INTERNATIONAL COMMISSION

FOR THE

NORTHWEST ATLANTIC FISHERIES

SAMPLING YEARBOOK VOLUME 2

for the year 1957

Edited by Ronald S. Keir

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PREFACE

At the Sixth Annual Meeting of the International Commission for the Northwest Atlantic Fisheries in June 1956 it was recommended that

> "For each species sampled each country should report to the Secretariat the sizes, ages, weights, and sexes of the fish sampled, by place and time of capture. The Commission should publish these statistics."

This number of the Sampling Yearbook, the second in the series, is considerably larger than the first, due partly to the increased quantity of samples reported by the member countries, but also to the inclusion of two papers which summarise results from earlier sampling.

The Sampling Yearbook has been prepared and edited by the Commission Biologist-Statistician, Mr. Ronald S. Keir. The printing has been done in the Secretariat.

The Commission greatly appreciates the co-operation it has received from the many contributors to this volume.

Halifax, N.S.
28th April, 1959

Erik M. Poulsen,
Executive Secretary

SAMPLING YEARBOOK VOLUME 2

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CONTRIBUTORS

Canada
- D.N. Fitzgerald
- A.M. Fleming
- F.D. McCracken
- W.R. Martin
- M.E. Prouse

Denmark
- Paul M. Hansen

France
- C. Nédélec

Germany
- A. Kotthaus
- A. Meyer

Iceland
- Jón Jónsson

Norway
- Birger Rasmussen

Portugal
- Mario J. Ruivo

Spain
- Alfonso Rojo

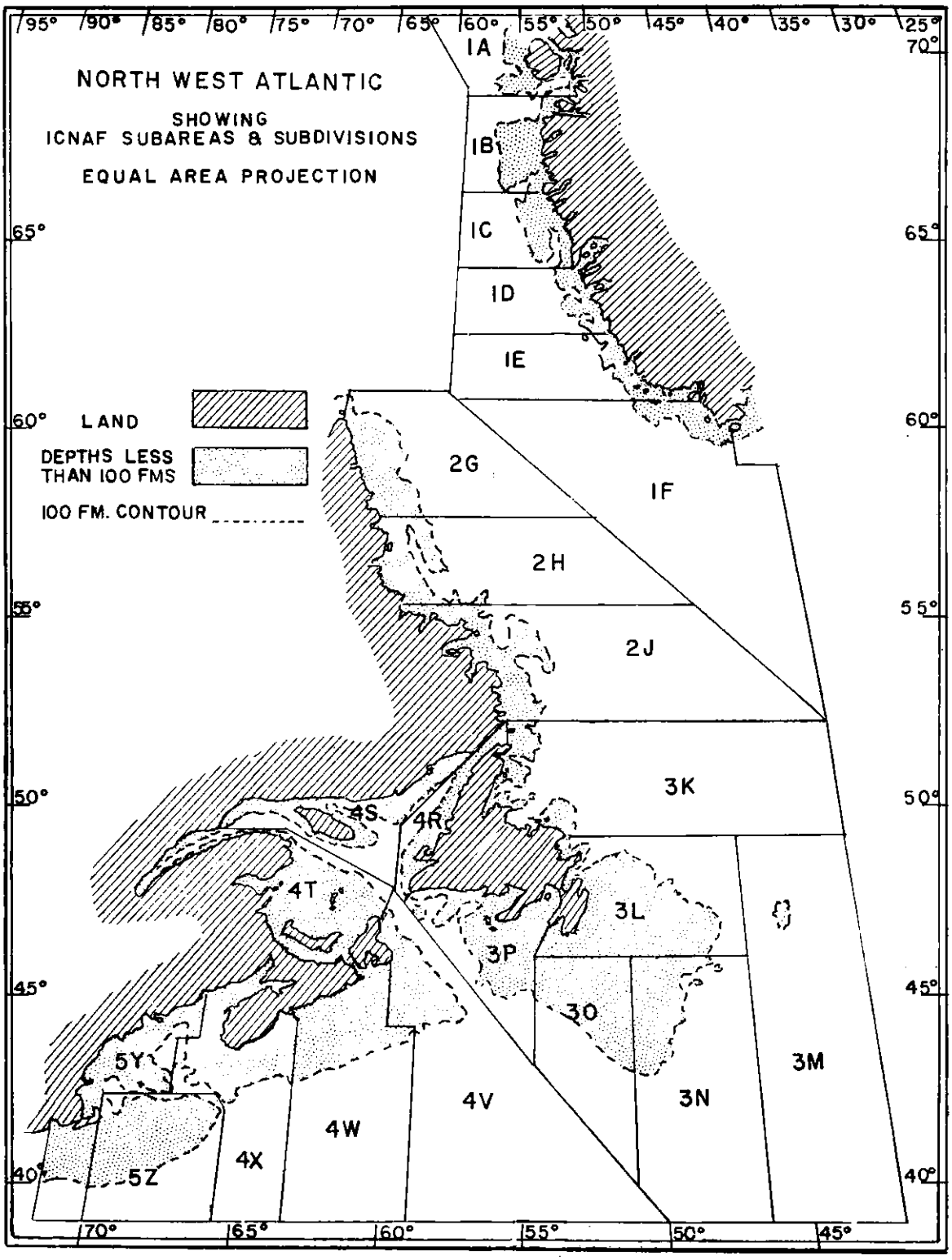
Union of Soviet Socialist Republics
- Ul. Marti

United Kingdom
- C.E. Lucas
- R.S. Wimpenny

United States
- J.R. Clark
- G.M. Clarke
- E.L. Dietsch
- F. Dreyer
- G.F. Kelly
- H.E. Murray
- J.P. Wise

Tables prepared for printing by Joan C. Edwards

1959



An Equal Area Map of the ICNAF Convention Area.

LIST OF CONTENTS

(cont'd.)

GUIDE TO TABLES

Explanation of Guide

The numbers in the guide are page numbers. For a length frequency reference the page number alone is given. For an age frequency the page number is followed by A. For an age frequency with mean size at each age, the page number of followed by A'. For an age-length key or frequency the page number is followed by K. For a weight-length table the page number is followed by W. For discard experiments the page number is followed by D.

Where '(year)' follows a page number the data referred to are not given by month or quarter, but as totals for the year.

NK indicates subdivision not known.

PAGE NUMBERS

Species	Year	ICNAF Area S.D.	OTTER TRAWL				HOOK & LINE AND OTHER GEARS			
			Jan-Mar	Apr-June	Jul-Sept	Oct-Dec	Jan-Mar	Apr-June	Jul-Sept	Oct-Dec
COD	1954	4T		74,74A						
	1956	4R	95,97A'	95,97A'						
		4S		95						
		4T		96						
		4V		96,97A'						
	1957	1A							68A	68A
		1B			94K,112	112		68A	68A,71A'	103
		1C		77K,78K 79K,83K 98,104A'	83K			71A'	68A,71A' 103	
		1D		77K,78K 79K,83K 93A',98 104A',105A'	83K	99,105A' 112,114K 115K	68A,69A	68A,69A 72A'	68A,72A' 103	
		1E		93A',99 106A',111W	84K			69A	69A	69A
		1F		99,106A'	80K,85K 86K	81K,82K			69A	
		1NK	121(year)			121D				
		E.G.[1]							70A	
		2H				100,107A'				
		2J				100,107A' 108A',111W 112,116K 117K				
		3K			112	101,109A'				
		3L		64	112,118K			64,66	64,65,66	65,66
		3N			113					
		3O	64	64	64	113				
		3P	113	113	113	113				
		3Pn					65,66	65,66	65,66	
		3Ps						64,65,66	64,65,66	65

1) East Greenland

(cont'd.)

(cont'd.)

PAGE NUMBERS

Species	Year	ICNAF Area S.D.	OTTER TRAWL				HOOK & LINE AND OTHER GEARS			
			Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
COD	1957	4R	102,110A'	102,110A'						
		4T	102,110A'	55,56D	55,56D 57D	55		58		
		4V	55,102 110A'	55,102 110A'				58	58,59	58,59
		4W	55	55				58	58	58
		4X					58,59		59	59
		5Y	126	126	126	126				
		5Z	126	126	126	126				
	1958	4R	75D,76D							
		4T	76D							
		4Vn	76D							
HADDOCK	1956	4X	122	122	122	122				
		5Y	123,127K 129K(year)	123,127K	123,127K 128K	123,128K				
		5Z	130K(year) 131K,132K 133K	134K,135K 136K	137K,138K 139K	140K,141K 142K				
	1957	3N			67,119	67				
		3O	67	67	67	67				
		4T		60	60					
		4V		60					59	59
		4W	61	60,61	61	61				
		4X	124	62,124	62,124	62,124	59		59	59
		5Y	125,144K 146K(year)	125,144K	125,144K 145K	125,145K				
		5Z	143K 147K(year) 148K,149K	150K,151K 152K	153K,154K 155K	156K,157K 158K				
	1958	5Z	159K							
REDFISH	1955	1NK		87	87					
	1956	1NK		88	88					
	1957	1D					73	73	73	73
		1E					73			
		1NK		89	89	89				
		2J				120,120K				
		3L				120,120K				
		3M	120,120K	120,120K						
		3NOP	161	161	161	162				
		4RST		162	162,163	164				
		4T			63					
		4VWX	164	164,165	165,166	166				
		5NK	167	167,168	168,169	169				
	1958	1NK	90	90,91	91	91				
		2NK			92	92				
		3NK	92		92					

INTRODUCTION

by Ronald S. Keir

The Sampling Yearbook summarises annually the data on lengths, ages and weights of the cod, haddock, redfish, and some other species of interest to the Commission, which have been collected to further the investigations on the fisheries and fish stocks of the Northwest Atlantic. This volume includes tables of all the length frequencies of samples taken in 1957 from commercial landings or catches and, for some countries, of the catches of research vessels. Age frequency data have also been reported by several countries. Tables I, II, and III summarise the extent of the 1957 sampling for cod, haddock and redfish, respectively, and Table IV summarises by countries the sampling reported in this volume.

Samples are taken either on shore from the commercial landings or at sea from the catches of commercial or research vessels. Where the commercial vessel catch is sampled at sea, samples may be taken before or after discarding of the small, unmarketable fish. In sampling the landings, samples are usually taken from each of the size categories in which the fish are landed, and the overall length frequency estimated by pooling the samples after weighting by the quantity of fish landed in each size category. Where samples are taken at sea no weighting factors are used, and samples are simply added together to obtain the average length frequency of the catch. As sampling practices vary among countries, some further "Notes on the Sampling Data" are given on pages 17 to 21.

Because of the size and complexity of the fisheries in the Convention Area and because of the large number of countries and variety of fishing gear involved, the amount of sampling required to estimate the length and age frequencies of the catches or landings is very much larger than that now carried out, and most sampling programmes will need to be extended and intensified.

It was the intention of the Commission that the data incorporated in the Sampling Yearbook should be readily intercomparable. To this end the Commission proposed that the fork length recorded to the nearest centimetre be adopted as the standard measure. It further recommended that length measurements should be reported by 3-centimetre groups for the cod and by 2-centimetre groups for the haddock. Only two methods of measuring fish are now in common use in the Convention Area: the one is the standard measure noted above, which is extensively used in Subareas 2, 3, 4, and 5; and the other is the total length measured to the centimetre below, which is used by several of the countries

fishing in Subarea 1. The latter method of measuring differs from the standard in two ways: measuring to the total length gives a greater length, which is compensated to some extent by measuring to the centimetre below, which gives a lesser length. Because of the very small differences involved and the limited data available to establish conversion factors, no conversions to standard measure have been made. Length frequencies are usually given in parts per thousand; however, in the case of the United States haddock sampling in Subarea 5, where the sampling is intensive, the estimated numbers landed are given.

The Commission has not yet defined a standard method for the presentation of age data. Where sufficient data were reported, an age-length frequency table is published; otherwise, the data are published an an age frequency with mean length at each age (if known).

Data are occasionally reported separately for the sexes and are so published.

Length-weight data are reported as mean weight at each length.

The amount of sampling on which the length frequencies and other tables are based is generally small and the tables should therefore be used with caution. In many cases, sampling from different depth zones, and possibly even different stocks, in a subdivision are pooled. The number of significant figures in the tables is frequently greater than justified by the data. Similarly, the mean weight of the fish and the estimated number of fish landed, etc., are often given to a larger number of significant figures than justified by the data or by the conversion factors used; for example, the conversion factor of 1.2 used to convert from gutted weight to round, fresh weight may be considered to introduce an error of approximately ± 5 per cent.

Weights are always recorded in metric tons round, fresh, except where otherwise noted. The conversion factors used are the same as those used in the ICNAF Statistical Bulletins (see Vol. 5, 1955, page 13). The most commonly used are:-

1.2 for cod and haddock, gutted, head on
3.0 for cod and haddock, green salted, landed in Europe
2.7 for cod and haddock, green salted, landed in North America or Greenland

Two series of measurements taken to measure discarding practices in cod fisheries are reported in this volume of the Sampling Yearbook. The series from Canada (Table 2) is based on measurements of samples of the total catch

taken at sea, and later of the landings from the same trip, the difference between the two being attributed to discarding. Ten trips were studied. The British data (Table 35), on the other hand, consist of direct estimates made at sea of the quantity and length frequency of the discards, and of measurements made on shore of the landings from the same trip. Only one trip was studied. Both sets of data indicate 50 per cent discarding points of about 46 cm for cod.

Two reviews, summarising earlier data, have been prepared for this volume of the Sampling Yearbook. The first, "Length-Weight Tables for Northwest Atlantic Haddock" by John R. Clark and Eli L. Dietsch, summarises a considerable body of data on the haddock of the southern part of the Convention Area. The second, on "Cod Samples from 1956" by Erik M. Poulsen, reviews the material given in the Sampling Yearbook Volume 1.

TABLE I. COD - 1957 SAMPLING REPORTED

Subarea	Country	Gear	No. of Samples	No. of Fish
1	Denmark	Commercial Hook & Line	24	4,722
		Commercial Trap	1	100
		Commercial Prawn Trawl	3	350
		Research Hook & Line	9	1,556
	Germany	Commercial Otter Trawlers	6	3,033
		Research Otter Trawler	46	17,502
	Iceland	Commercial Otter Trawlers	2	285
	Norway	Commercial Hook & Line	10[1]	1,091
	Portugal	Commercial Otter Trawlers	29	3,566
		Commercial Dory Vessels	10	1,000
	Spain	Commercial Otter Trawlers	83	18,078
	United Kingdom	Commercial Otter Trawlers	54	6,788
	TOTAL		277	58,071
2	Portugal	Commercial Otter Trawlers	35	3,924
	Spain	Commercial Otter Trawlers	11	5,709
	TOTAL		46	9,633
3	Canada (N)	Commercial Otter Trawlers	21	5,242
		Commercial Hook & Line	248	46,110
		Commercial Trap	85	13,423
	Portugal	Commercial Otter Trawlers	5	525
	Spain	Commercial Otter Trawlers	52	19,823
	TOTAL		411	85,123
4	Canada (M)	Commercial Otter Trawlers	150[1]	21,865
		Commercial Hook & Line	16	5,985
	Portugal	Commercial Otter Trawlers	9	900
	TOTAL		175	28,750
5	United States	Commercial Otter Trawlers	124	6,500
TOTAL			1,033	188,077

1) Estimated

TABLE II. HADDOCK - 1957 SAMPLING REPORTED

Subarea	Country	Gear	No. of Samples	No. of Fish
3	Canada (N)	Commercial Otter Trawlers	110	35,851
	Spain	Commercial Otter Trawlers	11	1,715
	TOTAL		121	37,566
4	Canada (M)	Commercial Otter Trawlers	45	10,089
		Commercial Hook & Line	21	5,090
	United States	Commercial All Gear	82	10,259
	TOTAL		148	25,438
5	United States	Commercial All Gear	676	52,982
TOTAL			945	115,986

TABLE III. REDFISH - 1957 SAMPLING REPORTED

Subarea	Country	Gear	No. of Samples	No. of Fish
1	Denmark	Research Shrimp Trawl	17	15,575
	Germany	Commercial Otter Trawlers	5	1,500[1]
	TOTAL		22	17,075
2	U.S.S.R.	Commercial Otter Trawlers	20[1]	2,408
3	U.S.S.R.	Commercial Otter Trawlers	475[1]	47,587
	United States	Commercial Otter Trawlers	12	1,200
	TOTAL		487	48,787
4	Canada (M)	Commercial Otter Trawlers	1	200
	United States	Commercial Otter Trawlers	109	10,900
	TOTAL		110	11,100
5	United States	Commercial Otter Trawlers	223	22,245
TOTAL			862	101,615

1) Estimated

NOTES ON THE SAMPLING DATA

Canada (Maritimes and Quebec) — Reported by D.N. Fitzgerald and W.R. Martin

Commercial landings of groundfish in the provinces of Nova Scotia, New Brunswick and Prince Edward Island have been continuously sampled for size and age composition since 1945. Sampling emphasis has been placed on landings by offshore vessels at the largest groundfish ports, but has also included sampling from the inshore fleets. The sampling data on cod, haddock, redfish, plaice, and witch lengths in 1957 have been reported to the Commission. (See summary in Table IV on page 22.

Landings are normally culled by market categories. Cod are divided into Large (Steak) and Medium (Market) sizes at about 10 pounds fresh, gutted weight. Small (Scrod) cod and haddock are mainly less than 2-1/2 pounds gutted weight. Small round haddock are sometimes landed in a separate market category. These market categories are sampled approximately in proportion to the relative numbers of each in a trip landing. When the final weighout is available, the length frequency of the landings is determined by applying weighting factors to each category. The length frequencies of the sexes are not given separately.

Fork length measurements were recorded to the nearest centimetre for each fish. These measurements are presented by 3-centimetre groups for cod and 2-centimetre groups for haddock. Mesh size is recorded as the approximate inside stretched wet used measurement of an average codend mesh. Hook size is given by number, No. 17 or 6/0 being the smallest commercial groundfish hook, and No. 12 being the large hook used on baited handlines.

Samples were also reported from observations made to determine the proportions of fish discarded at sea by otter trawlers when using various codend mesh sizes. The catches and landings of ten trips were studied. These data show a marked reduction in the quantity of fish caught but discarded when a mesh size of 4-1/2 inches or greater is used rather than a mesh size of about 3-1/4 inches.

Canada (Newfoundland) — Reported by A.M. Fleming and M.E. Prouse

Length frequencies based on sampling of the commercial landings of cod and haddock in 1957 have been reported. The numbers and the extent of the sampling are summarised in Table IV on page 22.

Length measurements were made of the fork length and recorded to the nearest centimetre. Sampling was carried out on shore. The total weight of each sample was obtained, together with the total weight of the species landed from the trip sampled. By means of the weighting factor determined from these data each sample frequency was raised to give the actual numbers of each size in the landings sampled. These raised frequencies were then pooled to give length frequencies by quarters (January-March, etc.), type of gear and subdivision, and then compiled in 3-centimetre groups (0-2 cm, etc.).

The 4-inch mesh size recorded for traps is to be considered a minimum.

Denmark — Reported by Paul M. Hansen

Samples of cod were taken from the catches of commercial gears (inshore) and from the catches of the R.V. "Dana" and R.V. "Adolf Jensen" (offshore), as summarised in Table IV on page 22. The samples were not pooled. Length measurements were made of the total length (end of tail lobes) and recorded to the nearest centimetre below.

A special series of redfish length samples has been taken at intervals of one to three months from Godthåb and Tunugdliarfik Fjords (since 1952 in the case of Godthåb Fjord). These are of small redfish and permit the study of the growth rate, using Petersen's method, as discussed in the Danish Research Report for 1956, ICNAF Annual Proceedings, Vol. 7. The samples taken from 1952 to 1956 were reported in the Sampling Yearbook, Vol. 1. The samples taken in 1957 are reported in this volume. Measurements were made of the total length and recorded to the centimetre below. These measurements have not been adjusted to the nearest centimetre or to the fork length.

France — Reported by J. Ancellin and C. Nédélec

Samples taken from the trawl catches of the Research Vessel "Président Théodore Tissier" in 1954 in Subdivision 4T are reported. Measurements were made to the total length to the centimetre below and have not been standardised.

Altogether, 2,300 otoliths were collected on this trip of the "Président Théodore Tissier" from several areas of Subareas 3 and 4, but details have so far been reported from only two samples totalling 289 otoliths.

Observations made on French otter trawlers in Subarea 4 in 1958 by J.R. Clark and F.D. McCracken are recorded in Table 16. Measurements were made to the fork length to the nearest centimetre.

Germany — Reported by A. Kotthaus and A. Meyer

Age-length frequencies of the 1957 landings of cod by otter trawlers from Subarea 1 have been reported. Length frequencies of redfish landings for 1955, 1956, 1957, and 1958 from Subarea 1 and for 1958 from Subareas 2 and 3 were reported. The age-length frequencies of the cod catches of the Research Vessel "Anton Dohrn" (using a covered codend) were reported. Length measurements were made of the total length (end of tail lobes) and recorded to the centimetre below. The length frequencies were reported to the Commission by centimetres.

Sampling was carried out on shore at the market. For the cod each of the three size categories landed was sampled separately, and the final length frequency calculated by weighting each length frequency by the quantity landed in the size category from which it was taken and then pooling the frequencies. The cod from the commercial landings were gutted before being measured; the redfish were round, except for a few of the larger ones.

Samples of otoliths were taken, stratified according to length of fish, and the age-length key constructed from this data, together with the length frequencies, was used to estimate the age distribution of the landing.

Iceland — Reported by Jón Jónsson

Cod age frequencies and age at first spawning (from otoliths) for 1957 with mean length at each age, based on the sampling of the otter trawler landings from Subarea 1, were reported. Length measurements were made of the total length recorded to the nearest centimetre, and compiled in 3-centimetre groups (0-2 cm, etc.).

Norway — Reported by Birger Rasmussen

The age-length frequency of samples of the commercial handline catch in Holsteinsborg Deep was reported.

Measurements were made of the fork length to the nearest centimetre.

Portugal — Reported by Mario J. Ruivo

Sampling at sea of the cod catches (before discarding undersized fish) of the Portuguese otter trawlers and dory vessels has been carried out in 1957 in Subareas 1, 2, 3, and 4. Length frequencies, age frequencies (based on otoliths), and the mean size at each age by sexes were included in the data reported.

Length measurements were made of the fork length recorded to the nearest centimetre and were compiled in 5-centimetre groups (0-4 cm, etc.). Samples were not weighted by the quantity caught; when taken on the same fishing bank at the same time they were generally pooled.

Samples from cod catches taken in 1956 from Subarea 4 are also included in this volume. Note that the 1956 samples were taken after discarding undersized fish.

Observations made on a Portuguese otter trawler in Subarea 4 in 1958 by J.R. Clark and F.D. McCracken are recorded in Table 16.

Spain — Reported by Alfonso Rojo

Length frequencies of the cod, haddock and pollock catches of Spanish otter trawlers collected at sea for the year 1957 were reported, together with age-length keys. Samples were taken from the commercial catch before discarding.

Length measurements were made of the fork length recorded to the nearest centimetre. Cod ages were based on otoliths. Samples were not weighted according to the quantity caught. They were added together by month/subdivisions and the combined frequencies printed.

Union of Soviet Socialist Republics — Reported by Ul. Marti

The age frequency and the length frequency of redfish catches were reported. Samples were taken at sea before discarding from the catches of commercial otter trawlers.

United Kingdom — Reported by C.E. Lucas and R.S. Wimpenny

The length composition of the cod landings of the United Kingdom otter trawlers from Subarea 1 was reported. Measurements were made of the total length to the centimetre below. To determine the length composition of the landings, samples were taken from each of the size categories into which the landings were divided. The length frequencies so obtained were then pooled, after weighting by the quantity of fish in the category from which they were taken.

Observations were also made at sea on one trip of an otter trawler to measure discarding practices, and these data were reported to the Commission.

United States — Reported by J.R. Clark, G.M. Clarke, E.L. Dietsch, F. Dreyer, G.F. Kelly, K.E. Murray, and J.P. Wise

The age-length composition of the United States landings of haddock for 1956 and 1957 and the length composition of the landings of cod and redfish are included in this volume. All measurements were made of the fork length to the nearest centimetre.

Compilation of Data

(a) Cod: Subarea 5, Otter Trawlers

Each length frequency sample was weighted by the weighout of the landing from which it was obtained (by market category for large, market, scrod; by total cod for mixed). The resulting length frequencies of sample landings were totalled and weighted by total United States cod landings for otter trawlers by quarters. These numbers were in turn combined into length frequencies for total United States otter trawl cod landings for each quarter.

(b) Haddock

The length frequency samples for each month by market category were pooled and the resulting frequency weighted by the total quantity of each category landed from each unit area. The weighted numbers of fish of each category were then pooled to obtain the total length frequency for haddock for each month for each subdivision. The age frequencies were determined from the length frequencies and age-length keys constructed from subsamples of the original samples. Ages were determined from the scales. The resulting age-length frequency expresses the total removals of haddock from the subdivision for the particular month.

Haddock biostatistical records are maintained by the "haddock year": namely, February 1st to January 31st of the following year. The haddock's birthday is taken as February 1st.

(c) Redfish

Samples were taken from the commercial catches and were pooled without weighting.

TABLE IV. SUMMARY BY COUNTRIES OF SAMPLING REPORTED

Country and Species	Gear	Area	No. of Samples	No. Fish Measured	Observations	
CANADA (M)	1957					
Cod	Otter Trawl	4T,4V,4W	33	7,897	Length Frequency	Comm. Landings
	Otter Trawl	4T	10 trips	11,457	Length Frequency	Comm. Catch
			10	2,511	Length Frequency	Comm. Landings
	Hook & Line	4T,4V,4W,4X	16	5,985	Length Frequency	Comm. Landings
Haddock	Otter Trawl	4T,4V,4W,4X	44	9,730	Length Frequency	Comm. Landings
	Otter Trawl	4X	1	359	Length Frequency	Comm. Catch
	Hook & Line	4V,4X	21	5,090	Length Frequency	Comm. Landings
Redfish	Otter Trawl	4S	1	200	Length Frequency	Comm. Landings
Am. Plaice	Otter Trawl	4T	1	100	Length Frequency	Comm. Landings
Witch	Otter Trawl	4T	1	100	Length Frequency	Comm. Landings
CANADA (N)	1957					
Cod	Otter Trawl	3L,3O	21	5,242	Length Frequency	Comm. Landings
	Trap	3L,3Ps	85	13,423	Length Frequency	Comm. Landings
	Hook & Line (inshore)	3L,3Ps,3Pn	248	46,110	Length Frequency	Comm. Landings
Haddock	Otter Trawl	3N,3O	110	35,851	Length Frequency	Comm. Landings
DENMARK	1957					
Cod	Hook & Line	1B,1C,1D	9	1,556	Age Frequency and Mean Lengths	Res. Catches
	Hook & Line	1A,1B,1C, 1D,1E,1F	24	4,722	Age Frequency	Comm. Catches
	Trap	1B	1	100	Age Frequency	Comm. Catches
	Prawn Trawl	1D	3	350	Age Frequency	Comm. Catches
	Hook & Line	E. Greenland	5	675	Age Frequency	Comm. Catches
Redfish	Shrimp Trawl	1D,1E	17	15,575	Length Frequency	Res. Catches
FRANCE						
Cod 1954	Otter Trawl	4T	2	289	Age & Length Frequencies	Res. Catches
Cod 1958	Otter Trawl	4R,4V	2	326	Length Frequency	Comm. Catch
	Otter Trawl	4R,4V,4T	8	1,351	Length Frequency	Retained Part
	Otter Trawl	4R,4V	3	342	Length Frequency	Discards
GERMANY						
Cod 1957	Otter Trawl	1C,1D,1F	6	3,033	Age/Length Freq.	Comm. Landings
	Otter Trawl	1E,1F	46	17,502	Age/Length Freq.	Res. Catches covered codend
Redfish 1955	Otter Trawl	Subarea 1	4[1]	-	Length Frequency	Comm. Landings

1) At least this many, possibly more.

(cont'd.)

TABLE IV (cont'd.). SUMMARY BY COUNTRIES OF SAMPLING REPORTED

Country and Species	Gear	Area	No. of Samples	No. Fish Measured	Observations	
GERMANY Redfish (cont'd.)						
1956	Otter Trawl	Subarea 1	4[1]	-	Length Frequency	Comm. Landings
1957	Otter Trawl	Subarea 1	5[1]	-	Length Frequency	Comm. Landings
1958	Otter Trawl	Subarea 1	9[1]	-	Length Frequency	Comm. Landings
1958	Otter Trawl	Subarea 2	3[1]	-	Length Frequency	Comm. Landings
1958	Otter Trawl	Subarea 3	3[1]	-	Length Frequency	Comm. Landings
ICELAND	1957					
Cod	Otter Trawl	1D,1E	2	285	Age Frequency, Mean Length at each Age, Age at First Spawning	Comm. Landings
NORWAY	1957					
Cod	Handline	1B	-	1,091	Age/Length Freq.	Comm. Catch before Discard
PORTUGAL						
Cod 1956	Otter Trawl	4R,4S,4T,4V	25	2,464	Length & Age Frequencies with Mean Length at each Age	Comm. Catch after Discard
1957	Otter Trawl	1C,1D,1E,1F	29[2]	3,566	Length & Age Frequencies with Mean Length at each Age	Comm. Catch before Discard
	Otter Trawl	2H,2J	35[2]	3,924		
	Otter Trawl	3K	5	525		
	Otter Trawl	4R,4S,4T,4V	9	900		
	Dory Vessels	1B,1C,1D	10	1,000	Length Frequency	Comm. Catch brought to mother ship
1958	Otter Trawl	4R	2	315	Length Frequency	Retained Catch
	Otter Trawl	4R	1	115	Length Frequency	Discarded Catch
SPAIN	1957					
Cod	Otter Trawl	1B,1D	83	18,078	Length Frequency & Age/Length Key	Comm. Catch before Discard
	Otter Trawl	2J	11	5,709		
	Otter Trawl	3K,3L,3N, 3O,3P	52	19,823		
Haddock	Otter Trawl	3N	11	1,715	Length Frequency	Comm. Catch before Discard
Pollock	Otter Trawl	3P	4	1,135	Length Frequency	

1) At least this many, possibly more.

2) Length/Weight data were reported for two of these samples.

(cont'd.)

TABLE IV (cont'd.). SUMMARY BY COUNTRIES OF SAMPLING REPORTED

Country and Species	Gear	Area	No. of Samples	No. Fish Measured	Observations	
U.S.S.R.	1957					
Redfish	Otter Trawl	2J	-	2,408	Length & Age Frequencies	Comm. Catch before Discard
	Otter Trawl	3L,3M	-	47,587		
U.K.	1957					
Cod	Otter Trawl	Subarea 1	21	4,830	Length Frequency	Comm. Landings
	Otter Trawl	Subarea 1	1	248	Length Frequency	Comm. Landings
	Otter Trawl	Subarea 1	32	1,710	Length Frequency	Discards
U.S.A.						
Haddock	All	4X[1]	101	9,215	Length Frequency	Comm. Landings
1956	All	5Y[1]	187	14,176	Age/Length Freq.	Comm. Landings
	All	5Z	387	31,189	Age/Length Freq.	Comm. Landings
Cod 1957	Otter Trawl	5Y,5Z	124	6,500	Length Frequency	Comm. Landings
Haddock	All	4X[1]	82	10,259	Length Frequency	Comm. Landings
1957	All	5Y[1]	233	19,500	Age/Length Freq.	Comm. Landings
	All	5Z	443	33,482	Age/Length Freq.	Comm. Landings
Redfish	Otter Trawl	3N,3O,3P	12[2]	1,200	Length Frequency	Comm. Landings
1957	Otter Trawl	4R,4S,4T	44[2]	4,400	Length Frequency	Comm. Landings
	Otter Trawl	4V,4W,4X	65[2]	6,500	Length Frequency	Comm. Landings
	Otter Trawl	5Y,5Z	223[2]	22,245	Length Frequency	Comm. Landings

1) United States/Canada Co-operative Programme.
2) Estimated.

LENGTH-WEIGHT TABLES FOR NORTHWEST ATLANTIC HADDOCK

by John R. Clark and Eli L. Dietsch

The collection of biostatistical information on the United States haddock fishery has been carried out continuously since 1931. The data are used principally to study the nature and extent of fluctuations in abundance and the effect of fishing on the stocks. In order to evaluate the importance of the various factors affecting the abundance of haddock it is necessary to determine the total removals by the fishery in terms of the weight and numbers of the various ages and sizes represented in the catches. The determination of removals requires the use of length-weight relationships to calculate the weight of the length samples of the landings, so that the proportion of the total landings which they represent can be determined.

An extensive series of length-weight observations has been collected since 1931 to establish the relationships required for our studies. Some length-weight data for haddock have previously been published by Herrington (1935) and Schuck (1951). It is the purpose of this study to present the complete collection of data in a form most useful to persons engaged in studying the haddock fishery of ICNAF Subareas 4 and 5.

Studies of growth rate, age and size composition, meristic attributes, and tag return records have shown that the haddock of Subareas 4 and 5 do not form one homogeneous population, but are divided into many population units. Preliminary analysis of our data revealed differences in length-weight among these units.

For this reason we allotted our data for analysis to five major population divisions, conforming to Subdivisions 4W, 4X, 5Y, 5Z east, and 5Z west. These divisions are shown in Figure 1. The individual samples are listed in Tables 1 to 4. The lengths used are those recommended by the Commission; i.e., they represent the distance between the tip of the snout and the shortest ray of the caudal fin and are assigned to the mid-point of each centimetre interval.

Haddock are typically landed in the "dressed" condition: gutted from December to March, and both gutted and gilled from April to November. It is, therefore, the dressed weight that we are concerned with in our study and our tables show the values in these terms. An average conversion factor of 1.17 may be used to convert dressed to whole ("round") weights. The factor is 1.14 for gutted haddock and 1.20 for gutted and gilled haddock.

As preliminary inspection of the data revealed seasonal changes in the length-weight relations, the data were grouped by months for analysis. The cyclic nature of the variation in weights is illustrated in Figure 2 for Subdivisions 4W and 5Z west. This cyclic pattern is consistent throughout our data for the larger sizes and becomes more pronounced with increasing length. The haddock with which we are concerned are nearly all mature at 45 centimetres; no significant pattern occurs below this length.

These findings agree with results obtained by Russell (1914) for haddock of the North Sea. Russell's suggestion that the variations in weight may be related to the sexual and feeding cycles of haddock is confirmed by our data. The height of spawning occurs in March in Subdivisions 5Y and 5Z, in April in Subdivision 4X, and in April to May in Subdivision 4W. The period of lowest weight coincides with the spawning period, occurring between March and May. Studies on haddock feeding (Wigley, 1956) have shown that food consumption of Georges Bank haddock is lowest in February to April and increases thereafter, reaching a peak in June. Vladykov (1954) discovered a similar relation in Nova Scotian offshore haddock: namely, a low point in February and a peak in July.

As data are not available throughout the year for any area, the weights for months not represented in the samples were estimated. The estimated weights were read from curves such as those shown in Figure 2, which were fitted to points for the available samples. These points were established from regression analysis of fish weight against logarithm of fish length. The weights were estimated to the nearest tenth of a pound for haddock larger than 40 centimetres and to the nearest hundredth of a pound for haddock less than 40 centimetres.

The monthly length-weight tables thus derived are presented in Tables 5 to 8 for Subdivisions 4W, 4X, 5Z east, and 5Z west. The division of Subdivision 5Z into east and west components was done to coincide with observed differences in the stocks of the two areas, which are now being studied separately. Insufficient samples were available to derive a table for Subdivision 5Y. Comparison of the two 5Y samples available with those of the other areas indicates that the tables constructed for 5Z west can be used for 5Y. This usage is substantiated by many studies which have shown that the haddock of Subdivisions 5Y and 5Z west are similar and may be considered as units of the same subpopulation (e.g., Needler, 1930).

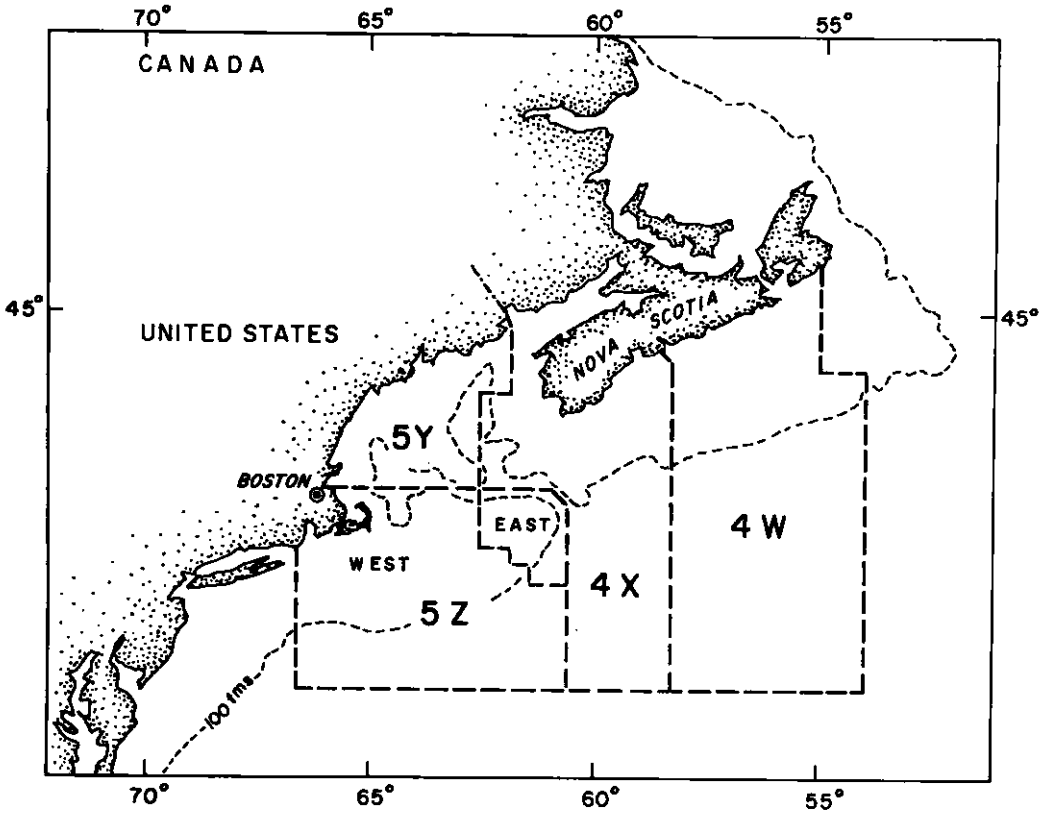


Figure 1. Areas from which length-weight samples were collected.

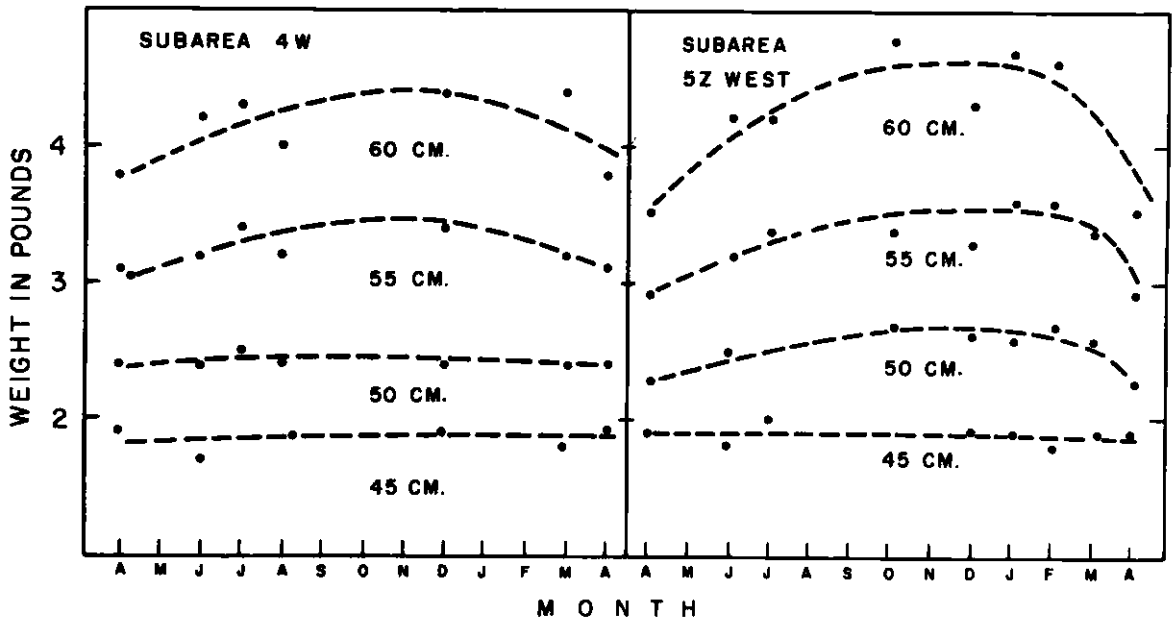


Figure 2. Seasonal changes in the weight of haddock of different lengths from Subdivisions 4W and 5Z west.

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TABLE 1 UNITED STATES - 1957 WEIGHT/LENGTH SAMPLE DATA - HADDOCK

by John R. Clark
Eli L. Dietsch

Subdivision 4W

Weights in POUNDS, fresh, gutted; lengths in centimeters

Month	March		April		June				July				August		December			
Year	1942		1932		1931		1932		1931		1932		1955		1931		1941	
		Avg.		Avg.		Avg.		Avg.		Avg.		Avg.		Avg.		Avg.		Avg.
Length	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.3	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.3	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0.4	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	0.4	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	0.4	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	0.4	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	0.5	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	0.6	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	0.6	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0.7	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.9	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0.8	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1.0	-	-
36	1	0.9	-	-	-	-	-	-	-	-	-	-	-	-	1	1.1	-	-
37	1	0.9	-	-	-	-	-	-	-	-	-	-	-	-	2	1.1	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-	1	1.2	9	1.2	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	2	1.3	12	1.3	-	-
40	2	1.3	-	-	-	-	-	-	-	-	-	-	6	1.4	16	1.4	1	1.3
41	1	1.2	-	-	-	-	-	-	-	-	-	-	8	1.5	23	1.4	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-	10	1.6	33	1.5	1	1.4
43	1	1.6	1	1.3	-	-	1	1.8	1	1.8	-	-	10	1.7	21	1.6	-	-
44	1	1.7	-	-	-	-	3	1.6	-	-	-	-	9	1.7	24	1.7	3	1.5
45	3	1.8	3	1.9	-	-	2	1.7	-	-	-	-	9	1.9	36	1.9	-	-
46	5	1.9	1	1.6	2	1.8	2	2.0	1	2.1	1	1.9	14	2.1	22	1.9	4	1.9
47	1	2.0	1	2.0	2	2.1	4	2.1	3	2.1	1	2.0	13	2.1	9	2.1	2	2.1
48	8	2.1	3	2.2	-	-	8	2.1	4	2.4	3	2.3	18	2.1	11	2.2	-	-
49	8	2.3	1	2.2	-	-	1	1.9	6	2.4	-	-	12	2.2	19	2.3	4	2.3
50	2	2.4	3	2.4	5	2.4	5	2.3	5	2.5	1	2.5	12	2.4	6	2.5	9	2.3
51	8	2.5	11	2.5	4	2.9	1	2.1	8	2.6	1	2.6	16	2.7	14	2.6	6	2.6
52	6	2.7	10	2.6	7	2.7	6	2.6	9	2.8	5	2.8	21	2.7	23	2.8	6	2.7
53	2	2.8	8	2.7	7	3.0	4	2.8	4	3.1	1	3.1	22	3.0	15	3.1	6	2.9
54	4	3.1	7	2.9	9	3.1	6	3.0	6	3.1	4	3.2	22	3.1	26	3.1	9	3.1
55	1	3.2	10	3.1	9	3.2	4	3.3	14	3.4	2	3.4	22	3.2	17	3.4	11	3.4
56	6	3.2	17	3.0	8	3.7	2	3.2	14	3.4	4	3.5	16	3.3	28	3.5	5	3.6
57	3	3.6	20	3.4	5	3.5	11	3.2	7	3.7	8	3.6	14	3.4	27	3.7	11	3.5
58	4	3.6	17	3.4	9	4.2	7	3.5	12	3.8	7	3.8	14	3.8	16	4.0	11	4.1
59	2	4.1	23	3.7	2	4.1	8	3.7	14	4.0	5	4.1	8	3.7	16	4.2	8	4.1
60	4	4.4	24	3.8	12	4.3	10	4.0	13	4.2	11	4.4	9	4.0	14	4.4	6	4.4
61	3	4.3	10	3.8	6	4.5	8	4.2	12	4.5	10	4.4	6	4.4	13	4.4	11	4.7
62	2	4.7	26	4.3	7	4.3	5	4.0	6	4.7	4	4.5	4	4.9	7	4.9	4	5.3
63	1	4.2	26	4.6	11	4.7	13	4.5	11	5.0	10	4.8	5	4.4	12	5.1	4	4.8
64	2	5.4	11	4.6	6	4.9	9	4.6	7	5.1	3	5.1	3	5.2	12	5.1	2	5.3
65	2	5.3	14	5.0	6	5.4	9	4.7	10	5.7	7	5.4	1	4.7	10	5.7	7	5.7
66	1	6.2	15	4.9	6	5.2	7	5.1	6	5.7	7	5.8	2	5.5	1	5.8	5	6.0
67	-	-	9	5.4	4	5.4	4	5.2	4	5.7	5	6.4	2	4.9	4	6.3	3	6.0
68	2	7.0	14	5.7	7	6.1	1	5.6	-	-	6	5.9	-	-	4	6.7	4	6.4
69	-	-	6	6.2	8	6.1	5	5.5	2	6.7	4	5.9	2	5.4	-	-	2	6.0
70	2	7.0	12	6.1	2	6.2	1	5.6	3	6.6	5	6.0	2	6.3	2	6.6	-	-
71	1	7.2	7	6.5	-	-	2	6.1	1	7.8	12	6.7	-	-	2	7.2	1	7.7
72	1	6.8	8	6.9	-	-	2	6.6	1	6.2	2	6.9	-	-	3	7.4	2	7.4
73	2	8.6	8	7.1	1	7.2	-	-	2	7.2	2	7.9	1	4.9	1	7.8	1	8.1
74	1	7.1	3	7.4	-	-	1	6.5	-	-	-	-	-	-	-	-	-	-
75	-	-	4	7.2	-	-	1	8.4	-	-	3	8.4	-	-	-	-	-	-
76	1	6.7	-	-	1	7.1	-	-	2	8.3	4	8.0	-	-	1	9.2	1	9.4
77	1	8.7	2	7.3	-	-	-	-	1	9.0	1	8.8	-	-	1	10.1	-	-
78	1	9.2	1	8.4	-	-	1	8.0	1	8.7	3	8.2	-	-	-	-	-	-
79	1	9.6	2	8.9	-	-	-	-	-	-	1	9.9	-	-	-	-	-	-
80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	1	10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	99	...	338	...	146	...	154	...	190	...	143	...	316	...	604	...	150	...

TABLE 2 UNITED STATES - 1957 WEIGHT/LENGTH SAMPLE DATA - HADDOCK

by John R. Clark
Eli L. Dietsch

Subdivision 4X

Weights in POUNDS, fresh, gutted; lengths in centimeters

Month	February				March				April				June		December	
Year	1931		1932		1933		1942		1932		1955		1931		1931	
Length	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.
39	-	-	-	-	-	-	-	-	-	-	1	1.5	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	2	1.4	-	-	1	1.3	-	-	-	-
42	-	-	-	-	-	-	3	1.6	1	1.6	5	1.4	-	-	-	-
43	-	-	-	-	1	1.6	2	1.6	-	-	5	1.7	-	-	-	-
44	1	2.1	1	1.7	-	-	7	1.7	-	-	6	1.8	-	-	1	1.5
45	1	2.3	-	-	-	-	10	1.8	-	-	3	2.1	-	-	1	1.8
46	1	1.9	-	-	3	2.1	7	1.9	1	2.0	11	2.2	2	1.9	5	1.9
47	1	2.1	3	2.0	-	-	8	2.1	-	-	5	2.1	1	2.2	3	2.2
48	4	2.3	5	2.2	5	2.3	6	2.1	3	2.1	6	2.4	5	2.2	7	2.1
49	2	2.7	3	2.5	4	2.5	7	2.4	4	2.3	6	2.3	4	2.3	9	2.3
50	5	2.7	4	2.6	13	2.7	12	2.5	4	2.4	8	2.4	5	2.4	6	2.4
51	10	2.8	5	2.8	13	2.8	3	2.7	7	2.6	5	2.6	7	2.6	8	2.6
52	5	3.3	10	2.8	13	3.1	6	2.8	5	2.8	1	3.0	6	2.7	21	2.8
53	13	3.2	7	3.1	17	3.5	11	2.9	4	2.9	3	3.0	8	3.3	18	2.8
54	7	3.6	7	3.4	13	3.2	8	3.3	5	2.9	11	3.1	14	3.0	20	3.2
55	15	3.4	4	3.4	9	3.5	6	3.3	7	3.0	5	3.2	11	3.2	28	3.3
56	18	3.5	8	3.7	15	3.8	10	3.5	2	3.4	11	3.8	13	3.5	29	3.5
57	15	3.8	7	3.7	17	4.0	5	4.2	3	3.8	4	3.5	13	3.5	28	3.6
58	8	4.1	10	4.0	13	4.0	3	3.7	3	3.4	5	3.6	12	3.8	29	3.9
59	14	4.1	10	4.3	12	4.3	7	4.2	2	4.3	3	3.9	14	4.1	32	4.2
60	17	4.3	13	4.6	12	4.6	3	4.5	3	4.6	4	4.4	12	4.0	24	4.2
61	14	4.7	6	5.0	10	4.6	3	4.9	7	4.1	5	4.2	21	4.5	28	4.4
62	8	4.7	6	5.1	11	4.7	6	4.7	2	4.4	6	4.5	14	4.3	26	4.6
63	9	5.3	3	4.6	1	5.0	2	5.2	-	-	4	5.1	6	4.7	31	5.0
64	7	5.0	3	5.1	4	5.1	1	6.0	2	4.9	1	4.6	10	5.0	16	5.0
65	9	5.4	3	5.5	5	5.5	3	5.3	1	5.0	1	5.6	8	5.0	21	5.5
66	6	5.8	2	6.0	7	5.7	4	5.7	-	-	-	-	3	5.6	14	5.6
67	6	5.9	2	6.3	3	6.0	-	-	1	6.0	-	-	9	5.6	11	6.0
68	7	6.2	2	7.3	1	5.4	1	6.6	-	-	1	5.5	1	5.4	12	6.3
69	1	7.9	4	7.1	1	6.1	1	6.1	1	6.6	-	-	2	5.8	4	6.4
70	2	6.1	-	-	-	-	-	-	2	6.6	-	-	-	-	4	7.0
71	-	-	1	8.7	1	7.7	-	-	-	-	-	-	3	6.3	7	7.0
72	2	8.1	2	8.5	-	-	1	8.9	-	-	-	-	1	6.9	-	-
73	-	-	-	-	-	-	-	-	1	7.0	-	-	-	-	1	6.4
74	-	-	1	8.7	-	-	1	7.7	-	-	-	-	-	-	2	8.4
75	-	-	1	9.0	-	-	1	9.7	-	-	-	-	-	-	2	8.2
76	1	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
77	-	-	-	-	-	-	-	-	-	-	-	-	1	7.2	-	-
Total	209	...	133	...	204	...	150	...	71	...	127	...	206	...	448	...

TABLE 3 UNITED STATES - 1957 WEIGHT/LENGTH SAMPLE DATA - HADDOCK by John R. Clark
Eli L. Dietsch

Subdivision 5Z East Weights in POUNDS, fresh, gutted; lengths in centimeters

Month	January		February		March		April		June		July		September		December	
Year	1932		1931		1942		1931		1931		1932		1931		1931	
Length	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.
33	-	-	-	-	1	0.7	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	1	0.9	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	2	1.0	-	-
36	-	-	-	-	1	1.0	-	-	-	-	-	-	6	1.1	-	-
37	-	-	-	-	1	1.1	-	-	-	-	-	-	9	1.2	-	-
38	-	-	-	-	1	1.3	-	-	-	-	-	-	15	1.3	-	-
39	6	1.4	-	-	5	1.3	-	-	-	-	-	-	27	1.3	-	-
40	3	1.6	-	-	4	1.5	-	-	-	-	2	1.5	49	1.4	-	-
41	12	1.6	-	-	10	1.5	-	-	-	-	4	1.8	37	1.6	3	1.1
42	11	1.6	4	2.0	6	1.7	-	-	-	-	7	1.8	37	1.7	4	1.6
43	14	1.8	1	1.6	9	1.7	-	-	3	1.7	15	2.0	38	1.8	6	1.8
44	16	1.8	8	1.9	9	1.9	-	-	6	1.8	10	2.1	26	1.9	4	1.8
45	26	2.0	16	2.0	16	2.0	2	1.6	11	2.0	22	2.1	18	2.0	8	2.0
46	23	2.1	22	2.1	10	2.2	2	2.1	20	2.0	10	2.2	17	2.1	13	2.0
47	7	2.4	32	2.2	9	2.2	1	1.8	34	2.1	8	2.3	14	2.3	5	2.1
48	13	2.4	51	2.5	15	2.4	3	2.0	43	2.2	12	2.6	9	2.3	5	2.2
49	9	2.5	44	2.5	15	2.6	1	1.9	48	2.3	9	2.8	6	2.4	2	2.1
50	8	2.6	63	2.6	13	2.7	7	2.4	56	2.5	16	2.9	12	2.5	-	-
51	19	2.7	62	2.8	12	2.9	4	2.4	63	2.6	4	3.1	12	2.7	1	2.7
52	20	3.0	65	3.0	15	2.9	4	2.6	57	2.7	6	3.2	16	3.0	-	-
53	21	3.2	65	3.1	5	3.0	5	2.7	56	2.9	4	3.4	15	3.1	-	-
54	19	3.5	73	3.3	4	3.5	8	2.9	31	3.0	13	3.6	15	3.2	-	-
55	18	3.6	60	3.5	5	3.3	5	3.1	41	3.2	12	3.8	7	3.4	2	3.2
56	22	3.6	52	3.7	6	3.9	7	3.3	26	3.3	21	4.0	18	3.5	-	-
57	15	4.2	51	3.8	4	3.7	8	3.3	41	3.6	14	4.1	14	3.7	-	-
58	10	4.1	31	4.1	5	3.8	8	3.6	19	3.7	9	4.3	13	4.0	1	3.7
59	13	4.3	39	4.3	4	4.4	8	3.6	25	4.0	9	4.4	14	4.2	1	3.9
60	12	4.5	35	4.3	3	4.3	6	3.8	15	4.2	13	4.5	9	4.4	1	4.1
61	11	4.7	24	4.6	1	5.1	2	4.2	11	4.6	11	5.0	9	4.4	-	-
62	13	4.8	32	4.9	1	5.0	2	4.1	4	4.8	12	5.6	5	4.7	1	4.5
63	10	5.3	25	5.1	-	-	2	4.4	8	4.7	10	5.5	10	4.8	-	-
64	6	5.2	12	5.4	1	5.0	5	4.4	3	4.8	7	5.6	5	5.2	-	-
65	6	6.4	13	5.6	-	-	2	4.8	2	5.0	7	6.1	3	5.3	-	-
66	5	5.9	9	5.7	1	5.4	-	-	5	5.7	12	6.3	4	5.5	-	-
67	2	5.8	6	6.1	-	-	3	5.5	1	5.7	-	-	3	5.9	-	-
68	3	7.0	7	5.5	-	-	3	5.4	1	5.2	2	7.1	1	6.9	-	-
69	4	6.5	2	6.8	-	-	3	5.5	1	5.4	1	7.3	2	4.9	-	-
70	4	7.0	4	6.4	-	-	3	6.3	-	-	-	-	-	-	-	-
71	-	-	-	-	-	-	-	-	-	-	1	6.9	1	6.1	-	-
72	2	7.3	1	8.1	-	-	1	6.9	-	-	-	-	3	7.0	-	-
73	1	6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74	1	9.0	1	7.4	-	-	-	-	1	6.3	1	9.1	-	-	-	-
Total	385	...	910	...	192	...	105	...	632	...	285	...	502	...	57	...

TABLE 4 UNITED STATES - 1957 WEIGHT/LENGTH SAMPLE DATA - HADDOCK

by John R. Clark
Eli L. Dietsch

Subdivision 5Z West

Weights in POUNDS, fresh, gutted; lengths in centimeters

Month	January				February		March				April		May	
Year	1931		1932		1931		1931		1942		1932		1932	
Length	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.
24	2	0.3	-	-	-	-	-	-	-	-	-	-	-	-
25	1	0.3	-	-	-	-	-	-	-	-	-	-	-	-
26	1	0.4	-	-	-	-	-	-	-	-	-	-	-	-
27	5	0.4	-	-	-	-	-	-	-	-	-	-	4	0.4
28	4	0.4	-	-	-	-	-	-	-	-	-	-	5	0.5
29	5	0.5	-	-	-	-	1	0.6	-	-	-	-	11	0.5
30	8	0.6	-	-	-	-	3	0.6	-	-	-	-	23	0.5
31	9	0.7	-	-	-	-	8	0.7	-	-	-	-	21	0.6
32	10	0.7	-	-	-	-	16	0.8	-	-	-	-	29	0.7
33	12	0.8	-	-	-	-	31	0.8	-	-	-	-	29	0.7
34	18	0.9	-	-	-	-	20	0.9	-	-	-	-	24	0.8
35	12	1.0	-	-	-	-	25	1.0	1	1.0	-	-	17	0.9
36	10	1.0	-	-	-	-	28	1.1	2	1.0	-	-	14	1.0
37	9	1.1	1	1.1	-	-	18	1.2	2	1.1	-	-	19	1.1
38	3	1.2	2	1.2	-	-	6	1.2	3	1.2	-	-	19	1.1
39	7	1.3	6	1.2	-	-	2	1.3	3	1.3	-	-	21	1.3
40	1	1.3	12	1.4	1	1.6	1	0.9	8	1.3	-	-	7	1.4
41	2	1.4	17	1.4	-	-	-	-	7	1.4	-	-	3	1.4
42	2	1.5	16	1.6	-	-	-	-	12	1.6	-	-	-	-
43	1	1.8	23	1.7	1	1.7	-	-	8	1.6	-	-	-	-
44	-	-	27	1.7	2	1.8	-	-	11	1.8	1	1.9	-	-
45	-	-	23	1.9	1	1.8	-	-	22	1.9	-	-	-	-
46	-	-	21	2.0	4	2.1	-	-	18	2.1	1	2.1	-	-
47	-	-	7	2.1	11	2.2	-	-	18	2.2	1	1.8	-	-
48	-	-	6	2.3	4	2.4	-	-	21	2.3	3	2.0	-	-
49	-	-	3	2.6	7	2.4	-	-	12	2.5	1	2.1	-	-
50	-	-	13	2.6	6	2.7	-	-	20	2.6	6	2.3	-	-
51	-	-	7	3.0	3	2.8	-	-	13	2.6	1	2.5	-	-
52	-	-	8	3.0	9	3.0	-	-	10	2.9	8	2.5	-	-
53	-	-	8	3.2	8	3.4	-	-	13	3.1	8	2.7	-	-
54	-	-	11	3.4	12	3.3	-	-	15	3.2	8	2.8	-	-
55	-	-	23	3.6	11	3.6	-	-	4	3.4	6	2.9	-	-
56	-	-	16	3.7	14	3.7	-	-	11	3.5	5	3.1	-	-
57	-	-	19	3.9	11	4.0	-	-	6	3.8	8	3.2	-	-
58	-	-	10	4.0	10	4.2	-	-	3	3.7	6	3.4	-	-
59	-	-	13	4.4	11	4.3	-	-	1	4.4	2	3.4	-	-
60	-	-	8	4.7	5	4.6	-	-	-	-	3	3.5	-	-
61	-	-	10	4.7	13	4.8	-	-	1	5.0	2	3.6	-	-
62	-	-	9	5.1	4	4.6	-	-	-	-	4	4.3	-	-
63	-	-	7	5.3	5	5.0	-	-	1	5.0	4	4.5	-	-
64	-	-	4	5.2	7	5.3	-	-	1	5.9	3	4.3	-	-
65	-	-	4	6.2	3	5.8	-	-	1	5.5	4	4.6	-	-
66	-	-	6	5.9	1	5.2	-	-	-	-	-	-	-	-
67	-	-	8	6.3	1	6.0	-	-	-	-	2	5.4	-	-
68	-	-	3	6.5	2	6.4	-	-	-	-	3	5.5	-	-
69	-	-	2	6.7	-	-	-	-	-	-	5	6.0	-	-
70	-	-	-	-	-	-	-	-	-	-	2	6.0	-	-
71	-	-	1	8.0	-	-	-	-	-	-	2	6.6	-	-
72	-	-	-	-	-	-	-	-	-	-	3	7.3	-	-
73	-	-	-	-	-	-	-	-	-	-	1	8.1	-	-
74	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75	-	-	1	8.8	-	-	-	-	-	-	-	-	-	-
76	-	-	-	-	-	-	-	-	1	8.9	-	-	-	-
77	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78	-	-	-	-	-	-	-	-	-	-	1	10.3	-	-
79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	-	-	-	-	-	-	-	-	-	-	-	-	-	-
81	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82	-	-	-	-	-	-	-	-	-	-	1	12.6	-	-
Total	122	...	355	...	167	...	159	...	249	...	105	...	246	...

(Cont'd.)

TABLE 4 UNITED STATES - 1957 (cont'd.) WEIGHT/LENGTH SAMPLE DATA - HADDOCK

by John R. Clark
Eli L. Dietsch

Subdivision 5Z West

Weights in POUNDS, fresh, gutted; lengths in centimeters

Month	June				July		October		November		December					
Year	1931		1932		1931		1931		1932		1931		1932		1941	
Length	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.	No.	Avg. Wt.
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	3	0.3	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	4	0.4	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	3	0.4	-	-	2	0.5	-	-
28	-	-	-	-	1	0.4	-	-	6	0.5	-	-	2	0.5	-	-
29	-	-	-	-	-	-	-	-	12	0.5	-	-	3	0.5	-	-
30	-	-	-	-	2	0.5	-	-	10	0.6	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	6	0.6	-	-	8	0.6	1	0.7
32	-	-	-	-	3	0.7	-	-	16	0.7	-	-	8	0.7	5	0.8
33	-	-	-	-	4	0.7	-	-	5	0.8	-	-	8	0.7	7	0.8
34	-	-	-	-	13	0.8	-	-	11	0.8	-	-	9	0.8	4	1.0
35	-	-	-	-	12	0.9	-	-	9	0.9	-	-	8	0.9	12	0.9
36	-	-	-	-	16	1.0	-	-	5	0.9	1	1.1	7	1.0	12	1.0
37	-	-	-	-	11	1.0	-	-	4	1.0	-	-	3	1.1	7	1.1
38	-	-	1	1.1	23	1.2	-	-	2	1.1	3	1.4	5	1.1	8	1.2
39	2	1.3	1	1.3	22	1.3	-	-	-	-	-	-	-	-	4	1.3
40	2	1.7	1	1.4	12	1.3	-	-	-	-	7	1.5	-	-	15	1.4
41	5	1.5	2	1.4	13	1.4	-	-	-	-	11	1.5	-	-	14	1.5
42	-	-	2	1.6	12	1.6	-	-	-	-	16	1.6	-	-	23	1.5
43	5	1.8	7	1.6	1	1.7	-	-	-	-	12	1.7	-	-	26	1.6
44	8	1.9	9	1.7	4	2.1	-	-	-	-	12	2.0	-	-	21	1.8
45	4	1.9	7	1.9	2	2.0	-	-	-	-	14	2.0	-	-	23	1.8
46	4	2.1	3	2.1	1	2.2	-	-	-	-	8	2.2	-	-	19	1.9
47	8	2.2	8	2.2	5	2.2	1	2.3	-	-	6	2.3	-	-	19	2.1
48	11	2.2	6	2.4	3	2.2	-	-	-	-	6	2.3	-	-	16	2.3
49	16	2.4	10	2.4	2	2.5	1	2.2	-	-	4	2.7	-	-	18	2.4
50	14	2.5	4	2.5	1	3.0	1	2.7	-	-	4	2.7	-	-	14	2.5
51	17	2.6	5	2.8	4	2.6	3	2.8	-	-	2	2.5	-	-	14	2.6
52	15	2.8	3	3.1	8	2.8	5	2.8	-	-	-	-	-	-	21	2.9
53	16	3.0	1	3.3	2	3.2	3	3.0	-	-	-	-	-	-	8	3.0
54	28	3.2	4	3.1	4	3.1	7	3.5	-	-	1	3.0	-	-	18	3.2
55	24	3.2	2	3.6	3	3.5	7	3.4	-	-	1	3.0	-	-	18	3.3
56	22	3.6	2	3.2	2	3.8	8	3.9	-	-	3	3.4	-	-	12	3.7
57	34	3.7	3	3.6	4	3.7	6	4.1	-	-	-	-	-	-	23	4.0
58	22	3.9	6	3.9	4	4.0	3	4.1	-	-	1	3.5	-	-	17	3.9
59	22	4.1	5	4.1	2	4.4	10	4.3	-	-	-	-	-	-	12	4.1
60	33	4.2	12	4.3	6	4.1	9	4.8	-	-	-	-	-	-	14	4.3
61	33	4.5	8	4.6	2	4.5	8	4.9	-	-	-	-	-	-	8	4.5
62	25	4.5	10	4.8	-	-	11	5.0	-	-	-	-	-	-	6	4.8
63	27	5.0	7	5.1	3	4.9	5	5.5	-	-	-	-	-	-	11	4.9
64	16	5.2	6	5.4	3	5.5	8	5.7	-	-	-	-	-	-	7	5.2
65	21	5.4	9	5.7	4	4.6	12	5.5	-	-	-	-	-	-	10	5.2
66	15	5.7	5	6.0	1	4.9	12	5.8	-	-	-	-	-	-	7	5.5
67	21	5.9	3	6.5	3	5.5	5	6.2	-	-	-	-	-	-	6	6.1
68	11	5.9	1	6.0	-	-	11	6.1	-	-	-	-	-	-	6	6.4
69	9	6.1	2	6.0	-	-	5	6.9	-	-	-	-	-	-	5	6.3
70	7	6.3	4	6.5	-	-	4	7.1	-	-	-	-	-	-	2	5.8
71	1	6.6	1	8.4	-	-	2	6.7	-	-	-	-	-	-	3	6.8
72	6	6.3	1	7.6	-	-	2	7.4	-	-	-	-	-	-	1	6.8
73	4	6.8	-	-	-	-	1	8.2	-	-	-	-	-	-	-	-
74	4	7.1	-	-	-	-	-	-	-	-	-	-	-	-	1	8.3
75	1	6.6	1	6.5	-	-	-	-	-	-	-	-	-	-	-	-
76	1	7.2	-	-	-	-	1	8.1	-	-	-	-	-	-	1	9.8
77	1	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
81	-	-	-	-	-	-	1	10.4	-	-	-	-	-	-	-	-
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	515	...	162	...	218	...	152	...	96	...	112	...	63	...	499	...

TABLE 5 UNITED STATES AVERAGE WEIGHT/LENGTH TABLE[1] - HADDOCK

by John R. Clark
Eli L. Dietsch

Subdivision 4W [2]

Weights in POUNDS, fresh, gutted; lengths in centimeters

Length	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Avg.
25	0.29	0.28	0.28	0.28	0.28	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
6	0.33	0.32	0.32	0.31	0.32	0.32	0.33	0.33	0.33	0.33	0.33	0.33	0.33
7	0.36	0.36	0.36	0.35	0.35	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
8	0.41	0.40	0.40	0.39	0.40	0.40	0.41	0.41	0.41	0.41	0.41	0.41	0.41
9	0.45	0.45	0.44	0.43	0.44	0.45	0.46	0.46	0.46	0.46	0.46	0.46	0.45
30	0.50	0.50	0.49	0.48	0.49	0.50	0.51	0.51	0.51	0.51	0.51	0.51	0.50
1	0.55	0.55	0.54	0.53	0.54	0.55	0.56	0.56	0.56	0.56	0.56	0.56	0.55
2	0.61	0.61	0.60	0.58	0.59	0.61	0.62	0.62	0.62	0.62	0.62	0.62	0.61
3	0.67	0.67	0.66	0.64	0.65	0.67	0.68	0.68	0.68	0.68	0.68	0.68	0.67
4	0.74	0.73	0.72	0.70	0.72	0.73	0.75	0.75	0.75	0.75	0.75	0.75	0.73
5	0.81	0.80	0.79	0.76	0.78	0.80	0.82	0.82	0.82	0.82	0.82	0.82	0.81
6	0.88	0.87	0.86	0.83	0.85	0.87	0.89	0.89	0.89	0.89	0.89	0.89	0.88
7	1.00	1.00	0.93	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98
8	1.10	1.00	1.00	0.97	1.00	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
9	1.20	1.10	1.10	1.00	1.10	1.10	1.20	1.20	1.20	1.20	1.20	1.20	1.20
40	1.30	1.20	1.20	1.10	1.20	1.20	1.30	1.30	1.30	1.30	1.30	1.30	1.30
1	1.40	1.30	1.30	1.20	1.30	1.30	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2	1.50	1.40	1.40	1.30	1.40	1.40	1.50	1.50	1.50	1.50	1.50	1.50	1.50
3	1.60	1.50	1.50	1.40	1.50	1.50	1.60	1.60	1.60	1.60	1.60	1.60	1.60
4	1.70	1.60	1.60	1.50	1.60	1.60	1.70	1.70	1.70	1.70	1.70	1.70	1.70
5	1.80	1.70	1.70	1.60	1.70	1.70	1.80	1.80	1.80	1.80	1.80	1.80	1.80
6	1.90	1.80	1.80	1.70	1.80	1.80	1.90	1.90	1.90	1.90	1.90	1.90	1.90
7	2.00	1.90	1.90	1.80	1.90	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00
8	2.20	2.10	2.10	2.00	2.10	2.10	2.20	2.20	2.20	2.20	2.20	2.20	2.10
9	2.30	2.20	2.20	2.10	2.20	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30
50	2.50	2.40	2.40	2.20	2.30	2.40	2.50	2.50	2.50	2.50	2.50	2.50	2.40
1	2.60	2.50	2.50	2.30	2.40	2.50	2.60	2.60	2.60	2.60	2.60	2.60	2.50
2	2.80	2.70	2.60	2.50	2.60	2.70	2.80	2.80	2.80	2.80	2.80	2.80	2.60
3	2.90	2.80	2.80	2.60	2.70	2.80	2.90	2.90	2.90	2.90	2.90	2.90	2.80
4	3.10	3.00	3.00	2.80	2.90	3.00	3.10	3.10	3.10	3.10	3.10	3.10	3.00
5	3.30	3.20	3.10	2.90	3.00	3.20	3.30	3.30	3.30	3.30	3.30	3.30	3.20
6	3.50	3.40	3.30	3.10	3.20	3.40	3.50	3.50	3.50	3.50	3.50	3.50	3.40
7	3.70	3.60	3.50	3.30	3.40	3.50	3.60	3.70	3.70	3.70	3.70	3.70	3.60
8	3.90	3.80	3.70	3.40	3.50	3.70	3.80	3.90	3.90	3.90	3.90	3.90	3.80
9	4.10	4.00	3.90	3.60	3.70	3.90	4.00	4.10	4.10	4.10	4.10	4.10	4.00
60	4.30	4.20	4.10	3.80	3.90	4.10	4.20	4.30	4.30	4.30	4.30	4.30	4.20
1	4.60	4.50	4.30	4.00	4.10	4.30	4.40	4.50	4.60	4.60	4.60	4.60	4.40
2	4.80	4.70	4.50	4.20	4.30	4.50	4.60	4.70	4.80	4.80	4.80	4.80	4.60
3	5.00	4.90	4.70	4.40	4.50	4.70	4.80	4.90	5.00	5.00	5.00	5.00	4.80
4	5.30	5.20	4.90	4.60	4.70	4.90	5.00	5.20	5.30	5.30	5.30	5.30	5.10
5	5.60	5.50	5.20	4.80	4.90	5.10	5.20	5.40	5.50	5.60	5.60	5.60	5.30
6	5.80	5.70	5.40	5.00	5.10	5.30	5.40	5.60	5.80	5.80	5.80	5.80	5.50
7	6.00	5 90	5.60	5.30	5.40	5.60	5.70	5.90	6.00	6.00	6.00	6.00	5.80
8	6.30	6.20	5.90	5.50	5.60	5.80	5.90	6.10	6.30	6.30	6.30	6.30	6.00
9	6.10	6.40	6.20	5.80	5.90	6.10	6.20	6.50	6.70	6.70	6.70	6.70	6.40
70	6.90	6.70	6.50	6.00	6.10	6.30	6.40	6.70	6.90	6.90	6.90	6.90	6.60
1	7.20	7.00	6.70	6.20	6.30	6.50	6.60	6.90	7.20	7.20	7.20	7.20	6.90
2	7.60	7.40	7.00	6.50	6.60	6.80	6.90	7.30	7.60	7.60	7.60	7.60	7.20
3	7.90	7.70	7.30	6.80	6.90	7.10	7.20	7.60	7.90	7.90	7.90	7.90	7.50
4	8.20	8.00	7.70	7.10	7.20	7.40	7.50	7.90	8.20	8.20	8.20	8.20	7.80
5	8.60	8.30	8.00	7.40	7.50	7.70	7.80	8.20	8.60	8.60	8.60	8.60	8.20
6	8.90	8.60	8.30	7.70	7.80	7.90	8.10	8.50	8.90	8.90	8.90	8.90	8.50
7	9.30	9.00	8.60	8.00	8.10	8.20	8.40	8.90	9.30	9.30	9.30	9.30	8.80
8	9.70	9.40	8.90	8.30	8.40	8.60	8.70	9.20	9.70	9.70	9.70	9.70	9.20
9	10.10	9.70	9.30	8.60	8.70	8.90	9.00	9.60	10.10	10.10	10.10	10.10	9.50
80	10.40	10.10	9.70	8.90	9.00	9.20	9.30	9.90	10.40	10.40	10.40	10.40	9.80
1	10.90	10.50	10.10	9.30	9.40	9.60	9.70	10.30	10.90	10.90	10.90	10.90	10.30
2	11.30	10.90	10.40	9.60	9.70	9.90	10.00	10.70	11.30	11.30	11.30	11.30	10.60
3	11.70	11.30	10.80	9.90	10.00	10.20	10.30	11.00	11.70	11.70	11.70	11.70	11.00
4	12.20	11.70	11.20	10.30	10.40	10.60	10.70	11.50	12.20	12.20	12.20	12.20	11.50
5	12.60	12.10	11.60	10.70	10.80	11.00	11.10	11.90	12.60	12.60	12.60	12.60	11.90

1) These data were collected over a number of years; see Table 1 from which this table has been derived.
2) See comment on page 26 and map on page 27.

TABLE 6 UNITED STATES AVERAGE WEIGHT/LENGTH TABLE [1] - HADDOCK

by John R. Clark
Eli L. Dietsch

Subdivision 4X [2]

Weights in POUNDS, fresh, gutted; lengths in centimeters

Length	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Avg.
25	0.38	0.38	0.37	0.35	0.35	0.35	0.35	0.36	0.36	0.37	0.37	0.38	0.36
6	0.43	0.43	0.42	0.40	0.40	0.40	0.40	0.41	0.41	0.42	0.42	0.43	0.41
7	0.47	0.47	0.46	0.44	0.44	0.44	0.44	0.45	0.45	0.46	0.46	0.47	0.45
8	0.52	0.52	0.51	0.49	0.49	0.49	0.49	0.50	0.50	0.51	0.51	0.52	0.50
9	0.58	0.58	0.57	0.54	0.54	0.54	0.55	0.55	0.56	0.56	0.57	0.58	0.56
30	0.63	0.63	0.62	0.59	0.59	0.59	0.60	0.60	0.61	0.61	0.62	0.63	0.61
1	0.69	0.69	0.68	0.65	0.65	0.65	0.66	0.66	0.67	0.67	0.68	0.69	0.67
2	0.76	0.76	0.74	0.70	0.70	0.70	0.71	0.72	0.73	0.73	0.74	0.75	0.73
3	0.83	0.83	0.81	0.77	0.77	0.77	0.78	0.79	0.80	0.80	0.81	0.82	0.80
4	0.90	0.90	0.88	0.84	0.84	0.84	0.85	0.86	0.87	0.87	0.88	0.89	0.87
5	0.97	0.97	0.95	0.91	0.91	0.91	0.92	0.93	0.94	0.94	0.95	0.96	0.94
6	1.05	1.05	1.03	0.98	0.98	0.98	0.99	1.00	1.01	1.02	1.03	1.04	1.01
7	1.13	1.13	1.10	1.06	1.06	1.06	1.07	1.08	1.09	1.10	1.11	1.12	1.09
8	1.20	1.20	1.17	1.14	1.14	1.14	1.15	1.16	1.17	1.17	1.18	1.19	1.17
9	1.30	1.30	1.30	1.20	1.20	1.20	1.20	1.20	1.20	1.30	1.30	1.30	1.30
40	1.40	1.40	1.40	1.30	1.30	1.30	1.30	1.30	1.30	1.40	1.40	1.40	1.40
1	1.50	1.50	1.50	1.40	1.40	1.40	1.40	1.40	1.40	1.50	1.50	1.50	1.50
2	1.60	1.60	1.60	1.50	1.50	1.50	1.50	1.50	1.50	1.60	1.60	1.60	1.60
3	1.70	1.70	1.70	1.60	1.60	1.60	1.60	1.60	1.60	1.70	1.70	1.70	1.70
4	1.80	1.80	1.80	1.70	1.70	1.70	1.70	1.70	1.70	1.80	1.80	1.80	1.80
5	1.90	1.90	1.90	1.80	1.80	1.80	1.80	1.80	1.80	1.90	1.90	1.90	1.90
6	2.10	2.10	2.10	1.90	1.90	1.90	1.90	1.90	2.00	2.00	2.00	2.00	2.00
7	2.20	2.20	2.20	2.00	2.00	2.00	2.00	2.00	2.10	2.10	2.10	2.10	2.10
8	2.30	2.30	2.30	2.20	2.10	2.10	2.10	2.10	2.20	2.20	2.20	2.20	2.20
9	2.50	2.50	2.50	2.30	2.30	2.30	2.30	2.30	2.30	2.40	2.40	2.40	2.40
50	2.60	2.60	2.60	2.40	2.40	2.40	2.40	2.40	2.50	2.50	2.50	2.50	2.50
1	2.80	2.80	2.80	2.50	2.50	2.50	2.60	2.60	2.70	2.70	2.70	2.70	2.70
2	2.90	2.90	2.90	2.70	2.70	2.70	2.70	2.70	2.80	2.80	2.80	2.80	2.80
3	3.10	3.10	3.10	2.90	2.90	2.90	2.90	2.90	3.00	3.00	3.00	3.00	3.00
4	3.20	3.20	3.20	3.00	3.00	3.00	3.00	3.00	3.10	3.10	3.10	3.10	3.10
5	3.40	3.40	3.40	3.20	3.20	3.20	3.20	3.20	3.30	3.30	3.30	3.30	3.30
6	3.60	3.60	3.60	3.30	3.30	3.30	3.30	3.30	3.40	3.40	3.50	3.50	3.40
7	3.80	3.80	3.80	3.50	3.50	3.50	3.50	3.50	3.60	3.60	3.70	3.70	3.60
8	4.00	4.00	4.00	3.70	3.60	3.60	3.70	3.70	3.80	3.80	3.90	3.90	3.80
9	4.20	4.20	4.20	3.80	3.70	3.70	3.80	3.90	3.90	4.00	4.10	4.10	4.00
60	4.40	4.40	4.40	4.00	3.90	3.90	4.00	4.10	4.10	4.20	4.30	4.30	4.20
1	4.60	4.60	4.60	4.20	4.10	4.10	4.20	4.30	4.30	4.40	4.50	4.50	4.40
2	4.80	4.80	4.80	4.40	4.30	4.30	4.40	4.50	4.50	4.60	4.70	4.70	4.60
3	5.00	5.00	5.00	4.60	4.50	4.50	4.60	4.70	4.70	4.80	4.90	5.00	4.80
4	5.20	5.20	5.20	4.80	4.70	4.70	4.80	4.90	4.90	5.00	5.10	5.20	5.00
5	5.40	5.40	5.30	5.00	4.90	4.90	5.00	5.10	5.10	5.20	5.30	5.40	5.20
6	5.60	5.60	5.50	5.20	5.10	5.10	5.20	5.30	5.40	5.50	5.60	5.60	5.40
7	5.90	5.90	5.80	5.50	5.40	5.40	5.50	5.60	6.70	5.80	5.90	5.90	5.70
8	6.10	6.10	6.00	5.70	5.60	5.60	5.70	5.80	5.90	6.00	6.10	6.10	5.90
9	6.40	6.40	6.30	5.90	5.80	5.80	5.90	6.00	6.20	6.30	6.40	6.40	6.20
70	6.60	6.60	6.50	6.20	6.10	6.10	6.20	6.30	6.40	6.50	6.60	6.60	6.40
1	6.90	6.90	6.80	6.40	6.30	6.30	6.40	6.50	6.70	6.80	6.90	6.90	6.70
2	7.20	7.20	7.00	6.70	6.60	6.60	6.70	6.80	7.00	7.10	7.20	7.20	6.90
3	7.50	7.50	7.30	6.90	6.80	6.80	6.90	7.10	7.20	7.40	7.50	7.50	7.20
4	7.80	7.80	7.60	7.20	7.10	7.10	7.20	7.40	7.50	7.70	7.80	7.80	7.50
5	8.10	8.10	7.90	7.50	7.40	7.40	7.50	7.70	7.80	8.00	8.10	8.10	7.80
6	8.40	8.40	8.10	7.70	7.60	7.60	7.80	7.90	8.10	8.20	8.40	8.40	8.10
7	8.70	8.70	8.40	8.00	7.90	7.90	8.10	8.20	8.40	8.50	8.70	8.70	8.40
8	9.00	9.00	8.80	8.30	8.20	8.20	8.40	8.50	8.70	8.80	9.00	9.00	8.70
9	9.40	9.40	9.10	8.60	8.50	8.50	8.70	8.90	9.00	9.20	9.40	9.40	9.00
80	9.70	9.70	9.40	8.90	8.80	8.80	9.00	9.20	9.30	9.50	9.70	9.70	9.30
1	10.10	10.10	9.80	9.20	9.10	9.10	9.30	9.50	9.70	9.90	10.10	10.10	9.70
2	10.50	10.50	10.20	9.50	9.40	9.40	9.60	9.80	10.10	10.30	10.50	10.50	10.00
3	10.90	10.90	10.60	9.80	9.70	9.70	9.90	10.20	10.40	10.70	10.90	10.90	10.40
4	11.30	11.30	11.00	10.20	10.10	10.10	10.30	10.60	10.80	11.10	11.30	11.30	10.80
5	11.70	11.70	11.40	10.50	10.40	10.40	10.70	10.90	11.20	11.40	11.70	11.70	11.10

1) These data were collected over a number of years; see Table 2 from which this table has been derived.
2) See comment on page 26 and map on page 27.

TABLE 7 UNITED STATES AVERAGE WEIGHT/LENGTH TABLE [1] - HADDOCK

by John R. Clark
Eli L. Dietsch

Subdivision 5Z East [2]

Weights in POUNDS, fresh, gutted; lengths in centimeters

Length	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Avg.
25	0.37	0.36	0.34	0.33	0.34	0.34	0.35	0.35	0.36	0.36	0.37	0.37	0.35
6	0.41	0.40	0.38	0.37	0.38	0.38	0.39	0.39	0.40	0.40	0.41	0.41	0.39
7	0.46	0.44	0.43	0.41	0.42	0.43	0.43	0.44	0.45	0.45	0.46	0.46	0.44
8	0.51	0.49	0.47	0.45	0.46	0.47	0.48	0.49	0.50	0.50	0.51	0.51	0.49
9	0.56	0.54	0.52	0.50	0.51	0.52	0.53	0.54	0.55	0.55	0.56	0.56	0.54
30	0.62	0.60	0.57	0.55	0.56	0.57	0.58	0.59	0.60	0.61	0.61	0.62	0.59
1	0.68	0.65	0.63	0.60	0.61	0.62	0.64	0.65	0.66	0.67	0.67	0.68	0.65
2	0.74	0.71	0.69	0.66	0.67	0.68	0.70	0.71	0.72	0.73	0.73	0.74	0.71
3	0.81	0.78	0.75	0.72	0.73	0.75	0.76	0.78	0.79	0.80	0.80	0.81	0.77
4	0.88	0.85	0.81	0.78	0.80	0.81	0.83	0.84	0.86	0.87	0.87	0.88	0.84
5	0.96	0.92	0.89	0.85	0.87	0.89	0.90	0.92	0.94	0.95	0.95	0.96	0.91
6	1.04	1.00	0.95	0.91	0.93	0.95	0.97	0.99	1.01	1.02	1.03	1.04	0.98
7	1.12	1.08	1.03	0.99	1.01	1.03	1.05	1.07	1.09	1.10	1.11	1.12	1.06
8	1.20	1.15	1.11	1.06	1.08	1.11	1.13	1.16	1.18	1.19	1.19	1.20	1.14
9	1.30	1.20	1.20	1.14	1.17	1.20	1.24	1.27	1.30	1.30	1.30	1.30	1.24
40	1.40	1.30	1.30	1.20	1.20	1.30	1.30	1.40	1.40	1.40	1.40	1.40	1.30
1	1.50	1.40	1.40	1.30	1.30	1.40	1.40	1.50	1.50	1.50	1.50	1.50	1.40
2	1.60	1.50	1.50	1.40	1.40	1.50	1.50	1.60	1.60	1.60	1.60	1.60	1.50
3	1.70	1.60	1.60	1.50	1.50	1.60	1.60	1.70	1.70	1.70	1.70	1.70	1.60
4	1.80	1.70	1.70	1.60	1.60	1.70	1.70	1.80	1.80	1.80	1.80	1.80	1.70
5	2.00	1.90	1.80	1.70	1.70	1.80	1.80	1.90	1.90	1.90	1.90	2.00	1.90
6	2.10	2.10	2.00	1.80	1.80	1.90	1.90	2.00	2.00	2.00	2.00	2.10	2.00
7	2.20	2.20	2.10	1.90	1.90	2.00	2.00	2.10	2.10	2.10	2.10	2.20	2.10
8	2.40	2.40	2.30	2.10	2.10	2.20	2.20	2.30	2.30	2.30	2.30	2.40	2.30
9	2.50	2.50	2.40	2.20	2.20	2.30	2.30	2.40	2.40	2.40	2.40	2.50	2.40
50	2.60	2.60	2.50	2.30	2.30	2.40	2.40	2.50	2.50	2.50	2.50	2.60	2.50
1	2.80	2.80	2.70	2.40	2.50	2.50	2.60	2.60	2.70	2.70	2.70	2.80	2.70
2	2.90	2.90	2.80	2.50	2.60	2.60	2.70	2.70	2.80	2.80	2.80	2.90	2.80
3	3.10	3.10	3.00	2.70	2.80	2.80	2.90	2.90	3.00	3.00	3.00	3.10	3.00
4	3.30	3.30	3.20	2.80	2.90	3.00	3.00	3.10	3.20	3.20	3.20	3.30	3.10
5	3.40	3.40	3.30	3.00	3.10	3.10	3.20	3.20	3.30	3.30	3.30	3.40	3.30
6	3.60	3.50	3.40	3.10	3.20	3.30	3.30	3.40	3.50	3.50	3.50	3.60	3.40
7	3.80	3.70	3.60	3.30	3.40	3.50	3.50	3.60	3.70	3.70	3.80	3.80	3.60
8	4.00	3.90	3.80	3.40	3.50	3.60	3.70	3.80	3.90	3.90	4.00	4.00	3.80
9	4.20	4.10	4.00	3.60	3.70	3.80	3.90	4.00	4.10	4.10	4.20	4.20	4.00
60	4.40	4.30	4.20	3.80	3.90	4.00	4.10	4.20	4.30	4.30	4.40	4.40	4.20
1	4.60	4.50	4.40	4.00	4.10	4.20	4.30	4.40	4.50	4.50	4.60	4.60	4.40
2	4.80	4.70	4.60	4.20	4.30	4.40	4.50	4.60	4.70	4.70	4.80	4.80	4.60
3	5.10	5.00	4.90	4.30	4.40	4.50	4.70	4.80	4.90	5.00	5.00	5.10	4.80
4	5.30	5.20	5.10	4.50	4.60	4.80	4.90	5.10	5.20	5.20	5.30	5.30	5.00
5	5.60	5.50	5.40	4.70	4.80	5.00	5.10	5.30	5.40	5.40	5.50	5.60	5.20
6	5.80	5.70	5.60	4.90	5.00	5.20	5.30	5.50	5.60	5.70	5.70	5.80	5.50
7	6.00	5.90	5.80	5.10	5.30	5.40	5.60	5.70	5.90	5.90	6.00	6.00	5.70
8	6.30	6.20	6.10	5.30	5.50	5.60	5.80	5.90	6.10	6.20	6.20	6.30	6.00
9	6.60	6.50	6.40	5.60	5.80	5.90	6.10	6.20	6.40	6.50	6.50	6.60	6.30
70	6.80	6.70	6.60	5.80	6.00	6.10	6.30	6.40	6.60	6.70	6.70	6.80	6.50
1	7.10	7.00	6.90	6.00	6.20	6.40	6.50	6.70	6.90	7.00	7.00	7.10	6.70
2	7.40	7.30	7.20	6.20	6.40	6.60	6.70	6.90	7.10	7.20	7.30	7.30	7.00
3	7.60	7.50	7.40	6.50	6.70	6.90	7.00	7.20	7.40	7.50	7.50	7.60	7.20
4	7.90	7.80	7.70	6.70	6.90	7.10	7.30	7.50	7.70	7.80	7.80	7.90	7.50
5	8.30	8.10	7.90	7.00	7.20	7.40	7.70	7.90	8.10	8.20	8.20	8.30	7.90
6	8.60	8.40	8.20	7.20	7.40	7.70	7.90	8.20	8.40	8.50	8.50	8.60	8.10
7	8.90	8.70	8.50	7.50	7.70	8.00	8.20	8.50	8.70	8.80	8.80	8.90	8.40
8	9.20	9.00	8.80	7.80	8.00	8.30	8.50	8.80	9.00	9.10	9.10	9.20	8.70
9	9.60	9.30	9.10	8.10	8.40	8.60	8.90	9.10	9.40	9.50	9.50	9.60	9.10
80	9.90	9.60	9.30	8.30	8.60	8.90	9.10	9.40	9.70	9.80	9.80	9.90	9.40
1	10.30	10.00	9.70	8.60	8.90	9.20	9.50	9.80	10.10	10.20	10.20	10.30	9.70
2	10.60	10.30	10.00	8.90	9.20	9.50	9.80	10.10	10.40	10.50	10.50	10.60	10.00
3	11.00	10.70	10.40	9.20	9.50	9.80	10.20	10.50	10.80	10.90	10.90	11.00	10.40
4	11.40	11.10	10.80	9.60	9.90	10.20	10.60	10.90	11.20	11.30	11.30	11.40	10.80
5	11.80	11.50	11.10	9.90	10.20	10.60	10.90	11.30	11.60	11.70	11.70	11.80	11.20

[1] These data were collected over a number of years; see Table 3 from which this table has been derived.
[2] See comment on page 26 and map on page 27.

TABLE 8 UNITED STATES AVERAGE WEIGHT/LENGTH TABLE [1] - HADDOCK

by John R. Clark
Eli L. Dietsch

Subdivision 5Z West [2]

Weights in POUNDS, fresh, gutted; lengths in centimeters

Length	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Avg.
25	0.31	0.31	0.29	0.27	0.28	0.30	0.31	0.31	0.31	0.31	0.31	0.31	0.30
6	0.35	0.35	0.33	0.31	0.32	0.34	0.35	0.35	0.35	0.35	0.35	0.35	0.34
7	0.39	0.39	0.37	0.34	0.36	0.38	0.39	0.39	0.39	0.39	0.39	0.39	0.38
8	0.43	0.43	0.40	0.38	0.39	0.41	0.43	0.43	0.43	0.43	0.43	0.43	0.41
9	0.48	0.48	0.45	0.43	0.44	0.46	0.48	0.48	0.48	0.48	0.48	0.48	0.46
30	0.54	0.54	0.51	0.47	0.49	0.52	0.54	0.54	0.54	0.54	0.54	0.54	0.52
1	0.59	0.59	0.56	0.52	0.54	0.57	0.59	0.59	0.59	0.59	0.59	0.59	0.57
2	0.65	0.65	0.61	0.57	0.59	0.63	0.65	0.65	0.65	0.65	0.65	0.65	0.63
3	0.71	0.71	0.67	0.63	0.65	0.69	0.71	0.71	0.71	0.71	0.71	0.71	0.69
4	0.78	0.78	0.74	0.69	0.72	0.75	0.78	0.78	0.78	0.78	0.78	0.78	0.76
5	0.86	0.86	0.82	0.75	0.78	0.82	0.86	0.86	0.86	0.86	0.86	0.86	0.83
6	0.93	0.93	0.89	0.82	0.85	0.89	0.93	0.93	0.93	0.93	0.93	0.93	0.91
7	1.00	1.00	0.95	0.89	0.92	0.96	1.00	1.00	1.00	1.00	1.00	1.00	0.98
8	1.10	1.10	1.05	0.96	1.00	1.05	1.10	1.10	1.10	1.10	1.10	1.10	1.07
9	1.20	1.20	1.10	1.03	1.10	1.10	1.20	1.20	1.20	1.20	1.20	1.20	1.16
40	1.30	1.30	1.20	1.10	1.20	1.20	1.30	1.30	1.30	1.30	1.30	1.30	1.30
1	1.40	1.40	1.30	1.20	1.30	1.30	1.40	1.40	1.40	1.40	1.40	1.40	1.40
2	1.50	1.50	1.40	1.30	1.40	1.40	1.50	1.50	1.50	1.50	1.50	1.50	1.50
3	1.60	1.60	1.50	1.40	1.50	1.50	1.60	1.60	1.60	1.60	1.60	1.60	1.60
4	1.70	1.70	1.60	1.50	1.60	1.60	1.70	1.70	1.70	1.70	1.70	1.70	1.70
5	1.80	1.80	1.70	1.60	1.70	1.70	1.80	1.80	1.80	1.80	1.80	1.80	1.80
6	2.00	2.00	1.80	1.70	1.80	1.80	1.90	1.90	2.00	2.00	2.00	2.00	1.90
7	2.20	2.20	2.00	1.80	1.90	1.90	2.00	2.00	2.10	2.20	2.20	2.20	2.10
8	2.30	2.30	2.10	1.90	2.00	2.10	2.20	2.20	2.30	2.30	2.30	2.30	2.20
9	2.40	2.40	2.20	2.10	2.20	2.20	2.30	2.30	2.40	2.40	2.40	2.40	2.30
50	2.60	2.60	2.40	2.20	2.30	2.40	2.50	2.50	2.60	2.60	2.60	2.60	2.50
1	2.70	2.70	2.50	2.30	2.40	2.50	2.60	2.60	2.70	2.70	2.70	2.70	2.60
2	2.90	2.90	2.70	2.50	2.60	2.70	2.80	2.80	2.90	2.90	2.90	2.90	2.80
3	3.00	3.00	2.80	2.60	2.70	2.80	2.90	2.90	3.00	3.00	3.00	3.00	2.90
4	3.20	3.20	3.00	2.70	2.80	3.00	3.10	3.10	3.20	3.20	3.20	3.20	3.10
5	3.40	3.40	3.20	2.90	3.00	3.20	3.30	3.30	3.40	3.40	3.40	3.40	3.30
6	3.60	3.60	3.40	3.00	3.10	3.30	3.40	3.40	3.50	3.60	3.60	3.60	3.40
7	3.80	3.80	3.60	3.20	3.30	3.50	3.60	3.60	3.70	3.80	3.80	3.80	3.60
8	4.00	4.00	3.80	3.40	3.50	3.70	3.80	3.80	3.90	4.00	4.00	4.00	3.80
9	4.20	4.20	4.00	3.60	3.70	3.90	4.00	4.00	4.10	4.20	4.20	4.20	4.00
60	4.40	4.40	4.20	3.80	3.90	4.10	4.20	4.20	4.30	4.40	4.40	4.40	4.20
1	4.70	4.60	4.40	4.00	4.10	4.30	4.40	4.50	4.60	4.70	4.70	4.70	4.50
2	4.90	4.80	4.60	4.20	4.40	4.60	4.70	4.70	4.80	4.90	4.90	4.90	4.70
3	5.20	5.10	4.80	4.40	4.60	4.80	4.90	5.00	5.10	5.20	5.20	5.20	5.00
4	5.40	5.30	5.00	4.60	4.80	5.00	5.10	5.20	5.30	5.40	5.40	5.40	5.20
5	5.60	5.50	5.20	4.80	5.00	5.20	5.40	5.40	5.50	5.60	5.60	5.60	5.40
6	5.90	5.80	5.50	5.00	5.20	5.40	5.60	5.70	5.80	5.90	5.90	5.90	5.60
7	6.20	6.10	5.80	5.20	5.40	5.70	5.90	6.00	6.10	6.20	6.20	6.20	5.90
8	6.50	6.30	6.00	5.40	5.60	5.90	6.10	6.30	6.40	6.50	6.50	6.50	6.20
9	6.80	6.60	6.20	5.70	5.90	6.20	6.40	6.60	6.70	6.80	6.80	6.80	6.50
70	7.10	6.80	6.40	5.90	6.20	6.50	6.70	6.90	7.00	7.10	7.10	7.10	6.70
1	7.40	7.10	6.70	6.20	6.50	6.80	7.00	7.20	7.30	7.40	7.40	7.40	7.00
2	7.70	7.40	7.00	6.40	6.80	7.10	7.30	7.50	7.60	7.70	7.70	7.70	7.30
3	8.00	7.70	7.30	6.70	7.10	7.40	7.60	7.80	7.90	8.00	8.00	8.00	7.60
4	8.30	8.00	7.60	7.00	7.40	7.70	7.90	8.10	8.20	8.30	8.30	8.30	7.90
5	8.70	8.30	7.90	7.30	7.70	8.00	8.20	8.40	8.50	8.70	8.70	8.70	8.30
6	9.10	8.60	8.20	7.60	8.00	8.30	8.50	8.70	8.90	9.10	9.10	9.10	8.60
7	9.50	9.00	8.60	7.90	8.30	8.60	8.90	9.00	9.30	9.50	9.50	9.50	9.00
8	9.80	9.30	8.90	8.20	8.60	8.90	9.20	9.30	9.60	9.80	9.80	9.80	9.30
9	10.20	9.70	9.20	8.50	8.90	9.20	9.60	9.70	10.00	10.20	10.20	10.20	9.60
80	10.60	10.00	9.50	8.80	9.30	9.60	9.90	10.10	10.40	10.60	10.60	10.60	10.00
1	11.00	10.40	9.90	9.20	9.70	10.00	10.30	10.50	10.80	11.00	11.00	11.00	10.40
2	11.40	10.70	10.20	9.50	10.00	10.40	10.60	10.90	11.20	11.40	11.40	11.40	10.80
3	11.90	11.10	10.60	9.80	10.40	10.80	11.00	11.30	11.60	11.90	11.90	11.90	11.20
4	12.40	11.50	11.00	10.20	10.80	11.20	11.40	11.80	12.20	12.40	12.40	12.40	11.60
5	12.80	11.90	11.40	10.60	11.20	11.60	11.80	12.20	12.60	12.80	12.80	12.80	12.00

1) These data were collected over a number of years; see Table 4 from which this table has been derived.
2) See comment on page 26 and map on page 27.

COD SAMPLES FROM 1956

by Erik M. Poulsen

This paper is based on length measurements of cod (Gadus callarias L.) for 1956 published in the ICNAF Sampling Yearbook Vol. 1[1].

The following countries reported data from one or more of the Commission's five subareas:-

Country \ Subarea	1	2	3	4	5	No. of Subareas	Samples taken before or after discarding unmarketable fish
Canada	-	-	+	+	-	2	after
Denmark	+	-	-	-	-	1	before
Germany	+	-	-	-	-	1	after
Norway	+	-	-	-	-	1	before
Portugal	+	+	-	+	-	3	after
Spain	-	-	+	-	-	1	before
U.K.	+	-	-	-	-	1	after
U.S.A.	-	-	-	-	+	1	after
No. of countries	5	1	2	2	1	...	...

An 'a' in the text or figures indicates that sampling was done after discard of unmarketable fish, a 'b' indicates sampling before such discard.

Five countries reported samples from Subarea 1, two from Subareas 3 and 4, and one from each of Subareas 2 and 5.

The numbers of cod measured and included in the above samples are as follows:-

	No. of Cod Measured
Subarea 1	15,698
Subarea 2	2,309
Subarea 3	27,641
Subarea 4	14,963
Subarea 5	3,855
Total	64,466

1) The Portuguese samples for Subarea 4 were not available when the Sampling Yearbook was printed. They are here cited from ICNAF Document Serial No. 600, Appendix VIII.

The differences in measurements - caused by the fact that for Subarea 1 some countries measure to the nearest centimetre, others to the nearest centimetre below, some countries to the end of the lobes of the caudal fin, others to the middle of its hind margin - are so small compared to the size of the cod as to be termed negligible; they are not considered at all in the following. All samples measured in Subareas 2, 3, 4, and 5 were measured to the nearest centimetre and to the fork length.

3. Summary by Subareas, Subdivisions

Figure 1 shows the length distribution in parts per thousand by subareas of all samples from otter trawl fishery, disregarding countries, discards or no discards, etc.

The measurements, in 3-centimetre groups, range from <35 cm to >96 cm. In the smallest and largest 3-centimetre groups a very few cod belonging to smaller or larger centimetre groups are included. In the few cases where a considerable number were included in these two end groups, the mean length of the sample was calculated before this contraction.

The mean lengths of the cod sampled from the otter trawl fishery in the different subareas vary from 57.5 cm in Subarea 2 to 66.5 cm in Subarea 4. When samples from all gears are pooled the following average lengths are found: Subarea 1 - 70.2 cm; Subarea 2 - 57.5 cm; Subarea 3 - 64.2 cm; Subarea 4 - 67.8 cm; and Subarea 5 - 60.8 cm. The increases in average length for Subareas 1, 3 and 4 are due to the addition of samples from the various hook fisheries.

In 1956 the following quantities of cod (metric tons, round fresh) were landed from the five subareas:-

Subarea 1	321,245 tons	33.9 per cent
Subarea 2	34,283 tons	3.6 per cent
Subarea 3	381,705 tons	40.2 per cent
Subarea 4	198,076 tons	20.9 per cent
Subarea 5	13,246 tons	1.4 per cent
Total	948,555 tons	100.0 per cent

Thus 95 per cent of the cod landed from the Convention Area come from Subareas 1, 3 and 4, and only 5 per cent from Subareas 2 and 5.

The cod landed from Subareas 2 and 5 are smaller than those landed from

the other subareas: 57.5 and 60.8 cm respectively. The difference in average weight would be much more marked; for example, although the cod from Subarea 2 are 82 per cent as long as those from Subarea 1, they are less than 55 per cent as heavy.

The mean lengths for the other three subareas, yielding in their total 95 per cent of the cod landed from the Convention Area, are fairly close to one another:-

	All Fisheries			Otter Trawl Only
	Mean Length	Length	Weight	Mean Length
Subarea 1	70.2 cm	100 per cent	100 per cent	66.2 cm
Subarea 4	67.8 cm	97 per cent	90 per cent	66.5 cm
Subarea 3	64.2 cm	91 per cent	75 per cent	61.3 cm

The difference in length between the subareas amounts to only 6 cm, or less than 9 per cent. This great conformity as to mean length of cod taken from the various regions of the Convention Area does not necessarily give proof of a correspondingly great similarity between the stocks as far as length is concerned. It may well be caused by the selection of the fishing fleets in order to land the sizes of cod preferred by the markets. This selection of the fleet is effected in the main by the following steps: 1) construction of gear (mesh and hook sizes), 2) selection of fishing area (avoiding areas with too many small cod), and 3) culling after capture. Each of these steps alienates the picture the samples give us from that of the stock of fish in the sea, approaching it to that of the demands of the market.

The samples show that there must be a pronounced conformity of the demands of the markets with respect to the sizes of the fish, and that the size compositions of the various stocks permit the fishing fleets, by proper choice of gear, fishing grounds and culling, to provide fish of a size acceptable to the markets. This may well make it advisable to consider the introduction of the same regulations of the cod fisheries through the whole of the Convention Area, which would facilitate the implementation and the control of regulations.

Although the mean sizes of cod taken in the various subareas are fairly close to one another, a considerable variation can be found in the form of the length-distribution curves. This variation must be caused by a somewhat different size- (and age-) distribution within the stocks themselves.

The peaks of the curves (Figure 1) for Subareas 2 and 5 are higher than those for the other subareas and show a steeper decline to both sides. This may well be due to the fact that for each of these two subareas only one fishery has been sampled; viz. in Subarea 2, the Portuguese trawl fishery, and in Subarea 5,

the United States trawl fishery. The distribution curves for the other subareas are based on samples from several countries.

The curve for Subarea 1 - although not quite so compressed as those for Subareas 2 and 5 - has its peak somewhat higher (off 135‰) than the curves for Subareas 3 and 4 (off 100‰ and 105‰ respectively). As the number of countries reporting samples is higher in Subarea 1 than in Subareas 3 and 4, it can be assumed that the varying form of the curves indicated different size-compositions of the stocks of these subareas.

The Portuguese samples, which include samples taken by otter trawl in both Subarea 1 and Subarea 4, make it possible to verify this assumption by direct comparison of samples taken by the same fleet in the two subareas. Figure 2 presents the length distributions of Portuguese otter trawl samples from Subdivisions 1B, 1C and 1D (May-September), and from Subdivisions 4R, 4S, 4T, and 4V (March-April), all samples taken after discarding. It is apparent that the mean lengths for these two groups of samples from widely separated regions are very close to one another: 66.1 cm (Subarea 1) and 66.8 cm (Subarea 4); this coincides well with the facts that in both cases the same type of gear, the same mesh size and the same fishing methods were used, and that the landings were intended for the same markets. However, the form of the curves is quite different. That for Subarea 1 is strongly compressed around a high peak off 155‰, with an equally strong decline to both sides (the peak being at the same length group as the mean, 66 cm). The curve for Subarea 4, on the other hand, is very much flattened; its peak reaches only 101‰. The decline from the peak (at 57 cm, that is, considerably below the mean length of 66.8 cm) is rather fast to the left (smaller sizes) and very slow to the right (larger sizes). As a different selectivity of the gear or a different culling is unlikely, the reasons for the different forms of the curves must be found in the stocks themselves. The main bulk of the cod in Subarea 1 must be composed of only a few year-classes with their mean sizes close to the peak, in Subarea 4 of a larger number of year-classes.

The reports on the Portuguese samples also include data on age. Figure 2 shows the age-distribution of samples from Subareas 1 and 4. The samples from Subarea 1 include far fewer older fish than those from Subarea 4. The proportion of cod of age 10 and more is 311‰ in Subarea 4, against only 64‰ in Subarea 1. The peculiar flattened upper part of the curve for Subarea 1 gets its explanation from the two rich ages, 6 and 9, making up the bulk of the cod, with two poor ages, 7 and 8, between them.

Figure 3 illustrates the regional length-distribution by subdivision; it

includes all samples, irrespective of gear and country.

In Subarea 1 the cod taken from Subdivisions 1B (the most northern of the subdivisions sampled) and 1F (the most southern) are somewhat smaller (mean lengths 65 and 67 cm) than the cod from the more central fishing banks, Subdivisions 1C, 1D and 1E (71-73 cm).

For Subarea 3 the fish are, on the whole, a little smaller than for Subarea 1. The largest cod (mean lengths 66-68 cm) come from Subdivisions 3O and 3P, i.e. the most southwestern subdivisions bordering Subarea 4. The cod from Subdivision 3L (northern part of the Grand Bank) are a little smaller (64 cm). Those from Subdivision 3N (the southeastern part of the Bank) are much smaller, only 52.5 cm. However, this latter figure is hardly comparable with the others; it represents a Spanish sample measured before discarding, whereas all the other samples from this subarea are taken after discarding. In considering the figures it ought to be noted that all samples were made before the present trawl regulations became effective. The curves for the four subdivisions of Subarea 3 are generally more flattened - including a larger number of bigger fish - than those for Subarea 1.

All curves for the Subarea 4 subdivisions are very much flattened, indicating a considerable intermixture of larger fish; this is especially so for the subdivisions off the Nova Scotian east and south coasts (Subdivisions 4V, 4W and 4X). The especially low average length for the samples from Subdivision 4V is due to a Canadian offshore trawl sample in August, which included mainly small cod from 45-59 cm, and no cod at all larger than 70 cm; this sample can hardly be regarded as typical of the subdivision. Portuguese samples from the same subdivision in March and April show the usual heavy intermixture of larger cod.

2. Summary by Countries

Figure 4 shows the samples by countries and for each country, by subareas. The largest cod taken in the Convention Area are those taken by Norway, with an average length of 73.2 cm; the measurements were made before discarding. In evaluating this high average it should be noted that most of the Norwegian samples come from line fisheries; only two samples are from purse seines and there are none from the trawl fishery, which generally yields smaller cod than the line fishery. Next in size come the Danish samples, with an average length of 69.9 cm. These samples also are taken before discarding, and all of them are from hook fisheries by jig and long lines. The Danish and Norwegian samples are all from Subarea 1. Close in size to the Danish samples

are those of Portugal from Subareas 1 and 4 (mean sizes 68 and 67 cm). Far smaller are the Portuguese otter trawl samples from Subarea 2, with a mean length of 57.5 cm. The Portuguese samples from Subarea 1 include otter trawl as well as dory catches, those from Subarea 4 only otter trawl catches; all samples were taken after discarding. The U.K. samples, all from Subdivision 1F, the southern part of Subarea 1, and taken by otter trawl, after discarding, show a mean of 67 cm, very close to the mean for the Portuguese samples. The Canadian samples from Subareas 3 and 4, taken after discarding and from the landings of a variety of gears, have a mean size of 66-67 cm, just below the British samples. The German samples, all from the landings of otter trawlers, after discarding, and from Subdivisions 1D and 1F, are again a little smaller, with a mean of 65 cm. Considerably smaller, with a mean of 60.6 cm, are the United States samples, all from otter trawler landings in Subarea 5 and taken after discarding. The smallest-sized cod from the 1956 samples are those from the Spanish trawl fishery in Subdivision 3N, taken before discarding and having a mean length of only 52.3 cm.

Disregarding the fisheries in Subareas 2 and 5 where, compared to the other subareas, only insignificant fisheries for cod are carried out, and the Spanish sample from Subdivision 3N, which is exceptionally small-sized, we find - as when considering the summary by subareas - a marked uniformity as to sizes of cod taken from the various main cod fishing regions of the Convention Area. The range of variation of mean sizes within the various countries is only from 65.3 to 73.2 cm.

A comparison of these curves by countries sampling after discarding and before discarding does not show any pronounced difference in the form of the curves. It is true that the curves for U.K. and U.S.A. present a steep decline on the left side of the curve, but for Canada, and to a certain degree also for Portugal - two other countries sampling after discard - no such steep decline is present. Further, the Danish and Spanish samples, taken before discarding, show a decline to the left almost as steep as U.K. and U.S.A. Only the Norwegian samples, taken before discarding, show a more gradual decline to the left of the peak. Unfortunately, for 1956 no sampling of the same catches before and after discarding was reported. It is to be hoped that countries will find opportunities for sampling the same fisheries, or even catches, both before and after discarding[1].

3. Summary by Gear

To summarise the material for a comparison of length-distribution for

1) Canada and the U.K. reported such data for 1957.

the various types of gear used, the following classification of fisheries by gears is used:-

1. Otter trawl fisheries
2. Hook fisheries from dory vessels
3. Other hook fisheries (long lines, hand lines, jig)
4. Purse seine fisheries
5. Cod trap fisheries

A summary of the length-distribution by gear is presented in Figure 5 panel A, where samples are pooled by gears, disregarding countries, regions, discard or no discard. It is apparent that the largest cod are those taken by the dory vessel hook fisheries (mean length 70.6 cm). Next, and very close, come the samples from other hook fisheries: long lines, hand lines, jig, for which samples the mean length is 68.5 cm. As the samples from the dory fisheries were all taken after discarding (by Canada and Portugal), whereas the samples from the other hook fisheries (except for the Canadian samples) were taken before discarding (Danish and Norwegian samples), it is probable that the cod taken by other hook fisheries are not smaller than those taken by the dory vessels.

The cod from the trawl fisheries are considerably smaller than the cod from the hook fisheries; they have a mean size of only 62.4 cm, i.e. about 8 cm lower than the cod taken with hooks.

Two small samples from purse seine catches in Subarea 1 (not shown in the figure) exhibit the same high average length (70.2 cm) as the hook fishery samples.

The samples from the Canadian fishery with cod traps in Subarea 3, however, include smaller fish than any of the other sample-groups, averaging only 58.1 cm.

Figure 5, B, C and D, shows a comparison of samples from otter trawls, dory fishing and other hook fisheries for Subareas 1, 3 and 4 separately. The cod taken by the otter trawlers are somewhat smaller than the cod taken by the dory vessels or by other hook fisheries, the difference being from 4 to 10 cm. It is to be noted that the cod sampled from Canadian dory vessels in Subarea 4 are considerably larger - 75.8 cm - than those from Subarea 3 - 68.7 cm - although they are taken with the same size hook (#16).

Panels E and F show a comparison of length-distribution of samples

from the Norwegian fishery in Subdivision 1B with hand lines and with floating long lines, the latter fishery yielding the larger fish, and from the Danish fishery in Subdivision 1D with long lines and with jig; only a small difference was found in the latter case.

Panel G shows a comparison of Canadian long line samples, offshore and inshore, in Subdivision 4X; the two curves and their mean lengths are very similar.

Figure 6, A and B, shows length variation of otter trawl samples by different countries within the same subareas. Germany, Portugal and U.K. all trawl for cod in Subarea 1. The form of the length-distribution curves and the mean lengths are very much alike; the mean length only varies between 65.3 and 67.1 cm, i.e. less than 2 cm.

A similar small variation is found in Subarea 4, where Canadian samples give a mean of 65.2 cm and Portuguese samples, 66.8 cm. The trend of the two curves for this subarea is much the same: rather flat curves with the peak well below the mean length, meaning a fairly great intermixture of large fish.

Figure 6C compares Portuguese dory vessel samples from the three subdivisions, 1B, 1C and 1D. It is apparent that there is a marked difference among the three subdivisions. The smallest cod are from 1B (most northern), considerably larger are the cod from 1C, and the cod from the most southern of these subdivisions, 1D, is still larger; the difference in mean length between 1B and 1D amounts to 6 cm.

Samples from other hook fisheries (long lines, hand lines, jig) are reported by Canada from Subareas 3 and 4 (Figure 6, E and F), and by Denmark and Norway from Subarea 1 (Figure 6D).

The largest cod taken by this hook fishery come from Subarea 1 (71.5 cm). The cod from Subarea 4 are only a little smaller (70.0 cm); those from Subarea 3 are considerably smaller (only 65.0 cm). It must here be noted that the samples from Subarea 1 are taken before discarding, those from Subareas 3 and 4 after discarding: therefore, the actual difference in size can be assumed to be still greater than the figures show.

Summary

1. The samples with the highest mean lengths come from Subareas 1 and 4,

farther below is Subarea 3 and then Subarea 5. The smallest cod are those from Subarea 2 (Figure 1).

2. The variation in mean lengths of the samples from Subareas 1, 3 and 4, which yield 95 per cent of the cod landings from the Convention Area, is small: the mean lengths are 70.2, 67.8 and 64.2 respectively.

3. The form of the length curves differs, however, considerably: a compressed, rather high-peaked curve for Subarea 1, a flattened, low-peaked curve for Subarea 4, and in a lesser degree for Subarea 3. This means a difference in length composition of the stocks on the fishing grounds: more smaller and more larger cod in Subareas 4 (and 3) than in Subarea 1 (Figures 1-6).

4. In Subarea 1 the largest cod come from the central fishing banks, Subdivisions 1C, 1D and 1E (71-73 cm); the cod from the most northern (1B) and most southern (1F) subdivisions are smaller (65 and 67 cm) (Figure 3 and Figure 6C).

5. In Subarea 3 the largest cod (66-68 cm) come from the southwestern subdivisions (3O and 3P), bordering Subarea 4. In Subdivisions 3L and 3N - Grand Bank - the cod are a little smaller (64 cm). In a single sample from Subdivision 3N, from the southeastern Grand Bank, the cod were much smaller (52.2 cm) (Figure 3).

6. In Subarea 4 the largest cod (74.5 cm) come from the southwest, with a very considerable number of big, old cod in the samples. Subdivisions 4X and 4V - bordering Subareas 5 and 3 - present lower means (65.1 and 61.0 cm). In the Gulf of St. Lawrence larger cod are found in the western and southern parts (Subdivisions 4S - 70.6 cm and 4T - 70.7 cm) than in the eastern part (4R - 63.8 cm) (Figure 3).

7. The samples with the highest average sizes come from Denmark and Norway (Subarea 1 only and hook fishery mainly); next come Canada and Portugal (trawl and hook fisheries); thereafter follow the countries using only trawls (Figure 4).

8. Dory fisheries and other hook fisheries yield the largest cod (70.6 and 68.5 cm respectively); somewhat smaller are the cod from the trawl fisheries (62.4 cm); considerably smaller are those from trap fisheries (58.1 cm) (Figure 5).

9. The fact that trawl-caught cod are on the whole smaller than line-caught cod shows that when regulating the fisheries, the trawl fisheries have to be considered first, as has been the case.

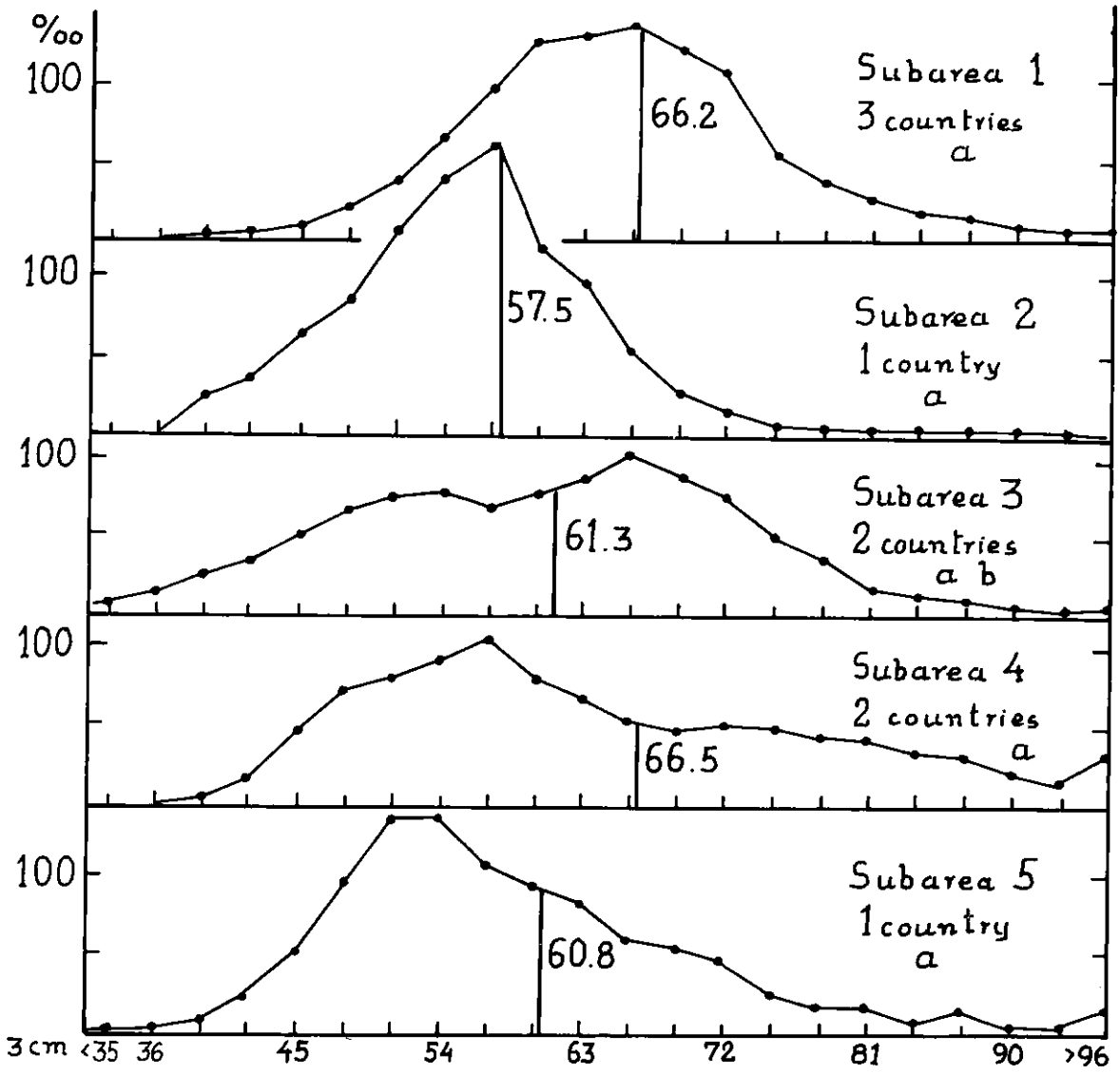

Fig. 1. Length-distribution of all trawl samples for each subarea

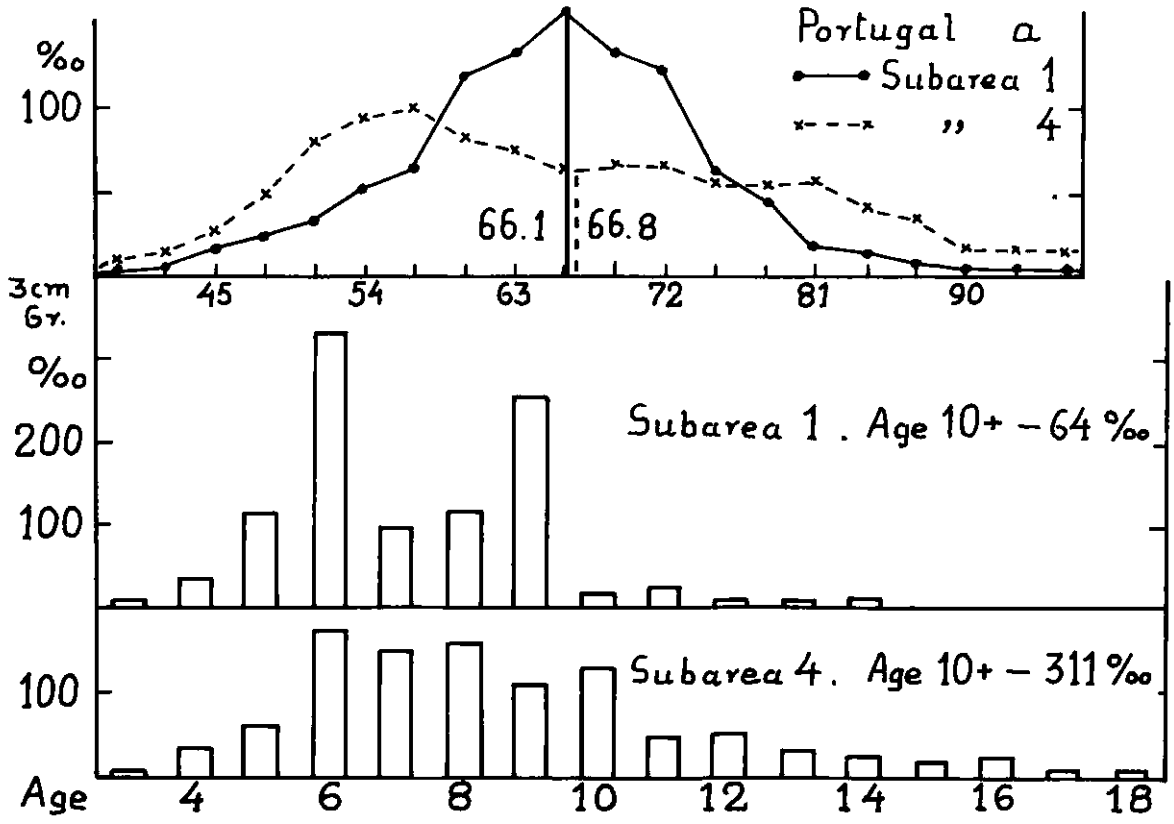

Fig. 2. Length-distribution above, and age-distribution below, of Portuguese otter trawl samples

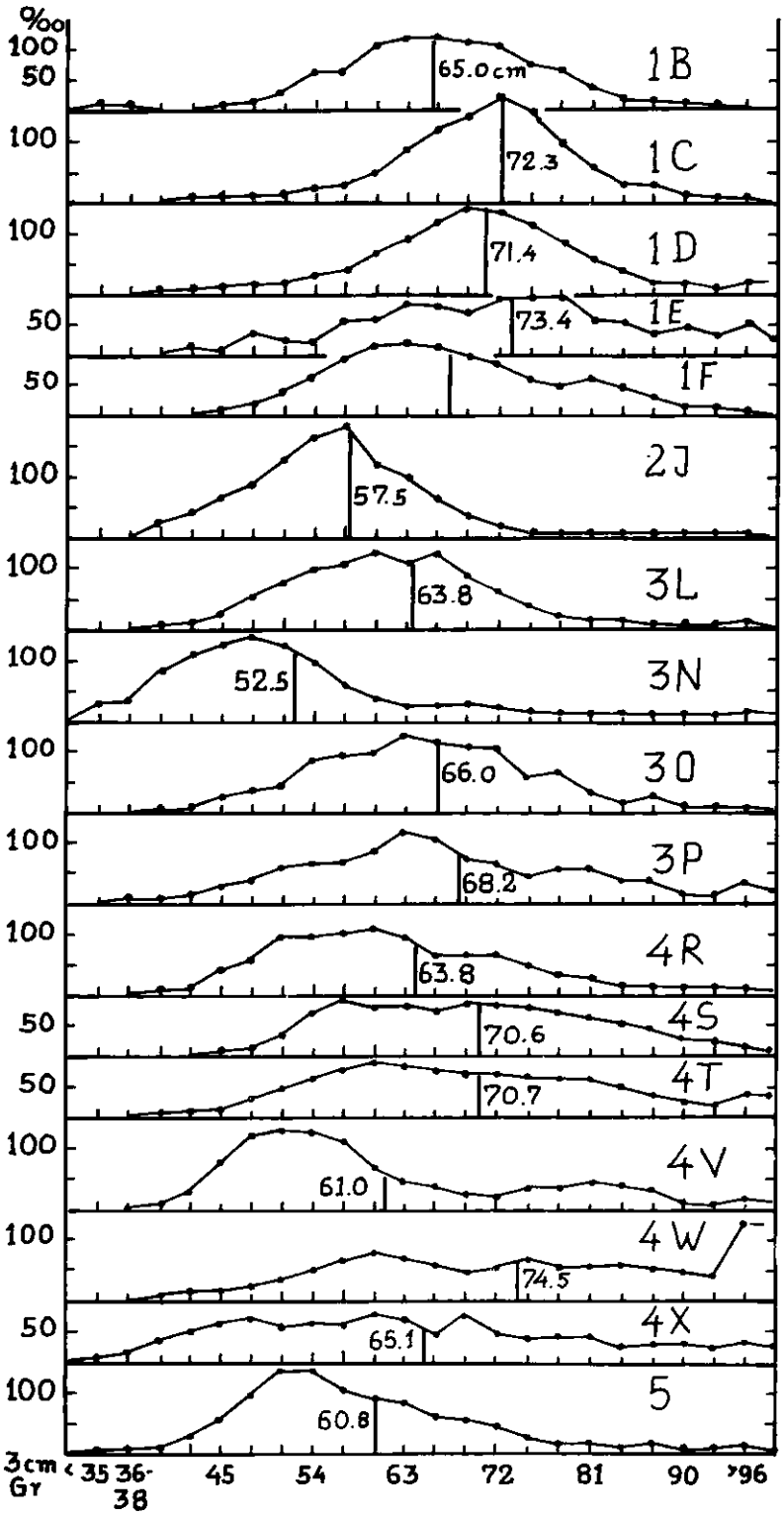

Fig. 3. Length-distribution by subdivisions (all year)

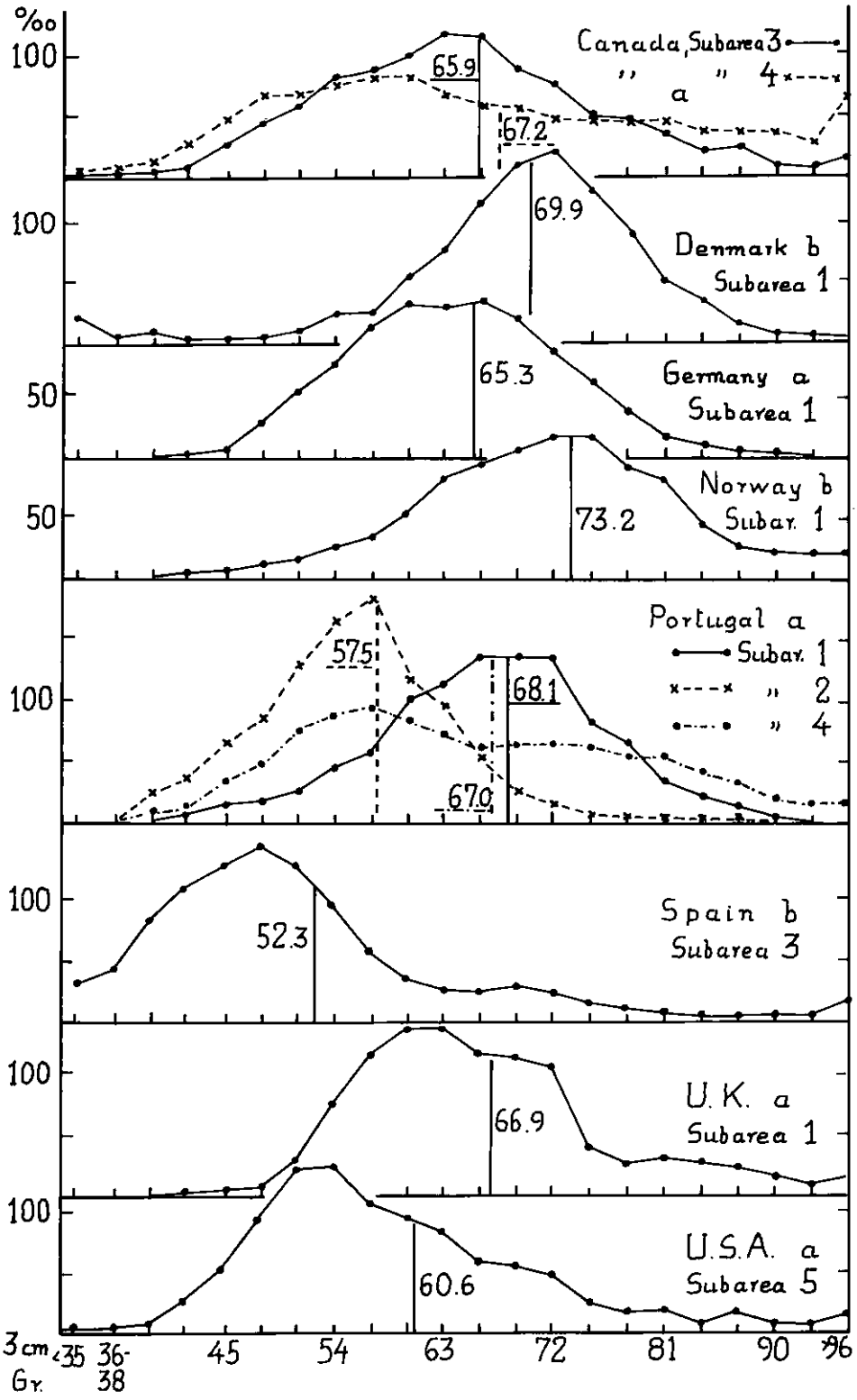

Fig. 4. Length-distribution by countries and by subareas (all year)

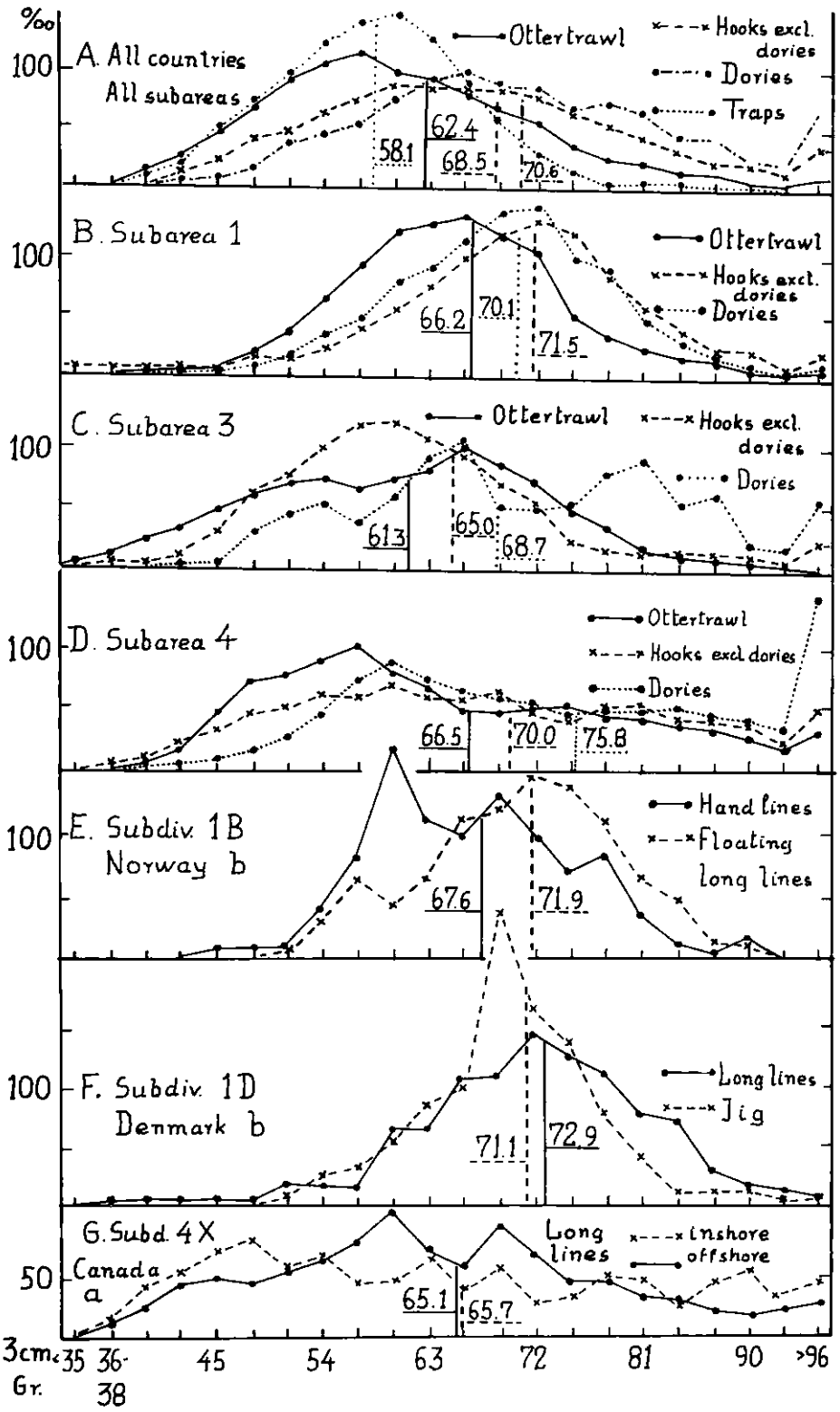

Fig. 5. Length-distribution by types of gear for different areas

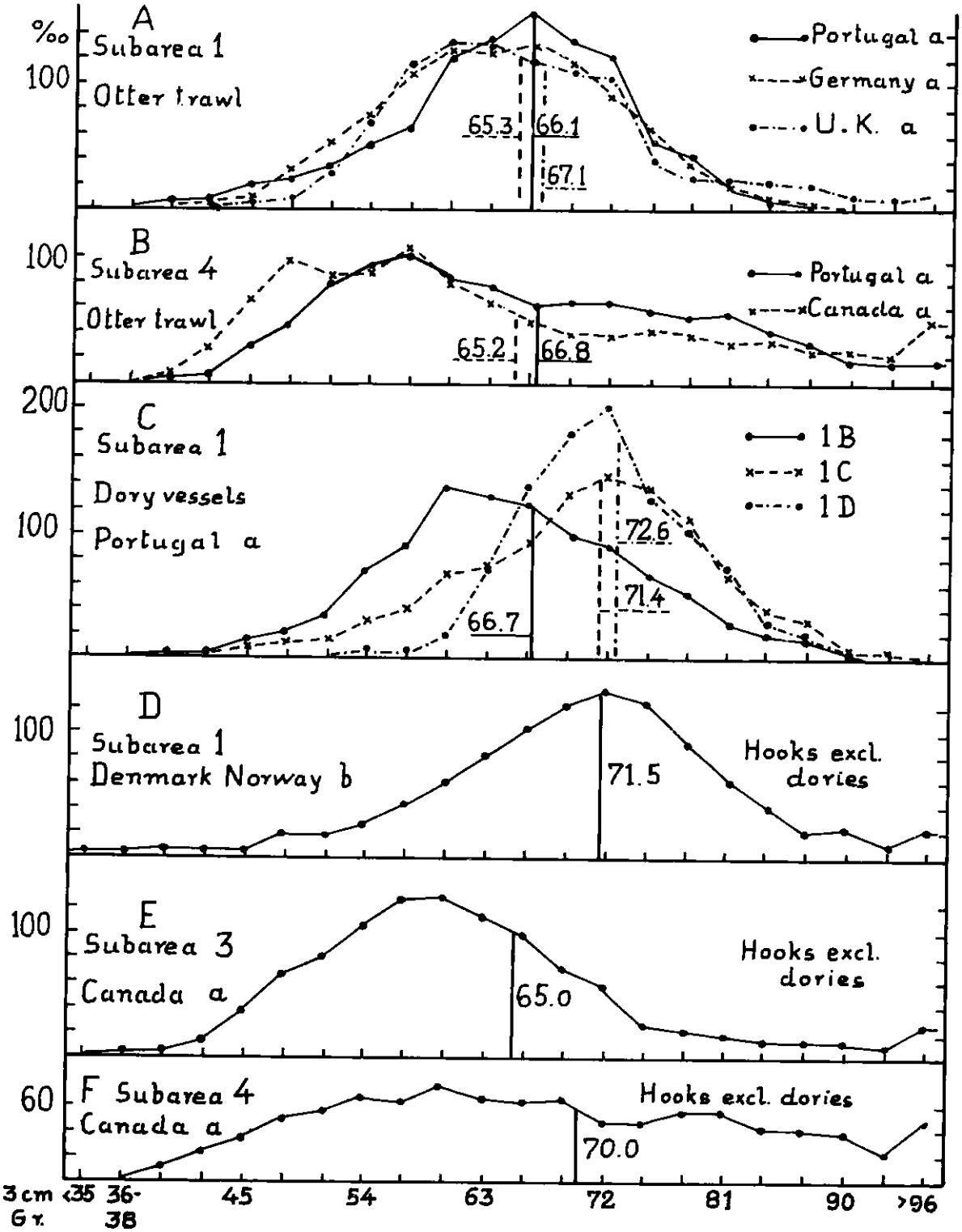

Fig. 6. Length-distribution by countries for various types of gear

TABLE 1 CANADA (Maritimes) - 1957 LENGTH FREQUENCIES - COD by D.N. Fitzgerald
W.R. Martin

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	4T					4V	4V-W	4W	
Month	June	July	Aug.	Sept.	Oct.	May	Apr.	Mar.	Apr.
3 cm. group	FREQUENCIES in ‰								
39-41	-	3	-	-	-	-	-	-	-
42-44	-	9	3	-	8	-	-	1	3
45-47	18	31	27	6	55	-	41	7	7
48-50	55	35	43	35	111	3	104	25	50
51-53	74	49	65	56	114	29	112	25	64
54-56	87	50	65	46	84	63	134	26	82
57-59	106	81	89	49	55	43	133	47	108
60-62	104	129	109	55	86	57	105	49	125
63-65	95	119	105	66	66	72	45	63	80
66-68	63	116	100	71	69	75	49	33	67
69-71	59	68	67	62	43	29	53	53	85
72-74	75	51	48	74	41	57	53	50	59
75-77	50	56	34	73	44	52	45	74	62
78-80	56	45	40	79	37	60	38	78	49
81-83	43	38	46	75	45	54	18	92	40
84-86	33	33	48	80	50	57	20	92	35
87-89	17	19	32	47	36	80	17	85	28
90-92	12	28	36	51	19	46	16	69	24
93-95	16	11	10	24	11	31	9	43	14
96-98	12	11	14	11	6	45	4	37	7
99-101	8	6	6	14	7	28	4	27	6
102-104	9	4	4	6	1	11	1	10	-
105-107	-	3	1	4	2	23	-	2	3
108-110	3	1	3	1	2	11	-	5	2
111-113	1	-	1	4	2	23	-	1	-
114-116	-	-	1	1	2	23	-	1	-
117-119	-	1	-	4	1	-	-	1	-
120-122	1	-	1	3	-	11	-	1	-
123-125	-	-	-	-	2	6	-	2	-
126-128	-	-	-	1	1	6	-	-	-
129-131	-	-	-	-	-	-	-	-	-
132-134	-	-	-	-	-	-	-	-	-
135-137	-	1	1	1	-	-	-	-	-
138-140	-	-	-	-	-	6	-	-	-
No. of Samples	3	3	3	2	3	1	6	8	4
No. of Fish Measured	874	900	1130	670	1095	300	615	1678	635
Mean Wt. of Fish (Kg.)	2.50	2.75	3.05	3.61	3.04	4.69	2.50	5.07	3.43
Wt. of Landings Sampled (Tons)	17	100	190	72	36	2	298	332	58
Range of Depths (Fms.)	25-135	34-80	25-80	24-60	30-60	23-26	40-70	31-100	35-65
Mesh Size (inches)	3 m	3 & 4½ m	4½ m	4½ m	3 & 4½ m	4½ m	4½ m	4½ m	4½ m

m - manilla

TABLE 2 CANADA (Maritimes) - 1957 LENGTH FREQUENCIES - COD

by D.N. Fitzgerald
W.R. Martin

Paired Sea and Wharf samples taken to determine sizes and quantities discarded at sea

OTTER TRAWLERS

Subdivision	4T							
Month	June		June		July		July	
	Sea	Wharf	Sea	Wharf	Sea	Wharf	Sea	Wharf
3 cm. Group	FREQUENCIES in °/₀₀							
21-23	-	-	-	-	-	-	-	-
24-26	6	-	-	-	2	-	-	-
27-29	52	-	-	-	12	-	1	-
30-32	72	-	1	-	25	-	-	-
33-35	38	-	1	-	34	-	3	-
36-38	38	-	5	-	26	-	3	-
39-41	61	-	13	-	63	-	19	-
42-44	73	2	35	4	65	6	35	10
45-47	60	35	43	20	49	44	26	19
48-50	37	55	49	48	39	44	38	32
51-53	39	60	51	32	52	50	48	32
54-56	49	76	69	48	67	50	70	36
57-59	61	110	79	44	66	75	104	97
60-62	61	55	121	124	72	94	125	133
63-65	56	72	99	115	109	157	105	123
66-68	33	41	77	122	58	57	75	107
69-71	32	49	66	110	50	39	55	69
72-74	40	74	52	67	27	68	42	58
75-77	38	59	55	36	34	83	42	46
78-80	33	83	39	68	40	54	47	41
81-83	34	60	41	60	37	83	37	32
84-86	19	45	29	46	22	32	33	44
87-89	18	32	20	18	19	24	27	29
90-92	23	16	17	11	15	8	24	49
93-95	13	27	15	4	7	16	19	15
96-98	6	16	8	7	4	8	10	11
99-101	3	10	8	4	1	-	2	4
102-104	-	13	3	7	-	8	3	4
105-107	1	2	2	-	-	-	2	-
108-110	1	5	-	-	3	-	1	-
111-113	-	1	-	4	-	-	-	-
114-116	-	-	-	-	-	-	1	-
117-119	-	-	-	-	-	-	1	4
120-122	-	1	-	-	-	-	-	-
123-125	-	-	-	-	-	-	-	-
126-128	-	-	-	-	-	-	-	-
129-131	-	-	-	-	-	-	-	-
132-134	-	-	-	-	-	-	-	-
135-137	-	-	-	-	-	-	1	4
No. of Samples	3	3	1	1	1	1	1	1
No. of Fish Measured	2052	703	2134	296	891	150	1179	300
Mean Wt. of Fish (Kg.)	...	3.29	...	3.03	...	3.17	...	3.08
Wt. of Landings Sampled (Tons)	...	9	...	17	...	4	...	22
Range of Depths (Fms.)	35-150	35-150	35-90	35-90	38-78	38-78	34-65	34-65
Mesh Size (inches)	3 1/4m	3 1/4 m	4 1/2m	4 1/2m	3 1/4m	3 1/4m	4 7/8m	4 7/8m

m - manilla

(cont'd.)

TABLE 2 CANADA (Maritimes) - 1957 LENGTH FREQUENCIES - COD by D.N. Fitzgerald
(cont'd.) W.R. Martin

Paired Sea and Wharf samples taken to determine sizes and quantities discarded at sea

OTTER TRAWLERS

Subdivision	4T					
Month	August		August		August	
	Sea	Wharf	Sea	Wharf	Sea	Wharf
3 cm. Group	F R E Q U E N C I E S in				%	
21-23	-	-	3	-	-	-
24-26	-	-	1	-	-	-
27-29	3	-	4	-	-	-
30-32	21	-	24	-	-	-
33-35	35	-	43	-	-	-
36-38	31	-	37	-	-	-
39-41	58	-	57	-	11	-
42-44	73	6	121	-	45	29
45-47	54	24	145	18	34	64
48-50	38	38	63	93	61	87
51-53	41	55	44	58	49	70
54-56	46	45	43	120	68	70
57-59	60	50	50	62	72	70
60-62	82	120	44	98	129	110
63-65	88	101	49	89	98	93
66-68	67	102	57	124	72	105
69-71	55	70	44	89	76	75
72-74	48	75	35	58	23	35
75-77	40	61	35	62	23	17
78-80	38	79	19	40	53	33
81-83	37	52	17	13	27	5
84-86	29	40	10	27	27	25
87-89	20	40	10	13	30	25
90-92	14	17	10	4	23	10
93-95	10	12	9	4	27	29
96-98	5	11	6	2	8	19
99-101	3	2	5	4	19	-
102-104	1	-	4	9	-	10
105-107	1	-	2	5	-	-
108-110	1	-	2	-	-	-
111-113	-	-	1	1	11	-
114-116	-	-	1	2	8	-
117-119	-	-	2	2	8	15
120-122	-	-	1	1	-	-
123-125	-	-	1	-	-	5
126-128	-	-	1	-	-	-
129-131	-	2	-	-	-	-
132-134	-	-	-	-	-	-
135-137	-	-	-	-	-	-
No. of Samples	2	2	1	1	1	1
No. of Fish Measured	4244	648	693	237	264	177
Mean Wt. of Fish (Kg.)	...	3.06	...	2.96	...	2.95
Wt. of Landings Sampled (Tons)	...	63	...	10	...	2
Range of Depths (Fms.)	23-85	23-85	29-32	29-32	37-47	37-47
Mesh Size (inches)	3 m	3 m	4 m	4 m	4 7/8 m	4 7/8 m

m - manilla

TABLE 3 CANADA (Maritimes) - 1957 LENGTH FREQUENCIES - COD by D.N. Fitzgerald W.R. Martin

LINERS - Commercial Samples

	Dory Vessel Long Line Offshore		Long Liners Inshore						Hand Line Jigger Inshore
Subdivision	4V	4W	4V				4X		4T
Month	May	March	June	July	Aug.	Nov.	Feb.	March	June
3 cm. Group	FREQUENCIES in ‰								
30-32	-	-	-	-	-	-	-	3	-
33-35	-	-	-	-	-	-	-	8	-
36-38	-	-	-	-	-	35	4	28	-
39-41	-	-	-	5	5	57	24	26	-
42-44	2	-	8	23	28	128	30	31	-
45-47	7	1	8	42	76	139	33	23	-
48-50	52	2	25	78	118	92	16	23	-
51-53	55	3	50	78	136	101	56	35	7
54-56	70	3	75	86	107	37	139	87	7
57-59	145	7	41	75	108	104	99	54	7
60-62	105	14	93	93	91	85	63	116	17
63-65	97	21	81	88	60	40	59	79	10
66-68	79	32	104	67	44	48	36	78	30
69-71	99	37	67	64	58	29	83	58	40
72-74	74	28	58	66	47	24	20	41	50
75-77	42	40	44	65	17	8	48	65	77
78-80	50	67	52	47	24	16	26	29	103
81-83	27	62	55	27	11	8	42	39	87
84-86	25	80	41	18	18	5	65	38	110
87-89	17	84	35	16	9	-	37	53	130
90-92	14	92	19	13	5	5	32	26	113
93-95	8	98	33	16	2	-	9	30	93
96-98	7	82	34	7	12	11	28	15	50
99-101	7	107	20	8	14	11	46	8	43
102-104	4	48	-	6	6	-	-	7	17
105-107	4	28	14	4	4	-	5	-	10
108-110	3	17	14	4	-	11	-	-	-
111-113	2	5	7	2	-	-	-	-	-
114-116	1	12	7	1	-	-	-	-	-
117-119	2	10	7	-	-	-	-	-	-
120-122	2	14	-	-	-	-	-	-	-
123-125	1	4	7	-	-	-	-	-	-
126-128	-	2	-	1	-	-	-	-	-
129-131	-	-	-	-	-	5	-	-	-
No. of Samples	4	2	1	3	2	1	1	1	1
No. of Fish Measured	1800	1185	300	900	600	300	300	300	300
Mean Wt. of Fish (Kg.)	2.96	7.76	3.55	2.87	2.39	1.89	3.49	3.45	5.74
Wt. of Landings Sampled (Tons)	400	144	13	25	6	4	3	3	2
Range of Depths (Fms.)	...	45-50	20-30	18-28	20-30	35-42	45-50	45-50	10-15
Hook Size	#15	#16	#6/0	#6/0	#6/0	#6/0	#6/0	#6/0	...

TABLE 4 CANADA (Maritimes) - 1957 LENGTH FREQUENCIES - HADDOCK by D.N. Fitzgerald
W.R. Martin

LINERS - Commercial Samples

	Long Liners Offshore		Long Liners Inshore						
Subdivision	4X		4V		4X				
Month	March	Nov.	Sept.	Oct.	Feb.	March	July	Nov.	Dec.
2 cm. Group	FREQUENCIES in ‰								
32-33	-	-	-	-	-	-	2	-	-
34-35	-	-	-	-	-	-	1	3	-
36-37	-	-	-	-	-	-	6	8	-
38-39	-	5	-	-	-	15	4	8	-
40-41	21	11	-	10	59	31	3	15	7
42-43	65	11	2	9	103	61	3	22	24
44-45	39	37	3	17	15	123	12	47	41
46-47	109	61	8	36	44	38	37	45	59
48-49	41	120	55	85	4	85	60	118	92
50-51	62	99	85	145	59	61	103	129	76
52-53	93	141	128	212	34	69	122	127	93
54-55	72	144	113	145	88	88	120	88	125
56-57	93	155	143	134	176	112	119	125	72
58-59	90	93	88	78	97	123	104	86	101
60-61	96	53	130	44	130	46	104	73	50
62-63	72	29	78	32	46	69	78	39	74
64-65	51	19	55	19	25	35	37	36	48
66-67	39	19	53	14	46	11	45	21	48
68-69	35	-	27	9	17	8	13	-	32
70-71	16	-	20	4	25	8	14	9	40
72-73	4	-	5	3	17	8	4	-	10
74-75	-	3	5	1	-	-	6	-	-
76-77	-	-	-	1	13	-	3	-	5
78-79	-	-	-	-	-	4	-	-	2
80-81	-	-	-	-	-	4	-	-	1
82-83	-	-	-	2	-	-	-	-	-
No. of Samples	3	1	3	5	1	1	3	1	3
No. of Fish Measured	600	375	600	1000	200	200	1015	500	600
Mean Wt. of Fish (Kg.)	1.97	2.18	2.02	1.74	2.19	1.74	2.35	1.86	1.99
Wt. of Landings Sampled (Tons)	11	1	3	8	2	2	4	2	5
Range of Depths (Fms.)	46-53	45-50	25-30	24-34	40-45	50	45	45	30-40
Hook Size	#6/0	#6/0	#6/0	#6/0	#6/0	#6/0	#6/0	#6/0	#6/0

TABLE 5 CANADA (Maritimes) - 1957 LENGTH FREQUENCIES - HADDOCK by D.N. Fitzgerald
W.R. Martin

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	4T		4V			4V-W	
Month	June	Sept.	April	May	June	April	June
2 cm. Group	FREQUENCIES in ‰						
32-33	-	-	-	-	-	-	2
34-35	2	-	-	-	-	-	2
36-37	4	-	-	-	-	-	5
38-39	18	5	-	6	-	6	14
40-41	42	36	-	62	12	6	52
42-43	53	45	43	88	47	53	111
44-45	54	103	64	169	234	106	196
46-47	96	133	149	81	193	177	153
48-49	125	144	191	114	122	120	199
50-51	210	201	117	161	106	151	139
52-53	124	119	122	62	71	113	46
54-55	100	115	118	94	77	79	31
56-57	34	38	80	72	89	66	8
58-59	27	8	61	41	12	66	8
60-61	37	21	32	37	12	25	23
62-63	34	26	13	8	16	4	8
64-65	14	4	-	-	4	12	3
66-67	13	-	13	4	4	8	-
68-69	10	-	-	4	-	4	-
70-71	4	-	-	-	-	-	-
72-73	-	-	-	-	-	4	-
74-75	-	-	-	-	-	-	-
76-77	-	-	-	-	-	-	-
78-79	-	-	-	-	-	-	-
No. of Samples	2	1	1	1	1	1	2
No. of Fish Measured	400	230	200	200	200	200	400
Mean Wt. of Fish (Kg.)	1.44	1.31	1.40	1.33	1.27	1.39	1.13
Wt. of Landings Sampled (Tons)	11	5	39	23	69	53	110
Range of Depths (Fms.)	25-70	18	24-100	16-34	20-27	35-63	18-28
Mesh Size (inches)	4 1/2n	4 1/2n	4 1/2m	4 1/2m	4 1/2m	4 1/2m	4 1/2m

(cont'd.)

n - nylon; m - manilla

TABLE 5 CANADA (Maritimes) - 1957 LENGTH FREQUENCIES - HADDOCK by D.N. Fitzgerald
(cont'd.) W.R. Martin

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	4W						
Month	Feb.	March	April	June	July	Oct.	Nov.
2 cm. Group	FREQUENCIES in ‰						
32-33	-	-	-	-	-	-	-
34-35	-	-	-	-	-	-	7
36-37	-	1	1	1	-	-	7
38-39	4	6	6	14	3	-	15
40-41	21	12	23	23	46	23	133
42-43	58	36	86	55	78	47	104
44-45	102	104	173	117	213	129	158
46-47	110	123	191	140	210	189	198
48-49	127	128	167	206	150	109	100
50-51	129	152	104	185	162	56	138
52-53	89	89	63	105	56	150	49
54-55	86	73	56	58	21	81	34
56-57	76	62	42	33	14	94	8
58-59	51	63	23	29	21	68	21
60-61	58	50	26	14	4	41	13
62-63	41	26	17	10	6	12	13
64-65	21	28	11	6	6	-	-
66-67	10	20	5	3	6	-	-
68-69	9	9	3	1	3	-	3
70-71	3	11	1	1	-	-	-
72-73	1	3	2	-	-	-	-
74-75	1	-	-	-	-	-	-
76-77	-	1	-	-	2	-	-
78-79	-	2	-	-	-	-	-
No. of Samples	12	4	7	5	3	1	1
No. of Fish Measured	2400	800	1400	1700	600	400	200
Mean Wt. of Fish (Kg.)	1.55	1.49	1.20	1.19	1.18	1.43	1.15
Wt. of Landings Sampled (Tons)	557	188	414	253	210	39	58
Range of Depths (Fms.)	32-118	48-80	34-60	15-30	12-26	25	...
Mesh Size (inches)	4 1/2m	4 1/2m	4 1/2m	4 1/2m	4 1/2m	4 1/2m	4 1/2m

(cont'd.)

m - manilla

TABLE 5 CANADA (Maritimes) - 1957
(cont'd.)

by D.N. Fitzgerald
W.R. Martin

LENGTH FREQUENCIES - HADDOCK

OTTER TRAWLERS (Offshore)

	Wharf		Sea Experimental
	Commercial		
Subdivision	4X		
Month	April	Sept.	Nov.
2 cm. Groups	FREQUENCIES in ‰		
20-21	-	-	3
22-23	-	-	-
24-25	-	-	-
26-27	-	-	3
28-29	-	-	6
30-31	-	-	8
32-33	-	-	14
34-35	-	-	36
36-37	-	29	50
38-39	-	106	92
40-41	11	110	111
42-43	22	115	217
44-45	49	149	114
46-47	94	168	131
48-49	94	87	89
50-51	198	121	61
52-53	75	41	42
54-55	79	41	19
56-57	116	18	3
58-59	69	12	-
60-61	56	-	-
62-63	56	-	-
64-65	31	6	-
66-67	19	-	-
68-69	19	-	-
70-71	12	-	-
No. of Samples	1	1	1
No. of Fish Measured	200	200	359
Mean Wt. of Fish (Kg.)	1.73	1.22	...
Wt. of Landings Sampled (Tons)	20	2	...
Range of Depths (Fms.)	62-75	15-25	18-40
Mesh Size (inches)	4 1/2m	4 n	4 n with 2" cover

n - nylon; m - manilla

TABLE 6 CANADA (Maritimes) - 1957

by D.N. Fitzgerald
W.R. Martin

LENGTH FREQUENCIES - REDFISH

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	4S
Month	July
cm. FREQUENCIES in ‰	
25	5
26	10
27	10
28	10
29	20
30	105
31	125
32	135
33	130
34	120
35	125
36	45
37	55
38	40
39	25
40	35
41	-
42	5
No. of Samples	1
No. of Fish Measured	200
Mean Wt. of Fish (Kg.)	0.91
Wt. of Landings Sampled	...
Range of Depths (Fms.)	90-105
Mesh Size (inches)	3 1/2m

m - manilla

TABLE 7 CANADA (Maritimes) - 1957

by D.N. Fitzgerald
W.R. Martin

LENGTH FREQUENCIES - AMERICAN PLAICE

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	4T
Month	Aug.
cm. FREQUENCIES in ‰	
37	40
38	20
39	120
40	90
41	80
42	60
43	70
44	50
45	60
46	40
47	40
48	100
49	50
50	70
51	20
52	30
53	20
54	20
55	-
56	-
57	-
58	-
59	10
60	10
No. of Samples	1
No. of Fish Measured	100
Mean Wt. of Fish (Kg.)	0.96
Wt. of Landings Sampled (Tons)	0.1
Range of Depths (Fms.)	35-40
Mesh Size (inches)	4 1/2m

m - manilla

TABLE 8 CANADA (Maritimes) - 1957

by D.N. Fitzgerald
W.R. Martin

LENGTH FREQUENCIES - WITCH

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	4T
Month	June
cm. FREQUENCIES in ‰	
35	10
36	-
37	10
38	-
39	10
40	20
41	20
42	20
43	70
44	20
45	60
46	40
47	70
48	120
49	60
50	120
51	90
52	60
53	50
54	30
55	20
56	50
57	40
58	10
No. of Samples	1
No. of Fish Measured	100
Mean Wt. of Fish (Kg.)	0.97
Wt. of Landings Sampled (Tons)	12
Range of Depths (Fms.)	50-80
Mesh Size (inches)	4 1/2m

m - manilla

TABLE 9 CANADA (Newfoundland) - 1957 LENGTH FREQUENCIES - COD by A.M. Fleming M.E. Prouse

Commercial Samples

Gear	Otter Trawl Offshore				Cod Trap Inshore			
Subdivision	3L	3O			3L		3P south	
Quarter	Apr.-June	Jan.-March	Apr.-June	Oct.-Dec.	Apr.-June	July-Sept.	Apr.-June	July-Sept.
3 cm. group	FREQUENCIES in ‰							
33-35	-	-	-	-	-	-	-	-
36-38	-	-	-	-	2	1	-	6
39-41	1	-	-	-	6	11	6	81
42-44	6	-	-	3	10	35	151	151
45-47	7	-	-	19	27	62	145	140
48-50	10	5	-	57	45	78	189	163
51-53	25	13	2	125	69	91	183	128
54-56	38	11	5	187	107	101	171	116
57-59	65	5	9	163	172	119	43	87
60-62	82	11	6	153	199	132	18	76
63-65	101	-	8	103	147	125	31	12
66-68	113	8	15	76	100	98	25	17
69-71	97	5	21	32	68	66	18	6
72-74	106	23	34	31	33	39	13	17
75-77	86	53	43	21	7	19	-	-
78-80	57	110	68	15	5	12	6	-
81-83	39	177	106	7	2	6	-	-
84-86	24	213	101	2	-	3	-	-
87-89	20	182	102	1	-	1	-	-
90-92	22	123	87	1	-	1	-	-
93-95	18	34	64	1	-	-	-	-
96-98	14	19	62	3	-	-	-	-
99-101	8	7	62	-	-	-	-	-
102-104	12	-	54	-	-	-	-	-
105-107	10	-	35	-	-	-	-	-
108-110	11	-	35	-	-	-	-	-
111-113	11	-	30	-	-	-	-	-
114-116	10	-	23	-	-	-	-	-
117-119	6	-	12	-	-	-	-	-
120-122	1	-	7	-	-	-	-	-
123-125	-	-	3	-	-	-	-	-
126-128	-	-	2	-	-	-	-	-
129-131	-	-	3	-	-	-	-	-
132-145[1]	-	-	2	-	-	-	-	-
No. of Samples	5	2	10	4	4	79	1	1
No. of Fish Measured	1417	406	2245	1174	800	12287	164	172
Mean Wt. of Fish (Kg.)	3.56	5.45	7.25	2.01	2.05	1.99	1.56	1.39
Wt. of Landings Sampled	255	65	516	213	11	169	1	9
Wt. of Total Landings	1177	237	2655	872	...	...	...	...
Est. No. in Total Landings[2]	0.33	0.04	0.37	0.43	...	...	...	...
Range of Depths (Fms.)	38-55	51-135	42-135	32-100	15-18	8-18	17	12-16
Mesh (in.) or Hook Size	4 man.	2¾ man.	4 man.	4 man.	4 cot.	4 cot.	4 cot.	4 cot.

1) 1 at 132-134 and 1 at 141-143. 2) In millions.

(cont'd.)

TABLE 9 CANADA (Newfoundland) - 1957 LENGTH FREQUENCIES - COD by A.M. Fleming
(cont'd.) M.E. Prouse

Commercial Samples

Gear	Line Trawl Inshore							
Subdivision	3L		3P north			3P south		
Quarter	July-Sept.	Oct.-Dec.	Jan.-March	Apr.-June	July-Sept.	Apr.-June	July-Sept.	Oct.-Dec.
3 cm. group	FREQUENCIES in ‰							
33-35	-	-	1	-	-	-	-	-
36-38	-	10	7	5	3	-	-	-
39-41	8	27	24	23	12	7	3	11
42-44	48	53	52	40	23	42	33	57
45-47	67	67	61	57	26	112	61	86
48-50	70	89	65	54	30	137	96	115
51-53	71	89	63	50	24	147	117	119
54-56	70	77	81	57	27	127	117	130
57-59	112	89	100	79	38	97	103	96
60-62	123	106	109	86	52	74	101	88
63-65	79	89	92	94	47	55	86	66
66-68	99	87	73	84	68	50	77	53
69-71	57	53	64	76	69	52	61	41
72-74	54	41	51	69	67	32	46	39
75-77	23	32	38	55	87	20	34	26
78-80	45	19	31	42	83	12	22	25
81-83	13	18	26	35	78	8	15	13
84-86	19	12	19	27	62	8	10	8
87-89	11	7	17	19	45	3	6	12
90-92	12	9	11	12	43	5	3	4
93-95	2	5	6	8	33	2	1	8
96-98	2	11	3	5	22	2	3	1
99-101	11	6	2	6	19	-	1	1
102-104	-	1	2	6	11	1	-	-
105-107	-	3	1	4	8	1	-	1
108-110	-	-	1	2	6	2	1	1
111-113	-	-	-	1	4	-	-	-
114-116	-	-	-	1	3	1	-	-
117-119	1	-	-	-	3	-	-	-
120-122	-	-	-	1	2	1	-	-
123-125	-	-	-	1	2	-	1	-
126-128	-	-	-	1	1	-	-	-
129-131	-	-	-	-	2	-	-	-
132-145[1]	-	-	-	-	1	1	-	-
No. of Samples	2	5	30	14	6	13	18	5
No. of Fish Measured	400	900	6327	3215	1786	2231	2877	1126
Mean Wt. of Fish (Kg.)	2.44	2.23	2.39	2.81	4.13	1.90	2.12	2.04
Wt. of Landings Sampled	2	3	35	16	8	20	37	5
Wt. of Total Landings	...	...	...	...	...	...	...	...
Est. No. in Total Landings	...	...	...	...	...	...	...	...
Range of Depths (Fms.)	20-40	20-40	60-90	30-90	30-60	10-65	10-60	30-65
Mesh (in.) or Hook Size	#14	#14	#14-17	#14-17	#14-17	#14-17	#14-17	#14-17

1) 1 at 142 and 1 at 145.

(cont'd.)

TABLE 9 CANADA (Newfoundland) - 1957 LENGTH FREQUENCIES - COD by A.M. Fleming
(cont'd.) M.E. Prouse

Commercial Samples

Gear	Handline Inshore		Longline Inshore						Jig Inshore	
Subdivision	3L		3L			3P north			3P south	
Quarter	Apr.-June	July-Sept.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-March	Apr.-June	July-Sept.	Apr.-June	July-Sept.
3 cm. group	FREQUENCIES in ‰									
33-35	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	4	2	-	-	-
39-41	-	3	-	-	-	34	10	1	6	-
42-44	9	15	2	1	4	63	51	6	75	30
45-47	10	31	9	6	20	85	41	13	143	115
48-50	46	53	24	11	36	78	48	16	153	172
51-53	73	82	38	23	58	88	45	22	192	168
54-56	129	110	86	49	73	89	69	42	112	124
57-59	150	136	129	82	112	97	88	68	103	128
60-62	194	146	159	144	129	112	94	74	53	92
63-65	136	150	148	155	134	89	89	107	44	77
66-68	121	99	122	132	126	69	85	117	35	44
69-71	55	66	99	105	80	49	75	98	23	13
72-74	42	44	71	73	57	17	61	105	23	9
75-77	23	23	47	43	47	33	69	92	14	13
78-80	6	16	24	40	36	20	45	62	13	4
81-83	3	10	15	27	19	20	34	50	4	4
84-86	1	5	13	25	16	15	30	33	-	4
87-89	1	3	3	21	15	12	18	31	1	-
90-92	-	2	4	19	6	12	15	21	3	-
93-95	-	1	2	17	7	6	5	12	1	-
96-98	-	1	3	9	6	-	5	8	-	-
99-101	-	1	-	7	7	3	7	6	-	-
102-104	-	-	1	5	5	-	1	6	-	-
105-107	-	1	-	2	3	2	3	1	4	-
108-110	-	-	-	1	1	2	1	3	-	-
111-113	-	-	1	1	1	2	2	3	-	-
114-116	-	-	-	-	1	-	-	2	-	-
117-119	-	-	-	-	-	-	1	-	-	-
120-122	-	-	-	-	-	-	2	-	-	4
123-125	-	-	-	-	-	-	-	-	-	-
126-128	-	-	-	-	-	2	-	-	-	-
129-131	-	-	-	-	-	-	1	-	-	-
132-145[1]	-	-	-	-	-	-	2	-	-	-
No. of Samples	6	60	5	48	16	3	5	5	6	1
No. of Fish Measured	1200	9823	1000	7521	3100	661	1076	1966	674	227
Mean Wt. of Fish (Kg.)	2.12	2.19	2.52	3.06	2.70	2.17	2.89	3.38	1.79	1.68
Wt. Landings Sampled	8	72	30	172	27	3	5	37	5	1
Wt. of Total Landings	...	...	...	...	...	...	...	...	...	...
Est. Total Landings	...	...	...	...	...	...	...	...	...	...
Range of Depths (Fms.)	6-15	4-30	130-150	10-150	10-145	50-90	50-90	20-50	10-40	10-20
Hook Size	#11-14	#11-14	#17	#17	#17	#14-17	#14-17	#14-17	#11	#11

1) 1 at 132-134 and 1 at 135-137.

TABLE 10 CANADA (Newfoundland) - 1957 LENGTH FREQUENCIES - HADDOCK by A.M. Fleming
M.E. Prouse

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	3N		3O			
Quarter	July-Sept.	Oct.-Dec.	Jan.-March	Apr.-June	July-Sept.	Oct.-Dec.
2 cm. group	FREQUENCIES in ‰					
20-21	9	-	-	-	-	-
22-23	-	-	2	5	-	-
24-25	9	-	11	11	-	-
26-27	13	-	10	10	-	1
28-29	4	-	2	4	-	1
30-31	-	26	3	4	-	1
32-33	9	33	15	15	-	-
34-35	79	76	48	41	3	6
36-37	119	148	105	95	33	14
38-39	220	190	144	140	51	57
40-41	101	192	154	150	88	120
42-43	70	130	176	173	160	233
44-45	145	72	155	151	155	253
46-47	115	65	93	100	215	193
48-49	79	40	45	48	151	60
50-51	22	16	18	23	70	35
52-53	-	7	8	10	34	11
54-55	4	4	4	6	13	3
56-57	-	1	2	4	9	9
58-59	-	-	2	3	7	-
60-61	-	-	1	2	5	2
62-63	-	1	1	1	2	-
64-65	-	-	-	1	1	-
66-67	-	-	-	-	1	-
No. of Samples	1	8	57	38	3	3
No. of Fish Measured	227	2055	19099	12348	1334	788
Mean Wt. of Fish (Kg.)	0.73	0.62	0.67	0.67	0.91	0.79
Wt. of Landings Sampled	38	379	3879	2507	146	81
Wt. of Total Landings	82	1013	11719	8934	408	768
Est. No. in Total Landings[1]	0.11	1.63	17.49	13.33	0.45	0.97
Range of Depths (Fms.)	30-68	20-114	43-105	40-90	40-72	48-56
Mesh (in.) or Hook Size	4 man.	4 man.	2¾ man.	4 man.	4 man.	4 man.

1) In millions.

TABLE 11 DENMARK - 1957 AGE FREQUENCIES - COD by Paul Hansen

West Greenland - Inshore and Fjords - Commercial Catches

Subdivision[1]		1A			1B			1C			1D			
Month		Aug. Sept. Oct.	Aug. Sept.	Aug.	July Aug. Sept.	July Aug. Sept.	June	July	Sept.	Sept.	March April	Sept.	Jan.	Feb.
Gear[2]		L.L.	L.L.	L.L.	L.L.	L.L.	P.N.	L.L.	L.L.	L.L.	L.L.	L.L.	P.T.	P.T.
Year-Class	Age-Group	FREQUENCIES in ‰												
1953	IV	-	-	-	2	18	170	181	322	146	240	512	26	48
1952	V	-	-	12	5	97	180	55	116	131	314	244	260	486
1951	VI	-	-	-	81	232	210	116	151	80	165	81	52	87
1950	VII	-	8	24	223	352	270	286	156	211	207	106	117	149
1949	VIII	-	8	-	54	56	80	35	45	10	58	8	169	67
1948	IX	11	8	49	66	31	30	85	30	65	-	-	52	29
1947	X	161	364	183	437	182	60	201	106	226	8	24	91	43
1946	XI	11	34	12	16	3	-	5	-	5	8	-	13	5
1945	XII	92	110	134	59	16	-	5	60	40	-	24	195	67
1944	XIII	46	42	49	12	4	-	15	-	5	-	-	-	-
1943	XIV	69	93	73	7	2	-	5	5	10	-	-	13	-
1942	XV	402	263	293	36	6	-	10	10	60	-	-	13	19
1941	XVI	57	8	122	2	-	-	-	-	-	-	-	-	-
1940	XVII	80	25	49	2	-	-	-	-	10	-	-	-	-
1939	XVIII	23	8	-	-	-	-	-	-	-	-	-	-	-
1938	XIX	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	XX	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	XXI	23	8	-	-	-	-	-	-	-	-	-	-	-
1935	XXII	11	-	-	-	-	-	-	-	-	-	-	-	-
1934	XXIII	11	17	-	-	-	-	-	-	-	-	-	-	-
No. of Fish		87	118	82	579	994	100	199	199	199	121	123	77	208
Serial No.		10	11	12	13	14	15	16	17	18	19	20	21a	21b

(cont'd.)

1) The positions of these samples are shown in Fig. 4 of ICNAF Document Serial No. 531 and in Fig. 4 page 31 of ICNAF Annual Proceedings Vol. 8, 1958.

2) L.L. - Longline with cod hooks; H.L. - Handline; P.T. - Prawn Trawl; P.N. - Pound Net.

TABLE 11 DENMARK - 1957 AGE FREQUENCIES - COD by Paul Hansen
(cont'd.)

West Greenland - Inshore and Fjords - Commercial Catches

Subdivision[1]		1D					1E				1F	
Month		Feb.	March	April	May	May	May	Aug. Sept.	Oct.	May June	July	Aug.
Gear[2]		L.L.	P.T.	H.L.	L.L.	H.L.	L.L.	L.L.	L.L.	3)	L.L.	H.L.
Year-Class	Age-Group	FREQUENCIES in ‰										
1953	IV	62	385	-	-	480	40	131	13	224	5	150
1952	V	215	554	23	123	381	88	137	20	181	25	131
1951	VI	31	46	13	164	54	136	103	34	104	60	194
1950	VII	123	15	96	196	30	440	377	228	308	575	313
1949	VIII	15	-	103	110	10	200	149	195	85	205	100
1948	IX	-	-	43	46	5	16	11	67	-	25	19
1947	X	77	-	169	105	25	32	80	309	59	65	81
1946	XI	-	-	23	23	-	8	-	20	-	-	-
1945	XII	123	-	199	100	5	16	11	74	33	35	6
1944	XIII	31	-	30	9	-	-	-	-	-	-	-
1943	XIV	31	-	30	14	-	-	-	7	-	-	-
1942	XV	108	-	100	50	10	8	-	27	5	-	6
1941	XVI	-	-	20	-	-	8	-	-	2	-	-
1940	XVII	123	-	133	59	-	8	-	7	-	-	-
1939	XVIII	31	-	-	-	-	-	-	-	-	5	-
1938	XIX	15	-	10	-	-	-	-	-	-	-	-
1937	XX	15	-	7	-	-	-	-	-	-	-	-
1936	XXI	-	-	-	-	-	-	-	-	-	-	-
1935	XXII	-	-	-	-	-	-	-	-	-	-	-
1934	XXIII	-	-	-	-	-	-	-	-	-	-	-
No. of Fish		65	65	301	219	202	125	175	149	425	200	160
Serial No.		21c	21d	21e	21f	21g	22	23	24	25	26	27

(cont'd.)

1) The positions of these samples are shown in Fig.4 of ICNAF Document Serial No. 531 and in Fig. 4, page 31 of ICNAF Annual Proceedings Vol. 8, 1958.
2) L.L. - Longline with cod hooks; H.L. - Handline; P.T. - Prawn Trawl; P.N. - Pound Net.
3) Taken with longline, handline and pound net.

TABLE 11 DENMARK - 1957 AGE FREQUENCIES - COD by Paul Hansen
(cont'd.)

East Greenland - Inshore and Fjords - Commercial Catches

Location[1]		Off Angmagssalik			Off Skjoldunge	
Month		Aug.	Sept.	Aug.-Sept.	Aug.	Sept.
Gear[2]		H.L. & L.L.	H.L.	L.L.	L.L.	H.L.
Year-Class	Age-Group	FREQUENCIES in ‰				
1953	IV	23	175	-	-	-
1952	V	108	278	-	29	-
1951	VI	250	232	34	29	22
1950	VII	528	273	131	147	76
1949	VIII	62	31	62	103	33
1948	IX	-	-	21	29	54
1947	X	23	10	241	88	217
1946	XI	-	-	7	29	11
1945	XII	6	-	103	74	152
1944	XIII	-	-	28	-	22
1943	XIV	-	-	28	29	22
1942	XV	-	-	193	235	326
1941	XVI	-	-	21	29	11
1940	XVII	-	-	34	44	11
1939	XVIII	-	-	7	29	-
1938	XIX	-	-	7	-	11
1937	XX	-	-	14	-	-
1936	XXI	-	-	41	74	11
1935	XXII	-	-	14	-	-
1934	XXIII	-	-	14	29	22
No. of Fish		176	194	145	68	92
Serial No.		1	2	3	4	5

1) The positions of these samples are shown in Fig. 5 of ICNAF Document Serial No. 531 and in Fig. 5 page 32 of ICNAF Annual Proceedings Vol. 8, 1958.

2) L.L. - Longline with cod hooks; H.L. - Handline.

TABLE 12 DENMARK - 1957 AGE FREQUENCIES - COD by Paul Hansen

and mean length at each age by sexes

Offshore

Location		1B Store Hellefiske Bank 67°49' N., 54°49' W.			1B Store Hellefiske Bank 66°49' N., 54°22' W.			1C Lille Hellefiske Bank 65°11' N., 53°15' W.		
Date		26th July			27th July			18th June		
Gear		"Dana" Handline			"Dana" Handline			"Adolf Jensen" Longline		
Year-Class	Age-Group	‰	Length cm. ♂♂	♀♀	‰	Length cm. ♂♂	♀♀	‰	Length cm. ♂♂	♀♀
1953	IV	489	46.5	46.6	480	46.7	45.8	6	48.0	-
1952	V	210	57.0	57.1	101	59.6	52.1	54	56.5	54.2
1951	VI	144	62.7	64.9	112	63.4	63.3	83	61.7	66.1
1950	VII	123	69.1	71.5	218	70.1	71.4	167	65.6	68.2
1949	VIII	8	70.0	-	17	77.0	80.5	6	-	68.0
1948	IX	4	-	69.0	22	-	74.7	65	70.5	75.4
1947	X	16	73.0	82.0	45	80.4	78.0	381	73.4	75.9
1946	XI	4	86.0	-	-	-	-	30	77.5	78.3
1945	XII	-	-	-	6	-	83.0	95	85.5	78.3
1944	XIII	-	-	-	-	-	-	18	80.5	84.0
1943	XIV	-	-	-	-	-	-	42	80.5	82.6
1942	XV	-	-	-	-	-	-	42	76.8	86.0
-	-	-	-	-	-	-	-	-	-	-
1934	XXIII	-	-	-	-	-	-	12	90.5	-
Total number			243			179			168	
Serial No.			1			2			3	
Depth (metres)			26-40			32-26			90	

Location		1C Lille Hellefiske Bank 64°57' N., 53°19' W.			1C Banana Bank 64°26' N., 53°13' W.			1C Banana Bank 64°21' N., 53°22' W.		
Date		28th July			20th June			29th July		
Gear		"Dana" Handline			"Adolf Jensen" Longline			"Dana" Handline		
Year-Class	Age-Group	‰	Length cm. ♂♂	♀♀	‰	Length cm. ♂♂	♀♀	‰	Length cm. ♂♂	♀♀
1953	IV	48	50.0	41.0	-	-	-	107	47.9	48.4
1952	V	-	-	-	-	-	-	107	58.8	61.3
1951	VI	79	63.8	-	63	-	65.0	98	64.7	64.7
1950	VII	206	69.0	71.1	281	70.7	70.2	233	70.5	68.4
1949	VIII	63	74.0	78.3	94	68.5	81.3	28	74.0	75.3
1948	IX	63	74.7	74.0	156	73.0	74.4	51	75.8	78.0
1947	X	38	75.6	77.0	30	79.6	79.4	31	77.7	78.9
1946	XI	48	77.3	-	16	-	89.0	28	79.6	88.0
1945	XII	63	78.0	85.3	16	-	84.0	23	79.0	79.3
1944	XIII	16	78.0	-	16	-	108.0	5	-	85.0
1943	XIV	-	-	-	-	-	-	9	76.0	80.0
1942	XV	16	89.0	-	63	86.0	82.3	-	-	-
1941	XVI	16	-	90.0	-	-	-	-	-	-
Total number			63			64			215	
Serial No.			4			5			6	
Depth (metres)			68-75			60-90			70-100	

(cont'd.)

TABLE 12 DENMARK - 1957 (cont'd) AGE FREQUENCIES - COD by Paul Hansen

and mean length at each age by sexes

Offshore

Location		1D Fylla Bank 64° 07' N., 52° 33' W.			1D Fylla Bank 64° 05' N., 52° 28' W.			1D Fylla Bank 63° 53' N., 53° 28' W.		
Date		30th July			26th June			3rd April		
Gear		"Dana" Handline			"Adolf Jensen" Longline			"Dana" Handline		
Year-Class	Age-Group	‰	Length cm. ♂♂	Length cm. ♀♀	‰	Length cm. ♂♂	Length cm. ♀♀	‰	Length cm. ♂♂	Length cm. ♀♀
1953	IV	54	51.8	51.3	-	-	-	107	46.9	44.8
1952	V	91	57.4	59.0	19	53.0	57.3	295	53.0	53.2
1951	VI	141	65.3	67.2	65	64.4	61.0	311	60.1	59.7
1950	VII	332	68.2	70.5	126	66.9	70.1	180	66.2	66.6
1949	VIII	108	74.2	80.0	27	67.3	76.5	-	-	-
1948	IX	54	72.0	71.0	107	72.7	73.8	8	-	77.0
1947	X	166	78.1	79.5	421	73.9	77.3	33	74.0	79.0
1946	XI	17	73.0	83.0	15	73.0	75.0	8	-	83.0
1945	XII	37	80.0	86.3	46	76.4	81.7	16	-	92.0
1944	XIII	-	-	-	23	80.8	89.0	-	-	-
1943	XIV	-	-	-	11	77.7	-	8	-	96.0
1942	XV	-	-	-	88	81.9	84.9	8	-	94.0
1941	XVI	-	-	-	8	91.0	86.0	8	-	99.0
1940	XVII	-	-	-	15	80.7	125.0	8	-	96.0
-	-	-	-	-	-	-	-	-	-	-
1936	XXI	-	-	-	11	90.7	-	8	-	94.0
-	-	-	-	-	-	-	-	-	-	-
1934	XXIII	-	-	-	15	102.7	89.0	-	-	-
Total number			241			261			122	
Serial No.			7			8			9	
Depth (metres)			35-70			...			180-200	

TABLE 13 DENMARK - 1957 LENGTH FREQUENCIES - REDFISH[1)2)] by Paul Hansen

SHRIMP TRAWL (Inshore): Research Samples Subarea 1

Taken by M/C "Immanuel" in Tunugdliarfik Fjord, 60°56'N, 45°47' W, and by M/C "Adolf Jensen" in Godthaab Fjord, 64°25'N, 50°19'W.

Location	Godthaab Fjord								Tunugdliarfik Fjord		
Month	Jan.	Feb.	Mar.	Apr.	July	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
cm.	FREQUENCIES in °/oo										
5	–	–	–	–	–	–	–	–	–	–	11
6	–	4	7	4	–	–	–	–	–	5	43
7	11	7	15	20	2	–	–	3	–	12	41
8	81	69	44	14	–	9	16	28	–	29	63
9	130	226	239	96	5	6	9	20	67	91	106
10	57	140	173	203	26	11	16	10	101	137	133
11	32	32	45	97	35	53	42	64	45	85	86
12	33	42	34	40	19	34	38	62	67	81	77
13	39	32	34	45	16	18	24	37	124	63	41
14	60	52	47	46	23	26	33	27	90	50	34
15	59	61	60	79	39	36	36	30	45	62	7
16	39	50	54	76	93	42	68	27	101	85	32
17	37	27	38	50	106	68	61	54	45	60	38
18	37	37	35	19	66	54	50	52	45	32	34
19	35	38	33	20	49	36	66	42	22	18	29
20	28	32	27	26	92	63	87	80	34	13	7
21	26	19	23	9	78	80	83	82	–	14	16
22	28	20	18	9	48	73	62	62	–	17	16
23	14	15	17	6	45	64	66	74	22	8	9
24	23	12	11	4	30	42	43	40	–	11	–
25	35	19	9	1	25	43	35	37	11	5	9
26	41	16	11	3	32	43	31	28	–	3	7
27	34	16	7	7	34	43	24	18	11	9	5
28	25	13	4	6	27	34	23	17	–	5	5
29	14	8	2	1	13	28	19	13	–	7	5
30	16	3	1	4	8	13	–	18	11	3	9
31	8	2	1	5	2	8	7	2	–	11	11
32	11	1	–	6	2	5	2	8	11	14	16
33	13	3	2	8	5	6	7	7	34	9	9
34	15	2	1	12	5	8	9	8	–	8	20
35	6	–	1	16	9	14	9	10	11	11	16
36	4	1	1	13	4	8	3	8	34	9	18
37	2	1	1	13	9	8	2	13	–	8	9
38	2	–	1	10	14	6	9	2	34	3	9
39	1	1	1	8	6	9	5	5	11	4	11
40	1	1	1	6	3	5	3	3	11	3	9
>40	2	1	2	18	28	6	12	8	11	16	11
No. of Hauls	1	1	1	1	2	2	1	1	1	4	2
No. of Fish	2541	3803	3508	1528	933	795	576	598	89	761	443

1) Total length recorded to the cm. below.

2) These data continue the series reported by Dr. Hansen in ICNAF Sampling Yearbook Vol. 1, Table 22.

TABLE 14 FRANCE - 1954 by C. Nédélec

LENGTH FREQUENCIES - COD[1]

OTTER TRAWLERS - Research Samples

Taken by "Président Théodore Tissier"

Subdivision	4T[2]	4T[2]
Month	May	May
3 cm. group	FREQUENCIES in ‰	
39-41	-	9
42-44	18	23
45-47	67	38
48-50	109	97
51-53	103	126
54-56	212	176
57-59	176	147
60-62	91	126
63-65	73	82
66-68	85	50
69-71	24	29
72-74	12	17
75-77	6	12
78-80	-	20
81-83	-	12
84-86	12	15
87-89	-	6
90-92	-	12
93-95	-	-
96-98	6	-
99-101	6	-
-	-	-
123-125	-	3
No. of Fish	165	341
Depth (m.)	110	120-150
Sample No.	1	2

1) Total length recorded to the cm. below.

2) Sample No. 1 was taken on 2nd May, 1954 at 47°35'N, 60°30'W; Sample No. 2 on 3rd May, 1954 at 47°18'N, 60°22'W.

TABLE 15 FRANCE - 1954 by C. Nédélec

AGE FREQUENCIES - COD

OTTER TRAWLERS - Research Samples

Taken by "Président Théodore Tissier"

Subdivision		4T[1]	4T[1]
Month		May	May
Year-Class	Age-Group	FREQUENCIES in ‰	
1950	IV	13	-
1949	V	122	97
1948	VI	333	243
1947	VII	295	272
1946	VIII	128	146
1945	IX	26	58
1944	X	39	58
1943	XI	13	58
1942	XII	19	29
1941	XIII	6	19
1940	XIV	6	10
1939	XV	-	-
1938	XVI	-	10
No. of Fish		156	103
Depth (m.)		110	120-150
Sample No.		1	2

1) Sample No. 1 was taken on 2nd May, 1954 at 47°35'N, 60°30'W; Sample No. 2 on 3rd May, 1954 at 47°18'N, 60°22'W.

TABLE 16 FRANCE/PORTUGAL[1] - 1958 LENGTH FREQUENCIES - COD by J. Clark F. McCracken

OTTER TRAWLERS - Commercial Catch

Subdivision	4R						
Date	16 March	19 March	19 March		21 March	22 March	22 March
3 cm. group	Ret.[2]	Ret.[2]	Ret.[2]	Disc.[2]	Unsort.[2]	Ret.[2]	Ret.[2]
24-26	-	-	-	-	-	-	-
27-29	-	-	-	-	-	-	-
30-32	-	-	-	1	-	-	-
33-35	-	-	-	4	-	-	-
36-38	-	2	-	11	1	-	-
39-41	3	1	-	22	3	1	-
42-44	4	1	1	40	6	1	1
45-47	12	2	6	25	7	4	3
48-50	22	4	18	16	9	2	6
51-53	23	5	21	2	15	11	3
54-56	12	8	16	-	22	5	2
57-59	31	13	16	-	17	9	14
60-62	51	15	20	-	13	7	14
63-65	45	15	32	-	13	11	23
66-68	40	11	15	-	12	7	20
69-71	29	9	16	-	7	3	23
72-74	14	3	7	-	7	3	11
75-77	11	4	7	-	5	-	17
78-80	9	2	3	-	2	2	9
81-83	4	-	-	-	1	1	8
84-86	3	-	2	-	-	-	6
87-89	2	1	1	-	2	-	4
90-92	2	2	1	-	-	-	1
93-95	3	1	-	-	-	-	6
96-98+	3	-	-	-	-	-	6
No. of Samples	1	1	1	1	1	1	1
No. of Fish	323	99	182	121	142	67	177
Vessel	Zelande	Clair-voyant	Clair-voyant	Clair-voyant	Clair-voyant	Clair-voyant	Santo André
Latitude	48°08'	48°30'	48°20'	48°20'	48°05'	48°05'	48°59'
Longitude	59°30'	59°40'	59°30'	59°30'	59°47'	59°35'	59°30'
Location	N. Cape Anguille	W. Cape George	W. Cape George	W. Cape George	N. Cape Anguille	N. Cape Anguille	N. Cape George
Depth (fm.)	85	115-120	75	75	135	120	125
Mesh Size[3]							

(cont'd.)

1) Observations made on a special trip aboard the French vessels, "Clairvoyant" and "Zelande", and the Portuguese vessel, "Santo André".

2) The samples were taken from the retained part of the catch (Ret.), the catch before discarding (Unsort.), or the discarded part of the catch (Disc.).

3) "Clairvoyant" - 4-4½" mesh nylon and 5½" mesh manilla; "Zelande" - 4½" mesh nylon inside, used, wet; "Santo André" - 5½" mesh manilla.

TABLE 16 FRANCE/PORTUGAL[1] - 1958 LENGTH FREQUENCIES - COD by J. Clark
(cont'd.) F. McCracken

OTTER TRAWLERS - Commercial Catch

Subdivision	4R				4V north				4T
Date	26 March		27 March		19 March	23 March			19 March
3 cm. group	Ret.[2]	Disc.[2]	Ret.[2]	Disc.[2]	Ret.[2]	Unsort.[2]	Ret.[2]	Disc.[2]	Ret.[2]
24-26	-	-	-	-	-	-	-	1	-
27-29	-	4	-	-	-	-	-	1	-
30-32	-	16	-	1	-	-	-	3	-
33-35	-	32	-	5	-	1	-	4	1
36-38	2	27	3	35	-	1	-	15	22
39-41	11	21	6	50	-	4	-	24	56
42-44	7	10	19	1	-	4	-	36	36
45-47	8	4	29	-	1	8	6	25	41
48-50	8	1	44	-	7	5	5	19	58
51-53	3	-	27	-	10	14	9	1	44
54-56	8	-	18	-	9	14	5	-	17
57-59	7	-	12	-	8	13	9	-	3
60-62	3	-	16	-	7	23	9	-	1
63-65	3	-	14	-	9	28	14	-	2
66-68	3	-	12	-	7	14	7	-	1
69-71	8	-	13	-	11	17	8	-	2
72-74	9	-	4	-	1	14	2	-	3
75-77	12	-	6	-	5	8	-	-	-
78-80	8	-	-	-	4	8	-	-	-
81-83	12	-	7	-	6	3	-	-	-
84-86	2	-	-	-	-	1	-	-	-
87-89	7	-	-	-	-	3	-	-	1
90-92	3	-	-	-	-	1	-	-	-
93-95	3	-	1	-	-	-	-	-	-
96-98 +	11	-	1	-	-	-	-	-	1
No. Samples	1	1	1	1	1	1	1	1	1
No. of Fish	138	115	232	92	85	184	74	129	289
Vessel	Santo André	Santo André	Zelande	Zelande	Clair-voyant	Clair-voyant	Clair-voyant	Clair-voyant	Zelande
Latitude	48°27'	48°27'	48°29'	48°29'	47°00'	47°41'	47°41'	47°41'	48°20'
Longitude	59°30'	59°30'	59°28'	59°28'	60°00'	59°28-30'	59°28-30'	59°28-30'	62°00'
Location	W. Cape George	W. Cape George	W. Cape George	W. Cape George	St. Paul Island	Cape Ray	Cape Ray	Cape Ray	Bird Rock
Depth (fm.)	70	70	75	75	110-120	115-125	115-125	115-125	135-160
Mesh Size[3]									

1) Observations made on a special trip aboard the French vessels, "Clairvoyant" and "Zelande", and the Portuguese vessel, "Santo André".

2) The samples were taken from the retained part of the catch (Ret.), the catch before discarding (Unsort.), or the discarded part of the catch (Disc.).

3) "Clairvoyant" - 4-4½" mesh nylon and 5½" mesh manilla; "Zelande" - 4½" mesh nylon inside, used, wet; "Santo André" - 5½" mesh manilla.

TABLE 17 GERMANY - 1957 AGE-LENGTH FREQUENCIES - COD[1] by A. Meyer

Landings of the Otter Trawler "Chr. Goedeken" Subdivisions 1C-1D May

Year-Class	1952	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37-	Length Freq-	No. Otoliths
Age	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	>19		
3 cm. group	FREQUENCIES in ‰																uency	Read
51-53	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
54-56	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4
57-59	4	10	14	-	2	-	-	-	-	-	-	-	-	-	-	-	30	15
60-62	-	27	41	-	-	-	-	-	-	-	-	-	-	-	-	-	68	5
63-65	-	-	94	12	-	6	-	-	-	-	-	-	-	-	-	-	112	19
66-68	-	-	58	6	6	58	-	-	-	-	-	-	-	-	-	-	128	20
69-71	-	-	42	8	-	51	-	-	-	-	-	-	-	-	-	-	101	12
72-74	-	-	-	-	-	91	8	8	-	-	-	-	-	-	-	-	107	13
75-77	-	-	-	-	15	54	8	23	8	-	8	-	-	-	-	-	116	15
78-80	-	-	-	-	12	26	6	19	12	-	6	-	-	-	-	-	81	13
81-83	-	-	-	-	-	-	-	23	9	18	5	14	-	-	-	-	69	15
84-86	-	-	-	-	-	3	-	14	3	3	9	3	3	-	-	-	38	13
87-89	-	-	-	-	-	5	5	-	5	5	10	-	-	-	-	-	30	6
90-92	-	-	-	-	-	4	-	4	-	4	8	-	4	-	-	-	24	6
93-95	-	-	-	-	-	-	-	-	4	-	8	-	4	4	-	-	20	5
96-98	-	-	-	-	-	-	-	3	9	-	-	-	-	-	3	-	15	5
99-101	-	-	-	-	-	2	-	2	-	-	-	7	-	-	-	-	11	6
102-104	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	8	1
105-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-	8	-	-	-	4	-	12	3
111-140	-	-	-	-	-	-	-	-	-	-	-	-	6	3	3	12	24	8
Age Freq.	7	39	249	26	35	300	27	96	50	30	62	32	17	7	10	12	999	...
Mean Length	56.3	59.9	64.9	68.2	74.5	73.0	78.0	80.8	84.4	84.5	88.5	91.5	98.9	110.7	111.7	>140	75.0	...
No. Otoliths Read	6	9	40	4	6	42	4	20	11	7	14	9	5	2	3	4	...	186

1) Total length recorded to the cm. below.

	By "Chr. Goedeken"	By all German Otter Trawlers in 1C-1D, May
Weight Landed (Kg.)[1]	12,367	203,000
Est. No. Landed	3,817	75,000
Est. Mean Wt. (Kg.)[1]	3.20	2.72
No. of Fish Measured	600	...

1) Weights are gutted, head on.

(cont'd.)

TABLE 17 GERMANY - 1957 AGE-LENGTH FREQUENCIES - COD[1] by A. Meyer
(cont'd.)

Landings of the Otter Trawler "Barmbek" Subdivisions 1C-1D May

Year-Class	1952	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37-	Length	No.
Age	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	>19	Freq-	Otoliths
3 cm. group	FREQUENCIES in ‰																uency	Read
54-56	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1
57-59	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-
60-62	-	-	51	-	-	-	-	-	-	-	-	-	-	-	-	-	51	7
63-65	-	-	109	-	15	-	-	-	-	-	-	-	-	-	-	-	124	17
66-68	-	-	97	16	16	49	-	-	-	-	-	-	-	-	-	-	178	22
69-71	-	-	96	-	-	96	-	-	-	-	-	-	-	-	-	-	192	16
72-74	-	-	45	23	23	124	-	-	-	-	-	-	-	-	-	-	215	19
75-77	-	-	7	7	7	74	-	-	-	-	-	-	-	-	-	-	95	13
78-80	-	-	-	-	4	50	4	8	-	-	-	-	-	-	-	-	66	17
81-83	-	-	-	2	2	5	1	2	1	1	1	-	-	-	-	-	15	15
84-86	-	-	-	1	-	4	-	-	2	-	4	-	-	1	-	-	12	9
87-89	-	-	-	-	-	2	1	4	-	-	1	-	-	-	-	1	9	9
90-92	-	-	-	-	-	1	1	2	-	-	1	-	-	-	-	-	5	10
93-95	-	-	-	-	-	-	-	1	-	1	2	-	-	-	-	-	4	12
96-98	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	7
99-101	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	2	4
102-104	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	2	3
105-107	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	3	4
108-110	-	-	-	-	-	-	-	1	-	-	1	1	-	-	-	-	3	4
111-140	-	-	-	-	-	-	-	-	1	-	3	2	1	3	-	1	11	13
Age Freq.	4	-	412	49	67	406	7	18	4	3	17	3	2	5	-	3	1000	...
Mean Length	55.0	-	66.8	72.1	70.5	73.3	82.4	85.2	95.5	92.0	97.2	117.0	109.0	112.6	-	107.0	71.6	...
No. Otoliths Read	1	-	47	8	11	63	6	17	4	4	25	4	3	5	-	4	...	202

1) Total length recorded to the cm. below.

	By "Barmbek"	By all German Otter Trawlers in 1C-1D, May
Weight Landed (Kg.)[1]	31,022	203,000
Est. No. Landed	12,111	75,000
Est. Mean Wt. (Kg.)[1]	2.60	2.72
No. of Fish Measured	443	...

1) Weights are gutted, head on.

(cont'd.)

TABLE 17 GERMANY - 1957 AGE-LENGTH FREQUENCIES - COD[1] by A. Meyer
(cont'd.)

Landings of the Otter Trawler "Carston Rehder" Subdivisions 1C-1D June

Year-Class	1953	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	Length Freq-	No. Otoliths
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	uency	Read
3 cm. group	FREQUENCIES in ‰																		
45-47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
51-53	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4
54-56	-	4	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	7	11
57-59	-	14	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	45	16
60-62	-	9	25	31	-	-	-	-	-	-	-	-	-	-	-	-	-	65	21
63-65	-	-	29	29	14	14	-	-	-	-	-	-	-	-	-	-	-	86	6
66-68	-	-	-	80	40	-	40	-	10	-	-	-	-	-	-	-	-	170	17
69-71	-	-	-	49	24	16	57	-	8	-	-	-	-	-	-	-	-	154	19
72-74	-	-	-	17	17	8	60	-	25	-	8	-	-	-	-	-	-	135	16
75-77	-	-	-	-	-	23	45	-	34	-	-	-	11	-	-	-	-	113	10
78-80	-	-	-	-	-	-	81	-	16	-	16	-	-	-	-	-	-	113	7
81-83	-	-	-	-	-	-	12	6	24	-	-	6	-	-	-	-	-	48	8
84-86	-	-	-	4	-	4	12	-	4	-	-	-	4	8	-	-	-	36	9
87-89	-	-	-	-	-	-	4	-	3	1	1	2	-	1	-	-	-	12	12
90-92	-	-	-	-	1	-	3	-	1	-	-	1	1	-	-	-	-	7	7
93-95	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	3	4
96-98	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	2	2
99-119	-	-	-	-	-	-	-	-	-	1	-	1	-	-	1	-	-	3	10
Age Freq.	-	28	66	232	96	65	314	6	126	3	25	12	16	10	1	-	-	1000	...
Mean Length	-	58.3	61.7	66.3	68.6	72.1	74.8	82.0	76.8	92.0	77.4	87.0	79.8	88.6	104.0	-	118.0	71.5	...
No. Otoliths Read	2	17	16	40	11	7	39	1	20	3	3	9	4	5	3	-	1	...	181

1) Total length recorded to the cm. below.

	By "Carston Rehder"	By all German Otter Trawlers in 1C-1D, June
Weight Landed (Kg.)[1]	56,340	5,560,000
Est. No. Landed	22,567	2,224,000
Est. Mean Wt. (Kg.)[1]	2.50	2.50
No. of Fish Measured	511	...

1) Weights are gutted, head on.

(cont'd.)

TABLE 17 GERMANY - 1957 AGE-LENGTH FREQUENCIES - COD[1] by A. Meyer
(cont'd.)

Landings of the Otter Trawler "Chr. Goedeken" Subdivision 1F August-September

Year-Class	1953	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37-	Length	No.
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	>19	Freq-	Otoliths
3 cm.group	FREQUENCIES in ‰																	uency	Read
48-50	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1
51-53	3	4	7	7	-	-	-	-	-	-	-	-	-	-	-	-	-	21	6
54-56	-	6	22	17	-	-	-	-	-	-	-	-	-	-	-	-	-	45	8
57-59	-	12	50	42	-	-	-	-	-	-	-	-	-	-	-	-	-	104	25
60-62	-	-	29	78	20	5	-	-	-	-	-	-	-	-	-	-	-	132	27
63-65	-	-	15	123	20	-	-	-	-	-	-	-	-	-	-	-	-	158	32
66-68	-	-	6	87	25	-	6	-	-	-	-	-	-	-	-	-	-	124	20
69-71	-	-	-	95	28	-	38	-	-	-	-	-	-	-	-	-	-	161	17
72-74	-	-	-	23	42	5	28	-	-	-	-	-	-	-	-	-	-	98	21
75-77	-	-	-	19	19	-	19	-	9	-	-	-	-	-	-	-	-	66	7
78-80	-	-	-	-	8	-	4	-	4	-	-	4	-	-	-	-	-	20	5
81-83	-	-	-	-	7	-	8	-	3	-	-	-	-	-	-	-	-	18	7
84-86	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	8	2
87-89	-	-	-	-	2	-	5	-	8	-	-	2	-	-	-	-	-	17	7
90-92	-	-	-	-	1	-	2	-	2	-	1	-	2	-	-	-	-	8	10
93-95	-	-	-	-	1	-	-	-	4	-	-	1	-	1	-	-	-	7	13
96-98	-	-	-	-	-	-	-	-	2	-	-	2	-	1	-	-	1	6	6
99-101	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	1	3	3
102-104	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1
105-107	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1
Age Freq.	3	25	129	491	173	10	118	-	34	-	1	11	2	3	-	-	2	1002	...
Mean Length	52.0	55.2	59.0	65.1	70.6	67.0	74.8	-	87.0	-	91.0	89.6	91.0	104.0	-	-	98.5	67.4	...
No.Otoliths Read	1	6	28	87	34	2	24	-	20	-	1	8	2	3	-	1	3	...	220

1) Total length recorded to the cm. below.

	By "Chr. Goedeken"	By all German Otter Trawlers in 1F, August-September
Weight Landed (Kg.)[1]	60,470	348,000
Est. No. Landed	27,338	157,000
Est. Mean Wt. (Kg.)[1]	2.21	2.21
No. of Fish Measured	588	...

1) Weights are gutted, head on.

(cont'd.)

TABLE 17 GERMANY - 1957 AGE-LENGTH FREQUENCIES - COD[1] by A. Meyer
(cont'd.)

Landings of the Otter Trawler "M. Friedrichs" Subdivision 1F October

Year-Class	1953	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37-	Length	No.
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	>19	Freq-	Otoliths
3 cm.group	FREQUENCIES in ‰																	uency	Read
45-47	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1
48-50	13	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	17	4
51-53	-	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	2
54-56	-	15	9	21	-	-	-	-	-	-	-	-	-	-	-	-	-	45	15
57-59	-	13	26	13	7	-	-	-	-	-	-	-	-	-	-	-	-	59	9
60-62	-	12	35	70	-	-	6	-	-	-	-	-	-	-	-	-	-	123	21
63-65	-	-	9	114	18	-	-	-	-	-	-	-	-	-	-	-	-	141	16
66-68	-	-	7	121	21	7	7	-	-	-	-	-	-	-	-	-	-	163	23
69-71	-	-	8	79	39	16	24	-	-	-	-	-	-	-	-	-	-	166	21
72-74	-	-	-	107	11	21	21	-	-	-	-	-	-	-	-	-	-	160	15
75-77	-	-	-	42	21	-	10	-	-	-	-	-	-	-	-	-	-	73	7
78-80	-	-	-	6	13	-	-	-	-	-	-	-	6	-	-	-	-	25	4
81-83	-	-	-	-	2	-	2	-	-	-	2	-	-	-	-	-	-	6	3
84-86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
87-89	-	-	-	-	1	-	-	-	1	-	-	-	1	-	1	-	-	4	4
>89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Age Freq.	15	48	102	577	133	44	70	-	1	-	2	-	7	-	1	-	-	1000	...
Mean Length	48.6	56.8	60.4	67.2	70.5	71.0	71.0	-	88.0	-	82.0	-	80.3	-	88.0	-	-	66.8	...
No.Otoliths Read	4	10	17	77	18	5	10	-	3	1	1	-	2	-	1	-	2	...	151

1) Total length recorded to the cm. below.

	By "M. Friedrichs"	By all German Otter Trawlers in 1F, October
Weight Landed (Kg.)[1]	43,270	43,270
Est. No. Landed	19,084	19,000
Est. Mean Wt. (Kg.)[1]	2.27	2.27
No. of Fish Measured	358	...

1) Weights are gutted, head on.

(cont'd.)

TABLE 17 GERMANY - 1957 AGE-LENGTH FREQUENCIES - COD[1] by A. Meyer
(cont'd.)

Landings of the Otter Trawler "Laboe" Subdivision 1F November-December

Year-Class	1953	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37-	Length Freq-	No. Otoliths
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	>19	uency	Read
3 cm. group	FREQUENCIES in ‰																		
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
48-50	11	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	4
51-53	13	23	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	42	16
54-56	6	36	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	13
57-59	-	21	16	69	5	-	-	-	-	-	-	-	-	-	-	-	-	111	21
60-62	-	7	26	112	7	-	-	-	-	-	-	-	-	-	-	-	-	152	23
63-65	-	-	8	131	31	8	8	-	-	-	-	-	-	-	-	-	-	186	24
66-68	-	-	16	109	68	-	5	-	-	-	-	-	-	-	-	-	-	198	38
69-71	-	-	-	65	24	-	8	-	8	-	-	-	-	-	-	-	-	105	13
72-74	-	-	-	6	62	-	6	-	-	-	-	-	-	-	-	-	-	74	13
75-77	-	-	-	5	10	-	-	-	-	-	-	-	-	-	-	-	-	15	3
78-80	-	-	-	-	17	-	-	-	-	-	-	-	-	-	-	-	-	17	2
81-83	-	-	-	-	3	-	3	-	-	-	-	-	-	-	-	-	-	6	4
>83	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	12
Age Freq.	31	90	105	500	227	8	30	-	9	-	-	-	-	-	-	-	-	1000	...
Mean Length	51.3	55.2	59.4	63.4	69.7	64.0	69.7	-	71.7	-	-	-	-	-	-	-	-	63.9	...
No Otoliths Read	9	21	18	81	39	1	7	-	5	5	-	-	-	-	-	-	-	...	186

1) Total length recorded to the cm. below.

	By "Laboe"	By all German Otter Trawlers in 1F, November-December
Weight Landed (Kg.)[1]	214,305	573,000
Est. No. Landed	106,388	285,000
Est. Mean Wt. (Kg.)[1]	2.01	2.01
No. of Fish Measured	533	...

1) Weights are gutted, head on.

TABLE 18 GERMANY - 1957 AGE-LENGTH KEY - COD[1] by A. Meyer

Summary of four small selected samples taken from the landings from four trips by Otter Trawlers from 1C and 1D in May, June, July

Males

Year-Class / cm. / Age	1953 4	1952 5	1951 6	1950 7	1949 8	1948 9	1947 10	1946 11	1945 12	1944 13	1943 14	1942 15	1941 16	1940 17	Total
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51-53	2	-	1	-	-	-	-	-	-	-	-	-	-	-	3
54-56	-	2	1	-	-	-	-	-	-	-	-	-	-	-	3
57-59	-	1	2	1	-	-	-	-	-	-	-	-	-	-	4
60-62	-	-	-	3	-	1	-	-	-	-	-	-	-	-	4
63-65	-	-	3	6	-	-	-	-	-	-	-	-	-	-	9
66-68	-	-	2	-	-	2	5	-	-	-	-	-	-	-	9
69-71	-	-	1	3	1	1	2	-	-	-	-	-	-	-	8
72-74	-	-	-	-	-	-	4	1	1	-	1	-	-	-	7
75-77	-	-	-	-	2	3	2	-	1	1	-	-	-	-	9
78-80	-	-	-	-	2	-	-	-	3	-	-	1	-	-	6
81-83	-	-	-	-	1	-	1	-	2	-	-	2	-	-	6
84-86	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2
87-89	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
90-92	-	-	-	-	-	1	-	-	1	-	-	-	-	-	2
93-95	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
96-98	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Total Males	3	3	10	13	6	8	15	1	8	1	1	7	-	1	77

Females

Year-Class / cm. / Age	1953 4	1952 5	1951 6	1950 7	1949 8	1948 9	1947 10	1946 11	1945 12	1944 13	1943 14	1942 15	1941 16	1940 17	Total
48-50	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
51-53	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
54-56	-	1	-	1	-	-	-	-	-	-	-	-	-	-	2
57-59	1	2	-	-	-	-	-	-	-	-	-	-	-	-	3
60-62	-	-	1	1	-	-	-	-	-	-	-	-	-	-	2
63-65	-	-	1	5	-	-	-	-	-	-	-	-	-	-	6
66-68	-	-	1	5	-	-	-	-	-	-	-	-	-	-	6
69-71	-	-	-	6	1	1	2	-	1	-	-	-	-	-	11
72-74	-	-	-	4	5	-	5	-	-	-	-	-	-	-	14
75-77	-	-	-	-	3	-	4	-	1	-	-	-	-	-	8
78-80	-	-	-	2	2	1	5	-	1	-	-	1	-	-	12
81-83	-	-	-	1	1	-	-	-	2	-	-	-	-	-	4
84-86	-	-	-	-	-	-	-	-	1	-	-	2	-	1	4
87-89	-	-	-	-	-	-	-	-	-	-	1	2	-	-	3
90-92	-	-	-	-	-	-	-	-	1	-	-	1	-	-	2
93-95	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Total Females	3	3	3	25	12	2	16	-	7	1	1	6	-	1	80

Total Males and Females	6	6	13	38	18	10	31	1	15	2	2	13	-	2	157

1) Total length recorded to the cm. below.

TABLE 19 GERMANY - 1957 AGE-LENGTH FREQUENCIES - COD[1] by A. Meyer

Research Vessel "Anton Dohrn" - Noname Bank, 61° 38-41'N, 50° 35-48'W

1E August Covered Codend Depth: 120-130 metres

Year-Class	56/55	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944-	Length Freq-	No. Otoliths
Age	1 or 2	3	4	5	6	7	8	9	10	11	12	>12		
3 cm. group	FREQUENCIES in ‰												uency	Read
12-14	32	-	-	-	-	-	-	-	-	-	-	-	32	-
15-17	8	-	-	-	-	-	-	-	-	-	-	-	8	-
18-20	4	-	-	-	-	-	-	-	-	-	-	-	4	-
21-23	19	-	-	-	-	-	-	-	-	-	-	-	19	1
24-26	38	19	-	-	-	-	-	-	-	-	-	-	57	3
27-29	28	-	-	-	-	-	-	-	-	-	-	-	28	2
30-32	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33-35	-	6	-	-	-	-	-	-	-	-	-	-	6	1
36-38	-	-	19	-	-	-	-	-	-	-	-	-	19	3
39-41	-	-	43	4	-	-	-	-	-	-	-	-	47	11
42-44	-	-	87	-	-	-	-	-	-	-	-	-	87	9
45-47	-	-	70	14	-	-	-	-	-	-	-	-	84	12
48-50	-	-	46	5	-	5	-	-	-	-	-	-	56	12
51-53	-	-	15	39	-	15	-	-	-	-	-	-	69	14
54-56	-	-	-	38	6	13	-	-	-	-	-	-	57	9
57-59	-	-	-	12	12	12	-	6	-	-	-	-	42	7
60-62	-	-	-	10	10	39	-	-	-	-	-	-	59	6
63-65	-	-	-	4	8	25	4	-	-	-	-	-	41	10
66-68	-	-	-	-	-	32	8	-	-	-	-	-	40	5
69-71	-	-	-	-	6	42	18	6	-	-	-	-	72	12
72-74	-	-	-	-	-	26	13	4	-	-	-	-	43	10
75-77	-	-	-	-	-	-	26	-	-	-	17	-	43	5
78-80	-	-	-	-	-	7	10	3	10	-	3	3	36	11
81-83	-	-	-	-	-	4	-	4	4	4	8	-	24	6
84-86	-	-	-	-	-	-	15	-	-	-	-	-	15	2
87-89	-	-	-	-	-	-	-	-	-	-	3	3	6	2
>89	-	-	-	-	-	-	-	-	-	-	4	2	6	3
Age Frequency	129	25	280	126	42	220	94	23	14	4	35	8	1000	...
Mean Length	21.5	27.2	44.4	53.6	61.1	65.1	74.9	70.7	79.9	82.0	82.9	98.1	53.1	...
No. Otoliths Read	5	2	45	22	7	38	16	5	4	1	8	3	...	156

(cont'd.)

1) Samples from three hauls with covered codend, totalling 527 length measurements. The age-length key used to obtain the above frequencies was based on 156 otolith readings from the same hauls.

Mean Weight (Kg.) - 1.71 No. Hauls - 3 Total length recorded to the cm. below.

TABLE 19 GERMANY - 1957 AGE-LENGTH FREQUENCIES - COD[1] by A. Meyer
(cont'd.)
Research Vessel "Anton Dohrn" - Cape Thorvaldsen, 60°21'N, 47°20'W

1F August Covered Codend

Year-Class	56/55	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944-	Length	No.
Age	1 or 2	3	4	5	6	7	8	9	10	11	12	>12	Freq-	Otoliths
3 cm. group	FREQUENCIES in ‰												uency	Read
12-14	1	-	-	-	-	-	-	-	-	-	-	-	1	2
15-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-23	2	-	-	-	-	-	-	-	-	-	-	-	2	-
24-26	2	-	-	-	-	-	-	-	-	-	-	-	2	-
27-29	3	-	-	-	-	-	-	-	-	-	-	-	3	2
30-32	-	5	5	-	-	-	-	-	-	-	-	-	10	4
33-35	-	4	26	-	-	-	-	-	-	-	-	-	30	7
36-38	-	-	73	10	-	-	-	-	-	-	-	-	83	17
39-41	-	-	141	-	-	-	-	-	-	-	-	-	141	22
42-44	-	-	129	18	-	-	-	-	-	-	-	-	147	16
45-47	-	-	59	52	-	-	-	-	-	-	-	-	111	17
48-50	-	-	20	46	5	5	-	-	-	-	-	-	76	15
51-53	-	-	-	25	25	13	-	-	-	-	-	-	63	15
54-56	-	-	3	17	14	17	3	-	-	-	-	-	54	19
57-59	-	-	-	12	7	33	2	-	-	-	-	-	54	23
60-62	-	-	-	-	12	38	8	-	4	-	-	-	62	31
63-65	-	-	-	1	-	40	9	-	6	-	3	-	59	41
66-68	-	-	-	-	-	32	8	-	5	-	-	-	45	45
69-71	-	-	-	-	-	14	6	-	5	-	-	-	25	33
72-74	-	-	-	-	-	4	7	-	5	-	1	-	17	21
75-77	-	-	-	-	-	1	4	1	1	-	1	-	8	24
78-80	-	-	-	-	-	-	-	-	2	-	1	-	3	11
81-83	-	-	-	-	-	-	1	-	-	-	-	-	1	4
84-86	-	-	-	-	-	-	-	-	-	-	1	-	1	5
87-89	-	-	-	-	-	-	-	-	-	-	2	2	4	4
>89	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Age Frequency	8	9	456	181	63	197	48	1	28	-	9	2	1002	...
Mean Length	23.9	32.3	41.2	48.5	54.8	61.6	66.6	76.0	68.3	-	75.6	88.0	49.6	...
No. Otoliths Read	4	3	73	39	21	132	53	3	35	-	20	7	...	390

(cont'd.)

1) Samples from hauls with covered codend, totalling 15,882 length measurements. The age-length key used to obtain the above frequencies was based on 238 otolith readings from the same hauls and 152 from the hauls reported in Table 19, page 86.

Mean Weight (Kg.) - 1.06 No. Hauls - 36 Total length recorded to the cm. below.

TABLE 19 GERMANY - 1957 AGE-LENGTH FREQUENCIES - COD[1] by A. Meyer
(cont'd.)
Research Vessel "Anton Dohrn" - Sermersok, 59°55'N, 45°50'W

1F August Covered Codend Depth: 130 metres

Year-Class	56/55	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944-	Length	No.
Age	1 or 2	3	4	5	6	7	8	9	10	11	12	>12	Freq-	Otoliths
3 cm. group	FREQUENCIES in ‰												uency	Read
12-14	4	-	-	-	-	-	-	-	-	-	-	-	4	2
15-17	1	-	-	-	-	-	-	-	-	-	-	-	1	-
18-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-23	3	-	-	-	-	-	-	-	-	-	-	-	3	-
24-26	3	-	-	-	-	-	-	-	-	-	-	-	3	-
27-29	-	-	-	-	-	-	-	-	-	-	-	-	-	2
30-32	-	-	-	-	-	-	-	-	-	-	-	-	-	4
33-35	-	1	4	-	-	-	-	-	-	-	-	-	5	7
36-38	-	-	2	-	-	-	-	-	-	-	-	-	2	17
39-41	-	-	11	-	-	-	-	-	-	-	-	-	11	22
42-44	-	-	19	3	-	-	-	-	-	-	-	-	22	16
45-47	-	-	17	16	-	-	-	-	-	-	-	-	33	17
48-50	-	-	5	10	1	1	-	-	-	-	-	-	17	15
51-53	-	-	-	13	13	7	-	-	-	-	-	-	33	15
54-56	-	-	2	14	12	14	2	-	-	-	-	-	44	19
57-59	-	-	-	15	9	41	3	-	-	-	-	-	68	23
60-62	-	-	-	-	25	80	17	-	8	-	-	-	130	31
63-65	-	-	-	5	-	129	28	-	18	-	9	-	189	41
66-68	-	-	-	-	-	122	30	-	19	-	-	-	171	45
69-71	-	-	-	-	-	72	32	-	28	-	-	-	132	33
72-74	-	-	-	-	-	18	32	-	22	-	4	-	76	21
75-77	-	-	-	-	-	7	21	3	7	-	3	-	41	24
78-80	-	-	-	-	-	1	1	1	4	-	3	-	10	11
81-83	-	-	-	-	-	-	1	-	1	-	1	-	3	4
84-86	-	-	-	-	-	1	-	-	1	-	2	-	4	5
87-89	-	-	-	-	-	-	-	-	-	-	-	-	-	4
>89	-	-	-	-	-	-	-	-	-	-	-	1	1	12
Age Frequency	11	1	60	76	60	493	167	4	108	-	22	1	1003	...
Mean Length	19.0	34.0	43.4	54.8	57.2	64.7	68.6	76.8	69.4	-	72.0	97.0	62.9	...
No. Otoliths Read	4	3	73	39	21	132	53	3	35	-	20	7	...	390

1) Samples from hauls with covered codend, totalling 1093 length measurements. The age-length key used to obtain the above frequencies was based on 152 otolith readings from the same hauls and 238 from the hauls reported in Table 19, page 85.

Mean Weight (Kg.) - 4.44 No. Hauls - 7 Total length recorded to the cm. below.

TABLE 20 GERMANY - 1955 LENGTH FREQUENCIES - REDFISH[1] by A. Kotthaus

OTTER TRAWLERS - Commercial Landings Subarea 1

Month	June	July	August	September
Length (cm.)	FREQUENCIES in ‰			
25	-	-	-	12
26	-	-	-	12
27	-	-	12	12
28	26	-	14	12
29	41	-	14	30
30	26	-	26	65
31	208	49	40	189
32	107	81	231	251
33	436	163	214	291
34	380	159	351	275
35	647	340	461	510
36	413	433	443	555
37	878	514	850	767
38	663	583	743	723
39	653	681	741	851
40	780	963	751	696
41	648	455	373	731
42	849	836	767	742
43	913	942	912	714
44	439	511	636	500
45	460	861	703	646
46	368	676	426	207
47	246	492	388	329
48	206	376	331	258
49	91	325	152	214
50	127	139	93	81
51	69	76	35	45
52	54	18	12	36
53	56	33	12	62
54	8	4	-	10
55	4	39	12	20
56	40	25	12	12
57	30	9	1	13
58	8	16	13	13
59	20	13	1	22
60	18	49	1	22
61	14	29	1	12
62	11	19	13	12
63	13	17	13	12
64	10	30	1	10
65	13	14	1	11
66	7	5	-	4
67	6	7	-	5
68	5	10	-	2
>68	9[2]	8[3]	-	4[4]
No. in Total Landings	390,669	507,958	980,083	638,148

1) Total length recorded to the cm. below.
2) 5 at 69; 2 at 70; 1 at 73; 1 at 74.
3) 4 at 69; 3 at 70; 1 at >74.
4) 1 at 69; 1 at 70; 1 at 73; 1 at >74.

(cont'd.)

TABLE 20 GERMANY - 1956 (cont'd.) LENGTH FREQUENCIES - REDFISH[1] by A. Kotthaus

OTTER TRAWLERS - Commercial Landings Subarea 1

Month	May	June	July	August
Length (cm.)	FREQUENCIES in ‰			
27	-	10	-	49
28	-	-	-	49
29	-	39	-	-
30	49	36	-	147
31	99	79	-	147
32	148	74	-	294
33	247	204	30	392
34	247	191	26	441
35	148	252	26	932
36	444	289	119	932
37	593	550	187	588
38	1185	601	298	1030
39	889	430	336	932
40	1086	861	459	637
41	543	428	570	441
42	1235	610	582	784
43	889	571	1079	539
44	395	466	603	392
45	346	737	692	392
46	543	576	442	343
47	148	426	441	343
48	247	516	234	49
49	99	236	666	-
50	198	357	547	49
51	1	192	517	49
52	148	133	604	-
53	1	88	238	-
54	-	155	352	-
55	1	110	268	-
56	4	131	119	-
57	3	91	91	-
58	8	146	46	-
59	5	65	47	-
60	4	72	7	49
61	9	61	40	-
62	6	63	41	-
63	7	61	107	-
64	9	22	37	-
65	7	26	43	-
66	4	9	19	-
67	-	16	18	-
68	1	5	24	-
69	2	7	14	-
70	-	6	10	-
>70	2[2]	2[3]	21[4]	-
No. in Total Landings	141,032	286,035	108,116	100,280

1) Total length recorded to the cm. below.
2) 1 at 72; 1 at 74.
3) 1 at 71; 1 at 74.
4) 12 at 71; 4 at 72; 3 at 73; 2 at >74.

(cont'd.)

TABLE 20 GERMANY - 1957 LENGTH FREQUENCIES - REDFISH[1] by A. Kotthaus
(cont'd.)

OTTER TRAWLERS - Commercial Landings Subarea 1

Month	May	June	July	September	October
Length (cm.)	FREQUENCIES in ‰				
27	-	18	-	-	-
28	-	24	-	-	-
29	-	11	-	-	-
30	-	29	-	36	-
31	86	27	-	-	92
32	171	33	87	36	46
33	129	146	70	71	-
34	214	227	153	142	46
35	600	321	145	403	92
36	815	408	236	295	183
37	772	707	604	437	183
38	1029	637	277	886	138
39	1158	532	240	897	550
40	1029	693	285	1051	780
41	772	629	323	706	688
42	900	609	402	967	780
43	557	579	604	1015	963
44	343	560	447	808	1147
45	386	496	493	632	1193
46	214	422	447	395	1193
47	300	469	497	313	734
48	129	430	571	321	596
49	171	348	236	182	46
50	43	254	473	79	229
51	-	215	380	45	183
52	-	179	357	57	46
53	1	146	299	34	92
54	-	98	212	36	-
55	1	95	263	48	-
56	88	87	240	13	-
57	7	143	319	3	-
58	11	80	342	18	-
59	7	66	238	29	-
60	13	104	215	8	-
61	9	54	161	4	-
62	9	36	177	3	-
63	11	24	72	3	-
64	7	13	18	5	-
65	7	19	45	5	-
66	4	14	18	2	-
67	1	2	18	5	-
68	2	3	27	3	-
69	1	2	9	2	-
70	1	11	-	1	-
>70	2[2]	2[3]	-	4[4]	-
No. in Total Landings	210,630	985,449	221,873	280,803	150,254

1) Total length recorded to the cm. below.
2) 1 at 71; 1 at 72.
3) 1 at 71; 1 at 73.
4) 1 at 71; 1 at 72; 2 at 74.

(cont'd.)

TABLE 20 GERMANY - 1958 LENGTH FREQUENCIES - REDFISH[1] by A. Kottheus
(cont'd.)

OTTER TRAWLERS - Commercial Landings Subarea 1

Month	February	March	April	May
Length (cm.)	FREQUENCIES in ‰			
25	23	-	-	-
26	-	-	-	-
27	-	-	-	12
28	-	-	-	-
29	23	-	14	-
30	69	48	36	-
31	42	-	26	31
32	69	-	51	27
33	153	265	58	90
34	202	211	126	192
35	180	397	160	353
36	379	437	434	443
37	620	515	501	737
38	806	1004	812	861
39	529	1003	745	873
40	845	923	976	935
41	825	959	827	1005
42	763	923	783	973
43	1078	708	1049	693
44	817	487	463	496
45	775	427	586	596
46	602	303	597	505
47	422	268	501	308
48	342	135	324	203
49	140	206	195	172
50	58	119	166	116
51	19	46	103	70
52	78	22	115	49
53	1	135	41	23
54	41	68	32	41
55	1	44	35	47
56	2	56	32	7
57	7	54	26	21
58	4	35	51	12
59	8	34	24	12
60	7	50	19	17
61	9	23	13	18
62	15	22	18	13
63	8	23	13	10
64	10	22	11	13
65	11	10	12	8
66	3	4	4	6
67	3	10	7	4
68	1	1	5	3
>68	10[2]	3[3]	9[4]	5[5]
No. in Total Landings	64,147	106,114	484,755	726,325

1) Total length recorded to the cm. below. (cont'd.)
2) 1 at 69; 3 at 70; 3 at 71; 1 at 72; 1 at 74; 1 at >74.
3) 3 at 72. 4) 4 at 69; 3 at 70; 1 at 71; 1 at >74. 5) 2 at 69; 1 at 70; 1 at 71; 1 at 74.

TABLE 20 GERMANY - 1958 LENGTH FREQUENCIES - REDFISH[1] by A. Kotthaus
(cont'd.)

OTTER TRAWLERS - Commercial Landings Subarea 1

Month	June	July	August	September	November
Length (cm.)	FREQUENCIES in ‰				
27	-	-	-	29	-
28	-	-	-	-	-
29	-	-	-	15	-
30	16	48	43	-	-
31	52	-	43	-	-
32	87	48	21	15	-
33	188	48	21	59	-
34	229	239	65	102	-
35	565	526	172	239	-
36	592	143	64	196	-
37	885	287	261	478	50
38	1450	430	458	434	50
39	1100	573	523	450	648
40	1129	1386	677	855	349
41	663	956	814	989	848
42	642	1051	1198	1492	499
43	595	860	971	1104	1047
44	404	1099	1039	894	1595
45	305	526	1059	896	1596
46	186	717	702	640	947
47	186	478	742	367	1047
48	86	191	390	212	599
49	77	239	219	139	349
50	30	143	133	138	100
51	43	-	45	46	199
52	68	-	45	17	-
53	27	-	-	3	50
54	41	-	49	4	-
55	47	-	35	3	-
56	34	-	13	15	-
57	13	-	17	10	-
58	38	1	22	19	-
59	31	1	32	27	2
60	31	1	23	27	2
61	19	2	20	20	2
62	35	1	18	23	3
63	26	1	18	8	2
64	24	1	8	13	2
65	20	1	13	10	3
66	14	1	10	2	1
67	5	1	9	3	3
68	3	-	3	1	2
69	7	1	3	4	2
70	5	-	-	1	1
>70	2[2]	-	2[3]	1[4]	2[5]
No. in Total Landings	161,574	245,291	273,466	519,464	143,913

1) Total length recorded to the cm. below.
2) 1 at 71; 1 at 72.
3) 1 at 71; 1 at >74.
4) 1 at 71.
5) 1 at 71; 1 at 72.

(cont'd.)

TABLE 20 GERMANY - 1958 LENGTH FREQUENCIES - REDFISH[1] by A. Kottheus
(cont'd.)

OTTER TRAWLERS - Commercial Landings

Subarea	Subarea 2			Subarea 3		
Month	September	October	November	February	March	August
Length (cm.)	FREQUENCIES in ‰					
<25	-	-	-	70	-	-
25	-	24	-	18	42	38
26	-	45	-	48	-	76
27	-	21	-	34	42	38
28	42	112	-	66	-	153
29	-	181	-	98	-	76
30	-	250	215	194	85	153
31	42	714	107	214	551	267
32	169	776	323	518	890	153
33	337	1204	430	567	1059	535
34	337	1014	1022	1095	975	534
35	632	1149	699	1416	1017	1069
36	295	697	860	1346	932	802
37	674	742	807	1615	1102	802
38	1054	597	753	901	1144	191
39	632	678	807	825	847	267
40	716	778	1129	468	594	458
41	379	319	645	287	212	420
42	464	160	645	72	128	267
43	674	202	376	108	84	496
44	379	67	323	1	43	229
45	253	67	107	36	-	382
46	295	22	215	-	42	230
47	421	48	55	-	84	267
48	337	23	55	3	-	344
49	169	23	54	-	43	114
50	337	4	1	-	42	305
51	175	4	5	-	-	229
52	217	5	59	-	-	305
53	97	6	112	-	42	229
54	228	11	58	-	-	38
55	209	13	7	-	-	114
56	59	12	60	-	-	115
57	110	8	59	-	-	114
58	74	9	6	-	-	38
59	70	5	3	-	-	114
60	65	4	1	-	-	38
61	42	2	-	-	-	-
62	11	2	1	-	-	-
63	3	1	1	-	-	-
64	2	1	-	-	-	-
No. in Total Landings	194,373	493,357	298,773	191,120	3,485	177,175

1) Total length recorded to the cm. below.

TABLE 21 ICELAND - 1957 AGE FREQUENCIES - COD[1] by Jón Jónsson

Age at first maturity and mean length by sexes

1D - Fylla Bank: 23rd-25th April OTTER TRAWLERS - Commercial Landings

Age Groups	Age at First Spawning 5	6	7	8	9	10	11	12	Total Mature	Immature	Total	Average Lengths Males No.	Males Size cm.	Females No.	Females Size cm.	Total Size cm.
3	-	-	-	-	-	-	-	-	-	4	4	2	34.5	2	37.5	36.0
4	-	-	-	-	-	-	-	-	-	113	113	56	45.6	57	45.1	45.3
5	16	-	-	-	-	-	-	-	16	34	50	21	52.3	29	56.4	54.7
6	-	15	-	-	-	-	-	-	15	12	27	11	59.5	16	62.4	61.2
7	-	2	61	-	-	-	-	-	63	6	69	34	68.6	35	65.9	67.2
8	-	1	1	4	-	-	-	-	6	1	7	5	78.4	2	78.5	78.4
9	-	-	1	4	4	-	-	-	9	-	9	5	74.2	5	75.4	74.8
10	-	1	1	3	2	3	-	-	10	-	10	7	76.6	3	77.3	76.8
11	-	-	-	1	-	-	-	-	1	-	1	1	83.0	1	71.0	77.0
12	-	-	-	-	-	-	-	1	1	-	1	1	93.0	1	78.0	85.5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	1	-	1	-	1	1	91.0	-	-	91.0
Total	16	19	64	12	6	3	1	1	122	170	292	...	...	...	...	...

Spawning Classes	1	2	3	4	5	6	7	
Number	104	9	5	2	1	-	1	Total: 122

1E - Noname Bank: 1st-2nd May OTTER TRAWLERS - Commercial Landings

Age Groups	Age at First Spawning 5	6	7	8	9	10	Total Mature	Immature	Total	Average Lengths Males No.	Males Size cm.	Females No.	Females Size cm.	Total Size cm.
4	-	-	-	-	-	-	-	4	4	3	46.0	1	50.1	47.0
5	1	-	-	-	-	-	1	14	15	9	56.9	6	56.3	56.7
6	-	16	-	-	-	-	16	13	29	11	58.6	18	62.9	61.2
7	-	1	67	-	-	-	68	73	141	83	67.4	58	66.0	66.8
8	-	-	3	41	-	-	44	22	66	40	73.5	27	70.5	72.3
9	-	-	3	3	2	-	8	-	8	9	76.4	1	75.0	76.3
10	-	-	4	7	2	5	18	1	19	15	77.9	5	76.2	77.5
11	-	-	1	2	-	-	3	-	3	2	77.5	2	76.0	76.8
12	-	-	-	1	2	2	5	-	5	4	77.7	4	80.7	79.2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	1	100.0	-	-	100.0
Total	1	17	78	54	6	7	163	127	290	...	...	...	...	...

Spawning Classes	1	2	3	4	5	
Number	132	9	12	8	2	Total: 163

1) Total length recorded to the cm. below.

TABLE 22 NORWAY - 1957 AGE-LENGTH KEY - COD by B. Rasmussen

Sample taken to estimate Age and Length Distribution

HANDLINES - Taken at Sea before Discarding 1B August Holsteinsborg Deep

Year-Class	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	
3 cm. group	ACTUAL NUMBERS													
51-53	1	1	-	-	-	-	-	-	-	-	-	-	-	2
54-56	1	3	2	-	-	-	-	-	-	-	-	-	-	6
57-59	1	4	2	-	-	-	-	-	-	-	-	-	-	7
60-62	1	16	15	2	-	-	-	-	-	-	-	-	-	34
63-65	-	12	19	14	1	1	1	-	-	-	-	-	-	48
66-68	-	4	27	37	2	3	2	-	-	-	-	-	-	75
69-71	-	1	17	59	5	15	32	1	1	-	-	-	-	131
72-74	-	-	11	70	7	22	47	2	2	1	-	-	-	162
75-77	-	-	-	40	11	34	90	9	7	1	1	1	-	194
78-80	-	-	-	28	11	27	83	9	8	1	2	1	-	170
81-83	-	-	1	4	10	14	69	8	11	3	2	3	1	126
84-86	-	-	-	2	4	7	30	6	9	3	2	4	1	68
87-89	-	-	-	1	2	3	11	5	7	3	2	4	1	39
90-92	-	-	-	-	1	1	2	-	6	1	1	1	1	14
93-95	-	-	-	-	1	1	2	-	4	-	1	1	1	11
96-98	-	-	-	-	-	-	1	-	1	-	1	-	-	3
99-101	-	-	-	-	-	-	-	-	1	-	-	-	-	1
102-104	-	-	-	-	-	-	-	-	1	-	-	-	1	2
105-107	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Total	4	41	94	257	55	128	370	40	59	13	12	15	6	1094[1]

1) Owing to rounding errors introduced when adjusting the data from 5 cm. groups to 3 cm. groups, this total is slightly higher than the sample total of 1091.

TABLE 23 PORTUGAL - 1956 LENGTH FREQUENCIES - COD by M. Ruivo

OTTER TRAWLERS - Commercial Catch after Discarding

Subdivision	4R[1]	4R			4S		
Month	March-April	March			April		
		Morning	Afternoon	Night	Morning	Afternoon	Night
3 cm. group	FREQUENCIES in ‰						
39-41	10	8	8	10	-	-	-
42-44	14	12	12	16	-	-	-
45-47	56	37	31	32	18	6	-
48-50	73	37	49	55	28	8	12
51-53	106	37	86	103	48	12	36
54-56	106	86	86	92	96	60	60
57-59	106	110	86	87	120	84	72
60-62	115	116	122	63	96	66	84
63-65	95	94	108	66	92	68	82
66-68	56	49	80	71	84	72	78
69-71	45	74	96	82	80	88	82
72-74	40	86	104	87	78	96	84
75-77	47	67	43	47	54	108	78
78-80	41	53	32	45	50	104	68
81-83	29	25	12	40	42	96	48
84-86	22	16	8	13	30	56	56
87-89	18	12	6	-	24	36	60
90-92	7	19	6	40	24	24	42
93-95	5	23	8	32	20	16	34
96-98	2	31	12	16	12	-	18
99-101	3	10	4	5	4	-	6
102-104	4	-	-	-	-	-	-
Serial No.	1,2,3,4	16	16	16	15	15	15
No. of Samples	4	1	1	1	1	1	1
No. of Fish Measured	362		277			300	
Mean Wt. Fish (Kg.)							
Wt. Total Landings							
Est. No. in Landings							
Mesh Size (mm.)	117		117			117	
% Males	45.9	47.0	55.1	62.2	44.0	44.0	39.0
Mean Length (cm.)	62.2	66.8	63.8	65.8	67.4	71.7	72.0

1) The age frequencies of these samples are given in Table 24.

(cont'd.)

TABLE 23 PORTUGAL - 1956 LENGTH FREQUENCIES - COD by M. Ruivo
(cont'd.)

OTTER TRAWLERS - Commercial Catch after Discarding

Subdivision	4T[1]	4T			4V[1]	4V[1]	4V	
Month	April	April			April	April	April	
		Morning	Afternoon	Night			Morning	Afternoon
3 cm. group	FREQUENCIES in ‰							
39-41	3	-	8	2	18	-	12	16
42-44	4	-	12	3	27	-	18	24
45-47	4	-	42	6	103	6	144	156
48-50	29	22	52	32	144	4	148	156
51-53	79	66	72	84	226	-	156	156
54-56	119	84	130	110	184	-	160	160
57-59	139	93	159	123	163	-	162	162
60-62	113	99	99	99	51	18	90	72
63-65	103	91	93	92	38	30	66	54
66-68	85	75	81	78	12	54	18	18
69-71	75	75	65	84	6	62	14	14
72-74	70	75	57	87	3	66	12	12
75-77	50	66	30	33	3	108	-	-
78-80	48	68	32	39	5	124	-	-
81-83	42	72	36	51	9	156	-	-
84-86	18	44	14	29	5	124	-	-
87-89	6	30	3	18	3	108	-	-
90-92	8	18	9	15	-	30	-	-
93-95	5	12	6	11	-	34	-	-
96-98	-	-	-	3	-	42	-	-
99-101	-	-	-	1	-	22	-	-
102-104	-	-	-	-	-	12	-	-
105-107	-	3	-	-	-	-	-	-
108-110	-	3	-	-	-	-	-	-
111-113	-	3	-	-	-	-	-	-
114-116	-	1	-	-	-	-	-	-
Serial No.	10,11 13,14	9,12	9,12	9,12	5,6	7	8	8
No. of Samples	4	2	2	2	2	1	1	1
No. of Fish Measured	375		600		225	125	200	
Mean Wt. Fish (Kg.)								
Wt. Total Landings								
Est. No. in Landings								
Mesh Size (mm.)	117		117		117	117	117	
% Males	51.7	50.0	51.0	51.0	54.8	45.0	58.0	51.0
Mean Length (cm.)	64.5	68.7	62.2	65.3	54.0	80.5	54.3	53.7

1) The age frequencies of these samples are given in Table 24.

TABLE 24 PORTUGAL - 1956

AGE FREQUENCIES - COD[1)]
with mean length at each age

by M. Ruivo

OTTER TRAWLERS

Subdivision		4R		4T		4V		4V	
Month		March-April		April		April		April	
Year-Class	Age	‰ Frequency	Mean Length cm.	‰ Frequency	Mean Length cm.	‰ Frequency	Mean Length cm.	‰ Frequency	Mean Length cm.
1953	3	-	-	-	-	5	41.0	-	-
1952	4	15	46.4	10	44.3	116	46.6	-	-
1951	5	69	47.6	37	55.2	131	49.7	10	69.0
1950	6	171	52.9	258	57.2	487	54.1	-	-
1949	7	162	56.2	228	60.0	171	56.5	10	60.0
1948	8	195	60.9	171	68.2	35	55.0	180	76.2
1947	9	150	67.1	161	70.7	35	68.0	110	77.5
1946	10	81	68.7	71	75.6	10	69.0	260	83.8
1945	11	21	76.6	17	75.3	-	-	80	79.1
1944	12	30	71.4	30	77.1	-	-	140	84.7
1943	13	9	75.8	13	73.5	-	-	80	80.5
1942	14	48	81.6	-	-	-	-	20	83.0
1941	15	30	78.3	3	79.0	5	80.0	40	80.0
1940	16	12	81.5	-	-	5	85.0	60	85.0
1939	17	3	79.0	-	-	-	-	-	-
1938	18	3	72.0	-	-	-	-	10	89.0
Serial No.		1,2,3,4		10,11,13,14		5,6		7	
No. of Samples		4		4		2		1	
No. Fish Measured		362		375		225		125	
Mean Wt. Fish (Kg.)									
Wt. Landed									
Est. No. Landed									
Mesh Size (mm.)		117		117		117		117	

1) The length frequencies of these samples are given in Table 23.

TABLE 25 PORTUGAL - 1957 LENGTH FREQUENCIES - COD by M. Ruivo

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision	1C[1]	1C		1C		1D[1]	1D[1]
Month	June	June		June		May	June
		Day	Night	Day	Night		
3 cm. group	FREQUENCIES in °/oo						
30-32	4	-	-	-	-	1	2
33-35	7	-	1	1	-	10	12
36-38	14	-	3	3	-	29	32
39-41	47	8	9	27	22	71	59
42-44	64	13	13	40	32	92	72
45-47	126	35	29	64	45	65	76
48-50	102	29	29	67	54	54	66
51-53	53	16	29	73	73	32	46
54-56	50	37	42	80	79	32	27
57-59	48	48	48	83	82	32	18
60-62	78	54	77	110	147	56	26
63-65	81	86	96	123	143	72	45
66-68	88	150	134	147	134	103	82
69-71	77	156	143	86	96	101	113
72-74	72	160	147	55	77	100	128
75-77	36	83	92	25	4	72	68
78-80	30	66	68	16	4	52	57
81-83	17	32	19	-	4	12	34
84-86	6	15	11	-	1	7	18
87-89	1	7	7	-	-	5	10
90-92	-	3	3	-	-	-	4
93-95	-	2	2	-	-	-	3
96-98	-	-	-	-	-	-	2
99-101	-	-	-	-	-	-	1
Serial No.	15,18,20 22,24	19	19	21	21	1,8,9 10,12	16,17,26
No. of Samples	5	1	1	1	1	5	3
No. of Fish Measured	500	376		343		500	300
Mean Wt. Fish (Kg.)							
Wt. Total Landings							
Est. No. in Landings							
Mesh Size (mm.)	117	117	117	117	117	117	117
% Males	45.4	50.0	44.6	42.8	53.0	54.0	55.3
Mean Length (cm.)	58.1	67.5	65.6	59.8	60.5	60.2	61.8

1) The age frequencies of these samples are given in Table 27.

(cont'd.)

TABLE 25 PORTUGAL - 1957 LENGTH FREQUENCIES - COD by M. Ruivo
(cont'd.)

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision	1D[1]	1E[1]	1E		1E		1F[1]
Month	October	May	May		May		June
			Day	Night	Day	Night	
3 cm. group	FREQUENCIES in ‰						
30-32	-	-	-	3	-	-	-
33-35	2	1	3	3	-	-	4
36-38	6	2	10	3	-	-	12
39-41	18	11	5	7	-	4	68
42-44	24	15	3	10	-	7	96
45-47	90	20	7	10	10	10	54
48-50	104	27	14	11	6	13	60
51-53	132	40	29	13	-	19	72
54-56	96	42	27	25	11	26	96
57-59	78	43	26	32	16	29	108
60-62	60	88	70	106	92	83	156
63-65	60	104	78	123	101	96	126
66-68	60	137	92	157	118	121	66
69-71	60	137	152	150	127	153	42
72-74	60	136	182	147	131	169	30
75-77	60	85	112	96	147	86	6
78-80	46	67	89	67	111	75	4
81-83	18	33	44	10	38	51	-
84-86	10	12	28	10	34	21	-
87-89	6	1	19	10	32	7	-
90-92	-	-	7	6	16	16	-
93-95	2	-	4	4	11	12	-
96-98	6	-	-	-	-	3	-
99-101	2	-	-	-	-	1	-
Serial No.	28	2,3,5,11 13,14	4	4	7	7	27
No. of Samples	1	6	1	1	1	1	1
No. of Fish Measured	100	595	376		376		100
Mean Wt. Fish (Kg.)							
Wt. Total Landings							
Est. No. in Landings							
Mesh Size (mm.)	117	117	117	117	117	117	117
% Males	51.0	55.1	51.1	54.3	50.0	53.1	48.0
Mean Length (cm.)	60.4	66.6	69.8	68.0	71.9	70.0	56.0

1) The age frequencies of these samples are given in Table 27.

(cont'd.)

TABLE 25 PORTUGAL - 1957 (cont'd.) LENGTH FREQUENCIES - COD by M. Ruivo

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision	2H[1]	2J[1]	2J			2J[1]	2J[1]	2J		
Month	Nov.	Oct.	October			Nov.	Nov.	November		
			Morn.	Aft.	Night			Morn.	Aft.	Night
3 cm. group	FREQUENCIES in ‰									
24-26	8	-	-	-	-	-	-	-	-	-
27-29	12	-	-	-	-	-	-	-	-	-
30-32	6	-	-	-	-	1	8	2	1	-
33-35	10	-	-	-	-	5	19	3	2	1
36-38	18	-	-	-	-	12	40	3	4	3
39-41	22	6	9	9	9	23	45	10	21	12
42-44	24	9	14	14	13	28	48	13	30	17
45-47	36	25	38	53	60	68	88	44	70	51
48-50	46	53	56	78	79	95	103	80	101	92
51-53	66	108	93	127	116	148	133	151	162	174
54-56	174	142	139	164	144	149	161	190	173	192
57-59	228	159	162	183	158	149	175	209	178	201
60-62	126	173	171	130	151	127	72	97	94	85
63-65	100	144	142	108	124	101	56	85	79	74
66-68	48	85	82	63	71	48	24	62	48	52
69-71	24	47	46	39	40	24	13	27	22	24
72-74	12	28	29	27	24	12	8	9	9	10
75-77	6	7	9	3	5	5	4	9	3	4
78-80	6	6	7	2	4	3	3	6	2	3
81-83	6	4	2	-	2	-	-	-	1	-
84-86	6	2	1	-	1	1	-	-	-	1
87-89	6	1	-	-	-	1	-	-	-	1
90-92	-	-	-	-	-	-	-	-	-	2
93-95	-	-	-	-	-	-	-	-	-	1
96-98	-	-	-	-	-	-	-	-	-	-
99-101	4	-	-	-	-	-	-	-	-	-
102-104	6	-	-	-	-	-	-	-	-	-
Serial No.	11	1,3,4 7,8,9	2,6	2,6	2,6	12,14,16 19,20	22,23 25	10,13 18,21	10,13,18/ 21,24	10,13 18,21,24
No. of Samples	1	6	2	2	2	5	3	4	5	5
No. of Fish Measured	100	600		720		500	300		1704	
Mean Wt. Fish (Kg.)										
Wt. Total Landings										
Est. No. in Landings										
Mesh Size (mm.)	117	117	117	117	117	117	117	117	117	117
% Males	55.5	41.7	43.1	43.4	47.8	52.1	47.8	46.2	43.3	47.2
Mean Length (cm.)	57.1	59.5	59.2	57.6	58.0	55.9	52.9	56.8	55.6	56.3

1) The age frequencies of these samples are given in Table 27.

(cont'd.)

TABLE 25 PORTUGAL - 1957 LENGTH FREQUENCIES - COD by M. Ruivo
(cont'd.)

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision	3K[1]	3K	
Month	October	October	
		Morning	Afternoon
3 cm. group	FREQUENCIES in ‰		
39-41	3	-	-
42-44	4	-	-
45-47	14	9	-
48-50	19	16	9
51-53	28	31	26
54-56	99	55	53
57-59	134	67	67
60-62	198	182	167
63-65	179	185	153
66-68	142	191	127
69-71	78	102	100
72-74	46	58	86
75-77	18	22	86
78-80	14	19	62
81-83	6	13	13
84-86	3	13	18
87-89	2	13	20
90-92	4	9	-
93-95	3	7	2
96-98	2	4	7
99-101	1	1	2
102-104	2	-	-
Serial No.	32,33,35	34	34
No. of Samples	3	1	1
No. of Fish Measured	300	225	
Mean Wt. Fish (Kg.)			
Wt. Total Landings			
Est. No. in Landings			
Mesh Size (mm.)	117	117	117
% Males	42.3	50.0	46.6
Mean Length (cm.)	63.0	65.4	67.3

1) The age frequencies of these samples are given in Table 27.

(cont'd.)

TABLE 25 PORTUGAL - 1957 LENGTH FREQUENCIES - COD[1] by M. Ruivo
(cont'd.)

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision	4R	4R	4T	4V
Month	March	April	March	March-April
3 cm. group	FREQUENCIES in ‰			
30-32	-	6	-	-
33-35	-	13	-	-
36-38	-	28	-	-
39-41	-	73	4	14
42-44	-	96	7	21
45-47	42	106	61	33
48-50	66	106	82	46
51-53	114	104	122	73
54-56	138	96	90	102
57-59	150	92	73	116
60-62	150	86	80	107
63-65	122	66	65	94
66-68	66	26	37	70
69-71	50	25	73	70
72-74	42	24	92	70
75-77	12	10	55	44
78-80	10	9	51	37
81-83	6	8	43	24
84-86	10	5	27	23
87-89	12	4	19	23
90-92	-	6	-	12
93-95	-	4	4	9
96-98	-	-	13	2
99-101	-	-	4	3
102-104	-	-	-	3
105-107	-	2	-	3
108-110	-	1	-	2
111-113	-	-	-	-
114-116	-	-	-	1
117-119	-	-	-	2
Serial No.	3	11,12,13	4	5,6,8,9
No. of Samples	1	3	1	4
No. of Fish Measured	100	300	100	400
Mean Wt. Fish (Kg.)				
Wt. Total Landings				
Est. No. in Landings				
Mesh Size (mm.)	117	117	117	117
% Males	49.0	52.2	43.9	53.8
Mean Length (cm.)	59.9	53.8	63.8	64.3

1) The age frequencies of these samples are given in Table 27.

TABLE 26 PORTUGAL - 1957 LENGTH FREQUENCIES - COD[1] by M. Ruivo

DORY VESSELS

Subdivision	1B	1B	1C	1D
Month	July	August	June	June
3 cm. group	FREQUENCIES in ‰			
39-41	1	2	-	-
42-44	2	3	-	-
45-47	10	21	-	12
48-50	18	24	-	16
51-53	32	32	-	24
54-56	46	36	24	60
57-59	52	38	36	78
60-62	99	51	48	84
63-65	101	68	76	94
66-68	105	104	132	114
69-71	121	124	168	114
72-74	129	134	186	114
75-77	69	124	120	84
78-80	63	103	100	74
81-83	51	60	60	54
84-86	31	35	32	38
87-89	21	22	18	30
90-92	14	8	-	-
93-95	10	3	-	-
96-98	4	-	-	-
99-101	4	2	-	4
102-104	4	3	-	6
105-107	2	-	-	-
108-110	2	-	-	-
111-113	2	-	-	-
114-116	2	1	-	-
117-119	3	2	-	-
Serial No.	31,32,33,34	35,36,37,38	30	29
No. of Samples	4	4	1	1
No. of Fish Measured	400	400	100	100
Mean Wt. Fish (Kg.)				
Wt. Total Landings				
Est. No. in Landings				
Hook Size	#14½	#14½	#14½	#14½
% Males				
Mean Length (cm.)	69.7	70.4	71.6	69.0

1) The samples were taken when the dories brought their catches on board the dory vessels.

TABLE 27 PORTUGAL - 1957 AGE FREQUENCIES - COD[1] by M. Ruivo

by sexes, with mean length at each age

OTTER TRAWLERS

Subdivision and Month		1C - June						1D - May					
Year-Class	Age	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.
1954	3	6	2	8	33.7	34.0	33.9	6	4	10	36.3	33.5	34.9
1953	4	154	178	332	45.1	45.2	45.2	162	110	272	43.6	42.4	43.0
1952	5	64	74	138	52.3	53.5	52.9	46	54	100	52.1	49.9	51.0
1951	6	68	70	138	60.2	62.8	61.5	30	36	66	57.9	59.9	58.9
1950	7	94	116	210	66.1	67.9	67.0	114	88	202	66.3	67.0	66.7
1949	8	26	32	58	71.9	75.1	73.5	18	26	44	69.8	70.5	70.2
1948	9	12	18	30	70.8	72.9	71.9	30	28	58	71.5	70.8	71.2
1947	10	26	40	66	73.4	74.4	73.9	108	92	200	73.3	76.1	74.7
1946	11	2	8	10	83.0	74.8	78.9	14	6	20	75.3	76.3	75.8
1945	12	-	-	-	-	-	-	4	6	10	80.5	77.3	78.9
1944	13	2	4	6	82.0	81.5	81.8	2	-	2	84.0	-	84.0
1943	14	-	2	2	-	88.0	88.0	2	4	6	72.0	81.0	76.5
1942	15	-	2	2	-	84.0	84.0	-	-	-	-	-	-
1941	16	-	-	-	-	-	-	4	4	8	83.0	83.5	83.3
1940	17	-	-	-	-	-	-	-	2	2	-	89.0	89.0
Total ‰		454	546	1000				540	460	1000			
Serial No.		15,18,20,22,24						1,8,9,10,12					
No. of Samples		5						5					
No. of Fish Measured		500						500					
Mean Wt. Fish (Kg.)													
Wt. Landed													
Est. No. Landed													
Mesh Size (mm.)		117						117					

(cont'd.)

1) The length frequencies of these samples are given in Table 25.

TABLE 27 PORTUGAL - 1957 (cont'd.) AGE FREQUENCIES - COD[1] by sexes, with mean length at each age by M. Ruivo

OTTER TRAWLERS

Subdivision and Month		1D - June						1D - October					
Year-Class	Age	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.
1954	3	4	3	7	39.0	38.9	38.5	10	-	10	39.0	-	39.0
1953	4	146	107	253	43.0	43.1	43.1	180	160	340	50.8	49.3	50.1
1952	5	53	67	120	47.6	49.6	48.6	120	100	220	53.9	55.7	54.8
1951	6	30	17	47	58.9	57.2	58.1	70	50	120	62.4	62.0	62.2
1950	7	100	93	193	67.6	69.2	68.4	90	80	170	71.8	71.1	71.5
1949	8	24	13	37	71.0	72.3	71.7	20	50	70	75.5	75.8	75.7
1948	9	27	30	57	69.5	73.6	71.6	-	10	10	-	79.0	79.0
1947	10	123	60	183	74.3	75.7	75.0	-	30	30	-	75.0	75.0
1946	11	13	24	37	79.5	78.4	79.0	10	10	20	81.0	89.0	85.0
1945	12	24	13	37	79.9	82.0	81.0	-	-	-	-	-	-
1944	13	3	14	17	77.0	77.0	77.0	-	-	-	-	-	-
1943	14	3	4	7	80.0	82.0	81.0	10	-	10	96.0	-	96.0
1942	15	3	-	3	80.0	-	80.0	-	-	-	-	-	-
1941	16	-	3	3	-	82.0	82.0	-	-	-	-	-	-
Total ‰		553	448	1001				510	490	1000			
Serial No.		16,17,26						28					
No. of Samples		3						1					
No. of Fish Measured		300						100					
Mean Wt. Fish (Kg.)													
Wt. Landed													
Est. No. Landed													
Mesh Size (mm.)		117						117					

(cont'd.)

1) The length frequencies of these samples are given in Table 25.

TABLE 27 PORTUGAL - 1957 (cont'd.) AGE FREQUENCIES - COD[1] by sexes, with mean length at each age by M. Ruivo

OTTER TRAWLERS

Subdivision and Month		1E - May						1F - June					
Year-Class	Age	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.
1953	4	17	7	24	42.8	43.5	43.2	80	60	140	43.6	41.7	42.7
1952	5	27	28	55	47.9	48.9	48.4	70	40	110	45.6	45.3	45.5
1951	6	46	25	71	58.4	54.1	56.3	100	50	150	50.7	54.4	52.6
1950	7	190	175	365	63.7	64.6	64.2	120	220	340	59.9	61.4	60.7
1949	8	28	46	74	66.8	68.7	67.7	40	120	160	60.0	61.8	60.9
1948	9	57	34	91	72.8	73.1	73.0	30	10	40	72.0	69.0	70.5
1947	10	118	92	210	71.7	74.0	72.9	30	20	50	66.7	70.0	68.4
1946	11	31	17	48	74.8	74.1	74.5	-	-	-	-	-	-
1945	12	20	14	34	77.0	74.9	76.0	-	-	-	-	-	-
1944	13	10	2	12	76.0	81.0	78.5	-	-	-	-	-	-
1943	14	5	5	10	81.0	76.3	78.7	-	-	-	-	-	-
1942	15	-	5	5	-	80.0	80.0	10	-	10	74.0	-	74.0
1941	16	2	-	2	87.0	-	87.0	-	-	-	-	-	-
Total ‰		551	450	1001				480	520	1000			
Serial No.		2,3,5,11,13,14						27					
No. of Samples		6						1					
No. of Fish Measured		595						100					
Mean Wt. Fish (Kg.)													
Wt. Landed													
Est. No. Landed													
Mesh Size (mm.)		117						117					

1) The length frequencies of these samples are given in Table 25.

Year-Class	1957 Age	Summary Mean Lengths (cm.) 1957 ♂♂	♀♀	Tot.	1956 Tot.	Yearly Increase
1954	3	37.0	35.2	36.6	-	-
1953	4	44.8	44.2	44.6	-	-
1952	5	49.9	50.5	50.2	-	-
1951	6	58.1	58.4	58.3	52.3	6.0
1950	7	65.9	66.9	66.4	61.1	5.3
1949	8	69.2	70.7	70.0	65.6	4.4
1948	9	71.3	73.1	72.9	69.9	3.0
1947	10	71.9	74.2	73.3	71.7	1.6
1946	11	78.7	78.5	78.6	76.8	1.8
1945	12	79.1	78.1	78.6	-	-
1944	13	79.8	79.8	80.3	-	-

(cont'd.)

TABLE 27 PORTUGAL - 1957 (cont'd.) AGE FREQUENCIES - COD[1] by sexes, with mean length at each age by M. Ruivo

OTTER TRAWLERS

Subdivision and Month		2H - November						2J - October					
Year-Class	Age	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.
1954	3	10	10	20	26.1	28.1	27.1	–	–	–	–	–	–
1953	4	40	10	50	38.8	37.0	37.9	–	2	2	–	49.0	49.0
1952	5	20	10	30	47.5	38.0	42.8	5	10	15	45.3	47.8	46.6
1951	6	40	10	50	46.5	45.0	45.8	23	24	47	49.8	48.0	48.9
1950	7	50	80	130	51.2	57.8	54.5	40	45	85	52.7	54.4	53.6
1949	8	60	40	100	58.0	57.3	57.7	33	74	107	54.8	56.5	55.6
1948	9	80	60	140	55.1	57.0	56.1	72	65	137	56.7	58.7	57.7
1947	10	40	30	70	63.3	62.0	62.7	79	90	169	58.0	62.2	60.1
1946	11	40	30	70	61.3	62.0	61.7	62	87	149	59.9	63.4	61.7
1945	12	40	90	130	59.5	65.1	62.3	39	72	111	61.0	62.7	61.9
1944	13	80	50	130	60.8	60.6	60.7	40	67	107	60.4	64.6	62.5
1943	14	20	10	30	56.5	77.0	66.8	8	19	27	63.0	68.4	65.7
1942	15	10	10	20	63.0	69.0	66.0	12	20	32	68.0	69.3	68.7
1941	16	–	20	20	–	67.0	67.0	2	6	8	64.0	71.3	67.7
1940	17	–	–	–	–	–	–	2	2	4	63.0	69.0	66.0
–	–	–	–	–	–	–	–	–	–	–	–	–	–
1936	21	–	10	10	–	101.0	101.0	–	–	–	–	–	–
Total ‰		530	470	1000				417	583	1000			
Serial No.			11						1,3,4,7,8,9				
No. of Samples			1						6				
No. of Fish Measured			100						600				
Mean Wt. Fish (Kg.)													
Wt. Landed													
Est. No. Landed													
Mesh Size (mm.)			117						117				

(cont'd.)

1) The length frequencies of these samples are given in Table 25.

TABLE 27 PORTUGAL - 1957 (cont'd.)
OTTER TRAWLERS

AGE FREQUENCIES - COD[1]
by sexes, with mean length at each age

by M. Ruivo

Subdivision and Month		2J - November						2J - November					
Year-Class	Age	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.
1954	3	–	4	4	–	38.5	38.5	–	7	7	–	35.0	35.0
1953	4	12	8	20	39.8	37.8	38.8	24	34	58	38.4	37.9	38.1
1952	5	30	26	56	45.4	45.8	45.6	57	63	120	42.2	42.6	42.4
1951	6	49	38	87	47.7	48.6	48.2	64	46	110	47.5	46.9	47.2
1950	7	79	62	141	52.0	53.1	52.6	63	94	157	51.6	54.0	52.8
1949	8	77	77	154	55.6	52.3	54.0	43	57	100	52.9	53.2	53.1
1948	9	70	65	135	56.9	62.9	59.9	37	53	90	54.6	57.6	56.1
1947	10	68	61	129	56.1	60.4	58.3	47	60	107	56.7	58.6	57.6
1946	11	50	65	115	58.9	60.2	59.6	70	50	120	59.1	59.8	59.5
1945	12	34	41	75	59.2	68.4	63.8	47	40	87	58.6	62.8	60.7
1944	13	22	29	51	62.0	63.4	62.7	17	13	30	58.0	57.3	57.7
1943	14	8	8	16	67.5	67.5	67.5	–	–	–	–	–	–
1942	15	6	4	10	62.3	66.0	64.2	11	3	14	67.0	71.0	69.0
1941	16	4	2	6	61.0	57.0	59.0	–	–	–	–	–	–
Total ‰		509	490	999				480	520	1000			
Serial No.		12,14,16,19,20						22,23,25					
No. of Samples		5						3					
No. of Fish Measured		500						300					
Mean Wt. Fish (Kg.)													
Wt. Landed													
Est. No. Landed													
Mesh Size (mm.)		117						117					

1) The length frequencies of these samples are given in Table 25.

Year-Class	1957 Age	Summary Mean Lengths (cm.) 1957 ♂♂	♀♀	Tot.	1956 Tot.	Yearly Increase
1952	5	44.3	45.4	44.9	42.5	2.4
1951	6	48.3	47.8	48.1	43.8	4.3
1950	7	52.1	53.8	53.0	48.9	4.1
1949	8	54.4	54.0	54.2	52.1	2.1
1948	9	56.1	59.7	58.7	55.6	3.1
1947	10	56.9	60.4	60.3	56.7	3.6
1946	11	59.3	61.1	62.1	58.5	3.6
1945	12	59.6	64.6	66.6	60.1	6.5
1944	13	60.1	61.8	67.3	61.3	6.0

(cont'd.)

TABLE 27 PORTUGAL - 1957 AGE FREQUENCIES - COD[1] by M. Ruivo
(cont'd.)

by sexes, with mean length at each age

OTTER TRAWLERS

Subdivision and Month		3K - October					
Year-Class	Age	‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.
1952	5	7	10	17	51.0	45.3	48.2
1951	6	7	26	33	55.0	52.0	53.5
1950	7	33	40	73	54.7	56.8	55.8
1949	8	47	56	103	56.9	60.4	58.7
1948	9	40	87	127	60.8	62.7	61.8
1947	10	113	114	227	63.0	64.1	63.6
1946	11	83	87	170	63.3	66.2	64.8
1945	12	40	80	120	63.0	65.0	64.0
1944	13	20	30	50	64.5	70.0	67.3
1943	14	13	27	40	68.8	70.9	69.9
1942	15	13	7	20	71.5	77.5	74.5
1941	16	7	6	13	87.0	84.5	85.8
1940	17	-	3	3	-	67.0	67.0
-	-	-	-	-	-	-	-
1936	21	-	3	3	-	96.0	96.0
Total ‰		423	576	999			
Serial No.		32,33,35					
No. of Samples		3					
No. of Fish Measured		300					
Mean Wt. Fish (Kg.)							
Wt. Landed							
Est. No. Landed							
Mesh Size (mm.)		117					

1) The length frequencies of these samples are given in Table 25.

Year-Class	1957 Age	Summary Mean Lengths (cm.) 1957 ♂♂	♀♀	Tot.	1956 Tot.	Yearly Increase
1952	5	51.0	45.3	48.2	38.0	10.2 ?
1951	6	55.0	52.0	53.5	38.5	15.0 ?
1950	7	54.7	56.8	55.8	49.2	6.6
1949	8	56.9	60.4	58.7	55.0	3.7
1948	9	60.8	62.7	61.8	60.0	1.8
1947	10	63.0	64.1	63.6	61.2	2.4
1946	11	63.3	66.2	64.8	62.6	2.2
1945	12	63.0	65.0	64.0	63.7	0.3
1944	13	64.5	70.0	67.3	65.3	2.0
1943	14	68.8	70.9	69.9	69.0	0.9

(cont'd.)

TABLE 27 PORTUGAL - 1957 (cont'd.) AGE FREQUENCIES - COD[1] with mean length at each age by M. Ruivo

OTTER TRAWLERS

Subdivision		4R		4R		4T		4V	
Month		March		April		March		March-April	
Year-Class	Age	‰ Frequency	Mean Length cm.	‰ Frequency	Mean Length cm.	‰ Frequency	Mean Length cm.	‰ Frequency	Mean Length cm.
1954	3	-	-	10	32.8	-	-	3	43.0
1953	4	10	48.0	104	41.5	41	46.3	38	45.5
1952	5	60	50.8	268	45.7	204	50.4	121	48.4
1951	6	110	55.4	174	50.2	102	54.3	90	54.9
1950	7	300	56.8	171	57.9	173	60.9	239	60.0
1949	8	140	59.6	137	61.4	133	65.9	196	65.0
1948	9	220	63.9	70	67.3	102	71.5	78	69.5
1947	10	100	67.3	37	71.6	173	78.2	75	74.4
1946	11	30	72.3	17	82.8	41	74.5	48	77.9
1945	12	10	58.0	3	93.0	-	-	48	79.7
1944	13	10	86.0	3	71.0	-	-	13	79.1
1943	14	-	-	3	91.0	-	-	8	75.3
1942	15	10	80.0	-	-	21	86.0	18	86.5
1941	16	-	-	-	-	11	76.0	13	89.9
1940	17	-	-	3	105.0	-	-	8	92.8
-	-	-	-	-	-	-	-	-	-
1936	21	-	-	-	-	-	-	5	87.5
Serial No.		3		11,12,13		4		5,6,8,9	
No. of Samples		1		3		1		4	
No. Fish Measured		100		300		100		400	
Mean Wt. Fish (Kg.)									
Wt. Landed									
Est. No. Landed									
Mesh Size (mm.)		117		117		117		117	

1) The length frequencies of these samples are given in Table 25.

TABLE 28 PORTUGAL - 1957 LENGTH-WEIGHT DATA - COD by M. Ruivo

by sexes, including weights of whole fish, livers, gonads, and intestines

1E May

Length cm.	Average Weights in Grams ♂♂ No. of Spec.	Whole Fish	Livers	Gonads	Intestines	Average Weights in Grams ♀♀ No. of Spec.	Whole Fish	Livers	Gonads	Intestines
50-54	1	1240	100.0	>10.0	100.0	1	1120	80.0	10.0	90.0
55-59	3	1754	106.7	>45.0	120.0	2	1755	110.0	>50.0	145.0
60-64	19	1911	98.3	26.1	120.7	7	2056	124.0	>26.7	124.2
65-69	37	2507	127.3	>38.1	157.2	24	2021	127.1	46.3	157.9
70-74	30	2958	144.1	>45.2	154.6	22	2953	178.1	>79.8	162.8
75-79	19	3549	165.5	56.0	202.6	14	3464	152.3	85.1	182.6
80-84	8	4192	125.5	66.1	339.2	6	4168	172.0	156.0	224.0
85-89	-	-	-	-	-	2	5170	155.0	120.0	265.0
	117[1]					78[1]				

2J October-November

Length cm.	Average Weights in Grams ♂♂ No. of Spec.	Whole Fish	Livers	Gonads	Intestines	Average Weights in Grams ♀♀ No. of Spec.	Whole Fish	Livers	Gonads	Intestines
45-49	9	1166	93	>62	143	2	930	63	>10	133
50-54	22	1421	106	54	197	14	1199	112	40	179
55-59	17	1615	136	89	307	21	1853	143	56	258
60-64	9	2463	183	>101	387	24	2430	177	79	363
65-69	7	2814	156	139	328	21	3199	251	97	458
	64[2]					82[2]				

1) Samples 3 and 6 from Otter Trawlers from 1E in May.
2) Samples 5 and 15 from Otter Trawlers from 2J in October and November.

TABLE 29 SPAIN - 1957 LENGTH FREQUENCIES - COD by A. Rojo

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision	1B			1D	2J		3K	3L
Month	Sept.		Oct.	Oct.[2]	Oct.	Nov.[2]	Aug.	Aug.[2]
Chafing Gear	One Cover	Two Covers	One Cover	One Cover	One Cover	One Cover	One Cover	
3 cm group	FREQUENCIES in ‰							
21-23	-	-	-	-	-	-	-	1
24-26	-	-	1	-	-	-	-	-
27-29	1	-	2	-	-	1	-	-
30-32	1	-	4	-	1	1	-	1
33-35	4	2	6	-	-	6	5	3
36-38	15	8	21	-	-	15	-	9
39-41	40	31	69	5	-	35	-	17
42-44	73	57	108	12	-	44	8	30
45-47	115	92	133	38	12	59	5	39
48-50	166	138	179	100	34	94	15	48
51-53	151	144	150	148	86	139	36	55
54-56	94	95	93	117	200	180	112	80
57-59	52	52	48	96	205	166	153	109
60-62	48	50	32	82	195	129	227	138
63-65	50	56	25	78	142	69	178	138
66-68	46	67	29	67	81	38	118	111
69-71	58	77	34	61	21	14	102	65
72-74	35	53	29	66	13	6	20	49
75-77	27	37	18	40	3	2	8	36
78-80	14	23	12	34	3	1	4	19
81-83	6	10	5	18	1	-	5	11
84-86	2	5	1	18	1	-	-	9
87-89	1	2	2	8	1	-	4	9
90-92	1	-	-	4	-	-	-	6
93-95	-	-	-	4	-	-	-	6
96-98	-	-	-	1	-	-	-	2
99-101	-	-	-	1	-	-	-	3
102-104	-	-	-	-	-	-	-	1
105-107	-	-	-	-	-	-	-	1
108-110	-	-	-	1	-	-	-	1
No. of Samples	40	26	11	6	2	9	2	16
No. of Fish Measured	7390	4052	4843	1793	809	4900	245	6628
Mean Wt. Fish (Kg.)								
Wt. of Landings Sampled								
Wt. of Total Landings								
Est. No. in Total Landings								
Mesh Size (mm.)[1]	160	160	160	160	160	160	160	160

(cont'd.)

1) Mesh Size - new, dry measure.

2) The age-length frequencies of these samples are given in Table 30.

TABLE 29 SPAIN - 1957 LENGTH FREQUENCIES - COD by A. Rojo
(cont'd.)

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision	3N		3O	3P			
Month	Aug.	Sept.	Nov.	Mar.[1]	Apr.[1]	Aug.[1]	Nov.
Chafing Gear			One Cover				One Cover
3 cm. group	FREQUENCIES in ‰						
30-32	6	1	-	-	3	-	-
33-35	15	8	1	-	8	-	-
36-38	47	22	4	10	42	-	5
39-41	101	47	18	30	85	5	15
42-44	183	67	36	25	65	44	50
45-47	173	113	73	107	95	151	91
48-50	147	136	113	84	58	121	147
51-53	106	130	130	112	77	41	143
54-56	79	117	155	156	70	66	125
57-59	48	124	118	69	53	53	111
60-62	45	82	107	79	122	76	88
63-65	23	52	80	124	95	60	71
66-68	6	24	46	69	70	101	45
69-71	-	24	29	67	76	64	35
72-74	6	17	28	32	35	60	24
75-77	2	11	23	22	25	60	22
78-80	9	5	21	12	12	46	18
81-83	-	6	11	-	3	21	4
84-86	3	2	4	-	5	7	4
87-89	-	-	1	-	1	2	-
90-92	-	2	1	-	1	11	1
93-95	-	1	-	-	1	7	1
96-98	3	1	-	-	-	-	1
99-101	-	1	-	-	-	2	-
102-104	-	1	-	-	-	2	1
105-107	-	1	-	-	-	-	-
108-110	-	1	-	-	1	-	-
111-113	-	1	-	-	-	-	-
114-116	-	-	-	-	-	-	-
117-119	-	2	-	-	-	-	-
120-122	-	1	-	-	-	-	-
No. of Samples	3	12	7	1	4	1	6
No. of Fish Measured	417	4089	3521	403	1378	436	2706
Mean Wt. Fish (Kg.)							
Wt. of Landings Sampled							
Wt. of Total Landings							
Est. No. in Total Landings							
Mesh Size (mm.)[2]	160	160	160	160	160	160	160

1) Originally measured in the hold of the vessel as split cod (heads off), but here converted to fork length using the equation given in ICNAF Document Serial No. 178.

2) Mesh Size - new, dry measure.

TABLE 30 SPAIN - 1957 AGE-LENGTH FREQUENCIES - COD by A. Rojo

Males and Females[2] OTTER TRAWLERS - Commercial Catch before Discarding 1D October

Year-Class	1954	1953	1952	1951	1950	1949	1948	1947-	Length Freq-uency[1]	No. Otoliths Read
Age	3	4	5	6	7	8	9	>9		
3 cm. group	FREQUENCIES in ‰									
39-41	5	-	-	-	-	-	-	-	5	1
42-44	-	12	-	-	-	-	-	-	12	1
45-47	-	23	15	-	-	-	-	-	38	10
48-50	-	26	70	4	-	-	-	-	100	23
51-53	-	16	96	37	-	-	-	-	149	28
54-56	-	-	73	45	-	-	-	-	118	21
57-59	-	-	50	36	10	-	-	-	96	19
60-62	-	-	7	41	20	14	-	-	82	12
63-65	-	-	4	29	21	8	16	-	78	19
66-68	-	-	-	16	31	10	5	5	67	13
69-71	-	-	-	6	31	12	12	-	61	10
72-74	-	-	-	-	16	25	17	8	66	8
75-77	-	-	-	-	-	30	-	10	40	4
78-80	-	-	-	-	-	11	12	11	34	3
81-83	-	-	-	-	-	6	6	6	18	3
84-86	-	-	-	-	-	18	-	-	18	1
>86	-	-	-	-	-	-	-	19	19	-
Age Frequency	5	77	315	214	129	134	67	59	1000	...
Mean Length	40.0	47.8	53.0	58.6	66.3	73.7	71.9	79.4	60.7	...
No. Otoliths Read	1	16	63	40	23	17	11	5	...	176

Codend mesh size: 160 mm. (new)

(cont'd.)

1) This is the same length frequency for 1D, October as is given in Table 29.

2) The data for males and females are recorded separately on the following page.

TABLE 30 SPAIN - 1957 AGE-LENGTH FREQUENCIES - COD by A. Rojo
(cont'd.)

Males[2] OTTER TRAWLERS - Commercial Catch before Discarding 1D October

Year-Class	1954	1953	1952	1951	1950	1949	1948	1947-	Length	No.
Age	3	4	5	6	7	8	9	>9	Freq-	Otoliths
3 cm. group	FREQUENCIES in ‰								uency	Read
39-41	5	-	-	-	-	-	-	-	5	1
42-44	-	12	-	-	-	-	-	-	12	1
45-47	-	19	8	-	-	-	-	-	27	7
48-50	-	9	39	-	-	-	-	-	48	11
51-53	-	5	42	27	-	-	-	-	74	14
54-56	-	-	28	17	-	-	-	-	45	8
57-59	-	-	31	25	5	-	-	-	61	12
60-62	-	-	-	7	14	7	-	-	28	4
63-65	-	-	4	8	8	8	8	-	36	9
66-68	-	-	-	16	16	5	5	-	42	8
69-71	-	-	-	6	12	6	12	-	36	6
72-74	-	-	-	-	8	17	17	-	42	5
75-77	-	-	-	-	-	-	-	10	10	1
78-80	-	-	-	-	-	-	11	-	11	1
81-83	-	-	-	-	-	-	6	6	12	2
84-86	-	-	-	-	-	-	-	-	-	-
>86	-	-	-	-	-	-	-	9[1]	9	-
Age Frequency	5	45	152	106	63	43	59	25	498	...
Mean Length	40.0	46.5	53.0	58.7	65.9	67.3	72.7	81.8	59.4	...
No. Otoliths Read	1	9	31	20	11	7	9	2	...	90

Females[2]

Year-Class	1954	1953	1952	1951	1950	1949	1948	1947-	Length	No.
Age	3	4	5	6	7	8	9	>9	Freq-	Otoliths
3 cm. group	FREQUENCIES in ‰								uency	Read
45-47	-	4	8	-	-	-	-	-	12	3
48-50	-	17	30	4	-	-	-	-	51	12
51-53	-	11	53	11	-	-	-	-	75	14
54-56	-	-	45	28	-	-	-	-	73	13
57-59	-	-	20	10	5	-	-	-	35	7
60-62	-	-	7	34	7	7	-	-	55	8
63-65	-	-	-	21	12	-	8	-	41	10
66-68	-	-	-	-	16	5	-	5	26	5
69-71	-	-	-	-	18	6	-	-	24	4
72-74	-	-	-	-	8	8	-	8	24	3
75-77	-	-	-	-	-	30	-	-	30	3
78-80	-	-	-	-	-	11	-	11	22	2
81-83	-	-	-	-	-	6	-	-	6	1
84-86	-	-	-	-	-	18	-	-	18	1
>86	-	-	-	-	-	-	-	10[1]	10	-
Age Frequency	-	32	163	108	66	91	8	34	502	...
Mean Length	-	49.7	53.1	58.3	66.7	76.2	64.0	78.5	61.9	...
No. Otoliths Read	-	7	32	20	12	10	2	3	...	86

(cont'd.)

Codend mesh size: 160 mm. (new)

1) There were no age nor sex observations on fish of over 86 cm.; hence the 19% over 86 cm. have been distributed evenly between males and females and assumed to be of over 9 years of age. 2) The data for total males and females are given on the previous page.

TABLE 30 SPAIN - 1957 AGE-LENGTH FREQUENCIES - COD by A. Rojo
(cont'd.)

Males and Females[2] OTTER TRAWLERS - Commercial Catch before Discarding 2J November

Year-Class	1954	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	Length Freq-uency[1]	No. Otoliths Read
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
3 cm. group	FREQUENCIES in °/oo																	
24-26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
27-29	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
30-32	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
33-35	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2
36-38	4	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	7
39-41	3	22	3	7	-	-	-	-	-	-	-	-	-	-	-	-	35	13
42-44	-	20	12	12	-	-	-	-	-	-	-	-	-	-	-	-	44	15
45-47	-	11	28	11	7	2	-	-	-	-	-	-	-	-	-	-	59	26
48-50	-	2	11	18	32	18	5	5	-	2	1	-	-	-	-	-	94	53
51-53	-	-	5	23	38	28	17	16	5	7	-	-	-	-	-	-	139	84
54-56	-	-	-	11	28	33	42	33	20	6	7	-	-	-	-	-	180	98
57-59	-	-	-	6	13	25	43	26	28	20	2	2	1	-	-	-	166	101
60-62	-	-	-	-	6	8	18	30	34	19	10	-	3	1	-	-	129	82
63-65	-	-	-	-	3	4	12	7	10	17	12	2	-	1	1	-	69	48
66-68	-	-	-	1	2	4	3	3	3	12	3	4	2	1	-	-	38	29
69-71	-	-	-	-	-	-	-	2	1	4	4	1	1	1	-	-	14	12
72-74	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	2	6	3
75-77	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2	1
78-80	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1
Age Freq.	12	69	59	89	129	122	140	124	103	87	39	9	7	7	1	2	999	...
Mean Length	35.8	41.3	46.2	49.4	53.1	55.0	57.1	57.8	59.4	60.7	61.8	64.7	63.6	70.4	64.0	73.0	54.7	...
No. Otoliths Read	6	27	26	47	75	72	83	76	64	56	25	6	6	6	1	1	...	577

Codend mesh size: 160 mm. (new) (cont'd.)

1) This is the same length frequency for 2J, November as is given in Table 29.
2) The data for males and females are recorded separately on the following page.

TABLE 30 SPAIN - 1957 (cont'd.) AGE-LENGTH FREQUENCIES - COD by A. Rojo

Males[1] OTTER TRAWLERS - Commercial Catch before Discarding 2J November

Year-Class	1954	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	Length Frequency	No. Otoliths Read
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
3 cm. group	FREQUENCIES in °/oo																	
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
27-29	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
30-32	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
33-35	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2
36-38	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	3
39-41	3	8	-	5	-	-	-	-	-	-	-	-	-	-	-	-	16	6
42-44	-	15	6	12	-	-	-	-	-	-	-	-	-	-	-	-	33	11
45-47	-	5	16	9	7	2	-	-	-	-	-	-	-	-	-	-	39	17
48-50	-	2	5	9	16	11	2	-	-	2	2	-	-	-	-	-	49	27
51-53	-	-	3	12	18	18	7	13	5	7	-	-	-	-	-	-	83	50
54-56	-	-	-	4	15	16	18	18	15	6	4	-	-	-	-	-	96	52
57-59	-	-	-	2	5	11	21	11	13	15	2	-	-	-	-	-	80	49
60-62	-	-	-	-	-	2	6	11	16	9	5	-	2	-	-	-	51	32
63-65	-	-	-	-	-	-	3	3	3	7	6	1	-	-	1	-	24	17
66-68	-	-	-	-	-	3	-	-	-	1	1	1	-	1	-	-	7	6
69-71	-	-	-	-	-	-	-	1	-	3	1	1	1	-	-	-	7	6
72-74	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2	1
Age Freq.	12	35	30	53	61	63	57	59	52	50	21	3	3	1	1	-	501	...
Mean Length	35.8	42.0	46.5	47.8	51.8	53.1	56.6	57.3	57.8	58.7	60.0	67.0	64.0	67.0	64.0	-	53.3	...
No. Otoliths Read	6	13	14	25	34	36	34	36	31	31	13	3	2	1	1	-	...	281

Females[1]

Year-Class	1954	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	Length Frequency	No. Otoliths Read
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
3 cm. group	FREQUENCIES in °/oo																	
36-38	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	4
39-41	-	13	3	3	-	-	-	-	-	-	-	-	-	-	-	-	19	7
42-44	-	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	10	4
45-47	-	7	11	2	-	-	-	-	-	-	-	-	-	-	-	-	20	9
48-50	-	-	5	9	16	7	4	5	-	-	-	-	-	-	-	-	46	26
51-53	-	-	2	12	20	10	10	3	-	-	-	-	-	-	-	-	57	34
54-56	-	-	-	7	13	16	24	15	6	-	4	-	-	-	-	-	85	46
57-59	-	-	-	5	8	13	21	15	15	5	-	2	2	-	-	-	86	52
60-62	-	-	-	-	6	6	11	19	19	9	5	-	2	2	-	-	79	50
63-65	-	-	-	-	3	4	9	4	7	10	6	-	-	1	-	-	44	31
66-68	-	-	-	1	3	1	3	3	3	10	1	3	3	-	-	-	31	23
69-71	-	-	-	-	-	-	-	1	1	1	2	-	-	1	-	-	6	6
72-74	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2	4	2
75-77	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2	1
78-80	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1
Age Freq.	-	34	26	39	69	57	82	65	53	35	18	5	7	7	-	2	499	...
Mean Length	-	40.9	45.8	51.8	54.5	55.9	57.3	58.2	60.8	63.4	62.0	63.4	62.7	69.6	-	73.0	56.1	...
No. Otoliths Read	-	14	12	22	41	35	49	40	33	25	12	3	4	5	-	1	...	296

Codend mesh size: 160 mm. (new) (cont'd.)

1) The data for total males and females are given on the previous page.

TABLE 30 SPAIN - 1957 (cont'd.) AGE-LENGTH FREQUENCIES - COD[2] by A. Rojo

OTTER TRAWLER 3L August Mesh size: 160 mm. (new)

Year-Class	1954	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38-	Length	No.
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	>18	Freq-uency[1]	Otoliths Read
3 cm. group	FREQUENCIES in ‰																		
21-23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
24-26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30-32	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
33-35	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2
36-38	3	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	6
39-41	5	2	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	7
42-44	-	21	6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	30	19
45-47	-	6	17	9	7	-	-	-	-	-	-	-	-	-	-	-	-	39	21
48-50	2	3	11	15	8	6	2	1	-	-	-	-	-	-	-	-	-	48	31
51-53	-	1	9	14	18	8	1	-	1	3	-	-	-	-	-	-	-	55	41
54-56	-	-	7	7	14	25	13	7	5	2	-	-	-	-	-	-	-	80	47
57-59	-	-	1	9	11	13	16	33	11	10	3	1	-	1	-	-	-	109	77
60-62	-	-	1	8	6	21	13	26	24	19	13	5	2	-	-	-	-	138	86
63-65	-	-	-	-	6	18	24	32	18	10	21	6	3	-	-	-	-	138	85
66-68	-	-	-	-	-	9	12	18	25	21	10	6	6	3	1	-	-	111	75
69-71	-	-	-	-	1	4	11	16	14	12	-	6	-	-	1	-	-	65	44
72-74	-	-	-	-	-	2	3	9	11	7	5	2	7	3	-	-	-	49	28
75-77	-	-	-	-	1	-	11	6	3	4	3	5	2	1	-	-	-	36	24
78-80	-	-	-	-	-	-	2	5	3	3	2	-	1	-	-	3	-	19	12
81-83	-	-	-	-	-	-	2	-	-	-	2	5	-	-	2	-	-	11	6
84-86	-	-	-	-	-	-	-	1	1	1	2	1	-	-	2	-	1	9	8
87-89	-	-	-	-	-	-	-	1	1	1	-	1	1	-	4	-	-	9	7
90-92	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3	-	-	6	2
93-95	-	-	-	-	-	-	-	-	1	1	-	-	1	-	-	-	2	6	5
96-98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1
99-101	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	-	-	3	2
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	4
105-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
108-110	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1
111-113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Age Freq.	14	35	66	65	72	106	110	155	118	94	64	38	26	8	15	3	7	1000	...
Mean Length	38.7	43.8	47.0	52.3	54.9	58.4	64.3	64.4	65.9	66.1	67.8	70.5	76.8	69.3	86.4	79.0	96.6	61.8	...
No.Otoliths Read	8	21	40	42	48	68	70	100	77	62	40	25	17	7	8	3	9	...	645

1) This is the same length frequency for 3L, August as is given in Table 29.
2) Data for males and females separately were not available.

TABLE 31 SPAIN - 1957 by A. Rojo

LENGTH FREQUENCIES - HADDOCK

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision	3N	
Month	Aug.	Sept.
2 cm. group	FREQUENCIES in ‰	
20-21	-	1
22-23	-	-
24-25	-	3
26-27	-	25
28-29	-	43
30-31	-	25
32-33	42	27
34-35	58	82
36-37	122	120
38-39	196	165
40-41	233	153
42-43	127	141
44-45	153	86
46-47	42	57
48-49	16	42
50-51	5	17
52-53	5	6
54-55	-	3
56-57	-	2
58-59	-	1
60-61	-	-
62-63	-	-
64-65	-	1
No. of Samples	1	10
No. of Fish Measured	189	1526
Mean Wt. of Fish (Kg.)		
Wt. of Landings Sampled		
Wt. of Total Landings		
Est. No. in Total Landings		
Mesh Size (mm.)[1]	160	160

1) Mesh Size - new, dry measure.

TABLE 32 SPAIN - 1957 by A. Rojo

LENGTH FREQUENCIES - POLLOCK

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision	3P	
Month	Aug.	Nov.
3 cm. group	FREQUENCIES in ‰	
36-38	8	-
39-41	18	-
42-44	106	-
45-47	244	25
48-50	177	62
51-53	73	37
54-56	54	86
57-59	44	62
60-62	53	111
63-65	51	111
66-68	41	124
69-71	34	185
72-74	36	62
75-77	20	74
78-80	25	12
81-83	9	25
84-86	3	12
87-89	2	12
90-92	2	-
93-95	1	-
96-98	1	-
99-101	2	-
102-104	-	-
No. of Samples	3	1
No. of Fish Measured	1054	81
Mean Wt. of Fish (Kg.)		
Wt. of Landings Sampled		
Wt. of Total Landings		
Est. No. in Total Landings		
Mesh Size (mm.)[1]	160	160

1) Mesh Size - new, dry measure.

TABLE 33 UNION OF SOVIET SOCIALIST REPUBLICS - 1957 — LENGTH FREQUENCIES - REDFISH — by Ul. Marti

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision	2J	3L	3M
Month	October	October-November	January-June
4 cm. group	FREQUENCIES in ‰		
20	1	+	-
21-24	28	3	6
25-28	56	55	54
29-32	154	190	125
33-36	437	367	344
37-40	256	259	370
41-44	49	112	94
45-48	8	14	97
49-52	1	+	+
No. of Fish Measured	2408	22,224	25,363
Mean Length (cm.)	34.61	35.76	35.85
Mean Wt. Fish (Kg.)	0.607	0.850	0.750
% Males	61.0	44.0	53.0
Wt. Total Landings			
Est. No. in Landings			

TABLE 34 UNION OF SOVIET SOCIALIST REPUBLICS - 1957 — AGE FREQUENCIES - REDFISH — by Ul. Marti

OTTER TRAWLERS - Commercial Catch before Discarding

Subdivision		2J	3L	3M
Month		October	October-November	January-June
Year-Class	Age	FREQUENCIES in ‰		
1950	7	17	-	+
1949	8	11	3	+
1948	9	66	6	8
1947	10	94	17	23
1946	11	172	23	74
1945	12	205	40	133
1944	13	172	89	183
1943	14	100	127	192
1942	15	61	132	149
1941	16	39	155	111
1940	17	22	127	62
1939	18	11	100	36
1938	19	22	95	13
1937	20	5	50	3
1936	21	-	17	1
1935	22	-	19	1
1934	23	-	-	1
No. of Fish Measured		180	347	1184

TABLE 35 UNITED KINGDOM - 1957 LENGTH FREQUENCIES - COD by C.E. Lucas R.S. Wimpenny

OTTER TRAWLERS Subarea 1

3 cm. group	All Landings Est. Nos. (Thousands)	‰	Estimates to Measure Discarding[1] Landings Est. Nos.	‰	Discards Est. Nos.	‰	Total Caught Est. Nos.	‰	Proportion Discarded[2] ‰
<33	-	-	-	-	55	9	55	1	100.0
33-35	-	-	-	-	100	16	100	2	100.0
36-38	-	-	-	-	231	37	231	5	100.0
39-41	2.0	1	314	7	991	160	1305	26	75.9
42-44	3.1	1	470	11	1370	222	1840	37	74.5
45-47	47.1	12	2117	48	1820	295	3937	78	46.2
48-50	83.0	22	1980	45	1290	209	3270	65	39.4
51-53	154.9	40	1707	39	230	37	1937	38	11.9
54-56	214.2	56	1689	38	82	13	1771	35	4.6
57-59	243.8	64	1680	38	8	1	1688	34	0.5
60-62	505.9	132	3997	91	-	-	3997	79	-
63-65	506.8	132	4503	102	-	-	4503	89	-
66-68	508.7	133	5515	125	-	-	5515	110	-
69-71	510.6	133	7232	164	-	-	7232	144	-
72-74	511.6	134	8091	183	-	-	8091	161	-
75-77	203.4	53	2302	52	-	-	2302	46	-
78-80	159.9	42	1741	39	-	-	1741	35	-
81-83	72.9	19	618	14	-	-	618	12	-
84-86	39.2	10	206	5	-	-	206	4	-
87-89	22.3	6	-	-	-	-	-	-	-
90-92	16.0	4	-	-	-	-	-	-	-
93-95	11.0	3	-	-	-	-	-	-	-
96-98	0.9	-	-	-	-	-	-	-	-
99-101	2.6	1	-	-	-	-	-	-	-
102-104	3.4	1	-	-	-	-	-	-	-
>104	3.9	1	-	-	-	-	-	-	-
Total	3827.2	1000	44162	1001	6177	999	50339	1001	12.3
Mean Wt. (Kg.)	2.60								
Mesh Size									
Mean Length	66.3		65.3		45.0		62.8		

1) These frequencies were based on the following sampling from one trip of an otter trawler in October:-

	Cod					Codling Rejects				
	No. of Hauls	Measured No. of Baskets	Measured No. of Fish	Total Catch No. of Baskets	Total Catch Est. No. of Fish	No. of Hauls	Measured No. of Baskets	Measured No. of Fish	Total Catch No. of Baskets	Total Catch Est. No. of Fish
Sampled	2	-	172	140	-	32	35	1710	74½	3567
Not sampled but catch recorded	51	-	-	1913	-	21	-	-	43½	-
Inadequate record	8	-	-	c. 200	-	8	-	-	c.11	-
Total for trip	61	-	172	2253	-	61			c. 129	6177
From market data		-	248	-	44,162					

2) These data give the following estimates: 75% discard point at approximately 42 cm.; 50% discard point at approximately 46 cm.; 25% discard point at approximately 50 cm.

TABLE 36 UNITED STATES/CANADA CO-OPERATIVE PROGRAMME - 1956/57

LENGTH FREQUENCIES - HADDOCK

by J. Clark
F. Dreyer

4X ALL GEARS - Commercial Landings (in hundreds)

cm.	Feb.- Apr.	May- July	Aug.- Oct.	Nov.- Jan.	Total
34	-	-	45	11	56
35	-	-	95	11	106
36	73	-	56	-	129
37	280	79	66	39	464
38	786	39	133	41	999
39	831	119	148	115	1213
40	1037	198	330	224	1789
41	1112	269	421	278	2080
42	1349	502	559	418	2828
43	2355	884	485	448	4172
44	2446	1582	421	544	4993
45	2865	1372	518	506	5261
46	3840	1515	491	450	6296
47	3536	1695	607	617	6455
48	4341	1500	985	507	7333
49	4235	2147	1017	545	7944
50	4311	1947	1007	721	7986
51	3937	1573	754	623	6887
52	3703	2042	1096	826	7667
53	3419	2004	776	537	6736
54	3224	1618	1034	684	6560
55	3145	1728	979	669	6521
56	2585	1719	579	537	5420
57	2400	1559	974	564	5497
58	1902	1035	609	360	3906
59	1697	1510	532	491	4230
60	1505	1097	523	543	3668
61	1117	854	532	365	2868
62	1095	718	520	361	2694
63	733	464	554	251	2002
64	671	494	390	223	1778
65	427	276	404	154	1261
66	466	182	231	110	989
67	423	379	392	123	1317
68	324	251	181	42	798
69	348	54	157	27	586
70	306	90	59	60	515
71	207	57	106	14	384
72	174	54	-	18	246
73	169	54	-	28	251
74	113	19	8	9	149
75	198	19	-	9	226
76	127	-	47	-	174
77	94	35	-	9	138
78	42	-	-	-	42
79	14	-	-	-	14
Total	67,962	33,733	18,821	13,112	133,628

Quarters	Feb.- Apr.	May- July	Aug.- Oct.	Nov.- Jan.	Total
No. Samples	45	13	28	15	101
No. Measured	4012	1206	2273	1724	9215
Mean Wt. of Fish (Kg.)	1.58	1.56	1.82	1.67	1.62
Wt. Landings Sampled	6.91	1.98	3.78	2.94	15.61
Wt. Total Landings	10,715	5273	3422	2195	21,605
Est. No. in Landings[1]	6.796	3.373	1.882	1.311	13.362

1) In millions.

(cont'd.)

TABLE 36 UNITED STATES/CANADA CO-OPERATIVE PROGRAMME - 1956/57 (cont'd.)

LENGTH FREQUENCIES - HADDOCK[2])

by J. Clark
F. Dreyer

5Y ALL GEARS - Commercial Landings (in hundreds)

cm.	Feb.-Apr.	May-July	Aug.-Oct.	Nov.-Jan.	Total
31	7	-	-	-	7
-	-	-	-	-	-
34	42	-	-	-	42
35	56	2	1	2	61
36	112	4	20	5	141
37	317	6	11	2	336
38	338	10	19	4	371
39	499	30	44	13	586
40	379	63	78	22	542
41	900	67	110	60	1137
42	602	153	147	60	962
43	1011	178	208	79	1476
44	1104	366	306	122	1868
45	1249	402	475	157	2283
46	1575	373	394	206	2548
47	1668	436	636	302	3042
48	1789	351	622	322	3084
49	1820	341	539	308	3008
50	1643	360	591	346	2940
51	1534	423	423	298	2678
52	1561	315	420	291	2587
53	1011	330	361	221	1923
54	973	272	307	200	1752
55	949	326	376	167	1818
56	951	307	410	131	1799
57	769	248	295	134	1446
58	790	311	272	147	1520
59	663	169	364	96	1292
60	632	196	267	79	1174
61	473	199	162	82	916
62	401	174	203	68	846
63	470	139	204	64	877
64	229	167	153	43	592
65	227	124	162	37	550
66	152	94	113	40	399
67	148	93	126	37	404
68	101	65	38	24	228
69	81	47	54	22	204
70	89	48	35	13	185
71	19	30	18	10	77
72	23	24	32	4	83
73	15	25	25	8	73
74	15	16	11	6	48
75	4	8	4	3	19
76	-	1	10	-	11
77-80	8	2	8	-	18
Total	27,399	7265	9054	4235	47,953

Quarters	Feb.-Apr.	May-July	Aug.-Oct.	Nov.-Jan.	Total
No. Samples	53	45	67	22	187
No. Measured	3769	3062	5459	1886	14,176
Mean Wt. of Fish (Kg.)	1.41	1.62	1.70	1.63	1.52
Wt. Landings Sampled	5.84	5.23	10.03	3.62	24.72
Wt. Total Landings	3872	1174	1538	693	7277
Est. No. in Landings[1])	2.740	0.726	0.905	0.424	4.795

1) In millions.
2) The corresponding age-length frequencies are given in Table 39.

TABLE 37 UNITED STATES/CANADA CO-OPERATIVE PROGRAMME - 1957/58

LENGTH FREQUENCIES - HADDOCK

by J. Clark
F. Dreyer

4X ALL GEARS - Commercial Landings (in hundreds)

cm.	Feb.-Apr.	May-July	Aug.-Oct.	Nov.-Jan.	Total
33	-	47	-	-	47
34	-	24	24	38	86
35	-	54	35	3	92
36	45	132	44	-	221
37	45	225	210	53	533
38	89	578	194	80	941
39	284	269	251	8	812
40	568	377	322	180	1447
41	715	689	341	133	1878
42	1042	484	271	182	1979
43	1730	474	577	210	2991
44	2089	778	785	307	3959
45	2081	470	599	521	3671
46	2985	343	562	600	4490
47	2529	677	795	509	4510
48	3113	731	609	800	5253
49	2966	541	762	560	4829
50	3473	965	879	634	5951
51	2616	623	873	548	4660
52	2886	964	1148	618	5616
53	2513	991	1189	638	5331
54	2509	877	1118	683	5187
55	2248	1484	1410	458	5600
56	2304	917	952	645	4818
57	1862	1256	789	395	4302
58	1908	1005	644	528	4085
59	1509	907	885	480	3781
60	1357	878	817	455	3507
61	1355	657	526	298	2836
62	889	696	817	261	2663
63	903	522	661	304	2390
64	676	484	420	202	1782
65	287	432	656	113	1488
66	339	385	519	207	1450
67	353	300	121	73	847
68	270	124	191	61	646
69	210	82	118	79	489
70	158	140	152	69	519
71	105	82	24	47	258
72	97	40	48	27	212
73	31	-	-	18	49
74	30	45	39	7	121
75	16	40	15	5	76
76	23	30	-	5	58
77	-	-	-	2	2
78	-	-	-	9	9
Total	51,208	21,819	21,392	12,053	106,472

Quarters	Feb.-Apr.	May-July	Aug.-Oct.	Nov.-Jan.	Total
No. Samples	49	7	11	15	82
No. Measured	5075	1341	1267	2576	10,259
Mean Wt. of Fish (Kg.)	1.60	1.64	1.73	1.71	1.65
Wt. Landings Sampled	8.87	2.43	2.07	4.84	18.21
Wt. Total Landings	8208	3568	3694	2058	17,528
Est. No. in Landings[1]	5.121	2.182	2.139	1.205	10,647

1) In millions.

(cont'd.)

TABLE 37 UNITED STATES/CANADA CO-OPERATIVE PROGRAMME - 1957/58 (cont'd.)

LENGTH FREQUENCIES - HADDOCK[2])

by J. Clark
F. Dreyer

5Y ALL GEARS - Commercial Landings (in hundreds)

cm.	Feb.- Apr.	May- July	Aug.- Oct.	Nov.- Jan.	Total
31	-	-	-	9	9
32	-	-	-	-	-
33	-	-	1	-	1
34	-	-	-	6	6
35	2	-	1	-	3
36	65	13	5	18	101
37	38	23	31	45	137
38	208	63	59	21	351
39	344	116	40	117	617
40	402	135	138	143	818
41	472	174	202	298	1146
42	634	271	317	267	1489
43	854	318	196	445	1813
44	865	380	342	465	2052
45	535	419	666	348	1968
46	589	388	582	543	2102
47	701	428	532	622	2283
48	588	497	508	588	2181
49	801	448	374	543	2166
50	865	434	665	424	2388
51	862	423	803	402	2490
52	707	394	509	324	1934
53	843	413	431	247	1934
54	892	377	514	234	2017
55	800	367	359	213	1739
56	713	302	403	207	1625
57	521	313	323	198	1355
58	554	287	361	165	1367
59	410	303	278	149	1140
60	314	278	270	142	1004
61	202	242	206	116	766
62	200	196	235	103	734
63	154	174	186	91	605
64	150	152	163	63	528
65	124	127	94	61	406
66	123	83	118	56	380
67	51	82	78	40	251
68	46	71	69	29	215
69	46	39	37	10	132
70	32	35	32	18	117
71	-	21	23	15	59
72	4	27	13	10	54
73	18	20	18	5	61
74	-	14	4	3	21
75	-	5	7	2	14
>75	8	7	6	2	23
Total	15,737	8859	10,199	7807	42,602

Quarters	Feb.- Apr.	May- July	Aug.- Oct.	Nov.- Jan.	Total
No. Samples	44	74	80	35	233
No. Measured	3093	6345	7110	2952	19,500
Mean Wt. of Fish (Kg.)	1.41	1.54	1.63	1.46	1.50
Wt. Landings Sampled	4.20	11.00	13.38	5.38	33.96
Wt. Total Landings[1])	2224	1369	1659	1137	6389
Est. No. in Landings	1.574	0.886	1.020	0.781	4.261

1) In millions.

2) The corresponding age-length frequencies are given in Table 41.

TABLE 38 UNITED STATES - 1957 LENGTH FREQUENCIES - COD by J.P. Wise H.E. Murray

OTTER TRAWLERS - Commercial Landings Weights in metric tons, round, fresh

Subdivision	5Y				5Z			
Quarter	Jan.-March	April-June	July-Sept.	Oct.-Dec.	Jan.-March	April-June	July-Sept.	Oct.-Dec.
3 cm. group	FREQUENCIES in ‰							
36-38	9	-	-	-	-	1	-	-
39-41	7	1	-	1	-	-	10	7
42-44	4	4	22	21	-	10	37	42
45-47	15	11	32	48	-	22	136	79
48-50	28	53	84	65	8	45	207	96
51-53	75	93	87	99	24	65	186	92
54-56	82	125	96	89	71	74	90	99
57-59	95	81	69	52	83	91	41	108
60-62	121	101	80	53	39	146	60	103
63-65	125	81	92	53	58	91	42	62
66-68	93	74	75	56	60	69	48	87
69-71	94	64	64	62	109	69	31	100
72-74	63	72	54	56	114	68	38	83
75-77	72	61	59	56	94	63	26	19
78-80	41	11	39	39	140	52	22	18
81-83	24	46	19	71	86	55	9	3
84-86	5	25	20	35	35	23	5	-
87-89	6	17	24	32	20	8	3	1
90-92	9	18	14	19	18	4	3	1
93-95	5	20	12	12	8	10	1	-
96-98	9	4	25	17	9	12	2	-
99-101	1	6	3	10	6	5	-	-
102-104	2	4	5	5	4	2	2	-
105-107	2	7	2	6	5	8	1	-
108-110	4	1	2	22	2	3	-	-
111-113	2	4	1	4	1	-	-	-
114-116	3	4	3	11	-	-	-	-
117-119	-	1	1	2	-	1	-	-
120-122	3	1	-	-	-	1	-	-
123-125	1	3	1	-	-	-	-	-
126-128	-	-	-	-	-	1	-	-
129-131	-	1	1	-	6	1	-	-
132-134	-	1	1	-	-	-	-	-
135-137	-	1	1	-	-	-	-	-
138-194	-	4[1]	12[2]	4[3]	-	-	-	-
No. of Samples	17	21	22	16	9	11	12	16
No. of Fish Measured	650	834	1154	653	529	790	854	1036
Mean Wt. of Fish (Kg.)	3.31	3.02	3.99	4.12	4.03	3.59	2.19	2.52
Wt. of Landings Sampled	10	5	14	6	29	31	19	29
Wt. of Total Landings	344	348	401	566	2843	2342	2904	1911
Est. No. in Total Landings[4]	104.0	115.4	100.6	137.2	705.8	653.4	1326.9	757.0

1) 2 at 138-140; 1 at 150-152; 1 at 159-161. 2) 1 at 138-140; 1 at 141-143; 3 at 150-152; 1 at 159-161; 2 at 165-167; 1 at 168-170; 2 at 174-176; 1 at 192-194. 3) 1 at 150-152; 1 at 162-164; 1 at 174-176; 1 at 186-188. 4) In thousands.

TABLE 39 UNITED STATES - 1956/57 AGE-LENGTH COMPOSITION - HADDOCK

by J. Clark
F. Dreyer

Part I - February-April, 1956 5Y ALL GEARS - Commercial Landings

Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
3 cm. group	NUMBERS LANDED - IN HUNDREDS									
29-31	-	7	-	-	-	-	-	-	-	7
32-34	-	-	42	-	-	-	-	-	-	42
35-37	-	-	485	-	-	-	-	-	-	485
38-40	-	-	923	293	-	-	-	-	-	1216
41-43	-	-	1118	1352	43	-	-	-	-	2513
44-46	-	-	961	2744	218	3	1	1	-	3928
47-49	-	-	468	4274	360	145	30	-	-	5277
50-52	-	-	209	2872	782	627	214	34	-	4738
53-55	-	-	61	1284	643	721	204	20	-	2933
56-58	-	-	7	618	567	961	319	38	-	2510
59-61	-	-	-	181	283	872	317	115	-	1768
62-64	-	-	-	-	155	592	258	70	25	1100
65-67	-	-	-	-	135	187	150	40	15	527
68-70	-	-	-	-	12	76	106	18	59	271
71-73	-	-	-	-	-	29	28	-	-	57
74-76	-	-	-	-	-	-	-	-	19	19
77-79	-	-	-	-	-	-	-	-	4	4
80-82	-	-	-	-	-	-	-	-	4	4
Total	-	7	4274	13,618	3198	4213	1627	336	126	27,399

No. Aged: 995
No. of Samples: 63

Part II - May-July, 1956 5Y ALL GEARS - Commercial Landings

Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
3 cm. group	NUMBERS LANDED - IN HUNDREDS									
35-37	-	6	6	-	-	-	-	-	-	12
38-40	-	26	65	12	-	-	-	-	-	103
41-43	-	-	279	119	-	-	-	-	-	398
44-46	-	-	267	837	7	-	-	-	-	1111
47-49	-	-	92	951	85	-	-	-	-	1128
50-52	-	-	43	435	268	290	62	-	-	1098
53-55	-	-	60	302	305	157	104	-	-	928
56-58	-	-	7	341	201	248	62	-	7	866
59-61	-	-	6	38	125	242	100	53	-	564
62-64	-	-	-	-	72	167	215	26	-	480
65-67	-	-	-	-	38	105	138	15	15	311
68-70	-	-	-	-	60	24	56	10	10	160
71-73	-	-	-	-	-	49	16	7	7	79
74-76	-	-	-	-	-	-	2	2	21	25
77-79	-	-	-	-	-	-	-	1	1	2
Total	-	32	825	3035	1161	1282	755	114	61	7265

No. Aged: 716
No. of Samples: 43

(cont'd.)

TABLE 39 UNITED STATES - 1956/57 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

Part III - August-October, 1956 5Y ALL GEARS - Commercial Landings

Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
3 cm. group	NUMBERS LANDED - IN HUNDREDS									
35-37	-	16	16	-	-	-	-	-	-	32
38-40	-	55	86	-	-	-	-	-	-	141
41-43	-	83	230	114	38	-	-	-	-	465
44-46	-	4	314	774	82	1	-	-	-	1175
47-49	-	2	427	990	272	106	-	-	-	1797
50-52	-	12	82	766	527	47	-	-	-	1434
53-55	-	-	138	463	254	97	77	-	15	1044
56-58	-	-	63	287	377	191	42	3	14	977
59-61	-	-	5	181	294	183	95	32	3	793
62-64	-	-	-	36	138	243	118	15	10	560
65-67	-	-	-	1	121	108	100	4	67	401
68-70	-	-	-	-	18	24	48	25	12	127
71-73	-	-	-	-	3	4	62	2	4	75
74-76	-	-	-	-	-	1	19	1	4	25
77-79	-	-	-	-	-	-	7	-	1	8
Total	-	172	1361	3612	2124	1005	568	82	130	9054
No. Aged: 989										
No. of Samples: 58										

Part IV - November- January, 1956/57 5Y ALL GEARS - Commercial Landings

Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
3 cm. group	NUMBERS LANDED - IN HUNDREDS									
35-37	-	5	4	-	-	-	-	-	-	9
38-40	-	39	-	-	-	-	-	-	-	39
41-43	-	173	26	-	-	-	-	-	-	199
44-46	-	94	354	37	-	-	-	-	-	485
47-49	-	21	526	331	54	-	-	-	-	932
50-52	-	-	326	598	11	-	-	-	-	935
53-55	-	-	44	395	94	55	-	-	-	588
56-58	-	-	21	222	97	65	7	-	-	412
59-61	-	-	-	73	121	47	-	16	-	257
62-64	-	-	-	11	76	67	21	-	-	175
65-67	-	-	-	-	42	43	29	-	-	114
68-70	-	-	-	-	25	16	18	-	-	59
71-73	-	-	-	-	-	11	2	8	1	22
74-76	-	-	-	-	-	7	2	-	-	9
Total	-	332	1301	1667	520	311	79	24	1	4235
No. Aged: 293										
No. of Samples: 17										

(cont'd.)

TABLE 39 UNITED STATES - 1956/57 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

Part V - Haddock Year, 1956/57 5Y ALL GEARS - Commercial Landings

Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
3 cm. group	NUMBERS LANDED - IN HUNDREDS									
29-31	-	7	-	-	-	-	-	-	-	7
32-34	-	-	42	-	-	-	-	-	-	42
35-37	-	27	511	-	-	-	-	-	-	538
38-40	-	120	1074	305	-	-	-	-	-	1499
41-43	-	256	1653	1585	81	-	-	-	-	3575
44-46	-	98	1896	4392	307	4	1	1	-	6699
47-49	-	23	1513	6546	771	251	30	-	-	9134
50-52	-	12	660	4671	1588	964	276	34	-	8205
53-55	-	-	303	2444	1296	1030	385	20	15	5493
56-58	-	-	98	1468	1242	1465	430	41	21	4765
59-61	-	-	11	473	823	1344	512	216	3	3382
62-64	-	-	-	47	441	1069	612	111	35	2315
65-67	-	-	-	1	336	443	417	59	97	1353
68-70	-	-	-	-	115	140	228	53	81	617
71-73	-	-	-	-	3	93	108	17	12	233
74-76	-	-	-	-	-	8	23	3	44	78
77-79	-	-	-	-	-	-	7	1	6	14
80-82	-	-	-	-	-	-	-	-	4	4
Total	-	543	7761	21,932	7003	6811	3029	556	318	47,953

No. Aged: 2993
No. of Samples: 181

TABLE 40 UNITED STATES - 1956/57 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark F. Dreyer

5Z Haddock Year, 1956/57 ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
32	-	16	-	-	-	-	-	-	-	16
33	-	126	3	-	-	-	-	-	-	129
34	61	186	-	-	-	-	-	-	-	247
35	5	859	21	-	-	-	-	-	-	885
36	41	2128	40	-	-	-	-	-	-	2209
37	-	3373	653	-	-	-	-	-	-	4026
38	-	6493	391	-	-	-	-	-	-	6884
39	-	10377	1299	211	53	-	-	-	-	11940
40	-	14087	2098	409	-	-	-	-	-	16594
41	-	17228	2295	1258	-	-	-	-	-	20781
42	-	16507	2307	1972	-	-	-	-	-	20786
43	-	16565	4152	2808	427	-	-	-	-	23952
44	-	14249	6172	3345	524	-	-	-	-	24290
45	-	12578	4944	4428	285	162	-	-	-	22397
46	-	9781	7087	4985	395	256	-	-	-	22504
47	-	6865	5125	8366	738	4	-	-	-	21098
48	-	5315	6220	7202	1302	87	175	-	-	20301
49	-	1826	4879	10563	671	244	-	-	-	18183
50	-	910	3498	10799	1945	186	61	-	-	17399
51	-	789	4281	8945	1968	771	125	-	-	16879
52	-	563	1768	9198	1991	982	445	-	-	14947
53	-	77	1409	7808	2419	1106	296	59	-	13174
54	-	-	681	7984	1864	1671	314	-	-	12514
55	-	135	785	5501	2509	2202	236	-	-	11368
56	-	64	251	5216	2158	2065	395	-	-	10149
57	-	-	128	3425	2097	2213	199	45	-	8107
58	-	-	160	2458	1855	2431	465	33	-	7402
59	-	-	111	2235	1078	1999	1146	188	-	6757
60	-	-	28	953	881	1702	1048	84	-	4696
61	-	-	47	633	884	1431	879	419	67	4360
62	-	-	23	457	759	1277	781	417	49	3763
63	-	-	-	238	351	1675	640	423	18	3345
64	-	-	-	75	522	1431	422	235	3	2688
65	-	-	-	28	312	838	394	536	128	2236
66	-	-	-	95	186	585	392	591	67	1916
67	-	-	-	4	73	806	485	215	61	1644
68	-	-	48	2	87	613	360	182	168	1460
69	-	-	-	-	-	195	354	315	87	951
70	-	-	-	-	-	272	224	234	237	967
71	-	-	-	-	16	143	239	68	189	655
72	-	-	-	17	-	70	219	210	29	545
73	-	-	-	-	-	17	80	109	72	278
74	-	-	-	-	-	45	25	60	114	244
75	-	-	-	-	-	2	25	45	19	91
76-84	-	-	-	-	8	-	74	16	261	359
Total	107	141,097	60,904	111,618	28,358	27,481	10,498	4,484	1,569	386,116

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark F. Dreyer

5Z JANUARY ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1954 I	1953 II	1952 III	1951 IV	1950 V	1949 VI	1948 VII	1947 VIII	1946- IX+	Total
34	13	-	-	-	-	-	-	-	-	13
35	14	-	-	-	-	-	-	-	-	14
36	13	27	-	-	-	-	-	-	-	40
37	8	29	4	-	-	-	-	-	-	41
38	49	58	14	-	-	-	-	-	-	121
39	35	103	49	-	-	-	-	-	-	187
40	-	110	24	-	-	-	-	-	-	134
41	-	77	157	7	-	-	-	-	-	241
42	-	162	256	39	-	-	-	-	-	457
43	-	186	312	24	-	-	-	-	-	522
44	-	158	363	19	-	-	-	-	-	540
45	-	74	632	38	-	-	-	-	-	744
46	-	119	591	20	-	-	-	-	-	730
47	-	28	556	57	-	-	-	-	-	641
48	-	20	658	176	4	-	-	-	-	858
49	-	17	671	114	67	7	-	-	-	876
50	-	-	565	165	55	-	-	-	-	785
51	-	-	552	176	118	51	18	18	-	933
52	-	-	578	56	12	-	-	-	-	646
53	-	-	431	135	144	15	-	-	-	725
54	-	-	414	173	116	72	23	-	-	798
55	-	-	322	63	182	20	1	-	-	588
56	-	-	136	80	147	28	17	-	-	408
57	-	-	91	73	90	54	-	100	-	408
58	-	-	68	30	127	80	51	-	-	356
59	-	-	-	50	82	98	31	-	-	261
60	-	-	-	16	130	66	39	22	-	273
61	-	-	-	-	100	125	91	-	25	341
62	-	-	-	44	56	75	-	32	-	207
63	-	-	-	-	79	81	20	20	-	200
64	-	-	-	22	53	66	18	-	13	172
65	-	-	-	16	69	24	25	23	5	162
66	-	-	-	6	50	31	37	17	-	141
67	-	-	-	-	39	17	32	-	-	88
68	-	-	-	-	22	36	21	-	9	88
69	-	-	-	-	24	24	48	12	-	108
70	-	-	-	-	-	17	18	6	-	41
71	-	-	-	-	-	18	4	4	4	30
72	-	-	-	-	-	-	2	2	28	32
73	-	-	-	-	-	-	-	-	-	-
74	-	-	-	-	-	9	-	-	-	9
75	-	-	-	-	-	-	-	2	4	6
76	-	-	-	-	-	-	1	4	10	15
-	-	-	-	-	-	-	-	-	-	-
81	-	-	-	-	-	-	-	-	18	18
Total	132	1168	7444	1599	1766	1014	497	262	116	13,998

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer
5Z FEBRUARY ALL GEARS - Commercial Landings (in hundreds)

Year-Class / cm. Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
33	-	14	2	-	-	-	-	-	-	16
34	-	-	-	-	-	-	-	-	-	-
35	-	28	11	-	-	-	-	-	-	39
36	-	46	8	-	-	-	-	-	-	54
37	-	109	115	-	-	-	-	-	-	224
38	-	167	135	-	-	-	-	-	-	302
39	-	132	89	129	35	-	-	-	-	385
40	-	223	104	69	-	-	-	-	-	396
41	-	70	71	392	-	-	-	-	-	533
42	-	-	406	405	-	-	-	-	-	811
43	-	-	67	592	106	-	-	-	-	765
44	-	-	410	410	246	-	-	-	-	1066
45	-	-	647	639	1	-	-	-	-	1287
46	-	-	306	939	179	124	-	-	-	1548
47	-	-	473	887	205	2	-	-	-	1567
48	-	-	181	1159	374	-	-	-	-	1714
49	-	-	231	1188	140	108	-	-	-	1667
50	-	-	-	1390	231	31	27	-	-	1679
51	-	-	-	1243	282	210	30	-	-	1765
52	-	-	83	978	228	228	217	-	-	1734
53	-	-	12	671	320	164	-	-	-	1167
54	-	-	-	517	231	276	91	-	-	1115
55	-	-	-	313	152	379	42	-	-	886
56	-	-	2	392	152	482	-	-	-	1028
57	-	-	-	207	13	388	-	13	-	621
58	-	-	-	70	151	578	81	-	-	880
59	-	-	-	159	29	262	245	29	-	724
60	-	-	-	-	163	313	114	-	-	590
61	-	-	-	13	40	129	169	79	12	442
62	-	-	-	10	57	113	78	148	23	429
63	-	-	-	-	-	205	94	83	-	382
64	-	-	-	-	52	223	123	49	-	447
65	-	-	-	-	16	78	16	110	48	268
66	-	-	-	-	38	89	-	185	17	329
67	-	-	-	-	10	66	46	56	-	178
68	-	-	-	-	-	62	46	46	33	187
69	-	-	-	-	-	-	47	36	25	108
70	-	-	-	-	-	-	60	44	96	200
71	-	-	-	-	-	-	64	3	68	135
72	-	-	-	-	-	-	7	67	-	74
73	-	-	-	-	-	-	3	42	9	54
74	-	-	-	-	-	-	-	8	76	84
Total	-	789	3353	12,772	3451	4510	1600	998	407	27,880

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z MARCH ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
37	-	55	-	-	-	-	-	-	-	55
38	-	22	6	-	-	-	-	-	-	28
39	-	92	55	19	-	-	-	-	-	166
40	-	103	58	39	-	-	-	-	-	200
41	-	69	70	174	-	-	-	-	-	313
42	-	-	127	128	-	-	-	-	-	255
43	-	-	16	409	93	-	-	-	-	518
44	-	-	254	253	212	-	-	-	-	719
45	-	-	560	560	-	-	-	-	-	1120
46	-	-	223	815	156	123	-	-	-	1317
47	-	-	329	1004	242	2	-	-	-	1577
48	-	-	142	1022	383	-	-	-	-	1547
49	-	-	267	1201	157	120	-	-	-	1745
50	-	-	-	1218	241	-	32	-	-	1491
51	-	-	-	1010	197	189	4	-	-	1400
52	-	-	45	656	166	156	135	-	-	1158
53	-	-	10	848	369	148	-	-	-	1375
54	-	-	-	537	202	424	96	-	-	1259
55	-	-	-	543	153	376	36	-	-	1108
56	-	-	9	615	199	487	2	-	-	1312
57	-	-	14	294	135	418	-	14	-	875
58	-	-	10	159	220	413	62	-	-	864
59	-	-	-	204	65	292	270	28	-	859
60	-	-	-	5	129	243	76	2	-	455
61	-	-	-	16	57	176	234	114	16	613
62	-	-	-	11	49	104	71	130	19	384
63	-	-	-	-	-	284	109	85	-	478
64	-	-	-	-	26	112	61	24	-	223
65	-	-	-	-	27	100	27	120	47	321
66	-	-	-	-	14	48	-	77	11	150
67	-	-	-	-	20	66	28	47	-	161
68	-	-	-	-	-	32	21	20	13	86
69	-	-	-	-	-	-	7	11	14	32
70	-	-	-	-	-	-	40	10	36	86
71	-	-	-	-	-	-	31	7	46	84
72	-	-	-	-	-	-	-	-	-	-
73	-	-	-	-	-	-	-	-	-	-
74	-	-	-	-	-	-	-	11	-	11
75	-	-	-	-	-	-	-	-	-	-
76	-	-	-	-	-	-	-	-	11	11
77	-	-	-	-	-	-	-	-	11	11
78	-	-	-	-	-	-	-	-	41	41
Total	-	341	2195	11,740	3512	4313	1342	700	265	24,408

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z APRIL ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947 - IX+	Total
36	-	20	-	-	-	-	-	-	-	20
37	-	20	-	-	-	-	-	-	-	20
38	-	33	8	-	-	-	-	-	-	41
39	-	34	20	63	18	-	-	-	-	135
40	-	354	25	16	-	-	-	-	-	395
41	-	204	203	49	-	-	-	-	-	456
42	-	-	260	259	-	-	-	-	-	519
43	-	-	105	380	30	-	-	-	-	515
44	-	-	147	148	66	-	-	-	-	361
45	-	-	166	165	-	-	-	-	-	331
46	-	-	155	340	58	9	-	-	-	562
47	-	-	214	235	50	-	-	-	-	499
48	-	-	244	435	37	-	-	-	-	716
49	-	-	242	497	28	15	-	-	-	782
50	-	-	-	759	110	15	2	-	-	886
51	-	-	-	560	62	28	11	-	-	661
52	-	-	22	396	48	91	16	-	-	573
53	-	-	13	303	109	70	-	-	-	495
54	-	-	-	443	116	107	16	-	-	682
55	-	-	-	243	74	99	59	-	-	475
56	-	-	-	274	87	114	-	-	-	475
57	-	-	2	135	39	109	-	18	-	303
58	-	-	3	71	97	194	25	-	-	390
59	-	-	-	71	14	115	83	5	-	288
60	-	-	-	4	37	73	12	2	-	128
61	-	-	-	9	18	61	70	24	9	191
62	-	-	-	11	21	61	41	56	3	193
63	-	-	-	-	-	75	12	-	-	87
64	-	-	-	-	35	73	31	7	-	146
65	-	-	-	-	17	36	17	17	-	87
66	-	-	-	-	-	39	-	26	13	78
67	-	-	-	-	10	28	7	16	-	61
68	-	-	-	-	-	39	8	8	-	55
69	-	-	-	-	-	-	31	15	-	46
70	-	-	-	-	-	-	21	-	11	32
71	-	-	-	-	-	-	-	9	20	29
72	-	-	-	-	-	-	18	37	-	55
73	-	-	-	-	-	-	3	4	7	14
74	-	-	-	-	-	-	-	-	21	21
75	-	-	-	-	-	-	-	1	4	5
76	-	-	-	-	-	-	-	-	9	9
Total	-	665	1829	5866	1181	1451	483	245	97	11,817

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z MAY ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
33	-	21	-	-	-	-	-	-	-	21
34	-	21	-	-	-	-	-	-	-	21
35	-	149	-	-	-	-	-	-	-	149
36	-	369	-	-	-	-	-	-	-	369
37	-	433	7	-	-	-	-	-	-	440
38	-	736	88	-	-	-	-	-	-	824
39	-	1221	28	-	-	-	-	-	-	1249
40	-	1303	152	-	-	-	-	-	-	1455
41	-	1258	485	101	-	-	-	-	-	1844
42	-	1177	219	304	-	-	-	-	-	1700
43	-	1122	313	307	52	-	-	-	-	1794
44	-	601	501	585	-	-	-	-	-	1687
45	-	368	720	581	-	56	-	-	-	1725
46	-	273	913	614	-	-	-	-	-	1800
47	-	273	569	1139	79	-	-	-	-	2060
48	-	105	883	937	97	2	46	-	-	2070
49	-	-	639	1672	48	-	-	-	-	2359
50	-	-	794	1330	193	37	-	-	-	2354
51	-	-	628	1301	189	38	28	-	-	2184
52	-	-	291	1269	293	112	31	-	-	1996
53	-	-	96	998	341	79	68	15	-	1597
54	-	-	53	1108	176	96	22	-	-	1455
55	-	-	21	746	324	283	-	-	-	1374
56	-	-	27	567	237	201	87	-	-	1119
57	-	-	-	331	331	396	66	-	-	1124
58	-	-	-	273	245	297	55	-	-	870
59	-	-	35	288	139	241	115	34	-	852
60	-	-	-	78	70	193	140	31	-	512
61	-	-	15	16	91	183	123	45	-	473
62	-	-	-	9	106	222	119	6	2	464
63	-	-	-	30	15	162	116	87	-	410
64	-	-	-	13	94	128	70	30	2	337
65	-	-	-	-	24	107	72	142	12	357
66	-	-	-	-	-	51	89	86	-	226
67	-	-	-	1	2	124	62	31	18	238
68	-	-	-	1	2	105	44	25	25	202
69	-	-	-	-	-	23	39	56	-	118
70	-	-	-	-	-	10	31	63	31	135
71	-	-	-	-	-	38	23	23	7	91
72	-	-	-	-	-	11	46	23	-	80
73	-	-	-	-	-	6	-	6	11	23
74	-	-	-	-	-	-	-	11	6	17
75	-	-	-	-	-	-	11	6	6	23
76	-	-	-	-	2	-	3	-	6	11
77	-	-	-	-	-	-	4	2	11	17
78-84	-	-	-	-	-	-	2	-	21	23
Total	-	9430	7477	14,599	3150	3201	1512	722	158	40,249

See Page 160 for data on number of samples, etc.

(cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z JUNE ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
35	-	104	-	-	-	-	-	-	-	104
36	-	221	-	-	-	-	-	-	-	221
37	-	590	39	-	-	-	-	-	-	629
38	-	611	69	-	-	-	-	-	-	680
39	-	1310	33	-	-	-	-	-	-	1343
40	-	1812	199	-	-	-	-	-	-	2011
41	-	1623	572	140	-	-	-	-	-	2335
42	-	1363	248	323	-	-	-	-	-	1934
43	-	1324	310	354	43	-	-	-	-	2031
44	-	943	781	913	-	-	-	-	-	2637
45	-	650	703	520	-	32	-	-	-	1905
46	-	373	1162	805	1	-	-	-	-	2341
47	-	304	626	1244	97	-	-	-	-	2271
48	-	107	941	1028	104	-	52	-	-	2232
49	-	-	650	1833	57	-	-	-	-	2540
50	-	-	758	1647	222	68	-	-	-	2695
51	-	-	737	1643	279	60	40	-	-	2759
52	-	-	314	1418	333	133	32	-	-	2230
53	-	-	107	1575	431	136	113	25	-	2387
54	-	-	49	1339	202	182	28	-	-	1800
55	-	-	24	1049	444	372	-	-	-	1889
56	-	-	16	750	225	223	104	-	-	1318
57	-	-	1	349	353	360	48	-	-	1111
58	-	-	-	238	233	290	42	-	-	803
59	-	-	13	282	101	233	123	13	-	765
60	-	-	-	107	63	268	127	10	-	575
61	-	-	19	4	100	184	123	57	-	487
62	-	-	-	4	114	251	137	3	1	510
63	-	-	-	47	23	257	94	47	-	468
64	-	-	-	13	94	121	54	27	-	309
65	-	-	-	-	25	115	76	38	13	267
66	-	-	-	-	-	69	92	115	-	276
67	-	-	-	1	3	161	82	40	24	311
68	-	-	-	-	-	180	59	30	32	301
69	-	-	-	-	-	41	69	82	-	192
70	-	-	-	-	-	-	36	70	36	142
71	-	-	-	-	-	18	10	10	4	42
72	-	-	-	-	-	16	62	31	-	109
73	-	-	-	-	-	2	-	2	4	8
74	-	-	-	-	-	-	-	-	-	-
75	-	-	-	-	-	-	9	4	4	17
76	-	-	-	-	4	-	4	-	9	17
77	-	-	-	-	-	-	2	1	5	8
78	-	-	-	-	-	-	4	-	4	8
79-81	-	-	-	-	-	-	2	-	22	24
Total	-	11,335	8371	17,626	3551	3772	1624	605	158	47,042

See Page 160 for data on number of samples, etc.

(cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z JULY ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
32	-	16	-	-	-	-	-	-	-	16
33	-	37	-	-	-	-	-	-	-	37
34	-	89	-	-	-	-	-	-	-	89
35	-	168	-	-	-	-	-	-	-	168
36	-	335	-	-	-	-	-	-	-	335
37	-	518	59	-	-	-	-	-	-	577
38	-	875	85	-	-	-	-	-	-	960
39	-	1186	65	-	-	-	-	-	-	1251
40	-	1341	136	-	-	-	-	-	-	1477
41	-	1256	359	124	-	-	-	-	-	1739
42	-	929	179	315	-	-	-	-	-	1423
43	-	904	449	277	103	-	-	-	-	1733
44	-	498	532	702	-	-	-	-	-	1732
45	-	236	780	662	-	74	-	-	-	1752
46	-	176	1223	579	-	-	-	-	-	1978
47	-	231	485	1078	54	-	-	-	-	1848
48	-	38	742	881	96	-	77	-	-	1834
49	-	-	596	1335	23	-	-	-	-	1954
50	-	-	511	1021	120	27	-	-	-	1679
51	-	-	359	907	173	62	12	-	-	1513
52	-	-	231	936	206	78	14	-	-	1465
53	-	-	83	806	229	69	72	19	-	1278
54	-	-	77	815	136	114	13	-	-	1155
55	-	-	51	557	223	197	-	-	-	1028
56	-	-	38	488	257	196	79	-	-	1058
57	-	-	4	242	255	257	38	-	-	796
58	-	-	-	224	209	231	47	-	-	711
59	-	-	13	157	74	133	79	-	-	456
60	-	-	-	71	58	176	116	22	-	443
61	-	-	13	10	81	150	98	38	-	390
62	-	-	-	5	88	179	94	3	1	370
63	-	-	-	17	9	96	52	34	-	208
64	-	-	-	9	59	81	44	19	1	213
65	-	-	-	-	17	74	50	42	8	191
66	-	-	-	-	-	34	52	57	-	143
67	-	-	-	2	5	75	53	25	19	179
68	-	-	-	1	1	71	30	17	17	137
69	-	-	-	-	-	21	36	50	-	107
70	-	-	-	-	-	17	17	35	17	86
71	-	-	-	-	-	23	15	16	7	61
72	-	-	-	-	-	7	26	13	11	57
73	-	-	-	-	-	9	1	10	18	38
74	-	-	-	-	-	-	-	3	2	5
75	-	-	-	-	-	-	2	1	1	4
76-80	-	-	-	-	2	-	6	1	17	26
Total	-	8833	7070	12,221	2478	2451	1123	405	119	34,700

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z AUGUST ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
33	-	29	-	-	-	-	-	-	-	29
34	26	32	-	-	-	-	-	-	-	58
35	-	88	-	-	-	-	-	-	-	88
36	1	225	-	-	-	-	-	-	-	226
37	-	530	117	-	-	-	-	-	-	647
38	-	942	-	-	-	-	-	-	-	942
39	-	1605	430	-	-	-	-	-	-	2035
40	-	1598	584	117	-	-	-	-	-	2299
41	-	2612	108	110	-	-	-	-	-	2830
42	-	2319	185	88	-	-	-	-	-	2592
43	-	2564	794	108	-	-	-	-	-	3466
44	-	2031	1001	124	-	-	-	-	-	3156
45	-	2076	370	478	69	-	-	-	-	2993
46	-	1524	962	333	1	-	-	-	-	2820
47	-	1049	618	582	-	-	-	-	-	2249
48	-	1380	1121	603	-	50	-	-	-	3154
49	-	523	768	1153	88	-	-	-	-	2532
50	-	166	249	1161	275	-	-	-	-	1851
51	-	134	522	808	312	82	-	-	-	1858
52	-	124	89	1333	159	71	-	-	-	1776
53	-	-	338	772	131	155	25	-	-	1421
54	-	-	115	839	149	172	22	-	-	1297
55	-	68	121	526	245	149	50	-	-	1159
56	-	-	41	382	198	67	14	-	-	702
57	-	-	26	385	180	52	-	-	-	643
58	-	-	25	300	99	37	12	-	-	473
59	-	-	20	193	75	144	63	44	-	539
60	-	-	-	141	70	58	49	8	-	326
61	-	-	-	77	50	98	-	-	-	225
62	-	-	-	65	41	26	41	9	-	182
63	-	-	-	-	22	103	-	31	10	166
64	-	-	-	-	14	128	-	-	-	142
65	-	-	-	-	19	56	3	-	-	78
66	-	-	-	13	25	25	15	13	2	93
67	-	-	-	-	-	94	13	-	-	107
68	-	-	17	-	1	1	19	-	17	55
69	-	-	-	-	-	17	-	17	17	51
70	-	-	-	-	-	8	4	1	1	14
71	-	-	-	-	-	-	7	-	2	9
72	-	-	-	3	-	-	7	-	-	10
73	-	-	-	-	-	-	5	-	-	5
74	-	-	-	-	-	-	4	3	2	9
75	-	-	-	-	-	-	-	-	-	-
76	-	-	-	-	-	-	2	2	1	5
78	-	-	-	-	-	-	3	-	2	5
Total	27	21,619	8621	10,694	2223	1593	358	128	54	45,317

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z SEPTEMBER ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
34	23	28	-	-	-	-	-	-	-	51
35	-	31	-	-	-	-	-	-	-	31
36	-	279	-	-	-	-	-	-	-	279
37	-	322	39	-	-	-	-	-	-	361
38	-	1243	-	-	-	-	-	-	-	1243
39	-	1837	186	-	-	-	-	-	-	2023
40	-	3192	277	55	-	-	-	-	-	3524
41	-	3355	287	51	-	-	-	-	-	3693
42	-	4518	126	63	-	-	-	-	-	4707
43	-	4178	1303	60	-	-	-	-	-	5541
44	-	4064	1207	68	-	-	-	-	-	5339
45	-	3150	505	328	150	-	-	-	-	4133
46	-	2733	917	258	-	-	-	-	-	3908
47	-	1909	825	970	-	-	-	-	-	3704
48	-	1234	1044	518	-	10	-	-	-	2806
49	-	325	414	478	53	-	-	-	-	1270
50	-	149	213	735	144	-	-	-	-	1241
51	-	58	278	540	149	45	-	-	-	1070
52	-	83	57	483	58	35	-	-	-	716
53	-	-	160	414	55	52	9	-	-	690
54	-	-	82	491	76	87	9	-	-	745
55	-	51	74	300	137	70	18	-	-	650
56	-	-	48	330	150	29	6	-	-	563
57	-	-	13	204	106	36	-	-	-	359
58	-	-	26	225	63	39	13	-	-	366
59	-	-	13	110	38	84	32	20	-	297
60	-	-	-	127	64	48	44	4	-	287
61	-	-	-	144	57	115	-	-	-	316
62	-	-	-	81	51	32	51	13	-	228
63	-	-	-	-	23	106	-	30	7	166
64	-	-	-	-	22	103	-	-	-	125
65	-	-	-	1	34	91	10	1	-	137
66	-	-	-	13	27	26	29	13	17	125
67	-	-	-	-	-	69	22	-	-	91
68	-	-	15	-	-	-	16	-	15	46
69	-	-	-	-	-	16	-	21	15	52
70	-	-	-	-	-	84	5	2	1	92
71	-	-	-	-	-	-	22	-	7	29
72	-	-	-	-	-	-	6	-	-	6
73	-	-	-	-	-	-	14	2	1	17
-	-	-	-	-	-	-	-	-	-	-
76	-	-	-	-	-	2	2	2	-	6
77	-	-	-	-	-	-	4	4	4	12
78	-	-	-	-	-	-	-	-	-	-
79	-	-	-	-	-	-	-	-	12	12
Total	23	32,739	8109	7047	1457	1179	312	112	79	51,057

See Page 160 for data on number of samples, etc.

(cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z OCTOBER ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
34	12	16	-	-	-	-	-	-	-	28
35	5	197	-	-	-	-	-	-	-	202
36	-	377	-	-	-	-	-	-	-	377
37	-	387	96	-	-	-	-	-	-	483
38	-	874	-	-	-	-	-	-	-	874
39	-	1340	345	-	-	-	-	-	-	1685
40	-	1656	563	113	-	-	-	-	-	2332
41	-	2999	140	117	-	-	-	-	-	3256
42	-	2707	171	87	-	-	-	-	-	2965
43	-	2458	760	99	-	-	-	-	-	3317
44	-	2117	1090	142	-	-	-	-	-	3349
45	-	1977	341	483	64	-	-	-	-	2865
46	-	1346	784	293	-	-	-	-	-	2423
47	-	994	599	570	1	-	-	-	-	2164
48	-	631	580	309	-	25	-	-	-	1545
49	-	298	387	544	53	-	-	-	-	1282
50	-	114	206	746	175	-	-	-	-	1241
51	-	87	333	484	212	57	-	-	-	1173
52	-	94	67	666	105	50	-	-	-	982
53	-	-	223	429	54	54	9	-	-	769
54	-	-	70	537	104	122	17	-	-	850
55	-	16	83	369	171	98	31	-	-	768
56	-	64	31	301	127	35	7	-	-	565
57	-	-	21	314	146	42	-	-	-	523
58	-	-	28	238	68	42	14	-	-	390
59	-	-	17	132	50	98	30	15	-	342
60	-	-	-	103	52	41	37	5	-	238
61	-	-	-	88	44	89	-	-	-	221
62	-	-	-	52	35	18	34	2	-	141
63	-	-	-	-	24	99	-	26	1	150
64	-	-	-	-	6	97	-	-	-	103
65	-	-	-	-	24	71	-	-	-	95
66	-	-	-	12	24	24	12	12	-	84
67	-	-	-	-	-	54	13	-	-	67
68	-	-	16	-	1	2	20	-	16	55
69	-	-	-	-	-	17	-	22	16	55
70	-	-	-	-	-	16	-	-	-	16
71	-	-	-	-	-	-	18	-	18	36
72	-	-	-	14	-	-	27	-	-	41
73	-	-	-	-	-	-	11	-	-	11
74	-	-	-	-	-	-	4	4	3	11
75	-	-	-	-	-	-	1	1	1	3
76	-	-	-	-	-	-	1	1	1	3
-	-	-	-	-	-	-	-	-	-	-
80	-	-	-	-	-	-	-	-	3	3
Total	17	20,749	6951	7242	1540	1151	286	88	59	38,083

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z NOVEMBER ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
33	-	25	1	-	-	-	-	-	-	26
34	-	-	-	-	-	-	-	-	-	-
35	-	24	2	-	-	-	-	-	-	26
36	28	99	8	-	-	-	-	-	-	135
37	-	174	92	-	-	-	-	-	-	266
38	-	452	-	-	-	-	-	-	-	452
39	-	597	23	-	-	-	-	-	-	620
40	-	1017	-	-	-	-	-	-	-	1017
41	-	1456	-	-	-	-	-	-	-	1456
42	-	1491	170	-	-	-	-	-	-	1661
43	-	1564	-	104	-	-	-	-	-	1668
44	-	1852	117	-	-	-	-	-	-	1969
45	-	1597	54	4	-	-	-	-	-	1655
46	-	1385	195	5	-	-	-	-	-	1585
47	-	765	115	238	2	-	-	-	-	1120
48	-	729	165	155	117	-	-	-	-	1166
49	-	178	231	211	9	-	-	-	-	629
50	-	157	322	343	102	4	-	-	-	928
51	-	167	544	164	39	-	-	-	-	914
52	-	66	162	377	144	8	-	-	-	757
53	-	21	106	335	125	60	-	-	-	647
54	-	-	76	428	155	26	-	-	-	685
55	-	-	143	247	169	42	-	-	-	601
56	-	-	12	356	174	76	29	-	-	647
57	-	-	17	345	179	52	17	-	-	610
58	-	-	21	198	138	86	34	10	-	487
59	-	-	-	176	137	106	28	-	-	447
60	-	-	10	113	62	103	91	-	-	379
61	-	-	-	90	127	98	25	25	12	377
62	-	-	7	62	54	67	34	14	-	238
63	-	-	-	43	50	86	28	-	-	207
64	-	-	-	12	37	101	12	12	-	174
65	-	-	-	10	40	40	40	19	-	149
66	-	-	-	22	22	70	40	3	3	160
67	-	-	-	-	8	22	45	-	-	75
68	-	-	-	-	31	46	31	8	-	116
69	-	-	-	-	-	19	39	-	-	58
70	-	-	-	-	-	59	7	6	5	77
71	-	-	-	-	6	23	17	-	-	46
72	-	-	-	-	-	12	6	13	6	37
73	-	-	-	-	-	-	25	25	12	62
74	-	-	-	-	-	15	5	5	-	25
75	-	-	-	-	-	-	-	17	-	17
76	-	-	-	-	-	-	3	3	6	12
77-82	-	-	-	-	-	-	14	-	29	43
Total	28	13,816	2593	4038	1927	1221	570	160	73	24,426

See Page 160 for data on number of samples, etc.

(cont'd.)

TABLE 40 UNITED STATES - 1956 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z DECEMBER ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
35	-	41	4	-	-	-	-	-	-	45
36	8	131	21	-	-	-	-	-	-	160
37	-	171	63	-	-	-	-	-	-	234
38	-	440	-	-	-	-	-	-	-	440
39	-	832	20	-	-	-	-	-	-	852
40	-	1047	-	-	-	-	-	-	-	1047
41	-	1689	-	-	-	-	-	-	-	1689
42	-	1327	162	-	-	-	-	-	-	1489
43	-	1635	35	88	-	-	-	-	-	1758
44	-	1278	79	-	-	-	-	-	-	1357
45	-	1589	74	7	1	-	-	-	-	1671
46	-	1189	140	3	-	-	-	-	-	1332
47	-	716	170	240	7	-	-	-	-	1133
48	-	662	94	79	40	-	-	-	-	875
49	-	262	206	218	4	-	-	-	-	690
50	-	192	257	262	96	2	-	-	-	809
51	-	197	467	188	50	-	-	-	-	902
52	-	126	260	405	138	13	-	-	-	942
53	-	28	139	334	137	60	-	-	-	698
54	-	-	78	485	155	37	-	-	-	755
55	-	-	184	332	224	57	-	-	-	797
56	-	-	15	400	173	79	33	-	-	700
57	-	-	18	370	169	59	18	-	-	634
58	-	-	24	232	147	89	24	12	-	528
59	-	-	-	263	201	169	47	-	-	680
60	-	-	10	111	61	101	124	-	-	407
61	-	-	-	103	130	76	19	19	9	356
62	-	-	9	85	92	129	47	19	-	381
63	-	-	-	53	98	105	71	-	-	327
64	-	-	-	13	37	119	12	30	-	211
65	-	-	-	10	40	41	41	20	-	152
66	-	-	-	16	16	47	23	-	-	102
67	-	-	-	-	10	32	63	-	-	105
68	-	-	-	-	22	32	21	5	-	80
69	-	-	-	-	-	27	53	-	-	80
70	-	-	-	-	-	44	-	-	-	44
71	-	-	-	-	5	20	15	-	-	40
72	-	-	-	-	-	10	5	10	4	29
73	-	-	-	-	-	-	13	13	7	33
74	-	-	-	-	-	15	5	5	-	25
75	-	-	-	-	-	-	-	11	-	11
76	-	-	-	-	-	-	1	1	2	4
77	-	-	-	-	-	-	-	-	4	4
78	-	-	-	-	-	-	4	-	-	4
79 & 86	-	-	-	-	-	-	2	-	6	8
Total	8	13,552	2529	4297	2053	1363	641	145	32	24,620

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 40 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z JANUARY ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1955 I	1954 II	1953 III	1952 IV	1951 V	1950 VI	1949 VII	1948 VIII	1947- IX+	Total
35	-	29	4	-	-	-	-	-	-	33
36	4	26	3	-	-	-	-	-	-	33
37	-	64	26	-	-	-	-	-	-	90
38	-	98	-	-	-	-	-	-	-	98
39	-	191	5	-	-	-	-	-	-	196
40	-	441	-	-	-	-	-	-	-	441
41	-	637	-	-	-	-	-	-	-	637
42	-	676	54	-	-	-	-	-	-	730
43	-	816	-	30	-	-	-	-	-	846
44	-	865	53	-	-	-	-	-	-	918
45	-	935	24	1	-	-	-	-	-	960
46	-	782	107	1	-	-	-	-	-	890
47	-	624	102	179	1	-	-	-	-	906
48	-	429	83	76	54	-	-	-	-	642
49	-	240	248	233	11	1	-	-	-	733
50	-	132	188	187	36	2	-	-	-	545
51	-	146	413	97	24	-	-	-	-	680
52	-	70	147	281	113	7	-	-	-	618
53	-	28	122	323	118	59	-	-	-	650
54	-	-	81	445	162	28	-	-	-	716
55	-	-	84	276	193	80	-	-	-	633
56	-	-	12	361	179	76	34	-	-	662
57	-	-	12	249	191	44	12	-	-	508
58	-	-	23	230	185	135	56	11	-	640
59	-	-	-	200	155	122	31	-	-	508
60	-	-	8	93	52	85	118	-	-	356
61	-	-	-	63	89	72	18	18	9	269
62	-	-	7	62	51	75	34	14	-	243
63	-	-	-	48	87	97	64	-	-	296
64	-	-	-	15	46	145	15	37	-	258
65	-	-	-	7	29	29	42	27	-	134
66	-	-	-	19	20	63	40	4	4	150
67	-	-	-	-	5	15	51	-	-	71
68	-	-	-	-	29	43	45	23	-	140
69	-	-	-	-	-	14	33	5	-	52
70	-	-	-	-	-	34	3	3	3	43
71	-	-	-	-	5	21	17	-	10	53
72	-	-	-	-	-	14	9	16	8	47
73	-	-	-	-	-	-	5	5	3	13
74	-	-	-	-	-	15	7	10	4	36
75	-	-	-	-	-	-	-	2	3	5
76	-	-	-	-	-	-	-	1	4	5
77	-	-	-	-	-	-	-	-	8	8
78	-	-	-	-	-	-	9	-	-	9
79	-	-	-	-	-	-	4	-	4	8
80	-	-	-	-	-	-	-	-	8	8
Total	4	7229	1806	3476	1835	1276	647	176	68	16,517

See Page 160 for data on number of samples, etc.

TABLE 41 UNITED STATES - 1957/58 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark F. Dreyer

Part I - February-April, 1957 5Y ALL GEARS - Commercial Landings

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
3 cm. group	NUMBERS LANDED - IN HUNDREDS									
35-37	-	93	12	-	-	-	-	-	-	105
38-40	-	471	435	48	-	-	-	-	-	954
41-43	-	800	979	181	-	-	-	-	-	1960
44-46	-	403	978	525	83	-	-	-	-	1989
47-49	-	78	311	1407	257	37	-	-	-	2090
50-52	-	-	140	571	1377	251	34	61	-	2434
53-55	-	-	48	476	1200	566	169	76	-	2535
56-58	-	-	-	145	683	540	261	115	44	1788
59-61	-	-	-	-	258	324	192	152	-	926
62-64	-	-	-	-	36	90	254	124	-	504
65-67	-	-	-	-	45	55	121	66	11	298
68-70	-	-	-	-	22	40	-	51	11	124
71-73	-	-	-	-	-	-	10	-	12	22
74-76	-	-	-	-	-	-	-	-	4	4
-	-	-	-	-	-	-	-	-	-	-
95-97	-	-	-	-	-	-	-	-	4	4
Total	-	1845	2903	3353	3961	1903	1041	645	86	15,737

No. Aged: 581
No. of Samples: 37

Part II - May-July, 1957 5Y ALL GEARS - Commercial Landings

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
3 cm. group	NUMBERS LANDED - IN HUNDREDS									
35-37	-	24	20	4	-	-	-	-	-	48
38-40	-	210	156	19	-	-	-	-	-	385
41-43	-	75	569	166	-	-	-	-	-	810
44-46	-	18	489	642	76	-	-	-	-	1225
47-49	-	-	273	862	261	-	-	-	-	1396
50-52	-	-	164	793	343	51	-	-	-	1351
53-55	-	-	26	584	511	30	7	-	-	1158
56-58	-	-	-	187	467	196	48	8	-	906
59-61	-	-	7	34	311	293	73	5	-	723
62-64	-	-	8	-	106	226	89	24	-	453
65-67	-	-	-	-	24	86	92	27	7	236
68-70	-	-	-	-	18	27	34	13	3	95
71-73	-	-	-	-	5	19	11	21	5	61
74-76	-	-	-	-	-	-	5	5	-	10
77-79	-	-	-	-	-	-	-	-	1	1
80-82	-	-	-	-	-	-	-	-	1	1
Total	-	327	1712	3291	2122	928	359	103	17	8859

No. Aged: 1018
No. of Samples: 67

(cont'd.)

TABLE 41 UNITED STATES - 1957/58 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

Part III - August-October, 1957 5Y ALL GEARS - Commercial Landings

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
3 cm. group	NUMBERS LANDED - IN HUNDREDS									
32-34	-	1	-	-	-	-	-	-	-	1
35-37	-	33	4	-	-	-	-	-	-	37
38-40	-	127	106	4	-	-	-	-	-	237
41-43	-	104	506	105	-	-	-	-	-	715
44-46	-	105	1309	176	-	-	-	-	-	1590
47-49	-	18	776	522	98	-	-	-	-	1414
50-52	-	-	208	1410	351	8	-	-	-	1977
53-55	-	-	111	392	684	87	30	-	-	1304
56-58	-	-	22	261	587	153	43	21	-	1087
59-61	-	-	-	42	379	265	32	34	2	754
62-64	-	-	-	18	201	268	56	39	2	584
65-67	-	-	-	11	57	133	63	24	2	290
68-70	-	-	-	-	4	17	104	6	7	138
71-73	-	-	-	-	-	15	30	6	3	54
74-76	-	-	-	-	-	-	3	6	7	16
77-79	-	-	-	-	-	-	-	1	-	1
Total	-	388	3042	2941	2361	946	361	137	23	10,199
No. Aged: 1172										
No. of Samples: 77										

Part IV - November-January, 1957/58 5Y ALL GEARS - Commercial Landings

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
3 cm. group	NUMBERS LANDED - IN HUNDREDS									
29-31	-	9	-	-	-	-	-	-	-	9
32-34	-	59	1	-	-	-	-	-	-	60
35-37	-	226	1	-	-	-	-	-	-	227
38-40	-	676	123	-	-	-	-	-	-	799
41-43	-	884	353	-	-	-	-	-	-	1237
44-46	-	562	935	150	-	-	-	-	-	1647
47-49	-	43	700	294	17	17	-	-	-	1071
50-52	-	-	186	320	104	31	-	-	-	641
53-55	-	-	64	272	262	33	-	-	-	631
56-58	-	-	20	121	309	96	24	-	-	570
59-61	-	-	-	30	209	72	90	6	-	407
62-64	-	-	-	27	90	44	69	17	10	257
65-67	-	-	-	-	23	52	47	35	-	157
68-70	-	-	-	-	4	11	15	7	20	57
71-73	-	-	-	1	-	2	14	13	-	30
74-76	-	-	-	-	-	-	4	-	2	6
77-79	-	-	-	-	-	-	-	-	1	1
Total	-	2459	2383	1215	1018	358	263	78	33	7807
No. Aged: 418										
No. of Samples: 25										

(cont'd.)

TABLE 41 UNITED STATES - 1957/58 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

Part V - Haddock Year, 1957/58 5Y ALL GEARS - Commercial Landings

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948-	Total
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+	
3 cm. group	NUMBERS LANDED - IN HUNDREDS									
29-31	-	9	-	-	-	-	-	-	-	9
32-34	-	60	1	-	-	-	-	-	-	61
35-37	-	376	37	4	-	-	-	-	-	417
38-40	-	1484	820	71	-	-	-	-	-	2375
41-43	-	1863	2407	452	-	-	-	-	-	4722
44-46	-	1088	3711	1493	159	-	-	-	-	6451
47-49	-	139	2060	3085	633	54	-	-	-	5971
50-52	-	-	698	3094	2175	341	34	61	-	6403
53-55	-	-	249	1724	2657	716	206	76	-	5628
56-58	-	-	42	714	2046	985	376	144	44	4351
59-61	-	-	7	106	1157	954	387	197	2	2810
62-64	-	-	8	45	433	628	468	204	12	1798
65-67	-	-	-	11	149	326	323	152	20	981
68-70	-	-	-	-	48	95	153	77	41	414
71-73	-	-	-	1	5	36	65	40	20	167
74-76	-	-	-	-	-	-	12	11	13	36
77-79	-	-	-	-	-	-	-	1	2	3
80-82	-	-	-	-	-	-	-	-	1	1
-	-	-	-	-	-	-	-	-	-	-
95-97	-	-	-	-	-	-	-	-	4	4
Total	-	5019	10,040	10,800	9462	4135	2024	963	159	42,602

No. Aged: 3189
No. of Samples: 206

TABLE 42 UNITED STATES - 1957/58 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark F. Dreyer

5Z Haddock Year, 1957/58 ALL GEARS - Commercial Landings (in hundreds)

Year-Class / cm. Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
33	41	85	-	-	-	-	-	-	-	126
34	48	119	2	-	-	-	-	-	-	169
35	76	745	20	-	-	-	-	-	-	841
36	126	1404	119	-	-	-	-	-	-	1649
37	333	2294	299	-	-	-	-	-	-	2926
38	288	4090	409	109	48	-	-	-	-	4944
39	206	5072	1609	105	-	-	-	-	-	6992
40	-	8467	2034	190	1	-	-	-	-	10693
41	-	7814	6149	68	-	-	-	-	-	14031
42	-	11849	4991	725	-	-	-	-	-	17565
43	-	7884	8771	1208	277	78	-	-	-	18218
44	-	7419	10594	1109	399	-	-	-	-	19522
45	-	3370	14778	1421	334	222	-	-	-	20125
46	-	3109	13864	1336	1093	1	-	-	-	19403
47	-	1903	13968	3173	850	-	-	-	-	19894
48	-	752	14151	3426	897	39	-	-	-	19265
49	-	787	13222	3072	3080	41	-	-	-	20202
50	-	259	9755	4846	2987	132	-	-	-	17979
51	-	167	10052	2700	1950	1022	287	-	-	16178
52	-	185	4952	3145	3967	1130	368	70	-	13817
53	-	-	4648	4100	2634	1239	143	-	-	12764
54	-	-	3394	2670	3405	1215	424	-	-	11108
55	-	-	2368	1808	3235	1603	1152	-	-	10166
56	-	69	1707	1634	4340	1416	635	-	-	9801
57	-	-	1090	1301	3339	1810	484	142	-	8166
58	-	-	883	1075	3119	1237	738	213	90	7355
59	-	-	309	964	3047	985	974	294	84	6657
60	-	-	336	338	2951	1168	504	191	129	5617
61	-	-	35	539	2342	1433	509	277	144	5279
62	-	-	-	309	1715	1203	997	447	228	4899
63	-	-	-	399	1484	572	1026	188	202	3871
64	-	-	-	229	1285	526	784	225	254	3303
65	-	-	-	135	831	816	904	463	8	3157
66	-	-	58	170	653	415	741	64	339	2440
67	-	-	-	2	218	1092	430	95	139	1976
68	-	-	-	87	492	345	636	276	-	1836
69	-	-	-	-	71	497	393	88	266	1315
70	-	-	-	-	268	76	413	153	105	1015
71	-	-	-	-	-	146	157	200	241	744
72	-	-	-	-	45	101	291	123	64	624
73	-	-	-	-	-	51	196	30	166	443
74	-	-	-	-	-	57	130	173	71	431
75	-	-	-	-	30	7	54	114	59	264
76-84	-	-	-	-	-	-	130	94	325	549
Total	1,118	67,843	144,567	42,395	51,387	20,675	13,500	3,920	2,914	348,319

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark F. Dreyer

5Z FEBRUARY ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
35	-	14	5	-	-	-	-	-	-	19
36	-	29	53	-	-	-	-	-	-	82
37	-	37	31	-	-	-	-	-	-	68
38	-	-	120	56	21	-	-	-	-	197
39	-	-	334	41	-	-	-	-	-	375
40	-	28	358	109	-	-	-	-	-	495
41	-	-	621	35	-	-	-	-	-	656
42	-	1	722	158	-	-	-	-	-	881
43	-	1	891	184	128	28	-	-	-	1232
44	-	-	1166	247	176	-	-	-	-	1589
45	-	-	1185	350	131	87	-	-	-	1753
46	-	-	921	463	316	-	-	-	-	1700
47	-	-	936	484	223	-	-	-	-	1643
48	-	-	883	463	348	1	-	-	-	1695
49	-	-	538	281	704	19	-	-	-	1542
50	-	-	315	531	490	81	-	-	-	1417
51	-	-	162	287	449	110	111	-	-	1119
52	-	-	-	108	751	303	82	21	-	1265
53	-	-	52	257	401	410	18	-	-	1138
54	-	-	22	145	468	264	112	-	-	1011
55	-	-	5	86	313	428	338	-	-	1170
56	-	-	1	87	320	419	132	-	-	959
57	-	-	-	55	304	317	167	49	-	892
58	-	-	1	90	292	227	150	56	34	850
59	-	-	-	31	263	148	179	52	31	704
60	-	-	-	-	232	133	180	67	-	612
61	-	-	-	34	153	213	72	58	-	530
62	-	-	-	-	94	90	165	120	69	538
63	-	-	-	38	34	46	168	46	75	407
64	-	-	-	35	63	63	102	35	32	330
65	-	-	-	35	105	35	99	64	-	338
66	-	-	-	-	92	-	122	-	61	275
67	-	-	-	-	21	51	52	11	40	175
68	-	-	-	-	46	18	63	61	-	188
69	-	-	-	-	-	78	55	-	-	133
70	-	-	-	-	-	-	55	37	-	92
71	-	-	-	-	-	10	7	22	20	59
72	-	-	-	-	-	14	50	5	-	69
73	-	-	-	-	-	-	-	-	16	16
74	-	-	-	-	-	-	8	20	-	28
75	-	-	-	-	-	-	5	4	-	9
76	-	-	-	-	-	-	-	5	8	13
77	-	-	-	-	-	-	-	-	-	-
78	-	-	-	-	-	-	-	-	4	4
Total	-	110	9322	4690	6938	3593	2492	733	390	28,268

See Page 160 for data on number of samples, etc.

(cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z MARCH ALL GEARS - Commercial Landings (in hundreds)

Year-Class / cm. Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
36	-	9	35	-	-	-	-	-	-	44
37	-	24	20	-	-	-	-	-	-	44
38	-	-	79	22	19	-	-	-	-	120
39	-	-	214	39	-	-	-	-	-	253
40	-	24	253	66	-	-	-	-	-	343
41	-	-	372	16	-	-	-	-	-	388
42	-	-	560	109	-	-	-	-	-	669
43	-	-	807	169	103	33	-	-	-	1112
44	-	-	1025	219	147	-	-	-	-	1391
45	-	-	1132	339	126	85	-	-	-	1682
46	-	-	1255	462	282	1	-	-	-	2000
47	-	-	1207	605	285	-	-	-	-	2097
48	-	-	1041	460	384	1	-	-	-	1886
49	-	-	780	407	782	15	-	-	-	1984
50	-	-	534	727	607	35	-	-	-	1903
51	-	-	291	402	624	113	91	-	-	1521
52	-	-	-	158	929	376	83	32	-	1578
53	-	-	77	383	591	395	26	-	-	1472
54	-	-	29	226	723	384	165	-	-	1527
55	-	-	5	110	347	496	380	-	-	1338
56	-	-	5	153	537	673	213	-	-	1581
57	-	-	1	66	390	407	213	64	-	1141
58	-	-	1	134	401	286	182	73	41	1118
59	-	-	-	44	358	204	249	70	39	964
60	-	-	-	-	341	181	239	90	-	851
61	-	-	-	75	242	396	100	108	-	921
62	-	-	-	-	121	103	210	158	87	679
63	-	-	-	51	65	87	262	87	102	654
64	-	-	-	65	67	67	164	65	34	462
65	-	-	-	30	90	30	174	143	-	467
66	-	-	-	-	116	-	162	-	81	359
67	-	-	-	-	34	81	85	17	63	280
68	-	-	-	-	59	12	73	71	-	215
69	-	-	-	-	-	153	52	-	-	205
70	-	-	-	-	-	-	127	40	-	167
71	-	-	-	-	-	10	28	85	20	143
72	-	-	-	-	-	30	72	10	-	112
73	-	-	-	-	-	-	-	-	75	75
74	-	-	-	-	-	-	40	22	-	62
75	-	-	-	-	-	7	-	47	-	54
76	-	-	-	-	-	-	7	-	40	47
77	-	-	-	-	-	-	-	7	15	22
78	-	-	-	-	-	-	4	-	23	27
79	-	-	-	-	-	-	-	-	20	20
80-88	-	-	-	-	-	-	-	-	27	27
Total	-	57	9723	5537	8770	4661	3401	1189	667	34,005

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z APRIL ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
35	-	-	13	-	-	-	-	-	-	13
36	-	8	20	-	-	-	-	-	-	28
37	-	14	11	-	-	-	-	-	-	25
38	-	-	55	31	8	-	-	-	-	94
39	-	-	191	25	-	-	-	-	-	216
40	-	21	127	10	-	-	-	-	-	158
41	-	-	272	17	-	-	-	-	-	289
42	-	1	377	76	-	-	-	-	-	454
43	-	-	377	79	46	17	-	-	-	519
44	-	-	587	129	76	-	-	-	-	792
45	-	-	715	205	77	50	-	-	-	1047
46	-	-	436	155	93	-	-	-	-	684
47	-	-	621	271	133	-	-	-	-	1025
48	-	-	415	150	140	1	-	-	-	706
49	-	-	385	184	303	5	-	-	-	877
50	-	-	204	255	199	16	-	-	-	674
51	-	-	184	175	280	31	31	-	-	701
52	-	-	-	119	418	183	47	17	-	784
53	-	-	31	172	308	150	11	-	-	672
54	-	-	22	142	316	152	67	-	-	699
55	-	-	6	82	284	204	127	-	-	703
56	-	-	8	70	242	211	76	-	-	607
57	-	-	2	57	208	192	104	29	-	592
58	-	-	-	82	195	121	71	32	15	516
59	-	-	-	14	211	141	154	42	14	576
60	-	-	-	-	166	70	85	34	-	355
61	-	-	-	32	91	156	35	44	-	358
62	-	-	-	-	66	36	102	90	38	332
63	-	-	-	12	28	38	84	38	25	225
64	-	-	-	42	21	21	94	42	11	231
65	-	-	-	7	23	7	83	75	-	195
66	-	-	-	-	45	-	72	-	35	152
67	-	-	-	-	19	32	47	10	22	130
68	-	-	-	-	41	8	46	46	-	141
69	-	-	-	-	-	86	25	-	-	111
70	-	-	-	-	-	-	62	17	-	79
71	-	-	-	-	-	-	12	36	-	48
72	-	-	-	-	-	8	10	3	-	21
73	-	-	-	-	-	-	-	-	27	27
74	-	-	-	-	-	-	22	-	-	22
75	-	-	-	-	-	-	-	5	-	5
-	-	-	-	-	-	-	-	-	-	-
78	-	-	-	-	-	-	-	-	11	11
79	-	-	-	-	-	-	-	-	-	-
80 & 81	-	-	-	-	-	-	-	-	10	10
Total	-	44	5059	2593	4037	1936	1467	560	208	15,904

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z MAY ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
35	-	51	-	-	-	-	-	-	-	51
36	-	246	6	-	-	-	-	-	-	252
37	-	305	-	-	-	-	-	-	-	305
38	-	334	93	-	-	-	-	-	-	427
39	-	306	149	-	-	-	-	-	-	455
40	-	406	168	-	-	-	-	-	-	574
41	-	572	773	-	-	-	-	-	-	1345
42	-	804	481	111	-	-	-	-	-	1396
43	-	204	1169	196	-	-	-	-	-	1569
44	-	277	1094	207	-	-	-	-	-	1578
45	-	-	1545	40	-	-	-	-	-	1585
46	-	98	1806	-	98	-	-	-	-	2002
47	-	199	1231	156	67	-	-	-	-	1653
48	-	-	1696	331	-	-	-	-	-	2027
49	-	-	1123	414	186	-	-	-	-	1723
50	-	-	845	468	299	-	-	-	-	1612
51	-	-	1102	226	82	246	-	-	-	1656
52	-	-	541	293	419	51	8	-	-	1312
53	-	-	319	688	322	124	22	-	-	1475
54	-	-	323	255	350	85	8	-	-	1021
55	-	-	237	226	446	127	78	-	-	1114
56	-	-	29	394	861	-	53	-	-	1337
57	-	-	53	205	598	337	-	-	-	1193
58	-	-	31	121	460	195	150	22	-	979
59	-	-	-	121	427	183	125	30	-	886
60	-	-	-	59	464	166	-	-	59	748
61	-	-	-	93	215	157	123	31	64	683
62	-	-	-	37	318	244	218	-	-	817
63	-	-	-	41	219	135	175	-	-	570
64	-	-	-	-	289	64	128	-	128	609
65	-	-	-	-	105	206	196	41	4	552
66	-	-	-	-	68	-	144	32	72	316
67	-	-	-	1	3	174	127	6	7	318
68	-	-	-	-	61	61	216	61	-	399
69	-	-	-	-	-	-	59	-	59	118
70	-	-	-	-	-	37	37	37	74	185
71	-	-	-	-	-	17	33	-	17	67
72	-	-	-	-	-	3	25	12	26	66
73	-	-	-	-	-	-	67	-	-	67
74	-	-	-	-	-	-	28	28	28	84
75	-	-	-	-	17	-	-	-	33	50
76	-	-	-	-	-	-	-	-	-	-
77	-	-	-	-	-	-	34	-	-	34
79	-	-	-	-	-	-	-	-	17	17
81	-	-	-	-	-	-	-	-	17	17
Total	-	3802	14,814	4683	6374	2612	2054	300	605	35,244

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z JUNE ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
33	-	18	-	-	-	-	-	-	-	18
34	-	35	-	-	-	-	-	-	-	35
35	-	52	1	-	-	-	-	-	-	53
36	-	121	1	-	-	-	-	-	-	122
37	-	281	123	-	-	-	-	-	-	404
38	-	563	34	-	-	-	-	-	-	597
39	-	841	371	-	-	-	-	-	-	1212
40	-	852	373	-	-	-	-	-	-	1225
41	-	512	837	-	-	-	-	-	-	1349
42	-	817	522	113	-	-	-	-	-	1452
43	-	158	1022	246	-	-	-	-	-	1426
44	-	343	1229	114	-	-	-	-	-	1686
45	-	1	1656	118	-	-	-	-	-	1775
46	-	138	1514	1	137	-	-	-	-	1790
47	-	119	1347	250	40	-	-	-	-	1756
48	-	1	1424	307	1	-	-	-	-	1733
49	-	-	1094	380	219	-	-	-	-	1693
50	-	-	1061	292	351	-	-	-	-	1704
51	-	-	853	141	111	213	-	-	-	1318
52	-	-	459	349	399	48	59	-	-	1314
53	-	-	196	631	240	34	28	-	-	1129
54	-	-	301	310	260	57	34	-	-	962
55	-	-	118	146	329	71	69	-	-	733
56	-	-	30	182	525	-	22	-	-	759
57	-	-	22	99	364	172	-	-	-	657
58	-	-	18	73	292	110	108	18	-	619
59	-	-	-	89	318	126	96	22	-	651
60	-	-	-	36	296	135	-	-	36	503
61	-	-	-	61	143	108	81	20	46	459
62	-	-	-	18	161	125	104	-	-	408
63	-	-	-	22	133	90	110	-	-	355
64	-	-	-	-	170	53	106	-	38	367
65	-	-	-	1	51	101	102	21	3	279
66	-	-	-	-	46	-	115	16	57	234
67	-	-	-	1	3	101	80	6	7	198
68	-	-	-	-	21	21	48	21	-	111
69	-	-	-	-	1	1	74	3	74	153
70	-	-	-	-	-	14	14	15	27	70
71	-	-	-	-	-	14	28	2	14	58
72	-	-	-	-	-	1	28	2	27	58
73	-	-	-	-	-	-	47	-	-	47
74	-	-	-	-	-	-	19	17	17	53
75	-	-	-	-	10	-	-	-	20	30
76	-	-	-	-	-	-	3	3	12	18
77-87	-	-	-	-	-	-	19	-	23	42
Total	-	4852	14,606	3980	4621	1595	1394	166	401	31,615

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z JULY ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
33	-	57	-	-	-	-	-	-	-	57
34	-	57	-	-	-	-	-	-	-	57
35	-	132	1	-	-	-	-	-	-	133
36	-	209	-	-	-	-	-	-	-	209
37	-	249	114	-	-	-	-	-	-	363
38	-	834	28	-	-	-	-	-	-	862
39	-	546	236	-	-	-	-	-	-	782
40	-	970	445	-	-	-	-	-	-	1415
41	-	540	1065	-	-	-	-	-	-	1605
42	-	1142	739	158	-	-	-	-	-	2039
43	-	223	1398	334	-	-	-	-	-	1955
44	-	492	1776	193	-	-	-	-	-	2461
45	-	8	2111	156	-	-	-	-	-	2275
46	-	173	1997	9	167	-	-	-	-	2346
47	-	177	2110	374	60	-	-	-	-	2721
48	-	7	2423	531	18	-	-	-	-	2979
49	-	-	1761	607	688	-	-	-	-	3056
50	-	-	1565	764	797	-	-	-	-	3126
51	-	-	1620	445	155	255	-	-	-	2475
52	-	-	700	422	622	105	54	-	-	1903
53	-	-	407	918	435	126	38	-	-	1924
54	-	-	377	347	459	104	38	-	-	1325
55	-	-	205	229	471	115	90	-	-	1110
56	-	-	33	196	571	-	23	-	-	823
57	-	-	35	141	434	231	-	-	-	841
58	-	-	15	61	217	91	77	12	-	473
59	-	-	-	81	278	86	74	20	-	539
60	-	-	-	34	286	119	-	-	34	473
61	-	-	-	47	110	81	63	16	34	351
62	-	-	-	13	114	86	78	-	-	291
63	-	-	-	16	95	60	76	-	-	247
64	-	-	-	-	57	19	39	-	8	123
65	-	-	-	-	20	42	39	8	1	110
66	-	-	-	-	28	-	61	13	30	132
67	-	-	-	-	-	43	28	-	-	71
68	-	-	-	-	16	16	36	16	-	84
69	-	-	-	-	-	-	32	2	32	66
70	-	-	-	-	-	-	-	-	-	-
71	-	-	-	-	-	13	27	-	13	53
72	-	-	-	-	-	-	9	-	9	18
73	-	-	-	-	-	-	54	2	1	57
74	-	-	-	-	-	-	-	-	-	-
75	-	-	-	-	3	-	-	-	6	9
76	-	-	-	-	-	-	-	-	4	4
78	-	-	-	-	-	-	2	-	7	9
Total	-	5816	21,161	6076	6101	1592	938	89	179	41,952

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z AUGUST ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
35	-	183	-	-	-	-	-	-	-	183
36	40	507	3	-	-	-	-	-	-	550
37	-	612	-	-	-	-	-	-	-	612
38	-	1118	-	-	-	-	-	-	-	1118
39	-	1560	31	-	-	-	-	-	-	1591
40	-	2710	14	-	-	-	-	-	-	2724
41	-	2073	960	-	-	-	-	-	-	3033
42	-	3702	774	-	-	-	-	-	-	4476
43	-	2716	1601	-	-	-	-	-	-	4317
44	-	1970	1709	-	-	-	-	-	-	3679
45	-	581	2532	65	-	-	-	-	-	3178
46	-	610	2454	40	-	-	-	-	-	3104
47	-	266	2636	511	20	-	-	-	-	3433
48	-	176	2332	492	-	-	-	-	-	3000
49	-	324	2866	331	100	-	-	-	-	3621
50	-	113	1669	644	127	-	-	-	-	2553
51	-	56	1405	330	69	24	24	-	-	1908
52	-	50	702	305	198	30	-	-	-	1285
53	-	-	943	191	98	-	-	-	-	1232
54	-	-	373	353	267	38	-	-	-	1031
55	-	-	273	186	201	16	16	-	-	692
56	-	23	272	87	214	27	13	-	-	636
57	-	-	165	123	191	40	-	-	-	519
58	-	-	33	97	201	53	-	-	-	384
59	-	-	71	107	176	27	27	-	-	408
60	-	-	31	52	186	52	-	-	-	321
61	-	-	9	9	161	57	9	-	-	245
62	-	-	-	31	190	81	16	-	-	318
63	-	-	-	35	153	20	26	-	-	234
64	-	-	-	-	65	36	23	20	-	144
65	-	-	-	-	70	109	43	14	-	236
66	-	-	9	26	9	35	8	-	-	87
67	-	-	-	-	30	34	-	10	-	74
68	-	-	-	25	-	48	25	-	-	98
69	-	-	-	-	25	17	17	6	41	106
70	-	-	-	-	52	7	-	-	-	59
71	-	-	-	-	-	7	7	-	26	40
72	-	-	-	-	-	-	9	-	-	9
73	-	-	-	-	-	9	-	-	8	17
74	-	-	-	-	-	9	-	7	-	16
75	-	-	-	-	-	-	-	9	-	9
76	-	-	-	-	-	-	3	3	3	9
77	-	-	-	-	-	-	3	2	2	7
78	-	-	-	-	-	-	5	-	4	9
Total	40	19,350	23,867	4040	2803	776	274	71	84	51,305

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

52 SEPTEMBER ALL GEARS - Commercial Landings (in hundreds)

Year-Class / cm. Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
33	21	6	-	-	-	-	-	-	-	27
34	12	15	-	-	-	-	-	-	-	27
35	-	164	-	-	-	-	-	-	-	164
36	16	201	1	-	-	-	-	-	-	218
37	-	529	-	-	-	-	-	-	-	529
38	-	738	-	-	-	-	-	-	-	738
39	-	813	16	-	-	-	-	-	-	829
40	-	1715	18	-	-	-	-	-	-	1733
41	-	1739	796	-	-	-	-	-	-	2535
42	-	2205	443	-	-	-	-	-	-	2648
43	-	1641	851	-	-	-	-	-	-	2492
44	-	1380	987	-	-	-	-	-	-	2367
45	-	523	2004	58	-	-	-	-	-	2585
46	-	395	1471	34	-	-	-	-	-	1900
47	-	192	1725	330	13	-	-	-	-	2260
48	-	85	1489	361	-	-	-	-	-	1935
49	-	176	1707	178	64	-	-	-	-	2125
50	-	82	1197	439	57	-	-	-	-	1775
51	-	63	1250	297	69	23	23	-	-	1725
52	-	72	653	405	122	25	-	-	-	1277
53	-	-	668	143	88	-	-	-	-	899
54	-	-	304	207	223	38	-	-	-	772
55	-	-	269	168	219	21	21	-	-	698
56	-	20	306	94	214	36	18	-	-	688
57	-	-	118	146	224	33	-	-	-	521
58	-	-	36	107	298	74	-	-	-	515
59	-	-	81	100	222	25	25	-	-	453
60	-	-	53	88	248	55	-	-	-	444
61	-	-	10	10	188	71	10	-	-	289
62	-	-	-	22	150	74	11	-	-	257
63	-	-	-	39	168	22	28	-	-	257
64	-	-	-	-	85	50	30	26	-	191
65	-	-	-	-	78	71	48	16	-	213
66	-	-	23	67	23	71	23	-	-	207
67	-	-	-	-	38	47	-	12	-	97
68	-	-	-	35	-	72	35	-	-	142
69	-	-	-	-	23	12	12	10	34	91
70	-	-	-	-	40	4	-	-	-	44
71	-	-	-	-	-	9	9	-	35	53
72	-	-	-	-	-	-	34	-	-	34
73	-	-	-	-	-	10	4	-	10	24
74	-	-	-	-	-	27	-	27	-	54
75	-	-	-	-	-	-	-	5	-	5
76	-	-	-	-	-	-	-	-	-	-
77-79	-	-	-	-	-	-	7	3	22	32
Total	49	12,754	16,476	3328	2854	870	338	99	101	36,869

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer
5Z OCTOBER ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
35	-	121	-	-	-	-	-	-	-	121
36	4	57	-	-	-	-	-	-	-	61
37	-	243	-	-	-	-	-	-	-	243
38	-	389	-	-	-	-	-	-	-	389
39	-	662	67	-	-	-	-	-	-	729
40	-	1078	29	-	-	-	-	-	-	1107
41	-	1291	351	-	-	-	-	-	-	1642
42	-	1680	205	-	-	-	-	-	-	1885
43	-	1391	494	-	-	-	-	-	-	1885
44	-	1378	617	-	-	-	-	-	-	1995
45	-	800	1201	89	-	-	-	-	-	2090
46	-	383	1309	41	-	-	-	-	-	1733
47	-	150	1015	184	6	-	-	-	-	1355
48	-	110	992	263	-	-	-	-	-	1365
49	-	117	1228	123	21	-	-	-	-	1489
50	-	64	871	340	60	-	-	-	-	1335
51	-	48	1037	226	32	7	7	-	-	1357
52	-	63	577	256	109	9	-	-	-	1014
53	-	-	642	136	40	-	-	-	-	818
54	-	-	440	435	303	21	-	-	-	1199
55	-	-	320	245	195	11	11	-	-	782
56	-	26	268	95	237	29	14	-	-	669
57	-	-	139	125	194	42	-	-	-	500
58	-	-	37	118	278	68	-	-	-	501
59	-	-	81	107	217	27	27	-	-	459
60	-	-	42	69	206	47	-	-	-	364
61	-	-	16	16	280	92	16	-	-	420
62	-	-	-	26	176	86	13	-	-	301
63	-	-	-	41	176	23	29	-	-	269
64	-	-	-	-	119	52	44	32	-	247
65	-	-	-	-	96	77	58	19	-	250
66	-	-	26	77	26	52	26	-	-	207
67	-	-	-	-	70	85	-	23	-	178
68	-	-	-	27	-	55	27	-	-	109
69	-	-	-	-	22	12	20	8	26	88
70	-	-	-	-	62	12	-	-	-	74
71	-	-	-	-	-	6	6	-	41	53
72	-	-	-	-	-	-	51	-	-	51
73	-	-	-	-	-	11	12	-	10	33
74	-	-	-	-	-	21	-	21	-	42
75	-	-	-	-	-	-	-	22	-	22
76	-	-	-	-	-	-	8	8	6	22
77	-	-	-	-	-	-	3	3	2	8
78	-	-	-	-	-	-	3	-	2	5
79-81	-	-	-	-	-	-	-	-	13	13
Total	4	10,051	12,004	3039	2925	845	375	136	100	29,479

See Page 160 for data on number of samples, etc.

(cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z NOVEMBER ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
33	10	2	-	-	-	-	-	-	-	12
34	36	6	1	-	-	-	-	-	-	43
35	38	12	-	-	-	-	-	-	-	50
36	54	17	-	-	-	-	-	-	-	71
37	181	-	-	-	-	-	-	-	-	181
38	181	54	-	-	-	-	-	-	-	235
39	105	176	-	-	-	-	-	-	-	281
40	-	442	132	3	1	-	-	-	-	578
41	-	728	70	-	-	-	-	-	-	798
42	-	628	60	-	-	-	-	-	-	688
43	-	647	63	-	-	-	-	-	-	710
44	-	494	119	-	-	-	-	-	-	613
45	-	543	261	1	-	-	-	-	-	805
46	-	458	247	46	-	-	-	-	-	751
47	-	328	482	7	2	-	-	-	-	819
48	-	142	556	27	2	23	-	-	-	750
49	-	70	627	66	8	1	-	-	-	772
50	-	-	619	161	-	-	-	-	-	780
51	-	-	703	47	30	-	-	-	-	780
52	-	-	367	216	-	-	11	-	-	594
53	-	-	393	185	36	-	-	-	-	614
54	-	-	353	85	14	22	-	-	-	474
55	-	-	252	43	118	30	7	-	-	450
56	-	-	201	69	163	4	20	-	-	457
57	-	-	165	82	116	7	-	-	-	370
58	-	-	196	53	130	-	-	-	-	379
59	-	-	20	68	148	3	-	20	-	259
60	-	-	73	-	163	73	-	-	-	309
61	-	-	-	48	223	29	-	-	-	300
62	-	-	-	51	102	80	25	25	4	287
63	-	-	-	31	122	15	17	2	-	187
64	-	-	-	22	87	24	12	1	-	146
65	-	-	-	20	61	43	20	20	-	164
66	-	-	-	-	63	81	4	1	1	150
67	-	-	-	-	-	87	-	-	-	87
68	-	-	-	-	58	8	16	-	-	82
69	-	-	-	-	-	40	14	18	-	72
70	-	-	-	-	37	-	36	-	-	73
71	-	-	-	-	-	24	-	22	22	68
72	-	-	-	-	17	17	-	34	-	68
73	-	-	-	-	-	8	8	7	-	23
74	-	-	-	-	-	-	5	12	10	27
75	-	-	-	-	-	-	23	-	-	23
76	-	-	-	-	-	-	-	14	-	14
77-79	-	-	-	-	-	-	5	1	4	10
Total	605	4747	5960	1331	1701	619	223	177	41	15,404

See Page 160 for data on number of samples, etc. (cont'd.)

TABLE 42 UNITED STATES - 1957 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z DECEMBER ALL GEARS - Commercial Landings (in hundreds)

cm. \ Year-Class / Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
33	10	2	-	-	-	-	-	-	-	12
34	-	-	-	-	-	-	-	-	-	-
35	8	4	-	-	-	-	-	-	-	12
36	12	-	-	-	-	-	-	-	-	12
37	106	-	-	-	-	-	-	-	-	106
38	57	37	-	-	-	-	-	-	-	94
39	64	106	-	-	-	-	-	-	-	170
40	-	142	79	2	-	-	-	-	-	223
41	-	168	15	-	-	-	-	-	-	183
42	-	425	47	-	-	-	-	-	-	472
43	-	512	60	-	-	-	-	-	-	572
44	-	595	181	1	-	-	-	-	-	777
45	-	438	212	-	-	-	-	-	-	650
46	-	413	247	33	-	-	-	-	-	693
47	-	262	358	-	-	-	-	-	-	620
48	-	108	405	13	-	9	-	-	-	535
49	-	55	547	41	1	-	-	-	-	644
50	-	-	386	106	-	-	-	-	-	492
51	-	-	641	60	38	-	-	-	-	739
52	-	-	387	273	-	-	13	-	-	673
53	-	-	317	184	42	-	-	-	-	543
54	-	-	372	87	13	24	-	-	-	496
55	-	-	326	104	151	40	7	-	-	628
56	-	-	262	102	211	10	21	-	-	606
57	-	-	166	83	129	12	-	-	-	390
58	-	-	265	70	184	6	-	-	-	525
59	-	-	18	62	135	3	18	-	-	236
60	-	-	63	-	173	63	-	-	-	299
61	-	-	-	52	251	28	-	-	-	331
62	-	-	-	57	115	90	28	28	4	322
63	-	-	-	31	122	15	15	-	-	183
64	-	-	-	35	140	38	20	1	1	235
65	-	-	-	10	28	20	10	10	-	78
66	-	-	-	-	54	68	-	-	-	122
67	-	-	-	-	-	191	-	-	-	191
68	-	-	-	-	86	12	24	-	-	122
69	-	-	-	-	-	42	14	14	-	70
70	-	-	-	-	44	1	46	3	2	96
71	-	-	-	-	-	18	-	17	17	52
72	-	-	-	-	13	13	-	26	-	52
73	-	-	-	-	-	13	-	11	11	35
74	-	-	-	-	-	-	8	19	16	43
75	-	-	-	-	-	-	26	-	-	26
76	-	-	-	-	-	-	-	26	-	26
77-81	-	-	-	-	-	-	15	11	18	44
Total	257	3267	5354	1406	1930	716	265	166	69	13,430

See Page 160 for data on number of samples, etc.

(cont'd.)

TABLE 42 UNITED STATES - 1958 AGE-LENGTH COMPOSITION - HADDOCK by J. Clark
(cont'd.) F. Dreyer

5Z JANUARY ALL GEARS - Commercial Landings (in hundreds)

Year-Class / cm. Age-Group	1956 I	1955 II	1954 III	1953 IV	1952 V	1951 VI	1950 VII	1949 VIII	1948- IX+	Total
34	-	6	1	-	-	-	-	-	-	7
35	30	12	-	-	-	-	-	-	-	42
36	-	-	-	-	-	-	-	-	-	-
37	46	-	-	-	-	-	-	-	-	46
38	50	23	-	-	-	-	-	-	-	73
39	37	62	-	-	-	-	-	-	-	99
40	-	79	38	1	-	-	-	-	-	118
41	-	191	17	-	-	-	-	-	-	208
42	-	444	61	-	-	-	-	-	-	505
43	-	391	38	-	-	-	-	-	-	429
44	-	490	104	-	-	-	-	-	-	594
45	-	476	224	-	-	-	-	-	-	700
46	-	441	207	52	-	-	-	-	-	700
47	-	210	300	1	1	-	-	-	-	512
48	-	123	495	28	4	4	-	-	-	654
49	-	45	566	60	4	1	-	-	-	676
50	-	-	489	119	-	-	-	-	-	608
51	-	-	804	64	11	-	-	-	-	879
52	-	-	566	241	-	-	11	-	-	818
53	-	-	603	212	33	-	-	-	-	848
54	-	-	478	78	9	26	-	-	-	591
55	-	-	352	183	161	44	8	-	-	748
56	-	-	292	105	245	7	30	-	-	679
57	-	-	224	119	187	20	-	-	-	550
58	-	-	250	69	171	6	-	-	-	496
59	-	-	38	140	294	12	-	38	-	522
60	-	-	74	-	190	74	-	-	-	338
61	-	-	-	62	285	45	-	-	-	392
62	-	-	-	54	108	108	27	26	26	349
63	-	-	-	42	169	21	36	15	-	283
64	-	-	-	30	122	39	22	3	2	218
65	-	-	-	32	104	75	32	32	-	275
66	-	-	-	-	83	108	4	2	2	199
67	-	-	-	-	-	166	11	-	-	177
68	-	-	-	-	104	14	27	-	-	145
69	-	-	-	-	-	56	19	27	-	102
70	-	-	-	-	33	1	36	4	2	76
71	-	-	-	-	-	18	-	16	16	50
72	-	-	-	-	15	15	3	31	2	66
73	-	-	-	-	-	-	4	10	8	22
74	-	-	-	-	-	-	-	-	-	-
75	-	-	-	-	-	-	-	22	-	22
76	-	-	-	-	-	-	-	7	-	7
77	-	-	-	-	-	-	5	1	8	14
78	-	-	-	-	-	-	4	-	3	7
Total	163	2993	6221	1692	2333	860	279	234	69	14,844

See Page 160 for data on number of samples, etc.

TABLE 43 UNITED STATES - 1956-1958 SAMPLES AND LANDINGS DATA - HADDOCK by J. Clark
for Tables 40 and 42 F. Dreyer

5Z ALL GEARS - Commercial Landings

Year	1956											
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Days Fished	388	558	588	255	421	467	344	487	522	405	559	577
No. Length Samples	18	27	14	13	39	41	50	47	20	45	28	45
No. Scale Samples	10	15	8	10	15	25	30	20	7	24	20	27
No. Fish Measured	1414	1957	954	1110	3325	3362	3966	3657	1760	3727	2470	3487
No. Fish Aged	212	264	154	192	273	438	500	342	125	417	356	491
Mean Wt. Fish (Kg.)	1.64	1.63	1.66	1.49	1.35	1.28	1.28	1.19	1.13	1.18	1.40	1.43
Est. Wt. Landings Sampled	2.50	3.47	1.80	1.98	5.48	4.94	6.00	5.44	2.52	5.95	4.50	6.00
Wt. Total Landings	2299	4539	4064	1764	5426	6020	4429	5395	5782	4489	3416	3524
Est. No. in Total Landings[1]	1.400	2.788	2.441	1.182	4.025	4.704	3.470	4.531	5.106	3.808	2.443	2.462

Year	1957												1958
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Days Fished	424	523	653	268	774	654	826	1188	944	798	459	449	513
No. Length Samples	28	51	43	24	19	49	45	29	41	40	32	16	26
No. Scale Samples	8	20	19	5	12	17	17	13	18	15	16	4	17
No. Fish Measured	1943	4206	3447	1972	1377	2925	3418	2176	3349	3206	2317	1205	1941
No. Fish Aged	134	348	336	85	206	282	292	226	317	253	274	63	216
Mean Wt. Fish (Kg.)	1.57	1.56	1.61	1.42	1.41	1.33	1.27	1.17	1.29	1.37	1.50	1.68	1.74
Est. Wt. Landings Sampled	3.18	7.40	6.24	3.22	2.18	4.72	4.93	3.24	5.40	5.58	3.97	2.21	3.58
Wt. Total Landings	2592	4397	5487	2254	4974	4202	5308	6000	4768	4032	2314	2262	2583
Est. No. in Total Landings[1]	1.652	2.827	3.400	1.590	3.524	3.162	4.195	5.131	3.687	2.948	1.540	1.343	1.484

1) In millions.

TABLE 44 UNITED STATES - 1957 LENGTH FREQUENCIES - REDFISH by G.F. Kelly
G.M. Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	3 N-O-P											
Month	February			May			June			July		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
cm.	FREQUENCIES in ‰											
17	-	-	-	3	3	6	-	-	-	-	-	-
18	-	-	-	3	3	6	-	-	-	-	-	-
19	-	-	-	10	7	17	-	-	-	-	-	-
20	-	-	-	13	3	16	-	30	30	-	-	-
21	-	-	-	13	7	20	10	10	20	-	-	-
22	20	-	20	47	7	54	30	30	60	-	-	-
23	40	20	60	127	20	147	120	30	150	10	-	10
24	60	20	80	177	37	214	260	90	350	10	20	30
25	40	40	80	107	77	184	70	60	130	30	10	40
26	60	80	140	60	107	167	40	80	120	70	10	80
27	40	80	120	13	73	86	10	40	50	70	40	110
28	-	50	50	-	17	17	-	20	20	40	30	70
29	30	50	80	3	23	26	-	20	20	20	40	60
30	10	30	40	3	17	20	-	40	40	20	100	120
31	10	-	10	-	7	7	-	-	-	30	70	100
32	-	20	20	-	7	7	-	10	10	20	20	40
33	10	60	70	-	3	3	-	-	-	20	10	30
34	10	50	60	-	3	3	-	-	-	30	20	50
35	-	60	60	-	-	-	-	-	-	20	20	40
36	-	40	40	-	-	-	-	-	-	-	40	40
37	-	30	30	-	-	-	-	-	-	10	70	80
38	-	20	20	-	-	-	-	-	-	-	60	60
39	-	10	10	-	-	-	-	-	-	-	30	30
40	-	10	10	-	-	-	-	-	-	-	10	10
Total	330	670	1000	579	421	1000	540	460	1000	400	600	1000
No. Fish Measured	33	67	100	174	126	300	54	46	100	40	60	100
Mean Wt. Fish (Kg.)												
Wt. Total Landings												
Est. No. in Total Landings												

(cont'd.)

TABLE 44 UNITED STATES - 1957 LENGTH FREQUENCIES - REDFISH by G.F. Kelly
(cont'd.) G.M. Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	3 N-O-P						4 R-S-T					
Month	October			December			June			July		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
cm.	FREQUENCIES in ‰											
14	–	–	–	–	–	–	–	–	–	1	–	1
15	–	–	–	–	–	–	1	–	1	1	–	1
16	–	–	–	–	–	–	–	–	–	1	–	1
17	–	–	–	–	–	–	–	–	–	–	–	–
18	–	–	–	–	–	–	1	–	1	1	–	1
19	–	–	–	2	4	6	1	1	2	–	–	–
20	–	–	–	2	–	2	5	1	6	1	–	1
21	–	–	–	8	2	10	5	3	8	2	–	2
22	50	10	60	20	8	28	15	5	20	3	2	5
23	100	50	150	34	14	48	21	9	30	8	6	14
24	90	60	150	102	24	126	27	14	41	11	3	14
25	110	80	190	96	32	128	29	18	47	23	4	27
26	50	80	130	72	40	112	53	24	77	47	7	54
27	30	120	150	32	44	76	67	33	100	54	16	70
28	10	70	80	50	56	106	39	40	79	35	22	57
29	–	10	10	26	50	76	25	59	84	31	33	64
30	20	30	50	26	32	58	33	53	86	45	35	80
31	–	–	–	10	32	42	47	42	89	43	54	97
32	–	–	–	4	38	42	38	28	66	26	45	71
33	10	–	10	8	22	30	21	25	46	29	57	86
34	–	10	10	2	20	22	19	15	34	31	43	74
35	–	–	–	–	30	30	13	13	26	19	18	37
36	–	10	10	–	22	22	6	41	47	10	20	30
37	–	–	–	2	10	12	1	39	40	11	28	39
38	–	–	–	–	12	12	1	33	34	1	47	48
39	–	–	–	–	2	2	–	19	19	1	55	56
40	–	–	–	–	–	–	–	9	9	1	41	42
41	–	–	–	–	–	–	–	3	3	–	18	18
42	–	–	–	–	2	2	–	3	3	–	8	8
43	–	–	–	–	4	4	–	–	–	–	1	1
–	–	–	–	–	–	–	–	–	–	–	–	–
47	–	–	–	–	2	2	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–
50	–	–	–	–	2	2	–	–	–	–	1	1
–	–	–	–	–	–	–	–	–	–	–	–	–
54	–	–	–	–	–	–	–	1	1	–	–	–
Total	470	530	1000	496	504	1000	468	531	999	436	564	1000
No. of Fish Measured	47	53	100	248	252	500	702	798	1500	436	564	1000
Mean Wt. Fish (Kg.)												
Wt. Total Landings												
Est. No. in Total Landings												

(cont'd.)

TABLE 44 UNITED STATES - 1957 LENGTH FREQUENCIES - REDFISH by G.F. Kelly
(cont'd.) G.M. Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	4 R-S-T											
Month	August			September			October			November		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
cm.	FREQUENCIES in ‰											
18	–	–	–	–	–	–	2	–	2	–	–	–
19	–	–	–	–	–	–	–	–	–	–	–	–
20	–	–	–	–	–	–	–	–	–	–	–	–
21	1	–	1	–	2	2	2	–	2	–	2	2
22	1	–	1	2	5	7	8	2	10	–	5	5
23	7	3	10	2	5	7	–	–	–	2	2	4
24	9	7	16	2	–	2	15	8	23	8	8	16
25	9	3	12	5	2	7	12	10	22	5	10	15
26	10	9	19	10	5	15	18	18	36	15	12	27
27	30	13	43	18	8	26	45	25	70	20	18	38
28	11	10	21	12	8	20	18	25	43	20	18	38
29	26	21	47	52	5	57	35	32	67	30	25	55
30	83	34	117	78	28	106	50	50	100	58	10	68
31	64	64	128	98	68	166	85	65	150	42	28	70
32	64	86	150	60	100	160	22	102	124	38	62	100
33	40	81	121	48	80	128	25	72	97	40	78	118
34	47	30	77	32	65	97	35	40	75	32	28	60
35	34	19	53	40	28	68	15	10	25	28	28	56
36	20	30	50	28	15	43	15	25	40	30	50	80
37	7	33	40	–	25	25	5	20	25	8	48	56
38	1	46	47	2	40	42	5	25	30	2	52	54
39	–	31	31	–	10	10	2	35	37	5	68	73
40	–	9	9	–	10	10	–	10	10	–	35	35
41	–	3	3	–	2	2	–	2	2	–	15	15
42	–	3	3	–	–	–	–	2	2	5	2	7
43	–	–	–	–	–	–	–	–	–	–	2	2
44	–	–	–	–	–	–	–	–	–	–	2	2
45	–	–	–	–	–	–	–	–	–	–	–	–
46	–	–	–	–	–	–	–	5	5	–	–	–
47	–	–	–	–	–	–	–	–	–	–	–	–
48	–	–	–	–	–	–	–	–	–	–	2	2
–	–	–	–	–	–	–	–	–	–	–	–	–
56	–	–	–	–	–	–	–	–	–	–	2	2
Total	464	535	999	489	511	1000	414	583	997	388	612	1000
No. of Fish Measured	326	374	700	196	204	400	166	234	400	155	245	400
Mean Wt. Fish (Kg.)												
Wt. Total Landings												
Est. No. in Total Landings												

(cont'd.)

TABLE 44 UNITED STATES - 1957 LENGTH FREQUENCIES - REDFISH by G.F. Kelly
(cont'd.) G.M. Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	4 V-W-X											
Month	January			February			March			April		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
cm.	FREQUENCIES in ‰											
13	–	–	–	–	–	–	–	–	–	1	–	1
14	–	–	–	2	–	2	–	–	–	1	–	1
15	10	–	10	2	–	2	2	–	2	1	–	1
16	10	–	10	–	–	–	–	–	–	–	–	–
17	–	–	–	2	–	2	2	–	2	7	3	10
18	30	30	60	10	8	18	4	2	6	10	3	13
19	40	20	60	18	20	38	14	10	24	33	7	40
20	120	40	160	40	12	52	24	22	46	56	24	80
21	150	60	210	55	30	85	90	32	122	83	30	113
22	70	100	170	60	42	102	100	58	158	86	61	147
23	70	60	130	102	48	150	48	94	142	64	77	141
24	40	30	70	88	25	113	16	156	172	49	89	138
25	20	30	50	52	52	104	4	126	130	19	94	113
26	–	30	30	32	52	84	2	108	110	3	71	74
27	–	20	20	15	65	80	–	54	54	1	47	48
28	–	–	–	8	58	66	–	18	18	3	33	36
29	–	–	–	5	35	40	–	6	6	3	19	22
30	–	–	–	–	22	22	–	4	4	–	3	3
31	–	–	–	–	18	18	–	2	2	4	1	5
32	–	10	10	–	10	10	–	–	–	–	1	1
33	–	–	–	–	5	5	–	–	–	–	3	3
34	–	10	10	–	5	5	–	–	–	–	1	1
35	–	–	–	–	–	–	–	–	–	–	7	7
36	–	–	–	–	–	–	–	2	2	–	–	–
Total	560	440	1000	491	507	998	306	694	1000	424	574	998
No. Fish Measured	56	44	100	197	203	400	153	347	500	297	403	700
Mean Wt. Fish (Kg.)												
Wt. Total Landings												
Est. No. in Total Landings												

(cont'd.)

TABLE 44 UNITED STATES - 1957 LENGTH FREQUENCIES - REDFISH by G.F. Kelly
(cont'd.) G.M. Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	4 V-W-X											
Month	May			June			July			August		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
cm.	FREQUENCIES in ‰											
15	-	-	-	-	-	-	3	1	4	-	-	-
16	-	-	-	2	-	2	-	-	-	1	1	2
17	7	1	8	-	-	-	1	3	4	2	2	4
18	6	5	11	10	5	15	4	1	5	-	1	1
19	15	7	22	10	2	12	6	6	12	1	1	2
20	27	19	46	10	2	12	20	17	37	11	9	20
21	39	20	59	18	12	30	14	11	25	14	19	33
22	50	44	94	35	20	55	46	19	65	36	28	64
23	59	47	106	30	18	48	57	41	98	56	50	106
24	56	60	116	32	30	62	43	40	83	58	52	110
25	43	55	98	70	32	102	43	37	80	76	58	134
26	22	51	73	60	40	100	33	44	77	61	46	107
27	27	48	75	55	48	103	27	41	68	48	61	109
28	36	46	82	58	52	110	16	40	56	38	42	80
29	16	22	38	35	38	73	14	29	43	19	28	47
30	12	33	45	20	30	50	13	27	40	22	38	60
31	12	26	38	15	35	50	13	27	40	16	24	40
32	11	23	34	10	28	38	13	23	36	9	20	29
33	1	17	18	5	25	30	10	20	30	2	11	13
34	1	22	23	8	10	18	20	14	34	2	6	8
35	-	8	8	-	22	22	6	19	25	1	6	7
36	-	6	6	5	20	25	9	20	29	-	5	5
37	-	1	1	5	12	17	9	30	39	-	4	4
38	-	-	-	2	10	12	1	19	20	-	5	5
39	-	-	-	-	10	10	3	33	36	-	5	5
40	-	-	-	-	-	-	-	6	6	-	1	1
41	-	-	-	-	2	2	-	4	4	-	1	1
42	-	-	-	-	-	-	-	1	1	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	1	1	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	1	1	-	-	-
Total	440	561	1001	495	503	998	424	575	999	473	524	997
No. Fish Measured	528	672	1200	198	202	400	296	404	700	380	420	800
Mean Wt. Fish (Kg.)												
Wt. Total Landings												
Est. No. in Total Landings												

(cont'd.)

TABLE 44 UNITED STATES - 1957 LENGTH FREQUENCIES - REDFISH by G.F. Kelly
(cont'd.) G.M. Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	4 V-W-X											
Month	September			October			November			December		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
cm.	FREQUENCIES in ‰											
15	–	–	–	1	–	1	–	–	–	3	–	3
16	–	–	–	–	–	–	3	–	3	–	–	–
17	–	3	3	2	1	3	7	–	7	7	7	14
18	–	3	3	1	1	2	7	7	14	10	7	17
19	7	3	10	4	4	8	17	7	24	13	17	30
20	7	–	7	5	8	13	30	10	40	50	27	77
21	7	7	14	18	15	33	57	20	77	93	50	143
22	63	17	80	59	20	79	50	37	87	127	43	170
23	107	30	137	60	35	95	50	53	103	57	53	110
24	57	43	100	69	51	120	60	63	123	43	107	150
25	30	77	107	59	59	118	37	70	107	27	93	120
26	50	70	120	45	68	113	13	57	70	3	57	60
27	43	97	140	36	51	87	13	50	63	–	67	67
28	37	43	80	21	64	85	17	43	60	–	27	27
29	30	40	70	15	51	66	–	53	53	–	13	13
30	7	20	27	11	39	50	3	27	30	–	–	–
31	–	33	33	2	36	38	–	37	37	–	–	–
32	–	30	30	1	22	23	3	47	50	–	–	–
33	–	23	23	1	25	26	–	33	33	–	–	–
34	–	10	10	–	18	18	–	10	10	–	–	–
35	–	3	3	–	10	10	–	7	7	–	–	–
36	–	3	3	–	8	8	–	3	3	–	–	–
37	–	–	–	–	1	1	–	–	–	–	–	–
38	–	–	–	–	2	2	–	–	–	–	–	–
Total	445	555	1000	410	589	999	367	634	1001	433	568	1001
No. Fish Measured	133	167	300	329	471	800	110	190	300	130	170	300
Mean Wt. Fish (Kg.)												
Wt. Total Landings												
Est. No. in Total Landings												

(cont'd.)

TABLE 44 UNITED STATES - 1957 LENGTH FREQUENCIES - REDFISH by G.F. Kelly
(cont'd.) G.M. Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	5 Y-Z											
Month	January			February			March			April		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
cm.	FREQUENCIES in ‰											
11	-	-	-	-	1	1	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	1	-	1	-	-	-	-	-	-
14	-	-	-	3	1	4	-	-	-	2	-	2
15	-	-	-	4	2	6	-	-	-	-	2	2
16	-	-	-	12	7	19	-	-	-	1	1	2
17	3	-	3	20	15	35	-	-	-	3	2	5
18	-	-	-	25	21	46	3	3	6	5	3	8
19	7	7	14	28	23	51	6	3	9	8	5	13
20	3	-	3	22	26	48	11	10	21	12	10	22
21	3	17	20	23	21	44	12	17	29	17	16	33
22	20	13	33	34	26	60	25	20	45	26	12	38
23	33	10	43	37	23	60	38	22	60	35	24	59
24	70	33	103	51	28	79	54	28	82	64	26	90
25	93	30	123	43	29	72	80	37	117	81	41	122
26	107	33	140	56	30	86	87	41	128	82	51	133
27	67	33	100	56	27	83	76	43	119	75	50	125
28	57	63	120	47	33	80	68	43	111	38	49	87
29	20	47	67	31	32	63	41	33	74	24	46	70
30	3	37	40	12	26	38	17	33	50	5	43	48
31	7	13	20	6	25	31	3	39	42	4	43	47
32	-	27	27	1	20	21	-	31	31	3	20	23
33	-	47	47	1	21	22	1	31	32	1	30	31
34	-	37	37	-	18	18	-	17	17	1	14	15
35	-	30	30	-	14	14	-	15	15	-	14	14
36	-	17	17	-	11	11	-	7	7	-	6	6
37	-	13	13	-	4	4	-	2	2	-	4	4
38	-	-	-	-	2	2	-	2	2	-	2	2
39	-	-	-	-	1	1	-	1	1	-	-	-
Total	493	507	1000	513	487	1000	522	478	1000	487	514	1001
No. Fish Measured	148	152	300	1591	1509	3100	1204	1096	2300	1073	1127	2200
Mean Wt. Fish (Kg.)												
Wt. Total Landings												
Est. No. in Total Landings												

(cont'd.)

TABLE 44 UNITED STATES - 1957 LENGTH FREQUENCIES - REDFISH by G.F. Kelly
(cont'd.) G.M. Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	5 Y-Z											
Month	May			June			July			August		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
cm.	FREQUENCIES in ‰											
15	-	-	-	-	-	-	-	-	-	1	-	1
16	-	-	-	1	-	1	1	-	1	-	-	-
17	1	-	1	1	-	1	-	-	-	1	2	3
18	4	3	7	2	1	3	2	1	3	4	4	8
19	4	4	8	4	2	6	6	2	8	10	7	17
20	6	6	12	4	8	12	10	12	22	10	6	16
21	10	8	18	12	13	25	12	14	26	12	14	26
22	16	13	29	18	20	38	31	9	40	27	19	46
23	35	22	57	40	19	59	35	23	58	31	25	56
24	64	32	96	58	35	93	63	37	100	51	29	80
25	95	43	138	76	48	124	86	43	129	65	50	115
26	92	50	142	80	59	139	75	52	127	63	51	114
27	76	55	131	74	62	136	64	72	136	61	61	122
28	40	59	99	36	51	87	41	66	107	49	42	91
29	22	47	69	24	52	76	24	53	77	31	47	78
30	9	39	48	4	40	44	7	37	44	16	37	53
31	3	31	34	1	37	38	1	29	30	4	34	38
32	1	31	32	1	36	37	1	23	24	2	36	38
33	1	27	28	-	29	29	-	29	29	1	32	33
34	-	25	25	-	18	18	1	16	17	-	28	28
35	-	17	17	-	18	18	-	16	16	-	21	21
36	-	5	5	-	12	12	-	4	4	-	11	11
37	-	3	3	-	2	2	-	2	2	-	4	4
38	-	2	2	-	1	1	-	2	2	-	2	2
39	-	-	-	-	-	-	-	-	-	-	1	1
Total	479	522	1001	436	563	999	460	542	1002	439	563	1002
No. Fish Measured	1196	1304	2500	721	929	1650	822	973	1795	831	1069	1900
Mean Wt. Fish (Kg.)												
Wt. Total Landings												
Est. No. in Total Landings												

(cont'd.)

TABLE 44 UNITED STATES - 1957 LENGTH FREQUENCIES - REDFISH by G.F. Kelly
(cont'd.) G.M. Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	5 Y-Z											
Month	September			October			November			December		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
cm.	FREQUENCIES in ‰											
11	–	–	–	–	–	–	1	–	1	–	–	–
12	–	–	–	–	–	–	–	–	–	–	–	–
13	–	–	–	–	–	–	–	–	–	–	–	–
14	–	–	–	–	–	–	1	–	1	–	–	–
15	–	–	–	–	–	–	1	2	3	–	–	–
16	1	–	1	1	–	1	2	1	3	–	–	–
17	1	–	1	2	–	2	4	4	8	–	–	–
18	2	3	5	5	4	9	9	5	14	–	–	–
19	7	5	12	7	5	12	7	5	12	4	–	4
20	9	9	18	14	10	24	18	15	33	2	2	4
21	17	16	33	18	13	31	28	24	52	4	10	14
22	16	23	39	24	20	44	25	25	50	24	22	46
23	33	28	61	40	29	69	35	35	70	24	18	42
24	60	33	93	60	35	95	45	29	74	28	32	60
25	69	45	114	78	49	127	47	39	86	60	26	86
26	75	53	128	74	51	125	59	32	91	104	44	148
27	70	60	130	51	66	117	54	58	112	84	54	138
28	47	61	108	45	60	105	45	42	87	48	48	96
29	31	43	74	23	52	75	27	48	75	22	62	84
30	9	36	45	7	39	46	10	38	48	6	62	68
31	3	31	34	3	35	38	3	34	37	6	50	56
32	2	36	38	–	27	27	–	45	45	2	48	50
33	–	26	26	–	23	23	–	45	45	–	56	56
34	–	20	20	–	14	14	–	25	25	–	30	30
35	–	9	9	–	9	9	–	19	19	–	12	12
36	–	8	8	–	5	5	–	8	8	–	4	4
37	–	2	2	–	2	2	–	2	2	–	2	2
38	–	–	–	–	–	–	–	1	1	–	–	–
Total	452	547	999	452	548	1000	421	581	1002	418	582	1000
No. Fish Measured	1128	1372	2500	1083	1317	2400	463	637	1100	209	291	500
Mean Wt. Fish (Kg.)												
Wt. Total Landings												
Est. No. in Total Landings												