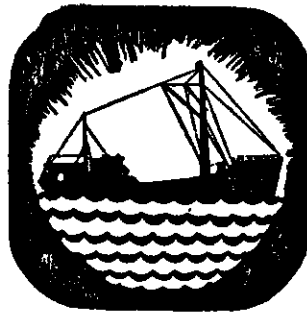


# INTERNATIONAL COMMISSION

FOR THE

NORTHWEST ATLANTIC FISHERIES



## SAMPLING YEARBOOK

VOLUME 13

PART II. HERRING — 1961-68

PREPARED BY MISS G. F. SCHRADER

Issued from the Headquarters of the Commission  
Dartmouth, N. S., Canada

1970



## PREFACE

In accordance with the requirements of the Standing Committee on Research and Statistics (STACRES) in 1968 (Redbook 1968, Part I, p. 86) and in 1969 (Redbook 1969, Part I, p. 13-14), Part II of Volume 13 of the Sampling Yearbook presents length and age data for herring only collected during the calendar years from 1961 to 1968 inclusive in the ICNAF Area. Some data from 1960 have also been included. Part I distributed in July 1970 presents length and age data for groundfish and flounders for 1968.

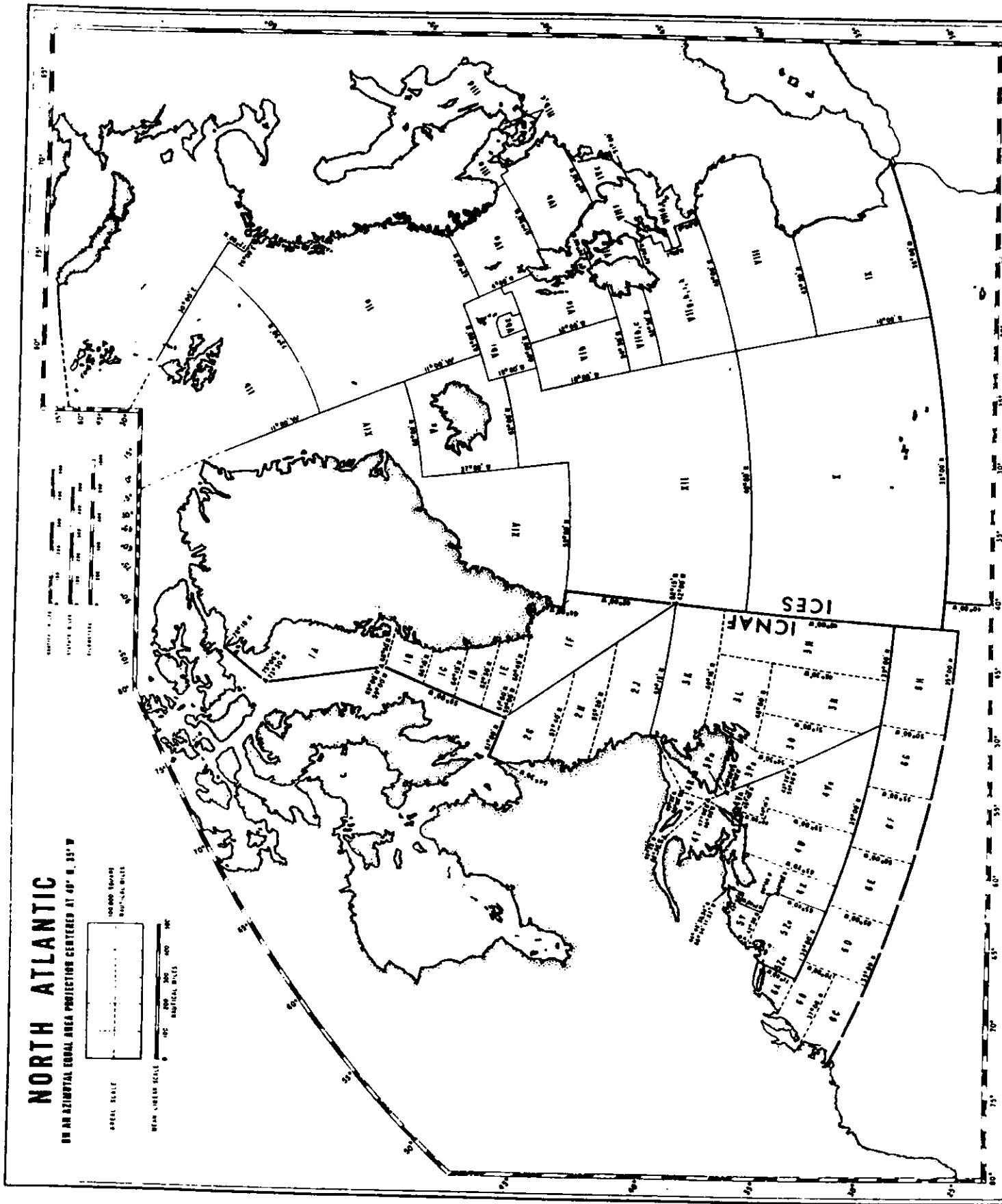
Contributions of herring length and age data to Part II were made by Canada, Denmark, France, Federal Republic of Germany, Poland, Romania, USSR and USA. Presentation of the data follows the 1969 recommendation of the Statistics and Sampling Subcommittee (Redbook 1969, Part I, p. 50):

- a) that herring length and age/length key data from 1961 to 1968 be published in a special issue of the ICNAF Sampling Yearbook with data for subsequent years included in the Sampling Yearbook on a routine basis;
- b) that the herring length data be published by country and by month for all ICNAF divisions except Div. 5Y for which the length data should be presented separately for a northern subdivision (from the border between Maine and New Brunswick to the border between Maine and New Hampshire) and for a southern subdivision (from the border between Maine and New Hampshire to Cape Cod);
- c) that herring lengths be published in cm to the cm below;
- d) that the herring sampling data should not be reported by type of gear or by vessel size;
- e) that the herring age/length keys be published by quarters for Div. 4X, 4Y and 5Z only, on a trial basis, with frequent review.

The Secretariat is grateful to the personnel of those laboratories who have supported the Commission's need for sampling of the ICNAF herring fisheries with a view to providing assessments of the state of the stocks and the effects of the fisheries on them.

L. R. Day  
Executive Secretary

October, 1970



# NORTH ATLANTIC

ON AN AZIMUTHAL EQUAL AREA PROJECTION CENTERED AT 40° N, 33° W

STATUTE MILES  
 NAUTICAL MILES

100,000 METERS  
 50,000 METERS

ICES

ICNAF

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## NOTES ON THE SAMPLING DATA

The "Notes on the Sampling Data" relate to the contributions by the reporting countries. The "Notes" contain information about methods of collection and presentation of the length and age data.

CANADA (Maritimes)

Reported by: S. N. Tibbo

Length frequencies and age/length keys are presented for herring for the years 1961-1968 inclusive.

Samples were mainly from commercial and research catches from Division 4X (Bay of Fundy and Southwest Nova Scotia). Additional length and age data by quarters and annually for the Bay of Fundy from 1956-1967 inclusive are published in *Fish. Res. Bd. Canada, Tech. Rep. 57, 1968*.

For the Gulf of St. Lawrence (Div. 4T) some length frequencies are presented here for the years 1961-1968 inclusive. Additional data for lengths (1949-1968) and ages (1966-1968) for Division 4T are published in *Fish. Res. Bd. Canada, Tech. Rep. 139, 1969*.

Letter codes (N, W, S, T) represent methods of fishing and substitute for "Mesh size" or "Mesh or Hook size" as follows:

- N = drift or set nets
- W = weirs and traps
- S = purse seines, stop seines, bar seines, etc.
- T = bottom, off-bottom and mid-water trawls

Length groupings are to the centimetre below and the means have been adjusted (i.e. 0.5 cm added).

CANADA (Newfoundland)

Reported by: V. M. Hodder

Length frequencies of herring are presented for the years 1965-1968 inclusive. In Division 3Ps (south coast of Newfoundland) there are two or more distinct stocks of herring, and consequently the length compositions are reported by areas as follows: Division 3Ps(1) is the inshore area between Burgeo and Pass Island; Division 3Ps(2) is Fortune Bay; and the length frequencies of Division 4R are for Bonne Bay on the west coast of Newfoundland.

Length frequencies are based on sampling of commercial catches from inshore waters using purse seines (325 fathoms long, 45 fathoms deep with 30-mm mesh).

Measurements are total length tabulated to the half-centimetre below; e.g. all fish whose actual total lengths fall within the range 30.0 to 30.9 cm are recorded as 30 cm. Mean lengths are calculated directly from the length frequencies without the 0.5 cm adjustment.

DENMARK (Greenland)

Reported by: Sv. Aa. Horsted

Length frequencies of herring taken in research catches in August 1968 in southern Greenland waters are reported.

FRANCE (St. Pierre et Miquelon)

Reported by: J. Morice

Length frequencies from research sampling in Divisions 3Pn and 4Vs are presented for 1967.

GERMANY, FEDERAL REPUBLIC

Reported by: K. Schubert

Age/length keys are presented for herring sampled from 1965-1968 mainly in the Georges Bank area (Div. 5Z).

POLAND

Reported by: F. Chrzan

Age/length keys are presented for herring sampled in research and commercial catches from 1965 to 1968 mainly in the Georges Bank area (Div. 5Z).

ROMANIA

Reported by: M. Niculescu-Duvăz

Length measurements made from commercial catch in 1967 in Georges Bank (Div. 5Z) are reported as standard length and grouped in 2 cm groupings.

UNION OF SOVIET SOCIALIST REPUBLICS

Reported by: A. S. Noskov

Mainly age/length keys are reported from commercial sampling in 1963-1968 on Georges Bank (Div. 5Z).

UNITED STATES

Reported by: B. E. Skud

Age/length keys are reported from commercial and research sampling from 1960-1968 inclusive from inshore fisheries in Division 4X (Southwest Nova Scotia) and Division 5Y (inshore New England area).

Length measurements are in total length.





TABLE 1

AGE/LENGTH KEY - HERRING - 4X - 1960 (1st QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1958		1957		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
				Months Within Quarter				
						Jan	Feb	Mar
8		5	-		5			
9		33	-		33			
10		25	-		25			
11		49	-		49			
12		61	-		61			
13		58	-		58			
14		13	-		13			
15		2	1		3			
16		1	1		2			
17		1	-		1			
18		-	1		1			
Total No. of Ages Read		248		3		251		
Serial Numbers		No. of Age Samples 5						
		Number of fish measured each month				50	101	100
		Mean length of fish (cm) each month				9.7	12.2	13.2
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)						

TABLE 1  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1960 (2nd QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1958		1957		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
						Months Within Quarter		
						Apr May Jun		
8	3	-	-	3				
9	11	-	-	11				
10	27	-	-	27				
11	33	-	-	33				
12	43	-	-	43				
13	27	16	-	43				
14	14	13	-	27				
15	14	8	-	22				
16	3	7	-	10				
17	-	10	-	10				
18	-	7	-	7				
19	-	6	-	6				
20	-	6	-	6				
Total No. of Ages Read		175		73		248		
Serial Numbers		No. of Age Samples 5						
		Number of fish measured each month				100	100	48
		Mean length of fish (cm) each month				12.9	13.6	14.6
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)						

TABLE 1  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1960 (3rd QUARTER)

COUNTRY		United States						
CATCHER/LANDINGS		Catcher						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Group (cm)	Age	1958	1957	1956	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2	3	4		Months Within Quarter	Jul	Aug
10		-	1	-	1			
11		-	1	-	1			
12		-	1	-	1			
13		1	14	-	15			
14		3	7	-	10		38	
15		26	10	-	36		94	
16		64	15	-	79		132	
17		112	13	-	125		113	
18		89	21	-	110		264	
19		39	2	-	41		113	
20		10	3	-	13		57	
21		4	4	-	8		94	
22		-	2	-	2		57	
23		-	-	-	-		19	
24		-	-	-	-		-	
25		-	-	-	-		-	
26		-	1	-	1		-	
27		1	1	-	2		19	
28		-	1	-	1		-	
29		-	-	-	-		-	
30		-	-	1	1		-	
31		-	-	3	3		-	
		-	-	3	3		-	
Total No. of Ages Read		349	97	7	453	1000		
Serial Numbers		No. of Age Samples 11						
		Number of fish measured each month				84	322	100
		Mean length of fish (cm) each month				16.2	18.1	18.2
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)						

TABLE 1  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1960 (4th QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1959		1958		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	1		2			Months Within Quarter		
						Oct	Nov	Dec
11		1		-	1			
12		21		-	21			
13		29		-	29			
14		2		1	3			
15		-		13	13			
16		-		38	38			
17		-		49	49			
18		-		29	29			
19		-		2	2			
20		-		-	-			
21		-		1	1			
22		-		1	1			
Total No. of Ages Read		53		134	187			
Serial Numbers						No. of Age Samples		
		Number of fish measured each month				50	87	50
		Mean length of fish (cm) each month				17.7	14.8	16.9
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)						



TABLE 2 AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1960 (2nd QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Group (cm)	Age	1958	1957	1956	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		2	3	4		Months Within Quarter			
						Apr	May	Jun	
10		6	-	-	6			-	
11		21	-	-	21			-	
21		11	-	-	11			-	
13		9	-	-	9			-	
14		2	-	-	2			-	
15		1	-	-	1			18	
16		-	1	-	1			105	
17		-	20	1	21			509	
18		-	19	-	19			246	
19		-	6	-	6			105	
20		-	2	-	2			18	
21		-	1	-	1			-	
Total No. of Ages Read						50	49	1	100
Serial Numbers						No. of Age Samples 2			1001
Number of fish measured each month								157	
Mean length of fish (cm) each month								16.2	
Mean weight of fish (kg) each month									
Total weight caught or landed (tons) each month						-	891	6573	
Estimated number caught or landed (whole numbers) each month									
Range of depths (m) each month									
Mesh size (mm)									

TABLE 2  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1960 (3rd QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	1	2	3		Months Within Quarter			
					Jul	Aug	Sep	
5	-	-	-	-	-	-	2	
6	-	-	-	-	-	-	-	
7	27	-	-	27	-	-	-	
8	2	-	-	2	-	-	-	
9	3	-	-	3	-	-	-	
10	28	-	-	28	-	-	-	
11	66	-	-	66	-	-	-	
12	47	-	-	47	-	-	-	
13	95	-	-	95	-	-	-	
14	18	70	-	88	-	-	72	
15	3	139	-	142	157	-	12	
16	1	196	1	198	172	428	155	
17	-	201	1	202	172	377	193	
18	-	90	1	91	243	144	112	
19	-	56	2	58	172	21	141	
20	-	39	3	42	57	21	146	
21	-	19	2	21	15	-	79	
22	-	4	-	4	2	-	50	
23	-	-	1	1	-	4	19	
24	-	-	-	-	2	-	12	
25	-	-	2	2	2	-	5	
26	-	-	-	-	2	-	-	
27	-	-	-	-	2	-	2	
Total No. of Ages Read	290	814	13	1117	998	995	998	
Serial Numbers	No. of Age Samples 21							
	Number of fish measured each month				691	588	901	
	Mean length of fish (cm) each month				17.0	16.3	17.4	
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month				12825	14856	11559	
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							

TABLE 2  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1960 (4th QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	1	2	3		Months Within Quarter			
					Oct	Nov	Dec	
11	1	-	-	1	-			
12	-	-	-	-	-			
13	2	-	-	2	6			
14	2	-	-	2	-			
15	-	-	-	-	16			
16	5	4	-	9	6			
17	-	51	1	52	137			
18	-	100	-	100	560			
19	-	46	-	46	236			
20	-	20	-	20	16			
21	-	17	2	19	16			
22	-	5	1	6	6			
					999			
Total No. of Ages Read	10	243	4	257				
Serial Numbers	No. of Age Samples 5							
	Number of fish measured each month				391	48		
	Mean length of fish (cm) each month				18.6	18.2		
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month				6173	1163	2214	
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							







TABLE 3

LENGTH FREQUENCIES - HERRING - 4T - 1961

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	May	June	August	September
COUNTRY	Canada (Maritimes)			
CATCHES/LANDINGS	Catches			
COMMERCIAL/RESEARCH	Commercial			
14	-	2	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	2	-	-
19	-	-	-	-
20	-	82	-	-
21	-	194	-	-
22	-	131	2	-
23	-	52	-	-
24	-	59	2	-
25	-	55	-	-
26	-	85	-	-
27	4	181	2	9
28	28	98	18	-
29	126	39	51	9
30	281	10	116	91
31	173	5	106	127
32	179	-	168	64
33	139	-	116	46
34	54	5	127	200
35	14	-	106	127
36	2	-	63	209
37	-	-	23	82
38	-	-	18	18
39	-	-	2	9
40	-	-	-	-
41	-	-	-	9
Total ‰	1000	1000	1000	1000
Serial Numbers	-	-	-	-
Number of Samples	5	1	7	1
Number of Fish Measured	498	612	510	110
Mean Length (cm)	31.6	24.7	33.0	34.4
Mean Weight (kg)	-	-	-	-
Total Weight Landed (tons)	10607	3474	1558	1995
Estimated Number Landed	-	-	-	-
Mesh(mm) or Hook(no.) Size	N	W	N	N
Range of Depths (fm)	-	-	-	-

TABLE 4

LENGTH FREQUENCIES - HERRING - 4X - 1961

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	January
COUNTRY	Canada (Maritimes)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Commercial
9	19
10	39
11	161
12	264
13	291
14	122
15	56
16	42
17	6
Total ‰	1000
Serial Numbers	-
Number of Samples	1
Number of Fish Measured	360
Mean Length (cm)	13.0
Mean Weight (kg)	-
Total Weight Landed (tons)	-
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	3
Range of Depths (fms)	-



TABLE 5

LENGTH FREQUENCIES - HERRING - 52 - 1961

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	August	October
COUNTRY	Canada (Maritimes)	
CATCHES/LANDINGS	Catches	
COMMERCIAL/RESEARCH	Research	
21	-	4
22	15	-
23	-	18
24	8	59
25	-	113
26	15	86
27	61	68
28	318	197
29	370	248
30	159	101
31	38	45
32	8	31
33	-	18
34	-	7
35	-	5
36	8	-
Total ‰	1000	1000
Serial Numbers	-	-
Number of Samples	1	7
Number of Fish Measured	132	573
Mean Length (cm)	29.2	28.4
Mean Weight (kg)	-	-
Total Weight Landed (tons)	-	-
Estimated Number Landed	-	-
Mesh(mm) or Hook(no.) Size	T	T
Range of Depths (fm)	-	-

TABLE 6

AGE/LENGTH KEY - HERRING - 4K - 1961 (1st QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class	Length Age Group (cm)	1959			Total No. of Ages Read	LENGTH COMPOSITION PER MILE		
						Months Within Quarter		
		Jan	Feb	Mar				
9		-			-		65	
10		5			5		215	
11		6			6		341	
12		13			13		215	
13		6			6		90	
14		-			-		25	
15		-			-		36	
16		-			-		7	
17		-			-		7	
Total No. of Ages Read		30			30	1001		
Serial Numbers		No. of Age Samples			1			
		Number of fish measured each month				309		
		Mean length of fish (cm) each month				11.8		
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)						

TABLE 6  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1961 (2nd QUARTER)

COUNTRY		Canada (Maritimes)					
CATCHES/LANDINGS		Catches					
COMMERCIAL/RESEARCH		Commercial					
STRUCTURES USED IN AGE DETERMINATION		Otoliths					
Year- Length Group (cm)	Class Age	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2	3		Months Within Quarter		
					Apr	May	Jun
8		1	-	1	-	-	-
9		6	-	6	-	2	-
10		36	-	36	10	35	7
11		84	1	85	31	112	54
12		123	3	126	117	169	172
13		159	12	171	191	230	323
14		107	24	131	120	127	244
15		26	25	51	123	62	75
16		9	36	45	162	79	47
17		1	32	33	123	69	54
18		-	6	6	84	40	7
19		-	4	4	23	32	11
20		-	3	3	10	18	7
21		-	-	-	-	3	-
22		-	-	-	3	2	-
23		-	-	-	3	-	-
Total No. of Ages Read		352	146	698	1000	1000	1001
Serial Numbers		No. of Age Samples 8					
		Number of fish measured each month			383	397	279
		Mean length of fish (cm) each month			15.3	14.3	14.1
		Mean weight of fish (kg) each month					
		Total weight caught or landed (tons) each month					
		Estimated number caught or landed (whole numbers) each month					
		Range of depths (m) each month					
		Mesh size (mm)			W	W	W

TABLE 6  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1961 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class	Age	1957	1956	1955	1954	1953	-	Total No. of Ages Read	Months Within Quarter			
Length Group (cm)		4	5	6	7	8	8+		Apr	May	Jun	
25	1	-	-	-	-	-	-	1			5	
26	3	-	-	-	-	-	-	3			15	
27	13	-	3	-	-	-	-	16			82	
28	6	-	14	-	-	-	-	20			103	
29	-	-	21	2	-	-	-	23			118	
30	-	-	5	21	-	-	-	26			133	
31	-	-	-	40	13	-	-	53			272	
32	-	-	-	2	24	-	-	26			133	
33	-	-	-	-	-	5	-	5			26	
34	-	-	-	-	-	1	8	9			46	
35	-	-	-	-	-	-	8	8			41	
36	-	-	-	-	-	-	5	5			26	
Total No. of Ages Read		23	43	65	37	6	21	195	1000			
Serial Numbers		No. of Age Samples							2			
		Number of fish measured each month								195		
		Mean length of fish (cm) each month								30.9		
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 6  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1961 (3rd QUARTER)

COUNTRY		Canada (Maritimes)					
CATCHES/LANDINGS		Catches					
COMMERCIAL/RESEARCH		Commercial					
STRUCTURES USED IN AGE DETERMINATION		Otoliths					
Year- Class Length Age Group (cm)	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2	3		Months Within Quarter			
				Jul	Aug	Sep	
12	11	-	11	29	-	-	
13	40	-	40	109	10	-	
14	75	-	75	210	80	-	
15	110	-	110	290	274	14	
16	89	-	89	184	99	58	
17	84	-	84	53	20	145	
18	76	-	76	19	-	160	
19	36	-	36	24	-	63	
20	10	2	12	11	-	14	
21	1	4	5	8	-	5	
22	5	4	9	5	-	5	
23	14	2	16	3	-	2	
24	16	18	34	5	-	5	
25	-	27	27	13	-	5	
26	-	15	15	21	5	17	
27	-	11	11	8	35	27	
28	-	1	1	3	129	87	
29	-	2	2	5	114	97	
30	-	-	-	-	94	119	
31	-	-	-	-	85	80	
32	-	-	-	-	30	53	
33	-	-	-	-	10	17	
34	-	-	-	-	-	7	
35	-	-	-	-	5	10	
36	-	-	-	-	5	5	
37	-	-	-	-	5	5	
Total No. of Ages Read	567	86	653	1000	1000	1000	
Serial Numbers	No. of Age Samples 7						
	Number of fish measured each month			376	201	413	
	Mean length of fish (cm) each month			16.2	23.1	24.6	
	Mean weight of fish (kg) each month						
	Total weight caught or landed (tons) each month						
	Estimated number caught or landed (whole numbers) each month						
	Range of depths (m) each month						
	Mesh size (mm)			W	W	N/S	

TABLE 6  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1961 (3rd QUARTER)

COUNTRY		United States								
CATCHES/LANDINGS		Catches								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class Length Group (cm)	Age	1960	1959	1958	1957	1956	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		1	2	3	4	5		Months Within Quarte		
								Jul	Aug	Sep
8		23	-	-	-	-	23	-	-	-
9		71	-	-	-	-	71	-	-	-
10		43	-	-	-	-	43	-	-	-
11		16	-	-	-	-	16	-	-	-
12		3	3	-	-	-	6	-	-	-
13		1	6	-	-	-	7	-	-	-
14		2	12	-	-	-	14	37	-	4
15		-	40	-	-	-	40	182	5	29
16		-	35	4	-	-	39	233	10	143
17		-	40	5	-	-	45	115	32	184
18		-	24	18	-	-	42	115	30	159
19		-	11	10	-	-	21	84	15	81
20		-	3	3	-	-	6	37	10	36
21		-	1	2	-	-	3	24	7	13
22		-	-	4	-	-	4	24	12	-
23		-	-	4	-	-	4	24	35	7
24		-	-	3	-	-	3	34	117	38
25		-	-	6	1	-	7	44	251	63
26		-	-	7	1	-	8	37	243	54
27		-	-	3	2	-	5	10	154	76
28		-	-	5	4	-	9	-	65	61
29		-	-	2	2	-	4	-	5	18
30		-	-	-	-	-	-	-	7	18
31		-	-	-	-	-	-	-	2	7
32		-	-	-	-	1	1	-	-	7
33		-	-	1	-	-	1	-	-	2
Total No. of Ages Read		159	175	77	10	1	422			
Serial Numbers		No. of Age Samples 6								
		Number of fish measured each month						355	403	809
		Mean length of fish (cm) each month						18.4	25.3	18.5
		Mean weight of fish (kg) each month								
		Total weight caught or landed (tons) each month								
		Estimated number caught or landed (whole numbers) each month								
		Range of depths (m) each month								
		Mesh size (mm)								

TABLE 6  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1961 (3rd QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Landings										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group (cm)	1957	1956	1955	1954	1953	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE				
	4	5	6	7	8	8+		Months Within Quarter	Jul	Aug	Sep	
26	1	-	-	-	-	-	1		22			
27	1	-	-	-	-	-	1		22			
28	5	3	-	-	-	-	8		178			
29	-	10	-	-	-	-	10		222			
30	-	5	3	-	-	-	8		178			
31	-	-	11	1	-	-	12		267			
32	-	-	-	2	-	-	2		44			
33	-	-	-	-	1	-	1		22			
34	-	-	-	-	-	1	1		22			
35	-	-	-	-	-	-	-		-			
36	-	-	-	-	-	1	1		22			
Total No. of Ages Read	7	18	14	3	1	2	45		999			
Serial Numbers	No. of Age Samples						1					
	Number of fish measured each month								45			
	Mean length of fish (cm) each month								30.3			
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 6  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1961 (4th QUARTER)

COUNTRY		Canada (Maritimes)								
CATCHES/LANDINGS		Catches								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class Length Group (cm)	Age	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		1	2	3	4		Months Within Quarter			
							Oct	Nov	Dec	
7		1	-	-	-	1	-	2	-	
8		8	-	-	-	8	-	18	3	
9		68	-	-	-	68	-	163	7	
10		121	-	-	-	121	-	241	62	
11		180	-	-	-	180	-	306	145	
12		83	-	-	-	83	-	178	30	
13		27	-	-	-	27	-	65	3	
14		9	2	-	-	11	-	23	5	
15		1	15	-	-	16	15	2	30	
16		1	41	-	-	42	55	2	75	
17		-	86	-	-	86	205	-	92	
18		-	119	-	-	119	420	-	107	
19		-	97	-	-	97	245	-	120	
20		-	72	-	-	72	45	-	155	
21		-	37	-	-	37	10	-	87	
22		-	5	2	-	7	-	-	18	
23		-	-	4	-	4	-	-	10	
24		-	-	2	-	2	5	-	3	
25		-	-	1	-	1	-	-	3	
26		-	-	3	-	3	-	-	7	
27		-	-	3	1	4	-	-	10	
28		-	-	-	2	2	-	-	5	
29		-	-	2	1	3	-	-	7	
30		-	-	-	4	4	-	-	13	
31		-	-	-	-	-	-	-	-	
32		-	-	-	1	1	-	-	3	
Total No. of Ages Read		499	474	17	9	999	1000	1000	1000	
Serial Numbers							No. of Age Samples 10			
		Number of fish measured each month					200	399	400	
		Mean length of fish (cm) each month					18.5	11.3	17.7	
		Mean weight of fish (kg) each month								
		Total weight caught or landed (tons) each month								
		Estimated number caught or landed (whole numbers) each month								
		Range of depths (m) each month								
		Mesh size (mm)					W	S	W/S	



TABLE 6  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1961 (4th QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Age Group (cm)		1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		1	2	3		Months Within Quarter			
						Oct	Nov	Dec	
7		16	-	-	16	-			
8		232	-	-	232	-			
9		455	-	-	455	-			
10		152	-	-	152	-			
11		14	-	-	14	-			
12		3	-	-	3	-			
13		-	-	-	-	5			
14		-	-	-	-	-			
15		-	-	-	-	-			
16		-	8	-	8	159			
17		-	16	-	16	338			
18		-	19	-	19	274			
19		-	4	-	4	154			
20		-	-	-	-	45			
21		-	2	-	2	15			
22		-	-	-	-	-			
23		-	-	-	-	-			
24		-	-	1	1	5			
25		-	-	-	-	-			
26		-	-	-	-	5			
Total No. of Ages Read		872	49	1	922	1000			
Serial Numbers		No. of Age Samples 4							
		Number of fish measured each month				450	673		
		Mean length of fish (cm) each month				14.3	9.4		
		Mean weight of fish (kg) each month							
		Total weight caught or landed (tons) each month							
		Estimated number caught or landed (whole numbers) each month							
		Range of depths (m) each month							
		Mesh size (mm)							

TABLE 6  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1961 (4th QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class Length Group (cm)	Age	1958	1957	1956	1955	1954	1953	-	Total No. of Ages Read	PER MILLE		
		3	4	5	6	7	8	8+		Oct	Nov	Dec
24		2	-	-	-	-	-	-	2	8		
25		14	2	-	-	-	-	-	16	64		
26		15	25	-	-	-	-	-	40	160		
27		1	63	2	-	-	-	-	66	264		
28		-	35	39	-	-	-	-	74	296		
29		-	1	19	-	-	-	-	20	80		
30		-	-	13	1	-	-	-	14	56		
31		-	-	1	7	-	-	-	8	32		
32		-	-	-	2	4	-	-	6	24		
33		-	-	-	-	-	-	1	1	4		
34		-	-	-	-	-	-	1	1	4		
35		-	-	-	-	-	-	1	1	4		
36		-	-	-	-	-	-	1	1	4		
Total No. of Ages Read		32	126	74	10	4	-	4	250	1000		
Serial Numbers		No. of Age Samples							1			
		Number of fish measured each month							250			
		Mean length of fish (cm) each month							28.1			
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 7 AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1961 (2nd QUARTER)

COUNTRY		United States				
CATCHES/LANDINGS		Catches				
COMMERCIAL/RESEARCH		Commercial				
STRUCTURES USED IN AGE DETERMINATION		Otoliths				
Year- Length Group (cm)	Class Age	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2		Months Within Quarter		
				Apr	May	Jun
13		5	5			-
14		18	18			-
15		38	38			-
16		13	13			591
17		8	8			409
18		1	1			-
19		1	1			-
Total No. of Ages Read		84	84	1000		
Serial Numbers		No. of Age Samples 1				
		Number of fish measured each month				106
		Mean length of fish (cm) each month				15.9
		Mean weight of fish (kg) each month				
		Total weight caught or landed (tons) each month			3	- 1514
		Estimated number caught or landed (whole numbers) each month				
		Range of depths (m) each month				
		Mesh size (mm)				

TABLE 7  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1961 (3rd QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Age Group (cm)	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	1	2	3	4		Months Within Quarter			
						Jul	Aug	Sep	
10	8	-	-	-	8	-	-	1	
11	86	-	-	-	86	-	-	-	
12	136	-	-	-	136	-	-	-	
13	84	-	-	-	84	-	-	-	
14	13	-	-	-	13	-	-	-	
15	-	4	-	-	4	-	-	-	
16	-	15	-	-	15	9	-	2	
17	-	69	1	-	70	85	103	76	
18	-	107	5	-	112	207	35	259	
19	-	81	1	-	82	244	35	175	
20	-	65	5	-	70	117	-	132	
21	-	47	7	-	54	136	-	104	
22	-	19	16	-	35	70	-	62	
23	-	10	28	-	38	70	69	35	
24	-	1	32	-	33	33	138	41	
25	-	-	43	-	43	19	172	53	
26	-	-	38	-	38	5	103	40	
27	-	1	14	-	15	-	69	10	
28	-	-	2	-	2	-	103	6	
29	-	-	3	1	4	-	69	3	
30	-	-	-	-	-	-	35	-	
31	-	-	-	1	1	-	69	-	
32	-	-	-	-	-	5	-	1	
Total No. of Ages Read	327	419	195	2	943	1000	1000	1000	
Serial Numbers	No. of Age Samples 13								
	Number of fish measured each month					318	129	1670	
	Mean length of fish (cm) each month					20.1	23.0	19.2	
	Mean weight of fish (kg) each month								
	Total weight caught or landed (tons) each month					3774	6758	5730	
	Estimated number caught or landed (whole numbers) each month								
	Range of depths (m) each month								
	Mesh size (mm)								

TABLE 7 AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1961 (4th QUARTER)  
(Cont'd)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class	Length Age Group (cm)	1960	1959	1958	1957	1956	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		1	2	3	4	5		Months Within Quarter			
							Oct			Nov	Dec
7	1	-	-	-	-	-	1	-	-	-	-
8	23	-	-	-	-	-	23	-	-	-	-
9	316	-	-	-	-	-	316	-	-	-	-
10	1018	-	-	-	-	-	1018	-	-	-	-
11	533	-	-	-	-	-	533	-	-	-	-
12	231	-	-	-	-	-	231	-	-	-	-
13	218	-	-	-	-	-	218	5	-	-	-
14	126	-	-	-	-	-	126	-	-	-	-
15	28	-	-	-	-	-	28	3	17	-	-
16	-	3	-	-	-	-	3	-	51	-	-
17	-	6	-	-	-	-	6	-	-	-	-
18	-	21	-	-	-	-	21	22	-	-	-
19	-	62	1	-	-	-	63	143	103	-	-
20	-	142	1	-	-	-	143	249	179	-	-
21	-	164	5	-	-	-	169	198	453	-	-
22	-	89	13	-	-	-	102	128	94	-	-
23	-	37	37	-	-	-	74	70	77	-	-
24	-	5	65	1	-	-	71	64	17	-	-
25	-	1	50	1	-	-	52	66	-	-	-
26	-	-	40	2	-	-	42	36	-	-	-
27	-	-	13	3	-	-	16	12	-	-	-
28	-	-	1	6	-	-	7	3	9	-	-
29	-	-	-	5	1	-	6	1	-	-	-
30	-	-	-	-	-	-	-	1	-	-	-
31	-	-	-	-	2	-	2	-	-	-	-
Total No. of Ages Read		2494	530	226	18	3	3271				
Serial Numbers		No. of Age Samples 25									
		Number of fish measured each month					4749	372			
		Mean length of fish (cm) each month					16.7	17.3			
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month					4100	1496	1311		
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 8

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1961 (3rd QUARTER)

COUNTRY		United States							Total	LENGTH COMPOSITION		
CATCHES/LANDINGS		Landings							No. of Ages Read	PER MILLE		
COMMERCIAL/RESEARCH		Commercial								Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths							Read	Jul	Aug	Sep
Year- Class	Age	1958	1957	1956	1955	1954	1953	-				
Length Group (cm)		3	4	5	6	7	8	8+				
21		1	-	-	-	-	-	-	1	7		
22		1	-	-	-	-	-	-	1	7		
23		-	-	-	-	-	-	-	-	-		
24		-	-	-	-	-	-	-	-	-		
25		6	1	-	-	-	-	-	7	45		
26		2	9	-	-	-	-	-	11	71		
27		-	25	-	-	-	-	-	25	162		
28		-	16	9	-	-	-	-	25	162		
29		-	6	18	-	-	-	-	24	156		
30		-	-	3	25	2	-	-	30	195		
31		-	-	-	4	15	-	-	19	123		
32		-	-	-	-	3	5	-	8	52		
33		-	-	-	-	-	-	2	2	13		
34		-	-	-	-	-	-	-	-	-		
35		-	-	-	-	-	-	1	1	7		
Total No. of Ages Read		10	57	30	29	20	5	3	154	1000		
Serial Numbers		No. of Age Samples							5			
		Number of fish measured each month							154			
		Mean length of fish (cm) each month							28.9			
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 8  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1961 (4th QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class Length Group (cm)	Age	1958	1957	1956	1955	1954	1953	-	Total No. of Ages Read	Months Within Quarter		
		3	4	5	6	7	8	8+		Oct	Nov	Dec
24		5	-	-	-	-	-	-	5		41	
25		12	-	-	-	-	-	-	12		98	
26		13	2	-	-	-	-	-	15		123	
27		-	10	1	-	-	-	-	11		90	
28		-	25	2	-	-	-	-	27		221	
29		-	5	15	-	-	-	-	20		164	
30		-	-	4	7	-	-	-	11		90	
31		-	-	-	6	1	-	-	7		57	
32		-	-	-	-	1	3	1	5		41	
33		-	-	-	-	-	-	4	4		33	
34		-	-	-	-	-	-	4	4		33	
35		-	-	-	-	-	-	-	-		-	
36		-	-	-	-	-	-	-	-		-	
37		-	-	-	-	-	-	1	1		8	
Total No. of Ages Read		30	42	22	14	2	3	10	122			
Serial Numbers		No. of Age Samples							1			
		Number of fish measured each month								122		
		Mean length of fish (cm) each month								27.8		
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 9

AGE/LENGTH KEY - HERRING - 5Z - 1961 (2nd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Research									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1957		1956		1955		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	Months Within Quarter			Apr	May	Jun					
24	1	-	-	-	-	-	1			13	
25	3	-	-	-	-	-	3			37	
26	31	-	-	-	-	-	31			388	
27	28	4	-	-	-	-	32			400	
28	3	7	-	-	-	-	10			125	
29	-	1	2	-	-	-	3			37	
Total No. of Ages Read		66	12	2			80			1000	
Serial Numbers		No. of Age Samples 1									
		Number of fish measured each month									80
		Mean length of fish (cm) each month									27.2
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									



TABLE 9  
(Cont'd)

## AGE/LENGTH KEY - HERRING - SZ - 1961 (4th QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS								Catches			
COMMERCIAL/RESEARCH								Research			
STRUCTURES USED IN AGE DETERMINATION								Otoliths			
Year- Class Length Age Group (cm)	1958	1957	1956	1955	1954	1953	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	3	4	5	6	7	8		Months	Within	Quarter	
								Oct	Nov	Dec	
20	1	-	-	-	-	-	1	2			
21	1	-	-	-	-	-	1	2			
22	8	-	-	-	-	-	8	16			
23	21	-	-	-	-	-	21	41			
24	55	-	-	-	-	-	55	108			
25	65	3	-	-	-	-	68	134			
26	28	26	-	-	-	-	54	106			
27	-	78	1	-	-	-	79	156			
28	-	99	19	-	-	-	118	232			
29	-	6	57	2	-	-	65	128			
30	-	-	9	12	-	-	21	41			
31	-	-	-	7	4	-	11	22			
32	-	-	-	1	3	2	6	12			
Total No. of Ages Read	179	212	86	22	7	2	508	1000			
Serial Numbers	No. of Age Samples						2				
	Number of fish measured each month						508				
	Mean length of fish (cm) each month						27.2				
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										







TABLE 10

LENGTH FREQUENCIES - HERRING - 4T - 1962

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	May
COUNTRY	Canada (Maritimes)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Commercial
21	<1
22	1
23	1
24	5
25	20
26	61
27	53
28	74
29	118
30	155
31	123
32	143
33	140
34	74
35	27
36	4
37	1
Total ‰	1000
Serial Numbers	-
Number of Samples	13
Number of Fish Measured	3921
Mean Length (cm)	31.0
Mean Weight (kg)	-
Total Weight Landed (tons)	26826
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	S/N/W
Range of Depths (fm)	-

TABLE 11 LENGTH FREQUENCIES - HERRING - 5Z - 1962

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	September
COUNTRY	Canada (Maritimes)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Research
15	<1
16	-
17	<1
18	<1
19	2
20	4
21	7
22	7
23	3
24	6
25	22
26	58
27	119
28	193
29	228
30	209
31	97
32	30
33	11
34	3
35	1
36	<1
37	<1
38	<1
39	<1
40	-
41	-
42	<1
Total ‰	1000
Serial Numbers	-
Number of Samples	22
Number of Fish Measured	7626
Mean Length (cm)	29.2
Mean Weight (kg)	-
Total Weight Landed (tons)	-
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	T
Range of Depths (fm)	-

TABLE 12

AGE/LENGTH KEY - HERRING - 4X - 1962 (1st QUARTER)

COUNTRY		Canada (Maritimes)								
CATCHES/LANDINGS		Catches								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class Length Age Group (cm)	1960					Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2						Months Within Quarter			
							Jan	Feb	Mar	
7				55		55	10	35	82	
8				235		235	130	220	225	
9				451		451	520	408	385	
10				282		282	310	248	255	
11				70		70	30	78	50	
12				5		5	-	7	3	
13				1		1	-	2	-	
14				1		1	-	2	-	
Total No. of Ages Read		1100					1100	1000	1000	1000
Serial Numbers		No. of Age Samples 11								
		Number of fish measured each month						100	600	400
		Mean length of fish (cm) each month						9.7	9.7	9.5
		Mean weight of fish (kg) each month								
		Total weight caught or landed (tons) each month								
		Estimated number caught or landed (whole numbers) each month								
		Range of depths (m) each month								
		Mesh size (mm)						\$	\$	\$

TABLE 12  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1962 (1st QUARTER)

COUNTRY		United States				
CATCHES/LANDINGS		Catches				
COMMERCIAL/RESEARCH		Commercial				
STRUCTURES USED IN AGE DETERMINATION		Otoliths				
Year-Class	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
Length Age Group (cm)	2		Months Within Quarte			
			Jan	Feb	Mar	
5	1	1	-		-	
6	-	-	-		-	
7	2	2	-		49	
8	28	28	54		327	
9	80	80	403		348	
10	67	67	425		205	
11	20	20	108		65	
12	2	2	11		5	
Total No. of Ages Read		200	1001		999	
Serial Numbers		No. of Age Samples 4				
Number of fish measured each month		286		485		
Mean length of fish (cm) each month		10.1		9.4		
Mean weight of fish (kg) each month						
Total weight caught or landed (tons) each month						
Estimated number caught or landed (whole numbers) each month						
Range of depths (m) each month						
Mesh size (mm)						



TABLE 12  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1962 (2nd QUARTER)

COUNTRY		Canada (Maritimes)						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class	Length Group (cm)	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2	3	4		Months Within Quarter		
Age						Apr	May	Jun
7		29	-	-	29	45	19	-
8		88	-	-	88	188	48	-
9		194	-	-	194	282	127	4
10		256	-	-	256	282	127	30
11		179	-	-	179	150	85	42
12		116	-	-	116	45	27	47
13		53	-	-	53	3	7	25
14		15	1	-	16	5	1	13
15		3	-	-	3	-	4	8
16		1	1	-	2	-	-	5
17		1	-	-	1	-	-	6
18		-	2	-	2	-	3	3
19		-	2	-	2	-	7	7
20		-	2	-	2	-	7	16
21		-	5	-	5	-	25	29
22		-	20	-	20	-	47	33
23		-	19	-	19	-	54	37
24		-	8	1	9	-	85	50
25		-	-	-	-	-	98	42
26		-	-	2	2	-	118	69
27		-	-	1	1	-	62	73
28		-	-	1	1	-	28	76
29		-	-	-	-	-	7	88
30		-	-	-	-	-	10	80
31		-	-	-	-	-	4	56
32		-	-	-	-	-	-	42
33		-	-	-	-	-	-	37
34		-	-	-	-	-	-	22
35		-	-	-	-	-	-	21
36		-	-	-	-	-	-	25
37		-	-	-	-	-	-	11
38		-	-	-	-	-	-	3
Total No. of Ages Read		935	60	5	1000	1000	1000	1000
Serial Numbers		No. of Age Samples 10						
		Number of fish measured each month			400	900	2817	
		Mean length of fish (cm) each month			18.0	18.6	25.7	
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)			S	W	W/S/N	

TABLE 12  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1962 (2nd QUARTER)

COUNTRY		United States				
CATCHES/LANDINGS		Catches				
COMMERCIAL/RESEARCH		Commercial				
STRUCTURES USED IN AGE DETERMINATION		Otoliths				
Year- Class Length Age Group (cm)	1960		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	2			Months Within Quarter		
				Apr	May	Jun
9	13		13		108	46
10	18		18		317	239
11	30		30		317	394
12	30		30		225	266
13	8		8		33	28
14	2		2		-	9
15	8		8		-	-
16	14		14		-	-
17	18		18		-	-
18	9		9		-	-
19	3		3		-	18
20	1		1		-	-
Total No. of Ages Read		154	154		1000	1000
Serial Numbers		No. of Age Samples		3		
		Number of fish measured each month			170	213
		Mean length of fish (cm) each month			11.2	13.2
		Mean weight of fish (kg) each month				
		Total weight caught or landed (tons) each month				
		Estimated number caught or landed (whole numbers) each month				
		Range of depths (m) each month				
		Mesh size (mm)				

TABLE 12  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1962 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							No. of Age Samples	Apr	May	Jun
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group (cm)	1959	1958	1957	1956	1955	1954	-	170	1000			
	3	4	5	6	7	8	8+		Apr	May	Jun	
24	1	3	-	-	-	-	-	4		23		
25	1	11	-	-	-	-	-	12		70		
26	-	33	4	-	-	-	-	37		218		
27	-	18	19	-	-	-	-	37		218		
28	-	-	28	1	-	-	-	29		170		
29	-	1	8	15	-	-	-	24		141		
30	-	-	-	7	-	-	-	9		53		
31	-	-	-	-	11	1	-	12		71		
32	-	-	-	-	-	2	-	2		12		
33	-	-	-	-	-	1	2	3		18		
34	-	-	-	-	-	-	-	-		-		
35	-	-	-	-	-	-	1	1		6		
Total No. of Ages Read		2	66	59	23	13	4	3	170			
Serial Numbers		No. of Age Samples							1			
		Number of fish measured each month								170		
		Mean length of fish (cm) each month								28.14		
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 12  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1962 (3rd QUARTER)

COUNTRY		Canada (Maritimes)						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2	3	4		Months Within Quarter			
					Jul	Aug	Sep	
6	1	-	-	1	<1	-	-	
7	1	-	-	1	<1	-	-	
8	-	-	-	-	-	-	-	
9	-	-	-	-	-	-	-	
10	7	-	-	7	2	-	-	
11	58	-	-	58	17	1	-	
12	149	-	-	149	28	13	38	
13	241	-	-	241	15	50	145	
14	228	-	-	228	9	66	124	
15	186	-	-	186	13	67	77	
16	77	-	-	77	24	27	53	
17	15	1	-	16	19	8	29	
18	6	1	-	7	23	4	58	
19	4	5	-	9	27	5	71	
20	-	4	-	4	23	6	104	
21	-	4	-	4	13	2	56	
22	1	7	-	8	6	2	24	
23	1	19	2	22	6	4	3	
24	-	29	15	44	12	6	2	
25	-	40	15	55	19	14	2	
26	-	13	22	35	27	21	11	
27	-	8	25	33	69	76	27	
28	-	3	8	11	125	117	48	
29	-	1	2	3	119	119	36	
30	-	-	1	1	110	127	39	
31	-	-	-	-	105	101	20	
32	-	-	-	-	75	62	20	
33	-	-	-	-	48	38	3	
34	-	-	-	-	19	18	3	
35	-	-	-	-	18	17	2	
36	-	-	-	-	17	19	2	
37	-	-	-	-	10	9	3	
38	-	-	-	-	2	1	-	
Total No. of Ages Read	975	135	90	1200	1002	1000	1000	
Serial Numbers	No. of Age Samples 12							
	Number of fish measured each month				4604	2235	660	
	Mean length of fish (cm) each month				27.3	26.5	19.7	
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month							
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)				W/S/N	W/S	W/S/T	

TABLE 12  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1962 (3rd QUARTER)

COUNTRY		United States					
CATCHES/LANDINGS		Catches					
COMMERCIAL/RESEARCH		Commercial					
STRUCTURES USED IN AGE DETERMINATION		Otoliths					
Year- Class Length Group (cm)	Age	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
				Months Within Quarter			
		2		Jul	Aug	Sep	
10		-	-	67	-	-	
11		4	4	267	-	-	
12		22	22	313	187	80	
13		48	48	267	427	200	
14		54	54	67	267	540	
15		18	18	13	93	160	
16		3	3	7	13	20	
17		-	-	-	13	-	
18		-	-	-	-	-	
19		-	-	-	-	-	
20		1	1	-	-	-	
Total No. of Ages Read		150	150		1001	1000	1000
Serial Numbers		No. of Age Samples 3					
		Number of fish measured each month			200	200	100
		Mean length of fish (cm) each month			12.8	13.9	14.5
		Mean weight of fish (kg) each month					
		Total weight caught or landed (tons) each month					
		Estimated number caught or landed (whole numbers) each month					
		Range of depths (m) each month					
		Mesh size (mm)					

TABLE 12  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1962 (3rd QUARTER)

COUNTRY		United States						Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings							Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial						Total No. of Ages Read	MONTHS WITHIN QUARTER		
STRUCTURES USED IN AGE DETERMINATION		Otoliths							PER MILLE		
Year- Class	Age	1958	1957	1956	1955	1954	-	Total No. of Ages Read	MONTHS WITHIN QUARTER		
Length Group (cm)		4	5	6	7	8	8+		Jul	Aug	Sep
25		4	-	-	-	-	-	4		6	6
26		25	-	-	-	-	-	25		35	43
27		41	28	-	-	-	-	69		104	93
28		11	87	2	-	2	-	102		153	143
29		-	110	13	-	-	-	123		174	205
30		-	33	61	3	-	-	97		139	155
31		-	2	68	16	-	-	86		116	162
32		-	-	2	46	5	-	53		83	62
33		-	1	1	-	16	9	27		42	31
34		-	-	-	-	2	36	38		62	37
35		-	-	-	-	-	24	24		39	25
36		-	-	-	-	-	24	24		35	37
37		-	-	-	-	-	5	5		10	-
38		-	-	-	-	-	1	1		2	-
Total No. of Ages Read		81	261	147	65	25	99	678			
Serial Numbers		No. of Age Samples						6			
		Number of fish measured each month							517	161	
		Mean length of fish (cm) each month							30.6	29.8	
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 12  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1962 (4th QUARTER)

COUNTRY		Canada (Maritimes)						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class	Age	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		1	2	3		Months Within Quarter		
Length Group (cm)						Oct	Nov	Dec
8		2	-	-	2	-	-	7
9		17	-	-	17	1	2	50
10		25	-	-	25	5	4	73
11		21	1	-	22	43	2	63
12		-	24	-	24	62	10	47
13		-	226	-	226	156	178	150
14		-	321	-	321	370	229	226
15		-	211	-	211	164	158	210
16		-	126	-	126	88	111	87
17		-	77	-	77	62	59	80
18		-	37	-	37	41	25	7
19		-	8	-	8	6	8	-
20		-	3	-	3	1	18	-
21		-	-	1	1	1	-	-
22		-	-	-	-	-	2	-
23		-	-	-	-	-	-	-
24		-	-	-	-	-	-	-
25		-	-	-	-	-	4	-
26		-	-	-	-	-	18	-
27		-	-	-	-	-	75	-
28		-	-	-	-	-	53	-
29		-	-	-	-	-	20	-
30		-	-	-	-	-	14	-
31		-	-	-	-	-	-	-
32		-	-	-	-	-	4	-
33		-	-	-	-	-	4	-
34		-	-	-	-	-	-	-
35		-	-	-	-	-	-	-
36		-	-	-	-	-	2	-
Total No. of Ages Read		65	1034	1	1100	1000	1000	1000
Serial Numbers		No. of Age Samples 11						
		Number of fish measured each month			810	506	300	
		Mean length of fish (cm) each month			14.8	17.8	14.1	
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)			W/S	W/S	W/S	

TABLE 12  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1962 (4th QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1961		1960		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	1		2			Months Within Quarter		
						Oct	Nov	Dec
11		1		-	1			-
12		-		-	-			-
13		9		-	9			-
14		8		9	17			134
15		-		14	14			417
16		-		15	15			244
17		-		9	9			189
18		-		3	3			16
Total No. of Ages Read		18		50	68			1000
Serial Numbers		No. of Age Samples 1						
		Number of fish measured each month						195
		Mean length of fish (cm) each month						15.8
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)						



TABLE 13

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1962 (1st QUARTER)

COUNTRY		United States				
CATCHES/LANDINGS		Catches				
COMMERCIAL/RESEARCH		Commercial				
STRUCTURES USED IN AGE DETERMINATION		Otoliths				
Year- Class Length Age Group (cm)	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE Months Within Quarter			
			Jan	Feb	Mar	
8	1	1	-	-	-	
9	15	15	-	-	24	
10	28	28	-	-	54	
11	117	117	-	-	81	
12	358	358	652	-	185	
13	190	190	261	635	302	
14	61	61	43	245	209	
15	24	24	43	88	106	
16	15	15	-	19	29	
17	1	1	-	13	4	
18	-	-	-	-	-	
19	-	-	-	-	5	
Total No. of Ages Read			810	810		
Serial Numbers			No. of Age Samples 8			
Number of fish measured each month			121	401	1282	
Mean length of fish (cm) each month			12.5	13.2	13.2	
Mean weight of fish (kg) each month						
Total weight caught or landed (tons) each month			2	27	366	
Estimated number caught or landed (whole numbers) each month						
Range of depths (m) each month						
Mesh size (mm)						

TABLE 13  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1962 (2nd QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2	3	4		Months Within	Quarte		
					Apr	May	Jun	
9	-	-	-	-	-	-	3	
10	8	-	-	8	-	6	12	
11	185	-	-	185	-	-	11	
12	302	-	-	302	-	-	19	
13	468	-	-	468	-	45	1	
14	392	-	-	392	444	40	131	
15	335	-	-	335	315	199	210	
16	207	-	-	207	191	256	274	
17	155	1	-	156	45	227	197	
18	52	2	-	54	-	63	110	
19	14	-	-	14	6	40	26	
20	1	3	-	4	-	40	4	
21	-	3	-	3	-	11	1	
22	-	3	-	3	-	17	-	
23	-	-	-	-	-	-	1	
24	-	-	-	-	-	-	-	
25	-	-	-	-	-	23	-	
26	-	-	-	-	-	17	-	
27	-	-	1	1	-	17	-	
Total No. of Ages Read	2119	12	1	2132				
Serial Numbers	No. of Age Samples			22				
	Number of fish measured each month				305	548	260	
	Mean length of fish (cm) each month				15.0	15.6	15.1	
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month				92	1234	12098	
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							

TABLE 13  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1962 (3rd QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group(cm)	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	1	2	3		Months Within Quarter			
					Jul	Aug	Sep	
8	2	1	-	3	-	-	2	
9	1	-	-	1	-	-	-	
10	1	-	-	1	-	-	-	
11	4	15	-	19	5	-	-	
12	5	53	-	58	49	-	2	
13	-	516	-	516	-	13	45	
14	-	1144	-	1144	24	3	8	
15	-	1339	-	1339	173	299	49	
16	-	725	-	725	347	280	227	
17	-	295	-	295	275	221	172	
18	-	174	-	174	91	90	174	
19	-	114	-	114	32	52	142	
20	-	74	1	75	1	33	87	
21	-	29	-	29	2	6	64	
22	-	12	2	14	-	2	15	
23	-	-	4	4	-	-	4	
24	-	-	1	1	-	1	6	
25	-	-	-	-	-	-	2	
Total No. of Ages Read	13	4491	8	4512	999	1000	999	
Serial Numbers	No. of Age Samples 42							
	Number of fish measured each month				2368	3071	1403	
	Mean length of fish (cm) each month				15.5	16.1	17.1	
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month				13394	21041	16063	
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							

TABLE 13  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1962 (4th QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class	Length Age Group (cm)	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		1	2	3		Months Within Quart			
						Oct	Nov	De	
9		14	-	-	14	-	-		
10		64	-	-	64	-	-		
11		65	-	-	65	-	-		
12		68	2	-	70	-	-		
13		33	21	-	54	40	519		
14		3	57	-	60	103	407		
15		10	156	-	166	165	74		
16		-	160	-	160	196	-		
17		-	76	-	76	116	-		
18		-	45	-	45	121	-		
19		-	28	-	28	76	-		
20		-	23	1	24	89	-		
21		-	17	1	18	58	-		
22		-	2	-	2	13	-		
23		-	-	2	2	9	-		
24		-	-	1	1	4	-		
25		-	-	-	-	9	-		
Total No. of Ages Read		257	587	5	849	999	1000		
Serial Numbers		No. of Age Samples 9							
	Number of fish measured each month					1000	100		
	Mean length of fish (cm) each month					15.9	12.8		
	Mean weight of fish (kg) each month								
	Total weight caught or landed (tons) each month					5874	874		
	Estimated number caught or landed (whole numbers) each month								
	Range of depths (m) each month								
	Mesh size (mm)								

TABLE 14

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1962 (4th QUARTER)

COUNTRY		United States								
CATCHES/LANDINGS		Landings								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class	Length Age Group (cm)	1959	1958	1957	1956	Total No. of Ages Read	LENGTH COMPOSITION PER MILE			
		3	4	5	6		Months Within Quarter			
							Oct	Nov	Dec	
22		1	-	-	-	1	4			
23		12	-	-	-	12	48			
24		35	-	-	-	35	139			
25		46	2	1	-	49	195			
26		32	32	-	-	64	255			
27		2	44	1	-	47	187			
28		-	18	3	-	21	84			
29		-	5	9	1	15	60			
30		-	1	3	2	6	24			
31		-	-	-	1	1	4			
							1000			
Total No. of Ages Read		128	102	17	4	251				
Serial Numbers		No. of Age Samples					1			
		Number of fish measured each month					231			
		Mean length of fish (cm) each month					26.5			
		Mean weight of fish (kg) each month								
		Total weight caught or landed (tons) each month								
		Estimated number caught or landed (whole numbers) each month								
		Range of depths (m) each month								
		Mesh size (mm)								

TABLE 15

AGE/LENGTH KEY - HERRING - 52 - 1962 (2nd QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Research							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Age Group (cm)		1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		3	4	5		Months Within Quarte			
						Apr	May	Jun	
21		1	-	-	1		10		
22		3	-	-	3		30		
23		5	8	-	13		131		
24		-	17	-	17		172		
25		-	28	-	28		283		
26		-	18	1	19		192		
27		-	7	5	12		121		
28		-	-	6	6		61		
Total No. of Ages Read		9	78	12	99	1000			
Serial Numbers						No. of Age Samples	1		
		Number of fish measured each month					99		
		Mean length of fish (cm) each month					25.5		
		Mean weight of fish (kg) each month							
		Total weight caught or landed (tons) each month							
		Estimated number caught or landed (whole numbers) each month							
		Range of depths (m) each month							
		Mesh size (mm)							

TABLE 15  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 52 - 1962 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches								Months Within Quarter		
COMMERCIAL/RESEARCH		Research							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class Length Group (cm)	Age	1959	1958	1957	1956	1955	1954	-	Total No. of Ages Read	Months Within Quarter		
		3	4	5	6	7	8	8+		Jul	Aug	Sep
23		5	-	-	-	-	-	-	5		-	7
24		4	1	-	-	-	-	-	5		-	7
25		16	11	-	-	-	-	-	27		18	38
26		8	72	-	-	-	-	-	80		54	114
27		3	140	4	-	-	-	-	147		89	210
28		-	179	23	-	-	-	-	202		161	286
29		-	25	152	3	-	-	-	180		321	239
30		-	2	18	38	-	-	-	58		214	68
31		-	-	-	15	3	-	-	18		54	22
32		-	-	-	-	5	3	-	8		71	6
33		-	-	-	-	-	2	-	2		18	1
34		-	-	-	-	-	-	1	1		-	1
Total No. of Ages Read		36	430	197	56	8	5	1	733			
Serial Numbers		No. of Age Samples							8			
		Number of fish measured each month								56	677	
		Mean length of fish (cm) each month								29.4	28.3	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 15  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1962 (4th QUARTER)

COUNTRY		United States								Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches									Months Within Quarter		
COMMERCIAL/RESEARCH		Research								Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths									Months Within Quarter		
Year- Class	1960	1959	1958	1957	1956	1955	1954	-	Total No. of Ages Read	PER MILLE			
Length Group (cm)	2	3	4	5	6	7	8	8+		Oct	Nov	Dec	
17	5	-	-	-	-	-	-	-	5	-	28	-	
18	25	-	-	-	-	-	-	-	25	-	140	-	
19	34	-	-	-	-	-	-	-	34	-	191	-	
20	32	-	-	-	-	-	-	-	32	-	174	40	
21	13	2	-	-	-	-	-	-	15	-	84	-	
22	1	2	-	-	-	-	-	-	3	-	11	40	
23	-	1	-	-	-	-	-	-	1	-	-	40	
24	-	2	-	-	-	-	-	-	2	-	6	40	
25	-	-	-	-	-	-	-	-	-	-	-	-	
26	-	2	4	-	-	-	-	-	6	22	6	160	
27	-	1	16	-	-	-	-	-	17	111	39	200	
28	-	-	26	13	-	-	-	-	39	467	79	160	
29	-	-	5	39	1	-	-	-	45	311	146	200	
30	-	-	-	6	9	-	-	-	15	67	56	8	
31	-	-	-	1	5	-	-	-	6	22	28	-	
32	-	-	-	-	-	1	-	1	2	-	6	40	
33	-	-	-	-	-	-	-	-	-	-	-	-	
34	-	-	-	-	-	-	-	-	-	-	-	-	
35	-	-	-	-	-	-	-	1	1	-	6	-	
Total No. of Ages Read	110	10	51	59	15	1	-	2	248				
Serial Numbers	No. of Age Samples 4												
	Number of fish measured each month								45	178	25		
	Mean length of fish (cm) each month								28.9	23.2	27.6		
	Mean weight of fish (kg) each month												
	Total weight caught or landed (tons) each month												
	Estimated number caught or landed (whole numbers) each month												
	Range of depths (m) each month												
	Mesh size (mm)												



1963

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TABLE 16

LENGTH FREQUENCIES - HERRING - 5Y (NORTH) - 1963

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	October
COUNTRY	Canada (Maritimes)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Commercial
12	37
13	46
14	18
15	27
16	230
17	544
18	97
Total ‰	1000
Serial Numbers	-
Number of Samples	1
Number of Fish Measured	217
Mean Length (cm)	16.9
Mean Weight (kg)	-
Total Weight Landed (tons)	-
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	W
Range of Depths (fm)	-

TABLE 17 LENGTH FREQUENCIES - HERRING - 52 - 1963

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	February	March	April	August
COUNTRY	USSR			Canada (Maritimes)
CATCHES/LANDINGS	Catches			
COMMERCIAL/RESEARCH	Commercial			Research
16	-	-	2	-
17	6	59	6	-
18	6	74	26	<1
19	45	101	29	-
20	51	95	51	1
21	11	71	66	6
22	17	43	65	24
23	8	38	34	86
24	28	47	22	244
25	82	59	53	266
26	163	98	150	127
27	282	130	214	31
28	163	127	247	25
29	113	58	34	54
30	22	-	1	67
31	-	-	-	47
32	-	-	-	17
33	3	-	-	3
34	-	-	-	2
35	-	-	-	<1
36	-	-	-	-
37	-	-	-	-
38	-	-	-	-
39	-	-	-	<1
<b>Total ‰</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>
Serial Numbers	-	-	-	-
Number of Samples	1	2	23	9
Number of Fish Measured	355	622	7120	2906
Mean Length (cm)	26.04	23.36	25.12	26.2
Mean Weight (kg)	0.181	0.142	0.166	-
Total Weight Landed (tons)	1.5	3	91.7	-
Estimated Number Landed	-	-	-	-
Mesh(mm) or Hook(no.) Size	40	40	40	T
Range of Depths (fm)	30-110	80-100	50-100	-

TABLE 18

AGE/LENGTH KEY - HERRING - 4X - 1963 (1st QUARTER)

COUNTRY		Canada (Maritimes)				
CATCHES/LANDINGS		Catches				
COMMERCIAL/RESEARCH		Commercial				
STRUCTURES USED IN AGE DETERMINATION		Otoliths				
Year- Class	1961	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
			Months Within Quarter			
Length Age Group (cm)	2		Jan	Feb	Mar	
6	-	-	1	<1	-	
7	1	1	3	6	3	
8	8	8	9	39	46	
9	58	58	43	135	344	
10	49	49	54	173	337	
11	22	22	41	101	101	
12	25	25	106	185	51	
13	51	51	224	196	73	
14	57	57	282	112	35	
15	22	22	150	36	9	
16	6	6	58	12	1	
17	-	-	17	2	-	
18	1	1	3	2	-	
19	-	-	1	1	-	
20	-	-	-	-	-	
21	-	-	<1	-	-	
Total No. of Ages Read	300	300	1001	1001	1000	
Serial Numbers	No. of Age Samples 3					
	Number of fish measured each month		4285	2532 <sup>1</sup>	1009	
	Mean length of fish (cm) each month		13.8	12.1	10.7	
	Mean weight of fish (kg) each month					
	Total weight caught or landed (tons) each month					
	Estimated number caught or landed (whole numbers) each month					
	Range of depths (m) each month					
	Mesh size (mm)		8	8/T	W	

<sup>1</sup> Includes 568 fish (one sample) from research vessel cruise

TABLE 18  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1963 (1st QUARTER)

COUNTRY		United States					
CATCHES/LANDINGS		Catches					
COMMERCIAL/RESEARCH		Commercial					
STRUCTURES USED IN AGE DETERMINATION		Otoliths					
Year- Class	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION, PER MILLE			
Length Group (cm)	2	3		Months Within Quarter			
				Jan	Feb	Mar	
8	-	-	-		51	12	
9	3	-	3		131	136	
10	7	-	7		141	281	
11	11	4	15		91	219	
12	4	25	29		182	174	
13	-	46	46		243	120	
14	2	25	27		131	50	
15	-	9	9		30	4	
16	-	4	4		-	4	
17	-	2	2		-	-	
Total No. of Ages Read	27	115	142		1000	1000	
Serial Numbers	No. of Age Samples 3						
	Number of fish measured each month				192	291	
	Mean length of fish (cm) each month				12.8	11.7	
	Mean weight of fish (kg) each month						
	Total weight caught or landed (tons) each month						
	Estimated number caught or landed (whole numbers) each month						
	Range of depths (m) each month						
	Mesh size (mm)						

TABLE 18  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1963 (2nd QUARTER)

COUNTRY		Canada (Maritimes)					
CATCHES/LANDINGS		Catches					
COMMERCIAL/RESEARCH		Commercial					
STRUCTURES USED IN AGE DETERMINATION		Otoliths					
Year- Class Length Age Group (cm)	1961		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2			Months Within Quarter			
				Apr	May	Jun	
7	-	-	-	1	<1	-	
8	-	-	-	11	10	-	
9	13	13	13	164	157	-	
10	45	45	45	333	309	43	
11	53	53	53	153	140	151	
12	65	65	65	78	81	183	
13	68	68	68	109	81	172	
14	30	30	30	88	60	138	
15	20	20	20	46	32	166	
16	3	3	3	12	10	65	
17	3	3	3	2	6	10	
18	-	-	-	2	5	3	
19	-	-	-	-	5	3	
20	-	-	-	1	3	-	
21	-	-	-	-	2	-	
22	-	-	-	-	1	1	
23	-	-	-	-	<1	-	
24	-	-	-	-	<1	-	
25	-	-	-	-	1	-	
26	-	-	-	-	-	-	
27	-	-	-	-	4	-	
28	-	-	-	-	7	-	
29	-	-	-	-	21	1	
30	-	-	-	-	32	1	
31	-	-	-	-	19	2	
32	-	-	-	-	11	6	
33	-	-	-	-	1	7	
34	-	-	-	-	<1	10	
35	-	-	-	-	1	12	
36	-	-	-	-	<1	12	
37	-	-	-	-	-	12	
38	-	-	-	-	-	2	
39	-	-	-	-	-	1	
Total No. of Ages Read		300	300				
Serial Numbers		No. of Age Samples 3			1710	5022	1512
Number of fish measured each month					11.6	13.4	15.1
Mean length of fish (cm) each month							
Mean weight of fish (kg) each month							
Total weight caught or landed (tons) each month							
Estimated number caught or landed (whole numbers) each month							
Range of depths (m) each month							
Mesh size (mm)					W	W/S	W/S

TABLE 18  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1963 (2nd QUARTER)

COUNTRY		United States								
CATCHES/LANDINGS		Catches								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class Length Group (cm)	Age	1961		1960		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		2		3			Months Within Quarte			
								Apr	May	Jun
8		1		-		1	10	-		3
9		15		-		15	71	121		21
10		107		-		107	192	264		149
11		85		2		87	141	229		170
12		56		19		75	141	236		128
13		26		68		94	294	79		83
14		10		66		76	131	57		66
15		3		54		57	20	14		54
16		2		24		26	-	-		80
17		1		29		30	-	-		99
18		-		21		21	-	-		84
19		-		12		12	-	-		48
20		-		3		3	-	-		6
21		-		-		-	-	-		6
22		-		-		-	-	-		3
Total No. of Ages Read		306		298		604				
Serial Numbers		No. of Age Samples 14								
		Number of fish measured each month				197	347	634		
		Mean length of fish (cm) each month				13.1	11.8	14.2		
		Mean weight of fish (kg) each month								
		Total weight caught or landed (tons) each month								
		Estimated number caught or landed (whole numbers) each month								
		Range of depths (m) each month								
		Mesh size (mm)								



TABLE 18  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1963 (3rd QUARTER)

COUNTRY		Canada (Maritimes)									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1962		1961		1960		Total No. of Ages Read	LENGTH COMPOSITION PER MILE			
	1	2	3	4	5	6		Months Within Quarter			
								Jul	Aug	Sep	
7	-	-	-	-	-	-	-	-	<1	-	
8	-	-	-	-	-	-	-	-	2	-	
9	-	-	-	-	-	-	-	-	16	-	
10	1	-	-	-	-	-	1	1	8	1	
11	5	-	-	-	-	-	5	4	1	10	
12	2	-	-	-	-	-	7	10	6	7	
13	-	-	54	-	-	-	54	14	83	16	
14	-	-	62	-	-	-	62	44	94	111	
15	-	-	33	-	4	-	37	69	40	87	
16	-	-	32	-	22	-	54	98	44	74	
17	-	-	9	-	36	-	45	104	58	68	
18	-	-	4	-	19	-	23	129	62	77	
19	-	-	-	-	9	-	9	133	97	44	
20	-	-	-	-	3	-	3	128	117	54	
21	-	-	-	-	-	-	-	72	77	30	
22	-	-	-	-	-	-	-	28	41	10	
23	-	-	-	-	-	-	-	16	15	7	
24	-	-	-	-	-	-	-	15	5	10	
25	-	-	-	-	-	-	-	14	1	19	
26	-	-	-	-	-	-	-	6	<1	9	
27	-	-	-	-	-	-	-	4	1	8	
28	-	-	-	-	-	-	-	6	16	32	
29	-	-	-	-	-	-	-	10	50	78	
30	-	-	-	-	-	-	-	22	53	83	
31	-	-	-	-	-	-	-	27	41	74	
32	-	-	-	-	-	-	-	19	26	46	
33	-	-	-	-	-	-	-	13	19	23	
34	-	-	-	-	-	-	-	8	9	12	
35	-	-	-	-	-	-	-	4	7	5	
36	-	-	-	-	-	-	-	1	4	2	
37	-	-	-	-	-	-	-	1	4	1	
38	-	-	-	-	-	-	-	<1	2	1	
39	-	-	-	-	-	-	-	-	1	<1	
Total No. of Ages Read	8	199	93				300	1001	1002	1000	
Serial Numbers	No. of Age Samples						3				
	Number of fish measured each month							3754	6095	3085	
	Mean length of fish (cm) each month							20.2	21.0	22.5	
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)							W/N/S	W/S/N/T	W/S/N	



TABLE 18  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1963 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
CATCHES/LANDINGS		Landings								Months Within Quarter			
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter			
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter			
Year- Class Length Group (cm)	Age	1960	1959	1958	1957	1956	1955	-	Total No. of Ages Read	Months Within Quarter			
		3	4	5	6	7	8	8+		Jul	Aug	Sep	
20		4	-	-	-	-	-	-	4	4	2	-	
21		3	-	-	-	-	-	-	3	4	-	-	
22		20	-	-	-	-	-	-	20	25	-	-	
23		74	-	-	-	-	-	-	74	91	-	8	
24		70	1	-	-	-	-	-	71	83	2	13	
25		20	5	1	-	-	-	-	26	32	2	-	
26		-	11	-	-	-	-	-	11	9	4	5	
27		-	19	34	-	-	-	-	53	31	46	18	
28		-	5	161	-	-	-	-	166	95	111	101	
29		-	-	225	14	-	-	-	239	133	162	150	
30		-	-	66	195	1	-	-	262	139	176	178	
31		-	-	-	133	97	2	-	232	123	134	186	
32		-	-	-	1	130	33	-	164	80	118	116	
33		-	-	-	1	4	110	21	136	69	92	98	
34		-	-	-	-	-	7	51	58	31	46	31	
35		-	-	-	-	-	2	58	60	25	44	49	
36		-	-	-	-	-	-	40	40	18	38	21	
37		-	-	-	-	-	-	13	13	5	11	10	
38		-	-	-	-	-	1	10	11	3	8	13	
39		-	-	-	-	-	-	2	2	-	4	-	
40		-	-	-	-	-	-	1	1	-	-	3	
Total No. of Ages Read		191	41	487	344	232	155	196	1646	1000	1000	1000	
Serial Numbers		No. of Age Samples							18				
		Number of fish measured each month							782	477	387		
		Mean length of fish (cm) each month							29.3	31.2	28.7		
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 18  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1963 (4th QUARTER)

COUNTRY		Canada (Maritimes)							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class	Length Age Group (cm)	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		1	2	3		Months Within Quarter			
						Oct	Nov	Dec	
8		-	-	-	-	-	3	-	
9		-	-	-	-	-	3	1	
10		5	-	-	5	1	52	32	
11		42	-	-	42	24	387	179	
12		68	-	-	68	140	234	318	
13		59	-	-	59	199	47	225	
14		23	5	-	28	73	5	131	
15		9	16	-	25	94	8	53	
16		3	19	-	22	125	3	17	
17		-	21	-	21	105	3	8	
18		-	25	-	25	102	25	10	
19		-	28	-	28	73	41	12	
20		-	22	-	22	40	55	5	
21		-	11	-	11	15	30	5	
22		-	5	-	5	7	14	3	
23		-	-	-	-	1	-	-	
24		-	-	8	8	1	22	1	
25		-	-	10	10	<1	27	-	
26		-	-	6	6	-	17	-	
27		-	-	4	4	-	11	-	
28		-	-	2	2	-	5	-	
29		-	-	3	3	-	8	-	
Total No. of Ages Read		209	152	33	394	1001	1000	1000	
Serial Numbers		No. of Age Samples 4							
	Number of fish measured each month					3489	364	866	
	Mean length of fish (cm) each month					15.8	14.6	13.3	
	Mean weight of fish (kg) each month								
	Total weight caught or landed (tons) each month								
	Estimated number caught or landed (whole numbers) each month								
	Range of depths (m) each month								
	Mesh size (mm)					W	W/S	W/S	

TABLE 18  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1963 (4th QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Age Group (cm)	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	1	2	3	4		Months Within Quarter			
						Oct	Nov	Dec	
8	-	-	-	-	-	-	-	5	
9	1	-	-	-	1	1	-	48	
10	14	-	-	-	14	8	34	94	
11	119	-	-	-	119	48	248	214	
12	240	1	-	-	241	224	267	327	
13	341	1	-	-	342	228	139	149	
14	114	15	-	-	129	79	30	79	
15	23	73	-	-	96	81	10	45	
16	2	97	5	-	104	130	15	12	
17	-	58	4	-	62	93	15	11	
18	-	41	26	-	67	45	15	9	
19	-	32	32	-	64	33	64	-	
20	-	5	43	-	48	13	49	-	
21	-	1	32	-	33	8	20	1	
22	-	-	40	1	41	6	10	3	
23	-	-	20	1	21	3	15	3	
24	-	-	10	2	12	-	25	-	
25	-	-	6	5	11	-	10	-	
26	-	-	1	2	3	-	15	-	
27	-	-	-	-	-	-	15	-	
28	-	-	-	1	1	-	5	-	
Total No. of Ages Read	854	324	219	12	1409	1000	1001	1000	
Serial Numbers	No. of Age Samples 32								
	Number of fish measured each month					1532	393	1128	
	Mean length of fish (cm) each month					15.4	16.2	12.9	
	Mean weight of fish (kg) each month								
	Total weight caught or landed (tons) each month								
	Estimated number caught or landed (whole numbers) each month								
	Range of depths (m) each month								
	Mesh size (mm)								



TABLE 19

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1963 (2nd QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1961		1960		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	2		3			Months Within Quarter		
						Apr	May	Jun
10		2		-	2		60	2
11		50		-	50		120	18
12		200		2	202		127	57
13		272		5	277		220	105
14		394		17	411		80	141
15		419		37	456		100	153
16		179		123	302		73	109
17		50		254	304		60	78
18		13		384	397		73	90
19		-		386	386		60	90
20		-		353	353		20	78
21		-		200	200		7	55
22		-		82	82		-	17
23		-		31	31		-	6
24		-		4	4		-	1
25		-		-	-		-	-
26		-		1	1		-	-
Total No. of Ages Read		1579		1879	3458		1000	1000
Serial Numbers		No. of Age Samples 71						
		Number of fish measured each month					246	7742
		Mean length of fish (cm) each month					15.1	16.9
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month					-	79
		Estimated number caught or landed (whole numbers) each month						11308
		Range of depths (m) each month						
		Mesh size (mm)						

TABLE 19  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1963 (3rd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1962		1961		1960		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	1	2	3	4	5	6		Months Within Quarter	Jul	Aug	Sep
9	6	-	-	-	6	-	-	3			
10	34	-	-	-	34	1	1	25			
11	138	-	-	-	138	1	9	65			
12	288	26	-	-	314	10	23	131			
13	174	266	-	-	440	57	21	76			
14	36	773	4	-	813	132	66	62			
15	3	1191	27	-	1221	186	139	119			
16	-	1403	92	-	1495	174	222	113			
17	-	1127	209	-	1336	120	213	134			
18	1	553	362	-	916	82	110	107			
19	-	165	441	-	606	64	70	54			
20	-	34	571	-	605	64	42	36			
21	-	6	529	-	535	64	41	25			
22	-	2	369	-	371	33	28	23			
23	-	1	202	-	203	11	11	19			
24	-	-	55	-	55	1	3	7			
25	-	-	12	-	12	-	-	-			
26	-	-	1	-	1	-	-	1			
27	-	-	1	-	1	-	1	-			
Total No. of Ages Read	680	5547	2875		9102						
Serial Numbers	No. of Age Samples 178										
	Number of fish measured each month							9243	7655	5237	
	Mean length of fish (cm) each month							17.3	17.3	16.6	
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month							19519	20883	10400	
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										



TABLE 19  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1963 (3rd QUARTER)

COUNTRY		United States						Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings							Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial						Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths							Months Within Quarter		
Year- Class	Age	1960	1959	1958	1957	1956	1955	Total No. of Ages Read	PER MILLE		
Length Group (cm)		3	4	5	6	7	8		Jul	Aug	Sep
20		1	-	-	-	-	-	1	7	-	-
21		2	-	-	-	-	-	2	7	-	5
22		11	-	-	-	-	-	11	44	-	27
23		10	-	-	-	-	-	10	59	-	11
24		14	-	-	-	-	-	14	74	-	21
25		1	2	-	-	-	-	3	22	-	-
26		-	6	-	-	-	-	6	29	-	11
27		-	29	10	-	-	-	39	147	-	102
28		-	36	50	-	-	-	86	228	-	294
29		-	3	58	11	-	-	72	213	-	230
30		-	-	18	33	-	-	51	88	-	208
31		-	-	-	11	8	-	19	59	-	59
32		-	-	-	-	8	-	8	15	-	32
33		-	-	-	-	-	1	1	7	-	-
Total No. of Ages Read		39	76	136	55	16	1	323	999		1000
Serial Numbers		No. of Age Samples 8									
		Number of fish measured each month							136		187
		Mean length of fish (cm) each month							27.9		28.9
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 19  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1963 (4th QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class		1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
Length Group (cm)	Age	2	3	4		Months Within Quarter			
						Oct	Nov	Dec	
10		4	-	-	4	3	37		
11		74	-	-	74	39	261		
12		175	1	-	176	137	284		
13		248	1	-	249	222	187		
14		141	5	-	146	109	60		
15		25	32	-	57	56	52		
16		-	98	1	99	77	37		
17		-	170	2	172	94	60		
18		2	157	15	174	82	7		
19		-	112	30	142	79	15		
20		-	25	30	55	36	-		
21		-	2	37	39	26	-		
22		-	-	31	31	23	-		
23		-	1	16	17	10	-		
24		-	-	3	3	4	-		
25		-	-	-	-	2	-		
26		-	-	-	-	-	-		
27		-	-	-	-	1	-		
Total No. of Ages Read		669	604	165	1438	1000	1000		
Serial Numbers		No. of Age Samples 29							
		Number of fish measured each month				2738	232		
		Mean length of fish (cm) each month				16.2	13.7		
		Mean weight of fish (kg) each month							
		Total weight caught or landed (tons) each month				6797	88	-	
		Estimated number caught or landed (whole numbers) each month							
		Range of depths (m) each month							
		Mesh size (mm)							

TABLE 20

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1963 (1st QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Landings									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1958		1957		1956		Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	5		6		7			Months Within Quarter			
								Jan	Feb	Mar	
28		3	-	-	-	3			120		
29		5	4	3	3	12			480		
30		-	4	1	5	5			200		
31		-	-	5	5	5			200		
Total No. of Ages Read		8	8	9	9	25	1000				
Serial Numbers		No. of Age Samples 1									
		Number of fish measured each month							25		
		Mean length of fish (cm) each month							30.1		
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 20  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1963 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class Length Group (cm)	Age	1960	1959	1958	1957	1956	1955	-	Total No. of Ages Read	Months Within Quarter		
		3	4	5	6	7	8	8+		Apr	May	Jun
19		1	-	-	-	-	-	-	1	-	-	4
20		5	-	-	-	-	-	-	5	-	7	8
21		24	-	-	-	-	-	-	24	-	35	37
22		42	-	-	-	-	-	-	42	-	85	21
23		48	3	-	-	-	-	-	51	-	85	58
24		23	3	-	-	-	-	-	26	-	53	12
25		1	3	-	-	-	-	-	4	-	7	4
26		-	27	-	-	-	-	-	27	91	30	53
27		-	46	25	-	-	-	-	71	91	141	37
28		-	23	93	1	-	-	-	117	273	196	119
29		-	3	91	46	-	-	-	140	363	191	218
30		-	-	10	90	8	-	-	108	-	122	226
31		-	-	-	17	32	-	-	49	182	41	119
32		-	-	-	-	9	2	-	11	-	7	33
33		-	-	-	-	-	-	6	6	-	-	25
34		-	-	-	-	-	-	6	6	-	-	25
Total No. of Ages Read		144	108	219	154	49	2	12	688	1000	1000	999
Serial Numbers		No. of Age Samples 9										
		Number of fish measured each month							11	434	243	
		Mean length of fish (cm) each month							29.1	27.4	29.0	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 20  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1963 (3rd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Landings									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year-Class Length Age Group (cm)	1960	1959	1958	1957	1956	1955	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	3	4	5	6	7	8	8+		Months Within Quarter		
									Jul	Aug	Sep
21	4	-	-	-	-	-	-	4	11	-	2
22	6	-	-	-	-	-	-	6	7	-	8
23	5	-	-	-	-	-	-	5	-	-	10
24	26	-	-	-	-	-	-	26	-	30	33
25	44	3	-	-	-	-	-	47	11	33	69
26	27	38	-	-	-	-	-	65	36	27	96
27	3	132	8	-	-	-	-	143	114	103	161
28	-	186	74	-	-	-	-	260	214	236	255
29	-	40	240	11	-	-	-	291	282	302	234
30	-	-	94	83	-	-	-	177	261	181	92
31	-	-	-	37	10	-	-	47	50	63	25
32	-	-	-	2	12	2	-	16	14	18	13
33	-	-	-	-	-	1	1	2	-	3	2
34	-	-	-	-	-	-	1	1	-	3	-
Total No. of Ages Read	115	399	416	133	22	3	2	1090	1000	999	1000
Serial Numbers	No. of Age Samples							14			
	Number of fish measured each month							280	331	479	
	Mean length of fish (cm) each month							29.1	29.1	28.2	
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										

TABLE 20  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1963 (4th QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Landings									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1960	1959	1958	1957	1956	1955	Total No. of Ages Read	LENGTH COMPOSITI PER MILLE			
	3	4	5	6	7	8		Months Within Qu			
								Oct	Nov		
20	4	-	-	-	-	-	4	-	38		
21	18	-	-	-	-	-	18	5	163		
22	34	-	-	-	-	-	34	-	327		
23	29	-	-	-	-	-	29	-	250		
24	14	-	-	-	-	-	14	5	96		
25	19	-	-	-	-	-	19	15	38		
26	4	8	-	-	-	-	12	45	-		
27	1	42	-	-	-	-	43	175	19		
28	-	72	30	-	-	-	102	365	48		
29	-	16	54	4	-	-	74	245	10		
30	-	-	35	18	-	-	53	110	10		
31	-	-	1	14	3	1	19	30	-		
32	-	-	-	2	3	-	5	5	-		
33	-	-	-	-	1	-	1	-	-		
Total No. of Ages Read	123	138	120	38	7	1	427				
Serial Numbers	No. of Age Samples 6										
	Number of fish measured each month							200	104		
	Mean length of fish (cm) each month							28.6	23.3	2	
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										

TABLE 21

AGE/LENGTH KEY - HERRING - 5Z - 1963 (2nd QUARTER)

COUNTRY		USSR						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Scales						
Year- Class Length Age Group(cm)		1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		3	4	5		Months Within Quarter		
						Apr	May	Jun
17		1	-	-	1			1
18		10	-	-	10			9
19		14	-	-	14			12
20		14	-	-	14			21
21		24	-	-	24			29
22		28	3	-	31			28
23		18	-	-	18			28
24		1	7	1	9			57
25		-	6	24	30			135
26		-	9	54	63			232
27		-	8	39	47			228
28		-	1	16	17			148
29		-	-	4	4			57
30		-	-	-	-			13
31		-	-	-	-			2
Total No. of Ages Read		110	34	138	282	1000		
Serial Numbers		No. of Age Samples 29						
		Number of fish measured each month						
		Mean length of fish (cm) each month						
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)						
		8279						
		25.88						
		0.157						
		1461.9						
		146-183						
		40						

TABLE 21  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1963 (2nd QUARTER)

COUNTRY		United States											
CATCHES/LANDINGS		Catches											
COMMERCIAL/RESEARCH		Research											
STRUCTURES USED IN AGE DETERMINATION		Otoliths											
Year- Class	Length Age Group (cm)	1960	1959	1958	1957	1956	1955	1954	Total No. of Ages Read	LENGTH COMPOSITION PER MILE			
		3	4	5	6	7	8	8+		Months Within Quart	Apr	May	Jun
21		1	-	-	-	-	-	-	1				1
22		-	-	-	-	-	-	-	-				-
23		4	1	-	-	-	-	-	5				6
24		17	6	-	-	-	-	-	23				26
25		7	8	-	-	-	-	-	15				17
26		1	20	-	-	-	-	-	21				24
27		1	93	17	-	-	-	-	111				124
28		1	71	104	6	-	-	-	182				204
29		-	3	178	107	3	-	-	291				326
30		-	-	9	144	18	-	-	171				191
31		-	-	-	13	45	2	-	60				67
32		-	-	-	-	6	5	-	11				12
33		-	-	-	-	-	-	1	1				1
34		-	-	-	-	-	-	-	-				-
35		-	-	-	-	-	-	-	-				-
36		-	-	-	-	-	-	1	1				1
Total No. of Ages Read		32	202	303	270	72	7	2	893				1000
Serial Numbers		No. of Age Samples 4											
		Number of fish measured each month											893
		Mean length of fish (cm) each month											29.1
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											



TABLE 21  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 52 - 1963 (3rd QUARTER)

COUNTRY		USSR									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Scales									
Year- Class	Length Age Group (cm)	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		2	3	4	5	6		Months Within Quarter			
							Jul			Aug	Sep
16		-	-	-	-	-	-	1	-	-	-
17		-	-	-	-	-	-	4	-	-	-
18		-	-	-	-	-	-	16	-	-	-
19		-	-	-	-	-	-	28	-	-	-
20		-	15	-	-	-	15	39	20	12	
21		8	49	-	-	-	57	55	64	48	
22		15	235	-	-	-	250	57	178	169	
23		5	240	2	-	-	247	38	160	177	
24		-	121	49	-	-	170	35	86	89	
25		-	21	73	-	-	94	64	58	59	
26		-	-	148	25	-	173	125	88	109	
27		-	-	21	181	-	202	194	143	133	
28		-	-	-	189	9	198	208	125	133	
29		-	-	-	22	41	63	108	52	54	
30		-	-	-	1	16	17	23	26	15	
31		-	-	-	-	2	2	5	-	2	
Total No. of Ages Read		28	681	293	418	68	1488	1000	1000	1000	
Serial Numbers		No. of Age Samples					59				
		Number of fish measured each month						7962	6279	5657	
		Mean length of fish (cm) each month						25.70	24.79	24.88	
		Mean weight of fish (kg) each month						0.175	0.160	0.161	
		Total weight caught or landed (tons) each month						18032.5	18307.4	22725.8	
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month						91-183	55-110	55-110	
		Mesh size (mm)						40	40	40	

TABLE 21  
(Cont'd)

AGE/LENGTH KEY - HERRING - 52 - 1963 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches								Months Within Quarte		
COMMERCIAL/RESEARCH		Research							Total No. of Ages Read	Months Within Quarte		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarte		
Year- Class Length Group (cm)	Age	1960	1959	1958	1957	1956	1955	-	Total No. of Ages Read	Months Within Quarte		
		3	4	5	6	7	8	8+		Jul	Aug	Sep
20		2	-	-	-	-	-	-	2	-	6	1
21		7	-	-	-	-	-	-	7	-	12	5
22		33	-	-	-	-	-	-	33	-	41	24
23		167	-	-	-	-	-	-	167	-	225	119
24		201	-	-	-	-	-	-	201	-	266	144
25		129	5	-	-	-	-	-	134	-	77	112
26		24	29	3	-	-	-	-	56	17	41	43
27		4	61	22	-	-	-	-	87	161	53	54
28		-	66	99	3	-	-	-	168	195	77	122
29		-	18	198	41	-	-	-	257	246	112	193
30		-	1	54	104	11	-	-	170	237	77	119
31		-	-	1	37	31	2	-	71	119	12	51
32		-	-	-	-	11	3	1	15	25	-	11
33		-	-	-	-	-	1	1	2	-	-	2
Total No. of Ages Read		567	180	377	185	53	6	2	1370	1000	999	1000
Serial Numbers		No. of Age Samples							10			
		Number of fish measured each month							118	169	1083	
		Mean length of fish (cm) each month							29.5	26.0	27.2	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 21  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1963 (4th QUARTER)

COUNTRY		USSR							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Scales							
Year- Class Length Age Group (cm)	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2	3	4	5		Months Within Quarter			
						Oct	Nov	Dec	
18	-	-	-	-	-	1			
19	4	-	-	-	4	9			
20	46	-	-	-	46	75			
21	130	7	-	-	137	327			
22	121	34	-	-	155	341			
23	4	93	-	-	97	150			
24	-	39	5	-	44	34			
25	-	3	4	-	7	20			
26	-	-	7	1	8	17			
27	-	-	2	9	11	9			
28	-	-	-	8	8	10			
29	-	-	-	3	3	6			
30	-	-	-	-	-	1			
Total No. of Ages Read	305	176	18	21	520	1000			
Serial Numbers	No. of Age Samples 8								
	Number of fish measured each month					2604			
	Mean length of fish (cm) each month					21.99			
	Mean weight of fish (kg) each month					0.124			
	Total weight caught or landed (tons) each month					5117.2			
	Estimated number caught or landed (whole numbers) each month								
	Range of depths (m) each month					55-110			
	Mesh size (mm)					40			

TABLE 21  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1963 (4th QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Research									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group(cm)	1961	1960	1959	1958	1957	1956	1955	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	2	3	4	5	6	7	8		Months Within Quarter		
									Oct	Nov	Dec
17	1	-	-	-	-	-	-	1		2	-
18	2	-	-	-	-	-	-	2		4	-
19	-	-	-	-	-	-	-	-		-	-
20	1	1	-	-	-	-	-	2		4	-
21	-	11	-	-	-	-	-	11		19	9
22	-	36	-	-	-	-	-	36		57	57
23	-	111	-	-	-	-	-	111		189	114
24	-	180	-	-	-	-	-	180		285	295
25	-	100	-	-	-	-	-	100		115	381
26	-	29	1	-	-	-	-	30		40	86
27	-	5	8	-	-	-	-	13		19	29
28	-	-	20	4	-	-	-	24		46	-
29	-	-	2	47	5	-	-	54		99	19
30	-	-	-	23	11	-	1	35		65	9
31	-	-	-	1	16	5	-	22		42	-
32	-	-	-	-	3	2	1	6		11	-
33	-	-	-	-	-	-	1	1		2	-
Total No. of Ages Read	4	473	31	75	35	7	3	628		999	999
Serial Numbers	No. of Age Samples 8										
	Number of fish measured each month									523	105
	Mean length of fish (cm) each month									25.8	25.0
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										





TABLE 22 LENGTH FREQUENCIES - HERRING - 4T - 1964

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	September
COUNTRY	Canada (Maritimes)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Commercial
27	10
28	10
29	-
30	40
31	290
32	330
33	150
34	70
35	30
36	40
37	20
38	10
Total ‰	1000
Serial Numbers	-
Number of Samples	1
Number of Fish Measured	100
Mean Length (cm)	32.7
Mean Weight (kg)	-
Total Weight Landed (tons)	1835
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	N
Range of Depths (fm)	-

TABLE 23

LENGTH FREQUENCIES - HERRING - 5Z - 1964

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	August
COUNTRY	Canada (Maritimes)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Research
25	18
26	75
27	136
28	83
29	57
30	70
31	96
32	184
33	202
34	48
35	22
36	9
Total ‰	1000
Serial Numbers	-
Number of Samples	4
Number of Fish Measured	228
Mean Length (cm)	30.9
Mean Weight (kg)	-
Total Weight Landed (tons)	-
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	T
Range of Depths (fm)	-



TABLE 24

## AGE/LENGTH KEY - HERRING - 4X - 1964 (1st QUARTER)

COUNTRY		Canada (Maritimes)				
CATCHES/LANDINGS		Catches				
COMMERCIAL/RESEARCH		Commercial				
STRUCTURES USED IN AGE DETERMINATION		Otoliths				
Year- Class Length Age Group (cm)	1962	1961	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	2	3		Jan	Feb	Mar
8	1	-	1		1	-
9	6	-	6		24	26
10	28	-	28		75	51
11	55	-	55		202	182
12	89	-	89		322	280
13	66	-	66		241	291
14	33	-	33		78	93
15	6	-	6		23	35
16	-	6	6		9	16
17	-	7	7		14	16
18	-	1	1		9	7
19	-	1	1		1	2
20	-	-	-		-	-
21	-	1	1		1	-
Total No. of Ages Read	284	16	300		1000	999
Serial Numbers	No. of Age Samples 3					
	Number of fish measured each month				796	429
	Mean length of fish (cm) each month				12.7	12.9
	Mean weight of fish (kg) each month					
	Total weight caught or landed (tons) each month					
	Estimated number caught or landed (whole numbers) each month					
	Range of depths (m) each month					
	Mesh size (mm)				S/W	S

TABLE 24  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1964 (1st QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Age Group (cm)	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILE				
	2	3	4		Months Within Quarter	Jan	Feb	Mar	
8	-	-	-	-			7		
9	2	-	-	2			27		
10	10	-	-	10			93		
11	57	-	-	57			146		
12	103	-	-	103			306		
13	78	-	-	78			253		
14	25	4	-	29			80		
15	3	7	-	10			27		
16	1	5	-	6			27		
17	-	1	-	1			20		
18	-	1	-	1			7		
19	-	1	1	2			7		
20	-	-	1	1			-		
Total No. of Ages Read	279	19	2	300	1000				
Serial Numbers	No. of Age Samples 6								
	Number of fish measured each month				400	50			
	Mean length of fish (cm) each month				12.9	12.7			
	Mean weight of fish (kg) each month								
	Total weight caught or landed (tons) each month								
	Estimated number caught or landed (whole numbers) each month								
	Range of depths (m) each month								
	Mesh size (mm)								

TABLE 24  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1964 (2nd QUARTER)

COUNTRY		Canada (Maritimes)											
CATCHES/LANDINGS										Catches			
COMMERCIAL/RESEARCH										Commercial			
STRUCTURES USED IN AGE DETERMINATION										Otoliths			
Year- Class Length Age Group (cm)		1962	1961	1960	1959	1958	1957	1956	1955	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2	3	4	5	6	7	8	9		Months Within Quarter		
											Apr	May	Jun
8		-	-	-	-	-	-	-	-	-	4	-	-
9		4	-	-	-	-	-	-	-	4	43	7	-
10		13	-	-	-	-	-	-	-	13	141	23	2
11		29	-	-	-	-	-	-	-	29	274	62	13
12		45	-	-	-	-	-	-	-	45	329	160	58
13		43	-	-	-	-	-	-	-	43	137	224	111
14		54	-	-	-	-	-	-	-	54	58	149	174
15		35	1	-	-	-	-	-	-	36	14	81	139
16		11	12	-	-	-	-	-	-	23	-	53	90
17		5	27	-	-	-	-	-	-	32	-	46	46
18		-	5	2	-	-	-	-	-	7	-	16	17
19		-	7	3	-	-	-	-	-	10	-	18	12
20		-	4	12	-	-	-	-	-	16	-	14	7
21		-	1	10	-	-	-	-	-	11	-	11	6
22		-	2	3	-	-	-	-	-	5	-	5	9
23		-	-	15	-	-	-	-	-	15	-	9	23
24		-	-	60	8	-	-	-	-	68	-	34	48
25		-	-	57	6	-	-	-	-	63	-	40	46
26		-	-	36	3	-	-	-	-	39	-	30	41
27		-	-	14	4	-	-	-	-	18	-	15	23
28		-	-	2	-	-	-	-	-	2	-	2	10
29		-	-	-	-	-	-	-	-	-	-	-	5
30		-	-	1	1	4	1	1	-	8	-	1	13
31		-	-	-	1	2	4	4	-	11	-	-	20
32		-	-	-	-	7	4	-	-	11	-	-	31
33		-	-	-	-	5	4	3	-	12	-	-	23
34		-	-	-	-	1	-	1	-	2	-	-	15
35		-	-	-	-	-	-	-	1	1	-	-	8
36		-	-	-	-	-	-	-	1	1	-	-	3
37		-	-	-	-	-	-	-	-	-	-	-	5
38		-	-	-	-	-	-	-	-	-	-	-	2
Total No. of Ages Read		239	59	215	23	19	13	9	2	579	1000	1000	1000
Serial Numbers		No. of Age Samples								7			
		Number of fish measured each month								277	1787	2847	
		Mean length of fish (cm) each month								12.1	15.8	19.4	
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)								S	W	W/S/N	

TABLE 24  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1964 (2nd QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	2	3	4	5		Months Within Quarter		
						Apr	May	Jun
9	7	-	-	-	7			7
10	25	-	-	-	25			7
11	76	-	-	-	76			20
12	88	-	-	-	88			13
13	104	-	-	-	104			88
14	128	-	-	-	128			136
15	74	-	-	-	74			75
16	27	5	-	-	32			-
17	7	4	1	-	12			13
18	2	5	1	-	8			7
19	1	3	1	-	5			-
20	-	4	2	-	6			-
21	-	4	5	-	9			14
22	-	3	13	-	16			48
23	-	-	42	3	45			116
24	-	-	65	2	67			238
25	-	-	18	5	23			129
26	-	-	10	-	10			68
27	-	-	2	1	3			7
28	-	-	1	1	2			-
29	-	-	-	1	1			7
30	-	-	-	1	1			-
31	-	-	-	-	-			-
32	-	-	-	-	-			7
Total No. of Ages Read	539	28	161	14	742	1000		
Serial Numbers	No. of Age Samples 16							
	Number of fish measured each month					50	200	639
	Mean length of fish (cm) each month					11.8	13.1	18.7
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month							
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							

TABLE 24

AGE/LENGTH KEY - HERRING - 4X - 1964 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial								Apr	May	Jun
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class	1961	1960	1959	1958	1957	1956	-					
Length Age Group (cm)	3	4	5	6	7	8	8+					
22	-	1	-	-	-	-	-	1			2	
23	-	17	-	-	-	-	-	17			32	
24	1	34	-	-	-	-	-	35			66	
25	-	10	-	-	-	-	-	10			19	
26	-	15	-	-	-	-	-	15			28	
27	-	11	2	-	-	-	-	13			25	
28	-	4	8	-	-	-	-	12			23	
29	-	-	5	11	-	-	-	16			30	
30	-	-	-	42	9	1	-	52			98	
31	-	-	-	16	87	5	-	108			204	
32	-	-	-	-	53	54	2	109			206	
33	-	-	-	1	-	28	40	69			130	
34	-	-	-	-	-	5	35	40			76	
35	-	-	-	-	-	-	16	17			32	
36	-	-	-	-	-	-	12	12			23	
37	-	-	-	-	-	-	2	2			4	
38	-	-	-	-	-	-	1	1			2	
Total No. of Ages Read	1	92	15	70	149	94	108	529	1000			
Serial Numbers	No. of Age Samples							6				
	Number of fish measured each month										529	
	Mean length of fish (cm) each month										31.1	
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 24  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1964 (3rd QUARTER)

COUNTRY		Canada (Maritimes)												
CATCHES/LANDINGS		Catches												
COMMERCIAL/RESEARCH		Commercial												
STRUCTURES USED IN AGE DETERMINATION		Otoliths												
Year- Class Length Age Group (cm)		1963	1962	1961	1960	1959	1958	1957	1956	1955	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		1	2	3	4	5	6	7	8	9		Months Within Quarter		
												Jul	Aug	Sep
8		4	-	-	-	-	-	-	-	-	4	-	-	1
9		15	-	-	-	-	-	-	-	-	15	-	-	5
10		8	-	-	-	-	-	-	-	-	8	-	-	1
11		5	-	-	-	-	-	-	-	-	5	2	-	2
12		4	4	-	-	-	-	-	-	-	8	7	<1	2
13		-	10	-	-	-	-	-	-	-	10	16	<1	1
14		-	27	-	-	-	-	-	-	-	27	46	6	2
15		-	53	-	-	-	-	-	-	-	53	88	34	26
16		-	77	-	-	-	-	-	-	-	77	118	83	65
17		-	80	-	-	-	-	-	-	-	80	58	107	85
18		-	52	-	-	-	-	-	-	-	52	26	72	96
19		-	32	-	-	-	-	-	-	-	32	12	43	69
20		-	14	1	-	-	-	-	-	-	15	11	22	31
21		-	12	3	-	-	-	-	-	-	15	7	10	17
22		-	-	12	1	-	-	-	-	-	13	12	11	12
23		-	-	22	1	-	-	-	-	-	23	25	16	17
24		-	-	57	4	4	-	-	-	-	65	55	40	25
25		-	-	68	1	8	-	-	-	-	77	77	78	52
26		-	-	71	-	12	-	-	-	-	83	113	99	98
27		-	-	40	-	9	-	-	-	-	49	118	106	96
28		-	-	18	-	4	-	-	-	-	22	55	73	62
29		-	-	1	-	-	1	-	-	-	2	19	29	31
30		-	-	3	2	1	4	1	-	-	11	14	26	31
31		-	-	-	2	-	6	5	1	-	14	32	50	56
32		-	-	-	1	-	4	5	2	-	12	36	43	54
33		-	-	-	2	-	3	5	1	2	13	22	22	33
34		-	-	-	-	-	-	1	4	2	7	14	14	17
35		-	-	-	-	-	-	-	-	1	1	10	8	5
36		-	-	-	-	-	-	-	-	1	1	3	3	2
37		-	-	-	-	-	-	-	-	1	1	2	4	2
38		-	-	-	-	-	-	-	-	-	-	1	1	1
39		-	-	-	-	-	-	-	-	-	-	1	-	1
40		-	-	-	-	-	-	-	-	-	-	-	-	-
41		-	-	-	-	-	-	-	-	-	-	-	<1	-
Total No. of Ages Read		36	361	296	14	38	18	17	8	7	795	1000	1003	1000
Serial Numbers		No. of Age Samples 15												
		Number of fish measured each month										2688	3384	3291
		Mean length of fish (cm) each month										23.4	24.3	24.4
		Mean weight of fish (kg) each month												
		Total weight caught or landed (tons) each month												
		Estimated number caught or landed (whole numbers) each month												
		Range of depths (m) each month												
		Mesh size (mm)										W/S/N	W/S/N	W/S/N

TABLE 24  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1964 (3rd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Group (cm)	Age	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		1	2	3	4	5		Months Within Quarter			
								Jul	Aug	Sep	
4		2	-	-	-	-	2	6	-	-	
5		15	-	-	-	-	15	72	18	-	
6		39	-	-	-	-	39	55	34	-	
7		41	-	-	-	-	41	4	77	3	
8		48	-	-	-	-	48	3	55	28	
9		117	-	-	-	-	117	-	24	85	
10		109	1	-	-	-	110	-	3	113	
11		129	3	1	-	-	133	6	1	87	
12		71	16	-	-	-	87	17	-	39	
13		9	47	-	-	-	56	50	1	5	
14		-	49	-	-	-	49	115	28	6	
15		1	106	-	-	-	107	173	82	11	
16		2	235	3	-	-	240	127	174	72	
17		1	257	8	1	-	267	82	149	156	
18		-	214	9	-	-	223	42	86	146	
19		-	134	10	2	-	146	19	50	80	
20		-	54	18	1	-	73	15	24	34	
21		-	20	31	5	-	56	15	17	14	
22		-	11	28	17	-	56	11	16	7	
23		-	5	33	52	-	90	50	11	8	
24		-	-	14	163	11	188	62	37	22	
25		-	-	2	198	14	214	36	47	37	
26		-	-	2	132	11	145	26	45	28	
27		-	-	-	50	13	63	7	18	14	
28		-	-	-	6	7	13	6	1	3	
29		-	-	-	4	-	4	1	1	-	
30		-	-	-	1	3	4	-	-	-	
31		-	-	-	-	1	1	-	1	-	
32		-	-	-	-	1	1	-	-	1	
33		-	-	-	-	-	-	-	-	-	
34		-	-	-	-	-	-	-	-	-	
35		-	-	-	-	-	-	-	-	-	
36		-	-	-	-	-	-	-	-	1	
Total No. of Ages Read		584	1152	159	632	61	2588	1000	1000	1000	
Serial Numbers		No. of Age Samples 50									
		Number of fish measured each month						1598	1873	2602	
		Mean length of fish (cm) each month						17.7	18.0	16.3	
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 24  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1964 (3rd QUARTER)

COUNTRY		United States											
CATCHES/LANDINGS		Landings											
COMMERCIAL/RESEARCH		Commercial											
STRUCTURES USED IN AGE DETERMINATION		Otoliths											
Year- Class	Length Group (cm)	1961	1960	1959	1958	1957	1956	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		3	4	5	6	7	8	8+		Months Within	Quarte		
										Jul	Aug	Sep	
22		1	-	-	-	-	-	-	1	2	-	-	
23		1	4	-	-	-	-	-	5	2	10	-	
24		-	45	-	-	-	-	-	45	38	49	14	
25		1	118	-	1	-	-	-	120	121	56	97	
26		-	136	-	-	-	-	-	136	143	41	128	
27		-	91	5	-	-	-	-	96	95	36	93	
28		-	40	10	1	-	-	-	51	43	26	55	
29		-	5	28	23	-	-	-	56	14	79	59	
30		-	-	14	114	6	-	-	134	90	126	114	
31		-	-	-	79	158	-	-	237	183	205	117	
32		-	-	1	1	120	38	-	160	117	156	107	
33		-	-	-	-	7	69	27	103	66	126	55	
34		-	-	-	-	-	3	54	57	48	41	45	
35		-	-	-	-	-	-	33	33	22	36	21	
36		-	-	-	-	-	-	13	13	10	13	7	
37		-	-	-	-	-	-	6	6	2	-	17	
38		-	-	-	-	-	-	4	4	3	-	7	
39		-	-	-	-	-	-	1	1	-	-	3	
Total No. of Ages Read		3	439	58	219	291	110	138	1258	999	1000	999	
Serial Numbers		No. of Age Samples							14				
		Number of fish measured each month							579	390	289		
		Mean length of fish (cm) each month							29.6	30.7	30.0		
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											



TABLE 24  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1964 (4th QUARTER)

COUNTRY		Canada (Maritimes)							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Group (cm)	Age	1963	1962	1961	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE .			
		1	2	3		Months Within Quarter			
						Oct	Nov	Dec	
7		-	-	-	-	-	<1	-	
8		11	-	-	11	-	12	20	
9		49	-	-	49	-	57	148	
10		127	-	-	127	-	200	226	
11		177	-	-	177	-	361	257	
12		84	-	-	84	-	201	119	
13		35	-	-	35	-	86	40	
14		14	-	-	14	1	49	11	
15		-	-	-	-	-	10	1	
16		-	3	-	3	3	4	2	
17		-	13	-	13	23	3	30	
18		-	18	-	18	50	9	41	
19		-	32	-	32	58	6	36	
20		-	36	-	36	64	1	37	
21		-	17	-	17	28	<1	17	
22		-	6	1	7	22	-	6	
23		-	1	-	1	15	-	5	
24		-	-	6	6	35	-	2	
25		-	-	21	21	95	-	1	
26		-	-	29	29	229	-	1	
27		-	-	17	17	234	-	-	
28		-	-	-	-	93	-	-	
29		-	-	-	-	19	-	-	
30		-	-	-	-	12	-	-	
31		-	-	-	-	12	-	-	
32		-	-	-	-	5	-	-	
33		-	-	-	-	1	-	-	
34		-	-	-	-	1	-	-	
Total No. of Ages Read		497	126	74	697				
Serial Numbers		No. of Age Samples 14					1000	1001	1000
Number of fish measured each month							956	2436	1522
Mean length of fish (cm) each month							25.3	11.9	12.6
Mean weight of fish (kg) each month									
Total weight caught or landed (tons) each month									
Estimated number caught or landed (whole numbers) each month									
Range of depths (m) each month									
Mesh size (mm)							W/S/T	W/S	S

TABLE 24  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1964 (4th QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group (cm)		1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE				
		1	2	3	4	5		Months Within Quarter				
								Oct	Nov	Dec		
7		1	-	-	-	-	1	-	-	-		
8		27	-	-	-	-	27	7	1	-		
9		198	-	-	-	-	198	78	35	177		
10		421	-	-	-	-	421	293	170	320		
11		295	-	-	-	-	295	216	320	220		
12		158	1	-	-	-	159	74	184	183		
13		97	1	-	-	-	98	31	95	67		
14		59	1	-	-	-	60	11	28	30		
15		23	5	-	-	-	28	1	2	3		
16		3	11	-	-	-	14	2	-	-		
17		-	30	-	-	-	30	29	-	-		
18		-	72	-	-	-	72	52	4	-		
19		-	70	1	-	-	71	35	9	-		
20		-	54	5	-	-	59	18	12	-		
21		-	20	1	-	-	21	19	8	-		
22		-	18	1	-	-	19	15	8	-		
23		-	4	6	3	-	13	9	2	-		
24		-	3	6	13	-	22	9	-	-		
25		-	-	4	54	2	60	31	17	-		
26		-	-	2	70	2	74	45	36	-		
27		-	-	1	35	2	38	23	41	-		
28		-	-	1	8	-	9	2	21	-		
29		-	-	-	1	-	1	-	4	-		
30		-	-	-	1	-	1	-	2	-		
31		-	-	-	-	2	2	-	-	-		
32		-	-	-	-	1	1	-	1	-		
Total No. of Ages Read		1282	290	28	185	9	1794	1000	1000	1000		
Serial Numbers		No. of Age Samples 36										
Number of fish measured each month												
Mean length of fish (cm) each month												
Mean weight of fish (kg) each month												
Total weight caught or landed (tons) each month												
Estimated number caught or landed (whole numbers) each month												
Range of depths (m) each month												
Mesh size (mm)												

TABLE 25

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1964 (1st QUARTER)

COUNTRY		United States					
CATCHES/LANDINGS		Catches					
COMMERCIAL/RESEARCH		Commercial					
STRUCTURES USED IN AGE DETERMINATION		Otoliths					
Year- Class Length Age Group (cm)	1962	1961	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
				Months Within Quarter			
				Jan	Feb	Mar	
11	2	-	2		41	10	
12	21	-	21		286	150	
13	49	-	49		265	310	
14	75	-	75		204	220	
15	44	-	44		163	260	
16	3	-	3		41	50	
17	-	5	5		-	-	
18	-	1	1		-	-	
Total No. of Ages Read	194	6	200		1000	1000	
Serial Numbers	No. of Age Samples		4				
	Number of fish measured each month			2	97	250	
	Mean length of fish (cm) each month			17.5	14.0	14.3	
	Mean weight of fish (kg) each month						
	Total weight caught or landed (tons) each month			-	18	123	
	Estimated number caught or landed (whole numbers) each month						
	Range of depths (m) each month						
	Mesh size (mm)						

TABLE 25  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1964 (2nd QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1963	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	1	2	3	4		Months Within Qu		
						Apr	May	
3	1	-	-	-	1		-	
4	3	-	-	-	3		-	
5	33	-	-	-	33		-	
6	13	-	-	-	13		-	
7	-	-	-	-	-		-	
8	-	-	-	-	-		-	
9	-	-	-	-	-		-	
10	-	1	-	-	1		-	
11	-	9	-	-	9		10	
12	-	49	-	-	49		30	
13	-	178	-	-	178		180	
14	-	351	-	-	351		330	
15	-	473	2	-	475		260	
16	-	486	5	-	491		120	
17	-	291	18	-	309		50	
18	-	171	21	-	192		10	
19	-	60	24	2	86		-	
20	-	13	16	2	31		-	
21	-	-	17	1	18		-	
22	-	-	3	4	7		10	
23	-	-	3	4	7		-	
24	-	-	-	4	4		-	
25	-	-	-	2	2		-	
26	-	-	-	2	2		-	
27	-	-	-	1	1		-	
Total No. of Ages Read	50	2082	109	22	2263		1000	
Serial Numbers	No. of Age Samples 57							
	Number of fish measured each month					50	365	
	Mean length of fish (cm) each month					14.7	14.9	
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month					21	57	
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							

TABLE 25  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1964 (3rd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class	Length Age Group(cm)	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		1	2	3	4	5		Months Within Quarter			
								Jul	Aug	Sep	
5		3	-	-	-	-	3	-	1	-	
6		45	-	-	-	-	45	-	7	-	
7		78	-	-	-	-	78	-	18	-	
8		108	-	-	-	-	108	1	7	1	
9		58	-	-	-	-	58	-	4	17	
10		72	-	-	-	-	72	-	4	56	
11		139	-	-	-	-	139	-	12	166	
12		175	-	-	-	-	175	-	11	91	
13		87	4	-	-	-	91	1	8	16	
14		34	46	-	-	-	80	9	3	2	
15		17	149	-	-	-	166	51	20	4	
16		2	372	-	-	-	374	182	73	30	
17		-	621	1	1	-	623	305	183	62	
18		-	627	4	1	-	632	221	210	148	
19		-	582	12	1	-	595	113	150	161	
20		-	366	33	1	-	400	51	91	109	
21		-	229	50	2	-	281	22	48	50	
22		-	66	73	4	-	143	11	27	30	
23		-	7	46	14	-	67	11	27	21	
24		-	-	8	42	-	50	5	22	19	
25		-	-	8	101	4	113	6	25	11	
26		-	-	1	164	5	170	8	23	4	
27		-	-	1	83	9	93	2	19	1	
28		-	-	-	18	2	20	1	4	-	
29		-	-	-	1	8	9	-	2	-	
30		-	-	-	-	2	2	-	1	1	
31		-	-	-	-	6	6	-	-	-	
Total No. of Ages Read		818	3069	237	433	36	4593	1000	1000	1000	
Serial Numbers		No. of Age Samples 147									
		Number of fish measured each month					5805	4105	3380		
		Mean length of fish (cm) each month					18.2	19.1	17.0		
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month					6901	5243	5146		
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 25  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1964 (3rd QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Landings										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group (cm)	1961	1960	1959	1958	1957	1956	-	Total No. of Ages Read	LENGTH COMPOSIT			
	3	4	5	6	7	8	8+		PER MILLE			
									Months Within Qu			
									Jul	Aug	9	
22	7	-	-	-	-	-	-	7	18	-		
23	6	4	-	-	-	-	-	10	26	-		
24	4	22	-	-	-	-	-	26	40	81		
25	-	79	-	-	-	-	-	79	84	378		
26	-	144	-	-	-	-	-	144	203	243		
27	-	144	2	-	-	-	-	146	237	230		
28	-	60	11	-	-	-	-	71	132	27		
29	-	3	45	11	-	-	-	59	79	-		
30	-	-	16	45	1	-	-	62	63	41		
31	-	-	-	24	28	-	-	52	84	-		
32	-	-	-	-	22	6	-	28	26	-		
33	-	-	-	-	-	7	2	9	5	-		
34	-	-	-	-	-	-	2	2	3	-		
35	-	-	-	-	-	-	1	1	-	-		
Total No. of Ages Read	17	456	74	80	51	13	5	696	1000	1000	9	
Serial Numbers	No. of Age Samples							8				
	Number of fish measured each month								380	74	2	
	Mean length of fish (cm) each month								27.8	26.3	28	
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 25  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1964 (4th QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Age Group (cm)		1963	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		1	2	3	4		Months Within Quarter		
							Ocr	Nov	Dec
8		15	-	-	-	15	-	-	
9		101	-	-	-	101	-	4	
10		92	-	-	-	92	-	68	
11		133	-	-	-	133	-	125	
12		201	-	-	-	201	3	209	
13		147	-	-	-	147	30	135	
14		108	-	-	-	108	247	88	
15		96	2	-	-	98	334	86	
16		82	4	-	-	86	48	59	
17		14	12	-	-	26	9	18	
18		1	57	-	-	58	33	35	
19		1	59	1	-	61	115	31	
20		-	116	-	-	116	112	16	
21		-	190	4	-	194	51	49	
22		-	133	15	-	148	9	20	
23		-	47	22	1	70	9	23	
24		-	9	27	6	42	-	4	
25		-	-	26	39	65	-	12	
26		-	-	6	88	94	-	12	
27		-	1	7	67	75	-	4	
28		-	-	2	26	28	-	2	
29		-	-	-	4	4	-	-	
30		-	-	-	1	1	-	-	
Total No. of Ages Read		991	630	110	232	1963			
Serial Numbers						No. of Age Samples	42		
		Number of fish measured each month					1730	1087	
		Mean length of fish (cm) each month					18.7	15.8	
		Mean weight of fish (kg) each month							
		Total weight caught or landed (tons) each month					4101	1019	555
		Estimated number caught or landed (whole numbers) each month							
		Range of depths (m) each month							
		Mesh size (mm)							

TABLE 25 AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1964 (4th QUARTER)  
(Cont'd)

COUNTRY		United States									
CATCHES/LANDINGS		Landings									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Group (cm)	Age	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILE			
		3	4	5	6	7		Months Within Qu			
								Oct	Nov		
24		1	2	-	-	-	3	30			
25		-	21	-	-	-	21	212			
26		-	35	-	-	-	35	354			
27		-	21	-	-	-	21	212			
28		-	5	-	-	-	5	51			
29		-	-	4	-	-	4	40			
30		-	-	2	1	-	3	30			
31		-	-	-	2	2	4	40			
32		-	-	-	-	3	3	30			
Total No. of Ages Read		1	84	6	3	5	99	999			
Serial Numbers							No. of Age Samples	1			
		Number of fish measured each month					99				
		Mean length of fish (cm) each month					27.1				
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									



TABLE 26

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1964 (1st QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year-Class	1961	1960	1959	1958	1957	1956	-	Total No. of Ages Read	Months Within Quarter			
Length Age Group (cm)	3	4	5	6	7	8	8+		Jan	Feb	Mar	
18	2	-	-	-	-	-	-	2	-	-	7	
19	-	-	-	-	-	-	-	-	-	-	-	
20	1	1	-	-	-	-	-	2	-	-	7	
21	-	1	-	-	-	-	-	1	-	-	4	
22	1	14	-	-	-	-	-	15	30	-	44	
23	-	23	-	-	-	-	-	23	60	-	62	
24	-	28	-	-	-	-	-	28	90	-	70	
25	-	18	-	-	-	-	-	18	20	-	59	
26	-	7	6	-	-	-	-	13	30	-	37	
27	-	9	29	-	-	-	-	38	150	-	85	
28	-	2	63	13	-	-	-	78	160	-	228	
29	-	-	9	80	2	-	-	91	350	-	206	
30	-	-	-	26	20	-	-	46	90	-	136	
31	-	-	-	3	13	-	-	16	20	-	51	
32	-	-	-	-	-	-	-	-	-	-	-	
33	-	-	-	-	-	-	1	1	-	-	4	
Total No. of Ages Read	4	103	107	122	35	-	1	372				
Serial Numbers	No. of Age Samples							5				
	Number of fish measured each month								100	272		
	Mean length of fish (cm) each month								28.0	27.8		
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 26  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1964 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	MONTHS WITHIN QUARTER		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								PER MILLE		
Year- Class	1961	1960	1959	1958	1957	1956	-	Total No. of Ages Read	MONTHS WITHIN QUARTER			
Length Group (cm)	3	4	5	6	7	8	8+		Apr	May	Jun	
20	1	-	-	-	-	-	-	1	9	-	-	
21	2	-	-	-	-	-	-	2	-	2	4	
22	4	-	-	-	-	-	-	4	-	2	12	
23	3	15	-	-	-	-	-	18	35	17	28	
24	-	51	-	-	-	-	-	51	17	75	75	
25	-	117	-	-	-	-	-	117	17	167	191	
26	-	126	-	-	-	-	-	126	35	170	214	
27	-	72	11	1	-	-	-	84	61	72	190	
28	-	18	49	9	-	-	-	76	156	103	67	
29	-	-	39	79	2	-	-	120	252	183	71	
30	-	-	2	72	26	-	-	100	226	128	91	
31	-	-	-	7	37	-	-	44	122	53	36	
32	-	-	-	1	7	12	-	20	61	20	20	
33	-	-	-	-	-	2	2	4	9	8	-	
Total No. of Ages Read	10	399	101	169	72	14	2	767	1000	1000	999	
Serial Numbers	No. of Age Samples							10				
	Number of fish measured each month								115	400	252	
	Mean length of fish (cm) each month								29.3	28.3	27.1	
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 26  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1964 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
CATCHES/LANDINGS		Landings								Months Within Quarter			
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter			
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter			
Year- Class Length Group (cm)	Age	1961	1960	1959	1958	1957	1956	-	Total No. of Ages Read	Months Within Quarter			
		3	4	5	6	7	8	8+		Jul	Aug	Sep	
21		2	-	-	-	-	-	-	2	23	-		
22		4	1	-	-	-	-	-	5	58	-		
23		9	-	-	-	-	-	-	9	12	64		
24		-	5	-	-	-	-	-	5	58	-		
25		-	6	-	-	-	-	-	6	70	-		
26		-	16	-	-	-	-	-	16	140	32		
27		-	21	-	-	-	-	-	21	116	88		
28		-	16	1	-	-	-	-	17	23	120		
29		-	1	19	8	-	-	-	28	151	120		
30		-	-	6	27	7	-	-	40	81	264		
31		-	-	-	25	22	-	-	47	163	264		
32		-	-	-	1	7	2	-	10	105	8		
33		-	-	-	-	-	-	5	5	-	40		
Total No. of Ages Read		15	66	26	61	36	2	5	211	1000	1000		
Serial Numbers		No. of Age Samples							7				
		Number of fish measured each month								86	125		
		Mean length of fish (cm) each month								28.2	29.7		
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 26  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1964 (4th QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITIO PER MILLE .			
CATCHES/LANDINGS		Landings								Months Within Quar			
COMMERCIAL/RESEARCH		Commercial								Oct	Nov	De	
STRUCTURES USED IN AGE DETERMINATION		Otoliths											
Year- Class	Length Age Group(cm)	1961	1960	1959	1958	1957	1956	-	Total No. of Ages Read				
		3	4	5	6	7	8	8+					
21		4	-	-	-	-	-	-		4	-	11	
22		28	-	-	-	-	-	-		28	6	62	3
23		75	-	-	-	-	-	-		75	51	73	34
24		83	21	2	-	-	-	-		106	88	89	28
25		63	42	10	-	-	-	-		115	105	95	12
26		6	138	8	-	-	-	-		152	125	157	9
27		-	176	28	-	-	-	-		204	198	159	3
28		-	111	51	-	-	-	-		162	171	95	6
29		-	6	55	27	-	-	-		88	99	43	
30		-	1	8	56	13	-	-		78	78	57	
31		-	-	-	27	37	-	-		64	48	78	
32		-	-	-	-	23	15	-		38	21	59	3
33		-	-	-	-	2	6	5	13	8	19		
34		-	-	-	-	-	-	2	2	1	3		
Total No. of Ages Read		259	495	162	110	75	21	7	1129	999	1000	100	
Serial Numbers		No. of Age Samples											
		Number of fish measured each month							727	370	3		
		Mean length of fish (cm) each month							27.1	27.0	25.		
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 27

AGE/LENGTH KEY - HERRING - 52 - 1964 (1st QUARTER)

COUNTRY		USSR													
CATCHES/LANDINGS		Catches													
COMMERCIAL/RESEARCH		Commercial													
STRUCTURES USED IN AGE DETERMINATION		Scales													
Year- Class Length Age Group (cm)		1960	1959	1958	1957	1956	1955	1954	1953	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE				
		4	5	6	7	8	9	10	11		Months Within Quarter	Jan	Feb	Mar	
14		-	-	-	-	-	-	-	-	-	15	-	-	-	
15		-	-	-	-	-	-	-	-	-	9	-	-	-	
16		-	-	-	-	-	-	-	-	-	13	-	-	-	
17		-	-	-	-	-	-	-	-	-	29	-	-	-	
18		-	-	-	-	-	-	-	-	-	44	4	-	-	
19		-	-	-	-	-	-	-	-	-	44	22	-	-	
20		-	-	-	-	-	-	-	-	-	88	53	-	-	
21		-	-	-	-	-	-	-	-	-	116	120	-	-	
22		-	-	-	-	-	-	-	-	-	122	146	-	-	
23		5	-	-	-	-	-	-	-	-	142	129	1	-	
24		9	-	-	-	-	-	-	-	-	9	102	69	2	
25		-	7	1	-	-	-	-	-	-	8	58	45	21	
26		-	4	2	-	-	-	-	-	-	6	34	72	47	
27		-	1	2	3	-	-	-	-	-	6	46	96	126	
28		-	-	4	16	-	-	-	-	-	20	62	88	286	
29		-	-	2	18	16	-	-	-	-	36	46	97	271	
30		-	-	-	8	55	1	-	-	-	64	26	44	161	
31		-	-	-	-	70	6	-	-	-	76	4	15	57	
32		-	-	-	-	15	24	3	-	-	42	-	-	26	
33		-	-	-	-	-	5	14	1	-	20	-	-	2	
34		-	-	-	-	-	-	-	1	-	1	-	-	-	
Total No. of Ages Read		14	12	11	45	156	36	17	2	293	1000	1000	1000		
Serial Numbers		No. of Age Samples 8													
	Number of fish measured each month												1707	822	812
	Mean length of fish (cm) each month												22.82	24.54	28.57
	Mean weight of fish (kg) each month														
	Total weight caught or landed (tons) each month														
	Estimated number caught or landed (whole numbers) each month														
	Range of depths (m) each month												64-110	91-110	101-155
	Mesh size (mm)												40	40	40

TABLE 27  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Z - 1964 (1st QUARTER)

COUNTRY		United States			Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches				Jan	Feb	Ma
COMMERCIAL/RESEARCH		Research						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Group (cm)	Age	1961	1960	1959				
		3	4	5		Months Within Quart		
17		1	-	-	1			17
18		2	-	-	2			33
19		1	-	-	1			17
20		-	1	-	1			17
21		1	4	-	5			83
22		-	8	-	8			133
23		-	19	-	19			316
24		-	18	-	18			300
25		-	4	-	4			67
26		-	-	1	1			17
Total No. of Ages Read		5	54	1	60	1000		
Serial Numbers		No. of Age Samples			1			
		Number of fish measured each month				60		
		Mean length of fish (cm) each month				23.2		
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)						

TABLE 27  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1964 (2nd QUARTER)

COUNTRY		USSR									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Scale									
Year- Class Length Age Group(cm)	1959	1958	1957	1956	1955	1954	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	5	6	7	8	9	10		Months Within Quarter			
								Apr	May	Jun	
14	-	-	-	-	-	-	-	-	-	3	
15	-	-	-	-	-	-	-	-	-	3	
16	-	-	-	-	-	-	-	-	-	4	
17	-	-	-	-	-	-	-	-	-	5	
18	-	-	-	-	-	-	-	-	-	2	
19	-	-	-	-	-	-	-	-	-	4	
20	-	-	-	-	-	-	-	-	-	9	
21	-	-	-	-	-	-	-	-	-	18	
22	-	-	-	-	-	-	-	20	-	22	
23	-	-	-	-	-	-	-	62	19	43	
24	-	-	-	-	-	-	-	57	54	79	
25	2	4	-	-	-	-	6	36	88	118	
26	10	6	-	-	-	-	16	34	81	72	
27	19	21	-	-	-	-	40	138	133	94	
28	-	84	18	1	-	-	103	246	227	212	
29	-	44	89	21	-	-	154	248	263	218	
30	-	-	31	71	2	-	104	113	118	78	
31	-	-	9	77	9	-	95	38	17	16	
32	-	-	-	21	12	-	33	8	-	-	
33	-	-	-	-	18	11	29	-	-	-	
34	-	-	-	-	-	2	2	-	-	-	
Total No. of Ages Read	31	159	147	191	41	13	582	1000	1000	1000	
Serial Numbers	No. of Age Samples 24										
	Number of fish measured each month							1218	467	7414	
	Mean length of fish (cm) each month							27.65	27.68	26.73	
	Mean weight of fish (kg) each month							0.163	0.170	0.174	
	Total weight caught or landed (tons) each month							1497.2	9695.5	13662.2	
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month							101-165	73-119	46-110	
	Mesh size (mm)							40	40	40	

TABLE 27  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Z - 1964 (2nd QUARTER)

COUNTRY		United States								Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches									Months Within Quarter		
COMMERCIAL/RESEARCH		Research								Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths									Months Within Quarter		
Year-Class Length Age Group (cm)	1962	1961	1960	1959	1958	1957	1956	-	Total No. of Ages Read	Months Within Quarter			
	2	3	4	5	6	7	8	8+		Apr	May	June	
14	2	-	-	-	-	-	-	-	2	-	-	-	
15	12	-	-	-	-	-	-	-	12	296	-	-	
16	12	-	-	-	-	-	-	-	12	74	-	-	
17	28	-	-	-	-	-	-	-	28	-	-	-	
18	24	3	-	-	-	-	-	-	27	-	-	-	
19	2	14	-	-	-	-	-	-	16	-	-	-	
20	1	34	1	-	-	-	-	-	36	37	-	-	
21	-	23	2	-	-	-	-	-	25	74	-	-	
22	-	13	12	-	-	-	-	-	25	148	-	-	
23	-	1	34	-	-	-	-	-	35	222	-	-	
24	-	-	49	-	-	-	-	-	49	74	-	-	
25	-	-	133	-	-	-	-	-	133	74	-	-	
26	-	-	232	-	-	-	-	-	232	-	-	-	
27	-	-	150	-	-	-	-	-	150	-	-	-	
28	-	-	37	38	1	-	-	-	76	-	-	-	
29	-	-	-	41	66	1	-	-	108	-	-	-	
30	-	-	-	3	89	29	-	-	121	-	-	-	
31	-	-	-	-	12	40	1	-	53	-	-	-	
32	-	-	-	-	-	5	7	-	12	-	-	-	
33	-	-	-	-	-	-	-	3	3	-	-	-	
34	-	-	-	-	-	-	-	1	1	-	-	-	
<b>Total No. of Ages Read</b>	<b>81</b>	<b>88</b>	<b>650</b>	<b>82</b>	<b>168</b>	<b>75</b>	<b>8</b>	<b>4</b>	<b>1156</b>	<b>999</b>			
<b>Serial Numbers</b>	<b>No. of Age Samples 14</b>												
	Number of fish measured each month								27	1			
	Mean length of fish (cm) each month								20.4	2			
	Mean weight of fish (kg) each month												
	Total weight caught or landed (tons) each month												
	Estimated number caught or landed (whole numbers) each month												
	Range of depths (m) each month												
	Mesh size (mm)												



TABLE 27  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1964 (3rd QUARTER)

COUNTRY		USSR										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Scale										
Year- Class Length Group (cm)	Age	1962	1961	1960	1959	1958	1957	1956	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2	3	4	5	6	7	8		Months Within Quarter		
										Jul	Aug	Sep
16		-	-	-	-	-	-	-	-	1	1	-
17		9	-	-	-	-	-	-	9	10	3	-
18		35	-	-	-	-	-	-	35	18	13	-
19		47	3	-	-	-	-	-	50	11	20	12
20		5	51	-	-	-	-	-	56	36	39	16
21		-	102	-	-	-	-	-	102	71	69	28
22		-	92	9	-	-	-	-	101	126	70	53
23		-	73	79	-	-	-	-	152	180	139	125
24		-	77	240	-	-	-	-	317	202	224	186
25		-	23	438	5	-	-	-	466	157	192	186
26		-	-	79	132	-	-	-	211	72	106	140
27		-	-	3	99	3	-	-	105	40	45	78
28		-	-	-	47	65	-	-	112	44	36	73
29		-	-	-	2	48	-	-	50	26	29	59
30		-	-	-	-	33	1	-	34	6	11	44
31		-	-	-	-	3	1	-	4	-	3	-
32		-	-	-	-	-	1	-	1	-	-	-
33		-	-	-	-	-	-	1	1	-	-	-
Total No. of Ages Read		96	421	848	285	152	3	1	1806	1000	1000	1000
Serial Numbers		No. of Age Samples 99										
		Number of fish measured each month								12180	17432	9411
		Mean length of fish (cm) each month								23.73	24.07	25.11
		Mean weight of fish (kg) each month								0.143	0.174	0.187
		Total weight caught or landed (tons) each month								16213	18476	14811
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month								27-146	37-101	37-55
		Mesh size (mm)								40	40	40

TABLE 27  
(Cont'd)

AGE/LENGTH KEY - HERRING - 52 - 1964 (3rd QUARTER)

COUNTRY		United States								Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches									Months Within Quar		
COMMERCIAL/RESEARCH		Research								Ages Read	Months Within Quar		
STRUCTURES USED IN AGE DETERMINATION		Otoliths									Ages Read	Months Within Quar	
Year- Class	Age	1962	1961	1960	1959	1958	1957	1956	-	Ages Read		Months Within Quar	
Length Group (cm)		2	3	4	5	6	7	8	8+		Jul	Aug	S
20		1	-	-	-	-	-	-	-	1		-	
21		-	1	-	-	-	-	-	-	1		-	
22		-	5	-	-	-	-	-	-	5		-	
23		-	7	-	-	-	-	-	-	7		-	
24		-	9	6	-	-	-	-	-	15		22	
25		-	2	36	-	-	-	-	-	38		67	
26		-	-	93	-	-	-	-	-	93		111	
27		-	-	127	-	-	-	-	-	127		133	
28		-	-	90	6	-	-	-	-	96		156	
29		-	-	14	31	5	-	-	-	50		111	
30		-	-	-	13	50	2	-	-	65		111	
31		-	-	-	-	24	19	-	-	43		133	
32		-	-	-	-	-	23	4	-	27		89	
33		-	-	-	-	-	-	6	-	6		67	
34		-	-	-	-	-	-	-	1	1		-	
Total No. of Ages Read		1	24	366	50	79	44	10	1	575			
Serial Numbers		No. of Age Samples 10											
		Number of fish measured each month								45 5			
		Mean length of fish (cm) each month								29.2 28			
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 27  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1964 (4th QUARTER)

COUNTRY		USSR										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Scales										
Year- Class Length Group (cm)	Age	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE Months Within Quarter				
		3	4	5	6	7		Oct	Nov	Dec		
19		-	-	-	-	-	-	9				
20		-	-	-	-	-	-	15				
21		1	-	-	-	-	1	23				
22		1	-	-	-	-	1	23				
23		6	-	-	-	-	6	74				
24		6	30	-	-	-	36	141				
25		1	74	-	-	-	75	179				
26		-	11	30	-	-	41	155				
27		-	1	10	-	-	11	110				
28		-	-	6	2	-	8	100				
29		-	-	2	11	-	13	109				
30		-	-	-	6	-	6	62				
31		-	-	-	-	2	2	-				
Total No. of Ages Read		15	116	48	19	2	200	1000				
Serial Numbers		No. of Age Samples					7					
		Number of fish measured each month					7009					
		Mean length of fish (cm) each month					25.84					
		Mean weight of fish (kg) each month					0.149					
		Total weight caught or landed (tons) each month					370.9					
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month					46-55					
		Mesh size (mm)					40					

TABLE 27  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1964 (4th QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Research										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group (cm)	1962	1961	1960	1959	1958	1957	1956	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE Months Within Quarter			
	2	3	4	5	6	7	8		Oct	Nov	Dec	
18	2	-	-	-	-	-	-	2	3	-	-	
19	12	-	-	-	-	-	-	12	19	-	-	
20	19	2	-	-	-	-	-	21	32	7	-	
21	19	10	-	-	-	-	-	29	41	29	-	
22	10	20	-	-	-	-	-	30	32	71	-	
23	2	29	2	-	-	-	-	33	41	57	-	
24	-	23	21	-	-	-	-	44	55	71	-	
25	-	10	75	-	-	-	-	85	87	222	-	
26	-	-	142	-	-	-	-	142	167	279	-	
27	-	-	160	-	-	-	-	160	222	164	-	
28	-	-	62	4	-	-	-	66	91	71	-	
29	-	-	3	26	1	-	-	30	47	7	-	
30	-	-	-	8	35	-	-	43	66	14	-	
31	-	-	-	-	24	13	-	37	58	7	-	
32	-	-	-	-	-	15	2	17	28	-	-	
33	-	-	-	-	-	-	5	5	8	-	-	
34	-	-	-	-	-	-	2	2	3	-	-	
Total No. of Ages Read	64	94	465	38	60	28	9	758	1000	999		
Serial Numbers	No. of Age Samples 10											
	Number of fish measured each month								618	140		
	Mean length of fish (cm) each month								26.8	25.8		
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 28 LENGTH FREQUENCIES - HERRING - 3Ps<sup>1</sup> - 1965

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	January	February	March	December
COUNTRY	Canada (Newfoundland)			
CATCHES/LANDINGS	Catches			
COMMERCIAL/RESEARCH	Commercial			
19	-	1	-	-
20	-	-	-	-
21	-	-	-	-
22	-	-	-	-
23	10	3	-	-
24	-	2	3	1
25	-	3	3	3
26	-	2	-	7
27	-	5	-	22
28	10	3	-	32
29	20	31	3	53
30	105	68	14	135
31	245	228	123	240
32	160	317	309	255
33	145	171	191	158
34	95	78	106	59
35	95	35	94	21
36	65	26	71	10
37	30	20	43	3
38	10	3	28	1
39	5	3	6	-
40	5	-	6	-
41	-	1	-	-
Total ‰	1000	1000	1000	1000
Serial Numbers	-	-	-	-
Number of Samples	-	-	-	-
Number of Fish Measured	200	650	350	2000
Mean Length (cm)	32.5	32.1	33.2	31.4
Mean Weight (kg)	-	-	-	-
Total Weight Landed (tons)	409	1296	366	2534
Estimated Number Landed	-	-	-	-
Mesh(mm) or Hook(no.) Size	-	-	-	-
Range of Depths (fm)	-	-	-	-

<sup>1</sup> Inshore, Burgeo to Pass Island, Newfoundland

TABLE 29

LENGTH FREQUENCIES - HERRING - 4R<sup>1</sup> - 1965

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	December
COUNTRY	Canada (Newfoundland)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Commercial
21	2
22	2
23	3
24	4
25	5
26	7
27	15
28	22
29	23
30	45
31	125
32	192
33	185
34	144
35	98
36	66
37	41
38	17
39	3
40	1
Total ‰	1000
Serial Numbers	-
Number of Samples	-
Number of Fish Measured	4500
Mean Length (cm)	32.7
Mean Weight (kg)	-
Total Weight Landed (tons)	2237
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	-
Range of Depths (fm)	-

<sup>1</sup> Bonne Bay

TABLE 30

LENGTH FREQUENCIES - HERRING - 4T - 1965

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	May	August
COUNTRY	Canada (Maritimes)	
CATCHES/LANDINGS	Catches	
COMMERCIAL/RESEARCH	Commercial	
27	5	-
28	7	-
29	123	-
30	447	9
31	327	149
32	75	367
33	16	311
34	-	75
35	-	49
36	-	27
37	-	9
38	-	4
Total ‰	1000	1000
Serial Numbers	-	-
Number of Samples	1	4
Number of Fish Measured	425	450
Mean Length (cm)	30.9	33.1
Mean Weight (kg)	-	-
Total Weight Landed (tons)	30935	2787
Estimated Number Landed	-	-
Mesh(mm) or Hook(no.) Size	N	N
Range of Depths (fm)	-	-

TABLE 31 LENGTH FREQUENCIES - HERRING - 5Y (NORTH) - 1965

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	March	November
COUNTRY	Canada (Maritimes)	
CATCHES/LANDINGS	Catches	
COMMERCIAL/RESEARCH	Commercial	
9	12	-
10	63	-
11	226	-
12	327	-
13	207	-
14	106	-
15	48	-
16	9	264
17	1	591
18	-	145
19	1	-
Total ‰	1000	1000
Serial Numbers	-	-
Number of Samples	4	1
Number of Fish Measured	1062	110
Mean Length (cm)	12.7	17.4
Mean Weight (kg)	-	-
Total Weight Landed (tons)	-	-
Estimated Number Landed	-	-
Mesh(mm) or Hook(no.) Size	8	8
Range of Depths (fm)	-	-



TABLE 32

LENGTH FREQUENCIES - HERRING - 5Z - 1965

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	January	July	August	September	October	October	November	November	December
COUNTRY	USSR		Canada (Maritimes)			USSR	Canada (M)		USSR
CATCHES/LANDINGS	Catches								
COMMERCIAL/RESEARCH	Commercial		Research			Commercial	Research		Commercial
15	2	-	-	-	-	-	-	-	-
16	47	-	-	-	-	-	-	-	-
17	58	-	-	-	-	-	-	-	-
18	82	-	-	-	-	-	-	-	-
19	110	-	-	-	16	-	-	-	-
20	158	-	1	-	-	-	-	-	-
21	118	<1	-	-	-	-	-	-	-
22	100	-	2	-	5	-	-	-	-
23	40	1	2	1	-	-	-	-	-
24	80	1	4	-	54	1	14	-	1
25	82	1	13	15	108	12	68	1	2
26	68	2	45	46	220	58	68	4	6
27	25	11	96	151	210	162	324	8	30
28	15	68	224	226	161	267	162	43	138
29	8	192	303	244	129	274	135	168	242
30	5	227	195	164	65	157	135	356	274
31	2	139	57	54	16	47	54	279	132
32	-	153	31	49	5	12	27	95	88
33	-	125	16	31	11	8	13	37	54
34	-	62	9	16	-	2	-	8	26
35	-	16	2	3	-	-	-	1	6
36	-	2	-	-	-	-	-	-	1
37	-	-	-	-	-	-	-	-	-
38	-	-	<1	-	-	-	-	-	-
39	-	<1	<1	-	-	-	-	-	-
Total ‰	1000	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers	-	-	-	-	-	-	-	-	-
Number of Samples	1	13	16	4	2	11	2	6	14
Number of Fish Measured	400	2316	3015	1010	186	2390	74	1200	2800
Mean Length (cm)	21.3	31.3	29.4	29.4	27.5	28.5	28.3	30.3	30.0
Mean Weight (kg)	0.157	-	-	-	-	0.152	-	0.135	0.176
Total Weight Landed (tons)	493	-	-	-	-	1835	-	780	1289
Estimated Number Landed	-	-	-	-	-	-	-	-	-
Mesh(mm) or Hook(no.) Size	40	T	T	T	T	40	T	40	40
Range of Depths (fm)	35-60	-	-	-	-	25-75	-	35-60	20-105



TABLE 33  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1965 (1st QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1963	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	2	3	4	5		Months Within Quarter		
						Jan	Feb	Mar
7	1	-	-	-	1	3	8	-
8	19	-	-	-	19	39	76	6
9	63	-	-	-	63	167	181	51
10	153	-	-	-	153	200	193	89
11	262	-	-	-	262	237	198	112
12	354	-	1	-	355	195	195	154
13	263	5	2	-	270	98	100	239
14	214	7	2	-	223	42	44	189
15	98	8	-	-	106	13	6	95
16	25	6	-	-	31	3	-	24
17	1	21	-	-	22	2	-	11
18	-	21	-	-	21	-	-	13
19	-	20	-	-	20	-	-	14
20	-	4	-	-	4	-	-	2
21	-	-	-	1	1	-	-	-
22	-	1	-	-	1	-	-	-
Total No. of Ages Read	1453	93	5	1	1552	999	1001	999
Serial Numbers	No. of Age Samples 31					1798	1300	1403
	Number of fish measured each month					11.7	11.5	13.7
	Mean length of fish (cm) each month							
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month							
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							

TABLE 33  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1965 (1st QUARTER)

COUNTRY		United States						Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings							Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial						Total No. of Ages Read	MONTHS WITHIN QUARTER		
STRUCTURES USED IN AGE DETERMINATION		Otoliths							PER MILLE		
Year- Class Length Group (cm)	Age	1961	1960	1959	1958	1957	-	Jan	Feb	Mar	
		4	5	6	7	8	8+				
24		7	3	-	-	-	-			58	
25		-	13	-	-	-	-			75	
26		-	32	-	-	-	-			185	
27		-	26	-	-	-	-			150	
28		-	12	-	-	-	-			69	
29		-	1	3	-	-	-			23	
30		-	-	7	2	-	-			52	
31		-	-	13	3	1	-			98	
32		-	-	5	17	-	-			127	
33		-	-	-	8	5	2			87	
34		-	-	-	-	10	-			58	
35		-	-	-	-	3	-			17	
Total No. of Ages Read		7	87	28	30	19	2	173	999		
Serial Numbers		No. of Age Samples						2			
		Number of fish measured each month									173
		Mean length of fish (cm) each month									28.9
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 33  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1965 (2nd QUARTER)

COUNTRY		Canada (Maritimes)											
CATCHES/LANDINGS		Catches											
COMMERCIAL/RESEARCH		Commercial											
STRUCTURES USED IN AGE DETERMINATION		Otoliths											
Year- Class Length Group (cm)	Age	1963	1962	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		2	3	4	5	6	7	8		Months Within Quarter			
										Apr	May	Jun	
7	-	-	-	-	-	-	-	-	-	-	<1	<1	
8	7	-	-	-	-	-	-	-	7	10	5	9	
9	27	-	-	-	-	-	-	-	27	97	27	29	
10	51	-	-	-	-	-	-	-	51	171	82	34	
11	105	-	-	-	-	-	-	-	105	224	188	96	
12	164	-	-	-	-	-	-	-	164	220	252	148	
13	147	-	-	-	-	-	-	-	147	133	182	153	
14	79	3	-	-	-	-	-	-	82	90	114	111	
15	42	5	-	-	-	-	-	-	47	27	67	61	
16	12	1	-	-	-	-	-	-	13	12	23	27	
17	2	5	-	-	-	-	-	-	7	3	7	11	
18	-	1	-	-	-	-	-	-	1	4	6	4	
19	-	-	-	-	-	-	-	-	-	2	5	2	
20	-	3	-	-	-	-	-	-	3	5	4	6	
21	-	3	-	-	-	-	-	-	3	1	2	8	
22	-	4	-	-	-	-	-	-	4	1	1	5	
23	-	1	-	-	-	-	-	-	1	-	1	3	
24	-	-	1	-	-	-	-	-	1	-	1	3	
25	-	2	7	2	-	-	-	-	11	-	<1	9	
26	-	-	26	-	-	-	-	-	26	-	5	18	
27	-	-	48	14	-	-	-	-	62	-	5	38	
28	-	-	104	24	-	-	-	-	128	-	10	77	
29	-	-	107	29	-	-	-	-	136	-	7	76	
30	-	-	26	18	1	-	-	-	45	-	2	30	
31	-	-	4	16	5	-	-	-	25	-	2	13	
32	-	-	-	13	-	8	2	-	23	-	1	13	
33	-	-	-	6	2	6	3	-	17	-	1	8	
34	-	-	-	-	4	2	3	-	9	-	-	5	
35	-	-	-	-	-	-	-	-	-	-	-	1	
36	-	-	-	-	-	-	-	-	-	-	-	1	
37	-	-	-	-	-	1	-	-	1	-	-	1	
38	-	-	-	-	-	-	-	-	-	-	-	<1	
39	-	-	-	-	-	-	-	-	-	-	-	<1	
Total No. of Ages Read		636	28	323	122	12	17	8	1146		1000	1002	1003
Serial Numbers		No. of Age Samples 19											
		Number of fish measured each month								1417	4016	4485	
		Mean length of fish (cm) each month								12.2	13.5	18.1	
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)								S/T/W	W	W/N/S	

TABLE 33  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1965 (2nd QUARTER)

COUNTRY		United States								
CATCHES/LANDINGS		Catches								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class Length Group (cm)	Age	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2	3	4	5	6		Months Within Quarter		
								Apr	May	Jun
8		5	-	-	-	-	5	10	-	-
9		29	-	-	-	-	29	220	16	-
10		45	-	-	-	-	45	230	96	15
11		84	1	-	-	-	85	300	236	100
12		257	1	-	-	-	258	170	280	238
13		379	2	-	-	-	381	60	200	275
14		230	12	-	-	-	242	-	136	180
15		119	11	-	-	-	130	-	28	115
16		35	8	-	-	-	43	-	8	58
17		3	2	-	-	-	5	-	-	8
18		1	3	1	-	-	5	10	-	5
19		-	6	1	-	-	7	-	-	3
20		-	4	-	-	-	4	-	-	3
21		-	1	-	-	-	1	-	-	-
22		-	1	-	-	-	-	-	-	-
23		-	-	-	-	-	1	-	-	-
24		-	-	-	-	-	-	-	-	-
25		-	-	-	-	-	-	-	-	-
26		-	-	1	-	-	1	-	-	3
27		-	-	-	-	-	1	-	-	-
28		-	-	-	2	1	3	-	-	-
					4	-	4	-	-	-
Total No. of Ages Read		1187	52	3	6	1	1249	1000	1000	1003
Serial Numbers		No. of Age Samples 25								
	Number of fish measured each month									
	Mean length of fish (cm) each month	200 649 1150								
	Mean weight of fish (kg) each month	12.0 13.6 13.5								
	Total weight caught or landed (tons) each month									
	Estimated number caught or landed (whole numbers) each month									
	Range of depths (m) each month									
	Mesh size (mm)									

TABLE 33  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1965 (2nd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Landings									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Group (cm)	Age	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		3	4	5	6	7		Months Within Quarter			
							Apr	May	Jun		
22		1	-	-	-	-	1			5	
23		1	-	-	-	-	1			5	
24		-	1	-	-	-	1			5	
25		-	8	-	-	-	8			42	
26		-	13	15	-	-	28			147	
27		-	-	76	-	-	76			400	
28		-	-	49	-	-	49			258	
29		-	-	17	3	-	20			105	
30		-	-	-	4	1	5			27	
31		-	-	-	-	1	1			5	
999											
Total No. of Ages Read		2	22	157	7	2	190				
Serial Numbers							No. of Age Samples		2		
		Number of fish measured each month								190	
		Mean length of fish (cm) each month								27.7	
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 33  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1965 (3rd QUARTER)

COUNTRY		Canada (Maritimes)								Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches									Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial								Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths									Months Within Quarter		
Year- Class Length Group (cm)	Age	1963	1962	1961	1960	1959	1958	1957	Total No. of Ages Read	PER MILLE			
		2	3	4	5	6	7	8		Jul	Aug <sup>1</sup>	Sep	
9		-	-	-	-	-	-	-	-	<1	-	<1	
10		-	-	-	-	-	-	-	-	2	1	<1	
11		21	-	-	-	-	-	-	21	25	15	1	
12		34	-	-	-	-	-	-	34	71	18	4	
13		100	-	-	-	-	-	-	100	102	52	44	
14		182	-	-	-	-	-	-	182	94	107	148	
15		177	-	-	-	-	-	-	177	68	133	186	
16		127	-	-	-	-	-	-	127	39	101	129	
17		63	1	-	-	-	-	-	64	27	51	72	
18		24	5	-	-	-	-	-	29	15	33	49	
19		15	7	-	-	-	-	-	22	6	20	32	
20		4	17	-	-	-	-	-	21	9	11	25	
21		1	27	-	-	-	-	-	28	11	12	24	
22		-	32	1	-	-	-	-	33	19	14	17	
23		-	17	8	-	-	-	-	25	14	10	8	
24		-	23	21	-	-	-	-	44	18	13	7	
25		-	33	41	3	-	-	-	77	26	17	10	
26		-	16	48	4	-	-	-	68	30	18	7	
27		-	6	80	14	-	-	-	100	39	36	18	
28		-	-	170	15	1	-	-	186	66	82	35	
29		-	-	248	7	-	-	-	255	96	110	65	
30		-	-	197	7	-	-	-	204	71	74	60	
31		-	-	82	33	3	-	-	118	39	26	16	
32		-	-	31	93	16	1	-	141	39	22	16	
33		-	-	3	92	29	2	-	126	35	13	12	
34		-	-	1	49	33	1	1	85	21	8	7	
35		-	-	-	6	31	-	-	37	9	3	4	
36		-	-	-	3	13	5	-	21	5	<1	2	
37		-	-	-	-	1	3	1	5	3	-	1	
38		-	-	-	-	-	4	-	4	1	-	1	
39		-	-	-	-	-	-	1	1	-	-	<1	
Total No. of Ages Read		748	184	931	326	127	16	3	2335	1001	1001	1003	
Serial Numbers		No. of Age Samples 35											
		Number of fish measured each month								4524	3442 <sup>1</sup>	2845	
		Mean length of fish (cm) each month								22.6	21.7	20.0	
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											
										W/S/N	W/S/N	W/S/N	

<sup>1</sup> Includes 379 fish (8 samples) from research vessel cruise



TABLE 33  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1965 (3rd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Group (cm)	Age	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		2	3	4	5	6		Months Within Quarter			
								Jul	Aug	Sep	
10		12	-	-	-	-	12	-	-	-	
11		26	-	-	-	-	26	9	-	1	
12		49	-	-	-	-	49	50	26	-	
13		209	-	-	-	-	209	177	80	11	
14		412	5	-	-	-	417	254	189	88	
15		486	5	-	-	-	491	263	240	223	
16		308	11	-	-	-	319	131	202	237	
17		183	15	-	-	-	198	71	116	144	
18		88	11	2	-	-	101	19	47	83	
19		51	17	-	-	-	68	9	16	29	
20		24	40	1	-	-	65	6	16	29	
21		14	45	-	-	-	59	1	9	24	
22		7	35	1	-	-	43	1	11	20	
23		4	23	-	-	-	27	1	10	27	
24		-	16	5	-	-	21	1	16	13	
25		-	12	4	2	-	18	1	9	17	
26		-	2	2	1	-	5	1	4	16	
27		-	1	9	3	1	14	3	1	7	
28		-	-	8	1	-	9	-	3	20	
29		-	-	8	2	-	10	-	3	7	
30		-	-	4	-	-	4	-	1	-	
31		-	-	-	-	1	1	-	-	1	
32		-	-	-	-	-	-	-	-	1	
Total No. of Ages Read		1873	238	44	9	2	2166	998	999	998	
Serial Numbers		No. of Age Samples 44									
		Number of fish measured each month					1349	1638	1324		
		Mean length of fish (cm) each month					15.3	16.7	17.5		
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 33  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1965 (3rd QUARTER)

COUNTRY		United States							Total	LENGTH COMPOSITION		
CATCHES/LANDINGS		Landings							No. of	PER MILLE		
COMMERCIAL/RESEARCH		Commercial							Ages	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths							Read	Jul	Aug	Sep
Year- Class	1962	1961	1960	1959	1958	1957	-	Total No. of Ages Read	PER MILLE			
Length Age Group(cm)	3	4	5	6	7	8	8+		Months Within Quarter			
									Jul	Aug	Sep	
21	1	-	-	-	-	-	-	1	1	-	-	
22	-	-	-	-	-	-	-	-	-	-	-	
23	7	-	-	-	-	-	-	7	6	3	-	
24	4	-	-	-	-	-	-	4	3	3	-	
25	7	3	-	-	-	-	-	10	9	4	-	
26	1	30	1	-	-	-	-	32	23	19	3	
27	-	86	79	-	-	-	-	165	101	105	47	
28	-	17	279	-	-	-	-	296	203	171	68	
29	-	5	242	7	-	-	-	254	185	119	95	
30	-	4	67	113	-	-	-	184	110	92	118	
31	-	-	8	81	114	-	-	203	111	129	91	
32	-	-	-	28	168	58	-	254	122	170	141	
33	-	-	-	-	12	103	36	151	70	95	105	
34	-	-	-	-	-	16	87	103	31	55	139	
35	-	-	-	-	-	4	40	44	13	16	78	
36	-	-	-	-	-	1	30	31	5	14	57	
37	-	-	-	-	-	1	12	13	3	4	27	
38	-	-	-	-	-	-	11	11	4	1	24	
39	-	-	-	-	-	-	1	1	-	-	3	
40	-	-	-	-	-	-	1	1	-	-	3	
Total No. of Ages Read	20	145	676	229	294	183	218	1765	1000	1000	999	
Serial Numbers	No. of Age Samples							21				
	Number of fish measured each month							773	696	296		
	Mean length of fish (cm) each month							30.2	30.7	32.5		
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 33  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1965 (4th QUARTER)

COUNTRY		Canada (Maritimes)										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group(cm)	1964	1963	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
									Months Within Quarter			
	1	2	3	4	5	6	7		Oct	Nov	Dec	
9	2	-	-	-	-	-	-	2	1	5	8	
10	10	-	-	-	-	-	-	10	2	65	16	
11	18	1	-	-	-	-	-	19	3	110	132	
12	25	2	-	-	-	-	-	27	6	117	228	
13	24	4	-	-	-	-	-	28	3	47	336	
14	5	12	-	-	-	-	-	17	20	20	124	
15	-	58	-	-	-	-	-	58	98	38	84	
16	-	61	-	-	-	-	-	61	135	125	48	
17	-	56	-	-	-	-	-	56	142	155	24	
18	-	63	1	-	-	-	-	64	140	160	-	
19	-	67	1	-	-	-	-	68	108	100	-	
20	-	48	3	-	-	-	-	51	74	43	-	
21	-	32	8	-	-	-	-	40	51	15	-	
22	-	15	21	1	-	-	-	37	46	-	-	
23	-	2	19	1	-	-	-	22	32	-	-	
24	-	-	10	-	-	-	-	10	19	-	-	
25	-	-	9	1	-	-	-	10	14	-	-	
26	-	-	6	1	-	-	-	7	12	-	-	
27	-	-	-	19	-	-	-	19	14	-	-	
28	-	-	-	47	-	-	-	47	34	-	-	
29	-	-	-	38	1	-	-	39	28	-	-	
30	-	-	-	14	2	-	-	16	12	-	-	
31	-	-	-	3	1	1	-	5	3	-	-	
32	-	-	-	-	1	-	-	1	1	-	-	
33	-	-	-	-	-	1	-	1	1	-	-	
34	-	-	-	-	-	-	-	-	-	-	-	
35	-	-	-	-	-	-	1	1	1	-	-	
Total No. of Ages Read	84	421	78	125	5	2	1	716				
Serial Numbers	No. of Age Samples							10				
	Number of fish measured each month								1512	400	250	
	Mean length of fish (cm) each month								19.7	15.9	13.5	
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)								S/N	S/W	S	

TABLE 33  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1965 (4th QUARTER)

COUNTRY		United States								
CATCHES/LANDINGS		Catches								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class Length Group (cm)	Age	1964	1963	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		1	2	3	4	5		Months Within Quarter		
								Oct	Nov	Dec
8		11	-	-	-	-	11	-	-	
9		36	-	-	-	-	36	-	22	
10		42	2	-	-	-	44	10	193	
11		26	2	-	-	-	28	10	244	
12		47	7	-	-	-	54	6	156	
13		25	19	-	-	-	44	6	30	
14		1	114	-	-	-	115	26	7	
15		-	190	-	-	-	190	192	52	
16		-	211	-	-	-	211	273	148	
17		-	101	-	-	-	101	150	104	
18		-	42	1	-	-	43	72	37	
19		-	29	1	-	-	30	36	7	
20		-	19	4	-	-	23	34	-	
21		-	5	10	-	-	15	16	-	
22		-	6	14	-	-	20	28	-	
23		-	4	9	1	-	14	14	-	
24		-	2	9	-	-	11	18	-	
25		-	-	8	-	-	8	14	-	
26		-	-	4	1	-	5	22	-	
27		-	-	1	1	-	2	26	-	
28		-	-	-	5	-	5	22	-	
29		-	-	-	15	2	17	14	-	
30		-	-	-	5	1	6	6	-	
31		-	-	-	1	-	1	-	-	
32		-	-	-	-	-	-	2	-	
33		-	-	-	-	-	-	2	-	
Total No. of Ages Read		188	753	61	29	3	1034	999	1000	
Serial Numbers		No. of Age Samples 21								
		Number of fish measured each month						1183	282	203
		Mean length of fish (cm) each month						18.1	14.7	11.5
		Mean weight of fish (kg) each month								
		Total weight caught or landed (tons) each month								
		Estimated number caught or landed (whole numbers) each month								
		Range of depths (m) each month								
		Mesh size (mm)								

TABLE 34

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1965 (1st QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1963	1962	1961	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2	3	4		Months Within Quarter			
					Jan	Feb	Mar	
9	-	-	-	-			7	
10	1	-	-	1			38	
11	28	-	-	28			148	
12	92	1	-	93			243	
13	145	2	-	147			243	
14	146	3	-	149			181	
15	75	6	-	81			87	
16	18	2	-	20			19	
17	3	2	-	5			6	
18	1	6	-	7			10	
19	-	9	1	10			10	
20	-	6	-	6			8	
21	-	2	-	2			1	
Total No. of Ages Read	509	39	1	549	1001			
Serial Numbers	No. of Age Samples 11							
	Number of fish measured each month						2000	
	Mean length of fish (cm) each month						13.6	
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month				4		2780	
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							

TABLE 34  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1965 (2nd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE				
	2	3	4	5	6		Months Within Quarter				
							Apr	May	Jun		
4	-	-	-	-	-	-	-	-	-		
5	-	-	-	-	-	-	-	-	31		
6	-	-	-	-	-	-	-	-	96		
7	-	-	-	-	-	-	-	-	7		
8	-	-	-	-	-	-	-	-	-		
9	12	-	-	-	-	-	-	-	-		
10	40	-	-	-	-	12	3	1	-		
11	169	-	-	-	-	40	26	19	1		
12	316	-	-	-	-	169	104	100	23		
13	458	1	-	-	-	316	171	188	72		
14	547	9	-	-	-	459	190	229	127		
15	532	18	-	-	-	556	220	188	140		
16	305	20	-	-	-	550	150	148	168		
17	134	18	-	1	-	326	46	67	167		
18	33	30	-	-	-	152	26	17	105		
19	5	39	-	-	-	63	16	12	40		
20	-	29	-	-	-	44	16	14	5		
21	-	21	-	-	-	29	26	7	8		
22	-	12	1	-	-	21	7	9	7		
23	-	4	-	-	-	13	-	-	4		
24	-	2	1	-	-	4	-	-	-		
25	-	1	-	-	-	3	-	-	-		
26	-	2	-	-	-	1	-	-	-		
27	-	-	2	6	-	10	-	-	-		
28	-	-	4	10	-	14	-	-	-		
29	-	-	1	13	1	15	-	-	-		
	-	-	-	6	-	6	-	-	-		
Total No. of Ages Read	2551	206	9	36	1	2803	1001	999	1001		
Serial Numbers	No. of Age Samples 57										
	Number of fish measured each month										
	Mean length of fish (cm) each month						969	1602	2599		
	Mean weight of fish (kg) each month						14.5	14.6	14.7		
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month						1494	465	4219		
	Range of depths (m) each month										
	Mesh size (mm)										

TABLE 34  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1965 (2nd QUARTER)

COUNTRY		United States						Total No. of Ages Read	LENGTH COMPOSITION PER MILE		
CATCHES/LANDINGS		Landings							Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Apr	May	Jun
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Group (cm)	Age	1962	1961	1960	1959	1958	1957				
		3	4	5	6	7	8		Apr	May	Jun
19		1	-	-	-	-	-	1		-	4
20		-	-	-	-	-	-	-		-	-
21		-	-	-	-	-	-	-		-	-
22		2	-	-	-	-	-	2		18	4
23		-	1	-	-	-	-	1		-	4
24		4	4	-	-	-	-	8		-	33
25		-	23	1	-	-	-	24		111	73
26		-	25	36	-	-	-	61		167	211
27		-	2	96	-	-	-	98		389	313
28		-	-	66	1	-	-	67		185	232
29		-	-	17	10	-	-	27		93	89
30		-	-	-	8	-	-	8		18	28
31		-	-	-	-	2	-	2		18	4
32		-	-	-	-	-	-	-		-	-
33		-	-	-	-	-	1	1		-	4
Total No. of Ages Read		7	55	216	19	2	1	300			
Serial Numbers		No. of Age Samples 5									
		Number of fish measured each month							54	246	
		Mean length of fish (cm) each month							27.5	27.4	
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 34  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1965 (3rd QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Group (cm)	Age	1964	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		1	2	3	4	5	6		Months Within Quarter	Jul	Aug	Sep
3		-	-	-	-	-	-	-	3	-	-	-
4		-	-	-	-	-	-	-	32	-	-	-
5		-	-	-	-	-	-	-	127	-	-	-
6		-	-	-	-	-	-	-	77	6	-	-
7		-	-	-	-	-	-	-	7	37	12	-
8		-	-	-	-	-	-	-	14	6	51	-
9	4	-	-	-	-	-	-	4	11	1	41	-
10	25	2	-	-	-	-	-	27	-	-	16	-
11	60	23	-	-	-	-	-	83	3	1	18	-
12	88	225	-	-	-	-	-	313	12	2	18	-
13	43	458	-	-	-	-	-	501	33	20	14	-
14	14	765	1	-	-	-	-	780	31	69	26	-
15	2	917	4	-	-	-	-	923	44	122	129	-
16	-	958	6	-	-	-	-	964	88	167	233	-
17	-	924	24	-	-	-	-	948	118	203	116	-
18	-	795	26	-	-	-	-	821	126	190	93	-
19	-	511	52	-	-	-	-	563	132	111	80	-
20	-	220	84	-	-	-	-	304	89	43	69	-
21	-	95	67	-	-	-	-	162	26	13	51	-
22	-	26	48	-	-	-	-	74	12	5	22	-
23	-	4	30	2	-	-	-	36	7	1	3	-
24	-	1	14	2	-	-	-	17	5	1	3	-
25	-	1	18	2	-	-	-	21	2	1	1	-
26	-	-	6	2	-	-	-	8	-	-	2	-
27	-	-	4	4	-	-	-	8	-	1	-	-
28	-	-	-	3	1	-	-	4	-	1	1	-
29	-	-	-	3	3	-	-	6	-	-	-	-
30	-	-	-	1	-	-	-	1	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-
32	-	-	1	-	-	1	-	2	-	-	-	-
Total No. of Ages Read		236	5925	385	19	4	1	6570	999	1001	999	
Serial Numbers		No. of Age Samples 137										
		Number of fish measured each month						4023	4511	2449		
		Mean length of fish (cm) each month						15.6	17.2	16.8		
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month						7424	8548	3921		
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										







TABLE 34  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1965 (3rd QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Landings										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group (cm)	1962	1961	1960	1959	1958	1957	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE .			
	3	4	5	6	7	8	8+		Months Within Quarter			
									Jul	Aug	Sep	
20	4	-	-	-	-	-	-	4	3	4	-	
21	23	-	-	-	-	-	-	23	19	25	-	
22	35	-	-	-	-	-	-	35	41	32	-	
23	52	-	-	-	-	-	-	52	53	51	-	
24	89	2	-	-	-	-	-	91	125	73	4	
25	93	29	-	-	-	-	-	122	138	111	8	
26	49	120	3	-	-	-	-	172	131	174	42	
27	3	96	100	-	-	-	-	199	197	136	165	
28	-	10	237	-	-	-	-	247	178	182	250	
29	-	-	176	1	-	-	-	177	69	130	254	
30	-	-	57	30	-	-	-	87	31	57	146	
31	-	-	4	21	12	-	-	37	9	18	85	
32	-	-	-	-	11	3	-	14	6	6	31	
33	-	-	-	-	-	4	-	4	-	1	11	
34	-	-	-	-	-	-	-	-	-	-	-	
35	-	-	-	-	-	-	1	1	-	-	4	
Total No. of Ages Read	348	257	577	52	23	7	1	1265	1000	1000	1000	
Serial Numbers	No. of Age Samples 20											
	Number of fish measured each month								320	685	260	
	Mean length of fish (cm) each month								26.6	27.0	29.1	
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 34  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1965 (4th QUARTER)

COUNTRY		United States								
CATCHES/LANDINGS		Catches								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class Length Group (cm)	Age	1964	1963	1962	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		3	2	1	4		Months Within Quarter			
							Oct	Nov	Dec	
7		-	-	-	-	-	6			
8		-	-	-	-	-	48			
9		-	-	-	-	-	270			
10		11	-	-	-	11	111			
11		47	-	-	-	47	12			
12		45	12	-	-	57	3			
13		60	52	-	-	112	3			
14		28	66	-	-	94	30			
15		11	159	-	-	170	141			
16		3	267	-	-	270	111			
17		-	309	-	-	309	75			
18		-	169	-	-	169	45			
19		-	83	-	-	83	51			
20		-	83	1	-	84	33			
21		-	46	5	-	51	36			
22		-	53	7	-	60	15			
23		-	13	8	-	21	9			
24		-	1	4	-	5	-			
25		-	-	-	-	-	-			
26		-	-	1	-	1	-			
27		-	-	-	-	-	-			
28		-	-	-	-	-	-			
29		-	-	-	-	-	-			
30		-	-	-	-	-	-			
31		-	-	-	-	-	-			
32		-	-	-	1	1	-			
Total No. of Ages Read		205	1313	26	1	1545	999			
Serial Numbers		No. of Age Samples 28								
		Number of fish measured each month					1679	199		
		Mean length of fish (cm) each month					16.2	18.6		
		Mean weight of fish (kg) each month								
		Total weight caught or landed (tons) each month					2623	347		
		Estimated number caught or landed (whole numbers) each month								
		Range of depths (m) each month								
		Mesh size (mm)								

TABLE 34  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1965 (4th QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year-Class Length Age Group (cm)	1962	1961	1960	1959	1958	1957	-	Total No. of Ages Read	PER MILLE			
	3	4	5	6	7	8	8+		Oct	Nov	Dec	
25	4	-	-	-	-	-	-	4	20	-		
26	7	2	-	-	-	-	-	9	46	-		
27	2	14	1	-	-	-	-	17	76	31		
28	-	13	35	-	-	-	-	48	223	63		
29	-	-	71	-	-	-	-	71	325	109		
30	-	-	38	4	-	-	-	42	173	125		
31	-	-	1	17	2	-	-	20	91	31		
32	-	-	-	-	15	-	-	15	36	125		
33	-	-	-	-	4	11	-	15	10	203		
34	-	-	-	-	-	-	14	14	-	219		
35	-	-	-	-	-	-	6	6	-	94		
Total No. of Ages Read		13	29	146	21	21	11	20	261	1000	1000	
Serial Numbers		No. of Age Samples 4										
		Number of fish measured each month							197	64		
		Mean length of fish (cm) each month							29.3	32.4		
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 35

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1965 (4th QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Landings									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year-Class Length Age Group (cm)	1962	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	3	4	5	6	7	8		Months Within Quarter			
								Oct	Nov	Dec	
22	1	-	-	-	-	-	1	-	5	-	
23	20	-	-	-	-	-	20	15	80	-	
24	38	-	-	-	-	-	38	38	134	-	
25	59	-	-	-	-	-	59	100	128	10	
26	89	-	-	-	-	-	89	167	166	10	
27	26	67	-	-	-	-	93	152	144	140	
28	-	52	65	-	-	-	117	196	182	160	
29	-	-	120	-	-	-	120	161	96	470	
30	-	-	53	7	-	-	60	103	59	140	
31	-	-	-	16	5	-	21	47	-	50	
32	-	-	-	-	7	1	8	18	5	10	
33	-	-	-	-	2	-	2	3	-	10	
Total No. of Ages Read	233	119	238	23	14	1	628	1000	999	1000	
Serial Numbers	No. of Age Samples 8										
	Number of fish measured each month							341	187	100	
	Mean length of fish (cm) each month							28.0	26.8	29.2	
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										

TABLE 35  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1965 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
CATCHES/LANDINGS		Landings								Months Within Quarter			
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter			
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter			
Year- Class Length Group (cm)	Age	1962	1961	1960	1959	1958	1957	-	Total No. of Ages Read	PER MILLE			
		3	4	5	6	7	8	8+		Jul	Aug	Sep	
20	1	1	-	-	-	-	-	-	1	4	-	-	
21	1	1	-	-	-	-	-	-	1	4	-	-	
22	5	-	-	-	-	-	-	-	5	20	-	-	
23	8	-	-	-	-	-	-	-	8	32	-	-	
24	24	-	-	-	-	-	-	-	24	72	10	8	
25	27	1	-	-	-	-	-	-	28	64	5	21	
26	28	21	1	-	-	-	-	-	50	80	36	44	
27	6	38	22	-	-	-	-	-	66	72	51	74	
28	-	9	134	-	-	-	-	-	143	184	128	140	
29	-	-	206	1	-	-	-	-	207	172	210	239	
30	-	-	83	79	-	-	-	-	162	96	246	175	
31	-	-	2	68	65	-	-	-	135	104	174	146	
32	-	-	-	1	67	10	-	-	78	56	77	95	
33	-	-	-	-	2	38	7	-	47	36	57	52	
34	-	-	-	-	-	-	4	-	4	4	5	4	
35	-	-	-	-	-	-	1	-	1	-	-	2	
Total No. of Ages Read		100	69	448	149	134	48	12	960	1000	999	1000	
Serial Numbers		No. of Age Samples 14											
		Number of fish measured each month							250	195	515		
		Mean length of fish (cm) each month							28.5	30.1	29.9		
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 35  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1965 (2nd QUARTER)

COUNTRY		United States							Total	LENGTH COMPOSITION		
CATCHES/LANDINGS		Landings							No. of	PER MILLE		
COMMERCIAL/RESEARCH		Commercial							Ages	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths							Read	Apr	May	Jun
Year- Class	Age	1962	1961	1960	1959	1958	1957	-	Total	PER MILLE		
Length Group (cm)		3	4	5	6	7	8	8+		Months	Within	Quarter
										Apr	May	Jun
17		2	-	-	-	-	-	-	2	5	-	-
18		4	-	-	-	-	-	-	4	9	-	-
19		13	-	-	-	-	-	-	13	30	-	-
20		29	-	-	-	-	-	-	29	67	-	-
21		65	-	-	-	-	-	-	65	150	-	-
22		62	-	-	-	-	-	-	62	143	-	-
23		30	8	-	-	-	-	-	38	83	20	-
24		7	32	-	-	-	-	-	39	69	80	5
25		-	19	19	-	-	-	-	38	65	90	5
26		-	8	79	-	-	-	-	87	136	180	50
27		-	-	99	-	-	-	-	99	106	280	125
28		-	-	108	2	-	-	-	110	81	200	275
29		-	-	36	31	-	-	-	67	30	120	210
30		-	-	-	20	11	-	-	31	14	10	120
31		-	-	-	7	14	2	-	23	5	20	95
32		-	-	-	-	7	6	-	13	2	-	60
33		-	-	-	-	-	4	6	10	5	-	40
34		-	-	-	-	-	-	2	2	-	-	10
35		-	-	-	-	-	-	1	1	-	-	5
Total No. of Ages Read		212	67	341	60	32	12	9	733	1000	1000	1000
Serial Numbers		No. of Age Samples							11			
		Number of fish measured each month							433	100	200	
		Mean length of fish (cm) each month							24.4	27.3	29.5	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										



TABLE 35  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1965 (1st QUARTER)

COUNTRY		United States							Total	LENGTH COMPOSITION		
CATCHES/LANDINGS		Landings							No. of	PER MILLE		
COMMERCIAL/RESEARCH		Commercial							Ages	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths							Read	Jan	Feb	Mar
Year- Class	1962	1961	1960	1959	1958	1957	-	Total No. of Ages Read	PER MILLE			
Length Group (cm)	3	4	5	6	7	8	8+		Jan	Feb	Mar	
16	1	-	-	-	-	-	-	1	-	-	3	
17	2	-	-	-	-	-	-	2	-	-	7	
18	10	-	-	-	-	-	-	10	11	-	30	
19	21	-	-	-	-	-	-	21	11	-	66	
20	30	-	-	-	-	-	-	30	66	-	80	
21	26	-	-	-	-	-	-	26	77	-	63	
22	26	1	-	-	-	-	-	27	43	-	76	
23	11	8	-	-	-	-	-	19	22	-	56	
24	2	10	-	-	-	-	-	12	-	-	40	
25	-	6	8	-	-	-	-	14	-	-	47	
26	-	1	53	-	-	-	-	54	121	-	143	
27	-	-	61	-	-	-	-	61	132	-	163	
28	-	-	25	9	-	-	-	34	88	-	86	
29	-	-	-	20	5	-	-	25	99	-	53	
30	-	-	-	1	26	-	-	27	88	-	63	
31	-	-	-	-	9	9	-	18	121	-	33	
32	-	-	-	-	-	6	3	9	99	-	-	
33	-	-	-	-	-	-	2	2	22	-	-	
Total No. of Ages Read	129	26	147	30	40	15	5	392	1000		999	
Serial Numbers	No. of Age Samples							8				
	Number of fish measured each month								91		301	
	Mean length of fish (cm) each month								27.5		25.1	
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 36

AGE/LENGTH KEY - HERRING - 5Z - 1965 (1st QUARTER)

COUNTRY		Germany, Federal Republic										
CATCHES/LANDINGS		NK										
COMMERCIAL/RESEARCH		NK										
STRUCTURES USED IN AGE DETERMINATION		Scales and Otoliths										
Year- Class Length Group (cm)	Age	1962	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		3	4	5	6	7	8		Jan	Feb	Mar	
22		2	-	-	-	-	-	2			8	
23		1	-	-	-	-	-	1			16	
24		-	1	-	-	-	-	1			16	
25		-	3	1	-	-	-	4			8	
26		-	6	9	1	-	-	16			51	
27		-	-	29	5	-	-	34			90	
28		-	-	21	4	-	-	25			138	
29		-	-	5	1	-	1	7			164	
30		-	-	-	-	-	3	3			118	
31		-	-	-	-	1	1	2			90	
32		-	-	-	-	-	-	-			168	
33		-	-	-	-	-	-	-			109	
34		-	-	-	-	-	-	-			20	
35		-	-	-	-	-	-	-			4	
Total No. of Ages Read		3	10	65	11	1	5	95	1000			
Serial Numbers		No. of Age Samples							1			
	Number of fish measured each month									255		
	Mean length of fish (cm) each month									30.14		
	Mean weight of fish (kg) each month									0.147		
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 36  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Z - 1965 (1st QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Research									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group(cm)	1963	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2	3	4	5	6	7		Months Within Quarter			
								Jan	Feb	Mar	
14	1	-	-	-	-	-	1		43	-	
15	1	-	-	-	-	-	1		43	-	
16	-	-	-	-	-	-	-		-	-	
17	-	-	-	-	-	-	-		-	-	
18	-	-	-	-	-	-	-		-	-	
19	-	4	-	-	-	-	4		131	83	
20	-	11	-	-	-	-	11		435	83	
21	-	4	-	-	-	-	4		131	83	
22	-	1	-	-	-	-	1		43	-	
23	-	-	2	-	-	-	2		43	83	
24	-	-	-	1	-	-	1		-	83	
25	-	-	1	1	-	-	2		-	168	
26	-	-	-	3	-	-	3		87	83	
27	-	-	-	4	-	-	4		43	250	
28	-	-	-	-	-	-	-		-	-	
29	-	-	-	-	-	-	-		-	-	
30	-	-	-	-	-	-	-		-	-	
31	-	-	-	-	-	1	1		-	83	
Total No. of Ages Read	2	20	3	9	-	1	35		999	999	
Serial Numbers	No. of Age Samples 2										
	Number of fish measured each month								23	12	
	Mean length of fish (cm) each month								21.0	25.1	
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										

TABLE 36  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1965 (2nd QUARTER)

COUNTRY		USSR						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Scales						
Year- Class	Length Age Group (cm)	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		4	5	6		Months Within Quarter		
						Apr	May	Jun
21		-	-	-	-	-	2	-
22		-	-	-	-	3	2	-
23		-	-	-	-	-	2	-
24		-	-	-	-	6	18	14
25		-	-	-	-	70	62	78
26	10	-	-	-	10	118	190	368
27	12	-	14	-	26	167	246	304
28	3	-	22	2	27	170	204	120
29	-	-	15	15	30	264	177	81
30	-	-	2	3	5	166	74	32
31	-	-	-	2	2	36	21	3
32	-	-	-	-	-	-	2	-
Total No. of Ages Read		25	53	22	100	1000	1000	1000
Serial Numbers		No. of Age Samples 6						
	Number of fish measured each month				330	1371	283	
	Mean length of fish (cm) each month				28.0	27.5	26.8	
	Mean weight of fish (kg) each month				0.194	0.190	0.204	
	Total weight caught or landed (tons) each month				5590	8193	7066	
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month				91-137	73-155	82-128	
	Mesh size (mm)				40	40	40	

TABLE 36  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1965 (2nd QUARTER)

COUNTRY		United States								Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches									Months Within Quarter		
COMMERCIAL/RESEARCH		Research								Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths									Months Within Quarter		
Year- Class Length Group (cm)	Age	1963	1962	1961	1960	1959	1958	1957	-	Total No. of Ages Read	PER MILLE		
		2	3	4	5	6	7	8	8+		Apr	May	Jun
12		1	-	-	-	-	-	-	-	1	2	-	-
13		2	-	-	-	-	-	-	-	2	4	-	-
14		19	-	-	-	-	-	-	-	19	42	-	-
15		32	-	-	-	-	-	-	-	32	71	-	-
16		7	-	-	-	-	-	-	-	7	16	-	-
17		-	2	-	-	-	-	-	-	2	4	-	-
18		-	5	-	-	-	-	-	-	5	11	-	-
19		-	14	-	-	-	-	-	-	14	31	-	-
20		-	20	-	-	-	-	-	-	20	44	-	-
21		-	41	-	-	-	-	-	-	41	91	-	-
22		-	39	-	-	-	-	-	-	39	85	-	2
23		-	24	20	-	-	-	-	-	44	60	-	35
24		-	19	40	2	-	-	-	-	61	53	-	77
25		-	1	60	29	-	-	-	-	90	80	-	112
26		-	-	41	129	-	-	-	-	170	136	-	226
27		-	-	-	158	-	-	-	-	158	149	-	189
28		-	-	-	113	10	-	-	-	123	91	-	170
29		-	-	-	22	13	-	-	-	35	18	-	56
30		-	-	-	-	11	7	-	-	18	7	-	31
31		-	-	-	-	1	15	3	-	19	4	-	35
32		-	-	-	-	-	5	15	1	21	-	-	44
33		-	-	-	-	-	-	6	3	9	-	-	19
34		-	-	-	-	-	-	-	2	2	-	-	4
Total No. of Ages Read		61	165	161	453	35	27	24	6	932	999		
Serial Numbers		No. of Age Samples								14	1000		
		Number of fish measured each month									450		482
		Mean length of fish (cm) each month									23.6		27.5
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 36  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1965 (3rd QUARTER)

COUNTRY		Poland									
CATCHES/LANDINGS		NK									
COMMERCIAL/RESEARCH		Research									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1962	1961	1960	1959	1958	1957	1956	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE	
	3	4	5	6	7	8	9	9+		Months Within Quarter Aug-Sep	
24	8	-	-	-	-	-	-	-	8		3
25	47	26	9	-	-	-	-	-	82		12
26	85	43	7	-	-	-	-	-	135		44
27	23	92	52	-	-	-	-	-	167		114
28	-	70	131	1	-	-	-	-	202		238
29	-	18	172	29	3	-	-	-	222		258
30	-	5	126	69	15	3	-	-	218		182
31	-	-	34	55	37	17	1	-	144		68
32	-	-	2	10	55	47	11	2	127		43
33	-	-	-	3	17	50	21	1	92		25
34	-	-	-	-	-	13	16	11	40		9
35	-	-	-	-	-	5	2	7	14		4
Total No. of Ages Read	163	254	533	167	127	135	51	21	1451		1000
Serial Numbers	No. of Age Samples 20										
	Number of fish measured each month									24000	
	Mean length of fish (cm) each month									29.45	
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										

TABLE 36  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1965 (3rd QUARTER)

COUNTRY		USSR									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Scale									
Year- Class Length Age Group (cm)	1962	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	3	4	5	6	7	8		Months Within Quarter			
								Jul	Aug	Sep	
22	-	-	-	-	-	-	-	2	-	-	
23	-	-	-	-	-	-	-	10	-	2	
24	2	-	-	-	-	-	2	25	12	6	
25	2	1	-	-	-	-	3	83	36	45	
26	-	8	-	-	-	-	8	231	95	115	
27	-	31	17	-	-	-	48	281	182	159	
28	-	9	56	-	-	-	65	118	222	154	
29	-	-	80	16	-	-	96	91	177	248	
30	-	-	32	30	-	-	62	106	148	139	
31	-	-	2	21	5	-	28	41	89	64	
32	-	-	-	8	12	-	20	11	25	38	
33	-	-	-	-	11	1	12	1	9	26	
34	-	-	-	-	4	2	6	-	4	4	
35	-	-	-	-	-	-	-	-	1	-	
Total No. of Ages Read	4	49	187	75	32	3	350	1000	1000	1000	
Serial Numbers	No. of Age Samples										
	Number of fish measured each month							1270	3582	2684	
	Mean length of fish (cm) each month							27.3	28.4	28.5	
	Mean weight of fish (kg) each month							0.234	0.240	0.234	
	Total weight caught or landed (tons) each month							1310	936	8439	
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month							46-119	64-73	37-64	
	Mesh size (mm)							40	40	40	

TABLE 36  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Z - 1965 (3rd QUARTER)

COUNTRY		United States								Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches									Months	Within	Quarter
COMMERCIAL/RESEARCH		Research											
STRUCTURES USED IN AGE DETERMINATION		Otoliths											
Year- Class Length Age Group (cm)	1963	1962	1961	1960	1959	1958	1957	-	8+	PER MILLE			
	2	3	4	5	6	7	8			Jul	Aug	Sep	
21	2	-	-	-	-	-	-	-	-	2	-	-	6
22	1	1	-	-	-	-	-	-	-	2	-	-	6
23	-	9	-	-	-	-	-	-	-	9	-	-	28
24	-	16	-	-	-	-	-	-	-	16	-	2	47
25	-	56	1	-	-	-	-	-	-	57	-	51	116
26	-	36	63	1	-	-	-	-	-	100	-	114	173
27	-	-	94	50	-	-	-	-	-	144	53	222	167
28	-	-	15	183	-	-	-	-	-	198	368	318	160
29	-	-	-	139	1	-	-	-	-	140	333	154	189
30	-	-	-	31	17	1	-	-	-	49	140	71	41
31	-	-	-	1	14	15	-	-	-	30	70	30	44
32	-	-	-	-	-	14	1	-	-	15	35	20	16
33	-	-	-	-	-	1	4	1	-	6	-	13	3
34	-	-	-	-	-	-	-	2	-	2	-	2	3
35	-	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	1	1	-	2	-
<b>Total No. of Ages Read</b>										771	999	999	999
<b>Serial Numbers</b>										<b>No. of Age Samples 11</b>			
Number of fish measured each month										57	396	318	
Mean length of fish (cm) each month										29.4	28.4	27.7	
Mean weight of fish (kg) each month													
Total weight caught or landed (tons) each month													
Estimated number caught or landed (whole numbers) each month													
Range of depths (m) each month													
Mesh size (mm)													



TABLE 36  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1965 (4th QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Research										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class	Age	1963	1962	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2	3	4	5	6	7	8		Months Within Quarter		
Length Group (cm)										Oct	Nov	Dec
22		1	1	-	-	-	-	-	2	-	6	
23		-	1	-	-	-	-	-	1	-	3	
24		-	4	-	-	-	-	-	4	-	12	
25		-	20	-	-	-	-	-	20	55	51	
26		-	56	4	-	-	-	-	60	127	159	
27		-	3	39	-	-	-	-	42	145	102	
28		-	-	48	75	-	-	-	123	455	293	
29		-	-	-	98	-	-	-	98	182	263	
30		-	-	-	19	3	-	-	22	18	63	
31		-	-	-	1	8	3	-	12	18	33	
32		-	-	-	-	-	3	-	3	-	9	
33		-	-	-	-	-	1	1	2	-	6	
										1000	1000	
Total No. of Ages Read		1	85	91	193	11	7	1	389			
Serial Numbers		No. of Age Samples							6			
		Number of fish measured each month								55	334	
		Mean length of fish (cm) each month								28.1	28.3	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										







TABLE 37

LENGTH FREQUENCIES - HERRING - 3Pn<sup>1</sup> - 1966

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	March	April	November
COUNTRY	Canada (Newfoundland)		
CATCHES/LANDINGS	Catches		
COMMERCIAL/RESEARCH	Commercial		
24	2	1	-
25	11	4	-
26	37	13	-
27	61	27	-
28	63	34	7
29	48	35	7
30	63	60	33
31	135	186	120
32	222	302	277
33	188	224	384
34	81	81	110
35	40	23	33
36	27	7	17
37	16	2	12
38	4	1	-
39	1	-	-
40	1	-	-
Total ‰	1000	1000	1000
Serial Numbers	-	-	-
Number of Samples	-	-	-
Number of Fish Measured	1000	2350	300
Mean Length (cm)	31.4	31.7	32.6
Mean Weight (kg)	-	-	-
Total Weight Landed (tons)	340	1877	1304
Estimated Number Landed	-	-	-
Mesh(mm) or Hook(no.) Size	-	-	-
Range of Depths (fm)	-	-	-

<sup>1</sup> Inshore, Cape Ray to Burgeo, Newfoundland

TABLE 38

LENGTH FREQUENCIES - HERRING - 3Ps<sup>1</sup> - 1966

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	January	February	March	December
COUNTRY	Canada (Newfoundland)			
CATCHES/LANDINGS	Catches			
COMMERCIAL/RESEARCH	Commercial			
24	3	-	-	-
25	11	2	-	-
26	49	8	8	-
27	87	16	18	-
28	79	20	23	13
29	65	28	23	33
30	113	70	42	44
31	197	190	140	172
32	207	290	271	335
33	118	212	257	255
34	39	80	121	79
35	19	36	46	49
36	11	26	28	13
37	2	16	15	5
38	-	4	7	2
39	-	1	1	-
40	-	1	-	-
Total ‰	1000	1000	1000	1000
Serial Numbers	-	-	-	-
Number of Samples	-	-	-	-
Number of Fish Measured	1000	1500	1200	1067
Mean Length (cm)	30.5	32.1	31.1	32.2
Mean Weight (kg)	-	-	-	-
Total Weight Landed (tons)	3440	3839	3634	4449
Estimated Number Landed	-	-	-	-
Mesh(mm) or Hook(no.) Size	-	-	-	-
Range of Depths (fm)	-	-	-	-

<sup>1</sup> Inshore, Burgeo to Pass Island, Newfoundland

TABLE 39

LENGTH FREQUENCIES - HERRING - 4R<sup>1</sup> - 1966

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	December
COUNTRY	Canada (Newfoundland)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Commercial
28	10
29	20
30	35
31	130
32	210
33	200
34	135
35	140
36	55
37	45
38	20
Total ‰	1000
Serial Numbers	-
Number of Samples	-
Number of Fish Measured	200
Mean Length (cm)	33.2
Mean Weight (kg)	-
Total Weight Landed (tons)	3069
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	-
Range of Depths (fm)	-

1 Bonne Bay

TABLE 40

LENGTH FREQUENCIES - HERRING - 4T - 1966

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	May	July	August
COUNTRY	Canada (Maritimes)		
CATCHES/LANDINGS	Catches		
COMMERCIAL/RESEARCH	Commercial		
17	<1	-	-
18	-	-	-
19	<1	-	-
20	-	-	-
21	<1	-	-
22	-	-	1
23	2	-	1
24	1	-	3
25	7	-	1
26	24	-	4
27	54	-	4
28	141	-	36
29	135	6	54
30	182	-	31
31	263	30	61
32	141	212	214
33	31	456	338
34	14	240	156
35	4	42	53
36	1	10	29
37	-	2	7
38	-	2	7
Total ‰	1000	1000	1000
Serial Numbers	-	-	-
Number of Samples	13	1	4
Number of Fish Measured	2898	500	800
Mean Length (cm)	30.5	33.6	33.0
Mean Weight (kg)	-	-	-
Total Weight Landed (tons)	18393	1479	6520
Estimated Number Landed	-	-	-
Mesh(mm) or Hook(no.) Size	N/S/W	N	S/N
Range of Depths (fm)	-	-	-



TABLE 41 LENGTH FREQUENCIES - HERRING - 4V - 1966

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	May
COUNTRY	Canada (Maritimes)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Commercial
11	2
12	12
13	6
14	18
15	24
16	24
17	32
18	34
19	14
20	24
21	30
22	34
23	10
24	8
25	16
26	22
27	46
28	72
29	88
30	116
31	176
32	114
33	48
34	24
35	6
Total ‰	1000
Serial Numbers	-
Number of Samples	1
Number of Fish Measured	500
Mean Length (cm)	27.4
Mean Weight (kg)	-
Total Weight Landed (tons)	21
Estimated Number Landed	-
Mash(mm) or Hook(no.) Size	W
Range of Depths (fm)	-

TABLE 42 LENGTH FREQUENCIES - HERRING - 4W - 1966

(FREQUENCIES IN %/oo - 1 CM GROUPS)

MONTH	July
COUNTRY	Canada (Maritimes)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Research
20	8
21	-
22	17
23	34
24	42
25	25
26	84
27	92
28	50
29	34
30	42
31	84
32	110
33	84
34	101
35	101
36	59
37	25
38	-
39	-
40	8
Total %/oo	1000
Serial Numbers	-
Number of Samples	2
Number of Fish Measured	119
Mean Length (cm)	31.0
Mean Weight (kg)	-
Total Weight Landed (tons)	-
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	T
Range of Depths (fm)	-

TABLE 43

LENGTH FREQUENCIES - HERRING - 5Z - 1966

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	July	August
COUNTRY	Canada (Maritimes)	
CATCHES/LANDINGS	Catches	
COMMERCIAL/RESEARCH	Research	
27	3	-
28	3	-
29	43	35
30	167	118
31	291	238
32	240	175
33	153	175
34	83	162
35	17	76
36	-	16
37	-	5
Total ‰	1000	1000
Serial Numbers	-	-
Number of Samples	1	2
Number of Fish Measured	300	433
Mean Length (cm)	32.1	32.7
Mean Weight (kg)	-	-
Total Weight Landed (tons)	-	-
Estimated Number Landed	-	-
Mesh(mm) or Hook(no.) Size	T	T
Range of Depths (fm)	-	-

TABLE 44

## AGE/LENGTH KEY - HERRING - 4X - 1966 (1st QUARTER)

COUNTRY		Canada (Maritimes)					
CATCHES/LANDINGS		Catches					
COMMERCIAL/RESEARCH		Commercial and Research					
STRUCTURES USED IN AGE DETERMINATION		Otoliths					
Year- Class Length Age Group (cm)	1964	1963	1962	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	2	3	4		Months Within Quarter		
					Jan <sup>1</sup>	Feb <sup>1</sup>	Mar <sup>1</sup>
6	1	-	-	1	-	3	-
7	3	-	-	3	-	3	2
8	21	-	-	21	-	60	31
9	73	-	-	73	8	208	111
10	88	-	-	88	50	273	106
11	54	-	-	54	142	197	56
12	25	2	-	27	183	103	20
13	8	5	-	13	167	70	17
14	4	13	-	17	292	35	31
15	1	12	-	13	150	11	51
16	-	26	-	26	8	19	83
17	-	32	-	32	-	8	124
18	-	27	-	27	-	5	136
19	-	43	-	43	-	5	132
20	-	23	-	23	-	-	62
21	-	3	1	4	-	-	25
22	-	2	1	3	-	-	8
23	-	-	1	1	-	-	3
24	-	-	1	1	-	-	1
25	-	-	-	-	-	-	1
Total No. of Ages Read	278	188	4	470			
Serial Numbers	No. of Age Samples			10			
	Number of fish measured each month				120	370	1186
	Mean length of fish (cm) each month				13.5	11.2	15.5
	Mean weight of fish (kg) each month						
	Total weight caught or landed (tons) each month						
	Estimated number caught or landed (whole numbers) each month						
	Range of depths (m) each month						
	Mesh size (mm)				S	S/T	S/T

<sup>1</sup> Research and commercial samples combined

TABLE 44  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1966 (1st QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Age Group (cm)	1964	1963	1962	1961	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2	3	4	5		Months Within Quarter			
						Jan	Feb	Mar	
8	8	-	-	-	8	-	-	-	
9	47	-	-	-	47	80	-	-	
10	60	1	-	-	61	400	2	-	
11	46	4	-	-	50	320	4	-	
12	21	5	-	-	26	120	-	-	
13	10	24	-	-	34	80	4	-	
14	2	23	-	-	25	-	-	10	
15	1	12	-	-	13	-	-	39	
16	-	13	-	-	13	-	-	104	
17	-	31	-	-	31	-	-	189	
18	-	43	-	-	43	-	-	275	
19	-	45	-	-	45	-	-	200	
20	-	26	-	-	26	-	-	112	
21	-	16	-	-	16	-	-	37	
22	-	7	-	1	8	-	-	16	
23	-	-	-	-	-	-	-	2	
24	-	-	-	-	-	-	-	-	
25	-	-	-	-	-	-	-	6	
Total No. of Ages Read	195	250	-	1	446				
Serial Numbers	No. of Age Samples 13							1000	1000
	Number of fish measured each month					99	100	781	
	Mean length of fish (cm) each month					12.2	11.5	17.8	
	Mean weight of fish (kg) each month								
	Total weight caught or landed (tons) each month								
	Estimated number caught or landed (whole numbers) each month								
	Range of depths (m) each month								
	Mesh size (mm)								

TABLE 44  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1966 (2nd QUARTER)

COUNTRY		Canada (Maritimes)									Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches										Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial and Research									Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths										Months Within Quarter		
Year- Class	1964	1963	1962	1961	1960	1959	1958	1957	Total No. of Ages Read	Months Within Quarter				
Length Age Group (cm)	2	3	4	5	6	7	8	9		Apr <sup>1</sup>	May <sup>1</sup>	Jun <sup>1</sup>		
7	-	-	-	-	-	-	-	-	-	1	-	-		
8	5	-	-	-	-	-	-	-	5	2	3	-		
9	31	-	-	-	-	-	-	-	31	51	32	1		
10	42	-	-	-	-	-	-	-	42	47	55	6		
11	37	-	-	-	-	-	-	-	37	29	56	18		
12	30	3	-	-	-	-	-	-	33	12	42	26		
13	9	9	-	-	-	-	-	-	18	22	30	27		
14	20	39	-	-	-	-	-	-	59	29	63	37		
15	12	65	-	-	-	-	-	-	77	52	70	43		
16	4	90	-	-	-	-	-	-	94	73	64	51		
17	1	115	-	-	-	-	-	-	116	80	74	71		
18	-	134	3	-	-	-	-	-	137	158	107	75		
19	2	100	6	-	-	-	-	-	108	204	120	75		
20	1	78	9	-	-	-	-	-	88	119	84	72		
21	-	36	10	-	-	-	-	-	46	76	47	45		
22	-	8	17	-	-	-	-	-	25	29	22	26		
23	-	3	5	-	-	-	-	-	8	12	11	14		
24	-	1	6	1	-	-	-	-	8	2	5	9		
25	-	1	6	2	-	-	-	-	9	2	8	8		
26	-	1	10	4	-	-	-	-	15	-	5	12		
27	-	1	30	14	-	-	-	-	45	-	7	39		
28	-	1	22	42	2	-	-	-	67	-	20	67		
29	-	2	7	80	4	-	-	-	93	-	40	86		
30	-	-	-	70	3	-	-	-	73	-	24	82		
31	-	-	-	26	5	1	-	-	32	-	6	56		
32	-	-	-	4	10	3	-	-	17	-	4	25		
33	-	-	-	-	7	1	2	2	12	-	1	15		
34	-	-	-	1	1	2	-	1	5	-	-	8		
35	-	-	-	-	1	-	-	-	1	-	-	3		
36	-	-	-	-	-	-	-	-	-	-	-	1		
37	-	-	-	-	-	-	-	-	-	-	-	1		
38	-	-	-	-	-	-	-	-	-	-	-	1		
39	-	-	-	-	-	-	-	-	-	-	-	<1		
Total No. of Ages Read	194	687	131	244	33	7	2	3	1301	1000	1000	1001		
Serial Numbers	No. of Age Samples 25													
	Number of fish measured each month									1256	953	3354		
	Mean length of fish (cm) each month									17.6	18.1	22.8		
	Mean weight of fish (kg) each month													
	Total weight caught or landed (tons) each month													
	Estimated number caught or landed (whole numbers) each month													
	Range of depths (m) each month													
	Mesh size (mm)									W/S/T	W/S/N	W/S		

1 Research and commercial samples combined

TABLE 44  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1966 (2nd QUARTER)

COUNTRY		United States						Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
CATCHES/LANDINGS		Catches							Months Within Quarter			
COMMERCIAL/RESEARCH		Commercial							Apr	May	Jun	
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Group (cm)	Age	1964	1963	1962	1961	1960	1959	Total No. of Ages Read	PER MILLE			
		2	3	4	5	6	7		Apr	May	Jun	
6		-	-	-	-	-	-	-	-	-	1	
7		-	-	-	-	-	-	-	-	-	-	
8		1	-	-	-	-	-	1	-	-	-	
9		4	-	-	-	-	-	4	6	80	-	
10		18	-	-	-	-	-	18	12	88	1	
11		16	1	-	-	-	-	17	7	136	12	
12		22	2	-	-	-	-	24	8	88	45	
13		16	10	-	-	-	-	26	22	24	58	
14		12	17	-	-	-	-	29	67	120	69	
15		8	50	-	-	-	-	58	98	168	72	
16		-	74	-	-	-	-	74	137	88	120	
17		-	97	-	-	-	-	97	199	72	143	
18		-	114	1	-	-	-	115	193	24	178	
19		-	102	-	-	-	-	102	149	40	109	
20		-	69	1	-	-	-	70	63	24	79	
21		-	28	2	-	-	-	30	25	32	34	
22		-	19	4	-	-	-	23	10	8	21	
23		-	5	5	-	-	-	10	-	-	4	
24		-	-	8	-	-	-	8	3	-	1	
25		-	-	2	-	-	-	2	1	8	2	
26		-	-	4	2	-	-	6	-	-	-	
27		-	-	3	1	-	-	4	-	-	6	
28		-	-	1	5	1	-	7	-	-	11	
29		-	-	1	12	3	-	16	-	-	18	
30		-	-	-	5	1	-	6	-	-	11	
31		-	-	-	-	-	-	-	-	-	1	
32		-	-	-	-	1	1	2	-	-	2	
33		-	-	-	-	-	-	-	-	-	2	
Total No. of Ages Read		97	588	32	25	6	1	749	1000	1000	999	
Serial Numbers		No. of Age Samples						30				
		Number of fish measured each month						1150	249	1212		
		Mean length of fish (cm) each month						17.6	15.3	18.4		
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 44  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1966 (2nd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Landings									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1963	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	3	4	5	6	7	8		Months Within Quarter			
								Apr	May	Jun	
21	2	-	-	-	-	-	2	-	-	12	
22	1	-	-	-	-	-	1	-	-	6	
23	1	-	-	-	-	-	1	14	-	-	
24	1	2	-	-	-	-	3	28	-	6	
25	-	7	-	-	-	-	7	69	-	12	
26	-	13	-	-	-	-	13	153	-	12	
27	-	20	5	-	-	-	25	139	-	89	
28	-	6	48	-	-	-	54	180	-	244	
29	-	-	36	42	-	-	78	250	-	357	
30	-	-	2	40	-	-	42	139	-	190	
31	-	-	-	6	7	-	13	28	-	65	
32	-	-	-	-	-	1	1	-	-	6	
Total No. of Ages Read	5	48	91	88	7	1	240				
Serial Numbers	No. of Age Samples 5										
	Number of fish measured each month								72	168	
	Mean length of fish (cm) each month								28.3	29.1	
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										



TABLE 44  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1966 (3rd QUARTER)

COUNTRY		Canada (Maritimes)												
CATCHES/LANDINGS									Catches					
COMMERCIAL/RESEARCH									Commercial					
STRUCTURES USED IN AGE DETERMINATION									Otoliths					
Year- Class Length Group (cm)	Age	1965	1964	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE				
		1	2	3	4	5	6	7		Months Within Quarter				
										Jul <sup>1</sup>	Aug <sup>1</sup>	Sep <sup>1</sup>		
6		-	-	-	-	-	-	-	-	-	-	-	1	
7		6	-	-	-	-	-	-	6	-	-	-	6	
8		11	-	-	-	-	-	-	11	-	-	-	15	
9		24	-	-	-	-	-	-	24	-	-	-	30	
10		24	-	-	-	-	-	-	24	<1	-	-	45	
11		39	-	-	-	-	-	-	39	1	<1	-	72	
12		6	14	-	-	-	-	-	20	7	2	-	19	
13		-	25	-	-	-	-	-	25	11	22	-	6	
14		-	32	3	-	-	-	-	35	14	36	-	2	
15		-	36	12	-	-	-	-	48	20	40	-	11	
16		-	33	16	-	-	-	-	49	28	22	-	25	
17		-	19	60	-	-	-	-	79	52	29	-	35	
18		-	10	115	-	-	-	-	125	93	60	-	40	
19		-	4	159	4	-	-	-	167	140	89	-	49	
20		-	3	159	9	-	-	-	171	152	129	-	54	
21		-	-	106	11	-	-	-	117	109	115	-	67	
22		-	1	73	7	-	-	-	81	52	48	-	84	
23		-	-	23	14	-	-	-	37	26	23	-	60	
24		-	-	9	8	1	-	-	18	13	11	-	42	
25		-	-	7	5	-	-	-	12	11	8	-	21	
26		-	-	-	8	2	-	-	10	10	8	-	8	
27		-	-	-	5	8	1	-	14	9	9	-	12	
28		-	-	-	12	14	-	-	26	16	13	-	15	
29		-	-	1	7	47	-	-	55	46	35	-	45	
30		-	-	-	3	76	3	-	82	94	92	-	85	
31		-	-	-	3	52	2	1	58	54	83	-	99	
32		-	-	-	-	30	4	-	34	23	41	-	31	
33		-	-	-	-	14	5	-	19	11	24	-	11	
34		-	-	-	-	7	7	-	14	6	18	-	7	
35		-	-	-	-	3	3	-	6	1	12	-	2	
36		-	-	-	-	-	1	-	1	1	13	-	1	
37		-	-	-	-	-	-	-	-	-	11	-	-	
38		-	-	-	-	-	-	-	-	-	5	-	<1	
39		-	-	-	-	-	-	-	-	<1	1	-	-	
Total No. of Ages Read		110	177	743	96	254	26	1	1407	1002	1001	1001		
Serial Numbers		No. of Age Samples							26					
		Number of fish measured each month							3240	2993	3268			
		Mean length of fish (cm) each month							22.7	24.0	22.1			
		Mean weight of fish (kg) each month												
		Total weight caught or landed (tonne) each month												
		Estimated number caught or landed (whole numbers) each month												
		Range of depths (m) each month												
		Mesh size (mm)										W/N	W/S/N/T	W/S/N/T

<sup>1</sup> Research and commercial samples combined

TABLE 44  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1966 (3rd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1965	1964	1963	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE Months Within Quarter			
	1	2	3	4	5	6		Jul	Aug	Sep	
9	-	-	-	-	-	-	-	5	-	5	
10	8	-	-	-	-	-	8	4	-	16	
11	9	-	-	-	-	-	9	21	-	39	
12	17	-	-	-	-	-	17	33	-	34	
13	1	5	-	-	-	-	6	21	6	6	
14	-	15	1	-	-	-	16	20	18	5	
15	-	40	2	-	-	-	42	40	40	39	
16	-	47	18	-	-	-	65	58	36	61	
17	-	39	59	-	-	-	98	112	38	71	
18	-	27	125	-	-	-	152	134	85	82	
19	-	12	188	-	-	-	200	155	126	98	
20	-	4	204	2	-	-	210	167	209	80	
21	-	2	149	-	-	-	151	102	186	97	
22	-	-	106	3	-	-	109	52	105	102	
23	-	-	46	2	-	-	48	16	51	121	
24	-	-	26	6	-	-	32	11	21	73	
25	-	-	17	5	-	-	22	10	13	36	
26	-	-	9	8	-	-	17	5	17	9	
27	-	-	1	9	3	-	13	10	10	12	
28	-	-	-	6	3	-	9	9	13	4	
29	-	-	-	5	7	-	12	9	13	7	
30	-	-	-	1	2	-	3	4	9	1	
31	-	-	-	-	5	-	5	2	4	1	
32	-	-	-	-	2	-	2	-	-	1	
33	-	-	-	-	-	-	-	-	-	-	
34	-	-	-	-	-	-	-	-	-	-	
35	-	-	-	-	-	-	-	-	-	-	
36	-	-	-	-	-	1	1	-	-	-	
Total No. of Ages Read	35	191	951	47	22	1	1247	1000	1000	1000	
Serial Numbers	No. of Age Samples 49										
	Number of fish measured each month							1310	1482	1171	
	Mean length of fish (cm) each month							19.5	20.8	19.7	
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										

TABLE 44  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1966 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	MONTHS WITHIN QUARTER		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								PER MILLE		
Year- Class	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	MONTHS WITHIN QUARTER			
Length Group (cm)	3	4	5	6	7	8	8+		Jul	Aug	Sep	
20	3	-	-	-	-	-	-	3	-	4	-	
21	4	-	-	-	-	-	-	4	-	6	-	
22	8	-	-	-	-	-	-	8	-	12	-	
23	5	-	-	-	-	-	-	5	-	7	-	
24	6	-	-	-	-	-	-	6	-	9	-	
25	6	-	-	-	-	-	-	6	-	9	-	
26	2	5	-	-	-	-	-	7	-	10	-	
27	-	14	-	-	-	-	-	14	3	19	-	
28	-	28	34	-	-	-	-	62	47	58	40	
29	-	2	153	12	-	-	-	167	103	135	220	
30	-	-	27	232	-	-	-	259	187	215	280	
31	-	-	-	150	82	-	-	232	227	198	145	
32	-	-	-	-	124	32	-	156	190	116	100	
33	-	-	-	-	-	108	25	133	127	104	120	
34	-	-	-	-	-	2	79	81	93	63	50	
35	-	-	-	-	-	-	29	29	10	26	40	
36	-	-	-	-	-	-	8	8	10	6	5	
37	-	-	-	-	-	-	3	3	3	3	-	
Total No. of Ages Read	34	49	214	394	206	142	144	1183	1000	1000	1000	
Serial Numbers	No. of Age Samples							14				
	Number of fish measured each month							300	683	200		
	Mean length of fish (cm) each month							31.7	30.9	31.3		
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 44  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1966 (4th QUARTER)

COUNTRY		Canada (Maritimes)											
CATCHES/LANDINGS								Catches					
COMMERCIAL/RESEARCH								Commercial					
STRUCTURES USED IN AGE DETERMINATION								Otoliths					
Year- Class Length Group (cm)	Age	1965	1964	1963	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE Months Within Quarter				
		1	2	3	4	5	6		Oct <sup>1</sup>	Nov <sup>1</sup>	Dec <sup>1</sup>		
6		-	-	-	-	-	-	-	4	-	-	-	
7		-	-	-	-	-	-	-	40	-	-	-	
8		-	-	-	-	-	-	-	103	-	-	-	
9	1	-	-	-	-	-	-	-	26	3	3	-	
10	7	-	-	-	-	-	-	1	7	31	13	-	
11	28	-	-	-	-	-	-	28	16	55	50	-	
12	23	-	-	-	-	-	-	23	27	72	110	-	
13	23	2	-	-	-	-	-	25	16	69	77	-	
14	18	9	-	-	-	-	-	27	9	61	54	-	
15	2	12	-	-	-	-	-	14	23	32	10	-	
16	-	32	1	-	-	-	-	33	70	77	7	-	
17	-	46	2	-	-	-	-	48	153	98	50	-	
18	-	51	10	-	-	-	-	61	161	124	80	-	
19	-	22	20	-	-	-	-	42	119	93	74	-	
20	-	6	10	-	-	-	-	16	71	75	30	-	
21	-	2	10	1	-	-	-	13	36	40	17	-	
22	-	1	8	-	-	-	-	9	25	23	23	-	
23	-	-	11	1	-	-	-	12	9	15	54	-	
24	-	-	9	-	-	-	-	9	4	11	37	-	
25	-	-	8	-	-	-	-	8	-	17	80	-	
26	-	-	10	1	-	-	-	11	1	31	87	-	
27	-	-	2	4	-	-	-	6	1	24	70	-	
28	-	-	2	3	6	-	-	11	7	24	27	-	
29	-	-	-	5	12	-	-	17	10	12	23	-	
30	-	-	-	2	36	-	-	38	30	8	10	-	
31	-	-	-	1	16	-	-	17	13	3	10	-	
32	-	-	-	-	10	-	-	10	8	1	3	-	
33	-	-	-	-	5	-	-	5	5	-	-	-	
34	-	-	-	-	1	2	-	3	2	1	-	-	
35	-	-	-	-	1	3	-	4	3	-	-	-	
36	-	-	-	-	-	-	-	-	-	-	-	-	
37	-	-	-	-	-	1	-	1	1	-	-	-	
Total No. of Ages Read		102	183	103	18	87	6	499	1000	1000	999		
Serial Numbers		No. of Age Samples 9											
	Number of fish measured each month							1277	750	299			
	Mean length of fish (cm) each month							17.5	18.2	20.1			
	Mean weight of fish (kg) each month												
	Total weight caught or landed (tons) each month												
	Estimated number caught or landed (whole numbers) each month												
	Range of depths (m) each month												
	Mesh size (mm)							W/S/N/T	S	S			

1 Research and commercial samples combined

TABLE 44  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1966 (4th QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Group (cm)	Age	1965	1964	1963	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILE			
		1	2	3	4	5	6		Months Within Quarter			
									Oct	Nov	Dec	
7		-	-	-	-	-	-	-	-	-	2	
8		1	-	-	-	-	-	1	6	10	5	
9		7	-	-	-	-	-	7	34	30	33	
10		15	-	-	-	-	-	15	56	63	47	
11		43	-	-	-	-	-	43	118	118	63	
12		71	-	-	-	-	-	71	86	103	117	
13		95	-	-	-	-	-	95	58	81	125	
14		49	5	-	-	-	-	54	26	57	40	
15		16	21	-	-	-	-	37	19	49	20	
16		2	46	1	-	-	-	49	67	76	17	
17		-	62	6	-	-	-	68	106	90	80	
18		-	50	29	-	-	-	79	88	83	133	
19		-	26	48	-	-	-	74	115	54	83	
20		-	13	32	-	-	-	45	96	54	93	
21		-	1	21	-	-	-	22	53	29	73	
22		-	2	26	-	-	-	28	32	19	43	
23		-	1	9	-	-	-	10	27	27	20	
24		-	1	15	-	-	-	16	8	15	2	
25		-	-	10	-	-	-	10	-	20	2	
26		-	-	8	1	-	-	9	2	15	-	
27		-	-	4	3	-	-	7	-	2	2	
28		-	-	-	2	1	-	3	-	3	-	
29		-	-	-	1	3	-	4	3	-	-	
30		-	-	-	-	-	1	1	-	-	-	
31		-	-	-	-	1	-	1	-	2	-	
Total No. of Ages Read		299	228	209	7	5	1	749				
Serial Numbers		No. of Age Samples						30				
		Number of fish measured each month						948	867	550		
		Mean length of fish (cm) each month						17.0	16.2	16.2		
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 45

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1966 (1st QUARTER)

COUNTRY		United States					
CATCHES/LANDINGS		Catches					
COMMERCIAL/RESEARCH		Commercial					
STRUCTURES USED IN AGE DETERMINATION		Otoliths					
Year- Length Group (cm)	Class Age	1964	1963	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2	3		Months Within Quarter		
					Jan	Feb	Mar
9		4	-	4		-	9
10		17	-	17		29	49
11		50	2	52		120	67
12		97	5	102		211	80
13		126	7	133		222	116
14		83	1	84		96	120
15		36	16	52		62	62
16		7	32	39		76	76
17		3	53	56		71	49
18		-	38	38		42	124
19		-	48	48		38	102
20		-	13	13		18	71
21		-	8	8		7	58
22		-	6	6		9	13
23		-	-	-		-	-
24		-	-	-		-	4
Total No. of Ages Read		423	229	652	1001 1000		
Serial Numbers		No. of Age Samples 16					
		Number of fish measured each month			50	777	500
		Mean length of fish (cm) each month			14.8	14.4	15.8
		Mean weight of fish (kg) each month					
		Total weight caught or landed (tons) each month			68	697	394
		Estimated number caught or landed (whole numbers) each month					
		Range of depths (m) each month					
		Mesh size (mm)					

TABLE 45  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1966 (2nd QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group (cm)	1964	1963	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2	3	4	5	6	7	8		Months Within Quarter			
									Apr	May	Jun	
8	1	-	-	-	-	-	-	1	-	-	-	
9	-	-	-	-	-	-	-	-	6	-	-	
10	4	-	-	-	-	-	-	4	40	-	-	
11	32	5	-	-	-	-	-	37	200	10	22	
12	80	1	-	-	-	-	-	81	326	80	81	
13	86	2	-	-	-	-	-	88	171	180	88	
14	87	8	-	-	-	-	-	95	51	230	142	
15	88	29	-	-	-	-	-	117	57	220	135	
16	44	52	-	-	-	-	-	96	28	150	101	
17	13	71	-	-	-	-	-	84	46	80	97	
18	6	75	-	-	-	-	-	81	40	30	87	
19	1	77	-	-	-	-	-	78	17	10	78	
20	2	61	-	-	-	-	-	63	6	10	69	
21	1	40	-	-	-	-	-	41	6	-	48	
22	-	13	-	-	-	-	-	13	6	-	20	
23	-	19	1	-	-	-	-	20	-	-	12	
24	-	8	-	-	-	-	-	8	-	-	5	
25	-	4	-	-	-	-	-	4	-	-	4	
26	-	4	1	-	-	-	-	5	-	-	1	
27	-	-	2	-	-	-	-	2	-	-	4	
28	-	-	1	-	-	-	-	1	-	-	2	
29	-	-	-	2	1	-	-	3	-	-	4	
30	-	-	-	1	-	-	-	1	-	-	-	
31	-	-	-	-	-	-	-	-	-	-	-	
32	-	-	-	-	-	-	-	-	-	-	-	
33	-	-	-	-	-	-	1	1	-	-	-	
Total No. of Ages Read	445	469	5	3	1	-	1	924	1000	1000	1000	
Serial Numbers	No. of Age Samples 40											
	Number of fish measured each month								373	200	1432	
	Mean length of fish (cm) each month								14.0	15.1	17.2	
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month								330	196	2512	
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 45  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1966 (3rd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1965	1964	1963	1962	1961	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	1	2	3	4	5	6		Months Within Quarter	Jul	Aug	Sep
5	-	-	-	-	-	-	-	-	1	-	
6	-	-	-	-	-	-	-	-	28	-	
7	-	-	-	-	-	-	-	-	20	41	
8	-	-	-	-	-	-	-	-	1	103	
9	3	-	-	-	-	-	3	-	1	24	
10	11	-	-	-	-	-	11	-	2	14	
11	39	5	-	-	-	-	44	16	1	35	
12	31	60	-	-	-	-	91	48	11	28	
13	7	119	-	-	-	-	126	64	70	17	
14	-	237	-	-	-	-	237	63	146	44	
15	-	270	3	-	-	-	273	60	125	73	
16	-	237	9	-	-	-	246	50	117	62	
17	-	265	25	-	-	-	290	68	102	63	
18	-	179	62	-	-	-	241	66	73	70	
19	-	101	113	-	-	-	214	80	52	68	
20	-	59	198	-	-	-	257	136	57	54	
21	-	35	234	-	-	-	269	162	59	52	
22	-	12	213	-	1	-	226	95	52	62	
23	-	2	160	1	-	-	163	60	43	71	
24	-	-	95	-	-	-	95	21	20	65	
25	-	-	54	1	-	-	55	6	10	23	
26	-	-	18	4	-	-	22	1	2	14	
27	-	-	3	3	1	-	7	1	1	8	
28	-	-	3	1	1	-	5	1	1	2	
29	-	-	-	2	6	-	8	1	1	1	
30	-	-	-	1	12	-	13	-	1	6	
31	-	-	-	1	3	-	4	-	1	-	
32	-	-	-	-	-	-	-	-	1	-	
33	-	-	-	-	-	-	-	1	1	-	
34	-	-	-	-	-	1	1	-	-	-	
Total No. of Ages Read	91	1581	1190	14	24	1	2901	1000	1000	1000	
Serial Numbers	No. of Age Samples 116										
	Number of fish measured each month							2161	3296	2043	
	Mean length of fish (cm) each month							18.9	17.7	18.1	
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month							5232	7202	4230	
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										



TABLE 45  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1966 (3rd QUARTER)

COUNTRY		United States							Total	LENGTH COMPOSITION		
CATCHES/LANDINGS		Landings							No. of	PER MILLE		
COMMERCIAL/RESEARCH		Commercial							Ages	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths							Read	Jul	Aug	Sep
Year- Class	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	PER MILLE			
Length Group (cm)	3	4	5	6	7	8	8+		Months Within Quarter			
									Jul	Aug	Sep	
19	2	-	-	-	-	-	-	2	-	-	10	
20	-	-	-	-	-	-	-	-	-	-	-	
21	6	-	-	-	-	-	-	6	-	10	16	
22	13	-	-	-	-	-	-	13	-	7	57	
23	26	-	-	-	-	-	-	26	-	13	115	
24	27	-	-	-	-	-	-	27	-	39	78	
25	46	-	-	-	-	-	-	46	-	77	115	
26	47	17	-	-	-	-	-	64	43	129	104	
27	6	52	1	-	-	-	-	59	130	87	104	
28	-	40	34	-	-	-	-	74	185	126	94	
29	-	-	76	10	-	-	-	86	336	119	94	
30	-	-	13	75	-	-	-	88	174	135	156	
31	-	-	-	35	26	-	-	61	109	139	42	
32	-	-	-	-	18	7	-	25	-	74	10	
33	-	-	-	-	-	9	3	12	-	35	5	
34	-	-	-	-	-	-	3	3	22	3	-	
35	-	-	-	-	-	-	2	2	-	7	-	
Total No. of Ages Read	173	109	124	120	44	16	8	594	999	1000	1000	
Serial Numbers	No. of Age Samples							8				
	Number of fish measured each month							92	310	192		
	Mean length of fish (cm) each month							29.3	28.7	26.8		
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 45  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1966 (4th QUARTER)

COUNTRY		United States																		
CATCHES/LANDINGS		Catches																		
COMMERCIAL/RESEARCH		Commercial																		
STRUCTURES USED IN AGE DETERMINATION		Otoliths																		
Year- Class Length Group (cm)	Age	1965	1964	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE										
		1	2	3	4	5	6	7		Months Within Quarter										
										Oct	Nov	Dec								
8		1	-	-	-	-	-	-	1	-	-	-								
9		13	-	-	-	-	-	-	13	13	-	-								
10		9	-	-	-	-	-	-	9	16	15	-								
11		42	-	-	-	-	-	-	42	25	45	-								
12		49	-	-	-	-	-	-	49	95	60	-								
13		18	1	-	-	-	-	-	19	86	30	-								
14		11	4	-	-	-	-	-	15	24	134	-								
15		2	26	-	-	-	-	-	28	26	89	-								
16		-	22	-	-	-	-	-	22	46	-	-								
17		-	31	3	-	-	-	-	34	69	-	-								
18		-	54	9	-	-	-	-	63	157	-	-								
19		-	71	7	-	-	-	-	78	180	-	-								
20		-	46	16	-	-	-	-	62	91	30	-								
21		-	21	24	-	-	-	-	45	80	15	214								
22		-	11	32	-	-	-	-	43	56	119	286								
23		-	6	24	-	-	-	-	30	24	104	214								
24		-	-	14	-	-	-	-	14	5	30	286								
25		-	-	7	-	-	-	-	7	5	15	-								
26		-	-	2	-	-	-	-	2	2	-	-								
27		-	-	-	-	-	-	-	-	-	-	-								
28		-	-	-	-	-	-	-	-	-	15	-								
29		-	-	-	2	1	-	-	3	-	-	-								
30		-	-	-	-	4	-	-	4	-	164	-								
31		-	-	-	-	-	1	-	1	-	45	-								
32		-	-	-	-	2	5	2	9	-	75	-								
33		-	-	-	-	2	5	-	7	-	15	-								
Total No. of Ages Read										145	293	138	2	9	11	2	600			
Serial Numbers										No. of Age Samples 24										
Number of fish measured each month										1049	140	39								
Mean length of fish (cm) each month										17.8	22.3	23.1								
Mean weight of fish (kg) each month																				
Total weight caught or landed (tons) each month										3468	1540	567								
Estimated number caught or landed (whole numbers) each month																				
Range of depths (m) each month																				
Mesh size (mm)																				

TABLE 45  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1966 (4th QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class	Age	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	Months Within Quarter		
Length Group (cm)		3	4	5	6	7	8	8+		Oct	Nov	Dec
24		8	-	-	-	-	-	-	8		57	-
25		19	-	-	-	-	-	-	19		113	16
26		17	5	-	-	-	-	-	22		113	31
27		2	35	-	-	-	-	-	37		113	111
28		-	26	14	-	-	-	-	40		121	121
29		-	-	53	-	-	-	-	53		135	179
30		-	-	12	61	-	-	-	73		206	232
31		-	-	-	48	11	-	-	59		113	226
32		-	-	-	-	12	-	-	12		7	58
33		-	-	-	-	1	3	-	4		-	21
34		-	-	-	-	-	1	-	1		7	-
35		-	-	-	-	-	-	3	3		14	5
Total No. of Ages Read		36	66	89	109	24	4	3	331			
Serial Numbers		No. of Age Samples							4			
		Number of fish measured each month								141	190	
		Mean length of fish (cm) each month								28.6	30.0	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										
										999	1000	

TABLE 46

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1966 (1st QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class Length Group (cm)	Age	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	Months Within Quarter		
		3	4	5	6	7	8	8+		Jan	Feb	Mar
19		2	-	-	-	-	-	-	2		3	10
20		3	-	-	-	-	-	-	3		7	10
21		8	-	-	-	-	-	-	8		10	50
22		27	-	-	-	-	-	-	27		50	120
23		27	1	-	-	-	-	-	28		60	100
24		1	6	-	-	-	-	-	7		7	50
25		-	17	-	-	-	-	-	17		43	40
26		-	28	15	-	-	-	-	43		106	110
27		-	4	59	-	-	-	-	63		163	140
28		-	-	44	31	-	-	-	75		210	120
29		-	-	-	49	1	-	-	50		137	90
30		-	-	-	21	12	-	-	33		87	70
31		-	-	-	2	16	7	-	25		77	20
32		-	-	-	-	-	11	-	11		20	50
33		-	-	-	-	-	1	6	7		17	20
34		-	-	-	-	-	-	1	1		3	-
Total No. of Ages Read		68	56	118	103	29	19	7	400			
Serial Numbers		No. of Age Samples 4										
		Number of fish measured each month							300 100			
		Mean length of fish (cm) each month							27.9 26.6			
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 46  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1966 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
CATCHES/LANDINGS		Landings								Months Within Quarter			
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter			
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter			
Year- Class	Age	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	MONTHS WITHIN QUARTER			
Length Group (cm)		3	4	5	6	7	8	8+		Apr	May	Jun	
20		2	-	-	-	-	-	-	2	6	-	-	
21		4	-	-	-	-	-	-	4	6	6	-	
22		4	-	-	-	-	-	-	4	3	9	-	
23		3	3	-	-	-	-	-	6	19	-	-	
24		1	11	-	-	-	-	-	12	25	12	-	
25		-	20	-	-	-	-	-	20	31	29	-	
26		-	22	1	-	-	-	-	23	34	32	3	
27		-	27	70	-	-	-	-	97	147	121	26	
28		-	6	119	29	-	-	-	154	213	199	55	
29		-	-	13	193	-	-	-	206	225	225	182	
30		-	-	-	157	13	-	-	170	94	188	244	
31		-	-	-	30	104	3	-	137	100	95	234	
32		-	-	-	-	35	44	1	80	75	43	133	
33		-	-	-	-	-	29	14	43	19	29	88	
34		-	-	-	-	-	-	9	9	3	6	19	
35		-	-	-	-	-	-	4	4	-	-	13	
36		-	-	-	-	-	-	3	3	-	6	3	
Total No. of Ages Read		14	89	203	409	152	76	31	974	1000	1000	1000	
Serial Numbers		No. of Age Samples 16											
		Number of fish measured each month							320	346	308		
		Mean length of fish (cm) each month							28.9	29.3	31.0		
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 46  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1966 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
CATCHES/LANDINGS		Landings								Months Within Quarter			
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter			
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter			
Length Group (cm)	Year- Class Age	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	Months Within Quarter			
		3	4	5	6	7	8	8+		Jul	Aug	Sep	
23		6	-	-	-	-	-	-	6	6	5	-	
24		19	-	-	-	-	-	-	19	8	28	38	
25		40	-	-	-	-	-	-	40	11	72	63	
26		39	9	-	-	-	-	-	48	18	72	114	
27		12	39	2	-	-	-	-	53	41	49	101	
28		-	24	76	1	-	-	-	101	120	52	76	
29		-	-	125	63	-	-	-	188	226	88	152	
30		-	-	8	161	3	-	-	172	185	121	114	
31		-	-	-	80	96	-	-	176	150	180	152	
32		-	-	-	-	71	58	-	129	108	134	114	
33		-	-	-	-	-	66	31	97	85	103	51	
34		-	-	-	-	-	-	1	53	35	75	25	
35		-	-	-	-	-	-	-	10	6	15	-	
36		-	-	-	-	-	-	2	2	-	5	-	
Total No. of Ages Read		116	72	211	305	170	125	95	1094	999	999	1000	
Serial Numbers		No. of Age Samples 13											
		Number of fish measured each month							627	388	79		
		Mean length of fish (cm) each month							30.3	30.4	29.5		
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 46  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1966 (4th QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
CATCHES/LANDINGS		Landings								Months Within Quarter			
COMMERCIAL/RESEARCH		Commercial							Otoliths				
STRUCTURES USED IN AGE DETERMINATION													
Year- Class	Age	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	PER MILLE			
Length Group (cm)		3	4	5	6	7	8	8+		Oct	Nov	Dec	
24		8	-	-	-	-	-	-	8	-	-	157	
25		5	-	-	-	-	-	-	5	15	-	59	
26		1	10	-	-	-	-	-	11	7	6	176	
27		5	11	-	-	-	-	-	16	22	29	157	
28		4	19	7	-	-	-	-	30	52	116	59	
29		-	23	17	1	-	-	-	41	119	133	39	
30		-	1	37	39	-	-	-	77	237	202	196	
31		-	-	24	32	8	-	-	64	207	179	98	
32		-	-	-	26	24	6	-	56	178	173	39	
33		-	-	-	-	13	21	2	36	111	116	20	
34		-	-	-	-	-	8	5	13	37	46	-	
35		-	-	-	-	-	-	2	2	15	-	-	
Total No. of Ages Read		23	64	85	98	45	35	9	359	1000	1000	1000	
Serial Numbers		No. of Age Samples 7											
		Number of fish measured each month								135	173	51	
		Mean length of fish (cm) each month								31.2	31.0	28.1	
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 47

AGE/LENGTH KEY - HERRING - SZ - 1966 (1st QUARTER)

COUNTRY		USSR									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Scales									
Year- Class Length Age Group (cm)	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE				
	5	6	7	8	9		Months Within Quarter	Jan	Feb	Mar	
19	-	-	-	-	-	-	-	-	-	12	
20	-	-	-	-	-	-	-	-	-	22	
21	-	-	-	-	-	-	-	-	-	15	
22	-	-	-	-	-	-	-	-	-	29	
23	-	-	-	-	-	-	-	-	-	21	
24	-	-	-	-	-	-	-	2	2	21	
25	-	-	-	-	-	-	-	5	5	74	
26	-	-	-	-	-	-	-	10	15	190	
27	-	-	-	-	-	-	-	34	49	274	
28	20	4	-	-	-	24	133	176	152		
29	-	29	-	-	-	29	207	210	98		
30	-	42	30	-	-	72	195	220	52		
31	-	5	42	-	-	47	170	110	35		
32	-	-	24	2	-	26	135	98	5		
33	-	-	3	12	-	15	82	69	-		
34	-	-	-	1	4	5	24	37	-		
35	-	-	-	-	-	-	3	9	-		
Total No. of Ages Read	20	80	99	15	4	218	1000	1000	1000		
Serial Numbers	No. of Age Samples 9										
	Number of fish measured each month						1100	900	1392		
	Mean length of fish (cm) each month						30.1	29.9	26.7		
	Mean weight of fish (kg) each month						0.203	0.197	0.174		
	Total weight caught or landed (tons) each month						1159	1313	1198		
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month						64-110	64-201	73-192		
	Mesh size (mm)						40	40	40		



TABLE 47  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 52 - 1966 (2nd QUARTER)

COUNTRY		USSR								
CATCHES/LANDINGS		Catches								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Scales								
Year- Class Length Age Group (cm)	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	5	6	7	8	9		Months Within Quarter			
							Apr	May	Jun	
19	-	-	-	-	-	-	-	-	+	
20	-	-	-	-	-	-	-	-	1	
21	-	-	-	-	-	-	-	-	+	
22	-	-	-	-	-	-	-	-	1	
23	-	-	-	-	-	-	-	-	2	
24	-	-	-	-	-	-	-	2	7	
25	-	-	-	-	-	-	-	25	14	
26	-	-	-	-	-	-	-	172	22	
27	3	-	-	-	-	3	344	35		
28	18	27	-	-	-	45	302	81		
29	11	107	-	-	-	118	121	175		
30	13	183	19	-	-	215	23	325		
31	2	99	31	2	-	134	10	210		
32	-	18	51	2	-	71	1	81		
33	-	6	21	19	-	46	-	30		
34	-	-	8	20	1	29	-	14		
35	-	-	-	2	1	3	-	2		
36	-	-	-	-	-	-	-	-	+	
Total No. of Ages Read	47	440	130	45	2	664				
Serial Numbers	No. of Age Samples 51									
	Number of fish measured each month						963	16114		
	Mean length of fish (cm) each month						27.4	29.8		
	Mean weight of fish (kg) each month						0.207	0.226		
	Total weight caught or landed (tons) each month						6971	27178		
	Estimated number caught or landed (whole numbers) each month									
	Range of depths (m) each month						91-128	37-165		
	Mesh size (mm)						40	40		

TABLE 47  
(Cont'd)

## AGE/LENGTH KEY - HERRING - SZ - 1966 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches								Months Within Quarter		
COMMERCIAL/RESEARCH		Research							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class Length Age Group(cm)	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	PER MILLE			
	3	4	5	6	7	8	8+		Apr	May	Jun	
18	5	-	-	-	-	-	-	5	22	-	-	
19	12	-	-	-	-	-	-	12	53	-	-	
20	16	-	-	-	-	-	-	16	66	-	2	
21	15	-	-	-	-	-	-	15	66	-	-	
22	12	-	-	-	-	-	-	12	53	-	-	
23	4	2	-	-	-	-	-	6	26	-	-	
24	1	4	-	-	-	-	-	5	13	-	4	
25	1	4	-	-	-	-	-	5	-	-	11	
26	-	18	2	-	-	-	-	20	26	-	31	
27	-	36	56	-	-	-	-	92	215	-	94	
28	-	7	153	28	-	-	-	188	237	-	292	
29	-	-	29	162	-	-	-	191	149	-	342	
30	-	-	-	94	2	-	-	96	74	-	172	
31	-	-	-	5	7	-	-	12	-	-	26	
32	-	-	-	-	4	5	-	9	-	-	20	
33	-	-	-	-	-	2	1	3	-	-	6	
Total No. of Ages Read	66	71	240	289	13	7	1	687	1000		1000	
Serial Numbers	No. of Age Samples 11											
	Number of fish measured each month								228		459	
	Mean length of fish (cm) each month								26.3		29.0	
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 47  
(Cont'd)

## AGE/LENGTH KEY - HERRING - SZ - 1966 (3rd QUARTER)

COUNTRY		USSR									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Scale									
Year- Class Length Age Group (cm)	1963	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	3	4	5	6	7	8		Months Within Quarter			
								Jul	Aug	Sep	
19	-	-	-	-	-	-	-	-	1	-	
20	-	-	-	-	-	-	-	-	2	-	
21	-	-	-	-	-	-	-	-	6	1	
22	-	-	-	-	-	-	-	-	6	3	
23	-	-	-	-	-	-	-	-	5	2	
24	4	2	-	-	-	-	6	+	4	3	
25	-	4	-	-	-	-	4	1	11	9	
26	-	17	-	-	-	-	17	3	27	26	
27	-	14	3	-	-	-	17	9	33	38	
28	-	29	76	-	-	-	105	39	94	104	
29	-	1	219	34	-	-	254	114	242	241	
30	-	-	168	256	-	-	424	226	266	294	
31	-	-	13	257	2	-	272	234	160	169	
32	-	-	-	148	15	-	163	158	78	67	
33	-	-	-	2	59	13	74	106	42	28	
34	-	-	-	-	26	19	45	76	19	12	
35	-	-	-	-	-	12	12	28	3	3	
36	-	-	-	-	-	-	-	6	1	+	
37	-	-	-	-	-	-	-	+	+	-	
Total No. of Ages Read	4	67	479	697	102	44	1393	1000	1000	1000	
Serial Numbers	No. of Age Samples										
	Number of fish measured each month							17048	21210	19829	
	Mean length of fish (cm) each month							31.1	29.7	29.7	
	Mean weight of fish (kg) each month							0.257	0.234	0.232	
	Total weight caught or landed (tons) each month							31512	15876	25723	
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month							55-219	27-201	27-137	
	Mesh size (mm)							40	40	40	

TABLE 47  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Z - 1966 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
CATCHES/LANDINGS		Catches								Months Within Quarter			
COMMERCIAL/RESEARCH		Research							Total No. of Ages Read	Months Within Quarter			
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter			
Year- Class	Age	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	PER MILLE			
Length Group (cm)		3	4	5	6	7	8	8+		Jul	Aug	Sep	
24		1	-	-	-	-	-	-	1	2		-	
25		2	-	-	-	-	-	-	2	2		3	
26		3	2	-	-	-	-	-	5	13		-	
27		-	27	-	-	-	-	-	27	49		27	
28		-	47	69	-	-	-	-	116	226		100	
29		-	-	173	23	-	-	-	196	306		268	
30		-	-	21	153	-	-	-	174	208		323	
31		-	-	-	62	19	-	-	81	104		141	
32		-	-	-	7	28	10	-	45	47		93	
33		-	-	-	-	4	18	2	24	34		38	
34		-	-	-	-	-	2	3	5	8		7	
Total No. of Ages Read		6	76	263	245	51	30	5	676	999		1000	
Serial Numbers		No. of Age Samples 13											
		Number of fish measured each month							385		291		
		Mean length of fish (cm) each month							29.2		30.3		
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 47  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1966 (4th QUARTER)

COUNTRY		Poland										
CATCHES/LANDINGS		NK										
COMMERCIAL/RESEARCH		Research										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year-Class	1964	1963	1962	1961	1960	1959	1958	1957	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE	
Length Group (cm)	2	3	4	5	6	7	8	9	9+		Months Within Quarter	
Age											Nov-Dec	
18	1	-	-	-	-	-	-	-	-	1		0
19	5	-	-	-	-	-	-	-	-	5		1
20	5	-	-	-	-	-	-	-	-	5		1
21	10	5	-	-	-	-	-	-	-	15		1
22	7	12	-	-	-	-	-	-	-	19		3
23	6	16	1	-	-	-	-	-	-	23		4
24	1	48	3	-	-	-	-	-	-	52		16
25	-	58	9	-	-	-	-	-	-	67		22
26	-	49	5	2	-	-	-	-	-	56		23
27	-	41	20	5	1	-	-	-	-	67		24
28	-	3	47	58	17	-	-	-	-	125		71
29	-	-	19	75	94	-	-	-	-	188		180
30	-	-	1	49	176	1	-	-	-	227		345
31	-	-	-	23	184	2	3	1	-	213		173
32	-	-	-	-	56	27	35	7	-	125		68
33	-	-	-	-	6	64	56	31	8	165		39
34	-	-	-	-	-	22	19	39	8	88		14
35	-	-	-	-	-	6	8	16	11	41		4
36	-	-	-	-	-	-	-	1	3	4		1
Total No. of Ages Read	35	232	105	212	534	122	121	95	30	1486		990
Serial Numbers	No. of Age Samples 17											
	Number of fish measured each month											18866
	Mean length of fish (cm) each month											30.22
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 47  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 52 - 1966 (4th QUARTER)

COUNTRY		USSR						Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches							Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Oct	Nov	Dec
STRUCTURES USED IN AGE DETERMINATION		Scale									
Year- Class	1963	1962	1961	1960	1959	1958	Total No. of Ages Read				
Length Age Group (cm)	3	4	5	6	7	8		Oct	Nov	Dec	
24	2	-	-	-	-	-	2	-	5		
25	2	-	-	-	-	-	2	-	5		
26	8	11	-	-	-	-	19	10	37		
27	-	10	2	-	-	-	12	4	27		
28	-	12	32	-	-	-	44	50	48		
29	-	8	125	6	-	-	139	132	168		
30	-	-	236	73	-	-	309	268	441		
31	-	-	10	137	-	-	147	142	190		
32	-	-	4	124	12	-	140	228	70		
33	-	-	-	35	25	3	63	122	7		
34	-	-	-	4	12	2	18	34	2		
35	-	-	-	-	2	2	4	8	-		
36	-	-	-	-	-	1	1	2	-		
Total No. of Ages Read	12	41	409	379	51	8	900	1000	1000		
Serial Numbers	No. of Age Samples										
	Number of fish measured each month						10537	3819			
	Mean length of fish (cm) each month						29.8	29.4			
	Mean weight of fish (kg) each month						0.193	0.180			
	Total weight caught or landed (tons) each month						5236.5	-			
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month						37-55	55-146			
	Mesh size (mm)						40	40			

TABLE 47  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Z - 1966 (4th QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches								Months Within Quarter		
COMMERCIAL/RESEARCH		Research							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class Length Age Group (cm)	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	PER MILLE			
	3	4	5	6	7	8	8+		Oct	Nov	Dec	
21	1	-	-	-	-	-	-	1	1	-	-	
22	8	-	-	-	-	-	-	8	13	-	-	
23	5	-	-	-	-	-	-	5	8	-	-	
24	7	1	-	-	-	-	-	8	13	-	-	
25	11	2	-	-	-	-	-	13	20	14	-	
26	21	15	-	-	-	-	-	36	54	41	-	
27	-	67	-	-	-	-	-	67	101	68	-	
28	-	37	140	-	-	-	-	177	255	274	-	
29	-	-	193	12	-	-	-	205	283	425	-	
30	-	-	14	110	-	-	-	124	180	178	-	
31	-	-	-	21	5	-	-	26	42	-	-	
32	-	-	-	-	10	3	-	13	21	-	-	
33	-	-	-	-	-	4	-	4	7	-	-	
34	-	-	-	-	-	-	1	1	1	-	-	
Total No. of Ages Read		53	122	347	143	15	7	1	688	999	1000	
Serial Numbers		No. of Age Samples 14										
		Number of fish measured each month							615	73		
		Mean length of fish (cm) each month							28.9	29.1		
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										









TABLE 48

LENGTH FREQUENCIES - HERRING - 3Pn - 1967

(FREQUENCIES IN % - 1 CM GROUPS)

MONTH	March <sup>1</sup>	April <sup>1</sup>	April	May <sup>1</sup>	November <sup>1</sup>
COUNTRY	Canada (Newfoundland)		France (St. P&M)	Canada (Newfoundland)	
CATCHES/LANDINGS	Catches				
COMMERCIAL/RESEARCH	Commercial		Research	Commercial	
22	-	-	-	4	-
23	-	-	-	4	-
24	-	-	-	-	-
25	4	-	-	-	-
26	-	6	-	-	-
27	21	5	2	12	-
28	65	29	11	58	-
29	100	37	13	129	43
30	108	60	44	154	114
31	156	105	58	120	186
32	225	323	134	212	243
33	195	277	347	183	272
34	61	114	239	100	114
35	30	26	94	12	21
36	17	7	31	8	7
37	18	3	18	4	-
38	-	2	6	-	-
39	-	5	3	-	-
40	-	1	-	-	-
Total %	1000	1000	1000	1000	1000
Serial Numbers	-	-	-	-	-
Number of Samples	-	-	2	-	-
Number of Fish Measured	231	1024	619	241	140
Mean Length (cm)	31.5	32.2	33.14	31.3	32.1
Mean Weight (kg)	-	-	0.243	-	-
Total Weight Landed (tons)	3599	5175	-	307	1024
Estimated Number Landed	-	-	-	-	-
Mesh(mm) or Hook(no.) Size	-	-	50	-	-
Range of Depths (fm)	-	-	93	-	-

<sup>1</sup> Inshore, Cape Ray to Burgeo, Newfoundland

TABLE 49 LENGTH FREQUENCIES - HERRING - 3Ps - 1967

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	January <sup>1</sup>	February <sup>1</sup>	March <sup>1</sup>	April <sup>2</sup>	April <sup>1</sup>	May <sup>2</sup>	November <sup>1</sup>	December <sup>1</sup>
COUNTRY	Canada (Newfoundland)							
CATCHES/LANDINGS	Catches							
COMMERCIAL/RESEARCH	Commercial							
22	1	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-
26	-	-	-	3	-	-	-	-
27	-	-	2	90	-	54	-	1
28	18	9	11	350	10	266	2	3
29	45	32	34	320	10	365	9	17
30	82	56	70	111	83	201	49	47
31	150	112	103	22	20	54	140	111
32	311	329	314	9	124	-	248	229
33	264	306	286	16	258	-	286	311
34	82	88	102	18	144	20	166	183
35	29	48	43	17	82	16	66	64
36	11	17	21	15	62	12	21	22
37	5	3	6	15	83	8	8	9
38	2	-	2	8	82	4	3	3
39	-	-	3	3	21	-	2	-
40	-	-	1	3	21	-	-	-
41	-	-	2	-	-	-	-	-
Total ‰	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers	-	-	-	-	-	-	-	-
Number of Samples	-	-	-	-	-	-	-	-
Number of Fish Measured	621	340	942	1723	97	244	662	2693
Mean Length (cm)	32.1	32.4	32.4	29.3	34.0	29.3	32.7	32.8
Mean Weight (kg)	-	-	-	-	-	-	-	-
Total Weight Landed (tons)	17013	11265	7066	4448	171	685	4013	17753
Estimated Number Landed	-	-	-	-	-	-	-	-
Mesh(mm) or Hook(no.) Size	-	-	-	-	-	-	-	-
Range of Depths (fm)	-	-	-	-	-	-	-	-

<sup>1</sup> Inshore, Burgeo to Pass Island, Newfoundland<sup>2</sup> Fortune Bay, Newfoundland

TABLE 50 LENGTH FREQUENCIES - HERRING - 4R<sup>1</sup> - 1967

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	January	November	December
COUNTRY	Canada (Newfoundland)		
CATCHES/LANDINGS	Catches		
COMMERCIAL/RESEARCH	Commercial		
29	-	-	9
30	20	10	11
31	10	20	42
32	30	80	138
33	50	300	231
34	240	260	215
35	290	150	145
36	240	60	108
37	90	60	61
38	30	50	29
39	-	-	8
40	-	10	3
Total ‰	1000	1000	1000
Serial Numbers	-	-	-
Number of Samples	-	-	-
Number of Fish Measured	100	100	545
Mean Length (cm)	34.9	34.2	34.0
Mean Weight (kg)	-	-	-
Total Weight Landed (tons)	471	899	4083
Estimated Number Landed	-	-	-
Mesh(mm) or Hook(no.) Size	-	-	-
Range of Depths (fm)	-	-	-

<sup>1</sup> Bonne Bay

TABLE 51 LENGTH FREQUENCIES - HERRING - 4T - 1967

(FREQUENCIES IN %/oo - 1 CM GROUPS)

MONTH	May	June	August	September
COUNTRY	Canada (Maritimes)			
CATCHES/LANDINGS	Catches			
COMMERCIAL/RESEARCH	Commercial			
11	1	-	-	-
12	2	-	-	-
13	-	-	-	-
14	1	-	-	-
15	-	-	-	-
16	1	-	-	-
17	1	-	-	-
18	1	-	-	-
19	1	-	-	-
20	3	-	-	-
21	7	-	-	-
22	8	-	-	-
23	12	2	1	-
24	9	-	-	-
25	18	-	2	-
26	16	8	1	-
27	16	8	7	-
28	14	52	10	6
29	22	88	22	14
30	100	92	67	34
31	302	190	102	76
32	326	308	82	114
33	112	168	227	210
34	24	62	273	300
35	3	16	101	146
36	-	4	55	62
37	-	2	26	30
38	-	-	18	4
39	-	-	5	4
40	-	-	1	-
Total %/oo	1000	1000	1000	1000
Serial Numbers	-	-	-	-
Number of Samples	6	4	8	5
Number of Fish Measured	927	500	1320	500
Mean Length (cm)	31.2	31.9	33.7	34.0
Mean Weight (kg)	-	-	-	-
Total Weight Landed (tons)	25120	8764	10718	4620
Estimated Number Landed	-	-	-	-
Mesh(mm) or Hook(no.) Size	N	N/S/W	N/S	N/S
Range of Depths (fm)	-	-	-	-

TABLE 52

LENGTH FREQUENCIES - HERRING - 4Vs - 1967

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	April
COUNTRY	France (St. Pierre et Miquelon)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Research
28	5
29	9
30	18
31	28
32	57
33	75
34	255
35	250
36	132
37	75
38	38
39	42
40	9
41	-
42	5
Total ‰	998
Serial Numbers	-
Number of Samples	1
Number of Fish Measured	212
Mean Length (cm)	34.77
Mean Weight (kg)	0.283
Total Weight Landed (tons)	-
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	50
Range of Depths (fm)	100

TABLE 53 LENGTH FREQUENCIES - HERRING - 4W - 1967

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	April	May	October
COUNTRY	USSR		
CATCHES/LANDINGS	Catches		
COMMERCIAL/RESEARCH	Commercial		
22	-	+	-
23	-	+	-
24	-	13	-
25	-	39	-
26	-	38	1
27	-	28	8
28	-	18	15
29	3	12	35
30	3	20	44
31	6	57	76
32	30	131	155
33	108	180	168
34	211	187	183
35	255	172	138
36	224	78	89
37	105	18	52
38	26	7	25
39	13	2	8
40	6	+	3
41	10	-	-
Total ‰	1000	1000	1000
Serial Numbers	-	-	-
Number of Samples	1	11	4
Number of Fish Measured	304	3547	1200
Mean Length (cm)	35.1	32.6	33.4
Mean Weight (kg)	0.270	0.275	0.299
Total Weight Landed (tons)	2	13	2
Estimated Number Landed	-	-	-
Mesh(mm) or Hook(no.) Size	40	40	40
Range of Depths (fm)	50-75	50-75	35-65



TABLE 54

LENGTH FREQUENCIES - HERRING - 5Y(NORTH) - 1967

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	January	October	November
COUNTRY	Canada (Maritimes)		
CATCHES/LANDINGS	Catches		
COMMERCIAL/RESEARCH	Commercial		
11	26	3	-
12	26	-	-
13	7	6	4
14	-	28	8
15	7	74	16
16	13	157	152
17	91	174	204
18	279	129	152
19	279	109	52
20	208	17	8
21	45	11	12
22	19	3	4
23	-	-	8
24	-	-	8
25	-	-	12
26	-	6	20
27	-	3	32
28	-	26	68
29	-	11	36
30	-	40	52
31	-	103	80
32	-	40	56
33	-	37	12
34	-	14	4
35	-	6	-
36	-	3	-
Total ‰	1000	1000	1000
Serial Numbers	-	-	-
Number of Samples	1	3	2
Number of Fish Measured	154	350	250
Mean Length (cm)	18.9	21.6	22.4
Mean Weight (kg)	-	-	-
Total Weight Landed (tons)	-	-	-
Estimated Number Landed	-	-	-
Mesh(mm) or Hook(no.) Size	8	8	T/S
Range of Depths (fm)	-	-	-

TABLE 55 LENGTH FREQUENCIES - HERRING - 52 - 1967

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	October	October	November	December
COUNTRY	Canada (Maritimes)		USSR	
CATCHES/LANDINGS	Catches			
COMMERCIAL/RESEARCH	Commercial			
19	-	-	+	-
20	-	+	3	-
21	-	+	2	-
22	4	3	+	-
23	-	3	3	-
24	-	6	4	-
25	-	11	4	-
26	-	32	11	3
27	-	79	40	24
28	27	119	95	68
29	93	137	172	117
30	198	255	242	253
31	350	241	286	375
32	195	85	110	132
33	74	25	26	28
34	47	4	2	+
35	4	+	+	-
36	8	-	-	-
Total ‰	1000	1000	1000	1000
Serial Numbers	-	-	-	-
Number of Samples	2	10	24	4
Number of Fish Measured	257	4399	7030	1200
Mean Length (cm)	31.5	29.6	29.95	30.4
Mean Weight (kg)	-	0.213	0.158	0.214
Total Weight Landed (tons)	-	4673	675	857
Estimated Number Landed	-	-	-	-
Mesh(mm) or Hook(no.) Size	5	40	40	40
Range of Depth (fm)	-	15-65	20-45	30-35

TABLE 55 LENGTH FREQUENCIES - HERRING - 5Z - 1967\*

(FREQUENCIES IN ‰ - 2 CM GROUPS)\*

MONTH	July	August	October
COUNTRY	Romania		
CATCHES/LANDINGS	Catches		
COMMERCIAL/RESEARCH	Commercial		
22	22	-	-
24	156	130	167
26	312	280	292
28	354	394	139
30	156	196	194
32	-	-	167
34	-	-	27
36	-	-	14
Total ‰	1000	1000	1000
Serial Numbers	-	-	-
Number of Samples	6	3	3
Number of Fish Measured	702	304	300
Mean Length (cm)	27.6	27.4	29.7
Mean Weight (kg)	-	-	-
Total Weight Landed (tons)	-	-	-
Estimated Number Landed	-	-	-
Mesh(mm) or Hook(no.) Size	5	5	5
Range of Depths (fm)	35-50	40-75	35-45

\* PLEASE NOTE: LENGTHS ARE STANDARD LENGTHS AND IN 2 CM GROUPS.

TABLE 56

## AGE/LENGTH KEY - HERRING - 4X - 1967 (1st QUARTER)

COUNTRY		Canada (Maritimes)								
CATCHES/LANDINGS		Catches								
COMMERCIAL/RESEARCH		Commercial and Research								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class Length Age Group (cm)	1965	1964	1963	1962	1961	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2	3	4	5	6		Months Within Quarter			
							Jan <sup>1</sup>	Feb <sup>1</sup>	Mar <sup>1</sup>	
6	-	-	-	-	-	-	-	-	1	
7	1	-	-	-	-	1	-	2	1	
8	5	-	-	-	-	5	13	16	21	
9	33	-	-	-	-	33	65	58	63	
10	71	-	-	-	-	71	96	85	128	
11	185	-	-	-	-	185	155	189	260	
12	215	-	-	-	-	215	163	251	244	
13	206	3	-	-	-	209	146	177	159	
14	63	5	-	-	-	68	57	74	68	
15	17	5	-	-	-	22	15	25	18	
16	3	3	2	-	-	8	17	16	10	
17	1	24	1	-	-	26	47	27	8	
18	2	27	1	-	-	30	49	33	9	
19	1	16	1	-	-	18	40	20	6	
20	-	20	5	-	-	25	27	11	3	
21	-	6	5	-	-	11	33	6	1	
22	-	2	5	-	-	7	30	3	-	
23	-	1	5	-	-	6	7	2	-	
24	-	-	-	-	-	-	13	4	-	
25	-	-	4	-	-	4	14	-	-	
26	-	-	4	-	1	5	7	-	-	
27	-	-	-	-	-	-	5	-	-	
28	-	-	1	-	-	1	-	-	-	
29	-	-	-	-	-	-	-	-	-	
30	-	-	-	1	-	1	1	-	-	
Total No. of Ages Read	803	112	34	1	1	951	1000	999	1000	
Serial Numbers						No. of Age Samples	19			
	Number of fish measured each month						953	1732	795	
	Mean length of fish (cm) each month						14.5	13.1	12.3	
	Mean weight of fish (kg) each month									
	Total weight caught or landed (tons) each month									
	Estimated number caught or landed (whole numbers) each month									
	Range of depths (m) each month									
	Mesh size (mm)						S	S	S/T	

<sup>1</sup> Research and commercial samples combined

TABLE 56  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1967 (1st QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1965	1964	1963	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	2	3	4		Months Within Quarter			
					Jan	Feb	Mar	
6	-	-	-	-	1	-	-	
7	2	-	-	2	1	2	5	
8	3	-	-	3	13	26	35	
9	20	-	-	20	49	40	125	
10	35	-	-	35	74	76	120	
11	96	-	-	96	151	160	160	
12	136	-	-	136	173	240	250	
13	130	-	-	130	123	188	145	
14	65	2	-	67	68	76	70	
15	16	11	-	27	17	32	30	
16	2	18	-	20	26	34	-	
17	-	22	-	22	46	42	30	
18	-	26	-	26	43	34	5	
19	-	6	2	8	34	20	20	
20	-	6	4	10	39	16	-	
21	-	4	4	8	45	8	5	
22	-	-	4	4	18	2	-	
23	-	1	5	6	25	2	-	
24	-	-	-	-	26	2	-	
25	-	-	2	2	10	-	-	
26	-	-	1	1	5	-	-	
27	-	-	2	2	6	-	-	
28	-	-	-	-	3	-	-	
29	-	-	-	-	3	-	-	
Total No. of Ages Read	505	96	24	625	999	1000	1000	
Serial Numbers	No. of Age Samples 25							
	Number of fish measured each month				997	753	350	
	Mean length of fish (cm) each month				16.5	13.4	12.6	
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month							
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							

TABLE 56  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1967 (2nd QUARTER)

COUNTRY		Canada (Maritimes)												
CATCHES/LANDINGS		Catches												
COMMERCIAL/RESEARCH		Commercial and Research												
STRUCTURES USED IN AGE DETERMINATION		Otoliths												
Year- Class Length Group (cm)	Age	1966	1965	1964	1963	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE Months Within Quarter		
		1	2	3	4	5	6	7	8	9		Apr <sup>1</sup>	May <sup>1</sup>	Jun <sup>1</sup>
6		3	-	-	-	-	-	-	-	-	3	18	-	-
7		7	-	-	-	-	-	-	-	-	7	13	3	<1
8		-	11	-	-	-	-	-	-	-	11	32	9	<1
9		-	23	-	-	-	-	-	-	-	23	64	28	1
10		-	70	1	-	-	-	-	-	-	71	185	58	8
11		-	138	1	-	-	-	-	-	-	139	246	104	34
12		-	166	1	-	-	-	-	-	-	167	175	110	60
13		-	121	3	-	-	-	-	-	-	124	81	88	60
14		-	80	2	-	-	-	-	-	-	82	32	55	54
15		-	47	2	-	-	-	-	-	-	49	6	39	30
16		-	20	3	-	-	-	-	-	-	23	4	31	14
17		-	6	5	-	-	-	-	-	-	11	4	18	11
18		-	2	10	5	-	-	-	-	-	17	2	14	8
19		-	2	14	2	-	-	-	-	-	18	8	28	19
20		-	2	13	8	-	-	-	-	-	23	12	48	24
21		-	3	15	9	-	-	-	-	-	27	16	33	25
22		-	-	5	16	2	-	-	-	-	23	13	28	37
23		-	-	3	28	-	-	-	-	-	31	16	24	49
24		-	-	2	54	-	-	-	-	-	56	28	42	73
25		-	-	-	70	12	-	-	-	-	82	21	49	93
26		-	-	-	59	30	-	-	-	-	89	9	53	97
27		-	-	-	55	29	-	-	-	-	84	5	41	72
28		-	-	-	31	28	1	-	-	-	60	1	30	43
29		-	-	-	16	34	6	-	-	-	56	4	27	30
30		-	-	-	2	23	25	-	-	-	50	2	16	29
31		-	-	-	1	8	59	17	-	-	85	1	8	38
32		-	-	-	-	4	76	14	1	-	95	-	5	34
33		-	-	-	-	-	39	31	10	-	80	1	8	20
34		-	-	-	-	-	1	17	27	1	46	1	2	17
35		-	-	-	-	-	-	-	2	1	3	-	1	11
36		-	-	-	-	-	-	-	-	-	-	-	-	7
37		-	-	-	-	-	-	-	-	-	-	-	-	1
38		-	-	-	-	-	-	-	-	-	-	-	-	1
Total No. of Ages Read		10	691	80	356	170	207	79	40	2	1635			
Serial Numbers		No. of Age Samples 26												
	Number of fish measured each month											850	1524	4951
	Mean length of fish (cm) each month											13.2	18.4	23.2
	Mean weight of fish (kg) each month													
	Total weight caught or landed (tons) each month													
	Estimated number caught or landed (whole numbers) each month													
	Range of depths (m) each month													
	Mesh size (mm)											W/T	W/T	W/N/S/T

1 Research and commercial samples combined

TABLE 56  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1967 (2nd QUARTER)

COUNTRY		United States											
CATCHES/LANDINGS		Catches											
COMMERCIAL/RESEARCH		Commercial											
STRUCTURES USED IN AGE DETERMINATION		Otoliths											
Year- Class Length Group (cm)	Age	1965	1964	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		2	3	4	5	6	7	8		Months Within Quarter			
										Apr	May	Jun	
6		-	-	-	-	-	-	-	-	10	-	-	-
7		-	-	-	-	-	-	-	-	-	-	-	-
8		-	-	-	-	-	-	-	-	30	3	-	-
9		3	-	-	-	-	-	-	3	100	27	2	-
10		19	-	-	-	-	-	-	19	220	27	7	-
11		46	-	-	-	-	-	-	46	270	98	29	-
12		62	-	-	-	-	-	-	62	210	197	48	-
13		74	-	-	-	-	-	-	74	90	166	61	-
14		44	-	-	-	-	-	-	44	30	115	45	-
15		25	1	-	-	-	-	-	26	10	47	32	-
16		10	2	-	-	-	-	-	12	-	34	15	-
17		4	8	-	-	-	-	-	12	-	17	13	-
18		-	13	1	-	-	-	-	14	-	34	26	-
19		-	20	2	-	-	-	-	22	-	41	38	-
20		-	25	7	-	-	-	-	32	-	20	52	-
21		-	10	18	-	-	-	-	28	10	7	47	-
22		-	8	20	-	-	-	-	28	-	34	71	-
23		-	5	52	2	-	-	-	59	20	14	79	-
24		-	3	48	1	-	-	-	52	-	20	123	-
25		-	2	55	5	-	-	-	62	-	24	106	-
26		-	-	51	2	-	-	-	53	-	24	81	-
27		-	-	30	6	-	-	-	36	-	3	42	-
28		-	-	9	6	-	-	-	15	-	20	27	-
29		-	-	3	11	4	1	-	19	-	14	17	-
30		-	-	-	4	14	7	-	25	-	10	23	-
31		-	-	-	-	4	10	3	17	-	-	7	-
32		-	-	-	-	5	2	3	10	-	-	5	-
33		-	-	-	-	-	2	-	2	-	-	3	-
34		-	-	-	-	-	-	-	-	-	3	1	-
35		-	-	-	-	-	-	-	-	-	-	1	-
Total No. of Ages Read		287	97	296	37	27	22	6	772	1000	999	1001	
Serial Numbers		No. of Age Samples 32											
		Number of fish measured each month								200	444	1665	
		Mean length of fish (cm) each month								12.5	16.5	22.0	
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 56  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1967 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class Length Group (cm)	Age	1964	1963	1962	1961	1960	1959	-	Total No. of Ages Read	Months Within Quarter		
		3	4	5	6	7	8	8+		Apr	May	Jun
22		1	1	-	-	-	-	-	2	-	-	2
23		3	9	-	-	-	-	-	12	-	-	16
24		1	20	-	-	-	-	-	21	-	-	28
25		1	41	-	-	-	-	-	42	25	-	52
26		-	46	-	-	-	-	-	46	34	-	56
27		-	41	5	-	-	-	-	46	119	-	43
28		-	2	35	-	-	-	-	37	93	-	35
29		-	-	33	51	-	-	-	84	161	-	87
30		-	-	-	115	10	-	-	125	136	-	145
31		-	-	-	19	134	-	-	153	169	-	177
32		-	-	-	-	39	83	-	122	144	-	140
33		-	-	-	-	-	42	55	97	76	-	117
34		-	-	-	-	-	-	52	52	25	-	65
35		-	-	-	-	-	-	-	23	17	-	28
36		-	-	-	-	-	-	5	5	-	-	7
37		-	-	-	-	-	-	-	-	-	-	-
38		-	-	-	-	-	-	2	2	-	-	2
Total No. of Ages Read		6	160	73	185	183	125	137	869	999 1000		
Serial Numbers		No. of Age Samples 12										
		Number of fish measured each month							118 751			
		Mean length of fish (cm) each month							30.3 30.6			
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										



TABLE 56  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1967 (3rd QUARTER)

COUNTRY		Canada (Maritimes)								Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches									Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial and Research								Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths									Total No. of Ages Read	Months Within Quarter	
Year-Class	Length Age Group (cm)	1966	1965	1964	1963	1962	1961	1960	1959	Total No. of Ages Read		Months Within Quarter	
		1	2	3	4	5	6	7	8		Jul <sup>1</sup>	Aug <sup>1</sup>	Sep <sup>1</sup>
7		1	-	-	-	-	-	-	-	1	-	1	<1
8		7	-	-	-	-	-	-	-	7	-	<1	6
9		40	-	-	-	-	-	-	-	40	-	-	35
10		19	-	2	-	-	-	-	-	21	1	-	19
11		7	-	10	-	-	-	-	-	17	8	<1	6
12		4	-	26	-	-	-	-	-	30	26	5	3
13		-	3	34	-	-	-	-	-	37	30	12	2
14		-	11	49	-	-	-	-	-	60	26	29	14
15		-	41	58	-	-	-	-	-	99	15	50	51
16		-	60	40	2	-	-	-	-	102	13	40	102
17		-	46	19	-	-	-	-	-	65	7	28	151
18		-	28	20	2	1	-	-	-	51	6	20	111
19		-	20	4	2	-	-	-	-	26	9	12	52
20		-	7	3	8	2	-	-	-	20	18	15	27
21		-	8	18	24	3	-	-	-	53	23	24	25
22		-	1	16	23	12	-	-	-	52	29	35	30
23		-	1	13	24	24	-	-	-	62	49	31	23
24		-	-	13	43	37	4	-	-	97	58	44	22
25		-	-	7	56	28	-	-	-	91	70	43	28
26		-	-	5	85	31	2	-	-	123	72	67	37
27		-	-	1	67	41	-	-	-	109	63	81	39
28		-	-	1	41	26	-	-	-	68	47	53	22
29		-	-	-	21	24	2	-	-	47	34	39	18
30		-	-	-	9	21	7	-	-	37	68	58	30
31		-	-	-	5	29	46	4	-	84	116	104	60
32		-	-	-	3	16	94	16	-	129	106	94	50
33		-	-	-	-	3	89	68	4	164	59	60	21
34		-	-	-	-	-	9	34	6	49	27	28	8
35		-	-	-	-	-	2	5	-	7	12	15	5
36		-	-	-	-	-	-	1	-	1	6	7	1
37		-	-	-	-	-	-	-	-	-	1	3	1
38		-	-	-	-	-	-	-	-	-	1	1	<1
39		-	-	-	-	-	-	-	-	-	<1	1	<1
Total No. of Ages Read		78	226	339	415	298	255	128	10	1749	1001	1002	1002
Serial Numbers		No. of Age Samples 24											
		Number of fish measured each month								4523	3935	3146	
		Mean length of fish (cm) each month								26.7	26.4	21.5	
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											
											W/N/S	TW/N/S	TW/N/S/T

<sup>1</sup> Research and commercial samples combined

TABLE 56  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1967 (3rd QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Group (cm)	Age	1966	1965	1964	1963	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE Months Within Quarter		
		1	2	3	4	5	6	7		Jul	Aug	Sep
5		-	-	-	-	-	-	-	-	-	-	-
6		-	-	-	-	-	-	-	-	-	-	2
7		-	-	-	-	-	-	-	-	-	-	19
8		2	-	-	-	-	-	-	-	-	-	96
9		11	-	-	-	-	-	-	2	-	-	151
10		19	2	-	-	-	-	-	11	3	50	93
11		8	5	-	-	-	-	-	21	24	8	66
12		6	31	-	-	-	-	-	13	57	23	30
13		-	38	-	-	-	-	-	37	68	29	5
14		-	33	-	-	-	-	-	38	76	40	12
15		-	67	-	-	-	-	-	33	50	53	34
16		-	72	-	-	-	-	-	67	26	59	77
17		-	58	2	-	-	-	-	72	25	44	141
18		-	41	11	-	-	-	-	60	14	27	117
19		-	20	13	1	-	-	-	52	17	26	101
20		-	14	33	4	-	-	-	34	30	13	44
21		-	3	42	9	-	-	-	51	32	31	27
22		-	2	35	19	-	-	-	54	44	38	25
23		-	-	29	48	-	-	-	56	58	42	14
24		-	-	11	54	-	-	-	77	66	30	11
25		-	-	5	81	-	-	-	65	96	40	23
26		-	-	-	94	2	-	-	86	77	30	25
27		-	-	1	60	7	-	-	96	85	50	15
28		-	-	-	35	7	-	-	68	68	28	25
29		-	-	-	9	9	4	-	42	34	21	13
30		-	-	-	1	12	19	-	22	19	20	14
31		-	-	-	-	5	24	-	32	16	9	14
32		-	-	-	-	2	8	-	29	7	14	14
33		-	-	-	-	-	3	2	10	4	7	8
34		-	-	-	-	-	-	-	5	1	1	1
35		-	-	-	-	-	-	-	-	1	-	-
36		-	-	-	-	-	-	-	-	-	-	1
Total No. of Ages Read		46	386	182	415	44	58	2	1133	999	1001	1002
Serial Numbers		No. of Age Samples 47										
	Number of fish measured each month											
	Mean length of fish (cm) each month	1341 1433 1128										
	Mean weight of fish (kg) each month	21.3 18.6 17.7										
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 56  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1967 (3rd QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Landings										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group (cm)	1964	1963	1962	1961	1960	1959	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	3	4	5	6	7	8	8+		Months Within Quarter			
									Jul	Aug	Sep	
20	3	-	-	-	-	-	-	3	-	7	-	
21	9	-	-	-	-	-	-	9	5	17	-	
22	2	-	-	-	-	-	-	2	-	5	-	
23	6	-	-	-	-	-	-	6	2	12	-	
24	4	1	-	-	-	-	-	5	2	10	-	
25	2	6	-	-	-	-	-	8	5	10	5	
26	2	23	-	-	-	-	-	25	27	22	12	
27	-	41	-	-	-	-	-	41	44	12	43	
28	-	29	11	-	-	-	-	40	27	34	36	
29	-	3	52	29	-	-	-	84	71	73	59	
30	-	-	1	202	-	-	-	203	190	137	166	
31	-	-	-	139	157	-	-	296	266	198	254	
32	-	-	-	-	173	74	-	247	180	208	211	
33	-	-	-	-	-	132	29	161	103	164	123	
34	-	-	-	-	-	1	68	69	57	59	52	
35	-	-	-	-	-	-	28	28	15	27	26	
36	-	-	-	-	-	-	7	7	5	5	7	
37	-	-	-	-	-	-	1	1	-	-	2	
38	-	-	-	-	-	-	1	1	-	-	2	
39	-	-	-	-	-	-	1	1	-	-	2	
Total No. of Ages Read	28	103	64	370	330	207	135	1237	999	1000	1000	
Serial Numbers	No. of Age Samples 16											
	Number of fish measured each month								406	409	422	
	Mean length of fish (cm) each month								31.2	31.3	31.6	
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 56  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1967 (4th QUARTER)

COUNTRY		Canada (Maritimes)									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial and Research									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class	Length Age Group (cm)	1966	1965	1964	1963	1962	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		1	2	3	4	5		Months Within Quarter			
							Oct   Nov   Dec				
8		7	-	-	-	-	7	4	5	2	
9		61	-	-	-	-	61	49	61	26	
10		143	-	-	-	-	143	106	130	66	
11		172	-	-	-	-	172	97	219	163	
12		197	-	-	-	-	197	58	228	307	
13		69	-	-	-	-	69	12	96	232	
14		19	4	-	-	-	23	8	33	99	
15		1	17	-	-	-	18	24	5	38	
16		-	34	-	-	-	34	51	20	5	
17		-	46	-	-	-	46	69	42	11	
18		-	37	-	-	-	37	56	49	16	
19		-	14	-	-	-	14	61	48	5	
20		-	9	-	-	-	9	28	30	17	
21		-	4	-	-	-	4	19	18	7	
22		-	1	-	-	-	1	30	7	1	
23		-	2	8	1	-	11	39	2	-	
24		-	-	7	5	-	12	37	2	2	
25		-	-	1	7	-	8	30	2	1	
26		-	-	4	7	-	11	49	2	1	
27		-	-	-	18	-	18	57	1	1	
28		-	-	1	12	1	14	39	-	-	
29		-	-	1	5	1	7	26	-	-	
30		-	-	-	6	-	6	15	-	-	
31		-	-	-	1	1	2	17	-	-	
32		-	-	-	-	4	4	9	-	-	
33		-	-	-	-	-	-	4	-	-	
34		-	-	-	-	-	-	2	-	-	
35		-	-	-	-	-	-	-	-	-	
36		-	-	-	-	-	-	1	-	-	
37		-	-	-	-	-	-	3	-	-	
Total No. of Ages Read		669	168	22	62	7	928	1000	1000	1000	
Serial Numbers		No. of Age Samples 18									
		Number of fish measured each month					1986	1300	900		
		Mean length of fish (cm) each month					19.0	13.5	13.1		
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)					S/W/T	S/T	W/S/T		

1 Research and commercial samples combined

TABLE 56  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1967 (4th QUARTER)

COUNTRY		United States						Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches							Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial						Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths							Months Within Quarter		
Year-Class Length Group (cm)	Age	1966	1965	1964	1963	1962	1961	Total No. of Ages Read	PER MILLE		
		1	2	3	4	5	6		Oct	Nov	Dec
4		-	1	-	-	-	-	1	-	-	-
5		-	-	-	-	-	-	-	-	-	-
6		-	-	-	-	-	-	-	-	-	-
7		-	-	-	-	-	-	-	1	2	-
8		2	-	-	-	-	-	2	21	6	9
9		9	-	-	-	-	-	9	103	53	27
10		66	-	-	-	-	-	66	177	206	111
11		185	-	-	-	-	-	185	156	227	241
12		249	-	-	-	-	-	249	78	246	379
13		115	-	-	-	-	-	115	20	72	173
14		16	10	-	-	-	-	26	5	17	31
15		1	9	-	-	-	-	10	30	-	9
16		-	24	-	-	-	-	24	40	4	4
17		-	23	-	-	-	-	23	59	32	10
18		-	33	-	-	-	-	33	62	44	3
19		-	21	-	-	-	-	21	30	36	1
20		-	25	-	-	-	-	25	29	19	-
21		-	5	-	-	-	-	5	16	21	-
22		-	3	7	1	-	-	11	18	11	-
23		-	2	11	2	-	-	15	18	2	-
24		-	-	6	4	-	-	10	18	2	-
25		-	-	-	2	-	-	2	19	-	-
26		-	-	-	3	-	-	3	21	-	-
27		-	-	-	2	-	-	2	24	-	-
28		-	-	-	-	-	-	-	14	-	-
29		-	-	-	-	-	1	1	8	-	-
30		-	-	-	-	1	2	3	11	-	-
31		-	-	-	-	-	-	-	9	-	-
32		-	-	-	-	-	-	-	11	-	-
33		-	-	-	-	-	-	-	1	-	-
Total No. of Ages Read		643	156	24	14	1	3	841	999	1000	998
Serial Numbers		No. of Age Samples 34									
		Number of fish measured each month						1137	749	900	
		Mean length of fish (cm) each month						15.5	13.1	12.4	
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 57

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1967 (1st QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1964	1963	1962	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	3	4	5		Months Within Quarter			
					Jan	Feb	Mar	
12	-	-	-	-	5	20	-	
13	-	-	-	-	-	-	4	
14	1	-	-	1	5	-	18	
15	3	-	-	3	11	20	13	
16	27	-	-	27	11	59	36	
17	47	-	-	47	86	118	173	
18	36	-	-	36	128	275	236	
19	16	3	-	19	59	255	187	
20	8	3	-	11	80	59	89	
21	1	5	-	6	70	39	80	
22	4	7	-	11	59	39	44	
23	1	10	-	11	166	39	53	
24	-	5	-	5	193	78	44	
25	-	1	1	2	64	-	18	
26	-	-	-	-	53	-	4	
27	-	-	-	-	5	-	-	
28	-	-	-	-	5	-	-	
Total No. of Ages Read	144	34	1	179	1000	1001	999	
Serial Numbers	No. of Age Samples 6							
	Number of fish measured each month				237	101	304	
	Mean length of fish (cm) each month				21.6	19.7	19.5	
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month				532	132	1793	
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							

TABLE 57  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1967 (2nd QUARTER)

COUNTRY		United States											
CATCHES/LANDINGS		Catches											
COMMERCIAL/RESEARCH		Commercial											
STRUCTURES USED IN AGE DETERMINATION		Otoliths											
Year- Class	Length Age Group(cm)	1965	1964	1963	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2	3	4	5	6	7	8	9		Months	Within	Quarter
											Apr	May	Jun
8		2	-	-	-	-	-	-	-	2	-	-	1
9		9	-	-	-	-	-	-	-	9	-	186	32
10		43	-	-	-	-	-	-	-	43	12	344	98
11		65	-	-	-	-	-	-	-	65	15	219	118
12		70	-	-	-	-	-	-	-	70	38	31	130
13		88	-	-	-	-	-	-	-	88	44	-	112
14		90	-	-	-	-	-	-	-	90	20	-	98
15		47	-	-	-	-	-	-	-	47	6	-	60
16		12	6	-	-	-	-	-	-	18	6	-	36
17		5	17	-	-	-	-	-	-	22	38	-	25
18		8	44	-	-	-	-	-	-	52	87	-	46
19		2	27	-	-	-	-	-	-	29	122	-	54
20		1	25	2	-	-	-	-	-	28	111	-	41
21		-	17	5	-	-	-	-	-	22	61	-	25
22		-	23	14	-	-	-	-	-	37	93	-	17
23		-	4	17	-	-	-	-	-	21	82	-	13
24		-	3	36	2	-	-	-	-	41	120	-	20
25		-	-	33	-	-	-	-	-	33	96	-	16
26		-	1	19	-	-	-	-	-	20	29	-	20
27		-	-	10	4	-	-	-	-	14	12	-	19
28		-	-	2	3	-	-	-	-	5	6	-	12
29		-	-	2	1	4	1	-	-	8	-	-	3
30		-	-	-	2	2	2	-	-	6	-	94	1
31		-	-	-	-	6	5	1	-	12	3	31	1
32		-	-	-	-	6	1	-	-	7	-	63	-
33		-	-	-	-	1	2	3	1	7	-	31	-
34		-	-	-	-	-	2	2	1	5	-	-	-
Total No. of Ages Read		442	167	140	12	19	13	6	2	801	1001	999	998
Serial Numbers		No. of Age Samples 31											
		Number of fish measured each month									454	98	1371
		Mean length of fish (cm) each month									21.2	20.9	16.0
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month									1487	181	1479
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 57  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1967 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class Length Age Group (cm)	1964	1963	1962	1961	1960	1959	-	Total No. of Ages Read	Months Within Quarter			
	3	4	5	6	7	8	8+		Apr	May	Jun	
22	1	-	-	-	-	-	-	1	-	-	4	
23	1	-	-	-	-	-	-	1	-	-	4	
24	3	27	-	-	-	-	-	30	47	-	59	
25	6	78	-	-	-	-	-	84	184	-	102	
26	-	129	2	-	-	-	-	131	263	-	188	
27	-	43	63	-	-	-	-	106	237	-	122	
28	-	1	62	1	-	-	-	64	133	-	86	
29	-	-	17	36	-	-	-	53	63	-	129	
30	-	-	-	38	6	-	-	44	35	-	129	
31	-	-	-	2	31	-	-	33	25	-	98	
32	-	-	-	-	7	8	-	15	10	-	47	
33	-	-	-	-	-	3	1	4	3	-	12	
34	-	-	-	-	-	-	4	4	-	-	16	
35	-	-	-	-	-	-	1	1	-	-	4	
Total No. of Ages Read	11	278	144	77	44	11	6	571	1000		1000	
Serial Numbers	No. of Age Samples							6				
	Number of fish measured each month							316		255		
	Mean length of fish (cm) each month							27.2		28.4		
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											



TABLE 57  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1967 (3rd QUARTER)

COUNTRY		United States											
CATCHES/LANDINGS		Catches											
COMMERCIAL/RESEARCH		Commercial											
STRUCTURES USED IN AGE DETERMINATION		Otoliths											
Year- Class	Length Age Group (cm)	1966	1965	1964	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		1	2	3	4	5	6	7	8		Months Within Quarter		
											Jul	Aug	Sep
3		-	-	-	-	-	-	-	-	-	1	-	-
4		-	-	-	-	-	-	-	-	-	35	-	-
5		-	-	-	-	-	-	-	-	-	148	-	-
6		-	-	-	-	-	-	-	-	-	7	-	2
7		-	-	-	-	-	-	-	-	-	2	1	39
8		-	-	-	-	-	-	-	-	-	-	1	25
9		2	1	-	-	-	-	-	-	3	5	6	13
10		1	11	-	-	-	-	-	-	12	34	5	7
11		2	89	-	-	-	-	-	-	91	82	29	3
12		-	118	-	-	-	-	-	-	118	83	65	9
13		-	210	-	-	-	-	-	-	210	88	85	32
14		-	320	2	-	-	-	-	-	322	76	91	102
15		-	301	3	-	-	-	-	-	304	62	101	90
16		-	277	8	-	-	-	-	-	285	49	97	88
17		-	316	11	-	-	-	-	-	327	42	74	108
18		-	255	36	-	1	-	-	-	292	48	74	96
19		-	167	86	-	-	-	-	-	253	49	69	65
20		-	108	111	-	-	1	-	-	220	41	61	49
21		-	27	141	1	3	1	-	-	173	39	49	35
22		-	5	143	-	4	-	-	-	152	31	40	49
23		-	-	150	3	3	-	-	-	156	23	39	45
24		-	-	124	19	-	-	-	-	143	22	38	52
25		-	-	52	47	-	-	-	-	99	10	22	53
26		-	-	29	62	2	-	-	-	93	7	21	23
27		-	-	4	54	3	-	-	-	61	5	12	8
28		-	-	-	26	6	-	-	-	32	6	8	4
29		-	-	-	12	7	1	-	-	20	1	3	1
30		-	-	-	-	5	4	-	-	9	1	3	1
31		-	-	-	-	-	5	-	-	5	2	2	1
32		-	-	1	-	1	5	1	-	8	1	2	1
33		-	-	-	-	-	-	2	-	2	1	2	-
34		-	-	-	-	-	-	1	1	2	-	1	-
Total No. of Ages Read		5	2205	901	224	35	17	4	1	3392	1001	1001	1001
Serial Numbers		No. of Age Samples 137											
		Number of fish measured each month									3357	2843	2835
		Mean length of fish (cm) each month									15.9	18.6	18.3
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month									4065	6679	6973
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 57  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1967 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	MONTHS WITHIN QUARTER		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								PER MILLE		
Year- Class Length Age Group (cm)	1964	1963	1962	1961	1960	1959	-	Total No. of Ages Read	MONTHS WITHIN QUARTER			
	3	4	5	6	7	8	8+		Jul	Aug	Sep	
20	3	-	-	-	-	-	-	3	-	-	44	
21	7	-	-	-	-	-	-	7	15	2	-	
22	15	-	-	-	-	-	-	15	23	10	29	
23	35	-	-	-	-	-	-	35	43	41	29	
24	77	-	-	-	-	-	-	77	114	74	44	
25	60	16	-	-	-	-	-	76	134	43	88	
26	12	60	1	-	-	-	-	73	111	48	147	
27	-	80	-	-	-	-	-	80	146	41	88	
28	-	42	36	-	-	-	-	78	124	53	118	
29	-	-	40	9	-	-	-	49	68	46	59	
30	-	-	-	94	-	-	-	94	88	119	177	
31	-	-	-	42	67	-	-	109	81	173	132	
32	-	-	-	-	70	23	-	93	35	195	29	
33	-	-	-	-	-	33	4	37	13	79	15	
34	-	-	-	-	-	-	24	24	5	36	-	
35	-	-	-	-	-	-	7	7	-	18	-	
36	-	-	-	-	-	-	-	-	-	-	-	
37	-	-	-	-	-	-	1	1	-	2	-	
Total No. of Ages Read	209	198	77	145	137	56	36	858	1000	1000	999	
Serial Numbers	No. of Age Samples							9				
	Number of fish measured each month							396	394	68		
	Mean length of fish (cm) each month							27.4	30.1	27.8		
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 57  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1967 (4th QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Group (cm)	Age	1966	1965	1964	1963	1962	1961	Total No. of Ages Read	LENGTH COMPOSITION PER MILE			
		1	2	3	4	5	6		Months Within Quarter			
								Oct	Nov	Dec		
9		1	-	-	-	-	-	1	6	-		
10		25	-	-	-	-	-	25	36	-		
11		43	-	-	-	-	-	43	29	-		
12		30	-	-	-	-	-	30	10	-		
13		29	-	-	-	-	-	29	3	-		
14		3	8	-	-	-	-	11	13	-		
15		-	38	-	-	-	-	38	73	-		
16		-	55	-	-	-	-	55	117	-		
17		-	54	4	-	-	-	58	134	-		
18		-	37	10	-	-	-	47	89	-		
19		-	36	8	-	-	-	44	61	-		
20		-	27	7	1	-	-	35	66	36		
21		-	14	13	-	-	-	27	46	71		
22		-	10	29	-	-	-	39	50	107		
23		-	1	36	2	-	-	39	75	286		
24		-	-	35	4	-	-	39	63	71		
25		-	-	41	11	-	-	52	65	71		
26		-	-	21	10	-	-	31	39	250		
27		-	-	1	16	-	-	17	16	71		
28		-	-	-	3	-	-	3	4	36		
29		-	-	-	2	-	-	2	1	-		
30		-	-	-	-	-	-	-	1	-		
31		-	-	-	-	1	3	4	1	-		
32		-	-	-	-	-	2	2	-	-		
33		-	-	-	-	-	1	1	-	-		
Total No. of Ages Read		131	280	205	49	1	6	672	998	999		
Serial Numbers		No. of Age Samples 29										
		Number of fish measured each month						1208	186			
		Mean length of fish (cm) each month						19.4	20.2			
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month						4734	1224	39		
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										



TABLE 58

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1967 (2nd QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Landings										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group (cm)	1964	1963	1962	1961	1960	1959	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	3	4	5	6	7	8	8+		Months Within Quarter			
									Apr	May	Jun	
17	1	-	-	-	-	-	-	1	-	1	-	
18	-	-	-	-	-	-	-	-	-	-	-	
19	-	-	-	-	-	-	-	-	-	-	-	
20	3	-	-	-	-	-	-	3	-	4	-	
21	9	-	-	-	-	-	-	9	-	12	-	
22	8	-	-	-	-	-	-	8	-	11	-	
23	12	5	-	-	-	-	-	17	5	22	-	
24	5	21	-	-	-	-	-	26	10	33	-	
25	-	50	-	-	-	-	-	50	20	61	6	
26	-	66	2	-	-	-	-	68	49	78	6	
27	-	38	43	-	-	-	-	81	25	97	29	
28	-	1	111	7	-	-	-	119	143	107	64	
29	-	-	28	163	2	-	-	193	379	120	162	
30	-	-	-	105	83	-	-	188	202	125	318	
31	-	-	-	15	136	1	-	152	113	124	220	
32	-	-	-	-	20	64	-	84	39	80	98	
33	-	-	-	-	-	17	38	55	15	53	75	
34	-	-	-	-	-	-	42	42	-	54	11	
35	-	-	-	-	-	-	11	11	-	12	11	
36	-	-	-	-	-	-	4	4	-	5	-	
Total No. of Ages Read	38	181	184	290	241	82	95	1111	1000	999	1000	
Serial Numbers	No. of Age Samples 14											
	Number of fish measured each month								203	735	173	
	Mean length of fish (cm) each month								29.6	29.3	30.8	
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 58  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1967 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class	Age	1964	1963	1962	1961	1960	1959	-	Total No. of Ages Read	Months Within Quarter		
Length Group (cm)		3	4	5	6	7	8	8+		Jul	Aug	Sep
22		3	-	-	-	-	-	-	3	-	5	-
23		4	-	-	-	-	-	-	4	-	5	5
24		21	-	-	-	-	-	-	21	-	34	10
25		53	8	-	-	-	-	-	61	45	68	85
26		41	73	-	-	-	-	-	114	210	89	181
27		-	108	-	-	1	-	-	109	173	98	156
28		-	32	49	-	-	-	-	81	158	61	131
29		-	-	34	14	-	-	-	48	90	43	60
30		-	-	-	69	-	-	-	69	68	45	176
31		-	-	-	40	69	-	-	109	83	130	126
32		-	-	-	-	47	61	-	108	83	152	60
33		-	-	-	-	-	58	22	80	60	125	10
34		-	-	-	-	-	-	56	56	30	93	-
35		-	-	-	-	-	-	21	21	-	37	-
36		-	-	-	-	-	-	8	8	-	14	-
Total No. of Ages Read		122	221	83	123	117	119	107	892	1000	999	1000
Serial Numbers		No. of Age Samples 10										
		Number of fish measured each month							133	560	199	
		Mean length of fish (cm) each month							29.0	30.5	28.7	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 58  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1967 (4th QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
CATCHES/LANDINGS		Landings								Months Within Quarter			
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	MONTHS WITHIN QUARTER			
STRUCTURES USED IN AGE DETERMINATION		Otoliths								PER MILLE			
Year- Class Length Group (cm)	Age	1964	1963	1962	1961	1960	1959	-	Total No. of Ages Read	MONTHS WITHIN QUARTER			
		3	4	5	6	7	8	8+		Oct	Nov	Dec	
20		-	1	-	-	-	-	-	1	-	5		
21		-	-	-	-	-	-	-	-	-	-		
22		-	13	-	-	-	-	-	13	-	60		
23		-	33	-	-	-	-	-	33	-	151		
24		-	38	-	-	-	-	-	38	-	174		
25		1	31	2	-	-	-	-	34	13	147		
26		-	22	3	-	-	-	-	25	13	105		
27		-	5	6	-	-	-	-	11	7	46		
28		-	7	8	-	-	-	-	15	74	18		
29		-	-	20	5	-	-	-	25	128	28		
30		-	-	-	33	-	-	-	33	195	18		
31		-	-	-	17	15	-	-	32	148	46		
32		-	-	-	-	45	6	-	51	228	78		
33		-	-	-	-	-	23	4	27	80	69		
34		-	-	-	-	-	-	23	23	80	50		
35		-	-	-	-	-	-	5	5	27	5		
36		-	-	-	-	-	-	1	1	7	-		
Total No. of Ages Read		1	150	39	55	60	29	33	367	1000	1000		
Serial Numbers		No. of Age Samples							5				
		Number of fish measured each month							149	218			
		Mean length of fish (cm) each month							31.4	27.1			
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 59

AGE/LENGTH KEY - HERRING - 5Z - 1967 (1st QUARTER)

COUNTRY		USSR									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Scales									
Year-Class Length Group (cm)	Age	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		5	6	7	8	9		Months Within	Quarter		
								Jan	Feb	Mar	
27		1	-	-	-	-	1	-	12	-	
28		4	-	-	-	-	4	4	63	10	
29		12	36	-	-	-	48	44	203	107	
30		2	113	8	-	-	123	206	349	273	
31		-	41	72	-	-	113	320	217	333	
32		-	2	54	5	-	61	240	119	197	
33		-	-	12	18	-	30	132	33	58	
34		-	-	-	5	-	5	42	4	17	
35		-	-	-	-	1	1	10	-	10	
36		-	-	-	-	-	-	2	-	-	
Total No. of Ages Read		19	192	146	28	1	386	1000	1000	1000	
Serial Numbers		No. of Age Samples 7									
		Number of fish measured each month						500	900	600	
		Mean length of fish (cm) each month						31.4	30.2	30.9	
		Mean weight of fish (kg) each month						0.234	0.215	0.205	
		Total weight caught or landed (tons) each month							110	126	
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month						146-201	64-82	110	
		Mesh size (mm)						40	40	40	



TABLE 59  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 52 - 1967 (2nd QUARTER)

COUNTRY		USSR										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Scales										
Year- Class Length Age Group (cm)	1965	1964	1963	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
										Months Within Quarter		
	2	3	4	5	6	7	8	9		Apr	May	Jun
15	-	-	-	-	-	-	-	-	-	+	-	-
16	-	-	-	-	-	-	-	-	-	2	-	-
17	1	-	-	-	-	-	-	-	1	7	-	+
18	1	-	-	-	-	-	-	-	1	3	-	+
19	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	5	-	-
21	-	1	1	-	-	-	-	-	2	5	-	+
22	-	3	8	-	-	-	-	-	11	4	1	+
23	-	-	4	-	-	-	-	-	4	11	2	1
24	-	1	12	-	-	-	-	-	13	8	10	2
25	-	-	21	6	-	-	-	-	27	7	37	11
26	-	-	12	42	3	-	-	-	57	9	58	24
27	-	-	11	76	16	-	-	-	103	19	118	46
28	-	-	3	72	44	-	-	-	119	28	81	88
29	-	-	1	33	88	13	-	-	135	23	112	108
30	-	-	-	24	155	62	-	-	241	46	178	118
31	-	-	-	3	119	182	1	-	305	158	217	238
32	-	-	-	1	22	105	1	-	129	275	134	243
33	-	-	-	-	1	50	8	1	60	246	43	88
34	-	-	-	-	-	1	8	-	9	105	8	22
35	-	-	-	-	-	-	1	-	1	29	1	5
36	-	-	-	-	-	-	-	-	-	10	+	6
37	-	-	-	-	-	-	-	-	-	+	-	+
Total No. of Ages Read	2	5	73	257	448	413	19	1	1218	1000	1000	1000
Serial Numbers	No. of Age Samples 63											
	Number of fish measured each month									3147	1641	21842
	Mean length of fish (cm) each month									30.5	29.5	29.6
	Mean weight of fish (kg) each month									0.191	0.195	0.208
	Total weight caught or landed (tons) each month									3293	3208	2561
	Estimated number caught or landed (whole numbers) each month									-	-	-
	Range of depths (m) each month									64-137	73-82	46-146
	Mesh size (mm)									40	40	40

TABLE 59  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1967 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches								Months Within Quarter		
COMMERCIAL/RESEARCH		Research								Apr	May	Jun
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Group (cm)	Age	1964	1963	1962	1961	1960	1959	-				
		3	4	5	6	7	8	8+		Apr	May	Jun
20		1	-	-	-	-	-	-	1			2
21		1	-	-	-	-	-	-	1			2
22		3	-	-	-	-	-	-	3			6
23		5	-	-	-	-	-	-	5			10
24		6	1	-	-	-	-	-	7			14
25		3	10	-	-	-	-	-	13			26
26		-	29	-	-	-	-	-	29			59
27		-	41	5	-	-	-	-	46			93
28		-	12	76	-	-	-	-	88			178
29		-	-	44	63	-	-	-	107			216
30		-	-	-	120	-	-	-	120			242
31		-	-	-	25	36	-	-	61			123
32		-	-	-	-	4	5	-	9			18
33		-	-	-	-	-	2	2	4			8
34		-	-	-	-	-	-	1	1			2
Total No. of Ages Read		19	93	125	208	40	7	3	495	999		
Serial Numbers		No. of Age Samples 6										
		Number of fish measured each month							495			
		Mean length of fish (cm) each month							29.2			
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 59  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Z - 1967 (3rd QUARTER)

COUNTRY		Germany, Federal Republic												
CATCHES/LANDINGS		NK												
COMMERCIAL/RESEARCH		NK												
STRUCTURES USED IN AGE DETERMINATION		Scales and Otoliths												
Year- Class Length Group(cm)	Age	1964	1963	1962	1961	1960	1959	1958	<1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		3	4	5	6	7	8	9	>9		Months Within Quarter	Jul	Aug	Sep
26		-	1	-	-	-	-	-	-	1				5
27		-	-	-	-	-	-	-	-	-				10
28		1	3	3	1	-	-	-	-	8				75
29		-	1	4	2	3	-	-	-	10				120
30		-	1	14	10	9	-	-	-	34				372
31		-	-	1	9	9	-	-	-	19				213
32		-	-	-	1	7	1	1	-	10				110
33		-	-	-	-	3	-	-	-	8				55
34		-	-	-	-	-	-	-	-	4				25
35		-	-	-	-	-	-	-	-	2				15
Total No. of Ages Read		1	6	22	23	31	1	1	11	96	1000			
Serial Numbers		No. of Age Samples									1			
		Number of fish measured each month												201
		Mean length of fish (cm) each month												30.98
		Mean weight of fish (kg) each month												0.288
		Total weight caught or landed (tons) each month												
		Estimated number caught or landed (whole numbers) each month												
		Range of depths (m) each month												
		Mesh size (mm)												

TABLE 59  
(Cont'd)

## AGE/LENGTH KEY - HERRING - SZ - 1967 (3rd QUARTER)

COUNTRY		Poland										
CATCHES/LANDINGS		NK										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class	Length Age Group (cm)	1964	1963	1962	1961	1960	1959	1958	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE	
		3	4	5	6	7	8	9	9+		Months Within Quarter	Aug-Sep
25		1	3	2	-	-	-	-	-	6		1
26		9	21	5	-	-	-	-	-	35		4
27		8	87	14	1	-	-	-	-	110		16
28		3	161	20	2	-	-	-	-	186		45
29		-	95	106	12	-	-	-	-	213		80
30		-	26	98	99	33	-	-	-	256		108
31		-	2	24	127	138	4	-	-	295		208
32		-	-	4	45	256	22	4	-	331		301
33		-	-	-	5	133	85	28	4	255		141
34		-	-	-	-	26	61	64	28	179		59
35		-	-	-	-	1	13	33	56	103		27
36		-	-	-	-	-	-	2	27	23		8
37		-	-	-	-	-	-	-	6	6		1
Total No. of Ages Read		21	395	273	291	587	185	131	121	2004	999	
Serial Numbers		No. of Age Samples 19										
		Number of fish measured each month									17990	
		Mean length of fish (cm) each month									31.83	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 59  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1967 (3rd QUARTER)

COUNTRY		USSR											
CATCHES/LANDINGS								Catches					
COMMERCIAL/RESEARCH								Commercial					
STRUCTURES USED IN AGE DETERMINATION								Scale					
Year- Class Length Group(cm)	Age	1963	1962	1961	1960	1959	1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE				
		4	5	6	7	8	9		Months Within Quarter				
								Jul			Aug		Sep
20		-	-	-	-	-	-	-	-	-	+	-	
21		-	-	-	-	-	-	-	-	-	+	-	
22		-	-	-	-	-	-	-	-	-	+	-	
23		-	-	-	-	-	-	-	-	-	+	-	
24		-	-	-	-	-	-	-	-	-	1	-	
25		1	-	-	-	-	-	-	-	-	1	+	
26		-	1	-	-	-	-	-	1	+	2	1	
27		-	11	-	-	-	-	-	13	1	8	12	
28		2	15	2	-	-	-	-	22	2	22	46	
29		-	22	5	-	-	-	-	64	4	46	96	
30		-	21	40	1	1	-	-	174	9	93	127	
31		-	6	100	53	-	-	-	275	30	267	200	
32		-	-	90	177	2	-	-	120	48	329	278	
33		-	-	14	103	3	-	-	57	89	158	165	
34		-	-	2	42	13	-	-	13	89	51	54	
35		-	-	-	1	12	-	-	3	285	17	16	
36		-	-	-	-	1	2	-	-	354	4	4	
37		-	-	-	-	-	-	-	-	136	1	1	
38		-	-	-	-	-	-	-	-	32	+	-	
39		-	-	-	-	-	-	-	-	8	-	-	
40		-	-	-	-	-	-	-	-	2	-	-	
		-	-	-	-	-	-	-	-	+	-	-	
Total No. of Ages Read		3	76	253	377	32	2	743	1000	1000	1000		
Serial Numbers		No. of Age Samples						129					
	Number of fish measured each month							23914	16895	17746			
	Mean length of fish (cm) each month							30.4	30.6	30.4			
	Mean weight of fish (kg) each month							0.250	0.253	0.236			
	Total weight caught or landed (tons) each month							2378	3134	5803			
	Estimated number caught or landed (whole numbers) each month												
	Range of depths (m) each month							46-128	46-91	55-201			
	Mesh size (mm)							40	40	40			

TABLE 59  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1967 (3rd QUARTER)

COUNTRY		United States								Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches									Months Within Quarter		
COMMERCIAL/RESEARCH		Research								Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths									Months Within Quarter		
Year- Class	Age	1965	1964	1963	1962	1961	1960	1959	-	Total No. of Ages Read	Months Within Quarter		
Length Group (cm)		2	3	4	5	6	7	8	8+		Jul	Aug	Sep
20		1	-	-	-	-	-	-	-	1			3
21		-	-	-	-	-	-	-	-	-			-
22		-	-	-	-	-	-	-	-	-			-
23		-	-	-	-	-	-	-	-	-			-
24		-	3	-	-	-	-	-	-	-			-
25		-	4	-	-	-	-	-	-	3			9
26		-	3	6	-	-	-	-	-	4			12
27		-	-	14	1	-	-	-	-	9			26
28		-	-	15	7	-	-	-	-	15			44
29		-	-	-	27	20	-	-	-	22			65
30		-	-	-	-	106	-	-	-	47			138
31		-	-	-	-	29	46	-	-	106			312
32		-	-	-	-	-	27	14	-	75			221
33		-	-	-	-	-	-	9	1	41			121
34		-	-	-	-	-	-	-	7	10			29
										7			20
Total No. of Ages Read		1	10	35	35	155	73	23	8	340	1000		
Serial Numbers		No. of Age Samples 4											
		Number of fish measured each month								340			
		Mean length of fish (cm) each month								30.4			
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 59  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Z - 1967 (4th QUARTER)

COUNTRY		Germany, Federal Republic														
CATCHES/LANDINGS		NK														
COMMERCIAL/RESEARCH		NK														
STRUCTURES USED IN AGE DETERMINATION		Scales and Otoliths														
Year- Class Length Group (cm)	Age	1964	1963	1962	1961	1960	1959	1958	<1958	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE					
		3	4	5	6	7	8	9	>9		Months Within Quarter					
											Oct	Nov	Dec			
24		-	-	-	-	-	-	-	-	-	-	-	-	-		
25		-	-	-	-	-	-	-	-	-	-	-	-	4		
26		-	1	-	-	-	-	-	-	-	-	-	-	4		
27		-	2	1	-	-	-	-	-	-	-	-	-	4		
28		-	9	1	-	-	-	-	-	-	-	-	-	31		
29		3	7	7	2	2	-	-	-	-	-	-	-	89		
30		-	3	8	11	22	-	-	-	-	-	-	194	22	112	
31		-	-	6	12	38	6	-	-	-	-	-	294	296	240	
32		-	-	-	2	23	1	-	-	-	-	-	62	391	479	333
33		-	-	-	-	3	1	-	-	-	-	-	27	49	113	157
34		-	-	-	-	-	1	1	3	-	-	-	8	48	90	26
									2	1			24	-	-	-
Total No. of Ages Read		3	22	23	27	88	8	1	5	177			1000	1000	1000	
Serial Numbers		No. of Age Samples 3														
		Number of fish measured each month										41	44	223		
		Mean length of fish (cm) each month										31.26	31.39	30.78		
		Mean weight of fish (kg) each month										0.224	0.217	0.215		
		Total weight caught or landed (tons) each month														
		Estimated number caught or landed (whole numbers) each month														
		Range of depths (m) each month														
		Mesh size (mm)														

TABLE 59  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1967 (4th QUARTER)

COUNTRY		United States						Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches							Months Within Quarter		
COMMERCIAL/RESEARCH		Research							Oct	Nov	Dec
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class	1963	1962	1961	1960	1959	-	Length Group (cm)				
Age	4	5	6	7	8	8+					
25	1	-	-	-	-	-	1	3			
26	-	-	-	-	-	-	-	-			
27	5	-	-	-	-	-	5	12			
28	1	10	1	-	-	-	12	30			
29	-	25	30	-	-	-	55	136			
30	-	-	157	1	-	-	158	392			
31	-	-	44	78	-	-	122	303			
32	-	-	-	25	7	-	32	79			
33	-	-	-	-	11	3	14	35			
34	-	-	-	-	-	3	3	7			
35	-	-	-	-	-	1	1	3			
Total No. of Ages Read		7	35	232	104	18	7	403	1000		
Serial Numbers		No. of Age Samples 5									
		Number of fish measured each month						403			
		Mean length of fish (cm) each month						30.8			
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									





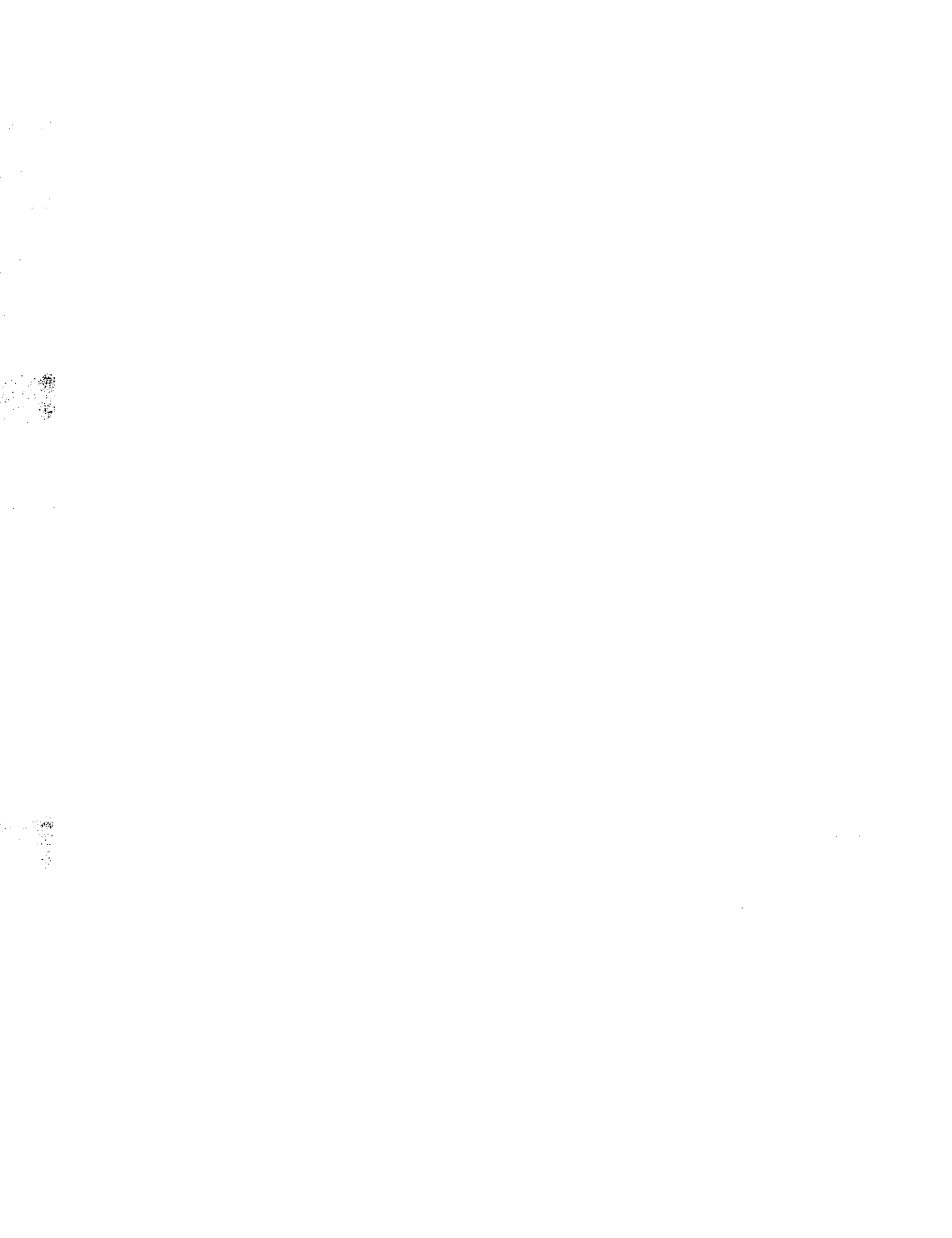


TABLE 60 LENGTH FREQUENCIES - HERRING - 1F - 1968

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	August	August
COUNTRY	Denmark (Greenland)	
CATCHES/LANDINGS	NK	
COMMERCIAL/RESEARCH	Research	
29	53	-
30	157	-
31	278	13
32	269	-
33	158	40
34	60	53
35	12	-
36	2	-
37	2	13
38	-	27
39	2	133
40	2	213
41	4	307
42	-	133
43	2	67
Total ‰	1001	999
Serial Numbers	-	-
Number of Samples	-	-
Number of Fish Measured	568	75
Mean Length (cm)	31.7	39.8
Mean Weight (kg)	-	-
Total Weight Landed (tons)	-	-
Estimated Number Landed	-	-
Mesh(mm) or Hook(no.) Size	30	ca. 45
Range of Depths (fm)	0-33	ca. 0-33

TABLE 61 LENGTH FREQUENCIES - HERRING - 3Pn - 1968

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	January	February	March	April	December
COUNTRY	Canada (Newfoundland)				
CATCHES/LANDINGS	Catches				
COMMERCIAL/RESEARCH	Commercial				
22	-	-	1	-	-
23	-	1	-	-	-
24	-	1	-	-	-
25	-	-	1	-	4
26	-	3	-	-	4
27	-	3	-	-	8
28	39	14	14	5	23
29	69	33	33	23	16
30	59	70	74	64	35
31	137	145	147	85	62
32	284	195	204	197	116
33	225	261	271	232	187
34	118	167	156	234	252
35	39	55	62	83	193
36	20	24	25	44	50
37	-	19	9	17	31
38	10	6	2	14	7
39	-	3	-	2	12
40	-	-	-	-	-
41	-	-	1	-	-
Total ‰	1000	1000	1000	1000	1000
Serial Numbers	-	-	-	-	-
Number of Samples	-	-	-	-	-
Number of Fish Measured	102	1107	1659	436	258
Mean Length (cm)	32.1	32.5	32.5	33.0	32.4
Mean Weight (kg)	-	-	-	-	-
Total Weight Landed (tons)	904	7659	14149	1926	1901
Estimated Number Landed	-	-	-	-	-
Mesh(mm) or Hook(no.) Size	-	-	-	-	-
Range of Depths (fm)	-	-	-	-	-

TABLE 62

LENGTH FREQUENCIES - HERRING - 3Ps - 1968

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	January <sup>1</sup>	February <sup>1</sup>	February <sup>2</sup>	March <sup>1</sup>	March <sup>2</sup>
COUNTRY	Canada (Newfoundland)				
CATCHES/LANDINGS	Catches				
COMMERCIAL/RESEARCH	Commercial				
15	-	-	-	-	1
16	-	-	2	-	-
17	-	-	2	-	-
18	-	-	2	-	1
19	-	-	3	-	2
20	-	1	14	-	8
21	-	-	16	-	27
22	-	-	10	1	11
23	-	-	3	-	1
24	-	-	-	-	-
25	-	-	-	-	1
26	-	-	-	1	-
27	2	1	-	5	-
28	5	3	2	7	2
29	17	24	101	19	60
30	59	39	292	34	199
31	113	110	294	83	367
32	219	180	112	156	182
33	307	265	33	302	48
34	188	241	26	238	22
35	64	83	21	91	18
36	16	30	25	39	16
37	8	13	18	15	19
38	2	8	10	4	9
39	-	1	10	1	6
40	-	-	4	3	-
41	-	1	-	1	-
Total ‰	1000	1000	1000	1000	1000
Serial Numbers	-	-	-	-	-
Number of Samples	-	-	-	-	-
Number of Fish Measured	4309	1452	909	1175	970
Mean Length (cm)	32.7	33.0	30.7	33.1	30.9
Mean Weight (kg)	-	-	-	-	-
Total Weight Landed (tons)	22918	9888	5291	3689	4405
Estimated Number Landed	-	-	-	-	-
Mesh(mm) or Hook(no.) Size	-	-	-	-	-
Range of Depths (fms)	-	-	-	-	-

<sup>1</sup> Inshore, Burgeo to Pass Island, Newfoundland  
<sup>2</sup> Fortune Bay, Newfoundland

TABLE 62  
(Cont'd)

LENGTH FREQUENCIES - HERRING - 3Ps - 1968

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	April <sup>2</sup>	April <sup>1</sup>	November <sup>1</sup>	December <sup>1</sup>
COUNTRY	Canada (Newfoundland)			
CATCHES/LANDINGS	Catches			
COMMERCIAL/RESEARCH	Commercial			
18	2	-	-	-
19	2	-	-	-
20	23	-	-	-
21	29	-	-	-
22	25	-	-	-
23	5	-	-	-
24	-	-	-	-
25	-	-	-	-
26	2	-	-	1
27	-	-	-	-
28	3	-	3	2
29	50	12	9	17
30	182	46	39	37
31	363	82	106	102
32	177	246	167	199
33	42	392	261	278
34	31	111	282	239
35	17	70	91	87
36	24	18	36	25
37	12	23	3	8
38	5	-	-	4
39	2	-	-	1
40	2	-	-	-
41	2	-	-	-
42	-	-	3	-
Total ‰	1000	1000	1000	1000
Serial Numbers	-	-	-	-
Number of Samples	-	-	-	-
Number of Fish Measured	576	171	330	706
Mean Length (cm)	30.5	32.8	33.1	32.9
Mean Weight (kg)	-	-	-	-
Total Weight Landed (tons)	2967	153	5704	40663
Estimated Number Landed	-	-	-	-
Mesh(mm) or Hook(no.) Size	-	-	-	-
Range of Depths (fm)	-	-	-	-

<sup>1</sup> Inshore, Burgeo to Pass Island, Newfoundland<sup>2</sup> Fortune Bay, Newfoundland

TABLE 63

LENGTH FREQUENCIES - HERRING - 4R - 1968

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	November <sup>1</sup>	December <sup>1</sup>
COUNTRY	Canada (Newfoundland)	
CATCHES/LANDINGS	Catches	
COMMERCIAL/RESEARCH	Commercial	
23	2	-
24	2	-
25	2	-
26	2	-
27	14	15
28	17	8
29	14	-
30	24	15
31	52	23
32	143	108
33	178	231
34	222	200
35	161	139
36	86	146
37	48	69
38	31	31
39	2	15
Total ‰	1000	1000
Serial Numbers	-	-
Number of Samples	-	-
Number of Fish Measured	421	130
Mean Length (cm)	33.5	34.1
Mean Weight (kg)	-	-
Total Weight Landed (tons)	2327	1200
Estimated Number Landed	-	-
Mesh(mm) or Hook(no.) Size	-	-
Range of Depths (fm)	-	-

<sup>1</sup> Bonne Bay

TABLE 64 LENGTH FREQUENCIES - HERRING - 4T - 1968

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	May	June	August	October
COUNTRY	Canada (Maritimes)			
CATCHES/LANDINGS	Catches			
COMMERCIAL/RESEARCH	Commercial and Research			
20	2	-	-	-
21	4	-	-	5
22	11	57	-	-
23	8	138	-	-
24	17	133	-	-
25	20	74	-	5
26	20	67	-	5
27	22	20	3	40
28	32	5	-	55
29	38	3	3	90
30	49	7	19	155
31	110	32	50	115
32	324	47	117	210
33	248	143	174	145
34	74	158	275	100
35	20	86	213	40
36	1	20	101	20
37	-	10	37	10
38	-	-	7	5
39	-	-	1	-
Total ‰	1000	1000 <sup>1</sup>	1000	1000
Serial Numbers	-	-	-	-
Number of Samples	10	2	5	1
Number of Fish Measured	1422	405	700	200
Mean Length (cm)	31.8	29.4	34.4	31.9
Mean Weight (kg)	-	-	-	-
Total Weight Landed (tons)	-	-	-	-
Estimated Number Landed	-	-	-	-
Mesh(mm) or Hook(no.) Size	N/T	N/T	N/S	S
Range of Depth (fm)	-	-	-	-

<sup>1</sup> Includes 205 fish (one sample) from research vessel cruises



TABLE 65

LENGTH FREQUENCIES - HERRING - 4V - 1968

(FREQUENCIES IN %/oo - 1 CM GROUPS)

MONTH	June
COUNTRY	Canada (Maritimes)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Commercial
24	5
25	20
26	75
27	100
28	80
29	175
30	170
31	115
32	95
33	60
34	70
35	30
36	5
Total %/oo	1000
Serial Numbers	-
Number of Samples	1
Number of Fish Measured	200
Mean Length (cm)	30.4
Mean Weight (kg)	-
Total Weight Landed (tons)	-
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	W
Range of Depths (fm)	-

TABLE 66 LENGTH FREQUENCIES - HERRING - 4W - 1968

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	October
COUNTRY	Canada (Maritimes)
CATCHES/LANDINGS	Catches
COMMERCIAL/RESEARCH	Research
25	20
26	30
27	100
28	380
29	250
30	170
31	40
32	10
Total ‰	1000
Serial Numbers	-
Number of Samples	1
Number of Fish Measured	100
Mean Length (cm)	29.0
Mean Weight (kg)	-
Total Weight Landed (tons)	-
Estimated Number Landed	-
Mesh(mm) or Hook(no.) Size	T
Range of Depths (fm)	-

TABLE 67 LENGTH FREQUENCIES - HERRING - 5Y (NORTH) - 1968 (FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	April	June	July	October	November
COUNTRY	Canada (Maritimes)				
CATCHES/LANDINGS	Catches				
COMMERCIAL/RESEARCH	Commercial				
8	27	-	-	-	-
9	173	-	-	-	-
10	380	-	-	-	-
11	180	-	-	-	-
12	120	-	-	-	-
13	60	-	-	-	-
14	27	-	-	-	-
15	-	-	-	-	-
16	27	-	-	-	-
17	6	-	-	-	-
18	-	-	-	-	-
19	-	-	-	-	-
20	-	-	-	-	-
21	-	-	-	-	-
22	-	-	-	-	10
23	-	-	-	-	10
24	-	-	-	7	5
25	-	-	-	27	15
26	-	-	-	21	55
27	-	10	-	27	100
28	-	60	-	27	115
29	-	60	-	27	145
30	-	110	30	130	130
31	-	250	260	123	175
32	-	240	320	282	80
33	-	220	220	219	115
34	-	50	140	103	40
35	-	-	20	7	5
36	-	-	10	-	-
Total ‰	1000	1000	1000	1000	1000
Serial Numbers	-	-	-	-	-
Number of Samples	1	1	1	1	1
Number of Fish Measured	150	100	100	146	200
Mean Length (cm)	11.2	31.9	32.8	31.8	30.2
Mean Weight (kg)	-	-	-	-	-
Total Weight Landed (tons)	-	-	-	-	-
Estimated Number Landed	-	-	-	-	-
Mesh(mm) or Hook(no.) Size	S	T	S	T	S
Range of Depths (fm)	-	-	-	-	-

TABLE 68 LENGTH FREQUENCIES - HERRING - 5Z - 1968

(FREQUENCIES IN ‰ - 1 CM GROUPS)

MONTH	April	June	September	December
COUNTRY	Canada (Maritimes)			USSR
GATCHES/LANDINGS	Catches			
COMMERCIAL/RESEARCH	Commercial			
20	-	-	-	4
21	-	-	-	9
22	-	-	-	12
23	-	-	-	20
24	-	-	-	15
25	-	-	-	18
26	-	-	-	22
27	-	4	-	37
28	-	4	-	22
29	7	12	30	32
30	87	84	100	114
31	260	316	290	188
32	233	384	350	268
33	267	156	120	175
34	93	36	50	49
35	33	4	-	12
36	20	-	-	3
Total ‰	1000	1000	1000	1000
Serial Numbers	-	-	-	-
Number of Samples	1	2	1	7
Number of Fish Measured	150	250	100	2100
Mean Length (cm)	32.7	32.2	31.9	30.7
Mean Weight (kg)	-	-	-	0.202
Total Weight Landed (tons)	-	-	-	-
Estimated Number Landed	-	-	-	-
Mesh(mm) or Hook(no.) Size	8	8	8	40
Range of Depths (fm)	-	-	-	-

TABLE 69

AGE/LENGTH KEY - HERRING - 4Vs - 1968 (4th QUARTER)

COUNTRY		Germany, Federal Republic									
CATCHES/LANDINGS		NK									
COMMERCIAL/RESEARCH		NK									
STRUCTURES USED IN AGE DETERMINATION		Scales and Otoliths									
Year-Class Length Age Group (cm)	1963	1962	1961	1960	1959	<1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	5	6	7	8	9	>9		Months Within Quarter			
								Oct	Nov	Dec	
28	1	-	-	-	-	-	1			12	
29	4	1	-	-	-	-	5			42	
30	2	1	2	-	-	-	5			34	
31	1	2	-	-	-	-	3			34	
32	-	6	2	11	1	3	23			121	
33	-	-	-	9	8	10	27			180	
34	-	-	1	4	8	41	54			243	
35	-	-	-	-	4	40	44			213	
36	-	-	-	-	-	12	12			75	
37	-	-	-	-	-	7	7			34	
38	-	-	-	-	-	1	1			-	
39	-	-	-	-	-	3	3			12	
Total No. of Ages Read	8	10	5	24	21	117	185	1000			
Serial Numbers	No. of Age Samples 2										
	Number of fish measured each month										239
	Mean length of fish (cm) each month										34.09
	Mean weight of fish (kg) each month										0.289
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										

TABLE 70

AGE/LENGTH KEY - HERRING - 4W-4X - 1968 (2nd QUARTER)

COUNTRY		Poland												
CATCHES/LANDINGS		NK												
COMMERCIAL/RESEARCH		Commercial												
STRUCTURES USED IN AGE DETERMINATION		Otoliths												
Year- Class Length Age Group (cm)		1964	1963	1962	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILE			
		4	5	6	7	8	9	10	11		Months Within Quarter	Apr	May	Jun
26		-	1	-	-	-	-	-	-	1				0
27		-	2	-	-	-	-	-	-	2				1
28		5	17	-	-	-	-	-	-	22				19
29		1	45	-	-	-	-	-	-	46				97
30		-	62	1	-	-	-	-	-	63				182
31		-	29	9	2	-	-	-	-	40				137
32		-	7	18	8	7	-	-	-	40				116
33		-	-	6	6	7	6	-	-	25				150
34		-	-	1	-	15	9	4	-	29				146
35		-	-	-	-	7	6	7	3	23				101
36		-	-	-	-	-	-	1	2	3				40
37		-	-	-	-	-	-	-	-	-				9
38		-	-	-	-	-	-	-	-	-				2
39		-	-	-	-	-	-	-	-	-				0
Total No. of Ages Read		6	163	35	16	36	21	12	5	294	1000			
Serial Numbers											No. of Age Samples	3		
		Number of fish measured each month												4495
		Mean length of fish (cm) each month												
		Mean weight of fish (kg) each month												
		Total weight caught or landed (tons) each month												
		Estimated number caught or landed (whole numbers) each month												
		Range of depths (m) each month												
		Mesh size (mm)												

TABLE 71

## AGE/LENGTH KEY - HERRING - 4X - 1968 (1st QUARTER)

COUNTRY		Canada (Maritimes)									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial and Research									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Group (cm)	Age	1966	1965	1964	1963	1962	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		2	3	4	5	6		Months Within Quarter			
								Jan <sup>1</sup>	Feb <sup>1</sup>	Mar <sup>1</sup>	
7		1	-	-	-	-	1	-	-	1	
8		16	-	-	-	-	16	17	-	15	
9		85	-	-	-	-	85	68	9	54	
10		127	-	-	-	-	127	91	90	224	
11		167	-	-	-	-	167	170	221	258	
12		223	-	-	-	-	223	318	292	246	
13		176	-	-	-	-	176	233	249	134	
14		39	1	-	-	-	40	46	66	31	
15		8	3	-	-	-	11	8	16	7	
16		-	4	-	-	-	4	4	6	4	
17		-	17	-	-	-	17	11	14	7	
18		-	14	-	-	-	14	14	18	7	
19		-	11	-	-	-	11	9	16	6	
20		-	5	-	-	-	5	7	2	3	
21		-	1	-	-	-	1	1	1	1	
22		-	-	-	-	-	-	1	-	1	
23		-	-	1	-	-	1	1	-	<1	
24		-	-	-	-	-	-	-	-	-	
25		-	-	-	-	-	-	-	-	-	
26		-	-	-	-	-	-	-	-	-	
27		-	-	-	-	-	-	-	-	-	
28		-	-	-	-	-	-	-	-	-	
29		-	-	-	-	-	-	-	-	-	
30		-	-	-	-	-	-	-	-	-	
31		-	-	-	-	1	1	1	-	-	
Total No. of Ages Read		842	56	1	-	1	900				
Serial Numbers							No. of Age Samples	18			
		Number of fish measured each month						1605	1089	3382	
		Mean length of fish (cm) each month						12.5	12.8	12.0	
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)						S/T	S	S/T	

<sup>1</sup> Research and commercial samples combined

TABLE 71  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1968 (1st QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1966		1965		Total No. of Ages Read	LENGTH COMPOSITION PER MILE		
	2		3			Months Within Quarter		
						Jan	Feb	Mar
8		1	-		1	17	-	1
9		8	-		8	47	12	9
10		29	-		29	94	73	70
11		90	-		90	169	206	181
12		262	-		262	322	338	321
13		247	1		248	197	225	242
14		55	7		62	47	46	54
15		7	16		23	12	13	10
16		-	22		22	16	11	20
17		-	38		38	28	27	32
18		-	28		28	21	25	31
19		-	11		11	16	16	14
20		-	3		3	12	4	11
21		-	-		-	-	3	2
22		-	1		1	2	1	1
23		-	-		-	-	-	-
24		-	-		-	-	-	-
25		-	-		-	-	-	-
26		-	-		-	-	-	-
27		-	-		-	-	-	-
28		-	-		-	-	-	-
29		-	-		-	-	-	-
30		-	-		-	-	1	-
Total No. of Ages Read		699	127		826	1000	1001	999
Serial Numbers		No. of Age Samples 33						
		Number of fish measured each month			799	1650	1374	
		Mean length of fish (cm) each month			12.8	13.0	13.4	
		Mean weight of fish (kg) each month						
		Total weight caught or landed (tons) each month						
		Estimated number caught or landed (whole numbers) each month						
		Range of depths (m) each month						
		Mesh size (mm)						



TABLE 71  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1968 (2nd QUARTER)

COUNTRY		Canada (Maritimes)											
CATCHES/LANDINGS		Catches											
COMMERCIAL/RESEARCH		Commercial and Research											
STRUCTURES USED IN AGE DETERMINATION		Otoliths											
Year- Class Length Group (cm)	Age	1966	1965	1964	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		2	3	4	5	6	7	8	9		Months Within Quarter		
											Apr <sup>1</sup>	May <sup>1</sup>	Jun <sup>1</sup>
8	7	-	-	-	-	-	-	-	-	7	8	4	-
9	46	-	-	-	-	-	-	-	-	46	66	36	1
10	81	-	-	-	-	-	-	-	-	81	158	44	8
11	127	-	-	-	-	-	-	-	-	127	216	89	32
12	192	1	-	-	-	-	-	-	-	193	225	151	75
13	213	-	-	-	-	-	-	-	-	213	169	179	122
14	120	3	-	-	-	-	-	-	-	123	86	114	134
15	37	4	-	-	-	-	-	-	-	41	12	73	90
16	25	6	-	-	-	-	-	-	-	31	8	55	71
17	7	10	-	-	-	-	-	-	-	17	9	28	52
18	-	20	-	-	-	-	-	-	-	20	11	20	23
19	-	18	-	-	-	-	-	-	-	18	12	11	14
20	-	7	2	-	-	-	-	-	-	9	8	13	9
21	-	8	1	-	-	-	-	-	-	9	5	7	8
22	-	7	-	-	-	-	-	-	-	7	4	11	7
23	-	3	1	1	-	-	-	-	-	5	1	14	7
24	-	3	2	-	-	-	-	-	-	5	2	18	8
25	-	-	5	4	-	-	-	-	-	9	-	22	13
26	-	-	7	13	-	-	-	-	-	20	-	19	24
27	-	-	12	13	-	-	-	-	-	25	-	25	33
28	-	1	10	17	-	-	-	-	-	28	-	24	62
29	-	-	1	18	2	-	-	-	-	21	-	24	56
30	-	-	-	11	3	-	-	-	-	14	-	10	42
31	-	-	1	6	5	2	-	-	-	14	-	3	34
32	-	-	-	-	1	5	1	-	-	7	-	3	31
33	-	-	-	-	-	3	1	-	-	4	-	2	21
34	-	-	-	-	1	1	1	-	-	3	-	1	12
35	-	-	-	-	-	-	-	1	-	1	-	<1	8
36	-	-	-	-	-	-	-	-	-	-	-	-	3
37	-	-	-	-	-	-	-	-	-	-	-	-	<1
Total No. of Ages Read		855	91	42	83	12	11	3	1	1098			
Serial Numbers											No. of Age Samples 22		
		Number of fish measured each month									1877	2533	2909
		Mean length of fish (cm) each month									12.5	16.1	20.2
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)									S/T/W	T/W	W/S/T

1 Research and commercial samples combined

TABLE 71  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1968 (2nd QUARTER)

COUNTRY		United States					
CATCHES/LANDINGS		Catches					
COMMERCIAL/RESEARCH		Commercial					
STRUCTURES USED IN AGE DETERMINATION		Otoliths					
Year- Class Length (cm) Age Group (cm)	1966	1965	1964	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE Months Within Quarter		
	2	3	4		Apr	May	Jun
8	-	-	-	-	9	4	-
9	4	-	-	4	31	73	-
10	27	-	-	27	89	99	21
11	96	-	-	96	178	126	68
12	194	-	-	194	295	217	215
13	242	-	-	242	209	290	283
14	127	3	-	130	46	77	195
15	41	8	-	49	6	18	62
16	14	12	-	26	9	16	24
17	6	14	-	20	18	8	7
18	1	13	-	14	37	14	16
19	-	10	-	10	22	20	11
20	-	7	-	7	22	-	11
21	-	5	1	6	12	10	7
22	-	1	-	1	12	6	8
23	-	-	2	2	-	6	3
24	-	-	1	1	3	4	8
25	-	-	-	-	-	4	10
26	-	-	-	-	-	2	3
27	-	-	-	-	-	4	7
28	-	-	-	-	-	2	12
29	-	-	-	-	-	2	12
30	-	-	-	-	-	-	7
31	-	-	-	-	-	-	5
32	-	-	-	-	-	-	4
33	-	-	-	-	-	-	3
Total No. of Ages Read	752	73	4	829	998	1002	1002
Serial Numbers	No. of Age Samples 36						
	Number of fish measured each month				550	786	1331
	Mean length of fish (cm) each month				13.3	13.3	14.7
	Mean weight of fish (kg) each month						
	Total weight caught or landed (tons) each month						
	Estimated number caught or landed (whole numbers) each month						
	Range of depths (m) each month						
	Mesh size (mm)						

TABLE 71  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1968 (2nd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Landings									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1965	1964	1963	1962	1961	1960	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
									3	4	5
									Apr	May	Jun
19	1	-	-	-	-	-	-	1		-	2
20	-	-	-	-	-	-	-	-		-	-
21	1	-	-	-	-	-	-	1		-	2
22	3	-	-	-	-	-	-	3		20	-
23	12	-	-	-	-	-	-	12		67	4
24	10	6	-	-	-	-	-	16		87	5
25	1	24	1	-	-	-	-	26		80	25
26	-	24	4	-	-	-	-	28		67	32
27	-	34	56	-	-	-	-	90		213	105
28	-	4	96	1	-	-	-	101		160	139
29	-	-	51	44	1	-	-	96		147	133
30	-	-	2	80	5	-	-	87		93	132
31	-	-	-	15	63	4	-	82		47	135
32	-	-	-	-	28	36	-	64		13	112
33	-	-	-	-	-	22	16	38		-	69
34	-	-	-	-	-	-	39	39		6	69
35	-	-	-	-	-	-	11	11		-	20
36	-	-	-	-	-	-	6	6		-	11
37	-	-	-	-	-	-	3	3		-	5
Total No. of Ages Read	28	92	210	140	97	62	75	704			
Serial Numbers	No. of Age Samples 8										
	Number of fish measured each month									150	554
	Mean length of fish (cm) each month									27.6	30.4
	Mean weight of fish (kg) each month										
	Total weight caught or landed (tons) each month										
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month										
	Mesh size (mm)										

TABLE 71  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1968 (3rd QUARTER)

COUNTRY		Canada (Maritimes)																
CATCHES/LANDINGS		Catches																
COMMERCIAL/RESEARCH		Commercial and Research																
STRUCTURES USED IN AGE DETERMINATION		Otoliths																
Year- Class Length Group (cm)	Age	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE					
		2	3	4	5	6	7	8	9	10	11		Months Within Quarter	Jul <sup>1</sup>	Aug <sup>1</sup>	Sep <sup>1</sup>		
9		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
10		9	-	-	-	-	-	-	-	-	-	9	4	-	-	-	1	-
11		34	-	-	-	-	-	-	-	-	-	34	23	4	-	-	-	-
12		56	-	-	-	-	-	-	-	-	-	56	32	19	3	-	-	-
13		99	-	-	-	-	-	-	-	-	-	99	68	33	29	-	-	-
14		155	-	-	-	-	-	-	-	-	-	155	75	67	155	-	-	-
15		194	-	-	-	-	-	-	-	-	-	194	68	77	200	-	-	-
16		115	1	-	-	-	-	-	-	-	-	116	53	78	125	-	-	-
17		83	8	-	-	-	-	-	-	-	-	91	43	90	109	-	-	-
18		60	11	-	-	-	-	-	-	-	-	71	48	98	106	-	-	-
19		39	14	-	-	-	-	-	-	-	-	53	32	86	74	-	-	-
20		22	10	-	-	-	-	-	-	-	-	32	15	61	49	-	-	-
21		13	8	-	-	-	-	-	-	-	-	21	4	21	22	-	-	-
22		1	21	-	-	-	-	-	-	-	-	22	6	9	14	-	-	-
23		-	6	1	-	-	-	-	-	-	-	7	8	8	5	-	-	-
24		1	6	14	-	-	-	-	-	-	-	21	15	8	4	-	-	-
25		-	5	20	5	-	-	-	-	-	-	30	32	9	5	-	-	-
26		-	1	18	12	-	-	-	-	-	-	31	49	9	5	-	-	-
27		-	-	1	21	-	-	-	-	-	-	22	59	17	8	-	-	-
28		-	-	4	29	1	-	-	-	-	-	34	73	30	13	-	-	-
29		-	-	7	53	2	-	-	-	-	-	62	75	34	16	-	-	-
30		-	-	4	45	15	2	1	-	-	-	67	48	32	12	-	-	-
31		-	-	-	27	42	25	2	-	-	-	96	43	30	14	-	-	-
32		-	-	-	16	71	73	10	-	-	-	170	52	41	14	-	-	-
33		-	-	-	6	29	120	39	6	-	-	200	40	48	11	-	-	-
34		-	-	-	3	14	71	61	11	3	-	163	24	41	4	-	-	-
35		-	-	-	-	-	12	21	20	5	-	58	7	29	1	-	-	-
36		-	-	-	-	-	-	2	10	5	1	18	3	14	<1	-	-	-
37		-	-	-	-	-	-	-	1	4	-	5	1	5	-	-	-	-
38		-	-	-	-	-	-	-	-	-	-	-	<1	2	-	-	-	-
39		-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-
40		-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-
41		-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-
Total No. of Ages Read		881	91	69	217	174	303	136	48	17	1	1937	1001	1003	1001			
Serial Numbers		No. of Age Samples 31																
	Number of fish measured each month												6063	4134	2763			
	Mean length of fish (cm) each month												23.1	22.4	18.3			
	Mean weight of fish (kg) each month																	
	Total weight caught or landed (tons) each month																	
	Estimated number caught or landed (whole numbers) each month																	
	Range of depths (m) each month																	
	Mesh size (mm)												W/S/T/N	W/S/N	W/S/T			

1 Research and commercial samples combined

TABLE 71  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1968 (3rd QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Age Group (cm)	1966	1965	1964	1963	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
						Months Within Quarter			
	2	3	4	5		Jul	Aug	Sep	
7	-	-	-	-	-	-	-	1	
8	-	-	-	-	-	-	1	1	
9	-	-	-	-	-	-	-	2	
10	1	-	-	-	1	10	-	1	
11	7	-	-	-	7	32	7	-	
12	37	-	-	-	37	71	37	3	
13	112	-	-	-	112	161	109	57	
14	185	-	-	-	185	225	191	159	
15	207	1	-	-	208	154	219	153	
16	181	-	-	-	181	59	159	122	
17	141	9	-	-	150	41	122	160	
18	88	16	-	-	104	30	61	146	
19	41	27	-	-	68	23	23	78	
20	10	23	-	-	33	21	20	49	
21	1	14	-	-	15	19	9	20	
22	-	6	-	-	6	17	10	14	
23	-	7	3	1	11	14	3	8	
24	-	4	5	1	10	23	3	6	
25	-	4	7	2	13	29	3	6	
26	-	1	3	2	6	26	2	3	
27	-	-	3	1	4	17	4	4	
28	-	-	-	2	2	16	6	1	
29	-	-	-	2	2	5	3	3	
30	-	-	-	-	-	4	3	-	
31	-	-	-	-	-	2	2	1	
32	-	-	-	-	-	1	3	3	
Total No. of Ages Read	1011	112	21	11	1155	1001	1000	1001	
Serial Numbers	No. of Age Samples 51								
	Number of fish measured each month					7977	1477	1726	
	Mean length of fish (cm) each month					16.7	16.3	17.1	
	Mean weight of fish (kg) each month								
	Total weight caught or landed (tons) each month								
	Estimated number caught or landed (whole numbers) each month								
	Range of depths (m) each month								
	Mesh size (mm)								

TABLE 71  
(Cont'd)

AGE/LENGTH KEY - HERRING - 4X - 1968 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year- Class	1965	1964	1963	1962	1961	1960	-	Total No. of Ages Read	PER MILLE			
Length Group (cm)	3	4	5	6	7	8	8+		Jul	Aug	Sep	
18	1	-	-	-	-	-	-	1	-	2	-	
19	-	-	-	-	-	-	-	-	-	-	-	
20	1	-	-	-	-	-	-	1	-	2	-	
21	-	-	-	-	-	-	-	1	-	2	-	
22	1	-	-	-	-	-	-	1	-	2	-	
23	6	-	-	-	-	-	-	6	4	6	-	
24	9	9	2	-	-	-	-	20	23	11	6	
25	13	50	2	-	-	-	-	65	54	36	88	
26	7	105	15	-	-	-	-	127	93	79	181	
27	1	126	61	1	-	-	-	189	157	130	163	
28	-	15	155	4	-	-	-	174	128	139	125	
29	-	3	109	53	1	-	-	166	115	142	106	
30	-	-	28	63	11	-	-	102	64	93	63	
31	-	-	2	47	74	8	-	131	82	116	100	
32	-	-	-	1	80	81	3	165	140	122	100	
33	-	-	-	-	8	58	25	91	91	57	50	
34	-	-	-	-	-	5	41	46	37	41	6	
35	-	-	-	-	-	-	14	14	6	14	12	
36	-	-	-	-	-	-	3	3	2	3	-	
37	-	-	-	-	-	-	4	4	4	3	-	
Total No. of Ages Read	40	308	374	169	174	152	90	1307	1000	1000	1000	
Serial Numbers	No. of Age Samples 19											
	Number of fish measured each month							515	632	160		
	Mean length of fish (cm) each month							29.7	29.8	28.9		
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											

TABLE 71  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1968 (4th QUARTER)

COUNTRY		Canada (Maritimes)									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial and Research									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Group (cm)	Age	1967	1966	1965	1964	1963	1962	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		1	2	3	4	5	6		Months Within Quarter		
									Oct <sup>1</sup>	Nov <sup>1</sup>	Dec <sup>1</sup>
7		1	-	-	-	-	-	1	4	1	5
8		16	-	-	-	-	-	16	1	13	32
9		31	-	-	-	-	-	31	1	57	81
10		78	-	-	-	-	-	78	4	112	117
11		85	-	-	-	-	-	85	12	108	124
12		73	2	-	-	-	-	75	6	89	87
13		16	7	-	-	-	-	23	19	22	32
14		3	60	-	-	-	-	63	86	8	16
15		-	84	-	-	-	-	84	196	40	3
16		-	91	-	-	-	-	91	198	71	49
17		-	100	-	-	-	-	100	179	136	146
18		-	79	-	-	-	-	79	104	160	171
19		-	63	1	-	-	-	64	52	119	86
20		-	42	1	-	-	-	43	42	43	30
21		-	17	3	-	-	-	20	20	16	11
22		-	6	4	-	-	-	10	12	4	5
23		-	3	4	-	-	-	7	12	1	2
24		-	1	9	-	-	-	10	9	-	1
25		-	-	7	-	-	-	7	12	-	1
26		-	-	4	1	-	-	5	9	-	-
27		-	-	-	-	-	-	-	8	-	-
28		-	-	-	3	1	-	4	9	-	-
29		-	-	-	1	1	-	2	2	-	-
30		-	-	-	-	-	-	-	1	-	-
31		-	-	-	-	-	1	1	1	-	-
32		-	-	-	-	-	-	-	-	-	-
33		-	-	-	-	-	1	1	1	-	-
Total No. of Ages Read		303	555	33	5	2	2	900	1000	1000	999
Serial Numbers		No. of Age Samples 18									
		Number of fish measured each month							2000	900	1319
		Mean length of fish (cm) each month							17.4	15.4	14.8
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)							W/S/T	S/T	S/T

<sup>1</sup> Research and commercial samples combined

TABLE 71  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 4X - 1968 (4th QUARTER)

COUNTRY		United States								
CATCHES/LANDINGS		Catches								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class	Length Age Group (cm)	1967	1966	1965	1964	1963	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
		1	2	3	4	5		Months Within Quarter		
								Oct	Nov	Dec
7		-	-	-	-	-	-	-	-	2
8		-	-	-	-	-	-	-	-	20
9		5	-	-	-	-	5	1	9	57
10		24	-	-	-	-	24	1	49	94
11		28	-	-	-	-	28	-	40	82
12		44	2	-	-	-	46	6	45	45
13		16	13	-	-	-	29	18	19	37
14		-	48	-	-	-	48	115	38	3
15		-	92	-	-	-	92	185	99	12
16		-	145	-	-	-	145	208	169	58
17		-	131	-	-	-	131	197	179	165
18		-	102	-	-	-	102	113	132	172
19		-	60	1	-	-	61	80	82	166
20		-	32	1	-	-	33	41	52	63
21		-	12	1	-	-	13	14	21	18
22		-	1	3	-	-	4	4	16	5
23		-	1	-	-	-	1	2	9	-
24		-	-	-	-	-	-	5	12	2
25		-	-	-	-	-	-	5	7	-
26		-	-	2	2	-	4	1	5	-
27		-	-	-	-	2	2	1	5	-
28		-	-	-	1	3	4	1	9	-
29		-	-	-	-	-	-	1	-	-
30		-	-	-	-	-	-	-	-	-
31		-	-	-	-	-	-	-	-	-
32		-	-	-	-	-	-	-	-	-
33		-	-	-	-	-	-	1	-	-
Total No. of Ages Read		117	639	8	3	5	772	1000	999	1001
Serial Numbers		No. of Age Samples 35								
		Number of fish measured each month						1681	651	263
		Mean length of fish (cm) each month						17.1	16.8	15.8
		Mean weight of fish (kg) each month								
		Total weight caught or landed (tons) each month								
		Estimated number caught or landed (whole numbers) each month								
		Range of depths (m) each month								
		Mesh size (mm)								



TABLE 72

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1968 (1st QUARTER)

COUNTRY		United States							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Age Group (cm)	1966		1965		Total No. of Ages Read	LENGTH COMPOSITION PER MILE			
	2		3			Months Within Quarter			
						Jan	Feb	Mar	
8	-	-	-	-	-	3	20	-	
9	6	-	-	-	6	55	60	54	
10	23	-	-	-	23	181	100	100	
11	47	-	7	-	54	231	120	226	
12	65	-	12	-	77	200	320	231	
13	54	-	25	-	79	175	140	213	
14	15	-	15	-	30	102	40	36	
15	1	-	4	-	5	31	20	32	
16	-	-	1	-	1	6	160	59	
17	-	-	-	-	-	6	20	36	
18	-	-	-	-	-	6	-	14	
19	-	-	-	-	-	3	-	-	
Total No. of Ages Read		211		64		275		999 1000 1001	
Serial Numbers				No. of Age Samples 12					
		Number of fish measured each month				400		75 396	
		Mean length of fish (cm) each month				12.2		13.5 13.3	
		Mean weight of fish (kg) each month							
		Total weight caught or landed (tons) each month				297		313 1132	
		Estimated number caught or landed (whole numbers) each month							
		Range of depths (m) each month							
		Mesh size (mm)							

TABLE 72  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1968 (2nd QUARTER)

COUNTRY		United States									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Group (cm)	Age	1967	1966	1965	1964	1963	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		1	2	3	4	5		Months Within Quarter			
								Apr	May	Jun	
3		27	-	-	-	-	27	-	-	-	
4		468	-	-	-	-	468	-	-	-	
5		507	-	-	-	-	507	-	-	-	
6		41	-	-	-	-	41	-	-	-	
7		-	-	-	-	-	-	-	-	-	
8		1	-	-	-	-	-	-	-	-	
9		-	22	-	-	-	1	37	15	-	
10		-	41	-	-	-	22	116	145	21	
11		-	61	-	-	-	41	204	205	53	
12		-	174	1	-	-	61	179	70	79	
13		-	220	4	-	-	175	165	155	155	
14		-	143	17	-	-	224	95	215	174	
15		-	57	30	-	-	160	45	90	130	
16		-	33	65	-	-	87	43	30	85	
17		-	7	49	-	-	98	51	20	44	
18		-	1	43	-	-	56	49	10	56	
19		-	-	24	-	-	44	13	5	39	
20		-	-	10	-	-	24	2	5	34	
21		-	-	13	-	-	10	1	25	18	
22		-	-	5	-	-	13	-	-	13	
23		-	-	2	1	-	5	-	-	18	
24		-	-	3	2	-	3	-	5	6	
25		-	-	-	5	-	5	-	-	11	
26		-	-	1	6	1	6	-	5	5	
27		-	-	-	1	3	10	-	-	7	
28		-	-	-	1	-	1	-	-	14	
29		-	-	-	-	1	2	-	-	20	
30		-	-	-	-	-	1	-	-	11	
31		-	-	-	-	-	-	-	-	2	
32		-	-	-	-	-	-	-	-	4	
33		-	-	-	-	-	-	-	-	1	
Total No. of Ages Read		1044	759	267	16	6	2092	1000	1000	1000	
Serial Numbers							No. of Age Samples	48			
		Number of fish measured each month					1049	685	2203		
		Mean length of fish (cm) each month					12.3	9.9	11.8		
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month					2255	415	2578		
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 72  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1968 (2nd QUARTER)

COUNTRY		United States						Total No. of Ages Read	LENGTH COMPOSITION. PER MILLE		
CATCHES/LANDINGS		Landings							Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Apr	May	Jun
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Group (cm)	Age	1964	1963	1962	1961	1960	-				
		4	5	6	7	8	8+				
24		1	-	-	-	-	-	1			5
25		7	4	-	-	-	-	11			51
26		6	8	-	-	-	-	14			65
27		5	19	-	-	-	-	24			111
28		-	43	1	-	-	-	44			205
29		-	30	20	-	-	-	50			232
30		-	-	26	1	-	-	27			126
31		-	-	6	14	1	-	21			98
32		-	-	-	12	3	-	15			70
33		-	-	-	-	6	1	7			32
34		-	-	-	-	-	1	1			5
Total No. of Ages Read		19	104	53	27	10	2	215	1000		
Serial Numbers		No. of Age Samples 4									
		Number of fish measured each month						215			
		Mean length of fish (cm) each month						29.3			
		Mean weight of fish (kg) each month									
		Total weight caught or landed (tons) each month									
		Estimated number caught or landed (whole numbers) each month									
		Range of depths (m) each month									
		Mesh size (mm)									

TABLE 72  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1968 (3rd QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Commercial										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Group (cm)	Age	1967	1966	1965	1964	1963	Total No. of Ages Read	LENGTH COMPOSITION PER MILE				
		1	2	3	4	5		Months Within Quarter				
								Jul	Aug	Sep		
4	5	-	-	-	-	-	5	-	-	-		
5	153	-	-	-	-	-	153	-	1	-		
6	291	-	-	-	-	-	291	-	1	-		
7	92	-	-	-	-	-	92	1	-	-		
8	140	-	-	-	-	-	140	1	-	-		
9	52	-	-	-	-	-	52	5	-	-		
10	15	1	-	-	-	-	16	37	-	-		
11	7	24	-	-	-	-	31	61	14	12		
12	17	56	-	-	-	-	73	128	54	4		
13	3	220	-	-	-	-	223	149	154	29		
14	-	439	-	-	-	-	439	185	168	102		
15	-	470	3	-	-	-	473	195	188	144		
16	-	464	13	-	-	-	477	100	169	173		
17	-	353	28	-	-	-	381	51	92	181		
18	-	195	51	-	-	-	246	35	42	96		
19	-	69	54	-	-	-	123	22	45	60		
20	-	31	55	-	-	-	86	16	26	42		
21	-	9	60	-	-	-	69	5	11	48		
22	-	1	41	-	-	-	42	4	2	29		
23	-	-	34	-	-	-	34	3	8	9		
24	-	-	22	3	-	-	25	1	2	12		
25	-	-	16	-	-	-	16	-	1	11		
26	-	-	3	1	1	-	5	1	6	1		
27	-	-	-	-	1	-	1	-	7	3		
28	-	-	-	1	3	-	4	1	5	6		
29	-	-	-	-	2	-	2	-	2	1		
30	-	-	-	-	-	-	-	1	-	-		
31	-	-	-	-	-	-	-	-	2	-		
Total No. of Ages Read		775	2332	380	7	5	3499	1002	1000	995		
Serial Numbers		No. of Age Samples 115										
		Number of fish measured each month					3596	2090	2821			
		Mean length of fish (cm) each month					14.0	16.2	16.6			
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month					6247	7280	5482			
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 72  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1968 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION		
CATCHES/LANDINGS		Landings								PER MILLE		
COMMERCIAL/RESEARCH		Commercial								Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Jul	Aug	Sep
Year- Class Length Group (cm)	Age	1965	1964	1963	1962	1961	1960	-	Total No. of Ages Read	PER MILLE		
		3	4	5	6	7	8	8+		Jul	Aug	Sep
21		6	-	-	-	-	-	-	6	7	14	5
22		11	-	-	-	-	-	-	11	7	9	20
23		24	-	-	-	-	-	-	24	-	23	48
24		57	2	-	-	-	-	-	59	22	46	116
25		62	15	-	-	-	-	-	77	118	73	113
26		35	63	4	-	-	-	-	102	176	64	161
27		1	100	34	-	-	-	-	135	301	128	166
28		-	31	100	1	-	-	-	132	228	170	161
29		-	4	66	8	-	-	-	78	74	106	113
30		-	1	25	21	3	-	-	50	37	128	43
31		-	-	2	16	18	-	-	36	-	110	30
32		-	-	-	1	14	7	-	22	15	78	8
33		-	-	-	-	-	10	2	12	7	37	8
34		-	-	-	-	-	1	5	6	-	14	8
35		-	-	-	-	-	-	-	-	-	-	-
36		-	-	-	-	-	-	1	1	7	-	-
Total No. of Ages Read		196	216	231	47	35	18	8	751	999	1000	1000
Serial Numbers		No. of Age Samples 9										
		Number of fish measured each month							136	218	397	
		Mean length of fish (cm) each month							27.6	28.8	27.2	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										

TABLE 72  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1968 (4th QUARTER)

COUNTRY		United States						
CATCHES/LANDINGS		Catches						
COMMERCIAL/RESEARCH		Commercial						
STRUCTURES USED IN AGE DETERMINATION		Otoliths						
Year- Class Length Age Group (cm)	1967	1966	1965	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	1	2	3		Months Within Quarter			
					Oct	Nov	Dec	
7	-	-	-	-	2	-	-	
8	-	-	-	-	8	-	-	
9	3	-	-	3	9	-	-	
10	13	-	-	13	8	-	-	
11	14	-	-	14	10	-	-	
12	25	-	-	25	22	-	-	
13	16	1	-	17	9	-	-	
14	4	9	-	13	18	-	-	
15	-	45	-	45	90	8	-	
16	-	143	-	143	183	176	-	
17	-	171	-	171	189	224	-	
18	-	113	3	116	155	320	-	
19	-	89	6	95	112	88	-	
20	-	58	23	81	73	80	-	
21	-	14	30	44	45	40	-	
22	-	5	31	36	21	48	-	
23	-	-	21	21	17	16	-	
24	-	-	19	19	19	-	-	
25	-	-	11	11	3	-	-	
26	-	-	6	6	5	-	-	
27	-	-	-	-	-	-	-	
28	-	-	-	-	1	-	-	
Total No. of Ages Read	75	648	150	873	999	1000		
Serial Numbers	No. of Age Samples 75							
	Number of fish measured each month				1891	268		
	Mean length of fish (cm) each month				18.1	18.5		
	Mean weight of fish (kg) each month							
	Total weight caught or landed (tons) each month				3772	1227	613	
	Estimated number caught or landed (whole numbers) each month							
	Range of depths (m) each month							
	Mesh size (mm)							

TABLE 72

## AGE/LENGTH KEY - HERRING - 5Y (NORTH) - 1968 (4th QUARTER)

COUNTRY		United States								
CATCHES/LANDINGS		Landings								
COMMERCIAL/RESEARCH		Commercial								
STRUCTURES USED IN AGE DETERMINATION		Otoliths								
Year- Class Length Age Group (cm)	1964	1963	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	4	5	6	7	8		Months Within Quarter			
							Oct	Nov	Dec	
26	1	1	-	-	-	2	57			
27	3	1	-	-	-	4	114			
28	-	6	-	-	-	6	171			
29	-	7	3	-	-	10	286			
30	-	-	6	-	-	6	171			
31	-	-	2	1	-	3	86			
32	-	-	-	3	-	3	86			
33	-	-	-	-	1	1	29			
Total No. of Ages Read	4	15	11	4	1	35	1000			
Serial Numbers	No. of Age Samples 1									
	Number of fish measured each month						35			
	Mean length of fish (cm) each month						29.6			
	Mean weight of fish (kg) each month									
	Total weight caught or landed (tons) each month									
	Estimated number caught or landed (whole numbers) each month									
	Range of depths (m) each month									
	Mesh size (mm)									

TABLE 73

AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1968 (2nd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	Months Within Quarter		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								Months Within Quarter		
Year-Class	Age	1965	1964	1963	1962	1961	1960	-	Total No. of Ages Read	Months Within Quarter		
Length Group (cm)		3	4	5	6	7	8	8+		Apr	May	Jun
19		1	-	-	-	-	-	-	1		1	-
20		1	-	-	-	-	-	-	1		1	-
21		2	-	-	-	-	-	-	2		3	-
22		8	1	-	-	-	-	-	9		4	6
23		22	2	-	-	-	-	-	24		21	7
24		16	23	-	-	-	-	-	39		39	8
25		5	73	9	-	-	-	-	87		105	3
26		2	79	29	-	-	-	-	110		124	11
27		-	48	34	-	-	-	-	82		65	29
28		-	9	75	7	-	-	-	91		60	41
29		-	1	37	81	1	-	-	120		56	73
30		-	-	6	265	44	-	-	315		134	201
31		-	-	-	87	325	8	-	420		140	298
32		-	-	-	-	157	146	4	307		111	211
33		-	-	-	-	-	101	54	155		83	86
34		-	-	-	-	-	-	45	45		34	17
35		-	-	-	-	-	-	19	19		13	9
36		-	-	-	-	-	-	3	3		4	-
37		-	-	-	-	-	-	-	-		-	-
38		-	-	-	-	-	-	1	1		1	-
39		-	-	-	-	-	-	1	1		1	-
Total No. of Ages Read		57	236	190	440	527	255	127	1832			
Serial Numbers		No. of Age Samples 20										
		Number of fish measured each month								799	1033	
		Mean length of fish (cm) each month								29.4	29.2	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										



TABLE 73  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Y (SOUTH) - 1968 (3rd QUARTER)

COUNTRY		United States							Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Landings								Months Within Quarter		
COMMERCIAL/RESEARCH		Commercial							Total No. of Ages Read	MONTHS WITHIN QUARTER		
STRUCTURES USED IN AGE DETERMINATION		Otoliths								PER MILLE		
Year- Class	Age	1965	1964	1963	1962	1961	1960	-	Total No. of Ages Read	MONTHS WITHIN QUARTER		
Length Group (cm)		3	4	5	6	7	8	8+		Jul	Aug	Sep
21	1	-	-	-	-	-	-	-	1	-	-	10
22	4	-	-	-	-	-	-	-	4	-	-	41
23	9	-	-	-	-	-	-	-	9	-	3	82
24	23	-	-	-	-	-	-	-	23	-	17	186
25	43	7	-	-	-	-	-	-	50	-	73	289
26	14	40	1	-	-	-	-	-	55	-	143	124
27	-	67	9	-	-	-	-	-	76	11	213	82
28	-	14	67	1	-	-	-	-	82	34	190	134
29	-	-	50	14	1	-	-	-	65	60	130	52
30	-	1	7	51	6	1	-	-	66	111	90	-
31	-	-	-	22	76	5	-	-	103	246	57	-
32	-	-	-	1	48	-	4	-	111	274	50	-
33	-	-	-	-	-	-	28	-	58	149	20	-
34	-	-	-	-	-	3	30	-	33	83	13	-
35	-	-	-	-	-	-	1	8	9	26	-	-
36	-	-	-	-	-	-	-	1	1	3	-	-
37	-	-	-	-	-	-	-	1	1	3	-	-
Total No. of Ages Read		94	129	134	89	131	98	72	747	1000	999	1000
Serial Numbers		No. of Age Samples 8										
		Number of fish measured each month							350	300	97	
		Mean length of fish (cm) each month							32.1	28.5	25.8	
		Mean weight of fish (kg) each month										
		Total weight caught or landed (tons) each month										
		Estimated number caught or landed (whole numbers) each month										
		Range of depths (m) each month										
		Mesh size (mm)										



TABLE 74

## AGE/LENGTH KEY - HERRING - 5Z - 1968 (1st QUARTER)

COUNTRY		USSR							
CATCHES/LANDINGS		Catches							
COMMERCIAL/RESEARCH		Commercial							
STRUCTURES USED IN AGE DETERMINATION		Otoliths							
Year- Class Length Age Group (cm)	1964	1963	1962	1961	1960	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
	4	5	6	7	8		Jan	Feb	Mar
12	-	-	-	-	-	-			4
13	-	-	-	-	-	-			26
14	-	-	-	-	-	-			38
15	-	-	-	-	-	-			16
16	-	-	-	-	-	-			3
17	-	-	-	-	-	-			2
18	-	-	-	-	-	-			2
19	-	-	-	-	-	-			4
20	-	-	-	-	-	-			6
21	-	-	-	-	-	-			8
22	-	-	-	-	-	-			7
23	-	-	-	-	-	-			1
24	-	-	-	-	-	-			2
25	-	-	-	-	-	-			3
26	-	-	-	-	-	-			4
27	2	-	-	-	-	2			13
28	-	3	-	-	-	3			23
29	-	12	3	-	-	15			55
30	-	9	16	5	-	30			125
31	-	-	12	16	-	28			264
32	-	-	2	5	2	9			230
33	-	-	-	-	-	-			115
34	-	-	-	-	1	1			40
35	-	-	-	-	-	-			7
36	-	-	-	-	-	-			2
Total No. of Ages Read	2	24	33	26	3	88	1000		
Serial Numbers	No. of Age Samples 9								
	Number of fish measured each month								2531
	Mean length of fish (cm) each month								29.4
	Mean weight of fish (kg) each month								0.168
	Total weight caught or landed (tons) each month						37.0	59.0	503.0
	Estimated number caught or landed (whole numbers) each month								
	Range of depths (m) each month								82-146
	Mesh size (mm)								40

TABLE 74  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1968 (2nd QUARTER)

COUNTRY		USSR												
CATCHES/LANDINGS		Catches												
COMMERCIAL/RESEARCH		Commercial												
STRUCTURES USED IN AGE DETERMINATION		Otoliths												
Year- Length Group (cm)	Class Age	1965	1964	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE Months Within Quarter				
		3	4	5	6	7	8	9		Apr	May	Jun		
17		-	-	-	-	-	-	-	-	-	-	-	-	+
18		-	-	-	-	-	-	-	-	-	-	-	-	-
19		-	-	-	-	-	-	-	-	-	-	-	-	-
20		-	-	-	-	-	-	-	-	-	-	-	1	1
21		-	-	-	-	-	-	-	-	-	-	-	4	1
22		7	-	-	-	-	-	-	-	-	-	-	12	4
23		15	-	-	-	-	-	-	7	-	-	-	25	31
24		22	5	-	-	-	-	-	15	+	-	-	25	85
25		13	27	-	-	-	-	-	27	+	-	-	32	137
26		7	36	4	-	-	-	-	40	4	-	-	36	79
27		-	39	21	-	-	-	-	47	22	-	-	43	48
28		-	27	52	4	-	-	-	60	46	-	-	51	35
29		-	1	86	4	1	-	-	83	61	-	-	83	46
30		-	-	91	68	20	-	-	92	86	-	-	135	61
31		-	-	9	106	104	1	-	179	162	-	-	179	97
32		-	-	-	50	158	3	-	220	262	-	-	205	150
33		-	-	-	4	46	13	-	211	232	-	-	133	166
34		-	-	-	-	5	4	1	63	95	-	-	32	53
35		-	-	-	-	-	4	-	10	25	-	-	4	5
36		-	-	-	-	-	-	-	-	4	-	-	+	1
		-	-	-	-	-	-	-	-	1	-	-	+	-
Total No. of Ages Read		64	135	263	236	334	21	1	1054		1000	1000	1000	
Serial Numbers		No. of Age Samples 72												
		Number of fish measured each month							6472	10036	5755			
		Mean length of fish (cm) each month							30.7	29.0	28.2			
		Mean weight of fish (kg) each month							0.200	0.181	0.172			
		Total weight caught or landed (tons) each month							2626	2675	492			
		Estimated number caught or landed (whole numbers) each month												
		Range of depths (m) each month							46-119	46-137	64-183			
		Mesh size (mm)							40	40	40			

TABLE 74  
(Cont'd)

AGE/LENGTH KEY - HERRING - SZ - 1968 (3rd QUARTER)

COUNTRY		Germany, Federal Republic													
CATCHES/LANDINGS		NK													
COMMERCIAL/RESEARCH		NK													
STRUCTURES USED IN AGE DETERMINATION		Scales and Otoliths													
Year- Class Length Age Group (cm)		1966	1965	1964	1963	1962	1961	1960	1959	<1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
		2	3	4	5	6	7	8	9	>9		Months Within Quarter	Jul	Aug	Sep
20		1	-	-	-	-	-	-	-	-	1				
21		-	1	-	-	-	-	-	-	-	1				
22		-	-	-	-	-	-	-	-	-	-				
23		1	5	-	-	-	-	-	-	-	6			7	
24		-	10	-	-	-	-	-	-	-	10			14	
25		-	5	5	-	-	-	-	-	-	10			21	
26		-	5	14	1	-	-	-	-	-	20			34	
27		-	2	9	4	-	-	-	-	-	15			46	
28		-	-	11	19	2	1	2	-	-	35			64	
29		-	-	6	51	3	7	3	-	-	70			126	
30		-	-	1	44	22	20	14	-	-	101			168	
31		-	-	-	6	17	36	36	1	-	96			275	
32		-	-	-	1	4	14	18	-	2	39			164	
33		-	-	-	-	-	2	2	-	1	5			59	
34		-	-	-	-	-	1	-	-	3	4			20	
35		-	-	-	-	-	-	-	-	-	-			2	
Total No. of Ages Read		2	28	46	126	48	81	75	1	6	413	1000			
Serial Numbers		No. of Age Samples										5			
		Number of fish measured each month											888		
		Mean length of fish (cm) each month											30.59		
		Mean weight of fish (kg) each month											0.236		
		Total weight caught or landed (tons) each month													
		Estimated number caught or landed (whole numbers) each month													
		Range of depths (m) each month													
		Mesh size (mm)													

TABLE 74  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1968 (3rd QUARTER)

COUNTRY		Poland									Total No. of Ages Read	LENGTH COMPOSITION, PER MILLE	
CATCHES/LANDINGS		NK										Months Within Quarter	
COMMERCIAL/RESEARCH		Commercial									Total No. of Ages Read	Months Within Quarter	
STRUCTURES USED IN AGE DETERMINATION		Otoliths										Jul-Aug	
Year- Class	Age	1965	1964	1963	1962	1961	1960	1959	1958	1957	Total No. of Ages Read	Months Within Quarter	
Length Group (cm)		3	4	5	6	7	8	9	10	11		Jul-Aug	
22		7	-	-	-	-	-	-	-	-	7		1
23		6	-	-	-	-	-	-	-	-	6		1
24		15	-	-	-	-	-	-	-	-	15		3
25		20	5	-	-	-	-	-	-	-	25		6
26		13	42	3	-	-	-	-	-	-	58		11
27		6	55	3	-	-	-	-	-	-	64		16
28		2	69	31	2	-	-	-	-	-	104		26
29		-	37	95	4	1	2	-	-	-	139		46
30		-	9	132	25	9	6	-	-	-	181		105
31		-	-	96	67	60	29	-	-	-	252		180
32		-	-	11	43	127	167	7	-	-	355		309
33		-	-	-	10	47	239	41	4	-	341		234
34		-	-	-	-	4	74	28	5	-	111		53
35		-	-	-	-	-	9	8	10	4	31		8
36		-	-	-	-	-	-	2	2	1	5		1
Total No. of Ages Read		69	217	371	151	248	526	86	21	5	1694	1000	
Serial Numbers		No. of Age Samples									19		
		Number of fish measured each month										22766	
		Mean length of fish (cm) each month										31.25	
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											

TABLE 74  
(Cont'd)

AGE/LENGTH KEY - HERRING - 5Z - 1968 (3rd QUARTER)

COUNTRY		USSR									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group (cm)	1965	1964	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
									Months Within Quarter		
									Jul	Aug	Sep
17	-	-	-	-	-	-	-	-	+	-	-
18	-	-	-	-	-	-	-	-	+	-	-
19	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	+	-	+
22	1	-	-	-	-	-	-	1	1	-	+
23	-	-	-	-	-	-	-	1	3	+	1
24	1	13	-	-	-	-	-	-	11	1	2
25	-	52	2	-	-	-	-	14	15	4	10
26	-	50	13	-	-	-	-	54	14	6	27
27	-	30	54	-	-	-	-	63	19	12	36
28	-	18	70	1	-	-	-	84	24	20	50
29	-	5	118	9	-	-	-	89	35	37	70
30	-	-	142	29	4	-	-	132	62	64	95
31	-	-	33	111	63	4	-	175	108	118	148
32	-	-	1	83	244	21	-	211	156	187	211
33	-	-	-	16	176	48	-	349	260	307	217
34	-	-	-	-	28	21	-	240	211	174	93
35	-	-	-	-	5	7	-	49	73	57	28
36	-	-	-	-	-	1	1	12	8	12	10
37	-	-	-	-	-	-	-	2	+	1	2
								-	-	+	+
Total No. of Ages Read	2	168	433	249	520	102	1	1475	1000	1000	1000
Serial Numbers	No. of Age Samples 298										
	Number of fish measured each month							25178	31544	34175	
	Mean length of fish (cm) each month							31.1	31.3	30.4	
	Mean weight of fish (kg) each month							0.222	0.247	0.247	
	Total weight caught or landed (tons) each month							13815	11663	31151	
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month							55-110	46-119	37-82	
	Mesh size (mm)							40	40	40	

TABLE 74  
(Cont'd)

AGE/LENGTH KEY - HERRING - 52 - 1968 (3rd QUARTER)

COUNTRY		United States										
CATCHES/LANDINGS		Catches										
COMMERCIAL/RESEARCH		Research										
STRUCTURES USED IN AGE DETERMINATION		Otoliths										
Year- Class Length Age Group (cm)	1965	1964	1963	1962	1961	1960	-	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	3	4	5	6	7	8	9+		Months Within Quarter			
									Jul	Aug	Sep	
24	1	-	-	-	-	-	-	1			5	
25	1	1	-	-	-	-	-	2			10	
26	1	5	-	-	-	-	-	6			30	
27	-	6	2	-	-	-	-	8			40	
28	-	1	20	1	-	-	-	22			110	
29	-	-	22	18	-	-	-	40			200	
30	-	-	6	25	7	-	-	38			190	
31	-	-	-	9	23	1	-	33			165	
32	-	-	-	-	20	7	1	28			140	
33	-	-	-	-	-	10	2	12			60	
34	-	-	-	-	-	-	6	6			30	
35	-	-	-	-	-	-	4	4			20	
Total No. of Ages Read	3	13	50	53	50	18	13	200	1000			
Serial Numbers	No. of Age Samples 2											
	Number of fish measured each month											
	Mean length of fish (cm) each month											
	Mean weight of fish (kg) each month											
	Total weight caught or landed (tons) each month											
	Estimated number caught or landed (whole numbers) each month											
	Range of depths (m) each month											
	Mesh size (mm)											



TABLE 74  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 5Z - 1968 (4th QUARTER)

COUNTRY		USSR									
CATCHES/LANDINGS		Catches									
COMMERCIAL/RESEARCH		Commercial									
STRUCTURES USED IN AGE DETERMINATION		Otoliths									
Year- Class Length Age Group(cm)	1964	1963	1962	1961	1960	1959	Total No. of Ages Read	LENGTH COMPOSITION PER MILLE			
	4	5	6	7	8	9		Months Within Quarter			
								Oct	Nov	Dec	
19	-	-	-	-	-	-	-	2	-		
20	-	-	-	-	-	-	-	3	-		
21	-	-	-	-	-	-	-	2	-		
22	-	-	-	-	-	-	-	10	-		
23	-	-	-	-	-	-	-	19	+		
24	-	-	-	-	-	-	-	31	4		
25	-	-	-	-	-	-	-	38	20		
26	1	-	-	-	-	-	1	54	42		
27	5	-	-	-	-	-	5	46	28		
28	-	2	-	-	-	-	2	75	34		
29	-	14	2	-	-	-	16	104	55		
30	-	16	14	3	-	-	33	117	116		
31	-	3	34	59	1	-	97	165	227		
32	-	-	15	112	10	-	137	168	266		
33	-	-	2	50	13	-	65	96	120		
34	-	-	-	12	16	-	28	55	65		
35	-	-	-	-	4	5	9	14	20		
36	-	-	-	-	-	-	-	1	1		
Total No. of Ages Read	6	35	67	236	44	5	393	1000	1000		
Serial Numbers	No. of Age Samples 23										
	Number of fish measured each month							1810	4978		
	Mean length of fish (cm) each month							29.8	31.0		
	Mean weight of fish (kg) each month							0.212	0.230		
	Total weight caught or landed (tons) each month							3889.0	111.6		
	Estimated number caught or landed (whole numbers) each month										
	Range of depths (m) each month							73-219	64-119		
	Mesh size (mm)							40	40		

TABLE 74  
(Cont'd)

## AGE/LENGTH KEY - HERRING - 52 - 1968 (4th QUARTER)

COUNTRY		United States								Total No. of Ages Read	LENGTH COMPOSITION PER MILLE		
CATCHES/LANDINGS		Catches									Months Within Quarter		
COMMERCIAL/RESEARCH		Research									Oct	Nov	Dec
STRUCTURES USED IN AGE DETERMINATION		Otoliths											
Year- Class	Age	1966	1965	1964	1963	1962	1961	1960	-	Total No. of Ages Read			
Length Group (cm)		2	3	4	5	6	7	8	8+		Oct	Nov	Dec
19		1	-	-	-	-	-	-	-	1	1		
20		1	-	-	-	-	-	-	-	1	1		
21		-	-	-	-	-	-	-	-	-	-		
22		1	-	-	-	-	-	-	-	1	1		
23		-	1	-	-	-	-	-	-	1	1		
24		-	14	2	-	-	-	-	-	16	23		
25		-	10	4	1	-	-	-	-	15	22		
26		-	5	19	-	-	-	-	-	24	35		
27		-	-	21	9	-	-	-	-	30	43		
28		-	-	11	45	-	-	-	-	56	81		
29		-	-	-	90	16	-	-	-	106	153		
30		-	-	-	21	126	18	-	-	165	238		
31		-	-	-	1	96	72	2	-	171	246		
32		-	-	-	-	1	63	20	-	84	121		
33		-	-	-	-	-	2	8	8	18	26		
34		-	-	-	-	-	-	-	5	5	7		
Total No. of Ages Read		3	30	57	167	239	155	30	13	694	999		
Serial Numbers										No. of Age Samples 25			
		Number of fish measured each month								694			
		Mean length of fish (cm) each month								30.2			
		Mean weight of fish (kg) each month											
		Total weight caught or landed (tons) each month											
		Estimated number caught or landed (whole numbers) each month											
		Range of depths (m) each month											
		Mesh size (mm)											