

ALASKA LEGISLATURE SPECIAL COMMITTEE/SUBJECT FILE 8672
1643 SCOMM 62: SENATE SPEC. COMM. ON OIL & GAS, 1989-1990

1 (3) "realistic maximum oil discharge" means the maximum and
2 most damaging oil discharge that the department estimates could occur
3 during the lifetime of the facility or pipeline based on the size,
4 location, and capacity of the facility or pipeline; on the depart-
5 ment's knowledge and experience with the facility or pipeline or with
6 similar facilities or pipelines; and on the department's analysis of
7 possible mishaps at the facility or pipeline or at similar facilities
8 or pipelines;

9 (4) "region of operation," with respect to the holder of a
10 contingency plan, means the area where the operations of the holder
11 that require a contingency plan are located, the boundaries of which
12 correspond to the regional boundaries established by the commissioner
13 for regional master planning purposes under AS 46.04.210.

14 * Sec. 11. AS 46.04.040(a) is amended to read:

15 (a) A person may not cause or permit the operation of an oil
16 terminal facility in the state unless the person has furnished to the
17 department, and the department has approved, proof of financial abil-
18 ity to respond in damages. Proof of financial responsibility required
19 for a crude oil terminal is \$50,000,000 per incident. Proof of finan-
20 cial responsibility required for a noncrude oil terminal is \$25, per
21 incident, for each barrel of total noncrude oil storage capacity at
22 the terminal or [WHICH HAS BEEN ACCEPTED BY THE DEPARTMENT. ABILITY
23 TO RESPOND IN DAMAGES NEED NOT EXCEED \$50,000,000 BUT MUST BE IN AN
24 AMOUNT (1) NOT LESS THAN \$10, PER INCIDENT, FOR EACH BARREL OF STORAGE
25 CAPACITY AT THE OIL TERMINAL FACILITY: OR (2)] \$1,000,000, whichever
26 is greater, subject to a maximum of \$50,000,000. For purposes of this
27 subsection, an oil terminal facility that stores both crude oil and
28 noncrude oil is subject to the financial responsibility requirements
29 applicable to the type of facility that corresponds to the type of oil

1 storage that predominates at the facility. However, if the facility
2 stores more noncrude oil than crude oil, the \$25 per incident, per
3 barrel requirement of this subsection applies to each barrel of oil
4 storage capacity at the facility.

5 * Sec. 12. AS 46.04.040(b) is amended to read:

6 (b) A [AFTER JULY 1, 1981, A] person may not cause or permit the
7 operation of a pipeline or an [OFFSHORE] exploration or production
8 facility in the state unless the person has furnished to the depart-
9 ment, and the department has approved, proof of financial ability to
10 respond in damages [HAS BEEN ACCEPTED BY THE DEPARTMENT]. Proof of
11 financial responsibility required for a pipeline or an offshore explo-
12 ration or production facility is \$50,000,000 [MAY NOT BE LESS THAN
13 \$35,000,000] per incident. Proof of financial responsibility required
14 for an onshore production facility is \$20,000,000 per incident. Proof
15 of financial responsibility required for an onshore exploration facil-
16 ity is \$5,000,000 per incident.

17 * Sec. 13. AS 46.04.040(c) is amended to read:

18 (c) Except as provided in (m) of this section, a [A] person may
19 not operate a tank vessel or an oil barge within the waters of the
20 state, or cause or permit the transfer of oil to or from a tank vessel
21 [,] or [, AFTER JANUARY 1, 1981, TO OR FROM] an oil barge, unless the
22 person operating the tank vessel or oil barge has furnished to the
23 department, and the department has approved, proof of financial abil-
24 ity to respond in damages. Proof of financial responsibility required
25 under this subsection is

26 (1) \$300, per incident, for each barrel of storage capacity
27 or \$100,000,000, whichever is greater, for a tank vessel or barge
28 carrying crude oil;

29 (2) \$100, per incident, for each barrel of storage capacity

1 or \$1,000,000, whichever is greater, subject to a maximum of
2 \$35,000,000, for a tank vessel or barge carrying noncrude oil [RESPON-
3 SIBILITY FOR THE TANK VESSEL OR BARGE HAS BEEN ACCEPTED BY THE DEPART-
4 MENT. FINANCIAL RESPONSIBILITY UNDER THIS SUBSECTION SHALL BE IN THE
5 FOLLOWING AMOUNTS:

6 (1) FOR A TANK VESSEL OR OIL BARGE INVOLVED IN THE TRANS-
7 PORTATION OF TRANS-ALASKA PIPELINE OIL, THE AMOUNT REQUIRED BY THE
8 FEDERAL MARITIME COMMISSION UNDER 43 U.S.C. 1653(c)(3) (SEC. 204
9 (c)(3), TRANS-ALASKA PIPELINE AUTHORIZATION ACT);

10 (2) FOR ANY OTHER OIL BARGE, THE AMOUNT REQUIRED BY SEC. -
11 311(p)(1) OF THE CLEAN WATER ACT, OR \$1,000,000, WHICHEVER IS GREATER;

12 (3) FOR ANY OTHER TANK VESSELS, THE AMOUNT REQUIRED BY
13 SEC. 311(p)(1) OF THE CLEAN WATER ACT, OR \$20,000,000, WHICHEVER IS
14 GREATER].

15 * Sec. 14. AS 46.04.040(d) is amended to read:

16 (d) Except for prosecutions under AS 46.03.790(b) and except as
17 provided in (k) of this section, it is not a defense to an action
18 brought for violation of (a) - (c) [(c)] of this section that the
19 person charged believed in good faith that proof of financial ability
20 to respond in damages had been furnished to, and approved by, the
21 department [THE VESSEL OPERATOR POSSESSED PROOF OF FINANCIAL RESPON-
22 SIBILITY ACCEPTED BY THE DEPARTMENT].

23 * Sec. 15. AS 46.04.040(e) is amended to read:

24 (e) Financial responsibility may be demonstrated by (1) self-
25 insurance, (2) insurance, (3) surety, (4) [OR] guarantee, (5) letter
26 of credit approved by the department, or (6) other proof of financial
27 responsibility approved by the department, including proof of finan-
28 cial responsibility provided by a group of insureds who have agreed to
29 cover pollution risks of members of the group under terms the

1 department may prescribe. An action brought under AS 46.03.758,
2 46.03.759, 46.03.760(a) or (e), 46.03.822, or AS 46.04.030(g) [OR TO
3 COLLECT PENALTIES IMPOSED UNDER AS 46.03.759] may be brought in a
4 state court directly against the insurer, the group, or another person
5 providing evidence of financial responsibility. The applicant, and an
6 insurer, surety, [OR] guarantor, person furnishing an approved letter
7 of credit, or other group or person providing proof of financial
8 responsibility approved by the department shall appoint an agent for
9 service of process in the state. For purposes of this subsection, an
10 [AN] insurer, other than a group of insureds whose agreement has been
11 approved by the department, must either be authorized by the Depart-
12 ment of Commerce and Economic Development to sell insurance in the
13 state or be an unauthorized insurer listed by the Department of Com-
14 merce and Economic Development as not disapproved for use in the
15 state.

16 * Sec. 16. AS 46.04.040(f) is amended to read:

17 (f) Acceptance of proof of financial responsibility expires

18 (1) one year from its issuance for self-insurance;

19 (2) on the effective date of a change in the surety bond,
20 guarantee, [OR] insurance agreement, letter of credit, or other proof
21 of financial responsibility; or

22 (3) on the expiration or cancellation of the surety bond,
23 guarantee, [OR] insurance agreement, letter of credit, or other proof
24 of financial responsibility.

25 * Sec. 17. AS 46.04.040(g) is amended to read:

26 (g) The person whose proof of financial responsibility is ac-
27 cepted by the department under this section shall notify the depart-
28 ment at least 30 days before the effective date of a change, expira-
29 tion or cancellation in the surety bond, guarantee, [OR] insurance

1 agreement, letter of credit, or other proof of financial responsibil-
2 ity. Application for renewal of acceptance of proof of financial
3 responsibility under this section must be filed at least 30 days
4 before the date of expiration.

5 * Sec. 18. AS 46.04.040 is amended by adding new subsections to read:

6 (j) Upon acceptance and approval of proof of financial responsi-
7 bility under this section, the department shall issue to the applicant
8 a certificate stating that the state's financial responsibility re-
9 quirements have been satisfied. The certificate must include the name
10 of the facility, pipeline, tank vessel, or oil barge for which it is
11 issued and the expiration date of the certificate.

12 (k) It is a defense to an action brought for violation of (a) -
13 (c) of this section that the person charged relied on a certificate of
14 approval issued under (j) of this section unless the person knew or
15 had reason to know at the time of the alleged violation that the
16 approval had been revoked or was expired.

17 (l) Notwithstanding the requirements of (e) of this section, the
18 applicant may provide evidence of financial responsibility provided by
19 an insurer or other person who does not agree to be subject to direct
20 action in state courts or to appoint an agent for service of process
21 if

22 (1) the department is satisfied that the insurance or other
23 form of financial responsibility covers judgments under the statutes
24 listed in (e) of this section;

25 (2) the applicant provides proof of \$50,000,000, or the
26 amount required by (c) of this section, whichever is less, in
27 insurance or other form of financial responsibility that meets the
28 requirements of (e) of this section; and

29 (3) the applicant provides a sworn statement or affidavit

1 that insurance or other form of financial responsibility that meets
2 the requirements of (e) of this section is not available in greater
3 amounts.

4 (m) A tank vessel or oil barge that is conducting, or is avail-
5 able only for conducting, oil discharge response operations is exempt
6 from the requirements of (c) of this section if the tank vessel or oil
7 barge has received prior approval of the department. The department
8 may approve an exemption under this subsection upon application and
9 presentation of information required by the department.

10 * Sec. 19. AS 46.04 is amended by adding a new section to read:

11 Sec. 46.04.045. ADJUSTMENT OF DOLLAR AMOUNTS. (a) The dollar
12 amounts in AS 46.04.040 change, as provided in this section, according
13 to and to the extent of changes in the Consumer Price Index for all
14 urban consumers for the Anchorage metropolitan area compiled by the
15 Bureau of Labor Statistics, United States Department of Labor (the
16 index). The index for January of the year in which this section
17 becomes effective is the reference base index.

18 (b) The dollar amounts change on October 1 of each third year
19 according to the percentage change between the index for January of
20 that year and the most recent index used to determine whether to
21 change the dollar amounts. After calculation of the new amounts, the
22 resulting amounts shall be rounded to the nearest cent.

23 (c) If the index is revised, the percentage of change is cal-
24 culated on the basis of the revised index. If a revision of the index
25 changes the reference base index, a revised reference base index is
26 determined by multiplying the reference base index applicable by the
27 rebasing factor furnished by the United States Bureau of Labor Statis-
28 tics. If the index is superseded, the index referred to in this sec-
29 tion is the one represented by the Bureau of Labor Statistics as

1 reflecting most accurately changes in the purchasing power of the
2 dollar for Alaskan consumers.

3 (d) The department shall adopt a regulation announcing

4 (1) on or before June 30 of each third year, the changes in
5 dollar amounts required by (b) of this section; and

6 (2) promptly after the changes occur, changes in the index
7 required by (c) of this section, including, if applicable, the numer-
8 ical equivalent of the reference base index under a revised reference
9 base index and the designation or title of any index superseding the
10 index.

11 (e) The department shall also provide notification of a change
12 in dollar amounts required under (b) of this section to the clerks of
13 court in each judicial district of the state.

14 * Sec. 20. AS 46.04.050 is amended to read:

15 Sec. 46.04.050. EXEMPTIONS. The provisions of [BECAUSE OF THE
16 RESTRICTED NATURE OF THE OPERATIONS AND THE MINIMAL DANGER TO THE
17 ENVIRONMENT POSED BY THE ACTIVITIES,] AS 46.04.030, 46.04.040, and
18 46.04.060 do not apply to an oil terminal facility that has an effec-
19 tive storage capacity of less than 5,000 [10,000] barrels of crude oil
20 or less than 10,000 barrels of noncrude oil.

21 * Sec. 21. AS 46.04.060 is amended to read:

22 Sec. 46.04.060. INSPECTIONS. In addition to other rights of
23 access or inspection conferred upon the department by law or other-
24 wise, the department may at reasonable times and in a safe manner
25 enter and inspect oil [OIL] terminal facilities, pipelines, [OFFSHORE]
26 exploration and production facilities, tank vessels, and oil barges in
27 order [ARE SUBJECT TO INSPECTION BY THE DEPARTMENT] to

28 (1) ensure compliance with the provisions of this chapter;

29 or

1 (2) participate in an examination of the structural integ-
2 riety and the operating and mechanical systems of those vessels,
3 barges, pipelines, and facilities by federal and state agencies with
4 jurisdiction.

5 * Sec. 22. AS 46.04.060 is amended by adding a new subsection to read:

6 (b) When the department determines that no federal or state
7 agencies with jurisdiction are performing timely and adequate inspec-
8 tions of an oil terminal facility, pipeline, exploration or production
9 facility, tank vessel, or oil barge, it may perform its own inspection
10 of the structural integrity and operating and mechanical systems of a
11 facility, pipeline, tank vessel, or oil barge by using personnel with
12 qualifications in the areas being inspected.

13 * Sec. 23. AS 46.04.200 is amended to read:

14 Sec. 46.04.200. STATE MASTER PLAN. (a) The department shall
15 prepare and annually review and revise a statewide master oil and
16 hazardous substance discharge [AND] prevention and contingency plan.

17 (b) The state master plan prepared under this section must

18 (1) take into consideration the elements of an oil dis-
19 charge prevention and contingency plan approved or submitted for
20 approval under AS 46.04.030;

21 (2) clarify and specify the respective responsibilities of
22 each of the following in the assessment, containment, and cleanup of a
23 catastrophic oil discharge or of a significant discharge of a hazard-
24 ous substance into the environment of the state:

25 (A) agencies of the state;

26 (B) municipalities of the state;

27 (C) appropriate federal agencies;

28 (D) operators of facilities;

29 (E) private parties whose land and other property may

1 be affected by the oil or hazardous substance discharge; and

2 (F) other parties identified by the commissioner as
3 having an interest in or the resources to assist in the contain-
4 ment and cleanup of an oil or hazardous substance discharge;

5 (3) specify the respective responsibilities of parties
6 identified in (2) of this subsection in an emergency response; and

7 (4) identify actions necessary to reduce the likelihood of
8 catastrophic oil discharges and significant discharges of hazardous
9 substances.

10 (c) In preparing and annually reviewing the state master plan,
11 the commissioner shall

12 (1) consult with municipal and community officials, and
13 with representatives of affected regional organizations;

14 (2) submit the draft plan to the public for review and
15 comment;

16 (3) submit to the legislature for review, not later than
17 the 10th day following the convening of each regular session, the plan
18 and any annual revision of the plan; and

19 (4) require or schedule unannounced oil spill drills to
20 test the sufficiency of an oil discharge prevention and contingency
21 plan approved under AS 46.04.030 or of the cleanup plans of a party
22 identified under (b)(2) of this section.

23 * Sec. 24. AS 46.04.210(a) is amended to read:

24 (a) For any region of the state, the boundaries of which are
25 determined by the commissioner by regulation, in which the department
26 is required to review and approve an oil discharge prevention and
27 contingency plan submitted by a person under AS 46.04.030, the depart-
28 ment shall prepare and annually review and revise a regional master
29 oil and hazardous substance discharge [AND] prevention and contingency

1 plan.

2 * Sec. 25. AS 46.04.900(8) is amended to read:

3 (8) "[OFFSHORE] exploration [OR PRODUCTION] facility" means
4 a platform, vessel, or other facility used to explore for [OR PRODUCE]
5 hydrocarbons in or on the waters of the state or in or on land in the
6 state; the term does not include platforms or vessels used for strati-
7 graphic drilling or other operations that [WHICH] are not authorized
8 or intended to drill to a producing formation;

9 * Sec. 26. AS 46.04.900(15) is amended to read:

10 (15) "tank vessel" means a self-propelled waterborne vessel
11 that is constructed or converted to carry liquid bulk cargo in tanks
12 and includes tankers, tankships, and combination carriers when carry-
13 ing oil; the term does not include vessels carrying oil in drums,
14 barrels, or other packages, or vessels carrying oil as fuel or stores
15 for that vessel;

16 * Sec. 27. AS 46.04.900 is amended by adding new paragraphs to read:

17 (18) "pipeline" means the facilities, including piping,
18 compressors, pump stations, and storage tanks, used to transport crude
19 oil and associated hydrocarbons between production facilities or from
20 one or more production facilities to marine vessels;

21 (19) "production facility" means a drilling rig, drill site,
22 flow station, gathering center, pump station, storage tank, well, and
23 related appurtenances on other facilities to produce, gather, clean,
24 dehydrate, condition, or store crude oil and associated hydrocarbons
25 in or on the water of the state or on land in the state, and gathering
26 and flow lines used to transport crude oil and associated hydrocarbons
27 to the inlet of a pipeline system for delivery to a marine facility,
28 refinery, or other production facility.

29 * Sec. 28. AS 46.08.040 is amended to read:

1 Sec. 46.08.040. PURPOSES OF THE FUND. The commissioner may use
2 money from the fund to

3 (1) investigate and evaluate the release or threatened
4 release of oil or a hazardous substance, and contain, clean up, and
5 take other necessary action, such as monitoring and assessing, to
6 address a release or threatened release of oil or a hazardous sub-
7 stance that poses an imminent and substantial threat to the public
8 health or welfare, or to the environment;

9 (2) pay all costs incurred

10 (A) to establish and maintain the oil and hazardous
11 substance response office and for the expenses of the oil and
12 hazardous substance response corps and the oil and hazardous
13 substance response depots established by that office;

14 (B) to review oil discharge prevention and contingency
15 plans submitted under AS 46.04.030;

16 (C) to conduct training, response exercises, inspec-
17 tions, and tests, in order to verify equipment inventories and
18 ability to prevent and respond to oil and hazardous substance
19 release emergencies, and to undertake other activities intended
20 to verify or establish the preparedness of the state, a munic-
21 ipality, or a party required by AS 46.04.030 to have an approved
22 contingency plan to act in accordance with that plan; and

23 (D) to verify or establish proof of financial respon-
24 sibility required by AS 46.04.040;

25 (3) provide matching funds for participation in federal oil
26 discharge cleanup activities and under 42 U.S.C. 9601-9657 (Compre-
27 hensive Environmental Response, Compensation, and Liability Act of
28 1980); [AND]

29 (4) recover the costs to the state or to a municipality of

1 a containment and cleanup resulting from the release or the threatened
2 release of oil or a hazardous substance; [.]

3 (5) prepare, review, and revise

4 (A) the state's master oil and hazardous substance
5 discharge [AND] prevention and contingency plan required by
6 AS 46.04.200; and

7 (B) a regional master oil and hazardous substance
8 discharge [AND] prevention and contingency plan required by
9 AS 46.04.210; and

10 (6) restore the environment by addressing the effects of an
11 oil or hazardous substance release.

12 * Sec. 29. AS 46.08.060(a) is amended to read:

13 (a) The commissioner shall submit a report to the legislature
14 not later than the 10th day following the convening of each regular
15 session of the legislature. The report may include information con-
16 sidered **significant** by the commissioner but must include:

17 (1) the amount of money expended under AS 46.08.040 during
18 the ~~preceding~~ fiscal year;

19 (2) the amount and source of money received and money
20 recovered during the preceding fiscal year as specified in AS 46.08.-
21 020;

22 (3) a summary of municipal participation in responses
23 funded by the fund;

24 (4) a detailed summary of department activities in re-
25 sponses funded by the fund during the preceding fiscal year, including
26 response descriptions and statements ~~outlining the nature of the~~
27 threat; in this paragraph, "detailed" includes information describing
28 each personal services position and total compensation for that posi-
29 tion, each contract in excess of \$20,000, and each purchase in excess

1 of \$10,000; and

2 (5) the projected cost for the next fiscal year of monitor-
3 ing, operating, and maintaining sites where response has been com-
4 pleted or is expected to be continued during the fiscal year.

5 * Sec. 30. SURVEY OF SMALL NONCRUDE OIL TERMINAL FACILITIES. (a) By
6 January 31, 1992, the Department of Environmental Conservation shall sur-
7 vey, inspect, and prepare an inventory of noncrude oil terminal facilities
8 in the state with an effective storage capacity of 5,000 to 10,000 barrels
9 in order to determine for each facility

10 (1) its actual storage capacity;

11 (2) the type of noncrude oil products stored;

12 (3) its age, design, construction, and general condition;

13 (4) the design and construction standards applicable or rele-
14 vant;

15 (5) the presence or absence of containment structures and equip-
16 ment;

17 (6) ~~the~~ ability to respond to a release or threatened release;

18 (7) ~~the~~ environmental sensitivity of the surrounding area and
19 the potential risk to the environment if a release occurs;

20 (8) the presence or absence of surface and subsurface pipelines
21 and storage tanks; and

22 (9) other appropriate information.

23 (b) By January 31, 1992, the Department of Environmental Conservation
24 shall report to the legislature the results of the survey required under
25 (a) of this section and its written recommendations concerning discharge
26 prevention and contingency requirements or design review requirements that
27 should be enacted for noncrude oil terminal facilities with storage capac-
28 ities of less than 10,000 barrels.

29 (c) Upon completion of the survey required under (a) of this section,
SCS CSHB 567(O&G)

1 the Department of Environmental Conservation may

2 (1) notify each facility of the results of the facility's in-
3 spection; and

4 (2) provide each facility with recommendations and technical
5 assistance concerning identified deficiencies.

6 (d) The Department of Environmental Conservation may conduct the
7 inspections required under this section notwithstanding the provisions of
8 AS 46.04.050. The department shall conduct the inspections at reasonable
9 times.

10 * Sec. 31. STUDY RELATING TO NONCRUDE OIL TANKERS AND BARGES. By
11 July 1, 1991, the Department of Environmental Conservation shall conduct a
12 study and report to the legislature its recommendations concerning the
13 following issues related to oil discharge prevention and contingency plan-
14 ning for tank vessels and oil barges carrying noncrude oil in bulk as
15 cargo:

16 (1) appropriate locations for regional response depots, based on
17 an assessment of historical evidence of where noncrude oil discharges are
18 most likely to occur and the needs of remote areas of the state such as
19 western and northern Alaska and the Aleutians;

20 (2) appropriate discharge response times;

21 (3) requirements for personnel and equipment that should be
22 imposed on contingency plan holders;

23 (4) appropriate roles for industry and state and local govern-
24 ments in the purchase, ownership, and positioning of discharge response
25 efforts.

26 * Sec. 32. TRANSITIONAL PROVISIONS. (a) AS 46.04.030(k) - (m), as
27 acted by sec. 10 of this Act, do not apply to oil discharge prevention and
28 contingency plans until June 1, 1991. On and after June 1, 1991, a contin-
29 gency plan must comply with AS 46.04.030(k) - (m), enacted by sec. 10 of

1 this Act, regardless of whether the contingency plan is due for renewal
2 under AS 46.04.030(d), as amended by sec. 9 of this Act.

3 (b) The amendments to AS 46.04.040, made by secs. 11 - 18 of this
4 Act, do not apply to persons required to show proof of financial respon-
5 sibility until June 1, 1991. On and after June 1, 1991, proof of financial
6 responsibility must comply with AS 46.04.040, as amended by secs. 11 - 18
7 of this Act, regardless of whether acceptance of proof of financial respon-
8 sibility has expired under AS 46.04.040(f), as amended by sec. 16 of this
9 Act.

10 * Sec. 33. This Act takes effect immediately under AS 01.10.070(c).
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Rishi OH

5/3/90

PLACE	CRUDE THRUPUT BBLs/DAY	RECOVERY EQUIP AVAILABLE IN 24-48 HOURS BBLs/HR	RATIO THRUPUT Vs. CAPABILITY	AMOUNT OF EQUIP ALYESKA NEEDS Vs. OTHERS BBLs/HR
ALYESKA	2,000,000	20,000	100:1	
SOLLUM VOE	800,000	38,000	21:1	95,000
NORWAY				
TOTAL OFFSHORE	1,500,000	134,000+	11:1	179,000
ALL TERMINALS	1,000,000	134,000+	7.5:1	268,000

FINANCIAL RESPONSIBILITY REQUIREMENTS
NON-CRUDE BARGES

<u>Barge Size (BBLs)</u>	<u>Existing Requirements</u>	<u>Proposed Requirements</u>
< 5,000	\$1 million	None
5,000 - 10,000	\$1 million	\$1 million
20,000	\$1 million	\$2 million
30,000	\$1 million	\$3 million
40,000	\$1 million	\$4 million
50,000	\$1 million	\$5 million
75,000	\$1 million	\$7.5 million
100,000	\$1 million	\$10 million
150,000	\$1 million	\$15 million

FINANCIAL RESPONSIBILITY REQUIREMENTS

EXISTING NON-CRUDE BARGE COMPANIES

<u>COMPANY</u>	<u>LARGEST BARGE SIZE (BBLs)</u>	<u>EXISTING REQUIREMENTS</u>	<u>NEW REQUIREMENTS</u>
Crowley	154,608	\$ 1 million	\$15.5 million
Foss	75,510	\$ 1 million	\$ 7.6 million
United Marine	74,100	\$ 1 million	\$ 7.4 million
Delta Western	50,000	\$ 1 million	\$ 5.0 million
Northland	39,000	\$ 1 million	\$ 3.9 million
Brix Maritime	21,750	\$ 1 million	\$ 2.1 million
Alaska Marine	16,031	\$ 1 million	\$ 1.6 million
White Pass	12,828	\$ 1 million	\$ 1.3 million
Yutana	7,600	\$ 1 million	\$ 1 million
Moody's	5,476	\$ 1 million	\$ 1 million
Kugkaktlike	3,600	\$ 1 million	None
Smith	1,768	\$ 1 million	None

Note: Barges listed are only those that have fulfilled financial responsibility requirements through June 30, 1990, and submitted contingency plans.

**FINANCIAL RESPONSIBILITY REQUIREMENTS
NON-CRUDE TERMINALS**

<u>Terminal Size (BBLs)</u>	<u>Existing Requirements</u>	<u>Proposed Requirements</u>
<10,000	None	None
10,000-40,000	\$1 million	\$1 million
50,000	\$1 million	\$1.25 million
100,000	\$1 million	\$2.5 million
500,000	\$5 million	\$12.5 million
1,000,000	\$10 million	\$25.0 million
1,500,000	\$15 million	\$37.5 million

FINANCIAL RESPONSIBILITY REQUIREMENTS

BARROW NON-CRUDE TERMINALS

<u>FACILITY</u>	<u>SIZE (BBLs)</u>	<u>EXISTING REQUIREMENTS</u>	<u>NEW REQUIREMENTS</u>
Block B Tank Farm (Eskimo Inc)	68,095	\$ 1 million	\$ 1.7 million
Barrow Oil Terminal (NSB)	24,240	\$ 1 million	\$ 1 million
Browerville (Eskimo Inc)	1,430	None	None

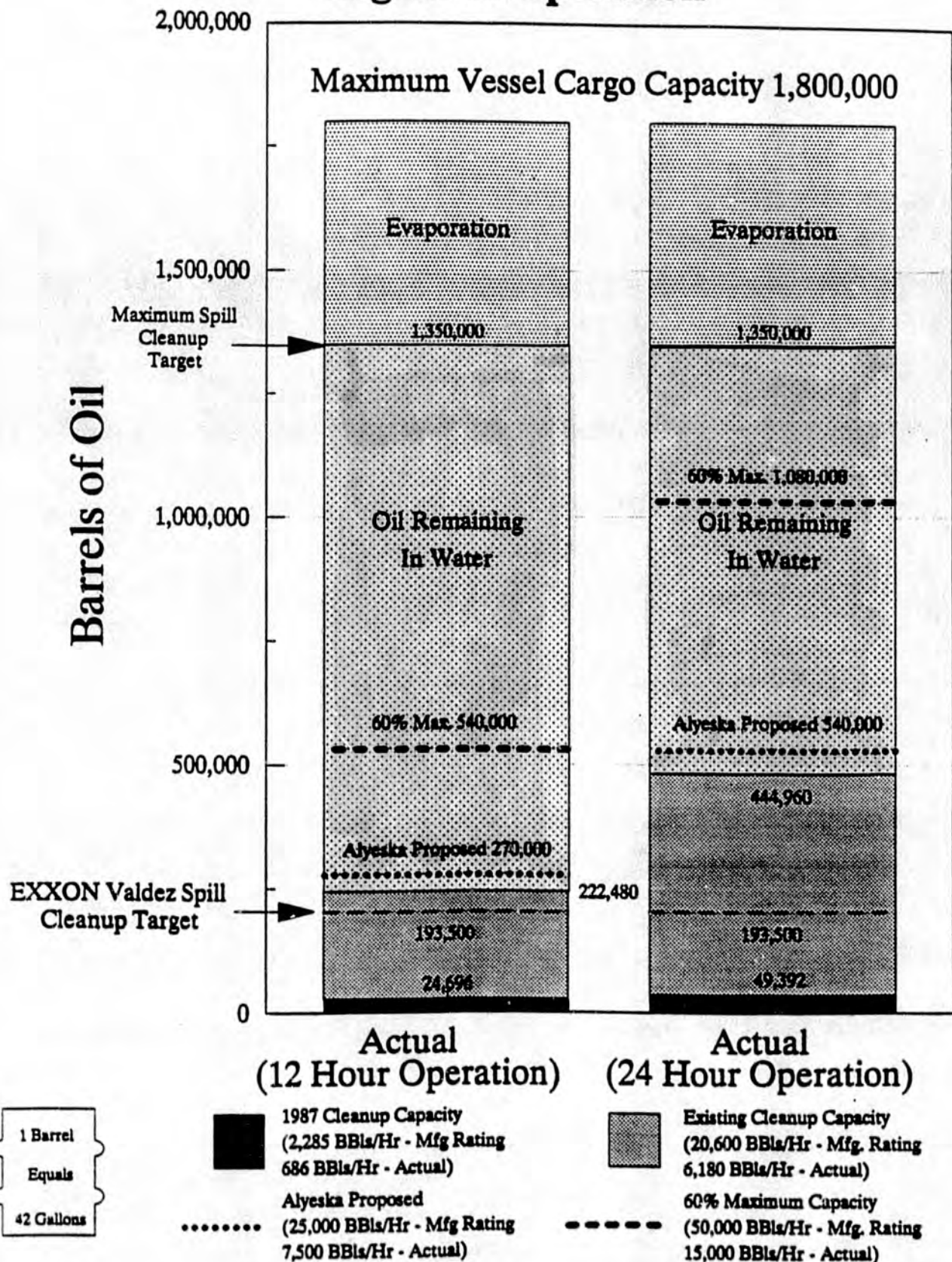
Block B Tank Farm and the Barrow terminal are currently required to have contingency plans and have submitted them to DEC for approval. The Browerville facility had a contingency plan in the past, but reduced its capacity and is no longer required to have a plan.

DRAFT

Dwight Lloyd

5/8/90

72 Hour Maximum Spill Recovery Capability Prince William Sound Region of Operation



DRAFT

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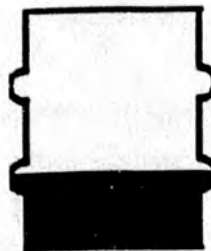
ASSUMPTIONS

1. Worst case is the maximum cargo capacity of the largest vessel or 1,800,000 barrels of oil.
2. Removal by a 25% evaporation rate (450,00 barrels) during the 72 hour period is deducted from the worst case spill volume.
3. Response capability is the total number of barrels of oil that can be removed in a 72 hour period as determined by summing the total recovery capability for each piece of skimming equipment. To derive the ACTUAL recovery rate a factor of 30% is applied against the equipment MANUFACTURE rating to account for the inefficiency of skimming equipment.

REMOVAL CAPACITY PER BARREL

42 BBL/HR - Manufacture
Rating

12.6 BBL/HR - Actual
Efficiency



DRAFT

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**72 Hour Maximum Spill
Recovery Capability**

**Prince William Sound
Region of Operation**

Maximum Vessel Cargo Capability - Prince William Sound Region of
Operation

1,800,000 bbls

Manufacturers Rated Recovery Capability
1,800,000 Maximum Vessel Cargo Capacity
+ 72 Hour Response Planning Standard

25,000 bbls/hour

Actual Recovery Capability
25,000 bbls/hour - manufacturers rated recovery capacity
x .30 Efficiency

7500 bbls/hour

Actual Recovery Capability for 72 Hours
7500 bbls/hr
x 72 hours

540,000 bbls

DRAFT

DRAFT

Amount on Water to be Recovered for a Worst Case Spill
1,800,000 bbls maximum cargo capacity of largest vessel
- 450,000 Evaporation estimated at 25%

1,350,000 bbls

Amount Not Recovered
1,350,000 amount on water to be recovered
- 540,000 72 Hour Recovery Capability

810,000

Percent Recovered
540,000 Amount Recovered in 72 Hours
+ 1,350,000 Amount on water to be recovered

40%

EXXON Valdez Oil Spill

258,000 bbls spilled
- 64,500 bbls evaporated at 25%
193,500 amount on water to be recovered

DRAFT

OIL SPILL SKIMMER RESPONSE CAPABILITY

	Manufacturers Rating (bbl/hr)	Actual (bbl/hr)
Alyeska 1987 Contingency Plan	2,285	686
Alyeska Emergency Order Requirements	30,000	10,000
Alyeska Provided Per Interim Operating Plan	10,470	3,141
Alyeska Contingency Plan Application	14,510	4,353
Alyeska in Place or On Order	20,600	6,180
Norwegian Government*	84,000	
Norwegian Industry*	50,000	
Norwegian TOTAL	134,000	40,200
Northern Europe (Bonn Agreement)*	500,000	150,000

*Estimates based on data from government documents.

DRAFT

5-3-90
Response Planning Standard
CHANGES TO PROPOSED SCS CSHE 567 (05-01-90 version)

Pg. 7, Ln. 16--pg. 8, ln. 29: DELETE ALL LANGUAGE. Replace with:

(k) Except as provided in (m) and (n) of this section, the holder of an approved contingency plan required under this section shall maintain in its region of operation, singly or in conjunction with other operators, sufficient oil discharge containment, storage, transfer, and removal equipment, personnel, and resources to accomplish the following response planning standards:

(1) for a discharge from an oil terminal facility, contain and clean up a discharge equal to the capacity of the largest oil storage tank at the facility within 72 hours, except that if the department determines that the facility is located in an area of high risk because of natural or man-made conditions outside of the facility the department may increase the volume requirement under this paragraph so that the contingency plan must be designed for a response that is greater in amount than the capacity of the largest oil storage tank at the facility;

(2) for a discharge from an exploration or production facility or pipeline, contain and clean up the realistic maximum oil discharge within 72 hours;

(3) for a discharge of crude oil from a tank vessel or oil barge, contain and clean up an amount equal to the maximum crude oil cargo volume of the tank vessel or oil barge within 72 hours. There must be located in the applicable region of operation all equipment and resources necessary to attain an oil recovery rate, comparable to the manufacturer's rated oil skimming capacity, equal to the maximum crude oil cargo volume of the tank vessel or oil barge covered by the plan divided by 72 hours. The equipment maintained in the applicable region shall include adequate pumping equipment, transfer and lightering equipment, storage capacity, and ancillary equipment adequate to receive, transfer, and store recovered oil so as to not impede the recovery rate. In addition, access to any other equipment located outside the applicable region of operation which is necessary to accomplish containment and cleanup of the maximum crude oil cargo volume within 72 hours must be demonstrated.

(4) for a discharge subject to the provisions of (k)(1)-(k)(3) of this section which enters a receiving environment other than open water, cleanup of the portion of the discharge which enters the receiving environment may, in the department's discretion, extend beyond 72 hours; however, the cleanup must be accomplished within the shortest possible time consistent with minimizing damage to the environment.

State is paying 25%

DRAFT

4-30-90

Response Planning Standard

P. 4, insert following 1. 12: The department may consider evidence that the holder of the contingency plan has implemented oil spill prevention measures and may, in its discretion, modify the standards set out in (j) of this section to reflect reduced risk of oil spills.

P. 6, substitute the following for the whole page:

in its region of operation, singly or in conjunction with other operators, sufficient oil discharge containment, storage, transfer, and removal equipment, personnel, and resources to accomplish the following:

(1) for discharges onto or into land from oil terminal facilities, contain and control a discharge in an amount equal to the capacity of the largest oil storage tank at the facility within 72 hours and remove the discharge within the shortest feasible time consistent with minimizing damage to the environment;

(2) for discharges onto or into land from exploration or production facilities and pipelines, contain and control the realistic maximum oil discharge within 72 hours and remove the discharge within the shortest feasible time consistent with minimizing damage to the environment;

(3) for discharges onto or into waters from oil terminal facilities, contain, control, and remove a discharge equal to the capacity of the largest oil storage tank at the facility within 72 hours, except that if the department determines that the facility is located in an area of high risk because of natural or manmade conditions outside of the facility, it may increase the volume requirement under this paragraph so that the contingency plan must be designed for a response that is greater in amount than the capability of the largest oil storage tank at the facility;

(4) for discharges onto or into waters from exploration or production facilities and pipelines, contain, control, and remove the realistic maximum oil discharge within 72 hours;

(5) for discharges into or onto waters from tank vessels and oil barges, contain, control, and remove a discharge of up to 15% of the maximum capacity of the vessel or barge within 24 hours; contain, control, and remove a discharge of up to 60% of the maximum capacity of the vessel or barge within 72 hours; and contain, control, and remove a discharge of up to the entire maximum capacity of the vessel or barge within 144 hours; notwithstanding (j) of this section, the plan may provide for use of equipment, personnel, and resources maintained outside the holder's region of operation for purposes of containment and control

FINANCIAL RESPONSIBILITY REQUIREMENTS
NON-CRUDE BARGES

<u>Barge Size (BBLs)</u>	<u>Existing Requirements</u>	<u>Proposed Requirements</u>
< 5,000	\$1 million	None
5,000 - 10,000	\$1 million	\$1 million
20,000	\$1 million	\$2 million
30,000	\$1 million	\$3 million
40,000	\$1 million	\$4 million
50,000	\$1 million	\$5 million
75,000	\$1 million	\$7.5 million
100,000	\$1 million	\$10 million
150,000	\$1 million	\$15 million

FINANCIAL RESPONSIBILITY REQUIREMENTS

EXISTING NON-CRUDE BARGE COMPANIES

<u>COMPANY</u>	<u>LARGEST BARGE SIZE (BBLs)</u>	<u>EXISTING REQUIREMENTS</u>	<u>NEW REQUIREMENTS</u>
Crowley	154,608	\$ 1 million	\$15.5 million
Foss	75,510	\$ 1 million	\$ 7.6 million
United Marine	74,100	\$ 1 million	\$ 7.4 million
Delta Western	50,000	\$ 1 million	\$ 5.0 million
Northland	39,000	\$ 1 million	\$ 3.9 million
Brix Maritime	21,750	\$ 1 million	\$ 2.1 million
Alaska Marine	16,031	\$ 1 million	\$ 1.6 million
White Pass	12,828	\$ 1 million	\$ 1.3 million
Yutana	7,600	\$ 1 million	\$ 1 million
Moody's	5,476	\$ 1 million	\$ 1 million
Kugkaktlike	3,600	\$ 1 million	None
Smith	1,768	\$ 1 million	None

Note: Barges listed are only those that have fulfilled financial responsibility requirements through June 30, 1990, and submitted contingency plans.

FINANCIAL RESPONSIBILITY REQUIREMENTS
NON-CRUDE TERMINALS

<u>Terminal Size (BBLs)</u>	<u>Existing Requirements</u>	<u>Proposed Requirements</u>
<10,000	None	None
10,000-40,000	\$1 million	\$1 million
50,000	\$1 million	\$1.25 million
100,000	\$1 million	\$2.5 million
500,000	\$5 million	\$12.5 million
1,000,000	\$10 million	\$25.0 million
1,500,000	\$15 million	\$37.5 million

FINANCIAL RESPONSIBILITY REQUIREMENTS

BARROW NON-CRUDE TERMINALS

<u>FACILITY</u>	<u>SIZE (BBLs)</u>	<u>EXISTING REQUIREMENTS</u>	<u>NEW REQUIREMENTS</u>
Block B Tank Farm (Eskimo Inc)	68,095	\$ 1 million	\$ 1.7 million
Barrow Oil Terminal (NSB)	24,240	\$ 1 million	\$ 1 million
Browerville (Eskimo Inc)	1,430	None	None

Block B Tank Farm and the Barrow terminal are currently required to have contingency plans and have submitted them to DEC for approval. The Browerville facility had a contingency plan in the past, but reduced its capacity and is no longer required to have a plan.

BRIEFING:

Prince William Sound Tanker Spill Prevention & Response Plan

- Prevention
- Preparation
- Response

Preliminary Copy

prepared by
Alyeska pipeline
SERVICE COMPANY

BRIEFING:

Prince William Sound Tanker Spill Prevention & Response Plan

Alyeska Pipeline Service Company recognizes the importance of shipping oil through Prince William Sound in an environmentally safe manner. To best accomplish this, Alyeska has developed a comprehensive, three-volume plan called the "Prince William Sound Tanker Spill Prevention & Response Plan." This booklet is a brief description of its key elements. Most of the elements of this Plan are already successfully operating in Prince William Sound.

Alaska law requires each tanker vessel loading oil at the Valdez Marine Terminal to have a State-approved Oil Spill Contingency Plan. Alyeska's Plan is designed to be included in those contingency plans. Under contract to the owners, operators and charterers of tank vessels in Prince William Sound, Alyeska will provide prevention measures and initial oil spill response services as outlined in the Plan.

The full Plan and supporting documents include three volumes: one volume describes the Plan; the other two volumes contain the documentation, research, and resources that support its prevention, preparation and response strategies.

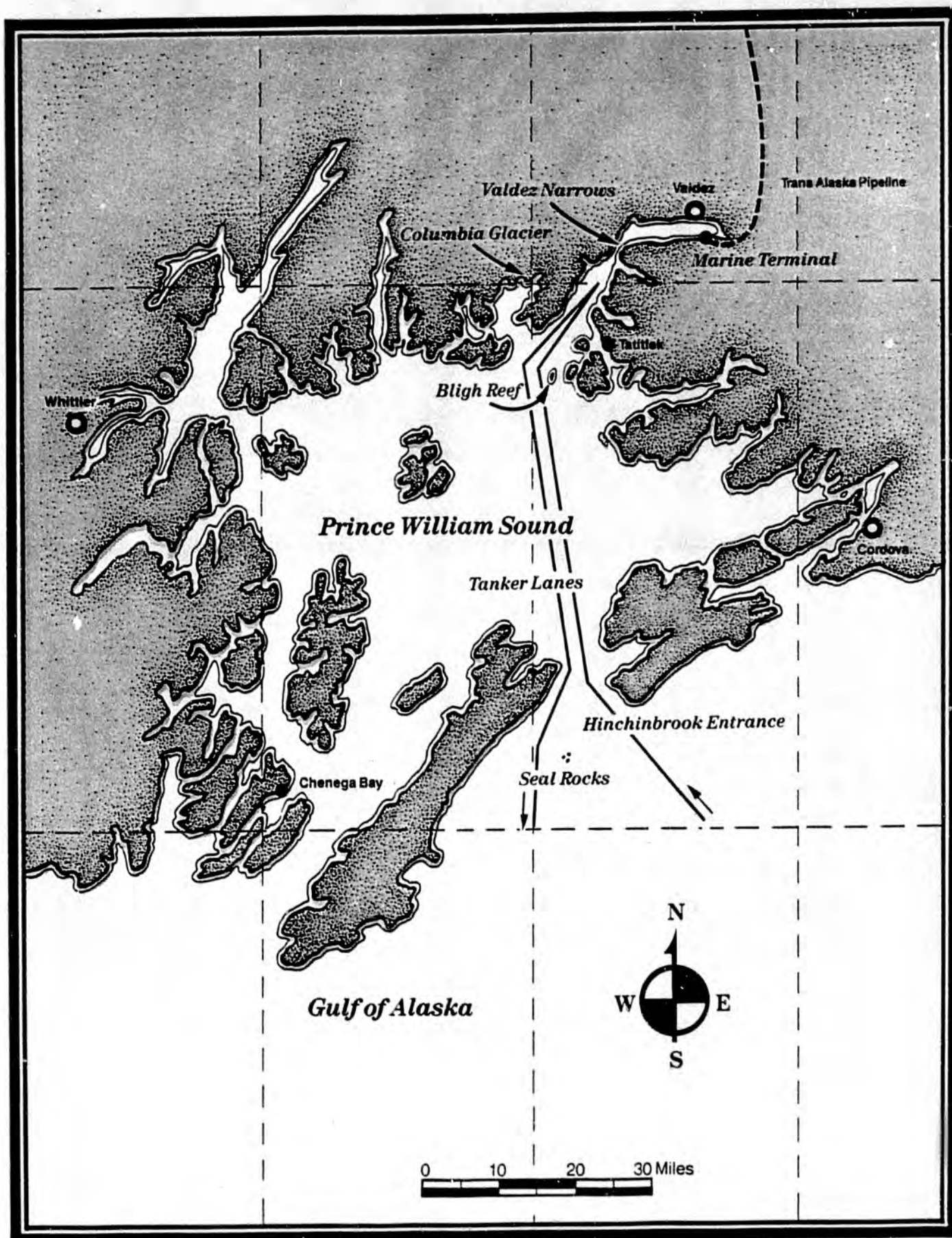
The entire Plan represents eight months of work by Alyeska employees and contractors, as well as review and recommendations by a citizens advisory committee and consultants. The result is a comprehensive plan that outlines strategies, equipment, manpower and training; emphasizes prevention of oil spills; and, integrates spill prevention, preparation and response.

While the Plan is a complete document, Alyeska Pipeline Service Company does not consider it to be final. Rather, Alyeska expects a complex contingency plan of this type to change over time as new technologies are developed and as new information gathered from tests, simulations, public involvement, and drills suggest modification — in short, it is a living document.

Copies of the complete Plan are available at public locations like community libraries, or from Alyeska Pipeline Service Company. For more information about the "Prince William Sound Tanker Spill Prevention & Response Plan," please contact:

Alyeska Corporate Affairs
Alyeska Pipeline Service Company
1835 S. Bragaw
Anchorage, Alaska 99512
(907) 265-8197

February, 1990



The Plan is designed to achieve three goals: 1) to prevent oil spills from occurring, 2) to prepare for possible oil spills, and 3) to respond if a spill occurs.

PREVENTION

Reducing the risk of future oil spills through prevention is a paramount goal. To achieve this, Alyeska, with the cooperation and commitment of the United States Coast Guard, tanker owners and operators, and others, has established, or endorses the following measures to minimize the risks that lead to spills.

- Prevention
- Preparation
- Response

1. Escort Vessels
2. Pilot Requirements
3. Radio Communications
4. U.S. Coast Guard Vessel Traffic System
5. Navigation Committee
6. Transit Speed and Vessel Traffic Lanes
7. Emergency Services
8. Tanker and Escort Emergency Towing Equipment
9. Training
10. Drug and Alcohol Screening

1. ESCORT VESSELS

Alyeska has based a fleet of specially fitted vessels and trained crews at key locations in Prince William Sound. Called the Ship Escort/Response Vessel System (SERVS), it is the core of the prevention, preparation and response elements of the entire Plan. Its job is to assist tankers in safe navigation through Prince William Sound, and to provide the first level of response in the event of a tanker problem or oil spill.

The SERVS fleet is headquartered in Valdez Harbor. It has its own pier, storage, communications and support services. Crews are on duty 24-hours a day, seven days a week, and the entire fleet is on standby alert whenever a laden tanker is traveling in the Sound.

Reducing the risk of future oil spills through prevention is a paramount goal of Alyeska. One prevention method is seen here as two escort vessels accompany a laden tanker on its transit through Prince William Sound. The escorts stay within one-half mile of the tanker, maintain radio communication, and are positioned to best assist the tanker on its route between the Terminal, through Hinchinbrook Entrance, to Seal Rocks — a distance of about 60 miles.



SERVS's mission is to prevent oil spills. All laden tankers leaving the Valdez Marine Terminal, and all partially laden inbound tankers, are escorted by two SERVS vessels. At least one of these escort vessels is a specially equipped, 210-foot Escort Response Vessel (ERV) described later.

While the tanker transits the Sound, the two escort vessels stay within one-half mile, and maintain radio communication. The escort vessels will remain closer than one-half mile when safety allows, especially when transiting the Valdez Narrows where a maximum tanker speed of 6 knots is federally mandated. Each escort vessel is positioned to best assist the tanker on its route between the Terminal, through Hinchinbrook Entrance, to Seal Rocks — a distance of about 60 miles.

2. PILOT REQUIREMENTS

All laden tankers transiting between the Terminal and an area south of Bligh Reef are required to have on the bridge an Alaska State licensed pilot. A pilot federally licensed for the waters of Prince William Sound is required to be on the bridge of any tanker while in the Sound between the Terminal and Seal Rocks.

3. RADIO COMMUNICATIONS

Tankers and their escort vessels will communicate with each other by radio during their transit, and keep in radio contact with the Valdez Escort Response Base. The tankers inform the escort vessels of all significant course and speed changes, any significant maneuvers or conditions, or at the earliest sign of trouble. The escort vessels warn the tanker of pending dangers and will question any action that raises doubts about the tanker's safe transit.

4. UNITED STATES COAST GUARD VESSEL TRAFFIC SYSTEM

Vessels transiting in the traffic lanes, from the Valdez Narrows to Cape Hinchinbrook, are required by law to maintain communications, and participate in the United States Coast Guard Vessel Traffic System (USCG VTS). Vessels are also required to notify the VTS before entering or leaving the lanes. Vessel masters must notify the VTS of any operational changes or emergencies that occur while in transit, and will comply with any directions given to them.

5. NAVIGATION COMMITTEE

Alyeska actively supports the establishment of a Navigation Committee with representatives from the USCG, owners of tankers transiting the Sound, Alyeska, Alaska Department of Environmental Conservation, and a citizens advisory committee. The committee will develop measures for the safe transit of tankers through the Sound for adoption by the USCG.

6. TRANSIT SPEED AND VESSEL TRAFFIC LANES

Alyeska and vessel masters have agreed to the following prevention measures. Alyeska also supports the adoption of these measures by the United States Coast Guard:

- 1) Maximum Transit Speed — The maximum speed for tankers through Prince William Sound is 10 knots, unless lower speeds are mandated or are requested by the escort vessels.
- 2) Ice Navigation Procedures — When vessels encounter glacial ice between Rocky Point and Bligh Reef, tankers will reduce speed to the lowest speed consistent with safe navigation.
- 3) Vessel Traffic Lanes — Tankers navigating in Prince William Sound will remain in the Vessel Traffic Lanes.

7. EMERGENCY SERVICES

The escort vessels of SERVS are under contract to Alyeska to provide emergency services to tankers if needed. Because of this arrangement, as well as the close proximity escorts keep with transiting laden tankers, open communications, and on-board emergency equipment, rapid decisions can be made by the tanker master for towing or other assistance in the event of an emergency.

8. TANKER AND ESCORT EMERGENCY TOWING EQUIPMENT

Escort vessels are designed and equipped for towing in the event of a tanker's loss of propulsion or steering gear failure. The escorts' excellent maneuverability allows them to secure a tow line to a disabled tanker. In addition, each tanker calling at the Terminal must be fitted with a customized towing package to make prompt linkage easier.

9. TRAINING

Tanker towing drills and exercises are conducted periodically to familiarize the escort vessel crews with the necessary procedures and to prepare them to handle other emergencies.

10. DRUG AND ALCOHOL SCREENING

Alyeska will require periodic certification that owners and operators of vessels comply with applicable government drug-testing regulations. Tanker captains are given alcohol breath tests one hour before a tanker's departure from the Terminal. Crew members returning to the Terminal can be tested if intoxication is suspected. A blood-alcohol content of 0.04 percent or above will result in denial of access to the Terminal and tanker berths, and a report to the vessel's watch officer and the U.S. Coast Guard.

PREPARATION

The goal of this second component of the Plan is for Alyeska to be prepared for an emergency; to have the necessary organizational management, community involvement, manpower, training, and strategically placed equipment to respond in the event of an oil spill.

- Prevention
- Preparation
- Response

ORGANIZATION

The management organization for the Plan is built around two concepts. First, before a spill occurs, the escort response vessels and other spill response vessels are managed by SERVS, a division of Alyeska. Second, as soon as a spill occurs, management of the spill response will be organized under the Incident Command System (ICS). ICS is a nationally recognized crisis management method first developed for wildland fire fighting in California and now in use in many areas of Alaska. ICS is designed to respond to small and routine situations as well as to large, complex incidents where many agencies might be involved.

The ICS organization initially consists of SERVS personnel. Depending upon the size and location of a spill, ICS can rapidly expand to include the Alyeska Incident Management Team, the Community Response Centers described later, fishing boat owners and crews who have agreed in advance to perform spill duties, and other resources as are needed.

MANPOWER AND TRAINING

Alyeska will have approximately 100 trained on and off-duty personnel available 24 hours a day, 7 days a week. Many of the SERVS crew members hired are familiar with Prince William Sound, and some have worked with spill operations around the world. Employees have received advanced spill training and continue to participate in ongoing training and drills.

In addition, at least 50 fishing boat captains will be on contract to receive response training and to assist in the event of a spill. The fishing boats will be called out according to a pre-established procedure. Personnel will also be identified and trained in each Community Response Center to maintain, secure and help expedite and deploy boom and supplies in the event of a spill.

Training is an important aspect of preparation, as well as to further evaluate the prevention and response measures of the Plan. Drills and exercises will be conducted periodically.

COMMUNITY INVOLVEMENT

While developing the Plan, Alyeska formed an Interim Alyeska Citizens Advisory Committee to review the initial draft and subsequent revisions. Composed of residents from communities in Prince William Sound, the Kenai Peninsula,

and Kodiak, this group has now become the non-profit, Regional Citizens Advisory Committee Inc. (RCAC), and continues to advise on oil spill planning matters.

The RCAC is expected to participate in the continuing development of the Plan, its periodic review, and review of other spill-related matters such as operations and research. The RCAC has been a valuable source for local information and comments about the strategies, resources, tactics, and other elements of the Plan.

EQUIPMENT

Alyeska will keep and maintain substantial quantities of oil spill response equipment for use in the Sound. This equipment includes boom, skimmers, lightering equipment and storage vessels. The five fish hatcheries in Prince William Sound will also be supplied by Alyeska with boom for their protection in the event of a spill. The Community Response Centers described later will also be equipped with boom and other equipment to assist in shoreline protection.

The SERVS fleet stationed around Prince William Sound is composed of the following vessels:

ESCORT RESPONSE VESSELS (ERVs) — SERVS has four of these 210-foot ships, each with a crew of nine. The ERVs' primary function is to safeguard tankers in transit, and are equipped to tow or assist tankers with power or navigation problems. In the event of an oil spill, each ERV carries 4,600 feet of containment boom, two sea skimmers, a 20-foot workboat, and can store up to 3,500 barrels (147,000 gallons) of recovered oil and water.

DYNAMIC SKIMMING VESSEL (DSV) — This 415-foot tug/barge unit is on continuous standby stationed midway on the tanker route through the Sound. Equipped with two skimmers for rapid oil recovery, it can store 140,000 barrels (5.88 million gallons) of recovered oil and water.

LIGHTERING VESSEL (LV) — Also stationed and on-call midway in the Sound, this 471-foot vessel assists in the off-loading of oil from a damaged tanker. Like the Dynamic Skimming Vessel, the Lightering Vessel is a specially converted tug/barge unit, but it has a larger storage capacity of 180,000 barrels (7.56 million gallons) of oil.

WEIR BOOM RESPONSE VESSEL (WRV) — Stationed in Valdez Harbor, the 207-foot Weir Boom Response Vessel is on standby whenever a laden tanker is in the Sound. It is designed for large-scale recovery operations and can store 9,800 barrels (411,600 gallons) of oil and water.

STORAGE BARGES — Two barges to carry response equipment are based in Valdez. One has a 6,300 barrel storage capacity, the other with a 7,300 barrel capacity (264,600 and 306,600 gallons) for use in recovery operations.

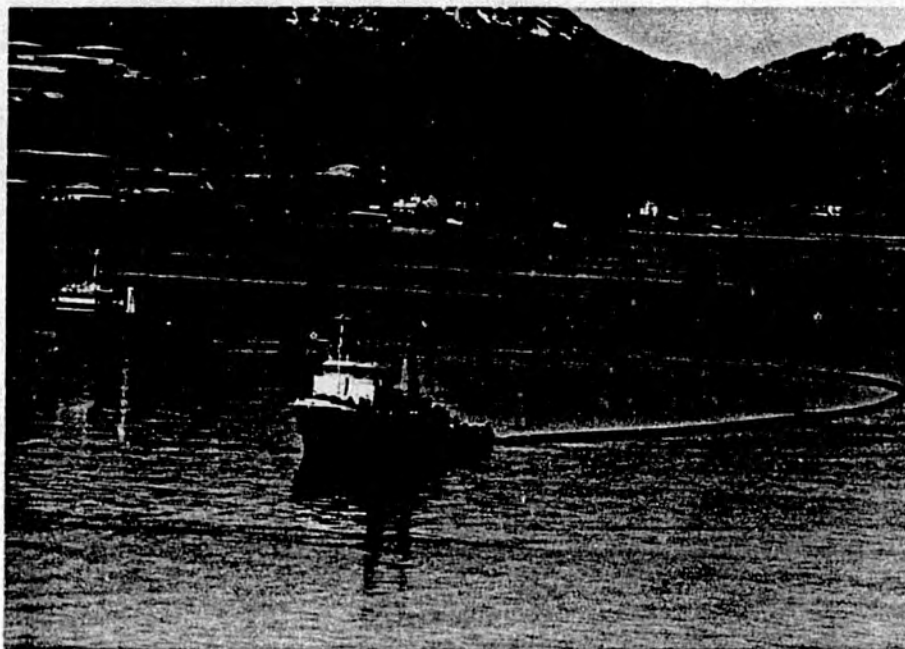
OTHER EQUIPMENT

Alyeska is storing in key areas around Prince William Sound other oil spill response equipment. These stockpiles include:

Boom — More than 31,000 feet of various types of boom. These will include both harbor and ocean boom. In addition, 2,600 feet of 3M Fire Containment Boom will be stored at the Valdez base.

Airborne Dispersant Delivery System — Two of these chemical dispersant delivery systems will be stored at the Anchorage International Airport. The integrated systems are designed for quick mobilization aboard a Lockheed C-130 transport, if use is approved by the designated on-scene spill commander.

Skimmers — A variety of skimmers to meet the many conditions of the Sound are stored and ready for use aboard the SERVS vessels and at the Valdez Marine Terminal.



Preparation, the second goal of the Plan, involves organization, manpower and training, community involvement, and equipment. In this picture, two Escort Response Vessels (ERVs) practice deploying boom during a training drill.

RESPONSE

- Prevention
- Preparation
- Response

Although Alyeska has developed strategies and provided resources to respond to a catastrophic spill of over 100,000 barrels, the Plan acknowledges there are few circumstances in which such a catastrophic spill can be substantially contained and recovered. For this reason, the Plan places an emphasis on prevention of oil spills.

However, if an oil spill occurs, the Plan is designed to employ strategies, organization, equipment and manpower that provide rapid On-Water, Near-Shore, and On-Shore Responses. The **SERVS** fleet, assisted by fishing boats and other community resources, is organized to provide three levels of oil spill response depending upon the scope of the spill.

EMERGENCY RESPONSE CENTERS

Spill response will be administered from two centers:

- The Valdez Emergency Operations Center will be located near the Valdez Escort Response Base in Valdez Harbor, and will serve as the center for all spill operations.
- The Anchorage Emergency Center is located in Alyeska's headquarters in Anchorage and provides support for the Valdez Emergency Operations Center.

AREA AND COMMUNITY RESPONSE CENTERS

Upon the Plan's approval, Alyeska will establish three Area Response Centers. Each will have a Logistics Coordinator responsible for activating emergency responses for the area as part of the ICS organization. The Area Response Centers are to be located as follows:

- Cordova (Prince William Sound Area)
- Homer (Kenai Peninsula Borough)
- Kodiak (Kodiak Island Borough)

Within each of the Area Response Centers, Community Response Centers will also be established. These will be located as follows:

- Prince William Sound: Tatitlek, Chenega Bay, Whittier, Valdez, and Cordova.
- Kenai Peninsula Borough: Seward, Port Graham, English Bay, Seldovia, Homer, and Kenai.
- Kodiak Island Borough: Kodiak, Ouzinkie, Port Lions, Old Harbor, Larsen Bay, and Karluk.

As mentioned earlier, additional boom and equipment will be stockpiled at five fish hatcheries around the Sound, and at some of the Community Response Centers listed above.

RESPONSE STRATEGIES

In the event of an oil spill, the Plan outlines strategies based upon situations and procedures for rapid response, containment and lightering, surveillance of the spill, and the use of chemical dispersants or in-situ burning if approved.

The plan identifies five critical steps in responding to any spill incident. These are as follows:

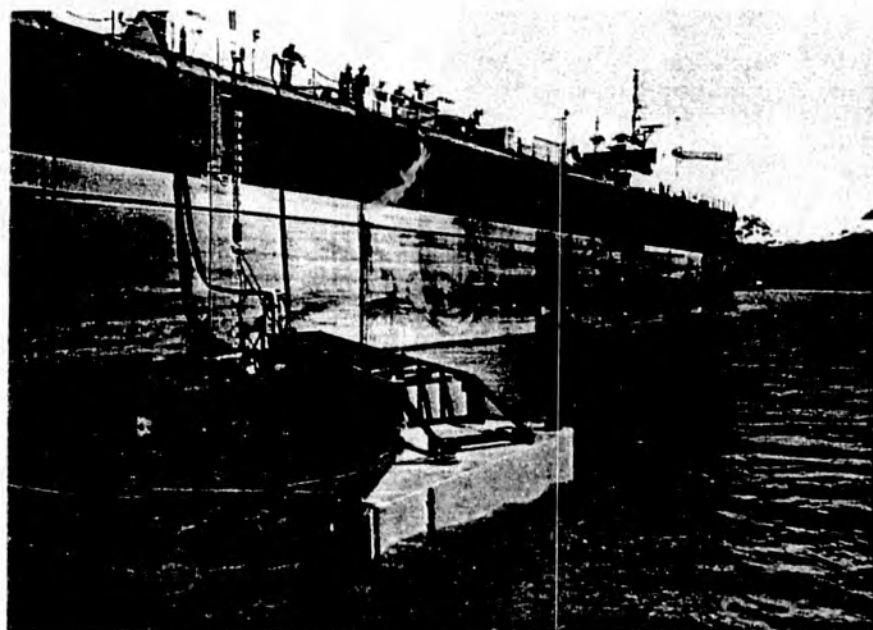
- 1) Location, size, threat of further discharge, and ERV response.
- 2) Determining feasibility of containment.
- 3) Dealing with containable oil.
- 4) Dealing with uncontained oil.
- 5) Longer term requirements.

Sections of the Plan discuss the many factors in tailoring a specific response to the situation, area and conditions of spilled oil. To list a few, these factors include conditions such as tides, anchor points, sea conditions, and effective booming techniques.

RESPONSE SCENARIOS

For planning purposes, and to show what might happen if a spill were to occur under specific conditions, the Plan contains three scenarios that illustrate hypothetical spill responses.

- 1) Scenario 1 covers the response strategies for a 2,000 barrel spill at the Valdez Terminal.
- 2) Scenario 2 outlines the strategies for a 35,000 barrel spill in Valdez Arm
- 3) Scenario 3 describes the actions for responding to a 250,000 barrel spill at Hinchinbrook Entrance.



The third goal of the Plan is response to an oil spill of any size. The Plan outlines response strategies that employ equipment such as this Marflex Sweeping Arm skimmer and Dynamic Skimming Vessel (DSV). The 415-foot DSV is located midway in the Sound and can store 140,000 barrels (5.88 million gallons) of recovered oil and water.

QUESTIONS AND ANSWERS ABOUT ALYESKA'S TANKER SPILL PREVENTION & RESPONSE PLAN

Q: What is different about this Plan from other oil spill plans?

A: The "Prince William Sound Tanker Spill Prevention & Response Plan" implements a number of new strategies and programs beyond other oil spill contingency plans, and that are uniquely tailored to the conditions and geography of Prince William Sound. The addition of the SERVS fleet, the escort, navigation and communication procedures, alcohol testing, and increased community involvement are all improvements that differ from other plans. In addition, this Plan provides for more oil spill response equipment for use in a single location than can be found elsewhere in the world.

Q: Does this Plan "guarantee" no more large oil spills?

A: No. There isn't a way to guarantee no more oil spills. However, because the Plan is based on extensive prevention, preparation and response strategies developed from experience, current studies and community involvement, the risk of a major oil spill occurring again is much more limited.

Q: When will the Plan be operational?

A: The Plan awaits final review and approval. However, many of the features of the Plan are already in operation. The SERVS unit has been performing its escort functions since July, 1989. Alcohol testing of tanker captains and crew has been conducted by Alyeska since May, 1989. And, the improved radio communications and vessel transit procedures, as well as the involvement of communities in the planning process have been ongoing since last year.

Q: If a spill occurs, who will be in charge?

A: As defined in the Plan, Alyeska will provide initial oil spill response services to tankers calling at the Terminal whose owners, operators or charterers have entered into a contract with Alyeska. Thereafter, if approved by the state, the vessel owner, or a state and federally approved designee of the owner, will assume management and control of the spill response.

Q: Are tankers safer now?

A: Alyeska can not answer for the owners, operators or charterers of tankers. However, Alyeska supports state and federal regulations governing the safe navigation of tankers in Prince William Sound.

Q: Is Alyeska adding employees for this Plan?

A: Alyeska has already added nearly 100 personnel as a result of this Plan. Almost all of these are staff and crew attached to the SERVS unit in Valdez.

Q: How are communities in Prince William Sound involved?

A: Communities throughout the Sound, as well as in the Boroughs of Kenai and Kodiak have been and continue to be involved in key aspects of this Plan. These include the review and comment on the design and implementation of this Plan, serving as sites for resource centers and stockpiles of spill response equipment, and providing fishing fleet and local support in the event of a spill. Through the Regional Citizens Advisory Committee they will have an information link to and from spill response control centers.

Q: How does Alyeska know that enough equipment is on hand to deal with another spill?

A: The Plan and its equipment and manpower requirements were developed based in part on the Emergency order issued by the Alaska Department of Environmental Conservation after the *Exxon Valdez* oil spill. In addition, oil spill experts from around the world added their experience to the information gathered from Alyeska's 12 years of operation, current studies and scenarios, previous oil spills, and an examination of worldwide oil spill response capabilities. The combined information has determined the equipment, manpower, and strategies outlined in this Plan that can deal with future oil spills.

Report of the Alaska Oil Spill Commission
Executive Summary

SPILL

The Wreck of the Exxon Valdez
Implications for Safe Marine Transportation

January 1990

FOREWORD

On March 24, 1989, Alaskans awoke to the shock of disaster. Shortly after midnight, the 987-foot-long supertanker Exxon Valdez had run hard aground on Bligh Reef, spilling 10.8 million gallons of crude oil into the unspoiled waters of Prince William Sound. The worst case had occurred.

This was the threatened tanker catastrophe residents of Prince William Sound had dreaded — but many had come to discount — ever since the trans-Alaska pipeline system was proposed in the late 1960s. A few of those scrambling to cope with the disaster knew something more chilling still. Though nearly 11 million gallons of crude oil already had escaped the fully-loaded *Exxon Valdez*, another 40 million gallons remained on board — and the ship was in considerable danger of capsizing. The spill that became the environmental disaster of the decade easily could have been five times worse.

The system that carried 25 percent of America's domestic oil production had failed. So had the regulatory apparatus intended to make it safe. The promises that led Alaska to grant its rights-of-way and Congress to approve the Alaska pipeline in June 1973 had been betrayed. The safeguards that were set in place in the 1970s had been allowed to slide. The vigilance over tanker traffic that was established in the early days of pipeline flow had given way to complacency and neglect. In the months following the spill, more than 1,000 miles of Alaska's coastline would be sullied by North Slope crude.

Communities touched by the effects of the spill staggered under the damage to land and water upon which they lived or the impact of the massive cleanup mobilization after the spill. Alaskans from walks of life as diverse as the oil industry and subsistence communities struggled with the economic losses, sorrow and dislocations as well as, for some, the opportunities that came with the spill and cleanup. Attitudes toward oil development, the land, the industry and the future were examined and re-examined as Alaskans searched for answers to the question of how things went wrong.

The Alaska Legislature created the Alaska Oil Spill Commission to provide some of the answers. Two months after the spill, the governor appointed an independent panel to study the event and recommend public policy remedies. The commissioners came to their work with broad experience in government and public affairs. Their sole purpose was to learn the causes of this disaster and propose changes that would prevent a recurrence of similar disasters anywhere. The mission was clear: Our report must show a path for Alaska, the United States and the world to a vastly improved system for transporting oil and other hazardous substances in the marine environment.

This disaster could have been prevented — not by tanker captains and crews who are, in the end, only fallible human beings, but by an advanced oil transportation system designed to minimize human error. It could have been prevented if Alaskans, state and federal governments, the oil industry and the American public had insisted on stringent safeguards. It could have been prevented if the vigilance that accompanied construction of the pipeline in the 1970s had been continued in the 1980s.

In 1977, when tanker operations began from Valdez, we thought we had created a system that offered guarantees against most disasters. As chairman of Alaska's Oil Tanker Task Force, I pulled together a team that provided the first full-scale simulation of marine operations ever done for a North American port.

Our simulation model demonstrated to the masters and pilots the conditions that would put their ships on the rocks. Tanker lanes into Port Valdez were set to insure the maximum feasible level of safety in tanker operations. Restrictions were imposed to limit operations in high winds. Agreements between the state, the industry and the Coast Guard established that when ice was encountered, the ships would slow down and proceed at minimum speed in the tanker lanes, rather than proceeding outside the lanes at sea speed, as did the *Exxon Valdez*.

The historical record developed by the commission is clear: The original rules were consistently violated, primarily to ensure that tankers passing through Prince William Sound did not lose time by slowing down for ice or waiting for winds to abate. Concern for profits in the 1980s obliterated the concern for safe operations that existed in 1977.

This disaster could have been prevented by simple adherence to the original rules. Human beings do make errors. The precautions originally in place took cognizance of human frailty and built safeguards into the system to account for it. This state-led oversight and regulatory system worked for the first two years, until the state was preempted from enforcing the rules by legal action brought by the oil industry. After that, the shippers simply stopped following the rules, and the Coast Guard stopped enforcing them.

This past year the Alaska Oil Spill Commission traveled to the coastal towns and villages of Prince William Sound and Southcentral Alaska to hear from the people most affected by the spill. We found communities and individuals whose lives and trust had been destroyed, but who had rededicated themselves to protecting their livelihood on water and land. Walter Meganack, Sr., traditional village chief of the Alaska Native subsistence community of Port Graham offered these words at a conference of mayors from spill-affected communities:

It is too shocking to understand. Never in the millennium of our tradition have we thought it possible for the water to die. But it is true. ... what we see now is death. Death — not of each other, but of the

source of life, the water. We will need much help, much listening in order to live through the long barren season of dead water, a longer winter than before. . . . We have never lived through this kind of death. But we have lived through lots of other kinds of death. We will learn from the past, we will learn from each other, and we will live.

Port Graham is about 250 miles, by water, from Bligh Reef. To get there, the oil had to travel the length of Prince William Sound, past Green, Story, Knight, Montague and LaTouche islands, out into the Gulf of Alaska and along the rocky headlands of Kenai Fjords National Park. It had to round the corner at the end of the Kenai Peninsula, plastering Elizabeth Island and heading into Cook Inlet and the outer reaches of Kachemak Bay. Moving beyond Port Graham and the surrounding area, the oil fouled beaches down the Alaska Peninsula — in Katmai National Park, along the Shelikof Strait, on Kodiak Island and beyond. As the oil spread so, belatedly, did the impact of cleanup and containment efforts, with an army of workers and a navy of boats to move and house them.

To trace on a map the tortured routes of the oil spilled from the *Exxon Valdez* is to appreciate the vulnerability of every coastline on earth as supertankers of 500,000 deadweight tons and more carry crude oil to market. When the Alaska pipeline was being planned and built, the largest tankers in the U.S. flag fleet were about half that size. The world's oil shipping companies, to the benefit of consumers and corporate shareholders, have created a megasystem that carries oil from wellheads in the far corners of the earth to refineries in its major industrial centers. But this megasystem is fragile. It requires careful scrutiny from outside the industry in design, construction and operation. When it fails, as it has in tanker disasters around the world, entire coastlines are at risk. Had a spill the extent of the *Exxon Valdez* disaster occurred off the United States East Coast, the devastation would have stretched from Cape Cod to Chesapeake Bay.

This is not a fictitious risk. Alaskans assume such risks daily as supertankers carry 2 million gallons of North Slope crude through Prince William Sound and out into the Gulf of Alaska. Other Americans on three coasts face just as ominous a threat as the world tanker fleet delivers 43 percent of all U.S. oil consumption daily from overseas.

What will limit these risks? Obviously, the present system, providing minimum penalties for creating massive environmental damage, has not deterred the industry from putting the coasts and oceans of the world at constant hazard. The system calls out for reform. The mission of this commission is to explain what must be done and why.

**Walter B. Parker, chairman
Alaska Oil Spill Commission
January 5, 1990**

Table of Contents

Foreword

Table of Contents

Introduction 1

Comprehensive Prevention Policy 11

Prevention as policy 12

Changed attitudes 12

Citizen knowledge of risk 13

Regulatory vigilance 13

Foreign flag spill prevention 14

Responsibilities of Industry 15

Industry commitment 16

Best available technology 17

Corporate safety executive 17

Tank farm 18

State Regulation and Oversight 19

Obligation to manage and protect 20

Federal preemption 20

Oversight council 21

Enhanced regulatory strength 22

Strengthened state inspections 23

State presence at Alyeska terminal 24

State licensing of safety managers 24

Enforcement in state waters 25

Interstate compacts 25

Maintenance and personnel audits 25

Marine pilot qualifications 26

State as co-insured 26

Remote spill response 26

Arctic prevention research priority 27

Pipeline evaluation 27

State harbor administration 28

Regional advisory committees 29

Local government representation 29

Federal Regulation and Oversight 31

- Double hulls and vessel design 32
- Mandatory traffic control 32
- Crew levels 33
- Coast Guard role 34
- Insurance premiums to reflect risk 35
- Corporate safety reporting 35
- International action 36
- Offshore tanker lanes 36
- Tracking vessels in the North Pacific 37
- Presidential report 37

Government Response Posture 39

- Government in charge 40
- Coast Guard role in response 41
- Role of Environmental Protection Agency 41
- State takeover of oil spills 42
- State role under federal authority 43
- State response depots 43
- Immediate local response 43
- Comprehensive regional response plans 44
- Regional response capability 44
- Emergency economic maintenance 44

Implementing the Response 47

- Incident Command System 48
- Enlarged community role 49
- Allocation of state response authority 49
- Enhanced role for Department of Military and Veterans Affairs 49
- Emergency response funding 50
- Local service impact funding 51
- Full-cost reimbursement 51
- Private contingency plans 52

Research & Development 55

- Knowledge transfer 56
- State research center 56
- Pretesting 57
- Tanker simulator training 58

Commission members 61

INTRODUCTION

The evidence points to eight fundamental conclusions that form the basis of this report:

- I. Moving oil by sea involves a complex, high-risk megasystem whose breakdown can threaten the welfare of entire coastlines.*
- II. Risk is unavoidable in modern oil transportation. It can be reduced but not eliminated.*
- III. Prevention of major oil spills must be a fundamental goal in the oil trade since cleanup and response methods remain primitive and inadequate.*
- IV. In government as well as industry, enforcement zeal declined, alertness sagged and complacency took root in the years preceding the Exxon Valdez disaster. Prevention was neglected.*
- V. Without continuing focus on the safety of the entire system by government and industry leaders, the oil transportation system poses an increasing risk to the environment and people of Alaska.*
- VI. The State of Alaska has primary responsibility for protecting the resources of the state and the welfare of its people, who bear the risk of unsafe conditions in oil transportation.*
- VII. Privatization and self-regulation in oil transportation contributed to the complacency and neglect that helped cause the wreck of the Exxon Valdez.*
- VIII. The safety of oil transportation demands review and overhaul. Not just new technology, but new institutions and new attitudes in old institutions are required.*

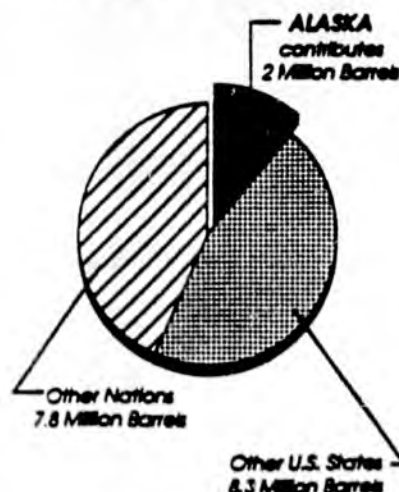
These are the basic premises we believe policymakers should understand in designing remedies for a flawed system of oil transportation.

Tankers carrying North Slope crude oil from the Valdez terminal of the trans-Alaska pipeline had safely transited Prince William Sound more than 8,700 times by the time the *Exxon Valdez* left port at 2112 hours (9:12

"I warned the community that the possibility of an oil spill in Valdez was very high. Given the high frequency of tankers into Port Valdez, the increasing age and size of that tanker fleet, and the inability to quickly contain and clean up an oil spill in open water of Alaska, we felt that we were playing a game of Russian Roulette. We knew 'The Big One' was only a matter of time."

Dr. Riki Ott, Cordova District
Fishermen United
House Committee on Interior and
Insular Affairs hearing, May 1989

America uses 18.1 million
barrels of oil every day



p.m., Alaska Standard Time) on March 23, 1989. This experience gave little reason to fear impending disaster. Yet less than three hours later, the *Exxon Valdez* grounded at Bligh Reef, rupturing eight of its 11 cargo tanks and spewing some 10.8 million gallons of crude oil into Prince William Sound.

No human lives were lost as a direct result of the *Exxon Valdez* disaster, and only one life was reported lost in the massive cleanup effort. Indirectly, however, the human and natural losses were immense—to fisheries, subsistence livelihoods, tourism, wildlife. The most important loss, for most Americans who will never visit Prince William Sound, was aesthetic—the sense that something sacred in the relatively unspoiled land and waters of Alaska had been defiled.

Experienced mariners express astonishment that a modern, well-equipped supertanker ran aground at Bligh Reef. The *Exxon Valdez* was traveling through well-charted waters in conditions of moderate weather and visibility. Bligh Reef was a well-known hazard, and all mechanical and navigational systems on the ship were working properly. Coast Guard Commandant Paul Yost engaged in only slight hyperbole when he said after inspecting the accident scene that his 10-year-old son could have steered the tanker safely through the area.

Yet the events leading to the grounding, and the institutions and procedures reflected in them, revealed a situation where the risk of disaster had increased steadily through years of relatively incident-free tanker trade. Success bred complacency; complacency bred neglect; neglect increased the risk—until the right combination of errors finally led to an accident of disastrous proportions.

The wreck of the *Exxon Valdez* was not an isolated, freak occurrence, but simply one possible (and disastrous) result of policies, habits and practices that for nearly two decades have infused the nation's maritime oil transportation system with increasing levels of risk. The *Exxon Valdez* was an accident waiting to happen, the link that broke first in a chain with many unreliable couplings. The specific lapses that permitted the *Exxon Valdez* to run aground on Bligh Reef are being remedied, but similar circumstances easily could be repeated in some other combination to allow some other disaster. What is required now is comprehensive action to reduce the risk in the system.

At one level it is obvious that a combination of human actions and errors led to the *Exxon Valdez* disaster. Many have been scrutinized in the public record, particularly the proceedings of the National Transportation Safety

Board. Not even the root of this disaster—departing from traffic lanes—was unique: The 1967 *Torrey Canyon* grounding off England took place when the captain left the traffic lanes to save time.

Yet behind all human actions in the Valdez tanker trade, supporting the men and women who load and operate the tankers, is a system—one whose design and function clearly failed that night in Prince William Sound.

The system includes hardware in the form of pipelines, terminals, storage tanks, loading facilities, tankers and all the associated gauges, meters and machinery that operate them. It also involves operating instructions in the form of technical and design standards, international protocols, capacity ratings, terminal procedures, loading instructions, contingency plans, pilotage rules, maritime rules of the road, local navigation regulations, vessel traffic monitoring and economic and career pressures on all participants. Finally, the system involves institutional oversight in the form of corporate management, private insurance systems, state inspection and enforcement, local port management and Coast Guard regulation.

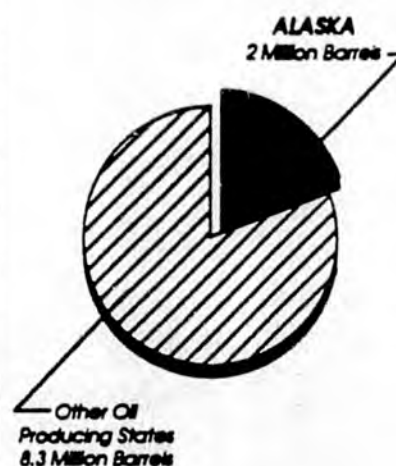
The objective is to move oil safely across the seas regardless of inevitable human error. System design must provide for redundancy—backup systems to prevent error from becoming disaster and overbuilding to provide for wider margins of error. Proper functioning requires constant testing, inspection vigilance, cooperation, discipline, expertise and commitment of organizations at every level of government and industry.

Yet for reasons of maritime tradition, economics, politics, public policy and modern practice, the maritime oil transport system is relatively more error-prone than safety-inducing. Industry tends to measure success as operating the biggest vessel with the thinnest hull and the smallest crew at the highest speed with the quickest port turnaround consistent with meeting minimum government requirements. Efficiency in a competitive world dominated by profit is all important in the oil transportation business, even in the Alaska trade where transportation competition is muted.

A comparison between the nation's passenger air transport system and the maritime transport system is instructive, if not exact. Air transport safety is better reinforced, backed up and institutionally safeguarded than maritime transport.

- Air pilots share responsibility with co-pilots and foster teamwork in the cockpit, while marine masters hold absolute authority,

Alaska produces 2 million barrels of oil every day



"It takes great strength to recognize the reflection in the mirror. Look in the mirror, and dig deep within yourself. Don't create an image that isn't there. Act on what you see. The environment is a reflection of who we are. We can't ignore the reflection we see. We have to live with it—today, tomorrow, and forever."

Dolly Reff, Kodiak native
Alaska Oil Spill Commission
hearing, 8/11/89

*"We in industry cannot
assume that all
regulation is bad; it's
not."*

*Jerry Aspland, President, ARCO
Marine, Inc.
Alaska Oil Spill Commission
hearing, 9/1/89*

sharing little command responsibility with other ship officers. Mistakes in the cockpit are more easily challenged than on the bridge;

- Air traffic control is mandatory, and ground controllers share responsibility with air pilots for safety of takeoffs, landings and approaches. There is no equivalent to ground control in marine transport, and vessel traffic systems are typically only advisory;
- The federal government imposes strict standards and enforcement carried out by the Federal Aviation Administration in air transport, while the federal presence is minor and interspersed among other Coast Guard duties in the marine environment;
- Strong international cooperation governs air transport practices, while international cooperation remains weak in the maritime field; and
- Working conditions in air transport are governed by strictly enforced limits on work hours, while overwork and long hours are routinely permitted to create fatigue among crew members in marine transport.
- Airline accident victims are identifiable and directly linked to the business of air travel, while the victims of marine accidents—seamen, fishermen, wildlife—are more likely to be anonymous.

The analogy to air transport is not perfect. The issues described here reflect institutional settings, demands and traditions that go beyond considerations of safety. But two points illustrate the relevance of the comparison.

First, there are approximately 17,000 airline departures per day in the United States. On most days, every single one of these departures safely arrives at its destination. The *Exxon Valdez* was a catastrophic failure—the oil transport equivalent of a major airliner crash. Studies performed for the commission indicate that a catastrophic failure such as the *Exxon Valdez* disaster can be expected to occur in the Valdez tanker trade approximately every 13 years, or about once every 11,600 transits. At a similar rate of catastrophic failure, the air transport system would produce 1.5 airliner disasters every single day, or 550 per year. If an average of 150 people died in each airline crash, such an accident rate would result in the loss of about 82,500 human lives per year—an unthinkable carnage that

is prevented by a tight, safety-reinforcing system of regulation and oversight.

Technological and human systems aren't perfect: Airliners occasionally do crash. But we have built a system that does not tolerate in air traffic anything like the catastrophic failure rate we can expect in the Valdez tanker trade. Because of that system, air travel can be considered safe and reliable. Risk cannot be eliminated, but it can be reduced—if we accept the costs involved.

Second, as vessels carrying oil and other hazardous materials impose higher and higher risks upon the world's oceans and coastlines, the environmental and social costs of marine transport accidents increase. The growth of a massive international system of transportation of oil by sea since World War II has not been accompanied by the development of organizations and active constituencies of those affected by the environmental hazards inherent in the trade. Those stakeholders, however, deserve increasing attention, for the risks they suffer are growing as the world's oil transportation system grows. And the marine transport system must become tighter and more safety inducing as the costs of failure grow more serious and more pervasive.

Alaska, like other states, has long relied on the National Contingency Plan to provide the manpower and resources to handle a catastrophic spill. But the *Exxon Valdez* response illustrated the emptiness of the NCP: It failed to provide the necessary resources, and indeed the record of the past decade shows that the federal government has relied on private industry to contain or clean up a major spill. The government provided no resources of its own to handle even moderate-sized spills adequately. Nor is there any indication that either the Environmental Protection Agency or the Coast Guard, the federal administrators of the NCP, made any effort to determine whether the oil industry actually had the capability to clean up a catastrophic spill.

The proposals in this report aim to revive the commitment of the state and nation to tanker safety and response preparedness. The basic premises behind these proposals are highlighted at the beginning of this chapter. The major recommendations for state, federal and industry actions are then divided by subject into seven sections.

The first section includes general prescriptions concerning prevention as a comprehensive policy goal of maritime oil transportation. It focuses on direct citizen oversight, improved industry and government attitudes,

"I think there's probably going to be reluctance from the management agencies that were involved, both at the state and federal levels, to take a hard look at their performance."

Dr. David G. Shaw, University of Alaska

Alaska Oil Spill Commission hearing, 9/21/89

knowledge of risk at all levels and regulatory vigilance as primary building blocks to a safer system.

The second section defines some commitments that must be made by the oil industry to provide better environmental protection, just as it would for human safety.

The third section addresses actions the State of Alaska should take to bolster its oil spill prevention and response systems. It provides insights on the state's relationship with the federal government and ideas on focusing the state's position on oil and gas transportation, expanding its regulatory position, creating interstate compacts, and adding greater local input to decision-making.

Recommendations to the federal government in section four, if adopted, would have considerable impact on tanker safety. Tanker design changes, including double hulls, improved traffic control systems and a increased emphasis on proper manning and crew training are the key elements. If adopted, these could decrease spill probabilities of the *Exxon Valdez* size more than four-fold. If further recommendations for increased federal oversight also were carried out, we could expect a five-fold improvement in oil tanker safety—and therefore a substantial decrease in the present devastation of our coasts and oceans.

"The level of inability to function in chaos that's going on out there is ridiculous. The amount of money that is being spent is obscene."

Dennis Holan, Cordova fisherman
Alaska Oil Spill Commission
hearing, 6/28/89

Section five describes what the commission believes should be the government's posture toward future spills—the response mechanisms of state, federal and local governments, and how they might fit together better to prepare for future spills. The private sector is included as a critical element of response, but not as the governing element. The key to a proper response system is speedy mobilization of manpower and resources immediately after a spill. The next element is to insure protection of key environmental areas if a spill cannot be contained. We recommend that the Incident Command System—currently familiar to many federal agencies for emergency response—be put into use widely to respond to natural disasters.

In section six we make recommendations on how to implement an oil spill response and how to integrate the Incident Command System into existing organizations. Our goal is to show how to use existing government systems in the most efficient manner while avoiding the creation of a separate spill response bureaucracy in every government agency concerned with oil spills. We have also emphasized an increased and structured role for local communities both to insure that local resources are available and that rapid mitigation of spill impacts occurs when

necessary. The role of private contingency plans also is defined in this section.

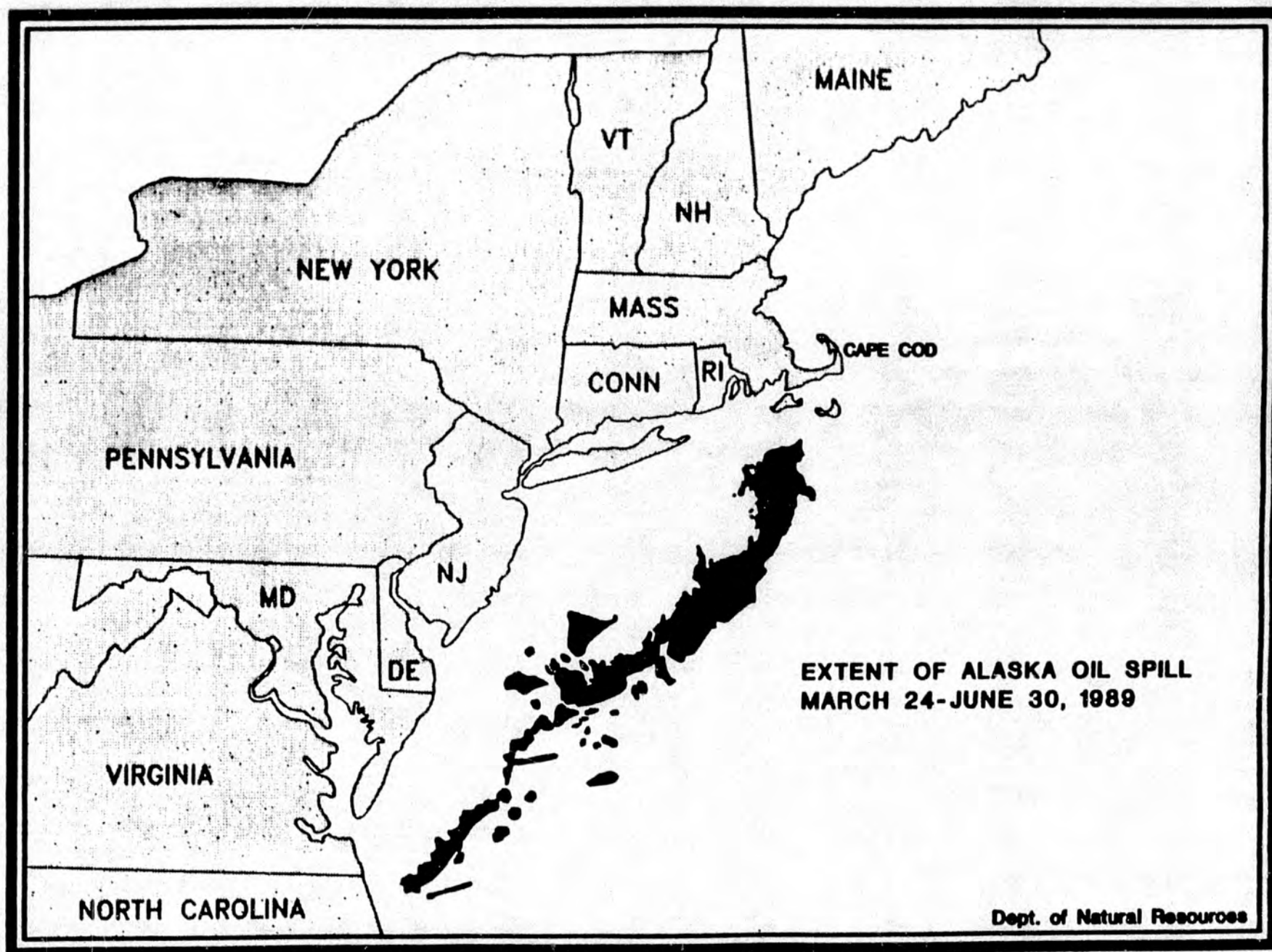
Section seven concludes this report with some ideas for improving research and development efforts toward oil spill prevention and response. We were able to use information gained from around the United States by the General Accounting Office and Office of Technology Assessment in their studies done after the *Exxon Valdez* spill. We also were able to obtain substantial information on advanced technologies in use by the U.S. Navy that were ignored in the *Exxon Valdez* incident. Finally, we have accumulated information on advanced spill response technology in Great Britain, the Netherlands, West Germany, Norway, France and South Africa. Information from the Middle East, the Soviet Union and Japan still remains to be gathered, a task we leave to our successors. In this section we also include our comments on the use of simulators in crew training.

If the commission's labors have been successful, the implementation of its proposals should considerably improve the safety of oil transportation by sea. But implementation rests in forums from the White House to local council halls, corporate board rooms to legislative chambers. Future vigilance rests in the hands of state and federal leaders, industry and public agency officials, terminal operators, tanker officers and crew, technical advisors and, perhaps most important of all, citizens exercising a watchdog presence and role.

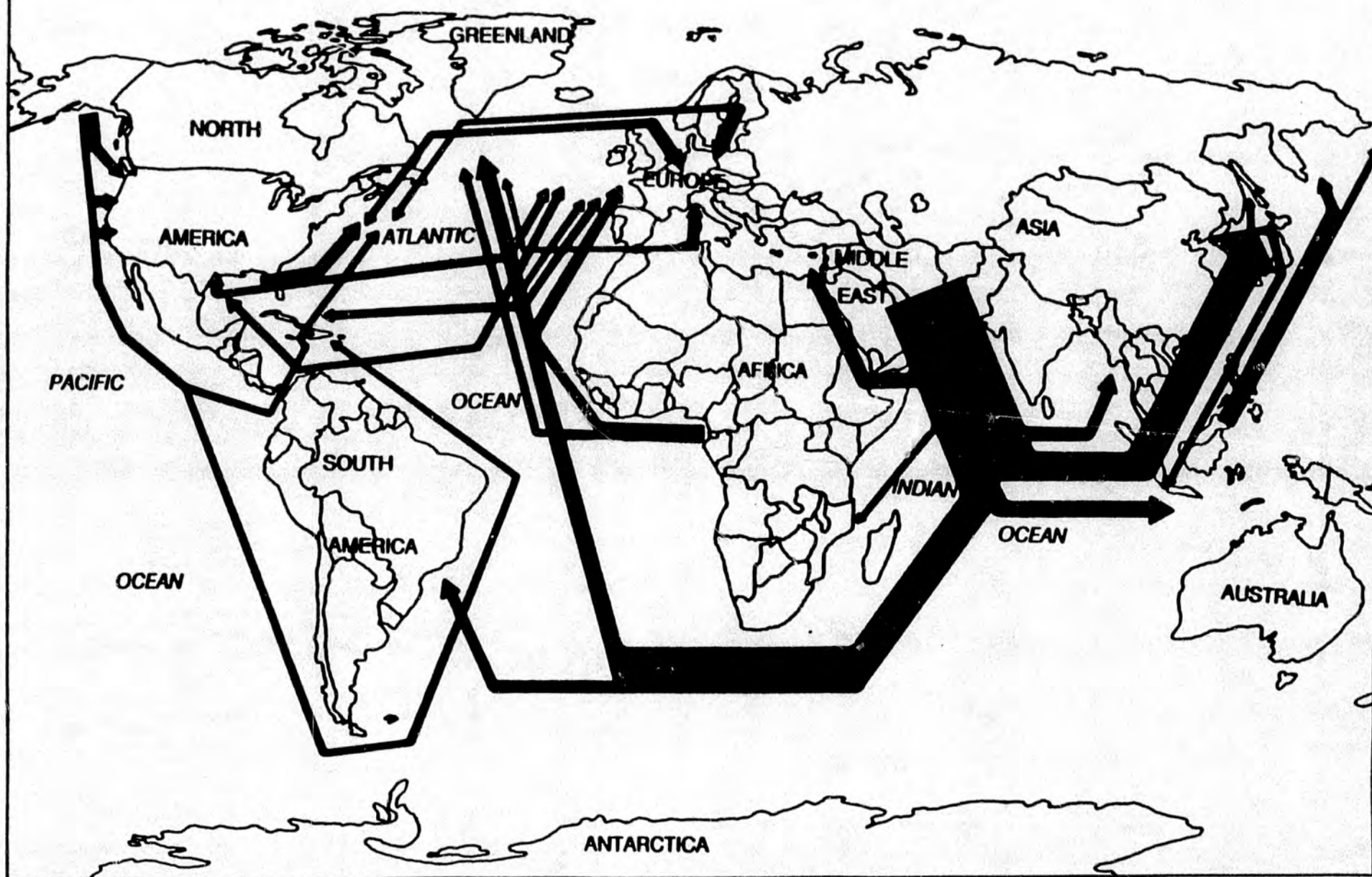
"What I'm afraid of is that the commission could end up being in such a defensive mode that it could end up making the world safe for oil spills."

Mike Milligan, Kodiak
Alaska Oil Spill Commission
hearing, 8/11/89





WORLD OIL TANKER ROUTES BY VOLUME



COMPREHENSIVE PREVENTION POLICY

Prevention is the only way to protect the oceans and coastlines from oil spills. Once it reaches the water, spilled oil is extremely difficult to contain and collect, even under ideal conditions. And the conditions under which oil is spilled are seldom ideal.

General Accounting Office data suggest no more than 10-15 percent of oil lost in a major spill is ever recovered. The Office of Technology Assessment estimates that only 3-4 percent of the oil spilled from the *Exxon Valdez* was recovered, despite Exxon's summer-long beach cleanup and oil skimming effort.

The urgency of establishing strong prevention policies for Alaska is also suggested by computer-assisted simulations done for the Alaska Oil Spill Commission by ECO, Inc., of Annapolis, Md. Its report notes that more tonnage of crude oil is shipped through the Valdez marine terminal than through any other port in the United States. Its simulations show that under typical winds and currents a catastrophic spill any time in Prince William Sound can be expected to coat the beaches of much of the sound and the Kenai Peninsula with oil. And its calculations indicate that under policies prevailing at the time of the *Exxon Valdez*, a similar occurrence can be expected in Prince William Sound approximately every 13 years.

Worldwide figures gathered by ECO show that during the past 20 years, tanker spills of the magnitude of the *Exxon Valdez* — more than 10 million gallons — have occurred approximately yearly. Spills of up to 1 million gallons have occurred approximately monthly. As this report goes to print, less than 10 months after the *Exxon Valdez* disaster, the *Khark-5* spill off the coast of Morocco has exceeded 30 million gallons, with the full cargo of 72 million gallons still at risk.

Both the frequency of oil spills and the failure of human capacity to clean them up argue for strong prevention regimes at every level.

"The die is cast, that Prince William Sound is going to recover pretty much at its own rate. And that no matter what we do, the rate isn't going to change a whole lot."

Professor David G. Shaw, University of Alaska

Alaska Oil Spill Commission hearing, 9/21/89

Recommendation 1
Prevention as policy

*"The most telling
remark, the president of
Exxon, Mr. Stevens,
said that the
contingency plan
cannot deal with a spill
like this."*

*Rep. George Miller, California
House Committee on Interior and
Insular Affairs hearing, May 1989*

Prevention of oil spills must be the fundamental policy of all parties in the maritime oil transportation system.

Worldwide experience has shown repeatedly that containing and collecting significant amounts of oil lost in a spill is beyond present technological capability except for relatively small amounts under optimum conditions. Data collected by the U.S. General Accounting Office suggests that no more than 10-15 percent of all spilled oil is ever recovered. Full repair of environmental and ecological damage caused by a major spill is similarly beyond human capabilities. Cleanup and containment technology remains primitive, although recent research and development initiatives offer promise of some improvement. With present technology, natural recovery often is the most effective recourse after a spill hits shore, but generations may lose the advantages of environmental quality during the recuperation.

These lessons were relearned in the response to the Exxon Valdez spill. Given the increasing capacity of supertankers carrying more and more oil through the world's oceans and the acknowledged shortcomings of cleanup methods, a sharpened focus on prevention is the key to environmental protection and, indeed, the only adequate response to the increasing risk in the system.

Recommendation 2
Changed attitudes

All parties must instill the attitude that spilled oil in the water is unacceptable into the approach of the maritime transportation industry in the United States and abroad.

The shipping industry historically has neglected the environmental costs to the public of oil spills. Maritime losses traditionally are measured only by the financial value of vessel and cargo. Economic calculations have emphasized short-term expenses over long-term protection. Attitudes in regulatory and response agencies, particularly the Coast Guard, tend to reflect a similar disregard for environmental costs. Protecting property has a long legal and practical tradition — witness the Coast Guard's longstanding focus on salvage of vessel and cargo — while protecting the environment still receives too little emphasis. Finally, cost-benefit analyses undertaken by public officials charged with regulating the maritime transportation industry sometimes assume that the costs and benefits accrue to industry alone, thus neglecting the interests of others affected by the risk of accident.

As public concern for environmental protection grows, industry and regulatory attitudes must change. The shipping industry has an incentive

to adopt stronger approaches to prevention as increasingly it is being required to pay for environmental costs previously borne by society.

Because many individuals and communities are placed at risk by modern oil transportation systems, citizens should be involved in oversight arrangements at every level of government.

Shipping oil involves inherent risk. The risk cannot be eliminated, only reduced. Citizens deserve to know and make informed social judgments about what constitutes an acceptable level of risk. Reducing the risk involves costs, both public and private. Citizens may or may not be willing to pay the incremental costs of reducing particular risks, but to make informed choices they should be made aware of the tradeoffs involved. Present federal committees for oversight and policymaking are made up of industry and government representatives. There are no equivalent state committees.

The nation and the state need strong, alert regulatory agencies fully funded to scrutinize and safeguard the shipment of oil.

The notion that safety can be insured in the shipping industry through self-regulation has proved false and should be abandoned as a premise for policy. Alert regulatory agencies, subject to continuous public oversight, are needed to enforce laws governing the safe shipment of oil.

National and state agencies formally vested with responsibility for overseeing the environmental safety of oil transportation frequently have been complacent. Regulatory authority has been weak, and there has been a dramatic decline in vigilance since 1981. State authority has been further impaired by conflict with federal authority. Funding ordinarily furnished to protection agencies has left broad areas of concern without oversight. Between disasters, appropriations have tended to decline. As federal administrations have changed, funding and commitment have fluctuated as well. Missions have been attenuated by the addition of further responsibilities without further funds, as in the case of the U.S. Coast Guard, whose duties have greatly expanded without a commensurate increase in budget.

In such an environment the nation's maritime oil transportation system becomes more, not less, prone to risk of accident. The nation's regulatory agencies must be committed to the safe shipment of oil and other

Recommendation 3
Citizen knowledge of risk

"We can't rely on government agencies to be the sole watchdog over industry."

Unidentified witness, Port Graham, Alaska

Recommendation 4
Regulatory vigilance

"The best way to keep the oil from becoming a problem is to keep it in the ship, because historically ... we clean up very little of the oil. ... So I guess prevention is one of the things that we certainly would look at as the strongest avenue to avoid having a catastrophe."

Commander Dennis Rome, U.S. Coast Guard

Alaska Oil Spill Commission hearing, 8/31/89

Recommendation 5
Foreign flag spill prevention

"We should look beyond ineffective sticks and consider some carrots as well. I think we should consider paying the industry to stay ready and to stay on top of technology—with their money, of course."

Professor Steve Colt, University of Alaska
Alaska Oil Spill Commission hearing, 9/21/89

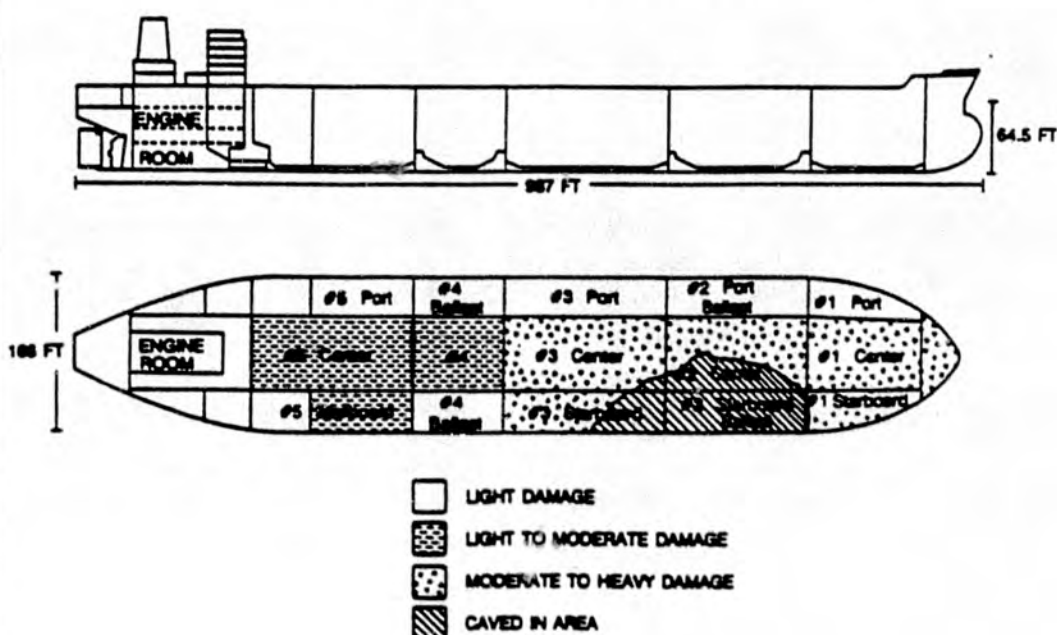
hazardous substances, and they must be encouraged by the regular oversight of citizens who have the greatest stake in the relevant environments. Without such an invigoration of these agencies, accidents such as the Exxon Valdez are bound to increase.

State laws protecting the environment from oil spills should be applied to foreign flag vessels equally with other vessels engaged in the transportation of oil.

The state has been unduly deferential to constitutional limits supposedly restricting a state's ability to impose containment and cleanup planning and equipment requirements on foreign flag vessels. A changing congressional intent will produce revised judicial interpretations of preemption doctrine. While most vessel design features are subject to exclusive federal rule, the state is empowered to protect its environment by all reasonable, non-burdensome means.

Containment and cleanup planning and readiness regimes established under state authority should apply to barge or tanker traffic under any flag in the waters of a state.

EXXON VALDEZ DAMAGE



RESPONSIBILITIES OF INDUSTRY

Public authority can do a great deal to enforce safety standards in oil transportation, but industry promises, policies and practices are typically the starting point for discussion. Industry bears a heavy obligation to operate safely and responsibly, regardless of the regulatory structure imposed by government.

Alyeska Pipeline Service Company has demonstrated a commitment to safer operations since the spill by establishing new procedures, including escort vessels, new spill response equipment, speed limits for tankers and dictates that tankers stay in designated traffic lanes while pushing through ice. Some of these reforms were more sweeping and costly than required by government.

Private industry's task is to carry oil to market responsibly and efficiently. Government's task is to regulate that trade prudently in the public interest. The obligation to protect the safety of the public and the environment is mutual, and shared by both sides.

"I think it's important to begin a process of informing society about the uncertainty, the risks and the tradeoffs that are involved in most human activities and especially in these kinds of large scale resource development activities."

Professor David G. Shaw, University of Alaska

Alaska Oil Spill Commission hearing, 9/21/89

Recommendation 6
Industry commitment

"Each of the various interested parties is trying to pass on their own real or perceived costs to everybody else."

Professor Matt Berman, University of Alaska
Alaska Oil Spill Commission hearing, 9/21/89

The nation and the state need a private oil transportation system with management that is committed to environmental safety.

The *Exxon Valdez* incident refocuses attention on industry's obligation to operate safely and responsibly. Decision-making by private industry is the first and, in many ways, most important pressure point for safety in the oil transportation system. Government regulation and public oversight can help safeguard the system, but industry can — and should — move rapidly and effectively on its own to establish procedures to reduce the risk of oil spills.

Response to the *Exxon Valdez* disaster illustrated industry's ability to mobilize quickly after a disaster. Exxon, though unprepared for a spill so large, responded far more swiftly than any government agency. The company committed vast human and material resources and reportedly spent more than \$1 billion to respond to the spill. (Luckily, Exxon was able and willing to bear this expense, but the industry would have had to spend comparatively modest sums to provide stringent prevention measures instead.)

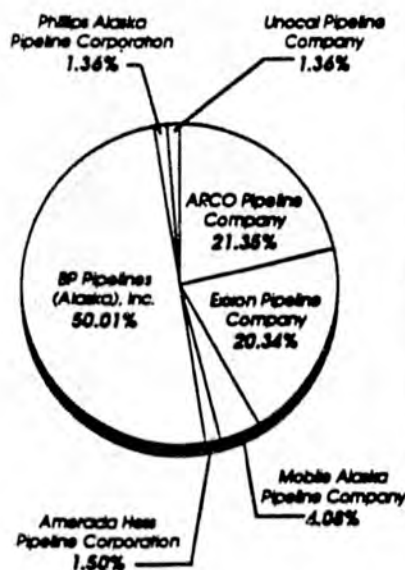
Though the industry's safety record is mixed, by and large it has not been committed to environmental safety. Driven by competition and profit-maximizing goals, the industry has focused on economic efficiency and opposition to government regulation, claiming it could operate with as great or greater regard for safety without regulation. An industry ideology that regulation is a nuisance can drive an industry attitude that the objectives of regulation are also a nuisance.

In addition, maritime liability limits and low levels of accountability for oil spills have led to neglect of the interests of those who are not owners of vessels and cargo but whose exposure to risk makes them stakeholders in the system.

Historically, the industry has "externalized" the costs of environmental degradation — that is, shifted the costs to others. As concern about oil spills increases, however, industry will be forced to "internalize" more of these costs as incentive to protect the environment.

Properly motivated and funded, private industry can move more swiftly and effectively than any regulatory agency to correct deficiencies in the oil transport system. A tenacious commitment to environmental protection by industry could do more, quicker than any government inducement. Management and shareholders should insist that the traditions and operating assumptions of the shipping industry reflect this commitment.

Alaska Pipeline Service Company



Source: Alaska Pipeline Service Company

Government and industry should strive to adopt the best available standard technology in establishing performance standards.

Consciousness of the importance of prevention, spill preparedness and corporate responsibility varies greatly among oil carriers. The blurring of responsibility within each oil company and within the Alyeska consortium, coupled with the independence of each shipping company and its owners, argues for uniform application of standards by government authority.

In the past the oil transportation industry has attempted to reduce virtually every performance standard sought, asking that government impose only minimum standards and claiming that most carriers voluntarily will exceed those minimums. But when accidents have occurred, industry representatives have frequently claimed that it has no obligation to go beyond those minimums. The public no longer should tolerate this double standard — and the conflict should be resolved as soon and as much as possible by the adoption of improved standards of performance by industry.

Every company shipping oil through the United States should identify a full-time environmental safety officer empowered to take recommendations to the highest level of the company.

Corporate performance on safety issues can be significantly improved by making safety a specified goal and giving primary responsibility to identified managers charged with increasing awareness at the highest executive level. Such corporate structures operated effectively, for example, during construction of the trans-Alaska pipeline system and should be recreated for operations as the system ages and becomes more prone to risk.

The designated corporate safety officer should be required to report annually to shareholders and the public concerning the safety of the tanker fleet, accidents and near-misses, state-of-the-art technology, and company plans for bringing its fleet into compliance with the most appropriate standards.

Public pronouncements by Alyeska and its owners that the company employed the best available technology and committed adequate resources to safety purposes turned out to be false. These assurances were aided by corporate institutional advertising and a sense of well-being

Recommendation 7
Best available technology

Recommendation 8
Corporate safety executive

"The marine industry needs to revamp all personnel training and development programs to meet today's modern fleet demands."

Jerry Aspland, President, ARCO Marine, Inc.

Alaska Oil Spill Commission hearing, 9/1/89

arising from the flow of oil revenue to Alaska's citizens which encouraged an atmosphere of laxity in state oversight of oil transportation.

A report to the public and corporate shareholders should provide accurate information about each shipper's spill prevention plan and preparedness posture to encourage greater corporate accountability for safety practices.

Recommendation 9
Tank farm

Tank farm capacity at Valdez should be increased to meet the original design requirement for maximum throughput.

Limited storage capacity at the Alyeska terminal can create undue pressure on loading and shipping schedules of tankers calling at Valdez. Shortage of storage capacity could lead terminal operators to load tankers under otherwise marginal weather conditions, for example, to avoid an expensive slowdown or shutdown of the pipeline.

It may be that the cost of tank farm construction is high enough that a slowdown or risk of slowdown is a preferred cost. If that is the case, standards for slowdowns and shutdowns should be clearly stated so that safety is not sacrificed to revenue or pipeline flow considerations.

"In boarding both the Japanese vessel and the Soviet vessel I had no problem getting on those vessels, but yet there was a guard at the door of the VECO office when I tried to enter that door. And I started wondering who is really afraid of me."

*Rita Turner, Seward
Alaska Oil Spill Commission
hearing, 7/14/89*

STATE REGULATION AND OVERSIGHT

The State of Alaska carries primary responsibility for protecting the state's public resources. Neither federal nor local authority and self can take the place of strong state regulation of industries that vitally affect the economic and environmental welfare of Alaskans.

State authority must be exerted to protect fish and wildlife resources, to vouchsafe federal regulation, to oversee industry operations, to inform the public of risk, and to insure proper response capabilities in case of accident. State government was not fully prepared in any of these categories before the *Exxon Valdez* disaster.

Alaskans have benefited strongly from the production and transportation of oil in the state, but they have not invested commensurate resources and attention in regulating and safeguarding the operations of the industry. It is incumbent upon Alaskans, through their elected officials as well as their own efforts, to create workable and effective institutions to protect their interests in the production and transportation of oil in the state.

"If you had an enforcement unit in place, staffed by the people who were solely charged with it and not distracted by some of the other responsibilities, that they would be able to take the time to account for what are our main polluters in the state."

*Sue Libenson, Executive Director
Alaska Center for the Environment
Alaska Oil Spill Commission
hearing, 9/21/89*

Recommendation 10
Obligation to manage and protect

The people of Alaska should recognize they are the stewards of vast natural resources that are the mainstay of their livelihood and a national treasure. Among the obligations of state stewardship is the duty to protect these resources as much as possible from harm.

The State of Alaska has not spent an amount appropriate to the job of natural resource management and protection. There are many reasons for this, including low recognition of the magnitude of the task.

Compare the total amount spent by the people of Alaska to manage fish and game resources to that for overseeing the oil industry. Recognizing the importance of fish and game to the state, the people of Alaska have spent substantial sums on regulation, enforcement, research and development, as well as a statewide system of citizen advisory committees. The amount spent overseeing the oil industry and its safety practices, by comparison, is a fraction of that total.

Recommendation 11
Federal preemption

The state should adopt stringent standards regulating the transportation of oil in its own waters without fear of federal preemption.

Alaska has had unsatisfactory experience with federal preemption in the field of tanker safety and local navigational controls, but Congress no longer intends to override more stringent state regulation.

In 1976 the State of Alaska adopted a law giving broad authority to state agencies to oversee and regulate the safety of tanker traffic to Valdez. In 1977 the oil companies responsible for carrying Alaska's oil initiated a lawsuit (*Chevron, et al. v. Hammond*) challenging the state's right to regulate the safety of marine oil transportation on grounds that congressional action and Coast Guard regulation preempted the field. By 1979 the plaintiff companies had gained both a favorable ruling from the U.S. District Court and negotiated concessions from the state. The result was a gutting of key provisions in the legislation.

Industry encouraged the view that it should be allowed to take care of its own safety matters; that state activity was a needless and obstructionist interference with private prerogative; and that left to its own devices the industry would employ the best available technology with the optimum commitment of resources. This was not remotely the case. The evisceration of the state's regulatory framework and the antiregulatory temper of the times laid a foundation for repeal of the 1976 legislation and a slashing of state budgetary allocations for oversight. As a result, the role of the Department of Environmental Conservation was sharply reduced. The

"I think what's missing here is an attitude among state leaders that the buck stops here, with the people of Alaska and not in Houston or Washington, D.C."

*Professor Matt Berman, University of Alaska
Alaska Oil Spill Commission
hearing, 9/21/89*

department's small staff was overwhelmed by technical licensing and permitting activities, leaving no opportunity for the agency to perform its role as overall environmental policy watchdog. Though the state retained certain powers over water quality, the overall effect of preemption through the federal courts was to reduce or eliminate the state presence in the oversight of oil industry affairs and demoralize state personnel engaged in such activity.

In the absence of the state presence, the already weak federal regulatory presence declined further. In 1990 Congress is likely to adopt legislation that would eliminate any presumption of federal preemption in actions taken by the state with respect to safety and response. Thus the way is open for the state to reassert its historic role in resource protection.

A citizens' advisory council should be established in the office of the governor and given responsibility for overseeing the safe transportation of oil, gas and other hazardous substances.

No state agency has as its primary mission oversight of environmentally safe transportation of Alaska's resources. Regulatory authority over such transportation is spread among several agencies that do not always coordinate information or resources. The only overall view of the system is exercised by the governor, but he has no single designated officer or council to provide information or maintain consistent oversight.

The state should establish a citizens' advisory council, supported by a full-time executive director and small staff, to provide focus to state oversight. Members should be chosen from among the general public, selected for their concern for environmental safety. The council should have power to subpoena information and witnesses, to inspect facilities, to conduct investigations, and to collect information and statistics on safety.

The council's duties should be to:

- Advise the governor and legislature on the environmental safety of the transportation of Alaska oil, gas and other substances posing environmental risks;
- Advise on potential initiatives in state and federal regulations and at the governor's request, represent the state's interests in the development of multistate compacts and national and international policy;

Recommendation 12
Oversight council

"What we have is a system driven by the fact the pipeline is pumping 2 million barrels of oil into the sound, and they have to get it out of here. They choose not to restrict it, turn it off, or anything else. The decision to sail or not to sail is not a dispassionate decision based on weather or traffic."

*Rep. George Miller, California
House Committee on Interior and
Insular Affairs hearing, May 1989*

"What tends to happen is DEC will get dragged into a septic tank argument and it will drain away as many resources as fighting, for instance, the Alyeska ballast water treatment plant. There's a real problem with priorities within DEC."

*Sue Libenson, Executive Director
Alaska Center for the Environment
Alaska Oil Spill Commission
hearing, 9/21/89*

Recommendation 13
Enhanced regulatory strength

- Identify unmet needs and recommend priorities, strategies and obstacles to achieving them;
- Encourage coordination of spill prevention and response programs currently spread among several agencies that cumulatively deserve high priority;
- Make budget and resource allocation recommendations;
- Evaluate programs and recommend elimination of marginal activities;
- Recommend changes based on new technologies and scientific impacts;
- Designate advisory panels, if deemed necessary, including appropriate representation, ex-officio, of appropriate departments of the state and municipalities, regional oil spill authorities, representatives of fishing and environmental groups, and shippers, owners and residential groups on the pipeline route; and
- Issue an annual report and safety assessment. Reports to the governor should include regular statistical and special reports on accidents and near-misses, the status of major risks, the performance of state and federal agencies, and long-term options for improving safety.

The state should expand and exercise its regulatory authority over environmental safety. Measures voluntarily adopted by industry should be backed up by state regulation. Federal technical standards and safety requirements should not preclude more stringent state standards.

The State of Alaska currently does not exercise its full power under the U.S. Constitution to regulate environmental safety. Recent congressional enactments and judicial decisions make it clear that Congress does not intend that states should hesitate to protect local environments with greater stringency than the minimums established under federal law. The state should have the power, for example, to prohibit vessels from entering or departing Alaska ports and waters under unsafe circumstances.

Regulatory effectiveness also should be improved through assessment of administrative and civil penalties to encourage prevention, no preem-

forcement review of compliance orders, environmental audits, stronger criminal penalties, and statutory provision for citizen lawsuits. Private voluntary prevention measures, though commendable, are often ignored as memories fade unless backed up by state regulations.

The state should renew and strengthen its authority to conduct inspections and spill response drills on vessels calling at Alaska ports and marine terminals.

The Valdez tanker fleet, built in the 1970s is approaching obsolescence. Structural weaknesses, technical malfunctions and other equipment problems can be expected to increase in frequency and seriousness.

Inspections and reports, done in cooperation with the Coast Guard or alone, should include examinations for structural integrity and environmental hazards. Inspection duties may be allocated between the harbor administration office proposed in this report and the Department of Environmental Conservation. State authority should include the power to levy substantial summary civil fines for interfering with inspections or failing to cooperate with response drills.

The lack of any quality control or assurance program on tanker operations from Prince William Sound or Cook Inlet allows serious hazards to arise. Coast Guard authorities already perform inspections on tankers calling at Valdez, but state inspection would provide an added measure of safety. In the past, when the state and the Coast Guard both inspected vessels, the two agencies reenforced each other's effectiveness. When the state was stopped from making inspections on the grounds that the activity was exclusively federal, the quality of Coast Guard inspections declined. Inspection by two governments is not needless duplication but needed redundancy, providing a greater measure of safety.

The "two-tier" system of quality control was adopted during construction of the trans-Alaska pipeline. The value of the two-tier system has been reenforced by the National Aeronautics and Space Administration experience with space disasters. The official inquiry into the 1986 Challenger space shuttle explosion found that system capabilities had been stretched to the limit in the winter of 1985-86 to support the flight schedule of the shuttle program. System capabilities for shipping oil from Valdez were similarly stretched to accommodate increasing throughput of the trans-Alaska pipeline to 2.2 million barrels per day without increasing other elements of the system, such as tank storage capacity.

Recommendation 14
Strengthened state inspections

"We are obligated to provide systems which enhance marine transportation safety, and we do it economically."

Jerry Aspland, President, ARCO Marine, Inc.

Alaska Oil Spill Commission hearing, 9/1/89

When systems are stretched thin, redundancy in oversight and inspection is doubly important to reduce the risk of catastrophic failure.

Recommendation 15
State presence at Alyeska terminal

Government agencies should be given space at the Alyeska terminal to carry out their duties.

State inspection efforts at the Alyeska terminal should be situated so as to maintain a continuing presence, instant response and constant vigilance over environmental safety at the terminal and on vessels calling there. Until the Exxon Valdez wreck, various agency personnel were hampered by lack of quick and easy access to the terminal. Alaska Department of Environmental Conservation officials attempting to inspect Alyeska facilities were told they might be required to procure a warrant, a laborious and time-consuming process. A more cooperative posture by Alyeska staff might result if state personnel were seen not so much as an opposing force, but as a normal and integral part of the operation. Office facilities on-site might normalize relations between government and industry officials so that regulatory activities, which on occasion can be adversarial, need not become unnecessarily antagonistic.

Recommendation 16
State licensing of safety managers

A state licensing system should be established for oil transportation system safety personnel, including pipeline pump station and terminal managers.

Oil transportation safety managers should be required to show educational qualifications or equivalent experience and pass examinations reflecting an understanding of environmentally safe resource transportation in Alaska.

Mariners, captains, engineers and ship's pilots, all water-based transportation managers, already are licensed to encourage safety and public accountability. Similar practices should be established to insure that personnel meet a state standard of professionalism for all important managers in the oil transportation system. Few of the managers brought in to oversee contingency plan development or respond to the Exxon Valdez spill had significant prior knowledge of Alaska environmental laws, resources or local capabilities.

Licensing can significantly help assure knowledge of prevention and response capabilities as well as public accountability. For example, regardless of whether particular conduct may be tacitly approved or

tolerated by an employer, a licensee who falsifies a report, bypasses a required procedure or otherwise violates the professional obligations covered by the license can lose his or her opportunity to engage in the employment.

To the extent it does not already have such authority, the state should seek from Congress authority to require and enforce prevention and response regimes on vessels trading in Alaska or adjacent waters.

Spilled oil recognizes no state boundaries. State jurisdiction is necessary because spilled oil may come ashore or ravage important local fisheries hundreds of miles from the point of the spill. The risk of breakup of a tanker or loss of a barge in the Gulf of Alaska is real. Gulf of Alaska shipping routes should be covered by an adequate regional response developed under the National Contingency Plan and backed by capabilities of the state, the Coast Guard, the carriers and other relevant authorities.

The State of Alaska should negotiate interstate compacts with other coastal states and provinces for the development of prevention strategies, storage of response capabilities and to effect coordination of assets in case of another major spill.

The western coastal states and provinces may share common environmental concerns about spilled oil. Compact agreements have the force of federal law and may enable these states to create an appropriate regional administration to oversee oil shipping.

The state should require maintenance and personnel audits at oil transportation facilities to provide information and pinpoint problems in spill prevention.

Accurate, timely information is central to the exercise of the oversight function and must be available to all government actors in prevention and response. The state can gather information on conditions relating to spill prevention through technical maintenance audits, thereby supporting the work of the state advisory council and regulatory agencies. Technical and personnel audits may be done by outside contract.

Recommendation 17
Enforcement in state waters

Recommendation 18
Interstate compacts

Recommendation 19
Maintenance and personnel audits

Recommendation 20
Marine pilot qualifications

Training and experience standards for marine pilots in Alaska should be upgraded to require actual experience in Alaska operations of vessels at thresholds of 60,000 and 150,000 deadweight tons.

Training and experience requirements have been reduced for pilots of large tankers in Prince William Sound and Cook Inlet since the late 1970s, allowing pilots to qualify for very large ship operations on insufficient experience. While no accidents have been caused by this circumstance, a system with multiple thresholds is inherently safer.

Recommendation 21
State as co-insured

Insurance policies should identify the State of Alaska as an additional insured or named beneficiary.

The shipping industry is responsive to economic incentives. Insurance premiums and premium requirements create incentives. The insurance industry is responsive to the needs of co-insureds. Such practices were required during construction of the trans-Alaska pipeline. There is every reason to revive them.

Recommendation 22
Remote spill response

The state should set rigorous requirements for private oil spill prevention and response capability in remote locations. The state also should develop response plans for major spills and articulate a prevention program from the Aleutian Islands to the Arctic.

Despite the state's obligation to respond to major spills, only if private resources are committed to prevention systems and response can an acceptable reduction in risk be achieved.

Marine traffic in arctic Alaska already poses unacknowledged risk. Fuel provisions delivered by sea and vessels fueled by oil create risks of damage in these hazardous and environmentally fragile waters. Spills are usually impossible or much more difficult to contain and collect in arctic waters. Immediacy of response is the key to cleanup if a spill occurs.

Measures should be undertaken to reduce spill risk in the arctic, including better vessel tracking and contingency plan requirements for all large vessels transiting the arctic, and for smaller vessels carrying oil or major fuel supplies.

Given the high risk involved in arctic oil transportation, the options for developing systematic environmental safety protections for this region should be a priority for scientific authorities.

The long-term need to develop environmental safety regimes of great stringency cannot be ignored. Development of arctic oil discoveries dependent on maritime transportation should await the preparation of approved systems of oil transportation using experience gained from the trans-Alaska pipeline system. But any increase in traffic simply to accommodate increases in oil production should be accompanied by a major increase in preventive safety.

The state should establish a task force to review the environmental safety of the trans-Alaska pipeline system independently or in concert with a federal counterpart.

More than enough evidence is available regarding sharply increasing risk of a pipeline breach and raising questions regarding government response capability. On the advice of contractors showing evidence of massive corrosion problems with the pipe, Alyeska already has undertaken a review and reconstruction program of the trans-Alaska pipeline system. The state was intimately involved in oversight of the original design and construction of the pipeline. This pattern of oversight should be renewed to protect the same public interests.

The task force should make recommendations to better oversee the long-term safety of the pipeline and gathering system. Specifically, it should review the environmental safety of:

- the trans-Alaska pipeline and gathering system;
- applicable government and private contingency plans; and
- the response plans and capabilities of government agencies.

The commission endorses the concept of a presidential task force on pipeline safety as proposed by Congress and urges that provision be made for state participation.

Recommendation 23
Arctic prevention research
priority

Recommendation 24
Pipeline evaluation

"The community must be imbedded in the bureaucracy because this is the only way oversight is going to happen. It's the only way that continued community involvement is going to happen. And it's the one way to guard against apathy if you don't have another oil spill for 20 years."

Jim Sykes
Alaska Oil Spill Commission
hearing, 9/21/89

Recommendation 25
State harbor administration

The state should create harbor administration offices for Prince William Sound and Cook Inlet to help regulate traffic and navigation and to implement terminal and vessel inspections.

Local oversight of navigation and port operations can improve conditions by bringing local perspectives to bear. A harbor administration office should have the power to:

- Regulate traffic and navigation issues not preempted by Coast Guard regulation to impose more exacting standards in the best interests of the state.
- Advise and oversee the Coast Guard's management of such issues and make recommendations for changes;
- Certify and declare disasters, and order state management of a spill in the port area; and
- Assume functions given under contract by the Coast Guard and participate in joint management arrangements.

The state asserted greater control over harbor activity in the mid-1970s, but conceded its management prerogatives in negotiations leading to a resolution of the Chevron, et al., v. Hammond lawsuit. Pending legislation clarifies congressional intent that the state may undertake safety regulations relating to local harbor conditions, weather and the like, and that the vessel must follow the more stringent rule. Collaboration with federal authority is required to assure that no direct conflict with Coast guard regulations are involved and that optimum safety conditions are observed.

In the event of a spill, the harbor administration at Valdez probably would be the headquarters of the on-scene commander carrying out the governor's delegated emergency authority.

Oil transportation in Cook Inlet, a body of water widely noted for its extreme tides, currents, winds and ice conditions, faces a high risk of spills. Though smaller volumes of oil pass through Cook Inlet than Prince William Sound, similar oversight arrangements should be duplicated there, allowing for appropriate variations in representation and the difference in geographic circumstances.

Research done for the Alaska Oil Spill Commission indicates that a major spill of between 300 and 1 million gallons can be expected in Cook Inlet approximately every 2.2 years, a spill of between 1 million and 9 million

"I would promote that there is a state group that deals with marine transportation, kind of a one-stop shopping group."

Jerry Aspland, President, ARCO Marine, Inc.

Alaska Oil Spill Commission hearing, 9/1/89

gallons about every 24 years, and a spill of 9 million gallons or more about every 66 years. Oversight arrangements should be created to provide appropriate public accountability and awareness of spill risks.

A system of regional advisory councils should be formalized under state authority to oversee harbor administration, state and federal regulation and private safety functions.

Recommendation 26
Regional advisory
committees

The people living closest to a danger have the most to risk and are the most likely to insure that readiness and alertness are maintained. As a Prince William Sound resident told the commission, "People take care of the things they love."

Regional oversight councils can both encourage protection of local resources and provide an opportunity to make use of local residents' knowledge of conditions and needs in crafting workable spill prevention and response policies. Regional advisory councils should provide advice to the statewide policy council proposed in this report and respond to its recommendations. A similar council should be considered for permanent oversight of the trans-Alaska pipeline system.

Local governments should be represented on the regional advisory councils and the harbor administration.

Recommendation 27
Local government
representation

Local residents complained that their views and knowledge often were ignored. Residents in small villages, in particular, believed they were bypassed despite their great, direct interest in events. Villagers rarely are able to send delegates to advisory boards, even though their lives may be severely traumatized by a spill. Special provisions should be made to assure no neglect of these stakeholders.

FEDERAL REGULATION AND OVERSIGHT

Congress has mandated a comprehensive system to protect the safety of oil and gas transportation, but for lack of enthusiasm and underfunding enforcement has been a failure. The quality of federal oversight of oil transportation in Alaska was typified by the U.S. Coast Guard, whose safety and regulatory efforts gradually declined for most of the decade leading up to the *Exxon Valdez* disaster.

The Coast Guard supported safe traffic monitoring systems and design standards, including double-hulled tankers, when the trans-Alaska pipeline system was approved in 1973. But by 1978, after strong industry opposition to double hulls in international regulatory forums, the Coast Guard backed off its support. The Coast Guard also imposed stringent safety inspections and vessel monitoring practices during the early years of tanker operations after the opening of the pipeline in 1977. Inspection and monitoring efforts waned noticeably after parallel state inspections were stopped in 1979, and gradually thereafter as Coast Guard funding and resources for these activities declined.

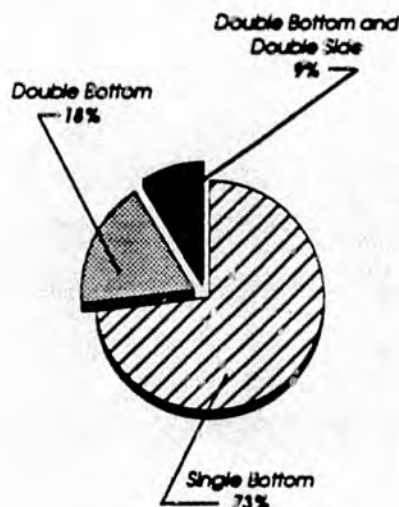
Some federal agencies performed admirably in events surrounding the spill — notably the U.S. Army Corps of Engineers and the U.S. Navy in cleanup response efforts and the Coast Guard itself in successful measures to salvage the ship and the unspilled cargo. As a rule, however, federal authority must be reinvigorated in several ways if it is to provide significant leadership in the safety and oversight of maritime oil transportation.

"Figure out what 25 percent of the nation's oil is worth."

*Rep. George Miller, California
House Committee on Interior and
Insular Affairs hearing, May 1989*

Recommendation 28
Double hulls and vessel design

Hull designs of the 93 tankers registered for Alaska trade.



Recommendation 29
Mandatory traffic control

Double hulls and other technological advances in tank vessel design should be required on an accelerated timetable, including prohibition of nonqualifying vessels, regardless of flag registry, in all U.S. waters.

The loss of oil from the *Exxon Valdez* wreck would have been substantially less if the vessel had had a double hull of appropriate design. A U.S. Coast Guard study undertaken after the accident indicated that up to 60 percent less oil — about 6 million gallons — would have entered the water if the *Exxon Valdez* had been equipped with a double hull. Double hulls already are required for chemical tankers and gas carriers to provide maximum protection to cargo tanks. A study for the Alaska Oil Spill Commission by ECO, Inc., of Annapolis, Maryland, says double hull design "provides the highest probability of surviving damage, either from a collision or grounding, with no loss of cargo."

Technical measures to reduce risk of accident and oil spillage have been advocated by naval engineers and others over the past two decades, but this advocacy has not produced significant voluntary changes in the way the industry does business. Suggestions regarding multiple screws, horsepower enhancement and other design overbuilding proposals to enhance safety have received only a negative response. Required changes are necessary, particularly as the size and carrying capacity of modern supertankers has increased.

Mandatory traffic control systems should be installed in due course in Cook Inlet, Prince William Sound and all waters of the U.S. where an equivalent or greater risk occurs.

Any of several common practices relating to positive vessel traffic control would have prevented the *Exxon Valdez* from straying so far off course as to run aground on Bligh Reef. The wreck would not have occurred if there had been a traffic control system covering operations to Hinchinbrook Entrance, as was promised by owners of the trans-Alaska pipeline system at the time the system was approved. The wreck would not have occurred if Loran C retransmit or radar had provided reliable coverage to Hinchinbrook Entrance, as was promised by the owners. And the *Exxon Valdez* wreck would not have occurred if the Coast Guard had not, according to regular, informal practice, given permission to the vessel to move outside established tanker lanes.

The *Exxon Valdez* wreck would have been less likely if the vessel had been traveling at lower speed and would not have occurred if the captain had

chosen to push through ice in the traffic lanes at low speeds, as was more common practice in the early years of operation of the Valdez terminal.

A mandatory vessel traffic control system operated by personnel more experienced than those now posted to the advisory system would require strict monitoring of a vessel's position in relation to traffic and known hazards and would prevent corner-cutting to save time, a conspicuous cause of the well-known Torrey Canyon disaster.

Crew levels on tank ships must be established to reflect manning needs under emergency conditions, not just normal operating circumstances, and must reflect the need to avoid fatigue and overtime among those with responsibility for safe navigation.

Crew sizes and fatigue factors have been subjects of investigation since the *Exxon Valdez* accident. A second qualified officer on the bridge would have made the wreck substantially less likely by increasing the likelihood that the bridge would have been alerted to the ship's errant position, the impact of the automatic steering mechanism, or to alternative last-minute navigation strategies for avoiding the reef, in time to avert the accident. Similarly, the wreck would have been less likely if crew members and ship's officers required to do double duty in Valdez harbor during loading operations had not been subject to fatigue.

A 1984 survey indicated that the ability to make schedules is viewed as the single most important factor in a company's evaluation of a captain's performance. Under such circumstances, a captain is strongly motivated to run whatever crew he has as long and as hard as necessary to meet the required schedule, despite formal duty time limitations. National Transportation Safety Board hearings on the *Exxon Valdez* accident showed that several crew members — including Third Mate Gregory Cousins, who was at the helm at the time of the accident — had worked extraordinarily long hours the day of the wreck. This practice is not rare in the trade.

Crew training standards must be strengthened and retraining and reexamination reviews tightened. Physical standards, in addition to those proscribing alcohol or drug abuse, must be met. A captain having a "predictable" heart attack is of no more use than one under the influence.

Recommendation 30
Crew levels

"The tradeoff in risk involved with a double hull is that to carry a given amount of oil, you now have to have 60 percent more tankers, and if you do the arithmetic that's the way it comes out."

Frank Iarossi, President, Exxon Shipping Company
Alaska Oil Spill Commission hearing, 9/1/89

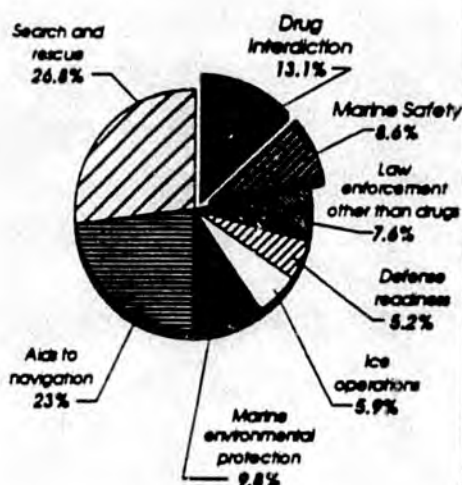
Recommendation 31 Coast Guard role

The mission of the U.S. Coast Guard to protect the safety of navigation should be defined specifically to include the safe transportation of oil by sea. Sufficient funding, resources and institutional support should be given to insure the strengthening this purpose.

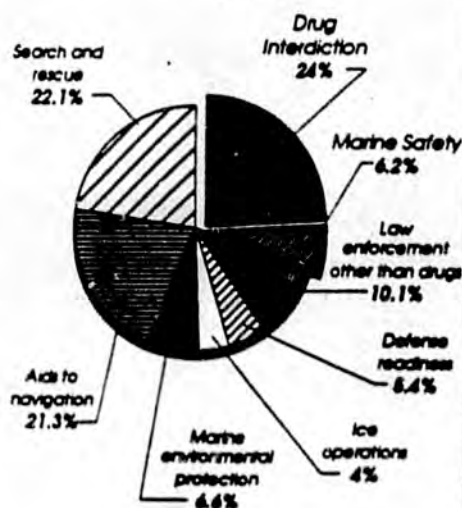
For reasons that include not just underfunding, but also confusion of mission and an unduly friendly relationship with industry, the Coast Guard has failed the American people in providing oversight of the country's oil transportation system. Enforcement must be strengthened and the penalty structure raised to a point where it weighs in the economic calculations of each company.

Coast Guard Budget Comparisons

1982



1989



Source: The Seattle Times

While various Coast Guard units have operational responsibilities for tanker safety, the Coast Guard's primary mission is not the environmentally safe transportation of oil by sea. There is a general disposition in the agency to keep commerce moving without regard to all environmental or social costs. This disposition may be in conflict with the need to "follow the book" to insure safety. The lack of particular focus on the environmental risks of oil transport was revealed in the system weaknesses that permitted the wreck of the *Exxon Valdez*.

The Coast Guard commandant is selected by the president and accordingly is likely to reflect the philosophical perspective of the times. After President Nixon's declaration of a policy of oil independence, which President Carter pursued through establishment of a Department of Energy, the national mood under President Reagan moved to industrial self-regulation. This mood was reflected in a greater resonance with industry wishes in Coast Guard performance. Relaxed regulation has contributed to a lack of progress in maritime environmental safety. Safety does not do well in a laissez-faire environment.

Underfunding and relaxed attitudes toward regulation increased the likelihood of the *Exxon Valdez* wreck in several ways. The junior Coast Guard personnel posted to Valdez did not think they had the authority to instruct tanker operators in navigation or to require frequent position reporting. Only one Coast Guard employee was on duty at the time of the accident. The wreck would not have occurred if the Coast Guard had prioritized the installation of up-to-date vessel monitoring systems. The wreck would have been less likely if the Coast Guard had exercised strong oversight of crews and manning practices.

The Coast Guard's power to determine required crew levels is of little consequence as exercised. The determination is largely a paper exercise in which the shipper submits a proposal that typically is routinely