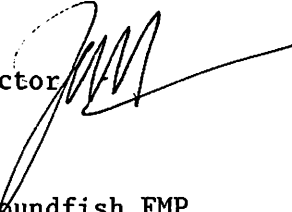


M E M O R A N D U M

TO: Council, SSC, and AP Members
FROM: Jim H. Branson, Executive Director 
DATE: December 30, 1981
SUBJECT: Bering Sea/Aleutian Islands Groundfish FMP

ACTION REQUIRED

Approval of changes to Amendment #4.

BACKGROUND

Amendment #4 was given final Council approval in December 1981 to go to Secretarial review and is currently under Regional Office review. This amendment is straight forward and, among other things, will change JVP, DAH, and TALFF for pollock, yellowfin sole, other flatfish, and Atka mackerel and change OY, reserves, and TALFF for Pacific cod.

Several additions need to be made to this amendment. First and most important is that we provide the NMFS Regional Director with authority to issue field orders for adjusting time/area closures for conservation reasons, thus enabling an immediate response to unanticipated stock conditions. This authority was granted in the Gulf of Alaska Groundfish FMP but was left out of the Bering Sea FMP. Amendment #1 would have eliminated this oversight, but that amendment is very complex and may require a lengthy review. Therefore, it may be more expedient to use Amendment #4 to convey this field order authority. Item E-6(a) is the general language that was used in Amendment 1 to change the foreign fishing regulations. This field order authority would of course, apply to both foreign and domestic fisheries.

Two other problems in the FMP can be eliminated with Amendment #4. First, the MSY's for sablefish in the summary tables of the Executive Summary (Section 3) and Annex I should be changed to 11,600 mt in the Bering Sea and 1,900 mt in the Aleutians to eliminate an inconsistency with the text pertaining to sablefish MSY (Section I.7.1 of Annex I).

Secondly, in the original FMP ABC and OY for Other Species is calculated as 5% of those parameters for the combined target species. Amendments 2 and 4 increased the ABC and OY for Pacific cod. Consequently the new ABC and OY for Other Species should be 79,314 mt and 77,314 mt respectively.

If the above changes are incorporated, then Items E-6(b), (c) and (d) show the new values for MSY, EY, ABC, OY and its allocation that will appear in the FMP after Amendment #4 is implemented sometime in 1982. The last two tables appear in the FMP in the annexes and in Section 3, the Executive Summary.

CP

JAN82/U

(4) Field Orders

(i) The Regional Director may issue field orders pursuant to paragraph (f) of this section adjusting time and/or area closures for conservation reasons. The field orders may open or close fishing areas or parts thereof and fishing seasons based upon the following considerations:

(A) The effect of overall fishing effort within a fishing area or part thereof.

(B) Catch per unit of effort and rate of harvest.

(C) Relative abundance of stocks within the area in comparison with pre-season expectations.

(D) The proportion of prohibited species being caught.

(E) General information on the condition of stocks within the area.

(F) Information pertaining to the guideline harvest level prescribed by the State of Alaska for species within a fishing area or part thereof.

(G) Any other factors necessary for the conservation and management of the groundfish resource.

Bering Sea/Aleutian Island Groundfish Harvest Allocations (1,000's mt)
as they will appear in the FMP once Amendments 2 and 4 are implemented.

		<u>OY</u>	<u>Reserve</u> ^{1/}	<u>DAH</u>	<u>DAP</u>	<u>DNP</u>	<u>JVP</u>	<u>TALFF</u>
Pollock	BS	1,000	50	74.5	10	0.5	64	875.5
	AI	100	--	--	--	--	--	100
POP	BS	3.25	0.162	1.38	0.55	--	0.83	1.708
	AI	7.50	0.375	1.38	0.55	--	0.83	5.745
Other Rockfish	BS	7.727	0.5	1.55	1.1	--	0.45	5.677
	AI	--	--	--	--	--	--	--
Sablefish	BS	3.50	0.350	0.7	0.5	--	0.2	2.45
	AI	1.50	0.150	0.7	0.5	--	0.2	0.65
Pacific Cod		120.0	6.00	43.265	26	0.2	17.065	70.735
Yellowfin Sole		117.0	5.85	31.2	1.0	0.2	30	79.950
Turbots		90.0	4.50	1.075	1.0	--	0.075	84.425
Other Flatfish		61.0	3.05	11.200	1.0	0.2	10	46.75
Atka Mackerel		24.8	1.24	14.5	--	--	14.5	9.06
Squid		10.0	0.5	0.05	--	--	0.05	9.45
Other Species		<u>77.314</u>	<u>3.866</u>	<u>7.8</u>	<u>1.4</u>	<u>0.4</u>	<u>6</u>	<u>65.648</u>
TOTAL		1,623.591	76.543	189.3	43.6	1.5	144.2	1,357.748

^{1/} Reserve = 500 mt or 5% OY, whichever is greater.

ANNEX III -- Derivation of Total Allowable Level of Foreign Fishing (TALFF)
(Metric Tons)

Reference: Species group	Sub-area ^{1/}	OY	Reserve	Initial DAH	Initial TALFF
Pollock	Bering Sea	1,000,000	50,000	74,500	875,500
Pollock	Aleutian	100,000	3/	--	100,000
Yellowfin sole		117,000	5,850	31,200	79,950
Turbots		90,000	4,500	1,075	84,425
Other flatfishes ^{2/}		61,000	3,050	11,200	46,750
Pacific cod		120,000 ^{4/}	6,000	43,265	70,735
Pacific ocean perch	Bering Sea	3,250	162	1,380	1,708
Pacific ocean perch	Aleutian	7,500	375	1,380	5,745
Other rockfish		7,727	500	1,550	5,677
Sablefish	Bering Sea	3,500	350	700	2,450
Sablefish	Aleutian	1,500	150	700	650
Atka mackerel		24,800	1,240	14,500	9,060
Squid		10,000	500	50	9,450
Other species		<u>77,314</u>	<u>3,866</u>	<u>7,800</u>	<u>65,648</u>
Total		1,623,591	76,543	189,300	1,357,748

*1/ BS Bering Sea (Statistical Areas I, II, II combined).
AL Aleutian Island Area (Statistical Area IV).

2/ Excluding Pacific halibut.

3/ This OY calculated for the offshore pollock population in deep water discussed in Annex I (p. AI-70). No reserve is considered necessary at this time since there is little U.S. capability for a pelagic trawl fishery and resource abundance on the continental shelf is expected to keep any U.S. effort on that component identified as "B.Sea."

4/ Pacific cod OY is 75% of ABC.

* Includes territorial waters.

Amended 81-4

Table I.1 -- MSY, EY, and ABC Values for Groundfish in
the Bering Sea/Aleutian Region (1000's mt)

Species	Sub-area ^{1/}	MSY	EY	ABC	(1980 OY)
Pollock	BS	1,100-1,600	1,000	1,000	(1,000)
	AL	--	--	100	(100)
Yellowfin sole	--	169-260	117	117	(117)
Turbots	--	100	90-95	90	(151)
Other flatfishes	--	44.3-76.8	=MSY	61	
Cod	--	55.0	160	160	(58.7)
Pacific ocean perch	BS	32	6.5	3.25	(3.25)
	AL	75	15	7.5	(7.5)
Other rockfish	--	--	--	7.727	(7.727)
Sablefish	BS	11.6	3.5	3.5	(3.5)
	AL	1.9	1.5	1.5	(1.5)
Atka mackerel	--	33	Unknown	24.8	(24.8)
Squid	--	10	10	10	(10)
Pacific halibut	--	5	0.3	<u>2/</u>	--
Other species	--	89.4	89.4	79.314	(74.2)
Total ^{3/}	--	1,721.2- 2,344.7	1,537.2- 1,574.7	1,665.591	(1,559.18)

1/ BS = Eastern Bering Sea Area (Statistical Areas I, II, III combined).
AL = Aleutian Area (Statistical Area IV).

2/ Managed by International Pacific Halibut Commission.

3/ Excluding Pacific halibut.

Amended 81-4

AI-1a

NORTH PACIFIC FISHERY MANAGEMENT COUNCIL

Bering Sea/Aleutian Islands Groundfish
Fishery Management Plan

Amendment #4

Changes to the FMP

INTRODUCTION:

The North Pacific Fishery Management Council (NPFMC) proposes the following changes to the Bering Sea/Aleutian Islands Fishery Management Plan (FMP, as amended by amendments 1a and 2):

1. Increase the JVP component of DAH for pollock, yellowfin sole, Atka mackerel, other flatfish, other species.
2. Increase the Optimum Yield (OY) of Pacific cod, based on the best scientific information available.
3. Make the FMP consistent with the Preliminary Fishery Management Plan (PMP) with respect to foreign fishery management regime area restrictions.

1. In section 3.0, Executive Summary, replace the Tables on Pages 3-1a and 3-1b with the attached amended Tables.
2. In Section 11.0, OPTIMUM YIELD, delete the first full paragraph on page 11-2 and substitute the following two paragraphs:

"With the expectation over the near term of only a modest but rapidly expanding domestic involvement in the fishery and having identified no social or economic reasons for reducing the yield of stocks in this fishery below ABC, Optimum Yield for all species except Pacific cod and the "Non-specified" finfish species, will be considered equal to ABC, as shown in Annex I.

The projected ABC for Pacific cod for 1982 is 160,000 mt. Because of inadequacies in the data used to make this projection, the OY for Pacific cod for 1982 is set conservatively at 75% of the projected ABC or $OY = 0.75 \times 160,000 \text{ mt} = 120,000 \text{ mt}.$ "

3. In Section 14, PROPOSED MANAGEMENT REGIME, Part 14.3.2.3.B, Page 14-8 add the following:

(vi) Trawling is permitted seaward of three nautical miles from the baseline used to measure the U.S. territorial sea in the area bounded by 170°30'W and 172°00'W on the north side of Aleutian Islands and by 170°00'W and 172°00'W on the south side of the Aleutian Islands.

4. In Section 14, PROPOSED MANAGEMENT REGIME, Part 14.3.2.3.C (3), Page 14-8, delete and substitute the following:

(3) Throughout the area west of 170°00'W, longlining is permitted seaward of three nautical miles.

5. In Section 18, REFERENCES, add the following:

Bakkala, R., L. Low, and V. Wespestad, 1979. Condition of Groundfish Resources in the Bering Sea and Aleutian Area. (Document submitted to the annual meeting of the International North Pacific Fisheries Commission, Tokyo, Japan, 1979) 105 p. Northwest and Alaska Fisheries Center, National Marine Fisheries Service, NOAA, 2725 Montlake Blvd. E., Seattle WA, 98112

Bakkala, R., V. Wespestad, L. Low, and J. Traynor, 1980. Condition of Groundfish Resources of the Eastern Bering Sea and Aleutian Islands Region in 1980. (Document submitted to the annual meeting of the International North Pacific Fisheries Commission, Anchorage, Alaska, October, 1980). 98 p. Northwest and Alaska Fisheries Center, National Marine Fisheries Service, NOAA, 2725 Montlake Blvd. E., Seattle, WA 98112

6. In Annex I, page AI-1a, delete Table I.1 and substitute the attached Table.

7. In Annex I, Part I.5, Pacific Cod, delete and substitute the following for Part I.5:

I.5 Pacific Cod

I.5.1 Maximum Sustainable Yield

Pacific cod are distributed widely over the Bering Sea continental shelf and slope, and have a distributional pattern similar to that of pollock. During the early 1960's, when a fairly large Japanese longline fishery operated on the continental slope, cod were harvested by longliners for the frozen fish market. Beginning in 1964, the Japanese North Pacific trawl fishery for pollock expanded, and cod became an important incidental catch in the pollock fishery. At present, cod are believed to be an occasional target species when high concentrations are detected during pollock fishing operations.

The annual catch of Pacific cod by all foreign nations in the eastern Bering Sea and Aleutians increased from 13,600 mt in 1964, to about 70,400 mt in 1970; since then, catches have varied between 36,600 mt and 63,800 mt (Table I-9). Japan has accounted for 66-99% of the catch since the U.S.S.R. began reporting their catches of cod in 1971.

The incidental occurrence of cod in foreign trawl catches makes questionable the use of CPUE trends from the commercial fishery. Moreover, the semi-demersal distribution of cod makes them difficult to assess with

Amended 81-4

Table I-9 -- Foreign calendar year catches (mt) of Pacific cod by area and nation, 1964-78.

Year	Eastern Bering Sea					Aleutian Island Area				E. Bering Sea and Aleutian Comb.Total		
	Japan		USSR	ROK ^{c/}	ROC ^{d/}	Total	Japan		USSR		ROK	Total
	MS-LG-NPT ^{a/}	LBD ^{b/}					MS-LG-NPT	LBD				
1964	13,408	-	-	-	13,408	241	-	-	-	241	13,649	
1965	13,524	1,195	-	-	14,719	414	37	-	-	451	15,170	
1966	17,178	1,022	-	-	18,200	103	51	-	-	154	18,354	
1967	30,502	1,562	-	-	32,064	153	140	-	-	293	32,357	
1968	52,135	5,767	-	-	57,902	121	168	-	-	289	58,191	
1969	44,871	5,480	-	-	50,351	204	16	-	-	220	50,571	
1970	61,015	9,079	-	-	70,094	221	62	-	-	283	70,377	
1971	32,206	8,362	2,486	-	43,054	263	162	1,653	-	2,078	45,132	
1972	33,715	2,162	7,028	-	42,905	233	202	-	-	435	43,340	
1973	38,137	2,680	12,569	-	53,386	295	271	411	-	977	54,363	
1974	42,741	3,174	16,547	-	62,462	651	683	45	-	1,379	63,841	
1975	32,092	1,230	18,229	-	51,551	2,470	111	257	-	2,838	54,389	
1976	29,627	2,382	17,756	716	50,481	3,688	174	312	16	4,190	54,671	
1977	29,682	3,459	177	-	33,320	1,533	1,629	100	-	3,262	36,582	
1978	36,513	4,721	419	859	42,512	1,460	1,705	120	6	3,291	45,803	

a/ Mothership, North Pacific longline, and North Pacific trawl fisheries.

b/ Landbased dragnet fishery.

c/ Republic of Korea

d/ Republic of China

Amended 81-4

research vessel trawls. MSY for this species has, therefore, been estimated on the basis of commercial catch data. Because catches increased rapidly in the mid-1960's and then stabilized, the average catch during this period of stability (1968-76) was assumed to reflect at least a minimal estimate of MSY. The original estimate was 58,700 mt, but this figure includes catches from west of 180° outside the U.S. FCZ. A more appropriate estimate, including only those catches within the FCZ from the eastern Bering Sea (east of 180°) and Aleutian Islands area, is 55,000 mt.

I.5.2. Equilibrium Yield

Accumulated evidence since 1978 indicates that the abundance of Pacific cod is increasing and that this increase may be substantial. The relative abundance of cod more than doubled between 1976 and 1978 based on NMFS research survey data, and in 1978 there appeared to be unusually high abundance of age 0 and age 1 cod (year-classes 1977 and 1978) in the research vessel catches (Bakkala et al., 1979). These year-classes as age 1 and age 2 fish were also abundant in research vessel catches during the large-scale survey of the eastern Bering Sea in 1979. Comparing data from a large-scale OCSEAP survey in 1975 and from an equivalent area in 1979 indicates that the CPUE of cod apparently increased by a factor of approximately 7 between 1975 (2.7 kg/km) and 1979 (19.8 kg/km).

Age data from the commercial fishery indicate that the abundance of a cod cohort peaks in the fishery at age 3, contributes substantially to

catches at age 4, and then declines sharply at ages 5 and 6. The 1977 and 1978 year-classes will, therefore, make their greatest contribution to the fishery in 1980-82. NMFS surveys in 1978-81 indicate continued good survival of the 1977 year-class.

The estimated biomass of cod from the 1979 survey was 792,300 mt with a 95% confidence interval of 603,200-981,400 mt. About 81% of the total biomass was made up of age groups 1 and 2 which are only partially recruited to the fishery. Using the 1979 population estimates by age, historical growth rates, instantaneous natural mortality rates ranging from 0.5 to 0.7, and varying estimated fishing mortalities by age, the biomass of cod in 1980 was projected to be 740,000-910,000 mt. Similarly, the projected exploitable biomass (age group 2-5) for 1981 was 803,000-1,248,000 mt.

The estimated exploitable biomass for 1982 is not expected to deviate significantly from that for 1981. Thus, the exploitable biomass for 1982 should be 803,000-1,248,000 mt. Using the lower end of the projected range in biomass and an exploitation rate of approximately 20%, EY for 1982 is estimated to be 160,000 mt.

I.5.3 Acceptable Biological Catch

ABC will exceed estimates of MSY in 1982 because of the strong 1977 and 1978 year-classes. Since natural mortality will rapidly reduce the abundance of these year-classes after age 4, it is prudent to harvest the 1977 and 1978 year-classes during the short period they remain in the fishery. Therefore, ABC for 1982 equals 160,000 mt.

8. In Annex II, Part II, p. AII.2, delete the Table and substitute the following:

Table AII.1
Domestic Annual Processing Capacity, DAP

<u>Species</u>	<u>Amount (mt)</u>
Pollock BS	10,000
Pollock AI	-0-
Yellowfin sole	1,000
Turbots	1,000
Other flatfish	1,000
Pacific cod	26,000
Pacific ocean perch BS	550
Pacific ocean perch AI	550
Other rockfish	1,100
Sablefish BS	500
Sablefish AI	500
Atka mackerel	-0-
Squid	-0-
<u>Other Species</u>	<u>1,400</u>
Total	43,600

9. In Annex II, Part II.2, p. AII, 2 and 3, delete the Table and substitute the following:

Table AII.2
Domestic Non-Processed Catch, DNP

<u>Species</u>	<u>Amount (mt)</u>
Pollock BS	500
Yellowfin sole	200
Other flatfish	200
Pacific cod	200
Other species	<u>400</u>
Total	1,500

10. In Annex II, Part II.B, p. AII-4, delete the Table and substitute the following:

Table II.3
U.S. Harvest, Delivered to Foreign Processors, JVP

<u>Species</u>	<u>Amount (mt)</u>
Pollock BS	64,000
Pollock AI	-0-
Yellowfin sole	30,000
Turbots	75
Other flatfish	10,000
Pacific cod	17,065
Pacific ocean perch BS	830
Pacific ocean perch AI	830
Other rockfish	450
Sablefish BS	200
Sablefish AI	200
Atka mackerel	14,500
Squid	50
<u>Other Species</u>	<u>6,000</u>
Total	144,200

11. In Annex III, delete the original and substitute Annex III, amended 81-4, included herein.

ANNEX III -- Derivation of Total Allowable Level of Foreign Fishing (TALFF)
(Metric Tons)

Reference: Species group	Sub-area ^{1/}	OY	Reserve	Initial DAH	Initial TALFF
Pollock	Bering Sea	1,000,000	50,000	74,500	875,500
Pollock	Aleutian	100,000	<u>3/</u>	--	100,000
Yellowfin sole		117,000	5,850	31,200	79,950
Turbots		90,000	4,500	1,075	84,425
Other flatfishes ^{2/}		61,000	3,050	11,200	46,750
Pacific cod		120,000 ^{4/}	6,000	43,265	70,735
Pacific ocean perch	Bering Sea	3,250	162	1,380	1,708
Pacific ocean perch	Aleutian	7,500	375	1,380	5,745
Other rockfish		7,727	500	1,550	5,677
Sablefish	Bering Sea	3,500	350	700	2,450
Sablefish	Aleutian	1,500	150	700	650
Atka mackerel		24,800	1,240	14,500	9,060
Squid		10,000	500	50	9,450
Others		<u>74,249</u>	<u>3,712</u>	<u>7,800</u>	<u>62,737</u>
Total		1,620,526	76,389	189,300	1,354,837

*1/ BS Bering Sea (Statistical Areas I, II, II combined).
AL Aleutian Island Area (Statistical Area IV).

2/ Excluding Pacific halibut.

3/ This OY calculated for the offshore pollock population in deep water discussed in Annex I (p. AI-70). No reserve is considered necessary at this time since there is little U.S. capability for a pelagic trawl fishery and resource abundance on the continental shelf is expected to keep any U.S. effort on that component identified as "B.Sea."

4/ Pacific cod OY is 75% of ABC.

* Includes territorial waters.

Amended 81-4

OPTIMUM YIELD (OY), DOMESTIC ANNUAL HARVEST (DAH),
AND TOTAL ALLOWABLE LEVEL OF FOREIGN FISHING (TALFF)
(Metric Tons)

Reference: Species group	Sub-area ^{1/}	OY	Reserve	Initial DAH	Initial TALFF
Pollock	Bering Sea	1,000,000	50,000	74,500	875,500
Pollock	Aleutian	100,000	<u>3/</u>	--	100,000
Yellowfin sole		117,000	5,850	31,200	79,950
Turbots		90,000	4,500	1,075	84,425
Other flatfishes ^{2/}		61,000	3,050	11,200	46,750
Pacific cod		120,000 ^{4/}	6,000	43,265	70,735
Pacific ocean perch	Bering Sea	3,250	162	1,380	1,708
Pacific ocean perch	Aleutian	7,500	375	1,380	5,745
Other rockfish		7,727	500	1,550	5,677
Sablefish	Bering Sea	3,500	350	700	2,450
Sablefish	Aleutian	1,500	150	700	650
Atka mackerel		24,800	1,240	14,500	9,060
Squid		10,000	500	50	9,450
Others		<u>74,249</u>	<u>3,712</u>	<u>7,800</u>	<u>62,737</u>
Total		1,620,526	76,389	189,300	1,354,837

*1/ BS Bering Sea (Statistical Areas I, II, II combined).
AL Aleutian Island Area (Statistical Area IV).

2/ Excluding Pacific halibut.

3/ This OY calculated for the offshore pollock population in deep water discussed in Annex I (p. AI-70). No reserve is considered necessary at this time since there is little U.S. capability for a pelagic trawl fishery and resource abundance on the continental shelf is expected to keep any U.S. effort on that component identified as "B.Sea."

4/ Pacific cod OY is 75% of ABC.

* Includes territorial waters.

Amended 81-4

MSY, EY, and ABC Values for Groundfish in
the Bering Sea/Aleutian Region (1000's mt)

Species	Sub-area ^{1/}	MSY	EY	ABC	(1980 OY)
Pollock	BS	1,100-1,600	1,000	1,000	(1,000)
	AL	--	--	100	(100)
Yellowfin sole	--	169-260	117	117	(117)
Turbots	--	100	90-95	90	} (151)
Other flatfishes	--	44.3-76.8	=MSY	61	
Cod	--	55.0	160	160	(58.7)
Pacific ocean perch	BS	32	6.5	3.25	(3.25)
	AL	75	15	7.5	(7.5)
Other rockfish	--	--	--	7.727	(7.727)
Sablefish	BS	11.35	3.5	3.5	(3.5)
	AL	1.85	1.5	1.5	(1.5)
Atka mackerel	--	33	Unknown	24.8	(24.8)
Squid	--	10	10	10	(10)
Pacific halibut	--	5	0.3	<u>2/</u>	--
Other included species	--	89.4	89.4	74.2	(74.2)
Total ^{3/}	--	1,720.9- 2,344.4	1,537.2- 1,574.7	1,660.48	(1,559.18)

1/ BS = Eastern Bering Sea Area (Statistical Areas I, II, III combined).
AL = Aleutian Area (Statistical Area IV).

2/ Managed by International Pacific Halibut Commission.

3/ Excluding Pacific halibut.

Amended 81-4

Table I.1 -- MSY, EY, and ABC Values for Groundfish in the Bering Sea/Aleutian Region (1000's mt)

Species	Sub-area ^{1/}	MSY	EY	ABC	(1980 OY)
Pollock	BS	1,100-1,600	1,000	1,000	(1,000)
	AL	--	--	100	(100)
Yellowfin sole	--	169-260	117	117	(117)
Turbots	--	100	90-95	90	} (151)
Other flatfishes	--	44.3-76.8	=MSY	61	
Cod	--	55.0	160	160	(58.7)
Pacific ocean perch	BS	32	6.5	3.25	(3.25)
	AL	75	15	7.5	(7.5)
Other rockfish	--	--	--	7.727	(7.727)
Sablefish	BS	11.35	3.5	3.5	(3.5)
	AL	1.85	1.5	1.5	(1.5)
Atka mackerel	--	33	Unknown	24.8	(24.8)
Squid	--	10	10	10	(10)
Pacific halibut	--	5	0.3	<u>2/</u>	--
Other included species	--	89.4	89.4	74.249	(74.2)
Total ^{3/}	--	1,720.9- 2,344.4	1,537.2- 1,574.7	1,660.48	(1,559.18)

1/ BS = Eastern Bering Sea Area (Statistical Areas I, II, III combined).
AL = Aleutian Area (Statistical Area IV).

2/ Managed by International Pacific Halibut Commission.

3/ Excluding Pacific halibut.

Amended 81-4

AI-1a