158
VII 1956	"		91	"	8	40		"	123	368	3.0	66	950	3245
VII 1956	"		91	"	7	60		"	123	397	3.2	87	1348	3741
VII 1956	"		91	"	8	80		"	123	412	3.3	65	1569	8640
VII 1956	"		151	"	4	40		"	73	248	3.4	38	1896	3417
VII 1956	"		151	"	4	60		"	73	252	3.5	43	1777	3514
VII 1956	"		151	"	5	80		"	73	248	3.4	38	2959	7371
VI 1952	"		101	"	6	(60)		"	92	314	3.4	45	219	6305
VI 1952	"		101	"	5	(60)		"	98	314	3.2	60	1219	5058
VI 1952	"		101	"	14	(60)		"	105	323	3.1	108	5809	13969

Table 6. Polyamide. Trawl. Haddock. ICNAF Sub-Areas 4 and 5.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end and Cover
VIII 1956	Double		161	Cover	17	90		ICNAF	112	365	3,3	70		8651+
VIII 1956	"		161	"	8	90		"	122	415	3,4	90		7055+
VIII-IX 1965	"	7500	133	"	8	120	4	ICES 4 kg	114	414	3,6	93	3996	11556

Table 7. Cotton. Trawl. Haddock. ICNAF Sub-Areas 4 and 5.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end and Cover
X 1955	Single			Cover	5	70		ICNAF	138	496	3,6	72	300	2606
X 1955	"			"	8	(60)		"	114	424	3,7			856
X 1955	"			"	6	(60)		"	86	258	3,0			2287
IX-XI 1954	"			"	6	(60)		"	73	208	2,8			2349
VII 1954	"		91	"	16	45		"	119	415	3,5	80		293

Table 8. Polyamide. Trawl. Haddock. ICNAF Sub-Areas 4 and 5.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end and Cover
XI 1955	Single		252	Cover	27	60		ICNAF	107	405	3,8	80		3106
XI 1955	"		252	"	15	60		"	122	485	4,0	70		1232
IV-VI 1965	"	17000	60	"	3	90	3.0-3.5	ICES 4 kg	127	409	3,2	112	2436	3408
X 1955	Single plaited		87	"	3	60		ICNAF	135	446	3,3	53	215	1382
X 1955	"			"	7	(60)		"	107	443	4,1			1139
X 1955	"			"	2	(60)		"	146	465	3,2			689
IX-XI 1954	Single twisted		81	"	4	(60)		"	84	260	3,1			372
V 1956	Single plaited		87	"	11	(60)		"	105	402	3,8	52	1106	5209
V 1956	"				14	(60)		"	134	461	3,4	108	1764	5188

Table 9. Polyester. Trawl. Haddock. ICNAF Sub-Areas 4 and 5.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end and Cover
V 1956	Single plaited			Cover	15	(60)		ICNAF	127	398	3,1	64	1216	6725

Table 10. Manila. Trawl. Haddock. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range		Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end	Cover	Cod-end	Cover
VI 1956	Double		160	Cover	7	(60)		Wedge 4 kg	74	190	2,6	40	1094	2045	1827	3633
VI 1956	"		160	"	3	(60)		"	108	320	3,0	55	528	445	1587	3111
VII 1957	"		-	"	13	(60)			77	230	3,0	43	1431	609	5713	963
VII 1957	"		-	"	7	(60)			77	210	2,7	49	101	41	2082	233
IV 1959	"		-	"	5	(60)			94	305	3,2	68	371	305	1870	5191
IV 1959	"		-	Whole Cover	9	(60)			94	303	3,2	53	317	312	1616	5646
IX 1960	"		226	"	7	(60)			78	285	3,7	92	754	618	1024	804
VI 1951	"		-	Cover	18	(60)		Scot-tish	99	252	2,6	43	577	575	2488	4131
VII 1957	"		262	"	8	(60)	4.0	ICNAF 4 kg	66	210	3,2	34	1660	1601	3820	1739
VII 1957	"		156	"	4	(60)	4.5	Scot-tish	65	204	3,2	28	342	270	1465	314
VI 1960	"		226	Whole Cover	9	(60)			70	260	3,7	67	940	693	1667	820

Table 11. Sisal. Trawl. Haddock. NEAFC Region 2

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range		Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end	Cover	Cod-end	Cover
VIII 1955	Double		302	Cover	5	(60)			69	235	3,4	27	463	349	1633	472
IX 1956	"		302	"	7	(60)			73	256	3,5	-	-	-	1798	1941

Table 12. Polyamide. Trawl. Haddock. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range		Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end	Cover	Cod-end	Cover
VI 1956	Double		210	Cover	2	(60)			73	220	3,0	45	191	357	1707	8727
VI 1956	"		210	"	14	(60)			107	350	3,3	135	1400	1276	2061	12977
VI 1956	"		280	"	2	(60)			83	320	3,9	60	784	646	4448	3380
VII 1963	Double twisted	2500	400	"	5	94		ICNAF 4 kg	62	213	3,4	35	2854	1740	15994	3342

Table 13. Polyethylene. Trawl. Haddock. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
VI 1958	Double		933	Cover	2	60	3,5	ICNAF 4 kg	80	231	2,9	52	127	218	102
VI 1958	"		200	"	8	60	4,0	"	71	234	3,3	45	2640	2604	2923

Table 14. Polyester. Trawl. Haddock. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
IX 1960	Double			Whole Cover	8	(60)			73	249	3,4	45	650	1475	718
VI 1958	"		385	Cover	5	60	4,0	ICNAF 4 kg	78	291	3,7	72	835	969	1915

Table 15. Polypropylene. Trawl. Haddock. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range		Total No.	
	Material Construct-ion	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end	Cover	Cod-end	Cover
V 1961	Double twisted	3311	302	Whole Cover	8	90			77	278	3,6	40	679		3007	1801
XII 1961	"	3311	302	"	17	90			78	289	3,7	44	2251		5906	1205
XII 1962	"	3311	302	"	3	60			74	248	3,4	61	4215		4498	12583
XII 1962	"	3311	302	"	3	60			74	220	3,0				6446	
II 1963	"	3311	302	"	28	60			77	223	2,9				112414	
III 1963	"	3311	302	"	15	60		ICES	83	306	3,7	65	153		270	2064
V 1963	"	3311	302	"	9	60		"	78	266	3,4	70	838		1244	4408
VI 1963	"	3311	302	Cover	17	60			82	278	3,4	58	521		2445	3963
II 1964	Double plaited	3546	282	Whole Cover	22	60		ICES	78	265	3,4	96	9880		5071	6478
XII 1964	"		282	"	10	65	3,8	ICES 4 kg	81	254	3,1	65	14038			
XII 1964	"		282	"	15	63	3,8	"	78	260	3,3	49	18057			
VIII-IX 1963	Double			Cover	11	78	4	ICES	70	248	3,6	50	2406		4084	1301

Table 16. Cotton. Haddock. Trawl. NEAFC Region 2

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range		Total No.	
	Material Construct-ion	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end	Cover	Cod-end	Cover
VIII 1955	Single		363	Cover	5	(60)			68	238	3,5	49	361	255	780	297

Table 17. Polyamide. Trawl. Haddock. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. of Selection Range		Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end	Cover	Cod-end	Cover
IX 1956	Single		302	Cover	4	(60)			64	253	3,9	-	-	-	1048	602
VI 1959	"			"	6	(60)		Pressure	69	237	3,4	61	435	529	579	634
VI 1959	"			"	8	(60)			69	232	3,4	57	813	1034	915	1132
IX 1959	"			"	8	(60)			66	259	3,9	80	895	1329	1033	1352
IX 1959	"			Whole Cover	10	(60)			66	290	4,4	-	-	-	842	2780

Table 18. Polyethylene. Trawl. Haddock. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. of Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
VI 1960	Single			Whole Cover	12	(60)			87	270	3,1	94	2349	1676	1260
IX 1960	"			"	7	(60)			84	277	3,3	59	1052	1648	908

Table 19. Polyester. Trawl. Haddock. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No.of Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
IX 1960	Single			Whole Cover	6	(60)			70	234	3,3	68	307	1053	364
VI 1958	"		127	Cover	6	60	4,5	Scot-tish	83	234	2,8	69	1544	1335	1115

Table 20. Cotton. Danish Seine. Haddock. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range		Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end	Cover	Cod-end	Cover
IX 1953	Single			Cover	7	(60)		Spring loaded	59	209	3,5		384	181	2087	276
IX 1953	"				37	(60)		"	71	273	3,8	48	1810	3113	4930	5621
IX 1953	"				27	(60)		"	80	326	4,1	80	1146	1608	1621	5694
IX 1953	"				8	(60)		"	71	270	3,8	62	670	873	1092	1848
IX 1953	"				8	(60)		"	80	354	4,4	90	534	1218	1118	9507

Table 21. Manila. Trawl. Haddock. ICES Division V b.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
XII 1957	Double twisted	6623	151	Cover	7	60		Scottish	105	316	3,0	62	391	2388	1175
XII 1957	"	"	"	"	9	60		"	94	233	2,5	45	941	3854	856
XII 1958	"	"	"	"	2	60		"	82	237	2,9	47	394	755	711
XII 1958	"	"	"	"	6	50		"	99	257	2,6	47	2489	5628	3575
XII 1958	"	"	"	"	2	60		"	82	245	3,0	52	500	767	864
XII 1958	"	"	"	"	6	50		"	99	283	2,8	57	1721	2387	5157
XII 1958	"	"	"	"	4	60		"	82	246	3,0	44	1748	2858	2757
XII 1958	"	"	"	"	4	60		"	82	253	3,1	40	1836	1402	3127

Table 22. Polypropylene. Trawl. Haddock. ICES Division Vb.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
VII 1965	Double plaited	2481	403	Whole Cover	1	90	3,5	ICES	111	361	3,2	51	300	1444	1117
VII 1965	"	"	"	"	1	45	3,5	"	114	394	3,5	90	504	883	475
II 1965	"	"	"	"	10	120	3,5	"	111	413	3,7	72	3104	3758	6020
VII 1965	"	"	"	"	1	90	3,8	"	111	373	3,4	63	378	1479	758
VII 1965	"	"	"	"	3	45	3,5	"	111	352	3,2	62	701	3796	1269
VII 1965	"	"	"	"	1	20	3,5	"	111	366	3,3	60	88	692	103
VII 1965	"	"	"	"	4	45	3,5	"	114	400	3,5	77	624	1492	1091
VII 1965	"	"	"	"	1	45	3,5	"	114	395	3,5	66	273	797	565
VII 1965	"	"	"	"	1	45	3,5	"	114	395	3,5	58	148	624	327
XII 1963	"	3546	282	"	17	60	-	"	101	351	3,5	68	7634	7877	15045
XII 1963	"	"	"	"	9	60	-	"	80	278	3,5	57	2101	4205	4133
II-III 1965	"	2500	400	"	13	120	3,5	-	114	387	3,4	130	2103	-	-
II-III 1965	"	"	"	"	17	120	"	-	112	375	3,4	110	3722	-	-

Table 23. Single Polyamide. Trawl. Haddock. ICES Division Vb.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
XII 1957	Single PA				7	(60)			106	350	3,3	50	379	1501	1287

Table 24. Manila. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range		Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover		Cod-end	Cover
I-VII 1954	Double		250	Whole Cover	24	180	2,5	Wedge 4 kg	69	263	3,8	39	1890		2104	3649
I-VII 1954	"		250	"	5	180	2,5	"	80	291	3,6	52	709		461	1572
VI 1956	"		160	Cover	7			ICNAF	74	200	2,7	45	359		2889	263
VI 1958	"		160	"	3				73	250	3,4	40	678		1394	6198
IV-V 1955	"			"	15	150		Lowestoft 3 kg	73	270	3,7	40	828		759	927
V-VI 1960	"		350	"	14				81	281	3,5	96	309		222	552
VI 1959	"		262	Whole Cover (cane hoops)	12	60	2,5	Wedge 3 kg	65	258	4,0	42	684		677	2948
IV 1959	"		262	"	3	60	2,5	"	65	266	4,1	40	184		143	809
IX 1955	"			Cover	1	150		Lowestoft 3 kg	62	266	4,3	30	360		684	502
IX 1955	"			"	1	150		"	62	271	4,4	20	305		682	680
IV-VI 1959	"		262	Whole Cover	2			Wedge 3 kg	65	272	4,2		70		88	649
IV 1959	"			"	5	60		Scottish	94	394	4,2	82	476		517	3623
VII 1957	"			Cover	19	60		"	77	308	4,4	42	939	1234	1943	6855
VI 1958	"	6410	156	"	4	60	4,5	ICNAF	68	212	3,1	42	114	107	583	475
VI 1958	"	6410	156	"	7	60	4,5	"	65	237	3,7	38	1130	1287	3169	3402
IX 1958	"			"	18	60		Scottish	63	267	4,2	34	877	741	3606	1585
VI 1959	"			"	10	60		"	62	206	3,3	37	1542	1994	1945	2503
XII 1959	"	3571	280	"	4	60		"	76	262	3,5	68	115	117	291	1247
IX 1960	"			"	5	60			78	319	4,1	70	1566	2036	2471	5514
XII 1961	"	4425	226	"	7	60			73	293	4,0	40	1202	1211	2001	4485
XII 1961	"	"	"	"	5	120			73	312	4,3	40	740	909	1401	6146
IV 1959	"			Whole cover	5	60		Scottish	94	379	4.0	39	112	101	429	2556

Table 25. Hemp. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construct-ion	R.Tex. (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
I-VII 1954	Double		510	Whole Cover (cane hoops)	11	180	2,5	Wedge 4 kg	67	285	4,3	46	425	320	1167
I-VII 1954	"		510	"	15	180	2,5	"	72	313	4,4	49	347	347	2187
I-VII 1954	"		510	"	7	180	2,5	"	77	324	4,2	44	68	89	1270
IX 1958	"		510	Cover	4	120	2,5	Wedge 3 kg	73	315	4,4	52	423	653	5172
IX 1958	"		510	"	4	120	2,5	"	71	341	4,8	33	88	133	3970
VI 1958	"		373	"	3	60	3,5	ICNAF 4 kg	72	257	3,6	84	637	675	597
VI 1958	"		373	"	1	60	3,5	"	73	279	3,8	55	68	134	294
VI 1958	"		174	"	2	60	4,0	"	53	200	3,8	28	1938	2813	2499

Table 26. Cotton. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construct-ion	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (m)	Cod-end and Cover	Cod-end	Cover
III 1954	Double		302	Cover	9	(90)			71	271	3,8	42	495	447	2407
III 1954	"		302	"	8	(90)			70	292	4,2	50	1554	1346	3182
XII 1954	"		452	"	5	(90)			66	249	3,8	66	851	(955)	(310)

Table 27. Sisal. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Spped of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	and Cover
VIII 1955	Double			Cover	13	96		Wedge	70	271	3,9	45		10600	
VIII 1955	"			"	16	96		"	77	287	3,7	44		7500	
VIII 1955	"			"	24	96		"	74	242	3,3	69		5700	
1950	"			"	20	90			74	216	2,9	36	1884	3500	1700
1952	"			"	14	90			69	260	3,8	24	154	1000	1300
1952	"		302	"	8	90	2,5		73	250	3,4	35	750	617	1532
1952	"		302	"	7	90	2,5		71	264	3,7	28	409	465	1997
1952	"		252	"	5	90	2,5		72	267	3,7	42	305	370	202
1952	"		252	"	5	90			66	243	3,7	62	602	(1047)	(318)
1952	"		302	"	5	90			69	265	3,8	44	708	1714	764
1952	"		302	"	3	90			73	293	4,0			1710	
1952	"		302	"	2	90			63	235	3,7			316	

Table 28. Polyamide. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
VI 1956	Double		210	Cover	2	60		ICNAF	73	260	3,6	65	2115	1940	1566
VI 1956	"		280	"	2	60		"	83	400	4,8	70	109	583	5413
X 1960	"		600	Whole Cover	13	60		"	69	257	3,7	55	2257	1778	3119
VI 1958	"		210	Cover	5	60	4,0	ICNAF 4 kg	65	256	3,9	53	1249	1518	3497
VI 1958	"		210	"	8	60	4,0	"	64	268	4,2	41	2664	2929	11252
IV 1960	"		557	Whole Cover (Cane hoops)	18	60	2,5	Westhoff 4 kg	69	297	4,3	53	932	732	10675
VII 1963	Double twisted	2500	400	Cover	6	86		ICNAF 4 kg	62	238	3,9	43	3045	4493	8461

Table 29. Polyethylene. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end				Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)	Method	No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
IX 1958	Double		933	Cover	4	120	2,5	Wedge 3 kg	76	284	3,8	39	706	912	5539
IX 1958	"		933	Whole Cover (Cone hoops)	4	120	2,5	"	74	310	4,2	46	438	468	4471
VI 1958	"		200	Cover	3				73	250	3,4	40	170	437	1046
IX 1960	"			Whole Cover	7				66	233	4,5	70	2398	1202	2671
VI 1958	"		933	Cover	4	60	3,5	ICNAF 4 kg	79	294	3,7	75	514	379	704
VI 1958	"		933	"	1	60	3,5	"	80	277	3,5	38	63	78	1198
VI 1958	"		933	"	6	60	4,0	"	71	271	3,8	50	1652	1731	7276

Table 30. Polyester. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end				Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)	Method	No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
IX 1960	Double	-	-	Cover	5	60	-	-	73	334	4,6	64	2018	1722	7015
V 1961	"	-	-	"	4	60	-	-	73	292	4,0	82	381	211	204
V 1961	"	-	-	"	6	120	-	-	73	307	4,2	68	300	231	202
VI 1958	"	-	-	"	2	60	4,0	ICNAF 4 kg	80	320	4,0	60	775	725	3861
VI 1958	"	-	-	"	1	60	4,0	"	78	348	4,5	57	40	42	430

Table 31. Polypropylene. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
V-VI 1961	Double	3311	302	Whole Cover	8	60	-	-	78	319	4,1	52	2031	1307	2805
V-VI 1961	"	"	"	"	9	120	-	-	78	329	4,2	47	2974	1977	8978
XI 1962	"	"	"	"	24	60	-	-	75	272	3,6	53	453	1337	10354
XII 1962	"	"	"	"	5	60	-	-	74	311	4,2	68	1145	1192	4299
XII 1962	"	"	"	"	9	60	-	-	75	257	3,4	47	2336	2078	1318
XII 1962	"	"	"	"	18	60	-	-	78	273	3,5	52	4988	3329	6817
V-VI 1961	"	"	"	"	2	60	-	-	77	325	4,2	44	278	236	765
V-VI 1961	"	"	"	"	2	120	-	-	77	345	4,5	49	153	183	589
II 1963	"	"	"	"	5	60	-	-	78	236	3,0	43	113	118	264
VIII 1963	"	"	"	"	16	60	-	ICES	61	231	3,8	41	4740	3890	12954
II 1964	"	3546	282	"	12	60	-	-	76	250	3,3	56	1363	1032	945
XII 1964	"	"	"	"	15	62	3,8	ICES	81	285	3,5	70	14110	-	-
XII 1964	"	"	"	"	26	60	3,8	ICES 4 kg	78	298	3,8	58	8816	-	-
VII-IX 1963	"	-	-	Cover	6	69	4,0	"	69	290	4,2	50	543	551	509

Table 32. Manila. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range		Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end	Cover	Cod-end	Cover
VI 1958	Single	6410	156	Cover	2	60	4,5	ICNAF	70	187	2,7	28	39	46	261	134
VI 1958	"	6410	156	"	4	60	4,5	"	66	209	3,2	34	311	284	1102	537

Table 33. Cotton. Trawl. Whiting. NEAFC Region 2

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
XI 1954	Single		363	Cover	8	(90)			72	301	4,2	52	287	249	193
XII 1954	"		363	"	10	(90)			64	246	3,8	42	1155	(2271)	(640)
VIII 1955	"		363	"	5	(90)			68	269	3,9	41	543	824	374

Table 34. Polyamide. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
IX 1956	Single	-	302	Cover	3	(60)	-	-	64	272	4,2	-	-	391	744
VI 1959	"	-	-	"	9	(60)	-	-	69	273	3,9	85	720	595	2113
VI 1958	"	7553	136	"	4	60	4,5	Scott.	71	272	3,8	84	564	540	899
VI 1958	"	"	"	"	8	60	"	"	68	246	3,6	43	3266	3664	6043
IV 1956	"	-	-	"	2	150	-	Lowestoft, 3kg	59	284	4,8	40	3263	3228	3717
IX 1955	"	-	-	"	1	150	-	"	59	268	4,6	30	1333	1597	1527

Table 35. Hemp. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
IV 1956	Single			Cover	1	150		Lowestoft 3 kg	72	292	4,1	40	854	946	6507
IV 1956	"			"	1	150		"	72	305	4,2	30	1109	764	2410
IV-VI 1959	"		372	Whole Cover (Cane hoops)	3	60	2,5	Wedge 3 kg	67	283	4,2	35	99	145	3038
IV-VI 1959	"		372	"	3	60	2,5	"	71	327	4,6	35	51	89	3390

Table 36. Polyethylene. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
II 1960	Single	-	-	Cover	5	(60)	2,5	Scissor 3 kg	69	267	3,9	40	86	207	482
II 1960	"	-	-	"	9	(60)	2,5	"	69	253	3,7	35	651	2245	592
IX 1960	"	-	-	Whole Cover	5	(60)	-	-	84	307	3,7	77	4829	2662	5379
XII 1959	"	-	-	Cover	5	(60)	-	-	86	266	3,1	43	870	734	1450
XII 1963	"	-	94	"	8	79	2,5	ICES	58	182	3,2	40	1861	1938	2526
XII 1963	"	-	"	"	4	75	2,5	"	67	215	3,2	64	396	973	1177
XII 1963	"	-	"	"	4	79	2,5	"	78	274	3,5	63	361	584	825

Table 37. Polyester. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
VI 1958	Single	7874	128	Cover	3	60	-	ICNAF	87	330	3,8	111	652	424	1474
VI 1958	"	"	"	"	4	60	-	"	82	269	3,3	86	1261	988	2136
IX 1960	"	-	-	"	3	60	-	-	70	284	4,0	63	1935	1708	2136
V 1961	"	-	-	"	5	60	-	-	72	299	4,1	45	115	114	89
V 1961	"	-	-	"	5	120	-	-	72	290	4,0	63	665	480	420

Table 38. Polypropylene. Trawl. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
XII 1963	Single twisted		125	Cover	5	87	2,5	ICES	67	238	3,5	59	246	382	197

Table 39. Cotton. Danish Seine. Whiting. NEAFC Region 2.

Date	Cod-end Material Construction	Cod-end R.Tex (g/1000 m)	Cod-end Runnage (m/kg)	Method	Hauls No.	Hauls Average Duration (min)	Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection Factor	Selection Range (mm)	No. in Selection Range Cod-end and Cover	Total No. Cod-end	Total No. Cover
XII 1959-II 1960	Single	-	-	Cover	3	(60)	-	(Scissor)	68	269	4,0	67	5009	6601	9575
"	"	-	-	"	2	(60)	-	"	64	266	4,1	50	234	(533)	(711)
VIII-IX 1953	"	-	-	"	7	(60)	-	-	59	223	3,8	72	11231	10437	6763
"	"	-	-	"	37	(60)	-	-	71	292	4,1	85	12931	6859	43289
"	"	-	-	"	26	(60)	-	-	80	362	4,5	64	341	1153	11695
VIII1962	"	3311	302	"	5	60	-	-	73	290	4,0	-	1968	2554	12330
VIII1962	"	"	"	"	2	60	-	-	60	232	3,9	-	716	398	514

Table 40. Polyamide. Danish Seine. Whiting. NEAFC Region 2.

Date	Cod-end Material Construction	Cod-end R.Tex (g/1000 m)	Cod-end Runnage (m/kg)	Method	Hauls No.	Hauls Average Duration (min)	Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection Factor	Selection Range (mm)	No. in Selection Range Cod-end and Cover	Total No. Cod-end	Total No. Cover
VIII 1962	Single	3311	302	Cover	1	60	-	-	63	234	3,7	-	837	525	436
VIII 1962	"	"	"	"	1	60	-	-	76	276	3,6	-	1366	473	1124
VIII 1962	"	"	"	"	2	60	-	-	63	256	4,1	-	443	210	601

Table 41. Polyethylene. Danish Seine. Whiting. NEAFC Region 2.

Date	Cod-end Material Construction	Cod-end R.Tex (g/1000 m)	Cod-end Runnage (m/kg)	Method	Hauls No.	Hauls Average Duration (min)	Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection Factor	Selection Range (mm)	No. in Selection Range Cod-end and Cover	Total No. Cod-end	Total No. Cover
XII 1959 - II 1960	Single	-	-	Cover	5	(60)	-	Scissor 3 kg.	57	229	4,0	(31)	(1703)	3735	4117
"	"	-	-	"	3	(60)	-	"	71	314	4,5	41	345	(214)	(682)
VII 1962	"	3311	302	"	1	60	-	-	75	264	3,5	50	3623	1887	4930

Table 42. Polypropylene. Danish Seine. Whiting. NEAFC Region 2.

Date	Cod-end			Method	Hauls		Speed of Tow (knots)	Mesh Gauge	Mean Mesh-Size (mm)	50% Length (mm)	Selection		No. in Selection Range	Total No.	
	Material Construction	R.Tex (g/1000 m)	Runnage (m/kg)		No.	Average Duration (min)					Factor	Range (mm)	Cod-end and Cover	Cod-end	Cover
VII 1962	Single	3311	302	Cover	1	60	-	-	75	252	3,4	42	3403	1523	3353
VII 1962	"	"	"	"	2	60	-	-	73	226	3,1	74	9884	6233	4912
VIII 1962	"	"	"	"	3	60	-	-	64	256	4,0	42	7464	3953	12053
VIII 1962	"	"	"	"	1	60	-	-	62	238	3,8	39	1981	1066	1194
VIII 1962	"	"	"	"	7	60	-	-	73	274	3,9	-	3735	2782	9375
VIII 1962	"	"	"	"	2	(60)	-	-	65	253	3,9	41	2282	1503	3937
VIII 1962	"	"	"	"	3	(60)	-	-	77	269	3,5	71	1862	1214	4911

Table 43. Cod and Haddock, ICNAF Sub-Areas 4 and 5. Trawl only. Mean selection factors and equivalents 1)

1. Unweighted mean
2. Weighted by number of hauls
3. Weighted by 3-component method
4. Weighted by inverse of variance

		Haddock				Cod		
Single twines	Method	Manila	Cotton	PA	PES	Manila	Cotton	PA
	1	-	3.32	3.54	3.10	-	3.60	3.78
	2	-	3.38	3.70	3.10	-	3.60	3.84
	3	-	3.24	3.72	3.10	-	3.60	3.77
	4	-	3.24	3.50	3.10	-	3.60	3.76
	Mean	-	3.30	3.62	3.10	-	3.60	3.79
(No. of data sets)			(5)	(9)	(1)		(2)	(5)
Double twines	1	3.20	-	3.43	-	3.36	-	3.80
	2	3.24	-	3.40	-	3.38	-	3.80
	3	3.15	-	3.37	-	3.39	-	3.80
	4	3.22	-	3.42	-	3.35	-	3.80
	Mean	3.20	-	3.41	-	3.37	-	3.80
(No. of data sets)		(33)		(3)		(10)		(2)
		Point estimates of equivalents (double manila as standard)						
Single twines		-	1.03	1.13	0.97	-	1.13	1.18
Double twines		1	-	1.07	-	1	-	1.19
		Approximate 95% confidence limits of equivalents						
Single		-	0.87 to 1.19	0.97 to 1.29	-	-	-	1.02 to 1.34
Double		-	-	-	-	-	-	-

1) Number of data sets in each mean selection factor shown in parentheses. Confidence limits on equivalents estimated only for categories with at least 4 data sets.

Table 44. Haddock, NEAFC Region 2. Mean selection factors and equivalents [1]

1. Unweighted mean
2. Weighted by number of hauls
3. Weighted by 3-component method
4. Weighted by inverse of variance

Selection factors

Single twines	Method	Manila	Sisal	Cotton	Hemp	PA	PE	PES	PP
Trawl	1	-	-	3.50	-	3.80	3.20	3.05	-
	2	-	-	3.50	-	3.84	3.17	3.05	-
	3	-	-	3.50	-	4.00	3.14	2.88	-
	4	-	-	3.50	-	3.73	3.19	3.01	-
	Mean	-	-	3.50	-	3.84	3.18	3.00	-
(No. of data sets)				(1)		(5)	(2)	(2)	
Seine	1	-	-	3.92	-	-	-	-	-
	2	-	-	3.92	-	-	-	-	-
	3	-	-	3.90	-	-	-	-	-
	4	-	-	3.88	-	-	-	-	-
	Mean	-	-	3.91	-	-	-	-	-
(No. of data sets)				(5)					
Double twines									
Trawl	1	3.10	3.45	-	-	3.40	3.10	3.55	3.38
	2	3.05	3.46	-	-	3.35	3.22	3.52	3.36
	3	3.05	3.49	-	-	3.36	3.29	3.53	2.99
	4	3.01	3.45	-	-	3.34	3.10	3.53	3.34
	Mean	3.05	3.46	-	-	3.36	3.18	3.53	3.27
(No. of data sets)		(11)	(2)			(4)	(2)	(2)	(12)
		Point estimates of equivalents (double manila as standard)							
Single, trawl		-	-	1.15	-	1.26	1.04	0.98	-
Single, seine		-	-	1.28	-	-	-	-	-
Double, trawl		1	1.13	-	-	1.10	1.04	1.16	1.07
		Approximate 95% confidence limits of equivalents							
Single, trawl		-	-	-	-	1.10 to 1.47	-	-	-
Single, seine		-	-	1.12 to 1.44	-	-	-	-	-
Double, trawl		-	-	-	-	0.94 to 1.26	-	-	0.91 to 1.23

1) Number of data sets in each mean selection factor shown in parentheses. Confidence limits on equivalents estimated only for categories with at least 4 data sets.

Table 45. Haddock, ICES Division Vb. Trawl only.
Mean selection factors and equivalents[1)]

1. Unweighted mean
2. Weighted by number of hauls
3. Weighted by 3-component method
4. Weighted by inverse of variance

Selection factors

Braiding	Method	Manila	PA	PP
Single	1	-	3.30	-
	2	-	3.30	-
	3	-	3.30	-
	4	-	3.30	-
	Mean	-	3.30	-
(No. of data sets)			(1)	
Double	1	2.86	-	3.43
	2	2.80	-	3.43
	3	2.79	-	3.48
	4	2.82	-	3.43
	Mean	2.82	-	3.44
(No. of data sets)		(8)		(13)
	Point estimates of equivalents (double manila as standard)			
Single		-	1.17	-
Double		1	-	1.22
	Approximate 95% confidence limits of equivalents			
Single		-	-	-
Double		-	-	1.06 to 1.38

1) Number of data sets in each mean selection factor shown in parentheses. Confidence limits on equivalents estimated only for categories with at least 4 data sets.

Table 46. Whiting, NEAFC Region 2. Mean selection factors and equivalent.[1)]

1. Unweighted mean
2. Weighted by number of hauls
3. Weighted by 3-component method
4. Weighted by inverse of variance

Selection factors

Single twines	Method	Manila	Sisal	Cotton	Hemp	PA	PE	PES	PP
Trawl	1	2.95	-	3.97	4.28	4.15	3.47	3.84	3.50
	2	3.03	-	3.96	4.34	3.92	3.48	3.86	3.50
	3	3.17	-	3.87	4.16	4.07	3.46	3.81	3.50
	4	2.93	-	3.95	4.28	4.00	3.43	3.79	3.50
	Mean	3.02	-	3.94	4.27	4.04	3.46	3.83	3.50
(No. of data sets)		(2)		(3)	(4)	(6)	(7)	(5)	(1)
Seine	1	-	-	4.06	-	3.80	4.00	-	3.66
	2	-	-	4.19	-	3.88	4.11	-	3.74
	3	-	-	4.06	-	3.77	3.90	-	3.70
	4	-	-	4.05	-	3.80	3.99	-	3.62
	Mean	-	-	4.09	-	3.81	4.00	-	3.68
(No. of data sets)				(7)		(3)	(3)		(7)
Double twines									
Trawl	1	3.82	3.63	3.93	4.16	4.06	3.84	4.26	3.81
	2	3.80	3.51	3.95	4.29	4.05	3.96	4.26	3.70
	3	3.85	3.58	4.04	4.27	4.01	4.13	4.40	3.69
	4	3.69	3.56	3.92	4.14	3.99	3.81	4.22	3.69
	Mean	3.79	3.57	3.96	4.22	4.03	3.94	4.29	3.72
(No. of data sets)		(22)	(12)	(3)	(8)	(7)	(7)	(5)	(14)
		Point estimates of equivalents							
Single, trawl		0.80	-	1.04	1.13	1.07	0.91	1.01	0.92
Single, seine		-	-	1.08	-	1.01	1.06	-	0.97
Double, trawl		1	0.94	1.04	1.11	1.06	1.04	1.13	0.98
		Approximate 95% confidence limits of equivalents							
Single, trawl		-	-	-	0.97 to 1.29	0.91 to 1.23	0.75 to 1.07	0.85 to 1.17	-
Single, seine		-	-	0.92 to 1.24	-	-	-	-	0.81 to 1.13
Double, trawl		-	0.78 to 1.10	-	0.95 to 1.27	0.90 to 1.22	0.88 to 1.20	0.97 to 1.29	0.82 to 1.14

1) Number of data sets in each mean selection factor shown in parentheses. Confidence limits on equivalents estimated only for categories with at least 4 data sets.

Table 47. Number of sets of hauls considered (S = single, D = double)

NEAFC Region 2

Gear	Material	Haddock		Whiting	
		S	D	S	D
Trawl	Cotton	1	0	3	3
	Hemp	0	0	4	8
	Manila	0	11	2	22
	Sisal	0	2	0	12
	PA	5	4	6	7
	PE	2	2	7	7
	PES	2	2	5	5
	PP	0	12	1	14
Danish Seine	Cotton	5	0	7	0
	PA	0	0	3	0
	PE	0	0	3	0
	PP	0	0	7	0

ICNAF Sub-Areas 4, 5

Gear	Material	Haddock		Cod	
		S	D	S	D
Trawl	Cotton	5	0	2	0
	Manila	0	33	0	10
	PA	9	3	5	2
	PES	1	0	0	0

ICES Division Vb

Gear	Material	Haddock	
		S	D
Trawl	Manila	0	8
	PA	1	0
	PP	0	13

Table 48. Frequency distribution of selection factors

Cod. ICNAF Sub-Areas 4, 5. Trawl

Selection Factor	Double		Single	
	Manila	PA	Cotton	PA
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1	1			
3.2	1			
3.3	2			
3.4	3			1
3.5	3		2	
3.6			2	
3.7				
3.8		2		1
3.9				3
4.0				
4.1				
4.2				
4.3				
4.4				
4.5				
Totals	10	2	2	5

Table 49. Frequency distribution of selection factors

Haddock. ICNAF Sub-Areas 4, 5. Trawl

Selection Factor	Double		Single		
	Manila	PA	Cotton	PA	PES
2.8			1		
2.9					
3.0	4		1		
3.1	6			1	1
3.2	7			2	
3.3	9	1		1	
3.4	5	1		1	
3.5	2		1		
3.6		1	1		
3.7			1		
3.8				2	
3.9					
4.0				1	
4.1				1	
Totals	33	3	5	9	1

Table 50. Frequency distribution of selection factors

Haddock. NEAFC Region 2

	Trawl						Trawl				Danish Seine
Selection	Double						Single				Single
Factor	Manila	Sisal	PP	PE	PES	PA	Cotton	PE	PES	PA	Cotton
2.5											
2.6	2										
2.7	1										
2.8									1		
2.9			1	1							
3.0	2		1			1					
3.1			1					1			
3.2	4										
3.3			1	1		1		1	1		
3.4		1	4		1	1				2	
3.5		1					1				1
3.6			2								
3.7	2		2		1						
3.8											2
3.9						1				2	
4.0											
4.1											1
4.2											
4.3											
4.4										1	1
4.5											
Totals	11	2	12	2	2	4	1	2	2	5	5

Table 51. Frequency distribution of selection factors

Haddock. ICES Vb. Trawl

Selection Factor	Manila double	PA single	PP double
2.5	1		
2.6	1		
2.7			
2.8	1		
2.9	1		
3.0	3		
3.1	1		
3.2			2
3.3		1	1
3.4			3
3.5			6
3.6			
3.7			1
Totals	8	1	13

Table 52. Frequency distributions of selection factors. Whiting. NEAFC Region 2.

	Trawl								Trawl							Danish Seine			
	Double Twines								Single Twines										
S.F.	Manila	Sisal	Cotton	Hemp	PP	PE	PES	PA	Manila	Cotton	Hemp	PP	PE	PES	PA	Cotton	PP	PE	PA
2.7	1								1										
2.8																			
2.9		1																	
3.0					1														
3.1	1												1				1		
3.2									1				2						
3.3	1	1			1									1					
3.4	1	1			1	1											1		
3.5	2				2	1						1	1				1	1	
3.6	1			1	1			1							1				1
3.7	2	5				1		1					2						1
3.8	1	2	2	2	2	2				1				1	1	1	1		
3.9	0	1						2		1			1		1	1	2		
4.0	2	1					2							2		2	1	1	
4.1	2				1						2			1		2			1
4.2	4		1	1	4	1	1	1		1	1				1				
4.3	2			1				1											
4.4	2			2															
4.5					1	1	1									1		1	
4.6							1				1				1				
4.7															0				
4.8				1				1							1				
Total	22	12	3	8	14	7	5	7	2	3	4	1	7	5	6	7	7	3	3

Table 53. Mesh-sizes at present in force in the ICES area and mesh-sizes calculated from average equivalents to show what their acceptance might imply

Part of Convention Area	Type of net	Present mesh-size (mm)	Mesh-sizes based on the results of analysis of selection factors (mm)
(a) (i) Waters in Region 1 with the exception of the area described in (a) (ii) below	Seine net	110	
	Such part of any trawl net as is made of:-		
	- cotton, hemp	120	118
	- polyester		114
	- polyamide		110
	- polyamide A		123
	- polyamide B		
	- polyethylene	130	131
	- polypropylene		122
	- manila or any other material not mentioned above		130
(a) (ii) The area contained by a line drawn eastwards from 10°W longitude along the parallel of 63°N latitude to 4°W longitude, thence south to 60°30'N latitude thence west to 5°W longitude, thence south to 60°N latitude, thence west to 15°W longitude, thence north to 62°N latitude, thence east to 10°W longitude, thence north to 63°N latitude	Seine net	105	
	Such part of any trawl net as is made of:-		
	- manila or sisal	110	110
	- polyethylene	105	90 (double)
	- polypropylene		
	- polyester		94 (single)
	- polyamide A		
	- polyamide B		
	- other material		

continued.....

Table 53 (continued)

Part of Convention Area	Type of Net	In used Mesh-Size (mm)		Haddock		Whiting		Average	
				Trawl	Seine	Trawl	Seine	Trawl	Seine
b) Other waters north of 48° north	Seine net, or such part of any trawl net as is made of single twine and contains no manila or sisal	70	Cotton	70	63	77	74	74	68
			Hemp			71		71	
			PA	64		75	79	70	79
			PE	77		88	76	82	76
			PES	82		79		81	
			PP	-		87	83	87	83
	Such part of any trawl net as is made of double twine of: polyethylene, polypropylene, polyester, polyamide A, polyamide B, Other material except manila or sial	75	Cotton	-		77		77	
			Hemp	-		72		72	
			PA	73		76		74	
			PE	77		77	75	77	75
			PES	69		71		70	
			PP	75		82		79	
	Such part of any trawl net as is made of manila or sisal	80	Manila	80					
			Sisal (double)	71		85		78	

Table 54. Mesh-sizes at present in force in the ICNAF area and mesh-sizes calculated from average equivalents to show what their acceptance might imply

Part of Convention Area	Type of net	Present mesh-size (mm)	Mesh-sizes based on the results of analysis of selection factors (mm)		
Sub-Area 1	Seine net	110			
	Such part of any trawl net as is made of:-				
	- cotton, hemp	120			
	- polyester		118		
	- polyamide		114		
	- polyamide A		110		
	- polyamide B		123		
	- polyethylene	130	131		
	- polypropylene		122		
	- manila or any other material not mentioned above		130		
Sub-Areas 2, 3	Seine net	100			
	Such part of any trawl net as is made of:-				
	- cotton, hemp	105			
	- polyester		104		
	- polyamide		100		
	- polyamide A		97		
	- polyamide B		108		
	- polyethylene	114	115		
	- polypropylene		107		
	- manila or any other material not mentioned above		114		
Sub-Areas 4, 5	Seine net	100			
	Such part of any trawl net as is made of:-		Haddock	Cod	Mean
	Single - cotton	105	111	101	106
	- polyamide		101	96	99
	- polyester		118	-	118
	Double - polyamide		107	96	100
	Single - manila and other material	114	114		
	Double - manila and other material				

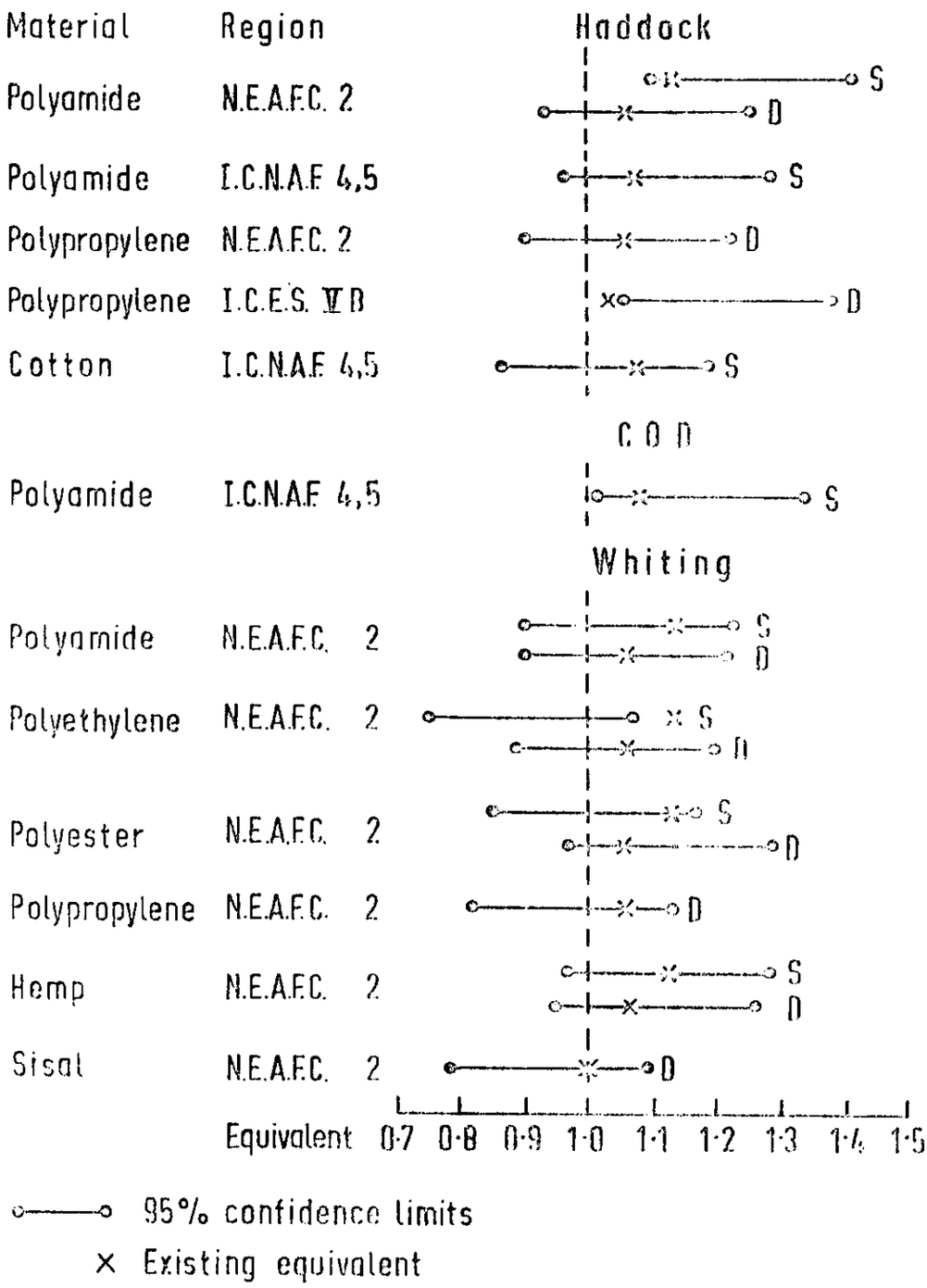

Figure 1 95% confidence limits of calculated equivalents and position of equivalents currently in force for trawls in NEAFC Region 2, ICES Division Vb and ICNAF Subareas 4 and 5 (results for four or more sets of data only). S = single braided, D = double braided.

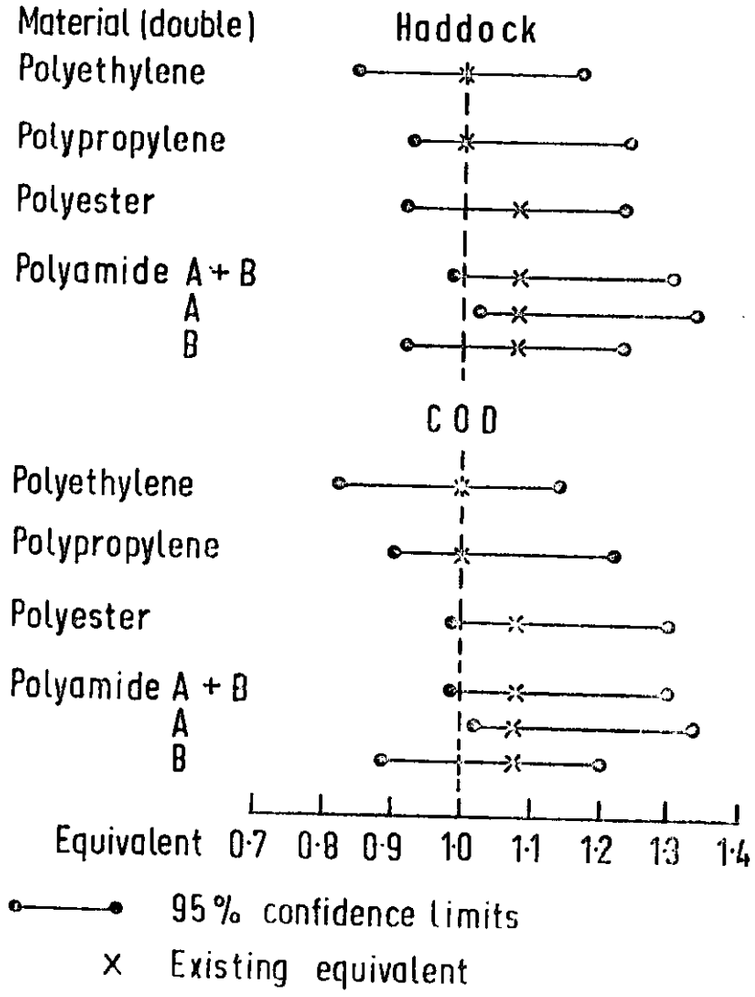

Figure 2 95% confidence limits of calculated equivalents and position of equivalents currently in force for trawls in NEAFC Region 1, excluding ICES Division Vb, and ICNAF Subareas 1, 2 and 3 (results for four or more sets of data only).
N.B. The distinction made between polyamide A and polyamide B is that made by the Working Group and it is NOT recognized in the current mesh regulations.