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Efficiency of Sampling the Major Fisheries of the Northwest Atlantic in 1977

by

Assistant Executive Secretary

Introduction

Quantitative analyses of sampling data reported to the ICNAF Secretariat for the years 1975 and 1976 in relation to nominal catches indicated that only 54% of the 52 stocks examined for 1975 and 67% of the 70 stocks examined for 1976 could be considered as having been adequately sampled for length frequencies (Sum. Doc. 77/VI/31 and 78/VI/11). Similar analyses of 1973 and 1974 data (Sum. Doc. 75/11 and 76/VI/33) indicated that about 60% of the stocks were adequately sampled for length. The present review utilizes sampling data and nominal catches reported to the Secretariat for 1977.

Materials and Methods

At the 1975 Annual Meeting, STACRES reviewed the minimum sampling requirements and recommended that each country should sample its commercial fisheries at the rate of one length sample per 1,000 tons of a species caught in each quarter of the year, with a corresponding age sample being one fish for each centimeter length group in the length frequency sample for species which can be aged.

Taking one length sample per 1,000 tons of fish as the baseline, the present analysis utilizes the nominal catch statistics for 1977 and commercial sampling data reported to the Secretariat for that year (Sum. Doc. 79/VI/12). Pure research vessel data were not generally used, except in cases where it appeared obvious that the samples were taken with commercial-sized gear and seemed to be associated with significant commercial fisheries.

All available data for 1977 are summarized in Table 1 by species, country, division and quarter of the year. The symbol "..." indicates that no age-length keys were reported with the length composition data submitted.

The data for 20 species involving 66 stocks are reviewed in Table 2. The nominal catches (000 tons) are listed by quarter for all countries whose catches were considered large enough to warrant the collection of sampling data whether or not such data were reported to the Secretariat. The % value in parentheses represent the percentage of the total catch covered by the catches listed for each stock.

The "sampling efficiency" is defined as the ratio of the "number of length samples" (from Table 1) to the "nominal catch in 1000-ton units". When sampling data were reported for cases where the nominal catch was less than 500 tons, the sampling efficiency is simply the number of samples (in parentheses). Asterisks (**) under "sampling efficiency" in the right portion of Table 2 indicate the absence of sampling data. Efficiency values less than 1.0 indicate that sampling for length was below the minimum required level, whereas values greater than 1.0 indicate the extent by which the minimum level was exceeded. No attempt is made in this review to assess the adequacy of sampling for age-length keys.

Abbreviations for countries correspond with those generally used in ICNAF statistical tabulations. Alpha-numeric 3-letter codes for species in the heading of Table 3 correspond with those recommended by the CWP as follows:

COD - Cod
HAD - Haddock
RED - Redfish
HKS - Silver hake
HKR - Red hake
POK - Pollock
RNG - Roundnose grenadier
HER - Herring
MAC - Mackerel
ARG - Argentine
ALE - Alewife
BUT - Butterfish

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PLA - American plaice
WIT - Witch flounder
YEL - Yellowtail flounder
GHL - Greenland halibut
CAP - Capelin
SQI - Squid-*Illex*
SQL - Squid-*Loligo*
PRA - Deepwater prawn (shrimp)

Results

Table 3 contains a summary of the information presented in Table 2 by stock area and country. Each entry in the table represents the nominal catch to the nearest 1,000 tons (on an annual basis) and the sampling efficiency as defined above. Asterisks (***) following an entry for nominal catch indicates that no sampling data were reported to the Secretariat. Nominal catches less than 1,000 tons are not generally listed; however, when sampling data were available, catches less than 1,000 tons are indicated by "+".

The following breakdown of the finfish, squid and shrimp stocks by sampling efficiency factors for 1977, together with the results for 1976, reflect in a very general way the adequacy (or inadequacy) of sampling for length in these years:

	1977			1976		
Species	No. of stocks	Samp. efficiency <1.0	Samp. efficiency ≥1.0	No. of stocks	Samp. efficiency <1.0	Samp. efficiency ≥1.0
Cod	12	3	8	12	8	4
Haddock	3	1	2	3	-	3
Redfish	9	3	6	9	3	6
Silver hake	4	3	1	4	-	4
Red hake	2	2	-	2	-	2
Pollock	2	1	1	2	1	1
American plaice	6	2	4	6	4	2
Witch flounder	5	2	3	5	1	4
Yellowtail flounder	2	1	1	3	1	2
Greenland halibut	2	-	2	2	1	1
Roundnose grenadier	2	2	-	2	-	2
Herring	5	3	2	5	1	4
Mackerel	2	1	1	2	-	2
Argentine	1	-	1	1	-	1
Alewife	1	1	-	1	1	-
Butterfish	1	1	-	1	-	1
Capelin	2	1	1	2	1	1
Squid-*Illex*	2	1	1	2	-	2
Squid-*Loligo*	1	1	-	1	-	1
Shrimp (PRA)	1	1	-			
Total	64	30	34	65	22	43

With reference to the sampling data indicated in Table 1 and the sampling efficiencies given in Tables 2 and 3, it should be noted that no sampling data for 1977 have yet been received from the United States. Consequently, the sampling efficiencies for many of the stocks in Subareas 5 and 6 are lower than they would be if USA data were included.

For some of the stocks with sampling efficiency factors greater than 1.0 (Table 3), sampling cannot be considered adequate when some countries with significant catches consistently report no commercial sampling data. Some significant deficiencies in reporting are as follows:

Canada	- Herring in Subarea 3 and Div. 4RST - Squid-*Illex* in Subareas 3 and 4
Denmark(G)	- Shrimp in Subarea 1
F. R. Germany	- Redfish in Subarea 1
German D. R.	- Mackerel in Subareas 5 and 6
Poland	- Mackerel in Subareas 5 and 6
Portugal	- No samples from otter trawl cod fishery

Spain	- Squid in Subareas 3 to 6
USSR	- Redfish in Div. 3O - Silver hake, red hake and mackerel in Subareas 5 and 6 - Capelin in Div. 3LNOP
Denmark(F) France(M) Iceland Japan Romania USA	- No commercial sampling data reported to the Secretariat

Conclusions

The sampling data available in the Secretariat for 64 stocks noted in the foregoing table indicate that just over 50% of the stocks were adequately sampled for length composition in 1977, in contrast to 67% in 1976. A major reason for this apparent decrease is the almost complete absence of data for most of the stocks in Subareas 5 and 6.

In the present analysis, only the quantitative aspect of length sampling has been considered. However, it was observed that, in many cases where length sampling appeared to be quite adequate, no age-length keys were provided to allow the calculation of age compositions.

References

Sum. Doc. 75/11. Efficiency of sampling the major fisheries of the Northwest Atlantic in 1973. Serial No. 3466.

Sum. Doc. 76/VI/33. Adequacy of sampling TAC stocks, 1974. Serial No. 3918.

Sum. Doc. 77/VI/31. Efficiency of sampling the major fisheries of the Northwest Atlantic in 1975. Serial No. 5097.

Sum. Doc. 78/VI/11. Efficiency of sampling the major fisheries of the Northwest Atlantic in 1976. Serial No. 5213.

Sum. Doc. 79/VI/12. Provisional lists of sampling data for 1977. Serial No. 5422.

Table 1. Summary of sampling data by species, country and division, 1977.

	ICNAF Div.	Quarter 1 No.	Quarter 1 Meas.	Quarter 1 Aged	Quarter 2 No.	Quarter 2 Meas.	Quarter 2 Aged	Quarter 3 No.	Quarter 3 Meas.	Quarter 3 Aged	Quarter 4 No.	Quarter 4 Meas.	Quarter 4 Aged	Gears sampled
COD														
CAN-M	3L	-	-	-	-	-	-	1	300	40	-	-	-	OTB
	3Ps	-	-	-	2	613	70	1	203	33	1	182	35	OTB
	4R	9	2651	454	11	3330	543	-	-	-	-	-	-	OTB
	4S	-	-	-	1	353	67	2	400	91	-	-	-	OTB
	4T	-	-	-	20	4057	747	48	9534	1733	5	1005	168	OTB,SN,GN,LHP
	4Vn	5	1464	240	2	497	99	3	824	97	6	1700	233	OTB,SN
	4Vs	6	1612	316	2	538	81	-	-	-	-	-	-	OTB
	4W	5	1446	264	2	452	93	-	-	-	2	432	78	OTB,LL
	4X	5	1202	290	1	172	60	7	1535	335	3	717	178	OTB,LL
	5Ze	1	124	49	3	896	106	8	2349	308	-	-	-	OTB
CAN-N	2H	-	-	-	-	-	-	4	379	...	-	-	-	OTB
	2J	-	-	-	-	-	-	28	4498	(645)	-	-	-	OTB,GN,LHP,FPN
	3K	6	2636	349	5	1787	(1454)	35	9509	(1435)	2	689	(424)	OTB,GN,LL,LHP,FP
	3L	2	907	262	32	11452	(1879)	37	9237	(2018)	7	2593	363	OTB,GN,LL,LHP,FP
	3M	-	-	-	-	-	-	-	-	-	3	1746	201	OTB
	3N	-	-	-	2	1679	272	2	599	103	-	-	-	OTB
	3O	-	-	-	3	1791	238	-	-	-	1	582	60	OTB
	3Pn	11	5565	653	-	-	-	-	-	-	-	-	-	OTB,LL
	3Ps	-	-	-	13	4605	(822)	12	3061	(889)	9	4509	(769)	OTB,LL,FPN
	4R	5	3272	583	20	8867	(1333)	14	2362	(714)	1	155	(391)	OTB,GN,FPN
DEN-G	1B	-	-	-	3	1399	216	1	274	...	-	-	-	FPN
	1D	1	1307	284	5	2734	740	-	-	-	14	1191	781	OTB,GN,FPN
	1E	1	1170		1	1033	228	-	-	-	-	-	-	OTB
	1F	-	-	-	-	-	-	2	2175	256	-	-	-	OTB
FRA-SP	4R	1	274	188	-	-	-	-	-	-	-	-	-	OTB
FRG	1F	4	1843	452	-	-	-	-	-	-	-	-	-	OTB
	2J	30	19596	633	-	-	-	-	-	-	-	-	-	OTB
	3K	2	498		-	-	-	-	-	-	-	-	-	OTB
GDR	2J	1	142	142	-	-	-	-	-	-	-	-	-	OTB
	3K	1	33	33	-	-	-	-	-	-	-	-	-	OTB
POL	2J	40	16356	1657	-	-	-	-	-	-	-	-	-	OTB
	3K	4	1543	154	-	-	-	-	-	-	-	-	-	OTB
POR	1B	-	-	-	-	-	-	5	248	...	-	-	-	GN
	1C	-	-	-	4	204	...	5	294	...	-	-	-	GN
	1D	-	-	-	2	73	...	-	-	-	-	-	-	GN
	3L	-	-	-	-	-	-	15	1523	202	-	-	-	GN
	3N	-	-	-	-	-	-	10	1099	251	-	-	-	GN
	3O	-	-	-	-	-	-	3	185	84	-	-	-	GN
SPA	3L	18	6652	870	20	8208	882	2	1139	107	-	-	-	PTB
	3M	-	-	-	5	1762	220	-	-	-	-	-	-	PTB
	3N	-	-	-	19	9671	1300	18	9017	488	-	-	-	PTB
	3O	2	377	175	2	545	115	-	-	-	-	-	-	PTB
USSR	2J	44	15234	1198	-	-	-	-	-	-	-	-	-	OTB
	3M	14	3899	...	-	-	-	-	-	-	-	-	-	OTB
	4W	-	-	-	-	-	-	8	1590	...	-	-	-	OTB
UK	3K	1	222	...	-	-	-	-	-	-	-	-	-	OTB
	3M	-	-	-	1	616	...	-	-	-	-	-	-	OTB
HADDOCK														
CAN-M	3Ps	1	206	46	-	-	-	-	-	-	1	216	42	OTB
	4W	2	436	70	5	1065	170	4	805	122	7	1614	197	OTB,SN,LL
	4X	46	9903	1507	14	3086	466	12	2407	383	8	1577	240	OTB,LL,LHP
	5Ze	1	236	40	2	427	71	8	1609	239	-	-	-	OTB
CAN-N	3Ps	-	-	-	5	1726	...	-	-	-	4	1734	...	OTB
USSR	4W	-	-	-	-	-	-	14	2703	...	-	-	-	OTB

Table 1. (Cont'd)

	ICNAF Div.	Quarter 1 No.	Meas.	Aged	Quarter 2 No.	Meas.	Aged	Quarter 3 No.	Meas.	Aged	Quarter 4 No.	Meas.	Aged	Gears sampled
REDFISH														
CAN-M	2J	1	191	...	-	-	-	2	400	...	-	-	-	OTB
	3L	-	-	-	-	-	-	2	400	...	1	200	...	OTB
	3M	-	-	-	3	600	...	1	200	...	-	-	-	OTB,OTM
	3O	-	-	-	1	201	...	-	-	-	-	-	-	OTB
	3Pn	1	201	...	-	-	-	-	-	-	-	-	-	OTM
	3Ps	1	201	...	1	200	...	7	1411	...	4	813	...	OTB,OTM
	4R	4	772	...	6	1184	...	10	1954	...	-	-	-	OTB,OTM
	4S	3	600	...	30	6045	...	-	-	-	-	-	-	OTB,OTM
	4T	-	-	-	6	1131	...	4	800	...	-	-	-	OTB,OTM
	4Vn	3	602	...	-	-	-	5	1001	...	1	206	...	OTB,OTM
	4Vs	3	697	...	1	199	...	6	1200	...	1	200	...	OTB,OTM
	4W	1	197	...	2	401	...	4	800	...	1	200	...	OTB
	4X	-	-	-	2	401	...	-	-	-	-	-	-	OTB
CAN-N	2H	-	-	-	-	-	-	2	959	...	-	-	-	OTB
	2J	-	-	-	-	-	-	2	851	...	1	557	...	OTB
	3K	4	1616	...	1	365	...	2	785	...	-	-	-	OTB
	3L	-	-	-	3	1099	...	7	3581	...	10	4155	...	OTB,OTM
	3M	-	-	-	3	1503	...	6	2778	...	-	-	-	OTM
	3N	-	-	-	-	-	-	1	401	...	-	-	-	OTM
	3O	1	439	...	-	-	-	2	3340	...	-	-	-	OTB
	3Pn	1	404	...	-	-	-	3	1347	...	-	-	-	OTB
	3Ps	1	232	...	1	642	...	6	2275	...	3	1806	...	OTB,OTM
	4R	1	349	...	-	-	-	-	-	-	-	-	-	OTB
FRG	2J	6	3488	432	-	-	-	-	-	-	-	-	-	OTB
	3K	1	442	387	-	-	-	-	-	-	-	-	-	OTB
SPA	3L	1	298	...	6	1188	...	-	-	-	-	-	-	PTB
	3M	-	-	-	1	264	...	-	-	-	-	-	-	PTB
USSR	3K	-	-	-	-	-	-	(4)	947	...	-	-	-	OTB
	3L	(30)	6678	288	-	-	-	-	-	-	-	-	-	OTB
	3M	(20)	4528	296	(9)	1913	459	-	-	-	-	-	-	OTB
	4W	-	-	-	-	-	-	6	1186	...	-	-	-	OTB
SILVER HAKE														
BUL	4W	-	-	-	-	-	-	2	400	...	-	-	-	OTM
CUBA	4W	-	-	-	-	-	-	7	2750	...	-	-	-	OTB
USSR	4W	-	-	-	25	5030	258	343	68698	700	-	-	-	OTB,OTM
RED HAKE		(NO SAMPLING DATA REPORTED												
POLLOCK														
CAN-M	4Vs	-	-	-	-	-	-	2	498	60	-	-	-	OTB
	4W	3	699	186	3	800	147	7	1958	339	8	2308	366	OTB
	4X	20	4417	789	7	1647	257	5	1064	154	5	1203	202	OTB,GN
	5Ze	4	860	162	-	-	-	1	219	39	1	268	41	OTB
A. PLAICE														
CAN-M	4R	1	190	41	2	400	90	-	-	-	-	-	-	OTB
	4S	-	-	-	-	-	-	1	200	37	-	-	-	OTB
	4T	-	-	-	9	1764	286	22	4354	721	-	-	-	OTB,SN
	4Vn	2	352	76	6	1200	231	10	2000	353	-	-	-	OTB,SN
	4Vs	2	400	86	3	600	123	3	572	117	-	-	-	OTB,SN
	4W	2	407	97	-	-	-	-	-	-	-	-	-	OTB
	4X	-	-	-	-	-	-	1	200	...	-	-	-	OTB
CAN-N	3K	7	3318	705	4	1490	409	9	2153	569	-	-	-	OTB,GN
	3L	2	1174	266	6	4593	483	9	3335	647	9	3737	491	OTB
	3N	3	869	361	4	1936	345	9	2797	640	6	2125	595	OTB
	3O	-	-	-	2	689	158	4	1566	227	-	-	-	OTB
	3Ps	2	1224	429	3	1561	317	-	-	-	3	1241	313	OTB
SPA	3L	12	3397	...	-	-	-	-	-	-	-	-	-	PTB
	3N	2	557	...	1	160	...	-	-	-	-	-	-	PTB
	3O	1	181	...	1	91	...	-	-	-	-	-	-	PTB
USSR	3L	-	-	-	-	-	-	11	5791	...	-	-	-	OTB

Table 1. (Cont'd)

	ICNAF Div.	Quarter 1 No.	Quarter 1 Meas.	Quarter 1 Aged	Quarter 2 No.	Quarter 2 Meas.	Quarter 2 Aged	Quarter 3 No.	Quarter 3 Meas.	Quarter 3 Aged	Quarter 4 No.	Quarter 4 Meas.	Quarter 4 Aged	Gears sampled
WITCH FLOUNDER														
CAN-M	3K	1	200	...	-	-	-	-	-	-	-	-	-	OTB
	4R	1	106	34	-	-	-	-	-	-	-	-	-	OTB
	4T	-	-	-	1	200	31	-	-	-	-	-	-	SN
	4Vn	1	200	29	4	800	134	3	600	94	-	-	-	OTB,SN
	4Vs	5	1000	164	-	-	-	-	-	-	-	-	-	OTB
	4W	2	392	60	2	400	...	-	-	-	-	-	-	OTB,SN
	4X	1	199	19	-	-	-	-	-	-	-	-	-	OTB
CAN-N	3K	4	2626	714	3	1407	289	10	1894	453	1	508	156	OTB,GN
	3L	-	-	-	-	-	-	2	1194	280	1	341	59	OTB,GN
	3N	1	900	203	2	1300	301	-	-	-	-	-	-	OTB
	3O	6	3824	733	-	-	-	-	-	-	1	835	115	OTB
	3Ps	1	109	72	3	2176	345	-	-	-	-	-	-	OTB
	4R	5	2140	603	-	-	-	-	-	-	-	-	-	OTB
	4S	-	-	-	1	735	116	-	-	-	-	-	-	OTB
POL	3K	2	1490	214	-	-	-	-	-	-	-	-	-	OTB
USSR	3K	-	-	-	-	-	-	-	-	-	12	1049	...	OTB
YELLOWTAIL FLOUNDER														
CAN-M	4Vs	-	-	-	3	600	99	3	600	104	-	-	-	OTB
CAN-N	3L	-	-	-	5	4322	252	5	3048	326	-	-	-	OTB
	3N	1	405	90	5	2863	481	4	2129	284	10	4444	544	OTB
	3O	1	691	94	2	1182	145	2	789	126	1	300	61	OTB
	3Ps	1	938	255	1	526	87	-	-	-	1	363	87	OTB
SPA	3N	3	968	...	2	509	...	2	460	...	-	-	-	PTB
	3O	1	214	...	2	480	...	-	-	-	-	-	-	PTB
GREENLAND HALIBUT														
CAN-N	2H	-	-	-	-	-	-	1	150	148	-	-	-	OTB
	2J	-	-	-	-	-	-	2	436	(752)	1	1598	(692)	OTB,GN
	3K	5	2294	770	3	652	299	17	4524	1216	1	726	157	OTB,GN
	3L	-	-	-	2	640	(345)	7	2278	(885)	1	310	(540)	GN
	4R	1	47	46	-	-	-	-	-	-	-	-	-	OTB
GDR	2G	-	-	-	-	-	-	1	210	210	-	-	-	OTB
	2H	-	-	-	1	448	400	1	270	270	1	145	145	OTB
POL	2J	1	852	...	-	-	-	-	-	-	-	-	-	OTB
	3K	2	1817	...	-	-	-	-	-	-	-	-	-	OTB
USSR	0B	-	-	-	-	-	-	25	8480	...	36	8574	...	OTB
	1C	-	-	-	-	-	-	18	6509	...	-	-	-	OTB
	2J	8	1982	...	-	-	-	-	-	-	-	-	-	OTB
WINTER FLOUNDER														
CAN-M	4T	-	-	-	4	649	139	-	-	-	-	-	-	OTB
	4X	-	-	-	-	-	-	4	802	156	-	-	-	OTB
GREENLAND COD														
DEN-G	1B	-	-	-	2	633	156	-	-	-	-	-	-	FPN
	1D	-	-	-	3	1434	...	-	-	-	5	71	...	FPN,GN
POR	1B	-	-	-	-	-	-	2	252	...	-	-	-	GN
	1C	-	-	-	4	240	...	5	169	...	-	-	-	GN
	1D	-	-	-	2	127	...	-	-	-	-	-	-	GN
ROUNDNOSE GRENADIER														
USSR	3K	9	3990	...	-	-	-	-	-	-	-	-	-	OTB
WHITE HAKE														
CAN-M	3Ps	2	318	...	-	-	-	-	-	-	-	-	-	LL
	4R	2	402	...	-	-	-	-	-	-	-	-	-	OTB
	4T	-	-	-	2	200	...	3	600	...	-	-	-	OTB,GN
	4Vn	-	-	-	1	164	...	2	400	...	-	-	-	SN
	4Vs	1	204	...	-	-	-	-	-	-	-	-	-	OTB
	4X	-	-	-	1	169	...	-	-	-	-	-	-	LL

Table 1. (Cont'd)

	ICNAF Div.	Quarter 1 No.	Quarter 1 Meas.	Quarter 1 Aged	Quarter 2 No.	Quarter 2 Meas.	Quarter 2 Aged	Quarter 3 No.	Quarter 3 Meas.	Quarter 3 Aged	Quarter 4 No.	Quarter 4 Meas.	Quarter 4 Aged	Gears sampled
HERRING														
CAN-M	4Vn	-	-	-	5	902	364	-	-	-	59	9034	844	OTM,FPN,PS
	4W	50	9287	2961	19	2796	835	-	-	-	5	875	136	OTM,PS
	4X	31	7325	1065	172	34390	5998	293	57972	7471	66	17491	1463	FPN,FWR,GN,PS
	5Y	-	-	-	1	132	28	-	-	-	-	-	-	PS
	5Z	-	-	-	-	-	-	1	841	32	-	-	-	PS
POL	5Ze	1	1056	130	-	-	-	-	-	-	-	-	-	OTB
MACKEREL														
BUL	5	31	6521	1565	-	-	-	-	-	-	-	-	-	OTM
CAN-N	3K	-	-	-	-	-	-	3	90	90	1	50	50	FPN,PS
	3L	-	-	-	-	-	-	15	745	745	4	198	198	FPN,PS,SB
	4R	-	-	-	-	-	-	2	90	89	-	-	-	GN
	4T	-	-	-	1	50	50	-	-	-	-	-	-	PS
USSR	4W	-	-	-	4	792	...	16	3126	...	-	-	-	OTB,OTM
ARGENTINE														
USSR	4W	-	-	-	-	-	-	18	3575	392	-	-	-	OTB
CAPELIN														
BUL	4W	-	-	-	2	400	...	-	-	-	-	-	-	OTM
CAN-N	2J	-	-	-	-	-	-	1	49	49	2	100	100	DN,OTM
	3K	-	-	-	17	839	839	2	89	89	16	800	800	CN,DN,FPN,OTM,SB
	3L	5	273	270	56	2771	2771	18	900	900	-	-	-	CN,DN,FPN,OTM,OTB, PS
	3N	-	-	-	20	954	954	-	-	-	-	-	-	OTB,OTM,PS
	3O	-	-	-	2	115	115	-	-	-	-	-	-	OTB
	3P	9	360	360	18	967	967	-	-	-	-	-	-	OTB,OTM,SB
	4R	-	-	-	37	1847	1847	1	26	26	-	-	-	CN,DN,OTB,PS
	4S	-	-	-	-	-	-	2	100	100	-	-	-	OTB
GDR	3K	-	-	-	-	-	-	-	-	-	1	531	156	OTM
NOR	3N	-	-	-	11	497	447	1	50	48	-	-	-	PS
USSR	2J	-	-	-	-	-	-	-	-	-	(12)	2545	303	OTM
	3K	-	-	-	-	-	-	-	-	-	(76)	15290	901	OTM
SQUID-ILLEX														
BUL	4X	-	-		2	422		1	100		-	-		OTM
CUBA	4W	-	-		-	-		3	388		-	-		OTB
FRA-SP	3Ps	-	-		-	-		-	-		21	19190		OTB
ITA	3L	-	-		1	60		3	180		2	120		OTB
POL	4W	-	-		-	-		14	6357		-	-		OTM
	5Z	-	-		-	-		47	4130		3	377		OTB
USSR	4W	-	-		137	27320		174	34917		9	1808		OTB,OTM

Table 2. Sampling efficiency in relation to nominal catches by species, area and country, 1977.

Species	Stock area	Country	Nominal catches by quarter 1	2	3	4	Total for countries listed	%	Sampling efficiency 1	2	3	4	Total
COD	1	DEN-F	4.8	2.5	-	-	7.3		**	**	-	-	**
		DEN-G	4.9	6.9	6.9	1.6	24.2		0.4	1.3	0.4	8.7	1.1
		FRG	2.1	0.1	0.1	0.3	2.6		1.9	-	-	-	1.5
		NOR	0.9	0.8	-	-	1.7		**	**	-	-	**
		POR	-	1.1	-	-	1.1		-	5.4	(10)	-	14.5
		Total	12.7	11.4	7.0	1.9	36.9	(97)	0.5	1.3	1.8	7.3	1.3
	2GH	CAN	-	-	0.1	-	0.1		-	-	(4)	-	(4)
		FRG	2.3	0.1	0.1	-	2.5		**	-	-	-	**
		Total	2.3	0.1	0.2	-	2.6	(72)	**	-	(4)	-	1.5
	2J+3KL	CAN	1.4	25.4	48.4	4.4	79.6		5.7	1.5	2.1	2.0	1.9
		FRA	5.3	-	-	-	5.3		**	-	-	-	**
		FRG	13.4	1.3	-	-	14.7		2.4	-	-	-	2.2
		GDR	4.3	-	-	-	4.3		0.5	-	-	-	0.5
		POL	6.6	0.5	0.2	0.1	7.4		6.6	-	-	-	5.9
		POR	8.1	4.4	3.4	2.8	18.7		**	**	4.4	**	0.8
		SPA	6.2	9.7	0.6	4.3	20.8		2.9	2.1	2.0	**	1.9
		USSR	18.5	0.1	0.1	0.1	18.8		2.4	-	-	-	2.3
		UK	0.3	0.5	0.7	-	1.5		(1)	-	-	-	(1)
		Total	64.1	41.9	53.4	11.7	171.1	(99)	2.3	1.4	2.2	0.8	1.9
	3M	CAN	-	-	1.6	0.1	1.7		-	-	-	(3)	1.7
		DEN-F	0.4	1.3	3.6	0.4	5.7		-	-	**	-	**
		FRA	1.7	0.2	0.6	2.2	4.7		**	-	-	**	**
		POR	0.4	2.1	3.5	0.6	6.6		-	**	**	-	**
		SPA	0.1	0.7	-	0.5	1.3		-	(5)	-	-	3.8
		USSR	1.7	0.5	0.8	-	3.0		8.2	-	-	-	4.7
		UK	0.3	0.5	0.5	-	1.3		-	(1)	-	-	0.8
		Total	4.6	5.3	10.6	3.8	24.3	(89)	3.0	1.1	**	0.8	0.9
	3NO	CAN	0.1	1.2	0.8	0.4	2.5		-	4.2	(2)	(1)	3.2
		POR	-	0.3	1.1	0.3	1.7		-	-	11.8	-	7.6
		SPA	0.3	6.8	0.7	1.0	8.8		(2)	3.0	(18)	-	4.6
		USSR	1.8	1.3	0.9	-	4.0		**	-	-	-	**
		Total	2.2	9.6	3.5	1.7	17.0	(96)	0.9	2.7	9.4	0.6	3.6
	3Ps	CAN	1.9	11.7	10.4	5.3	29.3		**	1.3	1.3	1.9	1.3
		FRA	1.0	0.3	0.7	0.9	2.9		-	-	-	-	**
		Total	2.9	12.0	11.1	6.2	32.2	(100)	**	1.2	1.2	1.6	1.2
	3Pn+4RS	CAN	11.1	23.0	17.3	4.0	55.4		2.2	1.4	0.9	0.2	1.3
		FRA	12.4	5.7	-	-	18.1		0.1	**	-	-	0.1
		Total	23.5	28.7	17.3	4.0	73.5	(100)	1.1	1.1	0.9	0.2	1.0
	4TVn	CAN	2.4	6.8	10.7	9.9	29.8	(99)	2.1	3.2	4.8	1.1	3.0
	4VsW	CAN	2.6	2.0	3.4	2.2	10.2	(95)	4.2	2.0	**	0.9	1.7
	4X	CAN	2.4	7.5	7.5	4.5	21.9	(96)	2.1	0.1	0.9	0.7	0.7
	5Y	USA	2.4	4.8	2.5	2.3	12.4	(99)	(NO SAMPLES)				
	5Z	CAN	0.2	1.2	4.7	0.1	6.2		(1)	2.5	1.7	-	1.9
		USA	3.2	7.9	6.0	3.7	20.8		**	**	**	**	**
		Total	3.4	9.1	10.7	3.8	27.0	(100)	0.3	0.3	0.7	**	0.4
HADDOCK	4VW	CAN	0.3	0.5	0.7	1.6	3.2	(100)	(2)	(5)	(4)	4.4	5.6
	4X	CAN	5.7	5.6	4.6	3.7	19.6		8.1	2.5	2.6	2.2	4.1
		USA	0.5	0.4	0.3	0.5	1.7		-	-	-	-	-
		Total	6.2	6.0	4.9	4.2	21.3	(100)	7.4	2.3	2.4	1.9	3.8

Table 2. (Cont'd)

Species	Stock area	Country	Nominal catches by quarter 1	2	3	4	Total for countries listed	%	Sampling efficiency 1	2	3	4	Total
	5	CAN	0.3	0.5	2.0	0.1	2.9		(1)	(2)	4.0	-	3.8
		USA	1.6	3.1	3.2	3.3	11.2		**	**	**	**	**
		Total	1.9	3.6	5.2	3.4	14.1	(100)	0.5	0.6	1.5	**	0.8
REDFISH	1	FRG	8.0	5.7	3.8	11.9	29.4	(95)	(NO SAMPLES)				
	2+3K	CAN	0.3	0.4	1.7	1.1	3.5		(5)	(1)	4.7	0.9	4.3
		FRG	0.6	0.1	0.1	-	0.8		(7)	-	-	-	(7)
		POL	0.5	0.2	1.3	0.3	2.3		-	-	**	-	**
		USSR	1.0	-	6.9	-	8.0		-	-	0.6	-	0.5
		Total	2.4	0.7	10.0	1.4	14.6	(84)	5.0	1.0	1.2	0.7	1.8
	3LN	CAN	-	1.1	4.2	4.2	9.5		-	2.7	2.4	2.6	2.5
		SPA	0.1	0.1	-	-	0.2		(1)	(6)	-	-	(7)
		USSR	3.8	1.6	0.5	-	5.9		7.9	**	-	-	5.1
		Total	3.9	2.8	4.7	4.2	15.6	(95)	7.9	3.2	2.1	2.6	3.9
	3M	CAN	-	2.2	2.7	-	4.9		-	2.7	2.6	-	2.6
		SPA	-	0.1	-	-	0.1		-	(1)	-	-	(1)
		USSR	3.5	4.2	1.8	-	9.5		5.7	2.1	**	-	3.1
		Total	3.5	6.5	4.5	-	14.5	(72)	5.7	2.5	1.6	-	3.0
	3O	CAN	-	0.2	1.9	0.9	3.0		(1)	(1)	1.1	-	1.3
		USSR	1.6	3.9	1.9	-	7.4		**	**	**	-	**
		Total	1.6	4.1	3.8	0.9	10.4	(96)	0.6	0.2	0.5	-	0.4
	3P	CAN	2.1	3.2	6.1	4.0	15.4		1.9	0.6	2.6	1.8	1.9
		FRA	0.3	0.9	0.5	-	1.7		-	-	-	-	-
		Total	2.4	4.1	6.6	4.0	17.1	(100)	1.7	0.5	2.4	1.8	1.7
	4RST	CAN	0.8	4.0	8.9	1.9	15.6	(99)	(8)	10.5	1.6	**	4.1
	4VWX	CAN	0.5	3.2	8.5	2.5	14.7		(7)	1.6	1.8	1.2	2.0
		USA	0.2	1.3	0.6	0.8	2.9		-	-	**	-	**
		Total	0.7	4.5	9.1	3.3	17.6	(98)	(7)	1.1	1.6	0.9	1.7
	5	USA	4.1	3.7	3.4	1.8	13.0	(98)	(NO SAMPLES)				
SILVER HAKE	4VWX	BUL	-	-	0.9	-	0.9		-	-	(2)	-	(2)
		CUBA	-	1.1	0.8	-	1.9		-	-	(7)	-	3.7
		USSR	3.7	15.7	13.5	0.3	33.2		**	1.5	25.4	-	11.0
		Total	3.7	16.8	15.2	0.3	36.0	(96)	**	1.5	23.1	-	10.4
	5Y	USA	0.1	2.2	3.8	2.6	8.7	(100)	(NO SAMPLES)				
	5Ze	BUL	-	1.3	-	-	1.3						
		USSR	3.5	35.2	0.5	-	39.2		(NO SAMPLES)				
		USA	-	0.2	3.3	0.2	3.7						
		Total	3.5	36.7	3.8	0.2	44.2	(100)					
	5Zw+6	USSR	13.9	-	-	-	13.9						
		USA	2.6	3.0	1.8	2.0	9.4		(NO SAMPLES)				
		Total	16.5	3.0	1.8	2.0	23.3	(98)					
RED HAKE	5Ze	USSR	0.6	2.2	-	-	2.8	(97)	(NO SAMPLES)				
	5Zw+6	USSR	2.4	-	-	-	2.4						
		USA	0.3	0.6	1.0	0.6	2.5		(NO SAMPLES)				
		Total	2.7	0.6	1.0	0.6	4.9	(100)					

Table 2. (Cont'd)

Species	Stock area	Country	Nominal catches by quarter 1	2	3	4	Total for countries listed	%	Sampling efficiency 1	2	3	4	Total
POLLOCK	4VWX	CAN	3.8	4.7	5.6	7.6	21.7	(96)	6.0	2.1	2.5	1.7	2.8
	5	CAN	1.3	0.3	0.8	1.0	3.4		3.0	-	1.0	1.0	1.8
		USA	2.1	2.8	3.4	3.7	12.7		**	**	**	**	**
		Total	3.4	3.1	4.2	4.7	16.1	(99)	1.2	**	0.2	0.2	0.4
A. PLAICE	2+3K	CAN	2.9	2.7	1.0	-	6.6	(88)	2.4	1.5	9.0	-	3.0
	3M	Total	0.3	0.7	0.4	0.2	1.6	(100)	(NO SAMPLES)				
	3LNO	CAN	2.7	11.4	16.7	11.8	42.6		1.9	1.0	1.3	1.3	1.3
		SPA	0.1	0.1	-	-	0.2		(15)	(2)	-	-	(17)
		USSR	0.2	0.5	0.3	-	1.0		-	-	(11)	-	(11)
		Total	3.0	12.0	17.0	11.8	43.8	(99)	6.7	1.2	1.9	1.3	1.9
	3Ps	CAN	1.2	0.9	0.7	1.7	4.5	(98)	1.7	3.0	-	1.8	1.8
	4VWX	CAN	1.6	2.8	2.3	1.0	7.7	(99)	3.8	3.2	6.0	-	3.8
	5+6	USA	1.4	3.5	1.2	0.8	7.1	(99)	(NO SAMPLES)				
WITCH	2J+3KL	CAN	2.3	1.1	0.8	0.2	4.4		2.1	2.7	(12)	(2)	5.0
		POL	0.6	2.0	0.1	0.4	3.1		(2)	**	-	-	0.6
		USSR	0.3	-	-	0.1	0.4		-	-	-	(12)	(12)
		Total	3.2	3.1	0.9	0.7	7.9	(95)	2.2	1.0	12.0	14.0	17.2
	3NO	CAN	1.9	0.9	-	0.2	3.0		3.7	2.0	-	(1)	3.3
		USSR	0.1	1.6	1.0	-	2.7		-	**	-	-	**
		Total	2.0	2.5	1.0	0.2	5.7	(99)	3.5	0.8	-	(1)	1.8
	3Ps	CAN	0.3	3.6	0.1	0.2	4.2	(99)	(1)	0.8	-	-	0.9
	4VWX	CAN	0.9	0.7	0.4	0.3	2.3	(96)	(9)	(6)	(3)	-	7.8
	5+6	USA	0.5	0.7	0.7	0.5	2.5	(100)	(NO SAMPLES)				
YELLOWTAIL	3LNO	CAN	0.2	3.3	5.1	2.7	11.3	(97)	(1)	3.7	2.1	4.0	3.1
	4VWX	CAN	0.1	0.6	0.6	0.1	1.4	(100)	-	(3)	(3)	-	4.2
	5+6	USA	3.4	3.3	5.8	4.1	16.6	(100)	(NO SAMPLES)				
G. HALIBUT	0+1	DEN-G	1.0	1.8	1.6	0.9	6.1		-	**	**	-	**
		USSR	0.3	-	1.9	2.2	4.4		-	-	22.6	16.3	18.0
		Total	1.3	1.8	3.5	3.1	10.5	(83)	-	**	12.3	11.6	7.5
	2+3KL	CAN	0.9	4.1	11.5	1.5	18.0		5.0	1.2	2.3	2.0	2.2
		GDR	0.1	0.5	1.0	0.4	2.0		-	(1)	(2)	(1)	2.0
		POL	4.2	1.6	0.2	-	6.0		0.7	**	-	-	0.5
		USSR	1.8	-	0.7	1.8	4.3		4.4	-	-	**	1.8
		Total	7.0	6.2	13.4	3.7	30.3	(95)	2.3	1.0	2.2	1.1	1.8
R. GRENADIER	0+1	USSR	0.4	-	1.9	-	2.3	(80)	(NO SAMPLES)				
	2+3	USSR	0.1	-	10.7	3.8	14.6	(95)	(9)	-	**	**	0.6
HERRING	3+4RST	CAN	1.9	46.5	7.1	32.1	87.6	(100)	(NO SAMPLES)				
	4V	CAN	-	3.9	-	7.1	11.0	(100)	-	1.3	-	8.3	5.8
	4WX	CAN	14.9	25.3	81.0	8.8	130.0	(100)	5.4	7.5	3.6	14.7	5.3

Table 2. (Cont'd)

Species	Stock area	Country	Nominal catches by quarter 1	2	3	4	Total for countries listed	%	Sampling efficiency 1	2	3	4	Total
	5Y	CAN	-	0.4	-	-	0.4		-	(1)	-	-	(1)
		USA	10.3	8.2	23.8	8.0	50.3		**	**	**	**	**
		Total	10.3	8.6	23.8	8.0	50.7	(100)	**	0.1	**	**	**
	5Z+6	CAN	-	-	-	-	-		-	-	(1)	-	-
		POL	0.1	-	-	-	0.1		(1)	-	-	-	-
		USSR	1.5	-	-	-	1.5		**	-	-	-	-
		Total	1.6	-	-	-	1.6	(76)	0.6	-	-	-	0.6
MACKEREL	3+4	CAN	-	6.8	10.3	5.2	22.3		-	0.1	1.9	1.0	1.2
		USSR	-	0.2	0.1	-	0.3		-	(4)	(16)	-	(20)
		Total	-	7.0	10.4	5.2	22.6	(99)	-	0.7	3.5	1.0	2.0
	5+6	BUL	3.1	-	-	-	3.1		10.0	-	-	-	10.0
		GDR	8.0	-	-	-	8.0		**	-	-	-	**
		POL	17.2	-	-	-	17.2		**	-	-	-	**
		USSR	22.6	-	-	-	22.6		**	-	-	-	**
		Total	50.9	-	-	-	50.9	(93)	0.6	-	-	-	0.6
ARGENTINE	4VWX	JAP	-	-	1.4	0.7	2.1		-	-	**	-	**
		USSR	-	0.2	-	-	0.2		-	-	(18)	-	(18)
		Total	-	0.2	1.4	0.7	2.3	(92)	-	-	12.8	-	7.8
ALEWIFE	5+6	USA	0.7	4.9	-	0.4	6.1	(97)	(NO SAMPLES)				
BUTTERFISH	5+6	JAP	1.3	-	-	0.5	1.8		(NO SAMPLES)				
		USA	0.2	0.2	0.4	0.4	1.5						
		Total	1.5	0.2	0.4	1.0	3.2	(71)					
CAPELIN	2+3K	BUL	-	-	2.9	-	2.9		-	-	**	-	**
		CAN	-	1.8	0.3	-	2.1		-	9.4	(3)	(18)	18.0
		CUBA	-	-	1.5	3.6	5.1		-	-	**	**	**
		GDR	-	-	-	1.0	1.0		-	-	-	1.0	1.0
		POL	-	-	-	4.3	4.3		-	-	-	**	**
		ROM	-	-	0.2	2.4	2.6		-	-	-	**	**
		USSR	-	-	41.8	91.7	133.5		-	-	**	1.0	0.7
		Total	-	1.8	46.7	103.0	151.5	(99)	-	9.4	0.1	1.0	0.8
	3LNOP	CAN	-	8.4	1.3	-	9.7		(14)	11.4	13.8	-	13.2
		ICE	-	3.4	-	-	3.4		-	**	-	-	**
		JAP	-	3.5	0.5	-	4.0		-	**	-	-	**
		NOR	-	21.5	-	-	21.5		-	0.5	(1)	-	0.6
		USSR	-	35.6	1.4	-	37.0		-	**	**	-	**
		Total	-	72.4	3.2	-	75.6	(97)	(14)	1.5	5.9	-	1.9
SQUID-*ILLEX*	3+4	BUL	-	0.6	2.4	-	3.0		-	(2)	0.4	-	1.0
		CAN	-	-	17.0	22.0	39.0		-	-	**	**	**
		CUBA	-	1.0	3.7	-	4.7		-	-	0.8	-	0.6
		FRG	-	0.5	5.8	1.7	8.0		-	-	**	**	**
		ITA	-	0.3	1.7	0.5	2.5		-	(1)	1.7	(2)	2.4
		JAP	-	0.1	2.0	1.0	3.1		-	-	**	-	**
		POL	-	-	2.9	-	2.9		-	-	4.8	-	4.8
		SPA	...	...	...	...	3.1		...	...	...	...	**
		USSR	-	9.7	8.3	-	19.0		-	14.1	21.0	(9)	16.8
		Total					86.7	(98)					4.0
	5+6	ITA	-	-	1.2	0.7	1.9		-	-	**	-	**
		JAP	-	-	4.5	0.4	4.9		-	-	**	-	**
		SPA	...	...	...	...	8.2		...	...	...	...	**
		POL	0.5	-	0.2	-	0.7		-	-	(47)	(3)	(50)
		USSR	0.1	0.1	7.8	-	8.0		-	-	**	-	**
		Total					23.7	(96)					2.1

Table 2. (Cont'd)

Species	Stock area	Country	Nominal catches by quarter 1	2	3	4	Total for countries listed	%	Sampling efficiency 1	2	3	4	Total
SQUID-*LOLIGO*	5+6	ITA	1.5	-	-	0.7	2.2						
		JAP	5.2	-	-	2.6	7.8		(NO SAMPLES)				
		SPA	...	...	...	...	5.2						
		Total					15.2	(91)					
SHRIMP	0+1	DEN	4.9	11.8	10.6	6.2	33.5						
		NOR	1.6	2.7	2.4	0.8	7.5		(NO SAMPLES)				
		Total	6.5	14.5	13.0	7.0	41.0	(97)					

Table 3. Summary of sampling efficiency by country and stock in relation to nominal catches (000 tons) for 1977.

	COD 1	COD 2GH	COD 2G+3KL	COD 3M	COD 3NO	COD 3Ps	COD 3Pn+4RS	COD 4TVn	COD 4VsW	COD 4X	COD 5Z	HAD 4VW	HAD 4X
BUL	-	-	-	-	-	-	-	-	-	-	-	-	-
CAN	-	+/(4)	80/1.9	2/1.7	3/3.2	29/1.3	55/1.3	30/3.0	10/1.7	22/0.7	6/1.9	3/5.6	19/4.1
CUBA	-	-	-	-	-	-	-	-	-	-	-	-	-
DEN-F	7/***	-	-	6/***	-	-	-	-	-	-	-	-	-
DEN-G	24/1.1	-	-	-	-	-	-	-	-	-	-	-	-
FRA	-	-	5/***	5/***	-	3/***	18/0.1	-	-	-	-	-	-
FRG	3/1.5	3/***	15/2.2	-	-	-	-	-	-	-	-	-	-
GDR	-	-	4/0.5	-	-	-	-	-	-	-	-	-	-
ICE	-	-	-	-	-	-	-	-	-	-	-	-	-
ITA	-	-	-	-	-	-	-	-	-	-	-	-	-
JAP	-	-	-	-	-	-	-	-	-	-	-	-	-
NOR	2/***	-	-	-	-	-	-	-	-	-	-	-	-
POL	-	-	7/5.9	-	-	-	-	-	-	-	-	-	-
POR	1/14.5	-	19/0.8	7/***	2/7.6	-	-	-	-	-	-	-	-
ROM	-	-	-	-	-	-	-	-	-	-	-	-	-
SPA	-	-	21/1.9	1/3.8	9/4.6	-	-	-	-	-	-	-	-
USSR	-	-	19/2.3	3/4.7	4/***	-	-	-	-	-	-	-	-
UK	-	-	2/1.0	1/0.8	-	-	-	-	-	-	-	-	-
USA	-	-	-	-	-	-	-	-	-	-	21/***	-	2/***
Total	37/1.3 (91)	3/1.5 (72)	171/1.9 (99)	24/0.9 (89)	17/3.6 (96)	32/1.2 (100)	73/1.0 (100)	30/3.0 (99)	10/1.7 (95)	22/0.7 (96)	27/0.4 (100)	3/5.6 (100)	21/3.8 (100)

	HAD 5	RED 1	RED 2+3K	RED 3LN	RED 3M	RED 3O	RED 3P	RED 4RST	RED 4VWX	RED 5	HKS 4VWX	HKS 5Y	HKS 5Ze
BUL	-	-	-	-	-	-	-	-	-	-	1/2.0	-	1/ -
CAN	3/3.8	-	4/4.3	10/2.5	5/2.6	3/1.3	15/1.9	16/4.1	15/2.0	-	-	-	-
CUBA	-	-	-	-	-	-	-	-	-	-	2/3.7	-	-
DEN-F	-	-	-	-	-	-	-	-	-	-	-	-	-
DEN-G	-	-	-	-	-	-	-	-	-	-	-	-	-
FRA	-	-	-	-	-	-	2/***	-	-	-	-	-	-
FRG	-	29/***	1/(8)	-	-	-	-	-	-	-	-	-	-
GDR	-	-	-	-	-	-	-	-	-	-	-	-	-
ICE	-	-	-	-	-	-	-	-	-	-	-	-	-
ITA	-	-	-	-	-	-	-	-	-	-	-	-	-
JAP	-	-	-	-	-	-	-	-	-	-	-	-	-
NOR	-	-	-	-	-	-	-	-	-	-	-	-	-
POL	-	-	2/***	-	-	-	-	-	-	-	-	-	-
POR	-	-	-	-	-	-	-	-	-	-	-	-	-
ROM	-	-	-	-	-	-	-	-	-	-	-	-	-
SPA	-	-	-	+/(7)	+/(1)	-	-	-	-	-	-	-	-
USSR	-	-	8/0.5	6/5.1	10/3.1	7/***	-	-	-	-	33/11.0	-	39/***
UK	-	-	-	-	-	-	-	-	-	-	-	-	-
USA	11/***	-	-	-	-	-	-	-	3/***	13/***	-	9/***	4/***
Total	14/0.8 (100)	29/*** (95)	15/1.8 (84)	16/3.9 (95)	15/3.0 (72)	10/0.4 (96)	17/1.7 (100)	16/4.1 (99)	18/1.7 (98)	13/*** (98)	36/10.4 (96)	9/*** (100)	44/*** (100)

Table 3. (Cont'd)

	HKS 5Zw+6	HKR 5Ze	HKR 5Zw+6	POK 4VWX	POK 5	PLA 2+3K	PLA 3M	PLA 3LNO	PLA 3Ps	PLA 4VWX	PLA 5+6	WIT 2J+3KL	WIT 3NO
BUL	-	-	-	-	-	-	-	-	-	-	-	-	-
CAN	-	-	-	22/2.8	3/1.8	7/3.0	-	43/1.3	5/1.8	8/3.8	-	4/5.0	3/3.3
CUBA	-	-	-	-	-	-	-	-	-	-	-	-	-
DEN-F	-	-	-	-	-	-	-	-	-	-	-	-	-
DEN-G	-	-	-	-	-	-	-	-	-	-	-	-	-
FRA	-	-	-	-	-	-	-	-	-	-	-	-	-
FRG	-	-	-	-	-	-	-	-	-	-	-	-	-
GDR	-	-	-	-	-	-	-	-	-	-	-	-	-
ICE	-	-	-	-	-	-	-	-	-	-	-	-	-
ITA	-	-	-	-	-	-	-	-	-	-	-	-	-
JAP	-	-	-	-	-	-	-	-	-	-	-	-	-
NOR	-	-	-	-	-	-	-	-	-	-	-	-	-
POL	-	-	-	-	-	-	-	-	-	-	-	3/0.6	-
POR	-	-	-	-	-	-	-	-	-	-	-	-	-
ROM	-	-	-	-	-	-	-	-	-	-	-	-	-
SPA	-	-	-	-	-	-	-	+/(17)	-	-	-	-	-
USSR	14/***	3/***	2/***	-	-	-	-	1/(11)	-	-	-	+/(12)	3/***
UK	-	-	-	-	-	-	-	-	-	-	-	-	-
USA	9/***	-	3/***	-	13/***	-	-	-	-	-	7/***	-	-
Total	23/*** (98)	3/*** (97)	5/*** (100)	22/2.8 (96)	16/0.4 (99)	7/3.0 (88)	2/*** (100)	44/1.9 (99)	5/1.8 (98)	8/3.8 (99)	7/*** (99)	8/17.2 (95)	6/1.8 (99)

	WIT 3Ps	WIT 4VWX	WIT 5+6	YEL 3LNO	YEL 5+6	GHL 0+1	GHL 2+3KL	RNG 0+1	RNG 2+3	HER 3+4RST	HER 4V	HER 4WX	HER 5Y
BUL	-	-	-	-	-	-	-	-	-	-	-	-	-
CAN	4/0.9	2/7.8	-	11/3.1	-	-	18/2.2	-	-	88/***	11/5.8	130/5.3	+/(1)
CUBA	-	-	-	-	-	-	-	-	-	-	-	-	-
DEN-F	-	-	-	-	-	-	-	-	-	-	-	-	-
DEN-G	-	-	-	-	-	6/***	-	-	-	-	-	-	-
FRA	-	-	-	-	-	-	-	-	-	-	-	-	-
FRG	-	-	-	-	-	-	-	-	-	-	-	-	-
GDR	-	-	-	-	-	-	2/2.0	-	-	-	-	-	-
ICE	-	-	-	-	-	-	-	-	-	-	-	-	-
ITA	-	-	-	-	-	-	-	-	-	-	-	-	-
JAP	-	-	-	-	-	-	-	-	-	-	-	-	-
NOR	-	-	-	-	-	-	-	-	-	-	-	-	-
POL	-	-	-	-	-	-	6/0.5	-	-	-	-	-	-
POR	-	-	-	-	-	-	-	-	-	-	-	-	-
ROM	-	-	-	-	-	-	-	-	-	-	-	-	-
SPA	-	-	-	-	-	-	-	-	-	-	-	-	-
USSR	-	-	-	-	-	4/18.0	4/1.8	2/***	15/0.6	-	-	-	-
UK	-	-	-	-	-	-	-	-	-	-	-	-	-
USA	-	-	3/***	-	17/***	-	-	-	-	-	-	-	50/***
Total	4/0.9 (99)	2/7.8 (96)	3/*** (100)	11/3.1 (97)	17/*** (100)	10/7.5 (83)	30/1.8 (95)	2/*** (80)	15/0.6 (95)	88/*** (100)	11/5.8 (100)	130/5.3 (100)	51/*** (100)

	HER 5Z+6	MAC 3+4	MAC 5+6	ARG 4VWX	ALE 5+6	BUT 5+6	CAP 2+3K	CAP 3LNOP	SQI 3+4	SQI 5+6	SQL 5+6	PRA 0+1
BUL	-	-	3/10.0	-	-	-	3/***	-	3/1.0	-	-	-
CAN	-/(1)	22/1.2	-	-	-	-	2/18.0	10/13.2	39/***	-	-	-
CUBA	-	-	-	-	-	-	5/***	-	5/0.6	-	-	-
DEN-F	-	-	-	-	-	-	-	-	-	-	-	33/***
DEN-G	-	-	-	-	-	-	-	-	-	-	-	
FRA	-	-	-	-	-	-	-	-	-	-	-	-
FRG	-	-	-	-	-	-	-	-	8/***	-	-	-
GDR	-	-	8/***	-	-	-	1/1.0	-	-	-	-	-
ICE	-	-	-	-	-	-	-	3/***	-	-	-	-
ITA	-	-	-	-	-	-	-	-	3/2.4	2/***	2/***	-
JAP	-	-	-	2/***	-	2/***	-	4/***	3/***	5/***	8/***	-
NOR	-	-	-	-	-	-	-	22/0.6	-	-	-	8/***
POL	+/(1)	-	17/***	-	-	-	4/***	-	3/4.8	1/(50)	-	-
POR	-	-	-	-	-	-	-	-	-	-	-	-
ROM	-	-	-	-	-	-	3/***	-	-	-	-	-
SPA	-	-	-	-	-	-	-	-	3/***	8/***	5/***	-
USSR	2/0.6	+/(20)	23/***	+/(18)	-	-	134/0.7	37/***	19/16.8	8/***	-	-
UK	-	-	-	-	-	-	-	-	-	-	-	-
USA	-	-	-	-	6/***	1/ -	-	-	-	-	-	-
Total	2/0.6 (76)	23/2.0 (99)	51/0.6 (93)	2/7.8 (92)	6/*** (97)	3/*** (71)	152/0.8 (99)	76/1.9 (97)	87/4.0 (98)	24/*** (96)	15/*** (91)	41/*** (97)