

ALASKA LEGISLATURE COMMITTEE FILES, 1989-1990 8672
6378 SENATE JUDICIARY

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This rule must be strictly enforced as "[t]he right of officers to thrust themselves into a home is also a grave concern, not only to the individual but to a society which chooses to dwell in reasonable security and freedom from surveillance. When the right of privacy must reasonably yield to the right of search is, as a rule, to be decided by a judicial officer, not by a policeman or government enforcement agent." *Id.* at 529, 87 S.Ct. at 1731 (quoting *Johnson v. United States*, 333 U.S. 10, 14, 68 S.Ct. 367, 369, 92 L.Ed. 436 (1948)). As shown by Judge Tang in his dissent, the regulation at issue here cannot be justified under any of the recognized exceptions to the warrant requirement, particularly the "pervasively regulated industry" exception.

Tuna fishermen do not waive their right to be free from unreasonable search or surveillance by temporarily living onboard a fishing vessel. The fishing boat is not just their place of employment, but for two to three months it is "the framework of [their] existence," *Aguilar v. Standard Oil Co.*, 318 U.S. at 732, 63 S.Ct. at 934, and their home. This home cannot be entered by law enforcement officers absent a warrant based on probable cause to believe that a crime has been or is being committed. It is well established that an administrative regulation which by its terms violates the fourth amendment is unconstitutional and should not be enforced. *Marshall v. Barlow's, Inc.*, *supra*.

The majority states that it is necessary to place federal observers aboard tuna fishing vessels to protect the lives of porpoises. Maj.op., at 760, 761. However, it fails to address the question whether a warrant authorizing the placement of such observers on a case-by-case basis would undercut the objectives of the Marine Mammal Protection Act. Clearly, if a warrant is required under the Marine Mammal Protection Act, those on the fishing vessel upon which an observer may be stationed could conceal no more than they could conceal with the federal agent forced aboard without the prophylactic protections of a warrant issued by a neutral officer. See *Marshall v. Barlow's, Inc.*, 436 U.S. at 323, 98 S.Ct. at 1826.

Moreover, the regulation by its own terms undermines the argument that notice would frustrate the objectives of the observer program as it provides that the fishing vessel owner receive notice of the placement of an "observer" five days prior to the voyage. 50 C.F.R. § 215.24(f)(4). Contrary to the majority position (maj.op., at 765), mere knowledge of the existence of a regulatory purpose cannot eliminate one's expectation of privacy, for that would consume the rule against warrantless searches in the exception. Cf. *Michigan v. Tyler*, 436 U.S. 499, 508, 98 S.Ct. 1942, 1949, 56 L.Ed.2d 486 (1978).

The majority states that the warrantless quartering of a federal agent on a 30-60 day fishing trip is so clearly limited by regulation that the regulation is the substantial equivalent of a warrant. Maj.op. at 765-766. However, it has been recognized that when law enforcement officers are lawfully on the premises for limited purposes, the restrictions placed on the scope of their search or duties "may be more theoretical than real." *Payton v. New York*, 445 U.S. at 589, 100 S.Ct. at 1381. Moreover, the majority's position that the observer may legitimately gather evidence in "plain view" on the ship belies the weight of the limitations placed on the observer by the regulations. Maj.op., at 763. The fishermen are placed in the position of hiding their everyday acts and comments from the federal agent in order to establish and protect their fundamental right to be let alone. See *Illinois v. Andreas*, — U.S. —, 103 S.Ct. 3319, 3327, 77 L.Ed.2d 1003 (1983) (Brennan, J., dissenting). The NOAA has made the price of being a tuna fisherman include the "dread of subjection to an unchecked surveillance power." *United States v. United States District Court*, 407 U.S. at 314, 92 S.Ct. at 2135.

The fourth amendment was a response to the general warrant whereby an officer was authorized to search private premises without evidence of unlawful activity. *Marshall v. Barlow's, Inc.*, 436 U.S. at 311, 98 S.Ct. at 1819-20. Today the majority holds that a

federal agent cannot only search a private vessel, but collect data, question fishermen, and live on the vessel for months at a time without the need to secure a warrant based on a legitimate suspicion of unlawful activity. The regulation at issue here can subject "even the most law-abiding citizen" to unprecedented and unjustified government intrusion and surveillance. See *Camara v. Municipal Court*, 387 U.S. at 530, 87 S.Ct. at 1731. Surely the lives of porpoises cannot be more sacred to us than the right to privacy and freedom from government intrusion protected by the fourth amendment.



James WAKREN, Jack Warren, Jerry Warren, Robert Warren and Frieda Warren, Plaintiffs-Appellants,

v.

The UNITED STATES DEPARTMENT OF the INTERIOR BUREAU OF LAND MANAGEMENT; Nevada Bureau of Land Management; and Does I-X, inclusive, Defendants-Appellees.

No. 82-4642.

United States Court of Appeals,
Ninth Circuit.

Argued and Submitted Oct. 13, 1983.

Decided Jan. 24, 1984.

Parents and brothers of decedent brought wrongful death action against Government. The United States District Court for the District of Nevada, Bruce R. Thompson, J., dismissed action, and plaintiffs appealed. The Court of Appeals, Skopil, Circuit Judge, held that jurisdictional limitations on tort claims against Federal Government do not encompass regulations promulgated pursuant to agencies' claims settlement authority.

Reversed and remanded.

Sneed, Circuit Judge, filed dissenting opinion in which Wallace and J. Blaine Anderson, Circuit Judges, joined.

1. United States ⇐113

Jurisdictional limitations on tort claims against Federal Government do not encompass regulations promulgated pursuant to agencies' claims settlement authority; overruling *House v. Mine Safety Appliances Co.*, 573 F.2d 609. 28 U.S.C.A. §§ 2672, 2675(a).

2. United States ⇐113

Claimant against Federal Government or his legal representative is required to file written statements sufficiently describing injury to enable agency to begin its own investigation, and a sum certain damages claim. 28 U.S.C.A. § 2675(a).

Robert J. Peyton, Houston & Peyton, Reno, Nev., for plaintiffs-appellants.

Al J. Daniel, Jr., U.S. Dept. of Justice, Washington, D.C., for defendants-appellees.

Appeal from the United States District Court for the District of Nevada.

Before BROWNING, WALLACE, SNEED, ANDERSON, TANG, SKOPIL, SCHROEDER, FARRIS, BOOCHEVER, NORRIS, and REINHARDT, Circuit Judges.

SKOPIL, Circuit Judge:

The issue presented is whether jurisdictional limitations on tort claims against the federal government encompass regulations promulgated pursuant to the agencies' claims settlement authority. See 28 U.S.C. §§ 2675(a) and 2672 (1982). We decide the case *en banc* to resolve a conflict in our prior decisions. Compare *Graves v. United States Coast Guard*, 692 F.2d 71 (9th Cir. 1982) with *House v. Mine Safety Appliances Co.*, 573 F.2d 609 (9th Cir.), *cert. denied*, 439 U.S. 862, 99 S.Ct. 182, 58 L.Ed.2d 171

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Wednesday
July 9, 1988

Federal Register

Part IV

Environmental Protection Agency

Environmental Auditing Policy Statement;
Notice

(1)

**ENVIRONMENTAL PROTECTION
AGENCY**

(OPPE-FRL-3046-8)

**Environmental Auditing Policy
Statement**

AGENCY: Environmental Protection
Agency (EPA).

ACTION: Final policy statement.

SUMMARY: It is EPA policy to encourage the use of environmental auditing by regulated entities to help achieve and maintain compliance with environmental laws and regulations, as well as to help identify and correct unregulated environmental hazards. EPA first published this policy as Interim guidance on November 8, 1985 (50 FR 46504). Based on comments received regarding the interim guidance, the Agency is issuing today's final policy statement with only minor changes.

This final policy statement specifically:

- Encourages regulated entities to develop, implement and upgrade environmental auditing programs;
- Discusses when the Agency may or may not request audit reports;
- Explains how EPA's inspection and enforcement activities may respond to regulated entities' efforts to assure compliance through auditing;
- Endorses environmental auditing at federal facilities;
- Encourages state and local environmental auditing initiatives; and
- Outlines elements of effective audit programs.

Environmental auditing includes a variety of compliance assessment techniques which go beyond those legally required and are used to identify actual and potential environmental problems. Effective environmental auditing can lead to higher levels of overall compliance and reduced risk to human health and the environment. EPA endorses the practice of environmental auditing and supports its accelerated use by regulated entities to help meet the goals of federal, state and local environmental requirements. However, the existence of an auditing program does not create any defense to, or otherwise limit, the responsibility of any regulated entity to comply with applicable regulatory requirements.

States are encouraged to adopt these or similar and equally effective policies in order to advance the use of environmental auditing on a consistent, nationwide basis.

DATES: This final policy statement is effective July 9, 1988.

FOR FURTHER INFORMATION CONTACT:
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Planning and Evaluation, (202) 382-
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or

Cheryl Wasserman, Office of
Enforcement and Compliance
Monitoring, (202) 382-7550.

SUPPLEMENTARY INFORMATION:

**ENVIRONMENTAL AUDITING
POLICY STATEMENT**

I. Preamble

On November 8, 1985 EPA published an Environmental Auditing Policy Statement, effective as Interim guidance, and solicited written comments until January 7, 1986.

Thirteen commenters submitted written comments. Eight were from private industry. Two commenters represented industry trade associations. One federal agency, one consulting firm, and one law firm also submitted comments.

Twelve commenters addressed EPA requests for audit reports. Three comments per subject were received regarding inspections, enforcement response and elements of effective environmental auditing. One commenter addressed audit provisions as remedies in enforcement actions, one addressed environmental auditing at federal facilities, and one addressed the relationship of the policy statement to state or local regulatory agencies. Comments generally supported both the concept of a policy statement and the interim guidance, but raised specific concerns with respect to particular language and policy issues in sections of the guidance.

General Comments

Three commenters found the interim guidance to be constructive, balanced and effective at encouraging more and better environmental auditing.

Another commenter, while considering the policy on the whole to be constructive, felt that new and identifiable auditing "incentives" should be offered by EPA. Based on earlier comments received from industry, EPA believes most companies would not support or participate in an "incentives based" environmental auditing program with EPA. Moreover, general promises to forgo inspections or reduce enforcement responses in exchange for companies' adoption of environmental auditing programs—the "incentives" most frequently mentioned in this context—are fraught with legal and policy obstacles.

Several commenters expressed concern that states or localities might

use the interim guidance to require auditing. The Agency disagrees that the policy states it opens the way for states and localities to require auditing. No EPA policy can grant states or localities any more (or less) authority than they already possess. EPA believes that the interim guidance effectively encourages *voluntary* auditing. In fact, Section II.B. of the policy states: "because audit quality depends to a large degree on genuine management commitment to the program and its objectives, auditing should remain a voluntary program."

Another commenter suggested that EPA should not expect an audit to identify all potential problem areas or conclude that a problem identified in an audit reflects normal operations and procedures. EPA agrees that an audit report should clearly reflect these realities and should be written to point out the audit's limitations. However, since EPA will not routinely request audit reports, if a Agency does not believe these concerns raise issues which need to be addressed in the policy statement.

A second concern expressed by the same commenter was that EPA should acknowledge that environmental audits are only part of a successful environmental management program and thus should not be expected to cover every environmental issue or solve all problems. EPA agrees and accordingly has amended the statement of purpose which appears at the end of this preamble.

Yet another commenter thought EPA should focus on environmental performance results (compliance or non-compliance) not on the processes or vehicles used to achieve those results. In general, EPA agrees with this statement and will continue to focus on environmental results. However, EPA also believes that such results can be improved through Agency efforts to identify and encourage effective environmental management practices, and will continue to encourage such practices in non regulatory ways.

A final general comment recommended that EPA should sponsor seminars for small businesses on how to start auditing programs. EPA agrees that such seminars would be useful. However, since audit seminars already are available from several private sector organizations, EPA does not believe it should intervene in that market, with the possible exception of seminars for government agencies, especially federal agencies, for which EPA has a broad mandate under Executive Order 12088 to

provide technical assistance for environmental compliance.

Requests for Reports

EPA received 12 comments regarding Agency requests for environmental audit reports, far more than on any other topic in the policy statement. One commenter felt that EPA struck an appropriate balance between respecting the need for self-evaluation with some measure of privacy, and allowing the Agency enough flexibility of inquiry to accomplish future statutory missions. However, most commenters expressed concern that the interim guidance did not go far enough to assuage corporate fears that EPA will use audit reports for environmental compliance "witch hunts." Several commenters suggested additional specific assurances regarding the circumstances under which EPA will request such reports.

One commenter recommended that EPA request audit reports only "when the Agency can show the information it needs to perform its statutory mission cannot be obtained from the monitoring, compliance or other data that is otherwise reportable and/or accessible to EPA, or where the Government deems an audit report material to a criminal investigation." EPA accepts this recommendation in part. The Agency believes it would not be in the best interest of human health and the environment to commit to making a "showing" of a compelling information need before ever requesting an audit report. While EPA may normally be willing to do so, the Agency cannot rule out in advance all circumstances in which such a showing may not be possible. However, it would be helpful to further clarify that a request for an audit report or a portion of a report normally will be made when needed information is not available by alternative means. Therefore, EPA has revised Section III.A., paragraph two and added the phrase: "and usually made where the information needed cannot be obtained from monitoring, reporting or other data otherwise available to the Agency."

Another commenter suggested that (except in the case of criminal investigations) EPA should limit requests for audit documents to specific questions. By including the phrase "or relevant portions of a report" in Section III.A., EPA meant to emphasize it would not request an entire audit document when only a relevant portion would suffice. Likewise, EPA fully intends not to request even a portion of a report if needed information or data can be otherwise obtained. To further clarify this point EPA has added the phrase,

"most likely focused on particular information needs rather than the entire report," to the second sentence of paragraph two, Section III.A. Incorporating the two comments above, the first two sentences in paragraph two of final Section III.A. now read: "EPA's authority to request an audit report, or relevant portions thereof, will be exercised on a case-by-case basis where the Agency determines it is needed to accomplish a statutory mission or the Government deems it to be material to a criminal investigation. EPA expects such requests to be limited, most likely focused on particular information needs rather than the entire report, and usually made where the information needed cannot be obtained from monitoring, reporting or other data otherwise available to the Agency."

Other commenters recommended that EPA not request audit reports under any circumstances, that requests be "restricted to only those legally required," that requests be limited to criminal investigations, or that requests be made only when EPA has reason to believe "that the audit programs or reports are being used to conceal evidence of environmental non-compliance or otherwise being used in bad faith." EPA appreciates concerns underlying all of these comments and has considered each carefully. However, the Agency believes that these recommendations do not strike the appropriate balance between retaining the flexibility to accomplish EPA's statutory missions in future, unforeseen circumstances, and acknowledging regulated entities' need to self-evaluate environmental performance with some measure of privacy. Indeed, based on prime informal comments, the small number of formal comments received, and the even smaller number of adverse comments, EPA believes the final policy statement should remain largely unchanged from the interim version.

Elements of Effective Environmental Auditing

Three commenters expressed concerns regarding the seven general elements EPA outlined in the Appendix to the interim guidance.

One commenter noted that were EPA to further expand or more fully detail such elements, programs not specifically fulfilling each element would then be judged inadequate. EPA agrees that presenting highly specific and prescriptive auditing elements could be counter-productive by not taking into account numerous factors which vary extensively from one organization to another, but which may still result in effective auditing programs.

Accordingly, EPA does not plan to expand or more fully detail these auditing elements.

Another commenter asserted that states and localities should be cautioned not to consider EPA's auditing elements as mandatory steps. The Agency is fully aware of this concern and in the interim guidance noted its strong opinion that "regulatory agencies should not attempt to prescribe the precise form and structure of regulated entities' environmental management or auditing programs." While EPA cannot require state or local regulators to adopt this or similar policies, the Agency does strongly encourage them to do so, both in the interim and final policies.

A final commenter thought the Appendix too specifically prescribed what should and what should not be included in an auditing program. Other commenters, on the other hand, viewed the elements described as very general in nature. EPA agrees with these other commenters. The elements are in no way binding. Moreover, EPA believes that most mature, effective environmental auditing programs do incorporate each of these general elements in some form, and considers them useful yardsticks for those considering adopting or upgrading audit programs. For these reasons EPA has not revised the Appendix in today's final policy statement.

Other Comments

Other significant comments addressed EPA inspection priorities for, and enforcement responses to, organizations with environmental auditing programs.

One commenter, stressing that audit programs are internal management tools, took exception to the phrase in the second paragraph of section III.B.1. of the interim guidance which states that environmental audits can "complement" regulatory oversight. By using the word "complement" in this context, EPA does not intend to imply that audit reports must be obtained by the Agency in order to supplement regulatory inspections. "Complement" is used in a broad sense of being in addition to inspections and providing something (i.e., self-assessment) which otherwise would be lacking. To clarify this point EPA has added the phrase "by providing self-assessment to assure compliance" after "environmental audits may complement inspections" in this paragraph.

The same commenter also expressed concern that, as EPA sets inspection priorities, a company having an audit program could appear to be a 'poor performer' due to complete and accurate reporting when measured against a

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company which reports something less than required by law. EPA agrees that it is important to communicate this fact to Agency and state personnel, and will do so. However, the Agency does not believe a change in the policy statement is necessary.

A further comment suggested EPA should commit to take auditing programs into account when assessing all enforcement actions. However, in order to maintain enforcement flexibility under varied circumstances, the Agency cannot promise reduced enforcement responses to violations at all audited facilities when other factors may be overriding. Therefore the policy statement continues to state that EPA may exercise its discretion to consider auditing programs as evidence of honest and genuine efforts to assure compliance, which would then be taken into account in fashioning enforcement responses to violations.

A final commenter suggested the phrase "expeditiously correct environmental problems" not be used in the enforcement context since it implied EPA would use an entity's record of correcting nonregulated matters when evaluating regulatory violations. EPA did not intend for such an inference to be made. EPA intended the term "environmental problems" to refer to the underlying circumstances which eventually lead up to the violations. To clarify this point, EPA is revising the first two sentences of the paragraph to which this comment refers by changing "environmental problems" to "violations and underlying environmental problems" in the first sentence and to "underlying environmental problems" in the second sentence.

In a separate development EPA is preparing an update of its January 1984 *Federal Facilities Compliance Strategy*, which is referenced in section III, C. of the auditing policy. The Strategy should be completed and available on request from EPA's Office of Federal Activities later this year.

EPA thanks all commenters for responding to the November 8, 1985 publication. Today's notice is being issued to inform regulated entities and the public of EPA's final policy toward environmental auditing. This policy was developed to help (a) encourage regulated entities to institutionalize effective audit practices as one means of improving compliance and sound environmental management, and (b) guide internal EPA actions directly related to regulated entities' environmental auditing programs.

EPA will evaluate implementation of this final policy to ensure it meets the above goals and continues to encourage

better environmental management, while strengthening the Agency's own efforts to monitor and enforce compliance with environmental requirements.

II. General EPA Policy on Environmental Auditing

A. Introduction

Environmental auditing is a systematic, documented, periodic and objective review by regulated entities of facility operations and practices related to meeting environmental requirements. Audits can be designed to accomplish any or all of the following: verify compliance with environmental requirements; evaluate the effectiveness of environmental management systems already in place; or assess risks from regulated and unregulated materials and practices.

Auditing serves as a quality assurance check to help improve the effectiveness of basic environmental management by verifying that management practices are in place, functioning and adequate.

Environmental audits evaluate, and are not a substitute for, direct compliance activities such as obtaining permits, installing controls, monitoring compliance, reporting violations, and keeping records. Environmental auditing may verify but does not include

activities required by law, regulation or permit (e.g., continuous emissions monitoring, composite correction plans at wastewater treatment plants, etc.). Audits do not in any way replace regulatory agency inspections. However, environmental audits can improve compliance by complementing conventional federal, state and local oversight." See III B 1

The appendix to this policy statement outlines some basic elements of environmental auditing (e.g., auditor independence and top management support) for use by those considering implementation of effective auditing programs to help achieve and maintain compliance. Additional information on environmental auditing practices can be found in various published materials.

¹ "Regulated entities" include private firms and public agencies with facilities subject to environmental regulation. Public agencies can include federal, state or local agencies as well as special purpose organizations such as regional sewage commissions.

² See, e.g., "Current Practices in Environmental Auditing," EPA Report No. EPA-330-09-83-006, February 1984; "Annotated Bibliography on Environmental Auditing," Fifth Edition, September 1985, both available from Regulatory Reform Staff, PM-22A, EPA, 401 M Street SW, Washington, DC 20460.

Environmental auditing has developed for sound business reasons, particularly as a means of helping regulated entities manage pollution control affirmatively over time instead of reacting to crises. Auditing can result in improved facility environmental performance, help communicate effective solutions to common environmental problems, focus facility managers' attention on current and upcoming regulatory requirements, and generate protocols and checklists which help facilities better manage themselves. Auditing also can result in better integrated management of environmental hazards. HQEP auditors frequently identify environmental liabilities which go beyond regulatory compliance. Companies, public entities and Federal facilities have employed a variety of environmental auditing practices in recent years. Several hundred major firms in diverse industries now have environmental auditing programs, although they often are known by other names such as assessment, survey, surveillance, review or appraisal.

While auditing has demonstrated its usefulness to those with audit programs, many others still do not audit. Clarification of EPA's position regarding auditing may help encourage regulated entities to establish audit programs or upgrade systems already in place.

B. EPA Encourages the Use of Environmental Auditing

EPA encourages regulated entities to adopt sound environmental management practices to improve environmental performance. In particular, EPA encourages regulated entities subject to environmental regulations to institute environmental auditing programs to help ensure the adequacy of internal systems to achieve, maintain and monitor compliance. Implementation of environmental auditing programs can result in better identification, resolution and avoidance of environmental problems, as well as improvements to management practices. Audits can be conducted effectively by independent internal or third party auditors. Larger organizations generally have greater resources to devote to an internal audit team, while smaller entities might be more likely to use outside auditors.

Regulated entities are responsible for taking all necessary steps to ensure compliance with environmental requirements, whether or not they adopt audit programs. Although environmental laws do not require a regulated facility to have an auditing program, ultimate responsibility for the environmental

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performance of the facility lies with top management, which therefore has a strong incentive to use reasonable means, such as environmental auditing, to secure reliable information of facility compliance status.

EPA does not intend to dictate or interfere with the environmental management practices of private or public organizations. Nor does EPA intend to mandate auditing (though in certain instances EPA may seek to include provisions for environmental auditing as part of settlement

agreements, as noted below). Because environmental auditing systems have been widely adopted on a voluntary basis in the past, and because audit quality depends to a large degree upon genuine management commitment to the program and its objectives, auditing should remain a voluntary activity.

III. EPA Policy on Specific Environmental Auditing Issues

A. Agency Requests for Audit Reports

EPA has broad statutory authority to request relevant information on the environmental compliance status of regulated entities. However, EPA believes routine Agency requests for audit reports could inhibit auditing in the long run, decreasing both the quantity and quality of audits conducted. Therefore, as a matter of policy, EPA will not routinely request environmental audit reports.

EPA's authority to request an audit report, or relevant portions thereof, will be exercised on a case-by-case basis where the Agency determines it is needed to accomplish a statutory mission, or where the Government deems it to be material to a criminal investigation. EPA expects such requests to be limited, most likely focused on particular information needed rather than the entire report, and usually made where the information needed cannot be obtained from monitoring, reporting or other data otherwise available to the Agency. Examples would likely include situations where audits are conducted under consent decrees or other settlement agreements; a company has placed its management practices at issue by raising them as a defense; or state of mind or intent are a relevant element of inquiry, such as during a criminal investigation. This list

² An "environmental audit report" is a written report which candidly and thoroughly presents findings from a review, conducted as part of an environmental audit as described in section 1.4. of facility environmental performance and practices. An audit report is not a substitute for compliance monitoring reports or other reports or records which may be required by EPA or other regulatory agencies.

is illustrative rather than exhaustive, since there doubtless will be other situations, not subject in prediction, in which audit reports rather than information may be required.

EPA acknowledges regulated entities need to self-evaluate environmental performance with some measure of privacy and encourages such activity.

However, audit reports may not shield monitoring, compliance, or other information that would otherwise be reportable and/or accessible to EPA, even if there is no explicit requirement to generate that data. Thus, this policy does not alter regulated entities' existing or future obligations to monitor, record or report information required under environmental statutes, regulations or permits, or to allow EPA access to that information. Nor does this policy alter EPA's authority to request and receive any relevant information—including that contained in audit reports—under various environmental statutes (e.g., Clean Water Act section 308, Clean Air Act sections 114 and 208) or in other administrative or judicial proceedings.

Regulated entities also should be aware that certain audit findings may by law have to be reported to government agencies. However, in addition to any such requirements, EPA encourages regulated entities to notify appropriate State or Federal officials of findings which suggest significant environmental or public health risks, even when not specifically required to do so.

B. EPA Response to Environmental Auditing

1. General Policy

EPA will not promise to forgo inspections, reduce enforcement responses, or offer other such incentives in exchange for implementation of environmental auditing or other sound environmental management practices. Indeed, a credible enforcement program provides a strong incentive for regulated entities to audit.

Regulatory agencies have an obligation to assess source compliance status independently and cannot eliminate inspections for particular firms or classes of firms. Although environmental audits may complement inspections by providing self-assessment to assure compliance, they are in no way a substitute for regulatory oversight. Moreover, certain statutes (e.g. RCRA) and Agency policies

³ See, for example, "Duties to Report or Disclose Information on the Environmental Aspects of Business Activities," Environmental Law Institute report to EPA, final report, September 1983.

establish minimum facility inspection frequencies to which EPA will adhere.

However, EPA will continue to address environmental problems on a priority basis and will consequently inspect facilities with poor environmental records and practices more frequently. Since effective environmental auditing helps management identify and promptly correct actual or potential problems, audited facilities' environmental performance should improve. Thus, while EPA inspections of self-audited facilities will continue, to the extent that compliance performance is considered in setting inspection priorities, facilities with a good compliance history may be subject to fewer inspections.

In fashioning enforcement responses to violations, EPA policy is to take into account, on a case-by-case basis, the honest and genuine efforts of regulated entities to avoid and promptly correct violations and underlying environmental problems. When regulated entities take reasonable precautions to avoid noncompliance, expeditiously correct underlying environmental problems discovered through audits or other means, and implement measures to prevent their recurrence, EPA may exercise its discretion to consider such actions as honest and genuine efforts to assure compliance. Such consideration applies particularly when a regulated entity promptly reports violations or compliance data which otherwise were not required to be recorded or reported to EPA.

2. Audit Provisions as Remedies in Enforcement Actions

EPA may propose environmental auditing provisions in consent decrees and in other settlement negotiations where auditing could provide a remedy for identified problems and reduce the likelihood of similar problems recurring in the future. Environmental auditing provisions are most likely to be proposed in settlement negotiations where:

- A pattern of violations can be attributed, at least in part, to the absence or poor functioning of an environmental management system; or
- The type or nature of violations indicates a likelihood that similar noncompliance problems may exist or occur elsewhere in the facility or at other facilities operated by the regulated entity.

⁴ EPA is developing guidance for use by Agency negotiators in structuring appropriate environmental audit provisions for consent decrees and other settlement negotiations.

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Through this consent decree approach and other means, EPA may consider how to encourage effective auditing by publicly owned sewage treatment works (POTWs). POTWs often have compliance problems related to operation and maintenance procedures which can be addressed effectively through the use of environmental auditing. Under its National Municipal Policy EPA already is requiring many POTWs to develop composite correction plans to identify and correct compliance problems.

C. Environmental Auditing at Federal Facilities

EPA encourages all federal agencies subject to environmental laws and regulations to institute environmental auditing systems to help ensure the adequacy of internal systems to achieve, maintain and monitor compliance. Environmental auditing at federal facilities can be an effective supplement to EPA and state inspections. Such federal facility environmental audit programs should be structured to promptly identify environmental problems and expeditiously develop schedules for remedial action.

To the extent feasible, EPA will provide technical assistance to help federal agencies design and initiate audit programs. Where appropriate, EPA will enter into agreements with other agencies to clarify the respective roles, responsibilities and commitments of each agency in conducting and responding to federal facility environmental audits.

With respect to inspections of self-audited facilities (see section III.B.1 above) and requests for audit reports (see section III.A above), EPA generally will respond to environmental audits by federal facilities in the same manner as it does for other regulated entities, in keeping with the spirit and intent of Executive Order 12088 and the EPA *Federal Facilities Compliance Strategy* (January 1984, update forthcoming in late 1986). Federal agencies should, however, be aware that the Freedom of Information Act will govern any disclosure of audit reports or audit-generated information requested from federal agencies by the public.

When federal agencies discover significant violations through an environmental audit, EPA encourages them to submit the related audit findings and remedial action plans expeditiously to the applicable EPA regional office (and responsible state agencies, where appropriate) even when not specifically required to do so. EPA will review the audit findings and action plans and either provide written approval or

negotiate a Federal Facilities Compliance Agreement. EPA will utilize the escalation procedures provided in Executive Order 12088 and the EPA *Federal Facilities Compliance Strategy* only when agreement between agencies cannot be reached. In any event, federal agencies are expected to report pollution abatement projects involving costs (necessary to correct problems discovered through the audit) to EPA in accordance with OMB Circular A-106. Upon request, and in appropriate circumstances, EPA will assist affected federal agencies through coordination of any public release of audit findings with approved action plans once agreement has been reached.

IV. Relationship to State or Local Regulatory Agencies

State and local regulatory agencies have independent jurisdiction over regulated entities. EPA encourages them to adopt these or similar policies, in order to advance the use of effective environmental auditing in a consistent manner.

EPA recognizes that some states have already undertaken environmental auditing initiatives which differ somewhat from this policy. Other states also may want to develop auditing policies which accommodate their particular needs or circumstances. Nothing in this policy statement is intended to preempt or preclude states from developing other approaches to environmental auditing. EPA encourages state and local authorities to consider the basic principles which guided the Agency in developing this policy:

- Regulated entities must continue to report or record compliance information required under existing statutes or regulations, regardless of whether such information is generated by an environmental audit or contained in an audit report. Required information cannot be withheld merely because it is generated by an audit rather than by some other means.

- Regulatory agencies cannot make promises to forgo or limit enforcement action against a particular facility or class of facilities in exchange for the use of environmental auditing systems. However, such agencies may use their discretion to adjust enforcement actions on a case-by-case basis in response to honest and genuine efforts by regulated entities to assure environmental compliance.

- When setting inspection priorities regulatory agencies should focus to the extent possible on compliance performance and environmental results.

- Regulatory agencies must continue to meet minimum program requirements

(e.g., minimum inspection requirements, etc.)

- Regulatory agencies should not attempt to prescribe the precise form and structure of regulated entities' environmental management or audit programs.

- An effective state/federal partnership is needed to accomplish the mutual goal of achieving and maintaining high levels of compliance with environmental laws and regulations. The greater the consistency between state or local policies and this federal response to environmental auditing, the greater the degree to which sound auditing practices might be adopted and compliance levels improve.

Dated: June 26, 1986.

Lee M. Thomas,
Administrator.

Appendix—Elements of Effective Environmental Auditing Programs

Introduction: Environmental auditing is a systematic, documented, periodic and objective review by a regulated entity of facility operations and practices related to meeting environmental requirements.

Private sector environmental audits of facilities have been conducted for several years and have taken a variety of forms, in part to accommodate unique organizational structures and circumstances. Nevertheless, effective environmental audits appear to have certain discernible elements in common with other kinds of audits. Standards for internal audits have been documented extensively. The elements outlined below draw heavily on two of these documents: "Compendium of Audit Standards" (©1983, Walter Willborn, American Society for Quality Control) and "Standards for the Professional Practice of Internal Auditing" (©1981, The Institute of Internal Auditors, Inc.). They also reflect Agency analyses conducted over the last several years.

Performance-oriented auditing elements are outlined here to help accomplish several objectives. A general description of features of effective, mature audit programs can help those starting audit programs, especially federal agencies and smaller businesses. These elements also indicate the attributes of auditing EPA generally considers important to ensure program effectiveness. Regulatory agencies may use these elements in negotiating environmental auditing provisions for consent decrees. Finally, these elements can help guide states and localities considering auditing initiatives.

(6)

An effective environmental auditing system will likely include the following general elements:

I. *Explicit top management support for environmental auditing and commitment to follow up on audit findings.* Management support may be demonstrated by a written policy articulating upper management support for the auditing program, and for compliance with all pertinent requirements, including corporate policies and permit requirements as well as federal, state and local statutes and regulations.

Management support for the auditing program also should be demonstrated by an explicit written commitment to follow-up on audit findings to correct identified problems and prevent their recurrence.

II. *An environmental auditing function independent of audited activities.* The status or organizational locus of environmental auditors should be sufficient to ensure objective and unobstructed inquiry, observation and testing. Auditor objectivity should not be impaired by personal relationships, financial or other conflicts of interest, interference with free inquiry or judgment, or fear of potential retribution.

III. *Adequate team staffing and auditor training.* Environmental auditors should possess or have ready access to the knowledge, skills, and disciplines needed to accomplish audit objectives. Each individual auditor should comply with the company's professional standards of conduct. Auditors, whether full-time or part-time, should maintain their technical and analytical competence through continuing education and training.

IV. *Explicit audit program objectives, scope, resources and frequency.* At a minimum, audit objectives should include assessing compliance with applicable environmental laws and evaluating the adequacy of internal compliance policies, procedures and personnel training programs to ensure continued compliance.

Audits should be based on a process which provides auditors: all corporate policies, permits, and federal, state, and local regulations pertinent to the facility; and checklists or protocols addressing specific features that should be evaluated by auditors.

Explicit written audit procedures generally should be used for planning audits, establishing audit scope, examining and evaluating audit findings, communicating audit results, and following-up.

V. *A process which collects, analyzes, interprets and documents information sufficient to achieve audit objectives.* Information should be collected before and during an onsite visit regarding environmental compliance (1), environmental management effectiveness (2), and other matters (3) related to audit objectives and scope. This information should be sufficient, reliable, relevant and useful to provide a sound basis for audit findings and recommendations.

a. *Sufficient information is factual, adequate and convincing so that a prudent, informed person would be likely to reach the same conclusions as the auditor.*

b. *Reliable information is the best attainable through use of appropriate audit techniques.*

c. *Relevant information supports audit findings and recommendations and is consistent with the objectives for the audit.*

d. *Useful information helps the organization meet its goals.*

The audit process should include a periodic review of the reliability and integrity of this information and the means used to identify, measure, classify and report it. Audit procedures, including the testing and sampling techniques employed, should be selected in advance, to the extent practical, and expanded or altered if circumstances warrant. The process of collecting, analyzing, interpreting, and documenting information should provide reasonable assurance that audit objectivity is maintained and audit goals are met.

VI. *A process which includes specific procedures to promptly prepare candid, clear and appropriate written reports on audit findings, corrective actions, and schedules for implementation.*

Procedures should be in place to ensure that such information is communicated to managers, including facility and corporate management, who can evaluate the information and ensure correction of identified problems. Procedures also should be in place for determining what internal findings are reportable to state or federal agencies.

VII. *A process which includes quality assurance procedures to assure the accuracy and thoroughness of environmental audits.* Quality assurance may be accomplished through internal supervision, independent internal reviews, external reviews, or a combination of these approaches.

Footnotes to Appendix D:
(1) A comprehensive assessment of compliance with federal environmental regulations requires an analysis of facility performance against numerous environmental statutes and implementing regulations. These statutes include Resource Conservation and Recovery Act, Federal Water Pollution Control Act, Clean Air Act, Hazardous Materials Transportation Act, Toxic Substances Control Act, Comprehensive Environmental Response, Compensation and Liability Act, Safe Drinking Water Act, Federal Insecticide, Fungicide and Rodenticide Act, Marine Protection, Research and Sanctuaries Act, Uranium Mill Tailings Radiation Control Act.

In addition, state and local government are likely to have their own environmental laws. Many states have been delegated authority to administer federal programs. Many local governments' building, fire, safety and health codes also have environmental requirements relevant to an audit evaluation.

(2) An environmental audit could go well beyond the type of compliance assessment normally concluded during regulatory inspections, for example, by evaluating policies and practices, regardless of whether they are part of the environmental system or the operating and maintenance procedures. Specifically, audits can evaluate the extent to which systems or procedures:

1. Develop organizational environmental policies which: a. implement regulatory requirements; b. provide management guidance for environmental hazards not specifically addressed in regulations;
2. Train and motivate facility personnel to work in an environmentally-acceptable manner and to understand and comply with government regulations and the entity's environmental policy;
3. Communicate relevant environmental developments expeditiously to facility and other personnel;
4. Communicate effectively with government and the public regarding serious environmental incidents;
5. Require third parties working for, with or on behalf of the organization to follow its environmental procedures;

6. Make proficient personnel available at all times to carry out environmental (especially emergency) procedures;

7. Incorporate environmental protection into written operating procedures;

8. Apply best management practices and operating procedures, including "good housekeeping" techniques;

9. Institute preventive and corrective maintenance systems to minimize actual and potential environmental harm;

10. Utilize best available process and control technologies;

11. Use most-effective sampling and monitoring techniques, test methods, recordkeeping systems or reporting protocols (beyond minimum legal requirements);

12. Evaluate causes behind any serious environmental incidents and establish procedures to avoid recurrence;

13. Exploit source reduction, recycle and reuse potential wherever practical; and

14. Substitute materials or processes to allow use of the least-hazardous substances feasible.

(3) Auditors could also assess environmental risks and uncertainties.

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various provisions of the Bill of Rights. In fact, the potential clash between federal regulatory schemes in the environmental context and individual constitutional safeguards promises to be a more active area for future judicial attention than the logically prior question of congressional power for at least two reasons. First, the extreme breadth of potential congressional power in this area makes it likely that political rather than constitutional considerations will prove to be the limiting factor in determining the proper federal-state balance, thus avoiding the need to probe judicially the ultimate limits of federal authority. Second, the imposition of governmental controls, whether state or federal, over essentially private activities raises issues that have received a considerably greater degree of respectful judicial attention in recent years than is the case with respect to claims that Congress has invaded areas reserved to the states by the Tenth Amendment. Accordingly, new initiatives in the environmental area that regulate the use of property or impose criminal and civil sanctions on environmentally undesirable conduct are more likely to lead to questions concerning, *e.g.*, the "taking" of property or the observance of required procedural safeguards than to claims that Congress has exceeded enumerated powers.

I. - Fourth Amendment issues

A regulatory scheme that imposes minimum standards on certain activities or premises in order to protect public health, safety, or environmental values will usually depend for its success on periodic checks for compliance by appropriate administrative officials. This need for administrative inspection must be accommodated to the provisions of the Fourth Amendment concerning the government's right to conduct searches and seizures.¹⁰⁶ That Amendment has consistently been construed to mean that "except in certain carefully defined classes of cases, a search of private property without proper consent is 'unreasonable' unless it has been authorized by a valid search warrant."¹⁰⁷ Furthermore, such warrants are not to be issued except "upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized."¹⁰⁸

The leading Supreme Court decisions construing the application of those two requirements in the case of routine administrative inspections are *Camara v. Municipal Court*¹⁰⁹ and *See v. City of Seattle*.¹¹⁰ In the former, the Court,

¹⁰⁶ "The right of the people to be secure in their persons, houses, papers and effects, against unreasonable searches and seizures, shall not be violated . . ." U.S. CONST. amend. IV.

¹⁰⁷ *Camara v. Municipal Court*, 387 U.S. 523, 528, 529 (1967).

¹⁰⁸ U.S. CONST. amend. IV.

¹⁰⁹ 387 U.S. 523 (1967).

¹¹⁰ 387 U.S. 541 (1967).

overruling an earlier contrary decision.¹¹¹ held that the warrant requirement applied to a municipal health inspector's search of a private residence. In *See* a similar conclusion was reached with respect to a fire inspector's attempted search of a commercial warehouse. But while thus extending the warrant requirement, the Court also indicated that a lesser degree of "probable cause" would be required for an administrative search warrant than for the typical criminal search warrant, thus allowing in the former case, e.g., routine, periodic searches of all structures in a given area based on an appraisal of conditions in the area as a whole rather than on a knowledge of conditions in any particular building. The reasonableness of such inspections is to be determined "by balancing the need to search against the invasion which the search entails,"¹¹² considering such factors as the history of judicial and public acceptance of such inspections, whether inspection is the only reasonable means of abating a dangerous condition of legitimate public concern, and the extent of invasion of the citizen's privacy — the invasion presumably being less where the inspection is "neither personal in nature nor aimed at the discovery of evidence of crime."¹¹³ Specifically excluded from the warrant requirement, however, were traditional "emergency situations;"¹¹⁴ in addition, the observation that "warrants should normally be sought only after entry is refused" was modified to permit immediate entry in the case of "a citizen complaint, or ... other satisfactory reason,"¹¹⁵ such as where surprise is crucial.

Although *Camara* and *See* thus establish the basic framework for accommodating inspection needs to Fourth Amendment requirements, three subsequent Supreme Court decisions appear to have expanded somewhat the area of permissible warrantless entries in this context. In *Colonnade Catering Corp. v. United States*¹¹⁶ the Court interpreted statutes regulating the inspection of federally licensed liquor dealers to preclude forcible entries without a warrant. In the course of its opinion, however, the Court seemed to agree that such entry would not amount to a constitutional violation, distinguishing *See* on the basis of the historically broad authority of the government to regulate the liquor industry.

In *Wyman v. James*¹¹⁷ the Court upheld warrantless home "visits" by welfare workers on the grounds that such visits were not "searches" and that even if they were, the absence of a warrant did not make them "unreasonable." *Camara* was distinguished in reaching the latter conclusion primarily on

¹¹¹ *Frank v. Maryland*, 359 U.S. 360 (1959).

¹¹² *Camara v. Municipal Court*, 387 U.S. at 537.

¹¹³ *Id.*

¹¹⁴ *See Id.*, at 539.

¹¹⁵ *Id.* at 539, 40.

¹¹⁶ 397 U.S. 72 (1970).

¹¹⁷ 400 U.S. 309 (1971).

the basis of the community welfare, rather than criminal, context of the home visitations. Finally, in *United States v. Biswell*,¹¹⁸ the Court upheld a warrantless search of a locked storeroom under provisions of the Gun Control Act that authorized official entry during business hours for the purpose of conducting inspections of federally licensed dealers in firearms. While conceding that federal regulation of the firearms industry was not as deeply rooted in history as was control of the liquor industry in *Colonnade*, the Court nevertheless refused to extend *See* primarily on the ground that warrantless inspections were essential to the effective enforcement of the regulatory scheme. In *See*, the Court observed, the building code violations that the inspection was designed to discover could not easily be corrected or concealed in a short time. "Periodic inspection sufficed, and inspection warrants could be required and privacy given a measure of protection with little if any threat to the effectiveness of the inspection system"¹¹⁹ In the case of firearms, on the other hand, unannounced, even frequent inspections were crucial to the success of the system: "and if the necessary flexibility as to time, scope, and frequency is to be preserved, then the protection afforded by a warrant would be negligible."¹²⁰ Other factors leading to this result were the "urgent" nature of the federal interest, and the limited threat to "the dealers' justifiable expectations of privacy":

When a dealer chooses to engage in this pervasively regulated business and to accept a Federal license, he does so with the knowledge that his business records, firearms and ammunition will be subject to effective inspection.¹²¹

These decisions become particularly relevant in the environmental context in view of the extensive reliance of existing and proposed federal pollution control schemes on an adequate system of inspection. The Clean Air Act, for example, bluntly declares that in order to implement and enforce the requirements of the Act appropriate officials:

shall have a right of entry to, upon, or through any premises in which an emission source is located ... [and] may at reasonable times have access to and ... inspect any monitoring equipment or method ... and sample any emissions ...¹²²

Virtually identical provisions are contained in the recently enacted Federal Water Pollution Control Act Amendments of 1972.¹²³ In both cases, questions of the need to secure a warrant and of the grounds that will support entry are

¹¹⁸ 406 U.S. 311 (1972).

¹¹⁹ *Id.* at 316.

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² 42 U.S.C. § 1857c-9(a)(2) (1970), ELR 41210.

¹²³ §308(a)(B), 33 U.S.C. §1318 (Supp. 1973), ELR 41114.

apparently left for subsequent judicial resolution.¹²⁴

The latter issue — whether “administrative probable cause” will support routine inspections in the environmental area — should, it seems, be answered in the affirmative by comparison with the factors referred to as decisive in this respect in *Camara* and *See*. Historically, perhaps, routine pollution inspections have not been as traditional as inspections for housing and safety code violations. But if construed broadly enough, one can view the former type of inspection as simply a modern version and recently recognized species of the latter. Moreover, the court’s retreat in *Biswell* from *Colonnade*’s emphasis on history as crucial to the Fourth Amendment inquiry, suggests that this factor should not be decisive in any event. With respect to the other factors, the urgency of the federal interest, the limited nature of the invasion, and the need

¹²⁴ In contrast, the new Federal Environmental Pesticide Control Act of 1972, 86 Stat. 973 (codified in scattered sections of 7,15,21 U.S.C.), ELR 41301, after authorizing entry by appropriate officials at “reasonable times” and “for the purpose of inspecting and obtaining samples,” proceeds to describe in somewhat more detail the procedures to be followed in exercising this right of entry. “Before undertaking such inspection” according to §9(a), the official:

must present to the owner, operator, or other agent in charge of the establishment . . . appropriate credentials and a written statement . . . as to whether a violation of the law is suspected. If no violation is suspected, an alternate and sufficient reason shall be given in writing.

The immediately following subsection discusses “warrants” but only to the extent of declaring that officials are “empowered” to obtain such documents authorizing entry, inspection, and seizure “upon a showing to an officer or court of competent jurisdiction that there is reason to believe that the provisions of the Act have been violated.”

As an attempt to integrate Fourth Amendment requirements with the special needs of an administrative inspection system, these provisions leave a great deal to be desired. In the first place, the standard employed in §9(b) for securing a warrant does not appear distinguishable from the traditional “probable cause” standard which would be applicable in any normal context. *See Carroll v. United States*, 267 U.S. 132 (1925). (“Probable cause exists where the facts and circumstances within [the officers’] knowledge and over which they had reasonable trustworthy information [are] sufficient in themselves to warrant a man of reasonable caution in the belief that” an offense has been or is being committed.) Thus if §9(b) were interpreted as more than simply an enabling provision, conferring search power on certain officers and employees of EPA, one might conclude that Congress has erected higher standards here than would have been required by the Fourth Amendment: whenever a warrant is necessary, it can only be issued on a showing of probable cause, and not on the lesser showing that would traditionally justify routine inspections as in *Camara* and *See*. Under this view, it becomes all the more important to ascertain just when inspections must be preceded by warrants.

for periodic routine inspection do not seem distinguishable from the situations in *Camara* and *See*.¹²⁵

The more difficult issue is whether *Biswell* should be viewed as substantially modifying the result in *See* with respect to the need to secure a warrant at all. The factors emphasized in *Biswell* to justify the warrantless search — the urgent (or historical) federal interest, the limited nature of the invasion, and the necessity for random inspections — seem to be the same factors relied on in *See* but only to justify a less than traditional showing of probable cause and not to dispense with the warrant requirement altogether. Explanation for the difference in result seems to lie in the fact that what in *See* appeared to be only an occasional possibility — resort to unannounced surprise inspections — appeared in *Biswell* to be a frequent and vital element of effective enforcement.¹²⁶ Under this view, the critical factor determining the applicability of the warrant requirement in the environmental context becomes the question of whether frequent, unannounced inspections are essential to effective enforcement of the pollution control scheme. If they are, then as in *Biswell*, requiring prior recourse to such "routine warrants" seems unlikely to result in sufficient additional protection of privacy to make the warrant essential to the "reasonableness" of the search under the Fourth Amendment.

Application of this general test appears very much to depend on the particular kind of pollution control scheme at issue. For example, where the inspection is not random, but is aimed at a particular polluter whose emission into the air or discharges into the water can be measured by an external observer, it seems quite likely that the traditional standard of probable cause to suspect a violation may be met and thus ought to withstand prior judicial testing under a normal warrant procedure. At the other extreme, it is possible that pollution control schemes, e.g., a system of effluent charges which depends on reliable self-monitoring by the affected polluter, can be enforced only by random and frequent inspections. Whether such inspections must also occur unannounced depends on the ease with which the polluter, in the short period following a refusal to permit the search and the securing of a warrant, can remedy the unlawful pollution practice or disguise tampering with self-monitoring equipment.¹²⁷

¹²⁵ See Note, *The Effluent Fee Approach For Controlling Air Pollution*, 1970 DUKE L. J. 943, 975-76.

¹²⁶ See text accompanying note 120, *supra*. For a review of this apparent exception as employed by lower courts since *Camara* and *See*, see Note, *Law of Administrative Inspections: Are Camara and See Still 'live and Well'*, 1972 WASH. U.L.Q. 313.

¹²⁷ For further discussion of these possibilities see Comment, *Camara and See: A Constitutional Problem with Effect on Air Pollution Control*, 10 ARIZ. L. REV. 120 (1968); Note, *supra* note 125 at 943. A variety of pollution control schemes appear to require random and even unannounced inspections, although it is not clear that they must be so frequent that prior resort to a warrant where surprise is crucial

According to this analysis, the focus of the constitutional inquiry in this area will be very much on the particular regulatory scheme at issue. Since it is not always easy for a court to draw the necessary factual conclusions from an inspection of the substantive provisions of the statute alone, one might expect this field to become increasingly a matter for congressional attention as reflected in the "findings" relied on to support a particular enforcement system. Indeed in both *Colonnade* and *Biswell*, the Court virtually extended an invitation to Congress to define for itself the requirements of "reasonableness" as regards administrative inspections, with the Court impliedly playing a more limited reviewing role in measuring the congressional determination against the demands of the Fourth Amendment. The provisions of the new pesticide legislation which require written notice of the purpose of the inspection¹²⁸ might, for example, be viewed as just such an attempt to strike a legislative balance between the privacy interests of the owner of the establishment and the enforcement interests of the Government. But this emphasis on an increased congressional role also suggests a possible counterpresumption to protect the interests that underlie *Cumara* and *See*: where Congress has not attempted explicitly to set reasonable boundaries to the situations calling for warrantless inspections, and where the facts of the inspection do not otherwise clearly indicate that the warrant requirement would frustrate enforcement, *Cumara* and *See* should be viewed as controlling.

2. Fifth Amendment (self-incrimination) issues

In addition to inspection schemes, the effectiveness of governmental regulation of private or commercial activity often depends on the ability to impose record keeping and reporting requirements on those subject to the regulation. Environmental legislation is no exception in this respect, as evidenced by the very similar provisions in both the Clean Air Act and the new amendments to the Federal Water Pollution Control Act, authorizing the administrator of EPA to:

require the owner or operator of any [emission or point] source to [1] establish and maintain such records, [2] make such reports ..., and [5] provide such other information as he may reasonably require ...¹²⁹

would frustrate the system. Inspection to ensure that pesticides stored for commercial distribution comply with labeling and use restrictions, for example, seem similar in concept to inspections that have long been conducted under various provisions of the Food and Drug Acts. See, e.g., *United States v. Stanack Sales Co.*, 307 F.2d 849 (3d Cir. 1968); cf., *United States v. Pittmart, Inc.*, 429 F.2d 1006 (9th Cir. 1970), cert. denied, 400 U.S. 926 (1970).

¹²⁸ See note 124, *supra*.

¹²⁹ See Clean Air Act, 42 U.S.C. §1857c-9(a)(1) (1970), ELR 41210; FWPCA §308(a), 33 U.S.C. §1388 (Supp. 1973), ELR 41114.

**INTERNATIONAL
OIL TAX COMPARISON
STUDY**

**Prepared for
the Alaska State Legislature
and
the Alaska Department of Revenue**

April 1990

**INTERNATIONAL
OIL TAX COMPARISON
STUDY**

**PART I THE ECONOMIC ANALYSIS:
ALASKA, UNITED KINGDOM, NORWAY, INDONESIA, & AUSTRALIA**

by

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**PART II FINANCIAL AND OTHER ASPECTS OF OIL
INDUSTRY INVESTMENT**

by

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London

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Peter Gaffney is a principle of Gaffney, Cline and Associates, energy advisors based in Houston, Texas and Hampshire, England. This is a premier firm in the appraisal of oil assets and oil prospects. Mr Gaffney, who grew up in an industry family, does some teaching in addition to his demanding consulting schedule. He has been on assignment to virtually every oil region in the world.

H. Motamen Scobie, a consultant to governments, oil companies, and the financial sector, comes from a background of teaching and international banking. Ms. Scobie is chief editor of two academic journals: "Energy Economics" and "Economic Modelling." Among her publications are Macroeconomics of North Sea Oil in the United Kingdom, Heinemann, London, 1983.

INTERNATIONAL
TAX COMPARISON STUDY

Prepared for

THE STATE OF ALASKA

AUPEC

Aberdeen University Petroleum
and Economic Consultants

GCA

Gaffney, Cline and Associates

April, 1990

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INTRODUCTION

The State of Alaska has undertaken a project to develop a model that will enable the State to compare the climate for investment in Alaska vis-à-vis other oil and gas provinces.

In the past few years a controversy has arisen between the oil industry and the State of Alaska. The Industry believes that its investors are not receiving a rate of return commensurate with the risks inherent in the exploration and development of new and existing fields. The State of Alaska contends that it is incumbent upon the State to pursue an aggressive oil royalty and taxation policy. The development of a comparative model is desired to increase the reliability of information available to the Alaska Legislature for use in the decision-making process in legislation on oil taxation.

The work was carried out under the aegis of a joint Senate/House Committee under the chairmanship of Senator Bettye Fahrenkamp. The consultants were selected in such a way as to represent a broad spread of expertise in the industry. Meetings were held with the Committee in Anchorage in November and in Juneau in January, at which the key questions raised by the Committee at their initial internal deliberations were addressed at some length. During the meetings and after subsequent work by the consultants the scope of the consultants' work was adjusted slightly to incorporate carrying out the actual tax comparisons in conjunction with the Revenue Department.

Four key Alaskan fields were chosen. It was decided to model historical Prudhoe Bay as well as to forecast its performance, together with hypothetical developments at the West Sak, North Star and Niakuk discoveries. The performance of an incremental project at Prudhoe Bay was also examined.

In addition to meetings with the Committee, extensive discussions were held with the Revenue Department and various tax models from other jurisdictions were made available. The Revenue Department prepared the four field economic cases under the Alaskan legislation and worked with the consultants to ensure the model would provide a framework for future ongoing work by the Department. Legislative comparisons were made with the UK, Norway, Indonesia and Australia. The study was carried out by, in effect, translating these four legislations to Alaska and examining the economic performance of the Alaskan fields as though that legislation had been in place

Department worked with the Consultants to ensure a compatible and appropriate comparison. The basic field data provided by the Department provided the base data for the comparisons.

A draft report was presented in mid March to the Committee and at separate meetings to the Senate Finance and House Finance Committees in addition to a discussion with Industry.

Although the industry was most helpful in general no direct information regarding for instance specific development plans or allocated exploration expense or their appropriateness was made available directly to consultants in time to be incorporated.

The following presentation reflects the work of AUPEC and GCA in this phase of the study. It was not the intention of these comparisons to mirror the industry's exact performance as each company will handle its tax arrangements differently and they will, indeed, be in a different position. The attempt was to try and compare on a "reasonably level playing field" how particular projects would have looked if they had been carried out in Alaska under different tax legislation environments.

Insufficient time was available to adequately cross check the material validity of the hypothetical development plans or to assess the impact of a realistic incremental project on Prudhoe Bay. With the current results to hand it would also be prudent to ensure that the base case Alaska cashflow analysis was also carried out under the same identical system as the comparison fields to ensure more complete compatibility. In these senses the work should be considered preliminary.

Nevertheless recognising that the original objective of this work was to set up a 'model' with which to make comparisons, a basic approach has been selected, models made available and a first pass of comparisons carried out.

Acknowledgements

The not inconsiderable help of the Revenue Department in Anchorage, the Revenue Commissioner's Office in Juneau and the Committee members and their staff is acknowledged. We are also grateful for material provided by industry and the opportunity to see the North Slope operations on site. No multiple organisation operation of this type works without cooperation and that cooperation provided by both State and Industry made possible the completion of this study.

CORRECTION

**THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY**

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The work was carried out under the aegis of a joint Senate/House Committee under the chairmanship of Senator Bettye Fahrenkamp. The consultants were selected in such a way as to represent a broad spread of expertise in the industry. Meetings were held with the Committee in Anchorage in November and in Juneau in January, at which the key questions raised by the Committee at their initial internal deliberations were addressed at some length. During the meetings and after subsequent work by the consultants the scope of the consultants' work was adjusted slightly to incorporate carrying out the actual tax comparisons in conjunction with the Revenue Department.

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In addition to meetings with the Committee, extensive discussions were held with the Revenue Department and various tax models from other jurisdictions were made available. The Revenue Department prepared the four field economic cases under the Alaskan legislation and worked with the consultants to ensure the model would provide a framework for future ongoing work by the Department. Legislative comparisons were made with the UK, Norway, Indonesia and Australia. The study was carried out by, in effect, translating these four legislations to Alaska and examining the economic performance of the Alaskan fields as though that legislation had been in place

in Alaska. The models used included provisions to examine, among other things sensitivity to oil price, costs, exploration programs, and differences between current and new investors.

The State of Alaska has requested the consultancy Gaffney Cline and Associates (GCA), in co-operation with AUPEC (Aberdeen University Petroleum and Economic Consultants), and Dr. Motamen Scobie, Economic Consultant, to prepare a report covering the methodology and results of the comparative modelling.

The division of work was as follows:

AUPEC Group

Professor Alex Kemp and David Rose, AUPEC, carried out the cashflow/country model computer runs.

GCA

GCA was to be an arbitrator of fairness in the analysis and be responsible for the reporting and also for the inclusion of the prospectivity analysis.

AUPEC and GCA worked together to select relevant criteria and to assess the validity of comparisons.

Dr. Motamen Scobie

Dr. Motamen Scobie was to examine the financial aspects of comparative legislation in terms of investor credibility, and was to review other legislations not included in the current group. Dr. Motamen's work is the subject of a separate presentation.

Department of Revenue

The oil group of the Department of Revenue carried out the historical and forecast assessment of the Prudhoe Bay field together with forecasting the performance under Alaskan legislation of the three new Alaskan fields which were to be considered. All base data for the Alaskan modelling were provided by the Department, and the

Department worked with the Consultants to ensure a compatible and appropriate comparison. The basic field data provided by the Department provided the base data for the comparisons.

A draft report was presented in mid March to the Committee and at separate meetings to the Senate Finance and House Finance Committees in addition to a discussion with Industry.

Although the industry was most helpful in general no direct information regarding for instance specific development plans or allocated exploration expense or their appropriateness was made available directly to consultants in time to be incorporated.

The following presentation reflects the work of AUPEC and GCA in this phase of the study. It was not the intention of these comparisons to mirror the industry's exact performance as each company will handle its tax arrangements differently and they will, indeed, be in a different position. The attempt was to try and compare on a "reasonably level playing field" how particular projects would have looked if they had been carried out in Alaska under different tax legislation environments.

Insufficient time was available to adequately cross check the material validity of the hypothetical development plans or to assess the impact of a realistic incremental project on Prudhoe Bay. With the current results to hand it would also be prudent to ensure that the base case Alaska cashflow analysis was also carried out under the same identical system as the comparison fields to ensure more complete compatibility. In these senses the work should be considered preliminary.

Nevertheless recognising that the original objective of this work was to set up a 'model' with which to make comparisons, a basic approach has been selected, models made available and a first pass of comparisons carried out.

Acknowledgements

The not inconsiderable help of the Revenue Department in Anchorage, the Revenue Commissioner's Office in Juneau and the Committee members and their staff is acknowledged. We are also grateful for material provided by industry and the opportunity to see the North Slope operations on site. No multiple organisation operation of this type works without cooperation and the cooperation provided by both State and Industry made possible the completion of this study.

SUMMARY OF RESULTS

Broad comparisons are possible and useful. While these comparisons show that both the State and the companies did well from Prudhoe Bay they do not necessarily suggest that the State could have done much better as the returns under all the other legislative which were not designed for a Prudhoe Bay sized field appear punitive.

The comparisons do show the new projects on the North Slope are marginal especially if sunk exploration costs are included. These projects look better especially under the U.K. and Norwegian systems, of course, the field sizes are more in line with the size of fields more typical of the North Sea region, so these comparisons are reasonable.

Being a current investor helps substantially and all the new projects look much worse from a new player's point of view.

It is important to stress that unlike other countries Alaska is disadvantaged as it only controls a part of total taxation and gains only very indirectly from employment, services and manufacture occurring in the lower 48.

In examining the many subjective perceptions that drive investments in the industry, it is clear that Alaska's image is one of being more difficult in many respects than the other countries concerned. Indeed the perceptions are reinforced by the results of the new projects mentioned above.

In summary we have answered a number of the initial questions raised by the committee including the usefulness and methodology of making some comparisons.

We have provided a framework for comparison and provided model capability. The first phase of model comparisons has been completed and some comments on the Alaskan legislation relative to other legislations have been made. Some observations have also been made on how in very general terms it might be possible to achieve one or more of a series of potential goals if these goals were indeed the State's objectives.

RESULTS OF COMPARISONS

Method of Approach

In order to present effectively and concisely the results of what amounts to a large volume of information, it has been necessary to adopt a summary approach in the following presentation. Full details of the economic analysis have been made available to the Department of Revenue. Essentially the key comparative components are shown on the attached graphs with a brief written summary of the results.

The basic analysis has consisted of establishing the value of each project by calculating the Net Present Value (NPV) on a 12.5% real basis (17% nominal), a measure of the size of each project in each country. This was carried out for both the company and government share.

Among other factors considered were:

Internal Rate of Return (IRR), a relative measure of return on investment, typically we would expect projects to stand some chance of proceeding if rates of return were at least 10% (real) or about 15% nominal.

Payout from initial development, a measure of how long the total funds were exposed.

Prospectivity, a series of very subjective judgements on the relative attraction of a Country for investment.

In addition, the sensitivity to changes in oil price, costs and the impact of exploration costs were also examined together with the effect of being a new investor as apposed to an existing one with tax sheltering capability.

The base case factors were as follows: real discount rate 12.5% (equivalent to a 17% nominal rate), oil prices US\$14.50 per barrel for Prudhoe wellhead, prices adjusted for quality and transportation for other fields, and inflation of 4.5% p.a. The base case also assumed an existing investor and takes account of some of the allocatable sunk past exploration costs. The Prudhoe Bay field was examined through its history and appropriate inflation rates were used for the prior period.

Net Present Value (NPV)

Net Present Value is an approach to illustrating the worth of a project after taking into account the time value of money. Typically the oil industry uses this approach to get a true idea of the value of the project and to compare the project with others. In carrying out our analysis we first brought past costs forward, using the US inflation rates of the day, so that \$1,000 spent 10 years ago in a particular country might represent the equivalent of \$2,000 today. Similarly, in examining future income, \$1,000 received ten years hence might be worth only \$500 today.

Next, we have to discount the stream of net income - to allow comparisons with other projects and give a yardstick as to how far above or below we are from our minimum return. The discounts applied to obtain Net Present Value in oil are commonly in the range of ten to fifteen percent above inflation. However, from time to time, financial institutions, in particular, may use higher percentage discounts in order to try and use the discounting approach to assess some sort of project related risk. For our purposes we have chosen a medium 12.5% real discount rate (i.e. 17% if there is 4.5% inflation) for the base case valuations but have also examined the projects at discounts of 10% and 15% in the detailed results which have been made available.

It is also clear that even a very large project which is carried out long into the future and evaluated with a high discount rate might have a very low Net Present Value. On the other hand a very small successful project occurring in the near future and evaluated perhaps with the same discount rate might appear to be a much more attractive project.

Net Present Value is a good indicator of project size but it in fact gives no indication of duration. Project payout on the other hand is a good indication of how long funds are at risk from the point of major investment but gives no indication of return on investment or project size. Rate of Return gives an indication of project success but no indication of timing or size.

While there are many performance criteria we can use in the interests of simplifying the results, we have limited our analysis to comparing the government and company Net Present Values, in real dollars, Internal Rate of Return in % terms and payout in years for each field, for each of the five legislative scenarios.

In order to present the most meaningful comparisons on the graph, anomalously high values have been capped. This is shown by the value of the bar being fully extended to the margin of the graph at its maximum or minimum value.

Company Net Present Value (NPV at 12.5%) Results

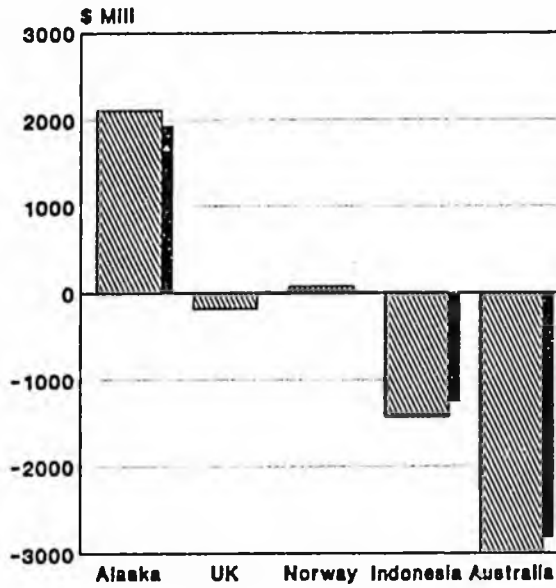
Company NPV for Prudhoe Bay is higher under the Alaskan legislation than under any others but it is unlikely that development could have proceeded under the Indonesian and Australian legislations. Note that this analysis looks at Prudhoe Bay as of 1975 - all other analysis uses 1990.

The remaining Net Present Value of Prudhoe Bay was also examined under each legislation in 1990 terms. This remaining NPV analysis does not include all likely necessary new investments typical of such situations and probably overstates the company position.

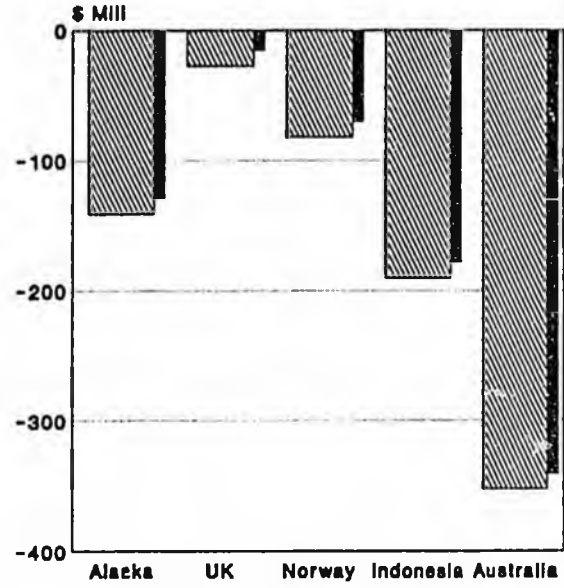
The remaining Prudhoe Bay Net Present Value is shown separately comparing government and company shares at zero discount and at the standard 12.5%. On the bar chart showing the relatively high remaining U.K. government NPV it must be remembered that while the marginal tax rate is very high, the U.K. allows offset of very significant exploration and some development costs against current production taxes.

For the other three fields only Niakuk in the U.K. appears positive, indeed all three fields would do better under both U.K. and Norwegian legislation. The high front end exploration and the low effective oil price make these projects all look unsuccessful under Indonesian and Australian legislation as these legislations are particularly geared to higher oil price regimes. Removing exploration costs, of course, makes all three projects look better and indeed viable in the model cases under some legislations.

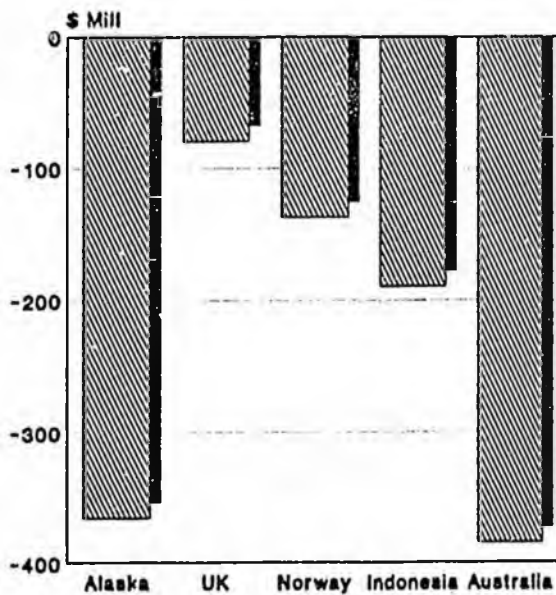
COMPANY NPV \$ REAL
Prudhoe Bay
Base Case at 12.5%



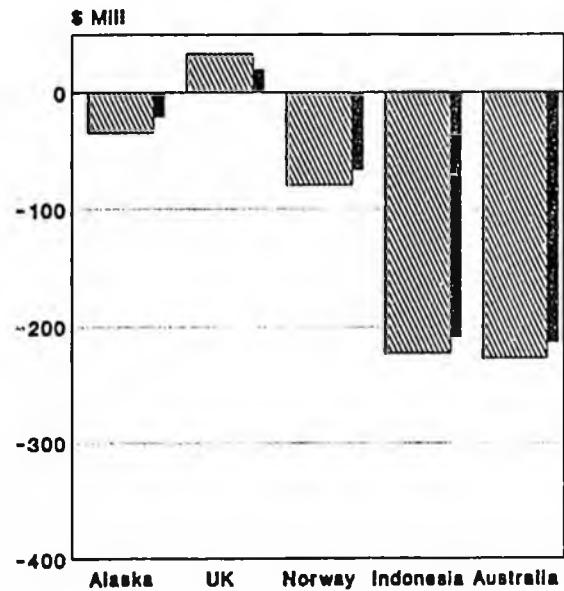
COMPANY NPV \$ REAL
West Sak
Base Case at 12.5%



COMPANY NPV \$ REAL
North Star
Base Case at 12.5%



COMPANY NPV \$ REAL
Niakuk
Base Case at 12.5%



Government Net Present Value (NPV at 12.5%) Results**Prudhoe Bay**

Apart from Australia where the revenues would have been so high as to negate the project, Alaska appears to have received somewhat less present value from the project than if the project had been under the other three legislations. Timing of revenues affects this type of analysis as funds received later will be worth less when present valued back to 1975 as was done in this case. Note that Prudhoe Bay government NPV shows the split between State and Federal taxes.

West Sak

Government NPV's look good in all cases except U.K. but the project is marginal from an investment point of view.

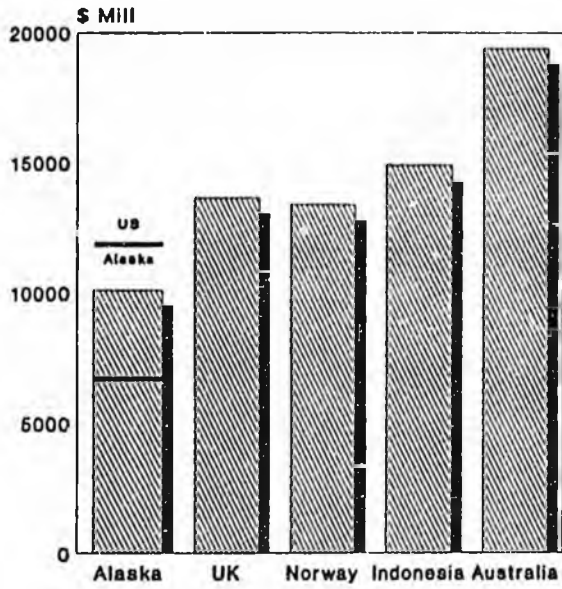
North Star

This project which is marginal appears to have a positive government NPV only in Alaska suggesting that, by comparison, it would be treated more favourable elsewhere.

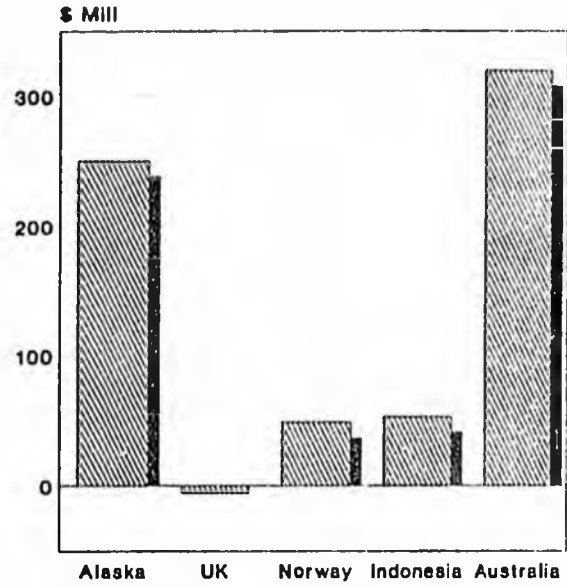
Niakuk

As in North Star, Alaska government's NPVs are much higher and indeed positive.

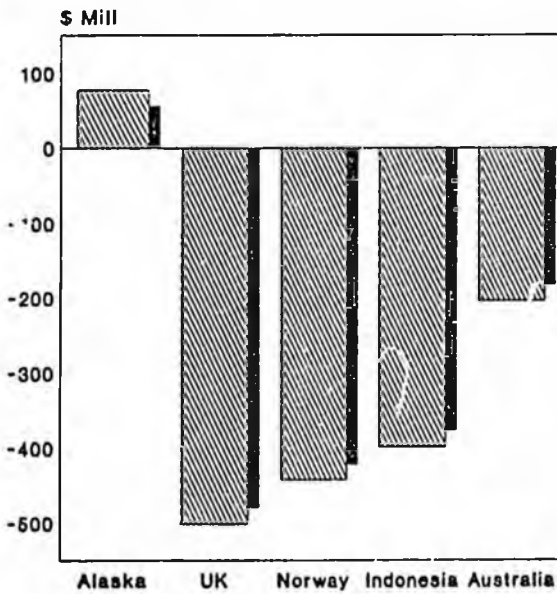
GOVERNMENT NPV \$ REAL
Prudhoe Bay
Base Case at 12.5%



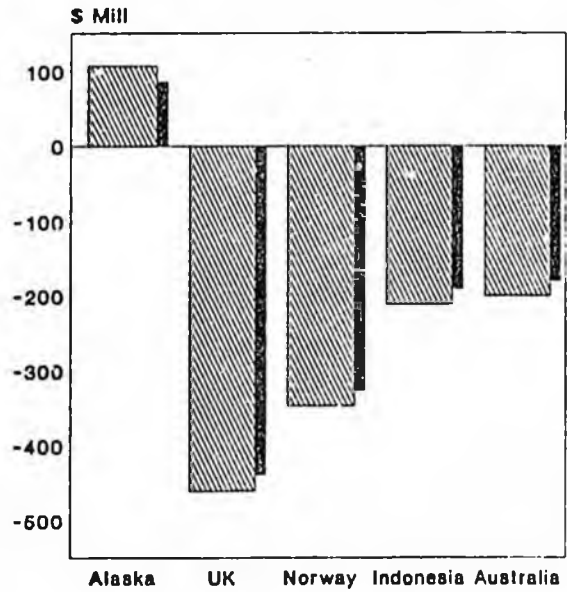
GOVERNMENT NPV \$ REAL
West Sak
Base Case at 12.5%



GOVERNMENT NPV \$ REAL
North Star
Base Case at 12.5%



GOVERNMENT NPV \$ REAL
Niakuk
Base Case at 12.5%



**Company and Government Prudhoe Bay NPV and Government Take -
Various Discounts**

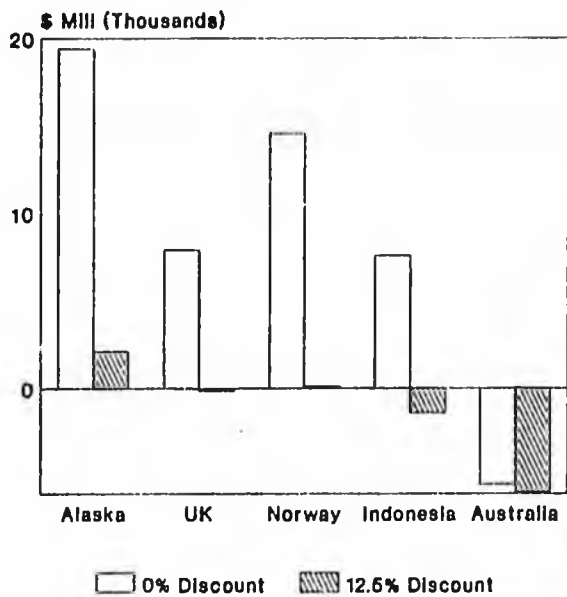
The following charts illustrate Prudhoe Bay Net Present Value from a government and company view based on different discount rates.

The government chart also shows the split between State and Federal taxes for Prudhoe Bay.

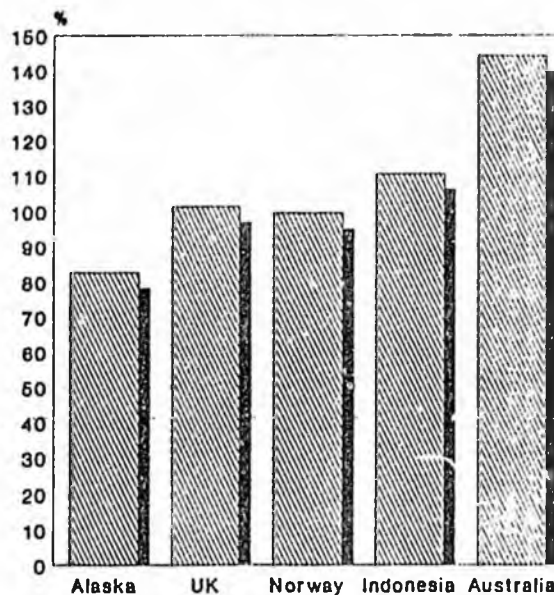
The government take chart shows the percentage government take for Prudhoe Bay over and above a 12.5% discount.

In Alaska this is just over 80% rising to over 100% for the other legislations. In other words this represents the percentage of what is referred to as the Economic Rent which is taken by the government. It can be seen that at 12.5% the take would be unreasonably high in all other countries giving grounds to the concept that their legislation was not geared to a Prudhoe Bay field.

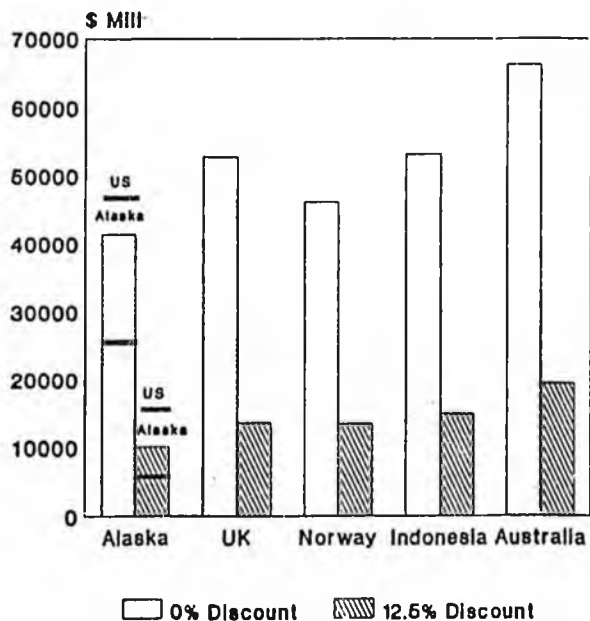
COMPANY NPV \$ REAL
Prudhoe Bay
Base Case Varying Discount



GOVERNMENT TAKE %
Prudhoe Bay
Base Case at 12.5%



GOVERNMENT NPV \$ REAL
Prudhoe Bay
Base Case Varying Discount

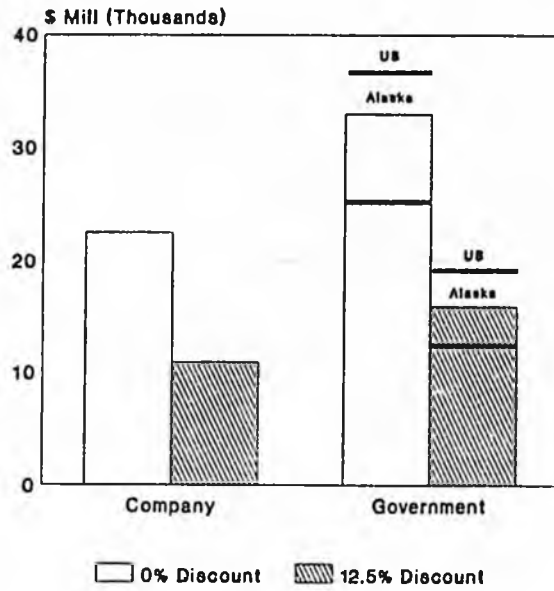


Prudhoe Bay Remaining Net Present Value (1990)

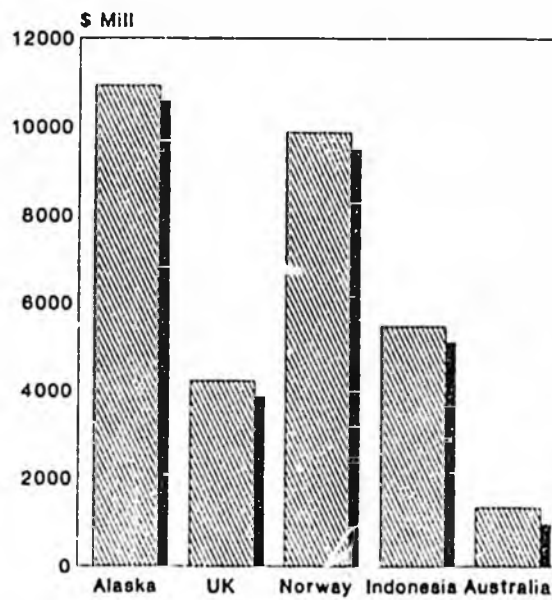
The remaining Net Present Value of Prudhoe Bay was also examined under each legislation in 1990 terms. This remaining NPV analysis does not include all likely necessary new investments typical of such situations and probably overstates the company position.

The remaining Prudhoe Bay Net Present Value is shown separately comparing government and company shares at zero discount and at the standard 12.5%. On the bar chart showing the relatively high remaining U.K. government NPV it must be remembered that while the marginal tax rate is very high, the U.K. allows offset of very significant exploration and some development costs against current production taxes.

REMAINING NPV COMP+GOV
Prudhoe Bay- Alaska
Base 1990\$ Varying Discount



REMAINING NPV COMPANY
Prudhoe Bay
Base Case 1990 \$ at 12.5%



Rate of Return (ROR) and Internal Rate of Return (IRR)

These are measures, typically quoted as percentages, of the amount of the investment which is recovered on an annual basis. Thus if we invest \$100 and get \$10 back within a year this might be referred to as a 10% return.

Internal Rate of Return is more typically used in the oil industry. It is the percentage rate of return which could still be achieved if the project was to only break even, i.e. the rate of return at which the Net Present Value (NPV) of a project is zero. Rates of Return are excellent comparative tools but they give no indication of size or duration of the project. Thus a very small investment with a correspondingly small Net Present Value might have a very high Rate of Return. Correspondingly, a very large project with a very large NPV could also have a very small Rate of Return. It is important to stress that these performance measures cannot be considered in isolation, and a series of the various project performance tools must be used.

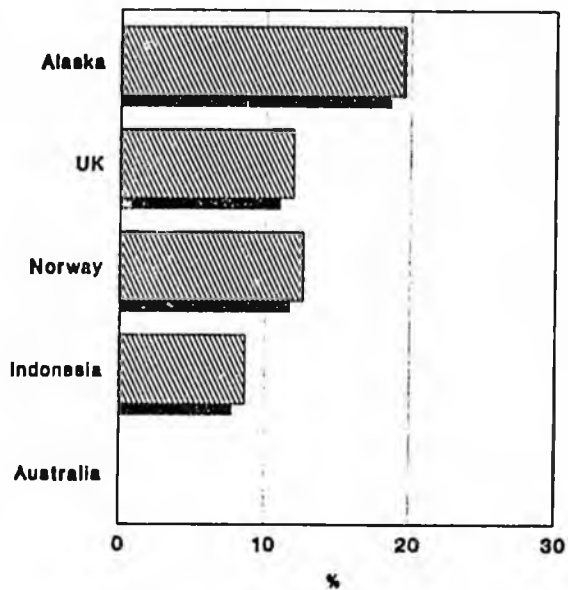
For rate or return purposes, only positive Internal Rate of Return (IRR) values were shown so that the lowest value in the rate of return is zero. Negative IRR values can be misleading.

Internal Rate of Return Results

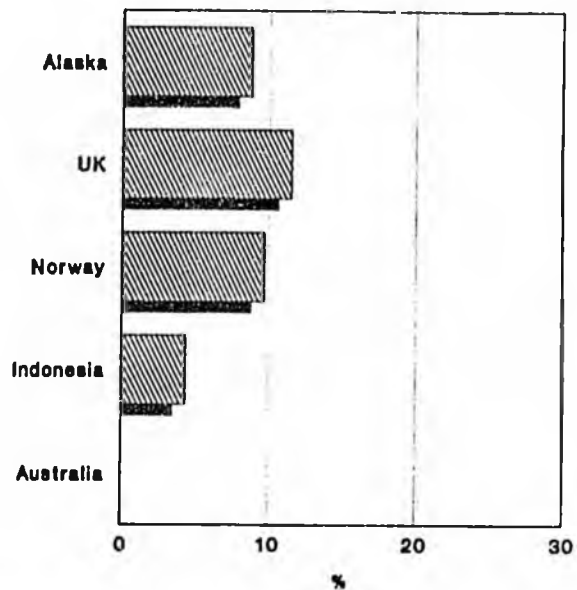
Prudhoe Bay IRR% is higher in Alaska than in all the other countries. This is partially so because other countries tightened their legislation significantly as prices rose in the late Seventies/early Eighties. Indeed the U.K. was at its most aggressive with high rate Petroleum Revenue Tax (PRT), Supplemental Petroleum Duty (SPD) and Advanced Petroleum Revenue Tax (APRT) payments all occurring in the late Seventies and adversely affecting the early production of Prudhoe Bay under that simulated legislation.

All three new fields look better under U.K. legislation, while North Star only has a positive rate of return under U.K. and Norwegian legislations.

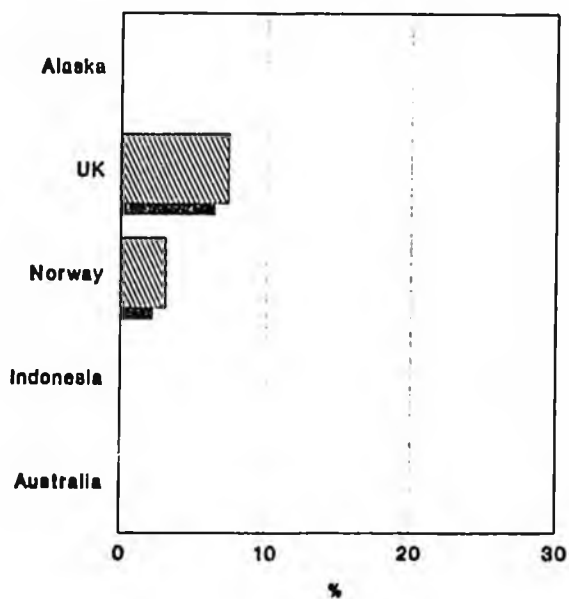
COMPANY IRR % REAL
Prudhoe Bay
Base Case



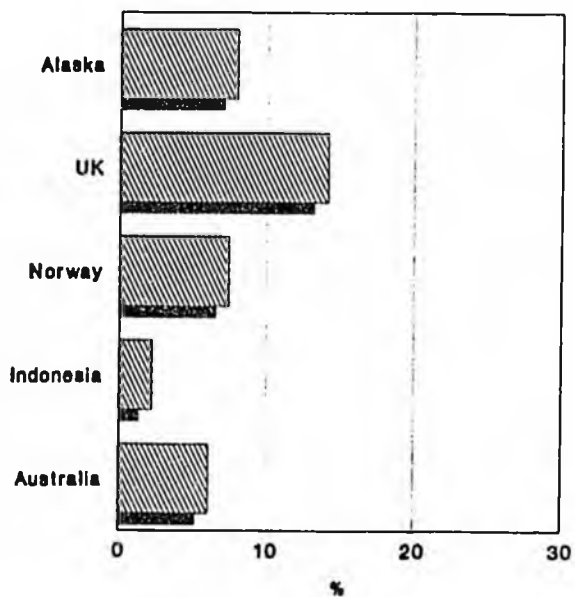
COMPANY IRR % REAL
West Sak
Base Case



COMPANY IRR % REAL
North Star
Base Case



COMPANY IRR % REAL
Niakuk
Base Case



Years to Payout

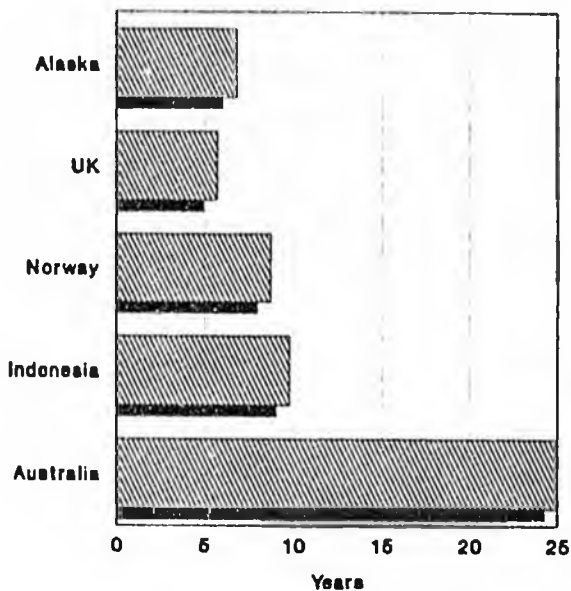
This is defined as the time required to recover the original investment including a full exploration program.

How soon payout was achieved from the beginning of each of the projects at the development stage was examined. It should be noted that payout, of course, would take rather longer if the period from the beginning of the exploration stage had been taken; but payout as calculated does incorporate repayment of the inflation- adjusted exploration costs no matter how long ago they had been expended.

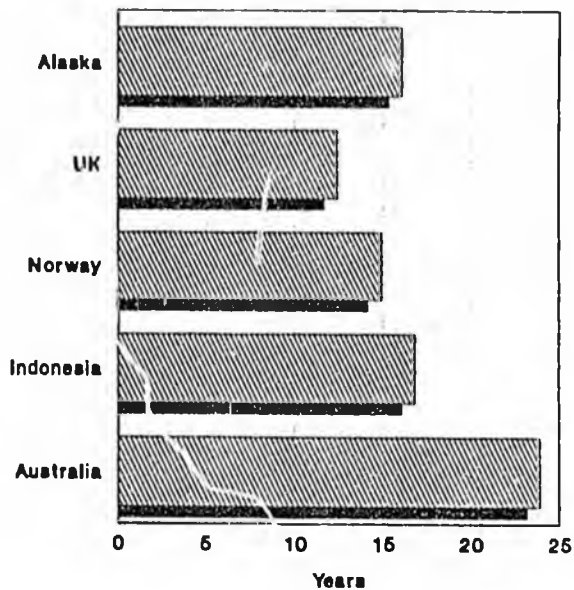
Years to Payout Results

Prudhoe Bay would have paid out sooner under U.K. legislation but Alaska, Norway and Indonesia were all of the same order of magnitude. North Star and Niakuk payout earlier under U.K. legislation.

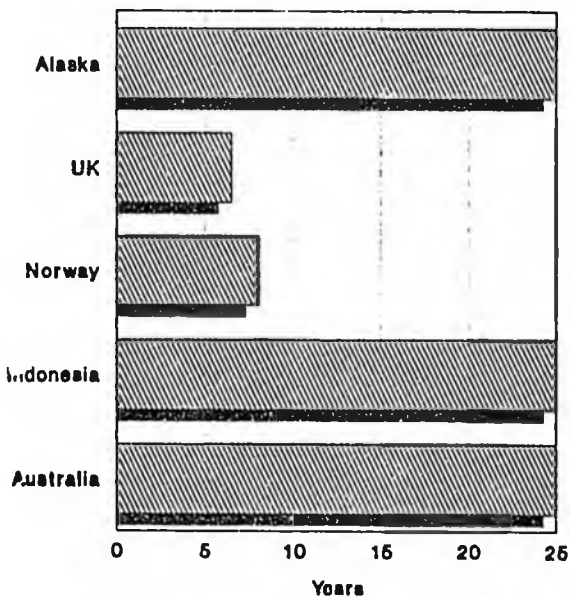
YEARS TO PAYOUT
Prudhoe Bay
Base Case



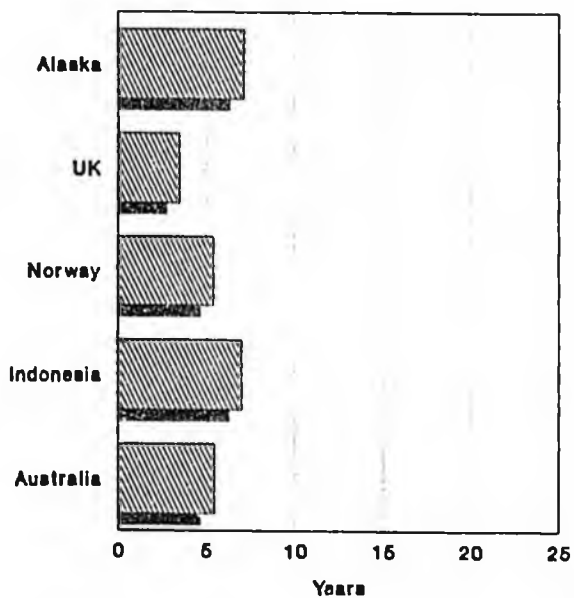
YEARS TO PAYOUT
West Sak
Base Case



YEARS TO PAYOUT
North Star
Base Case



YEARS TO PAYOUT
Niakuk
Base Case



CORRECTION

**THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY**

Years to Payout

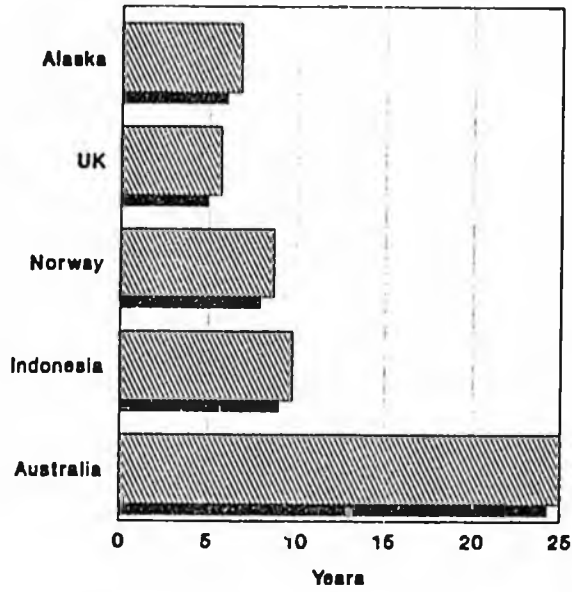
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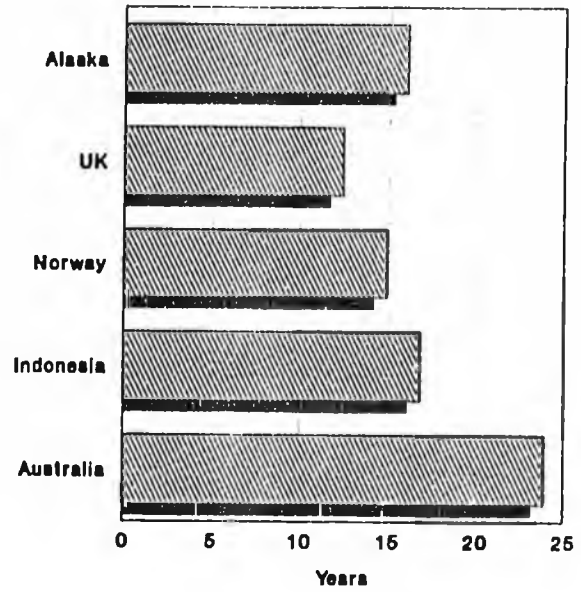
Years to Payout Results

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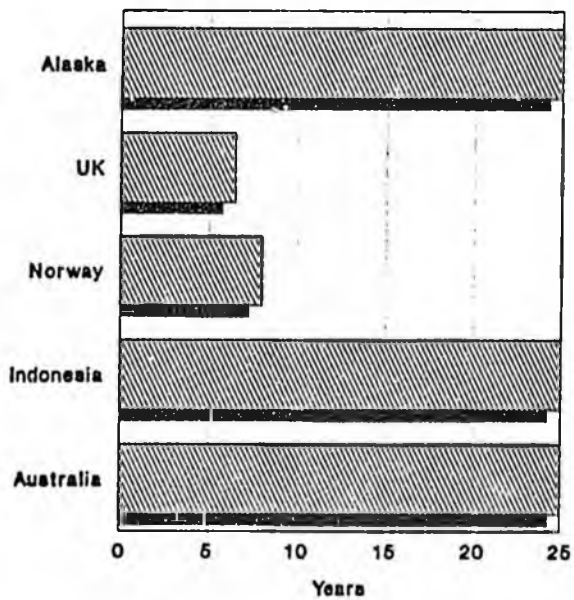
**YEARS TO PAYOUT
Prudhoe Bay
Base Case**



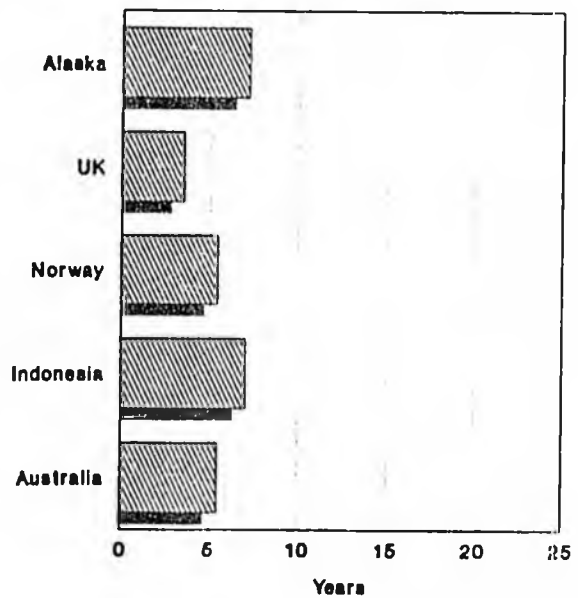
**YEARS TO PAYOUT
West Sak
Base Case**



**YEARS TO PAYOUT
North Star
Base Case**



**YEARS TO PAYOUT
Niakuk
Base Case**



Net Present Value for Incremental Prudhoe Bay Project

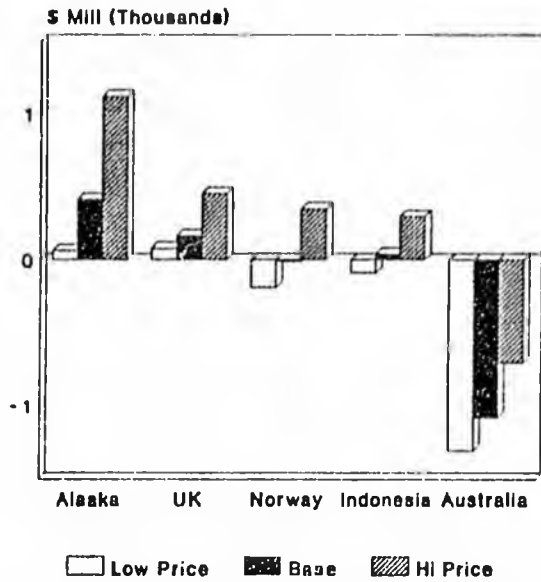
We have examined for Prudhoe Bay, in each legislative scenario, the impact of a late-life incremental project (i.e. additional reserves, additional revenues and additional costs) on the Net Present Value of the overall project.

Net Present Value for Incremental Project Results

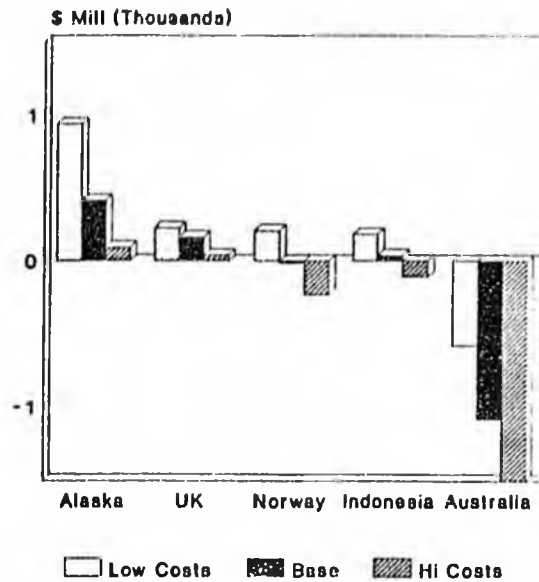
The incremental project (Hurl State Analogy) looks better under Alaska legislation than it does under any of the others.

However, this incremental project was a Hurl State Analog and insufficient time was available to evaluate its appropriateness as an incremental project. Indeed it is clear that it does not adequately simulate some likely aspects of typical late life field investments and costs.

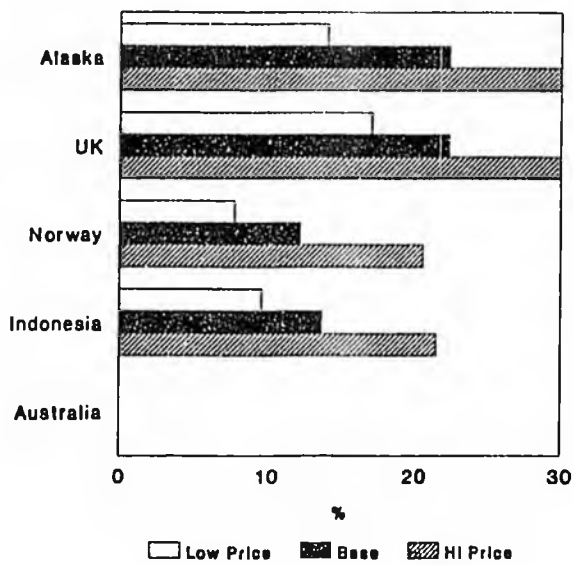
COMPANY NPV \$ REAL
Prudhoe Bay Increment
Sensitivity to Oil Price



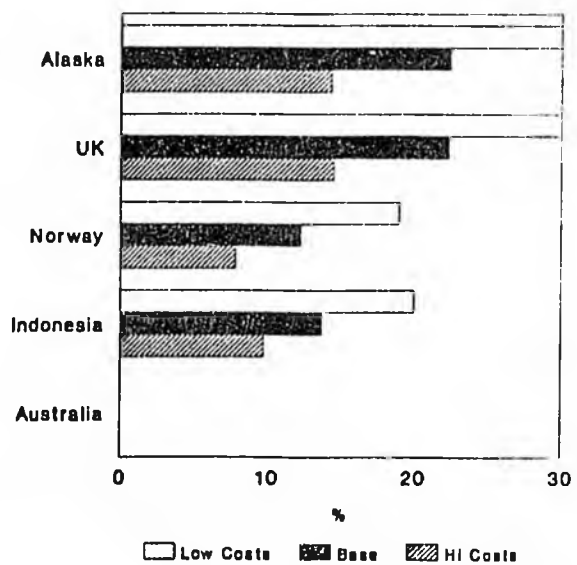
COMPANY NPV \$ REAL
Prudhoe Bay Increment
Sensitivity to Costs



COMPANY IRR % REAL
Prudhoe Bay Increment
Sensitivity to Oil Price



COMPANY IRR % REAL
Prudhoe Bay Increment
Sensitivity to Costs



Prospectivity

It is well recognised within the industry that decisions are made on the basis of more than just the previously mentioned economic criteria. It is the combination of criteria that allows proper assessment of the opportunity. No one company at any one time will be driven by the same influences or use the same performance yardsticks yet, from time to time, the industry as a whole may rush to a new or revitalised area, for instance, offshore China in the early 1980s.

Companies which want to invest in exploration have to perceive that the geological prospects are good and that the combination of resources and technology available to them make it possible for them to expect economic success.

Included among the key criteria in what we might generally call prospectivity is the perception of how good the geological prospects are, the size of those prospects, the logistics, costs, legislative and political environment, the time to do a deal, the time to get on production, the market, and what we might generally describe as the hassle factor. Of course, in addition to these are the availability of capital within the company and issues of pricing and costs which are largely taken care of in the economic analysis.

In reviewing the prospectivity charts one must accept that this is a subjective judgement made at a precise moment. Such an assessment will vary with time, with company, with prospect and with opportunity levels. The charts are given solely to give an idea of some of the factors which have a very real bearing on initial and reinvestments.

Geology

The geological prospects for oil or gas have to be reasonable.

Field or Opportunity Size

Large companies will rarely look in areas where the potential field size is very small. They have limited staff resources and their way of doing business is such that their costs will form too high a burden on small fields. For any given area the geological prospectivity will suggest the types of field sizes which might be possible. These field sizes

have to be large enough in the particular logistical and economic climate to be viable for the type and size of organisation that is investing in them.

Logistics

Difficult logistics, for instance in transport, environment, the lack of existing pipelines or a simple method of extracting the crude, will dictate that much larger fields have to be found to make the ultimate project viable. In such situations, longer periods of time are necessary and hence exploration funds are exposed at risk for a longer period. Poor logistics in combination with other marginal factors can lead to a company deciding not to invest. Good logistical factors are a major plus, for instance, in many parts of the North Sea.

Costs

There will be a perception of costs in each particular area. Major variations will depend among other factors upon the logistics, environment and the nature and depth of the potential prospects. If the operation is perceived extremely costly then naturally one has to be looking for larger fields. To the extent that costs are high this will tend to mitigate against the involvement of smaller, less adequately financed concerns and favour larger companies who can handle major longer term expenditures.

Legislative and Political Risk

Legislative and political risk is mainly a perception of potential change which might affect the company's ability to recover an investment. If the prospects and economic returns look good the industry frequently takes on board what are huge risks, investing in volatile legislative scenarios and where there may be very real potential risk exposure.

Time to Do a Deal

To many companies an important aspect is their perception of whether it would be possible to do a deal and get exploration acreage in a

reasonable finite period. How long will it take to obtain the opportunity in the first place? If the prospects are excellent and the perceived field sizes large, companies will be quite happy to wait around for years, all other things being largely positive. If, on the other hand, the current returns appear marginal they may be more inclined to be impatient and at the very least place the opportunity on the back burner.

Time to Get Production (Time to Product)

Smaller companies and indeed larger ones are frequently concerned about how long it will take once they have found production to get it on stream and begin to make a return. The nature of the legislation itself can define how fast they can make their return and these items are dealt with in the economic criteria presented elsewhere. If the combination of logistics, environment, location etc. indicate in the end a very long time to get production on stream, then this has a negative impact.

Markets

Availability of a market, particularly today for gas and also for instance heavy oil, can be a major factor in the timing and ability to carry out both exploration and development. With long lead-times, (exploration through to discovery and development) particularly in the more harsh environments, companies must make judgements on oil and gas prices and markets well into the future. To the extent that there appears some other element of market risk this will downgrade attractiveness of the project. To the extent that there appears to be no significant market risk, projects get upgraded.

Hassle/Pizzaz Factor

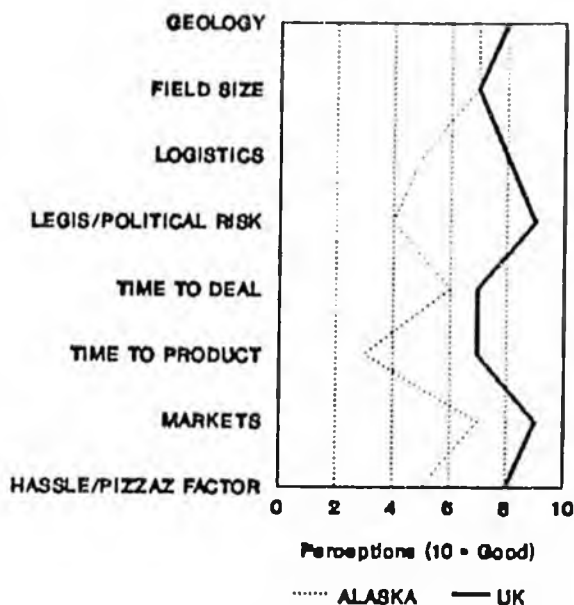
Industry is frequently driven, like any exploration-based natural resource concern, on what we might call the gold-rush concept. Is there a new place where a new series of large or even small discoveries appears imminent? Is there an old area we can revisit with new technology and do well? So from time to time we see the industry move

suddenly to new pastures where there is a perception of major new opportunity. The industry moved to the North Sea in the early 70s with successful results and moved to offshore China in the early 80s with very poor results. Regions and indeed countries become fashionable even though particular countries and environments may have large problems. Environmental aspects may cause substantial delays; there may be difficulties in getting expatriate staff in place or with approvals for the importing of equipment. There may even be concerns of terrorist activity. The combination of these makes up what we might generally refer to as the hassle and/or pizzaz factor. If there are high hopes and it is a fashionable area, the industry will frequently cope with quite exceptional circumstances. On the other hand if the prospects are less attractive, the industry is less inclined to invest in the first place.

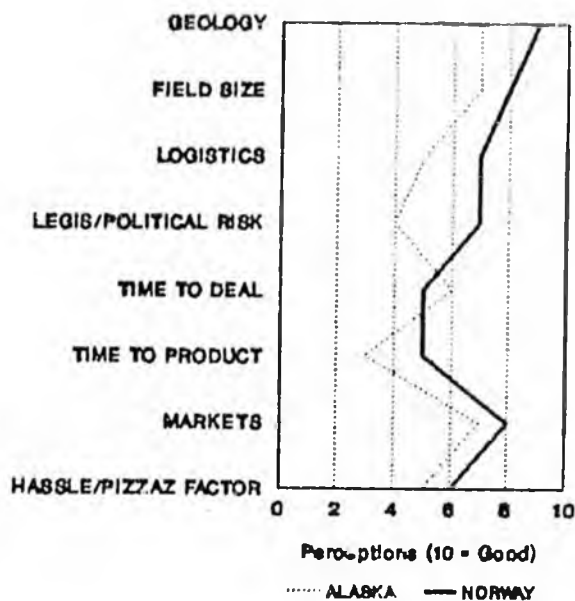
Prospectivity Results

Generally, Alaska looks less attractive under the scenario's examined at this "snap-shot" in time. Legislative/political risk appears higher in Alaska because among other reasons, the UK, Norway and Indonesia have all made material improvements in their legislation in more recent times. Recognising the subjective nature of the approach, overall Alaska appears similar to Norway and generally less attractive than the U.K. North Sea.

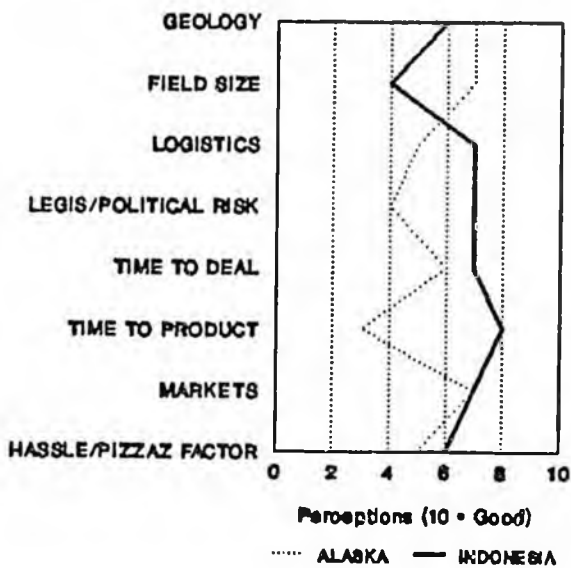
PROSPECTIVITY United Kingdom



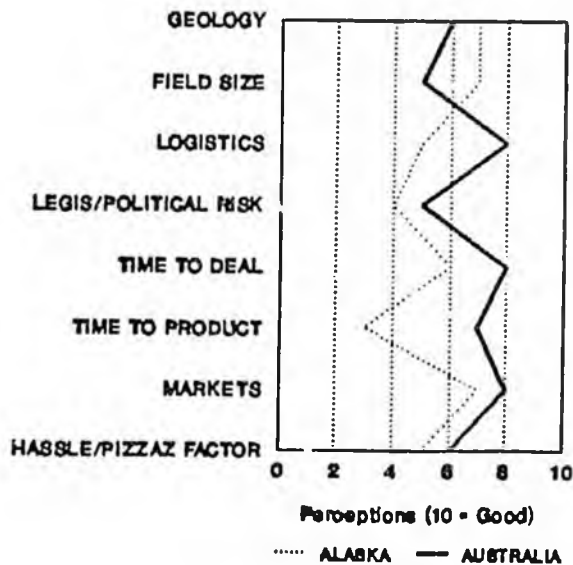
PROSPECTIVITY Norway



PROSPECTIVITY Indonesia



PROSPECTIVITY Australia



Sensitivities

Sensitivities to Prices

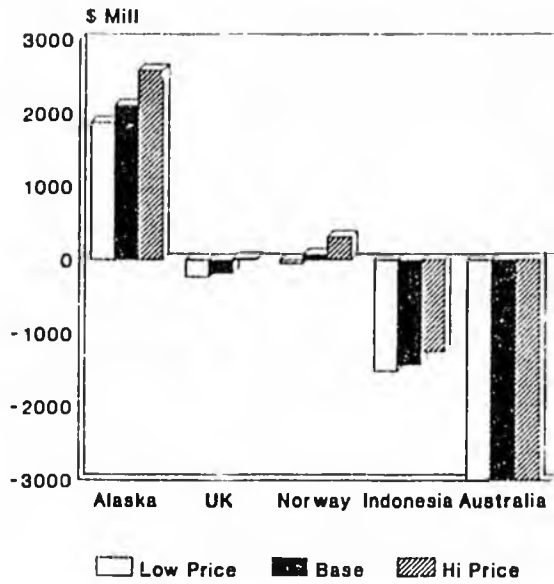
The following two pages of charts show the sensitivity to a high and low price, US\$3 down (US\$17/Bbl sale price) and US\$6 up (US\$26/Bbl sale price) from our base case (US\$20/Bbl sale price - US\$14.40 well head).

The sensitivity on the Net Present Value and on the internal rate of return is illustrated.

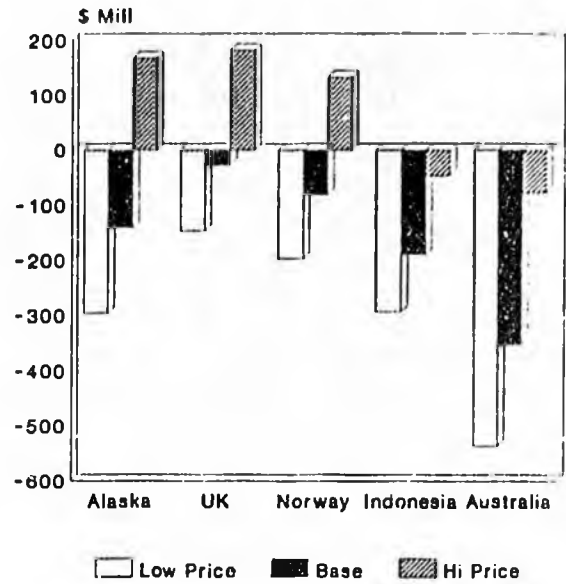
Prudhoe Bay historical rate of return is extremely insensitive to future prices when looking back from 1975. This is, of course, because a large part of the production is already at a market established price.

High prices put West Sak and Niakuk into a better looking scenario rate of return wise but only under U.K. legislation does North Star look to reach an even marginally acceptable internal rate of return. The rate of return on Niakuk demonstrates quite clearly the difference between the U.K. and Alaskan legislation, as even under a low price the rate of return is above 10% in U.K. versus 2% for Alaska. While under a high price the Alaskan return exceeds that in the U.K.

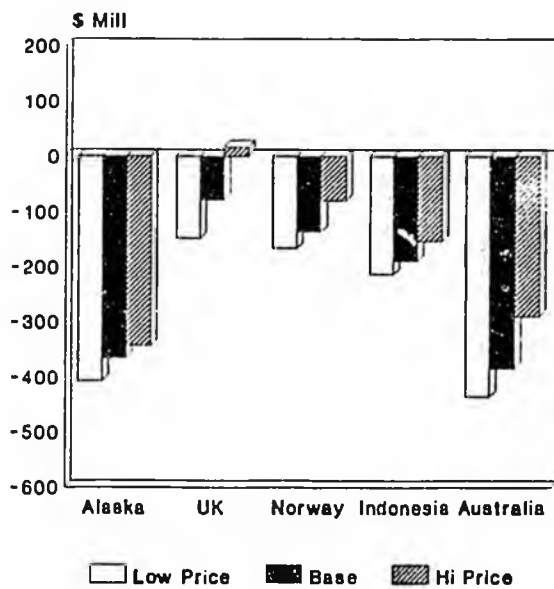
COMPANY NPV \$ REAL
Prudhoe Bay
Sensitivity to Oil Price



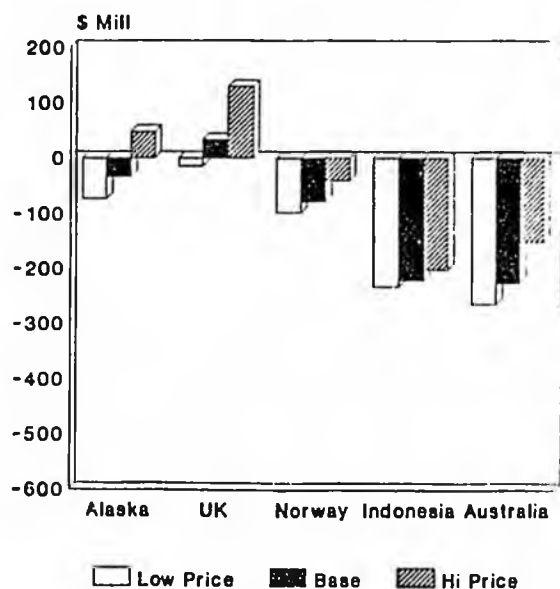
COMPANY NPV \$ REAL
West Sak
Sensitivity to Oil Price



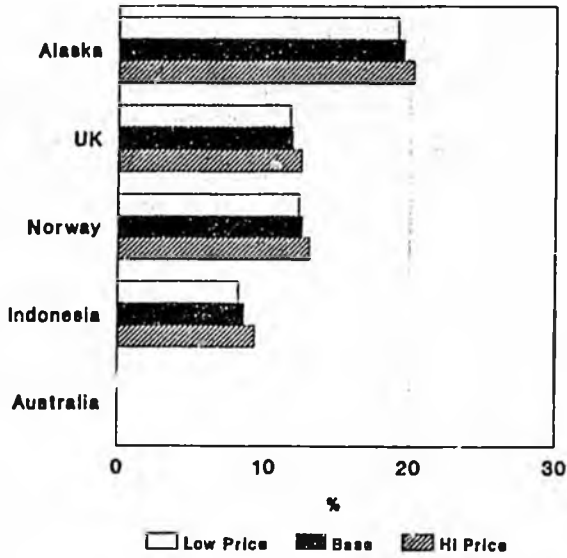
COMPANY NPV \$ REAL
North Star
Sensitivity to Oil Price



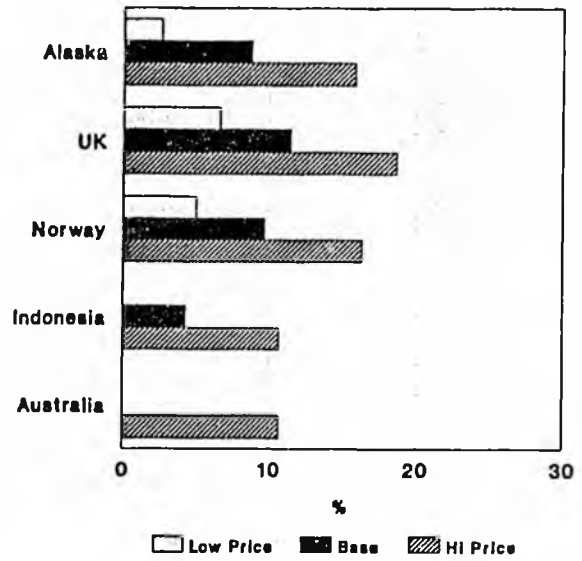
COMPANY NPV \$ REAL
Niakuk
Sensitivity to Oil Price



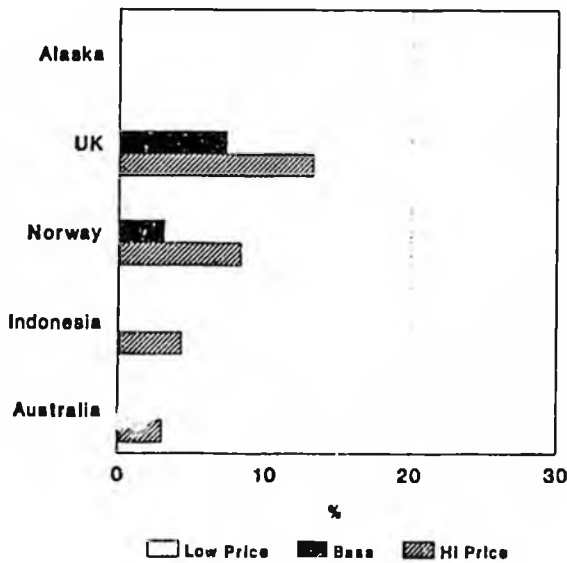
COMPANY IRR % REAL
Prudhoe Bay
Sensitivity to Oil Price



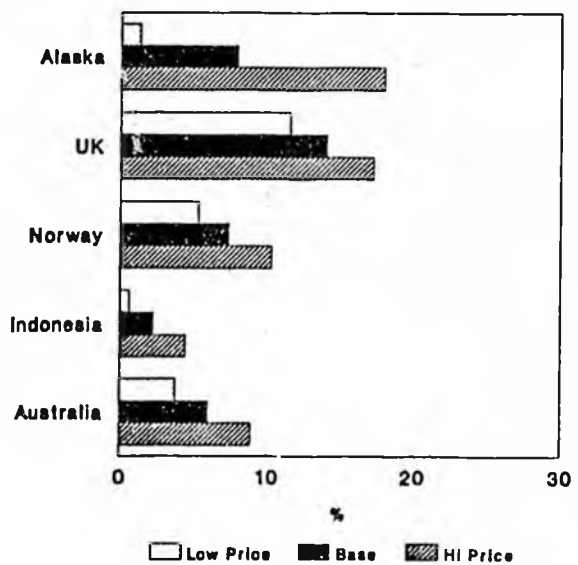
COMPANY IRR % REAL
West Sak
Sensitivity to Oil Price



COMPANY IRR % REAL
North Star
Sensitivity to Oil Price



COMPANY IRR % REAL
Niakuk
Sensitivity to Oil Price



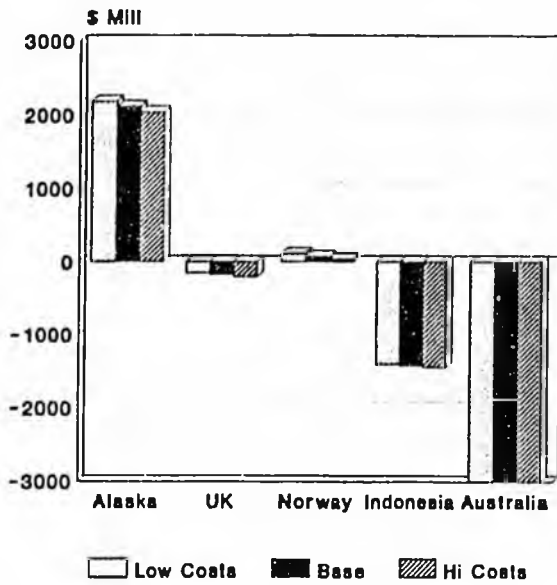
Sensitivity to Costs

The following two pages of charts show the sensitivity to a high (+25%) and low (-25%) cost scenario. The sensitivity on the Net Present Value and on the internal rate of return is illustrated.

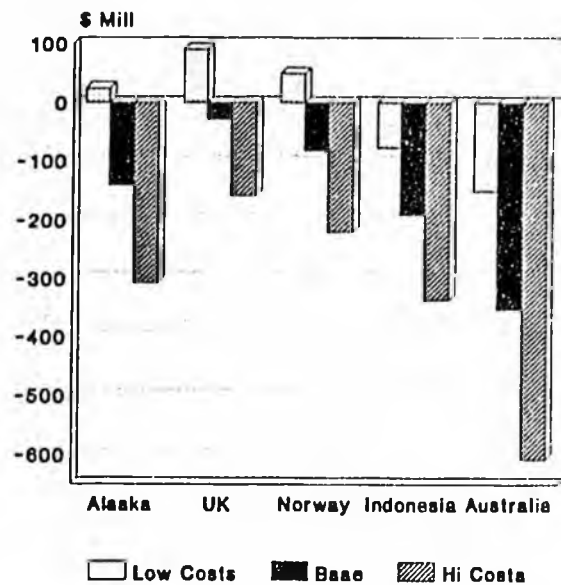
Again Prudhoe Bay is very insensitive to future cost changes when viewed from 1975. A low cost case makes West Sak and Niakuk look more attractive. Even North Star gets up in the range of potential investment consideration under U.K. legislation if costs can be reduced by 25%.

Sensitivity to costs is more marked in rate of return numbers in Alaska than say in U.K. or Norway.

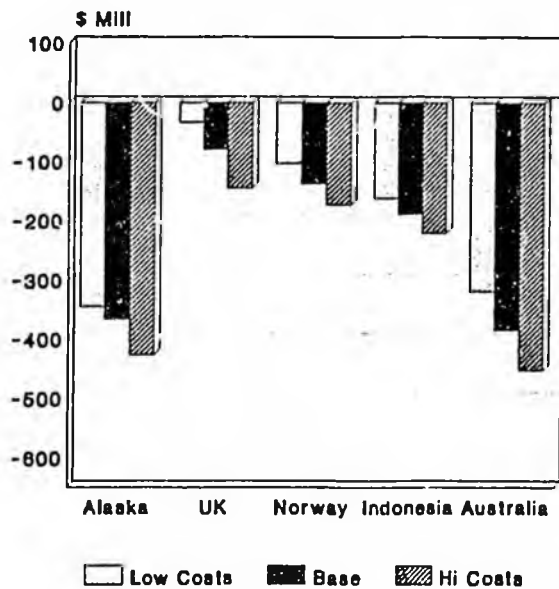
COMPANY NPV \$ REAL
Prudhoe Bay
Sensitivity to Costs



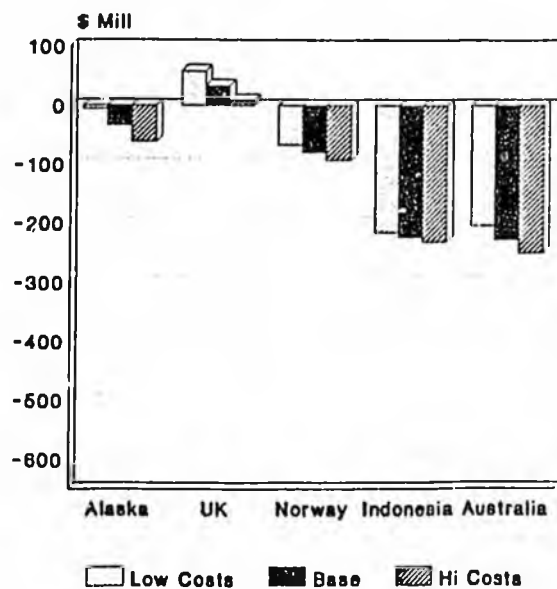
COMPANY NPV \$ REAL
West Sak
Sensitivity to Costs



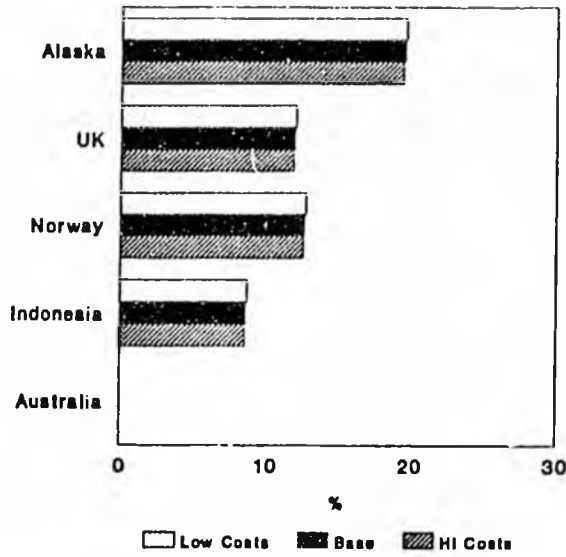
COMPANY NPV \$ REAL
North Star
Sensitivity to Costs



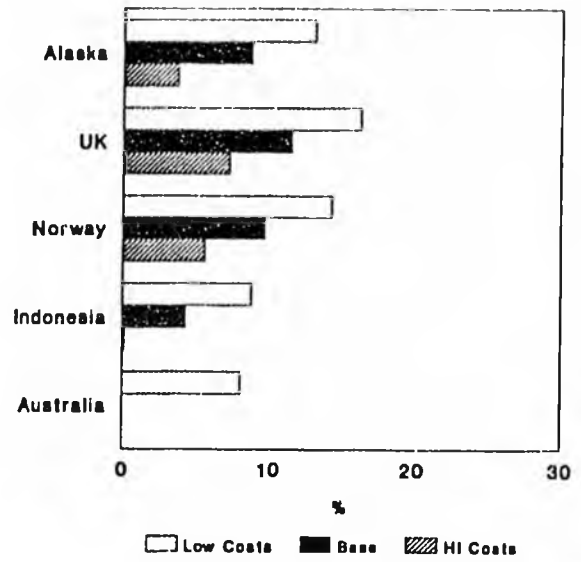
COMPANY NPV \$ REAL
Niakuk
Sensitivity to Costs



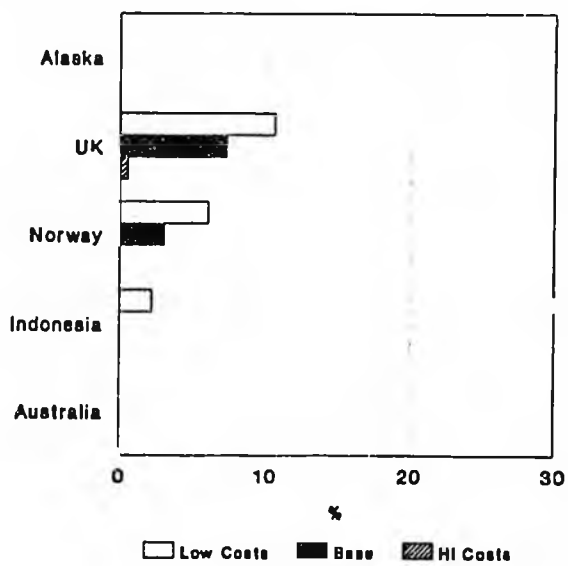
COMPANY IRR % REAL
Prudhoe Bay
Sensitivity to Costs



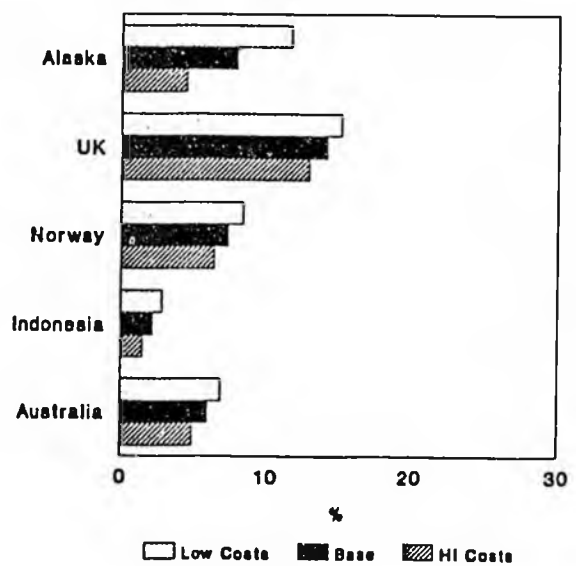
COMPANY IRR % REAL
West Sak
Sensitivity to Costs



COMPANY IRR % REAL
North Star
Sensitivity to Costs



COMPANY IRR % REAL
Niakuk
Sensitivity to Costs



Sensitivity to Exploration and New Investment

The following two pages of charts show the sensitivity to the sunk exploration costs on the Net Present Value and internal rate of return of the four fields.

Also shown on the same two pages is the effect of being a new player and not having the benefit of exploration write off against other projects.

Sunk Exploration Costs

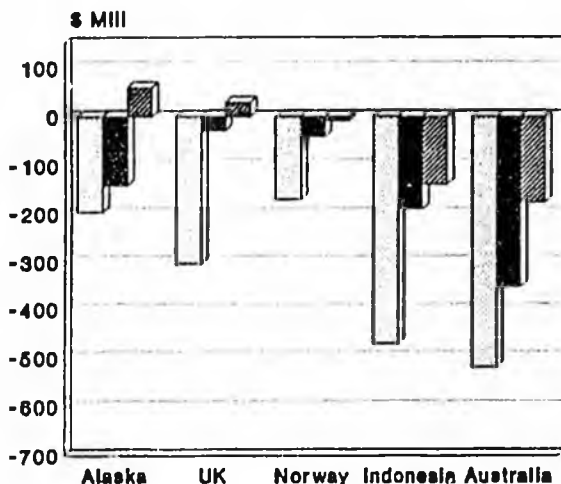
The decision to explore implies a commitment to later development of attractive opportunities. Unrecovered unsuccessful exploration effort has to be incorporated in the overall industry economics. So while a new area may look attractive from a development point alone the necessary front end exploration costs including related unsuccessful efforts must be considered in early assessments of going ahead on a new exploration venture. The exploration bill has to be paid somewhere.

Having made a discovery the analysis of the development economics may well take place without allocating sunk costs of exploration and development in the basic decision to proceed. However to the extent that such costs are not notionally recoverable against the project regardless of whether previously offset against past tax, the industry is simply cutting its losses rather than investing in a sensible project. It is clear that taking out the sunk exploration costs made Niakuk and West Sak especially more attractive projects.

New Player Versus Ongoing Investors

The impact of being a new player is also shown in the "Exploration" Sensitivity charts. As is to be expected, a new player would find the three new developments much less attractive than a current player, indeed none of the projects would look viable with the possible exception of West Sak.

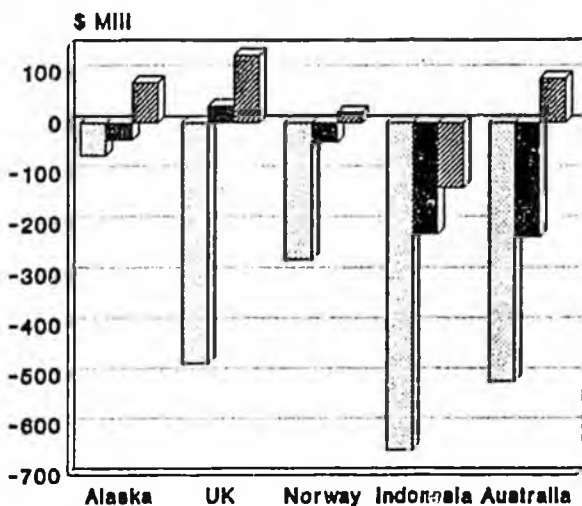
**COMPANY NPV \$ REAL
West Sak
Sensitivity to Exploration**



New Player + Expl
 Ongoing + Expl
 Ongoing No Expl Cost

Ongoing + Expl Costs is Base Case

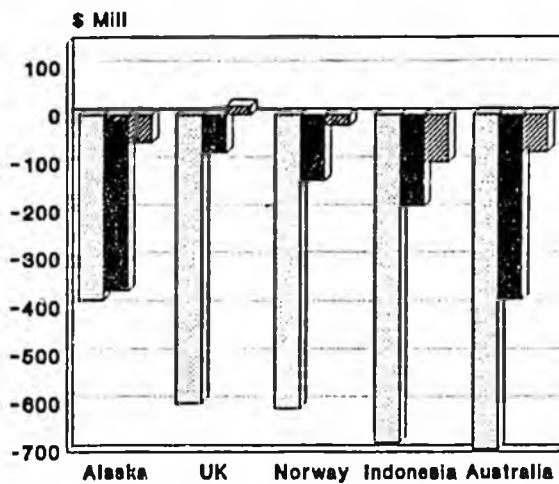
**COMPANY NPV \$ REAL
Niakuk
Sensitivity to Exploration**



New Player + Expl
 Ongoing + Expl
 Ongoing No Expl Cost

Ongoing + Expl Costs is Base Case

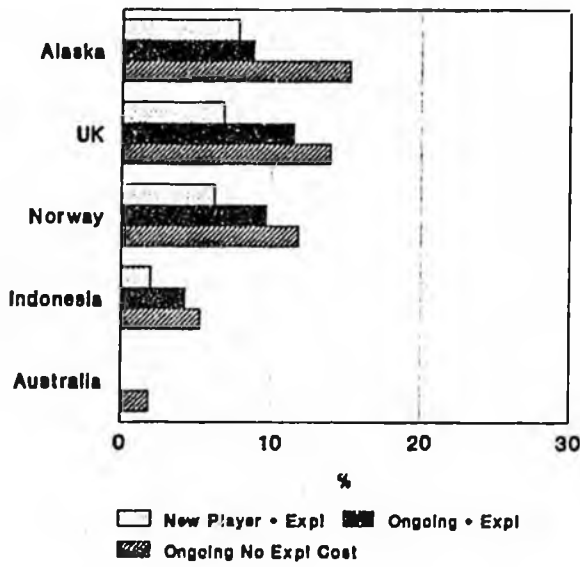
**COMPANY NPV \$ REAL
North Star
Sensitivity to Exploration**



New Player + Expl
 Ongoing + Expl
 Ongoing No Expl Cost

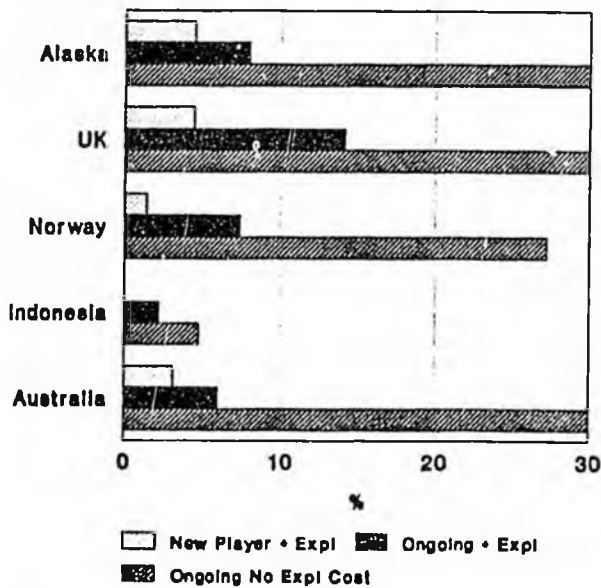
Ongoing + Expl Costs is Base Case

COMPANY IRR % REAL
West Sak
Sensitivity to Exploration



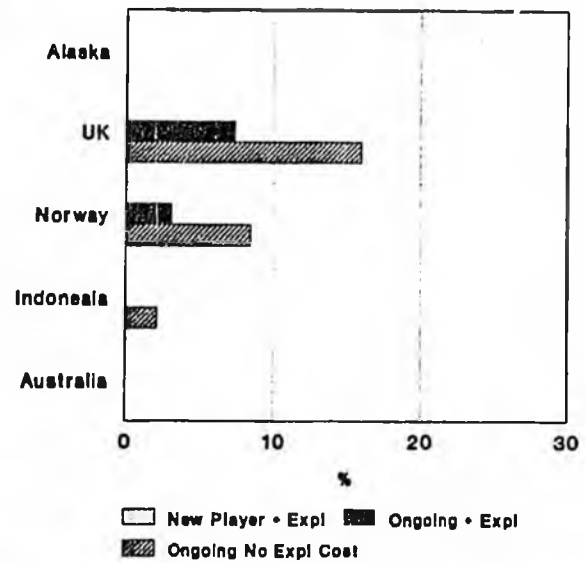
Ongoing + Expl Costs is Base Case

COMPANY IRR % REAL
Niakuk
Sensitivity to Exploration



Ongoing + Expl Costs is Base Case

COMPANY IRR % REAL
North Star
Sensitivity to Exploration



Ongoing + Expl Costs is Base Case

Encouraging Activity

Whether it be under concession arrangements such as in the United Kingdom or production-sharing agreements such as in Indonesia, these two governments have certainly used a pragmatic approach to adjust relative returns to the industry. This has been achieved by modifications to the contract conditions and/or to tax accounting guidelines. If encouraging exploration and development are objectives, the most successful approach has been that in the U.K. where the tax write-offs are significant enough to continue to encourage major exploration effort so that high marginal tax rates are offset by substantial exploration offset provisions. A similar, if somewhat more restricted approach, is taken under the Indonesian Production-Sharing Contract. Any government, of course must make a decision on the extent to which it wishes to encourage further exploration, investment in existing fields or new developments based relative to its need for current or longer term revenue from the industry, in addition to aspects such as employment and infrastructure which are critical in many jurisdictions.

While from a purely Alaskan view much of the employment and equipment manufacturing benefits may occur elsewhere, they do for the most part occur within the same government jurisdiction, i.e. the United States. Thus major projects, particularly on the North Slope or elsewhere, can have a significant impact in relative terms on the whole of the U.S. oil industry environment.

Certainly, governments in other countries have sought to encourage development and indeed domestic employment and domestic manufacture, but they are, of course, more concerned that such employment occurs within the country rather than a particular State. In the U.K., however, the emphasis has been more localised and significant efforts have been made to ensure that much of the offshore benefits accrue to Scotland.

Policy Goals

While the goal in Australia has been to maximise revenue the perception has been that prospects were not good for finding major new fields. In Indonesia while foreign currency and revenue were key issues the government has recognised a need to continue encouraging the industry for long term benefits of revenue, foreign exchange, employment and infrastructure.

In Norway the goal has been to maximise both revenue and local involvement and at the same time control development so as not to allow it to get out of hand.

The United Kingdom has pursued a varied policy over the last several years but overall it can be said to have wanted first to reduce or eliminate the oil deficit by encouraging exploration and development, then encouraging domestic industry with the resulting employment. Those two planks, maximising production and local involvement continue to be key driving forces, although it must be recognised that the U.K. marginal tax rate on large fields is one of the harshest in the world. This in turn is offset by generous exploration offsets to encourage further exploration.

How does the Government control industry in other countries?

The industry is largely controlled in most countries by a combination of the equivalent of a Ministry or Department of Energy and an appropriate Department of Revenue. Basically, the Ministry is responsible for issuing of new licences, exploration/production (the equivalent of lease sales), the approval of appropriate permits and for the general regulation and control of the industry, and will typically have involvement in the basic terms and conditions affecting the return to the industry. The revenue authorities typically will be involved in adjustments to the tax code and the general guidance of the government and the ministry or equivalent to encourage/discourage further investment by way of tax enhancements/disincentives.

To the extent that some countries have separated aspects of basic petroleum control and taxation into more than one or two groups, there has definitely been some reduction in effectiveness and there appears to be an increased likelihood of litigation.

The Legislative Dilemma

We must recognise the long time between encouraging exploration or reinvestment on the one hand and seeing the results in terms of taxation revenues in a remote and costly location on the other. This time gap makes it difficult for governments to establish a reasonable basis for judging the level of appropriate

benefits today as opposed to what one should encourage for a tomorrow which could be more than a decade away. While the oil industry is not unique in this regard, because much of it is so visible - it continues to present all legislators with very difficult choices.

The median view would seem to be to continue to encourage re-investment and development and exploration at the expense of current revenues to the extent necessary while reasonable prospects and opportunities appear to exist in the future. Industry itself provides the barometer of the reality of those opportunities since they are unlikely to invest even small percentages in a tax-efficient manner if the opportunities are indeed poor. To achieve this happy, and perhaps ideal mean, does require the government to have its own ongoing and reasonable analysis of prospects and opportunities and to be close enough to the industry to recognise their own driving forces and to encourage them accordingly.

As indicated in discussions with the Committee we are dealing with a worldwide industry and other opportunities will cause the limited capital resources to move away from one area to another. This will require governments of the day to adjust their revenue-sharing arrangements if they wish to continue to attract risk funds.

Similarly, from time to time it may well be that the existing structure, as we have seen in the U.K. and in other parts of the world, is no longer appropriate and it may be necessary to increase the tax share. Logically, how one treats the industry will be different if it forms a high proportion of government revenues, than how the industry is treated where it is but a small fraction. The principles may well be the same but the approach will be different.

Ideally from both governments' and industry's point of view a tax system which seeks to increase the state take as the project becomes more attractive, be it because of price, improved performance or whatever reason, is one that seems to find the most favour with all parties. Unfortunately, most systems are not even-handed in how they treat and encourage re-investment, development of marginal fields or encouragement of exploration, especially under lower oil price scenarios. However, it is fair to say that there is no panacea in defining legislation, for each country has particular circumstances which both require and justify somewhat different handling.

Some Observations

We must recognise that the analysis carried out is by no means exhaustive in terms of examining a full spectrum of opportunities for Alaska. Nevertheless, it may be helpful to examine the possible direction in which legislation might achieve one or another end, based on what has been carried out in other countries. A significant amount of additional study on the Alaskan Legislation and the appropriateness and application of necessary directions would be needed to recommend specific detailed tax policies and indeed the Legislature would need to define objectives accordingly.

Let us suppose that the hypothetical objective was to encourage domestic employment to the extent that such approaches were acceptable under federal regulations. It might be possible to grant some relief on future development to those concerns which demonstrated in all their operations an increase in Alaskan domiciled employees (e.g. perhaps those who qualify for payouts from the permanent fund).

If we assume that a longer term objective might be to maximise the State revenue to reduce the potential fiscal gap as much as possible, then we might proceed as follows. Carry out a reasonable assessment preferably with industry's help of remaining potential exploration, development and incremental projects. Then modify the fiscal legislation to make it more progressive so as to encourage a reasonable amount of exploration and development on an ongoing basis.

An efficient fiscal system applied to petroleum exploitation may be defined as one which collects a share of any economic rents to the State while at the same time maintaining incentives for (a) continued exploration, (b) new field developments, and (c) incremental investments. Account should be taken of the risks involved in petroleum exploitation, and the lead times between initial expenditures and income from production. In assessing investment opportunities oil companies employ discount rates which reflect their costs of capital and the perceived risks. A well-designed tax system should take these factors into account.

In practice an efficient fiscal system should be related to the profitability of petroleum exploitation. It should be sensitive to the variations in the factors determining project viability, such as oil prices and development costs.

A profits-related system is better able to satisfy these conditions than one based on production or gross revenues. Thus, when oil prices fall impositions based on gross revenues can render marginal fields uneconomic. The impact of profits-based taxes also depends upon the timing of the reliefs for exploitation costs. A slow rate of relief brings earlier revenue to government but reduces the post-tax returns in present value terms. A delicate balance is required to maintain incentives. This issue is especially important when there are very long lead times between expenditure and income.

Should the objective be to maximise oil production and the discovery of the maximum resource, then the recommended approach adopted in the previous case must be relaxed to greater extent to ensure that exploration development and investment funds are encouraged to move toward Alaska preferentially. Ideally this would mean providing early relief from higher rates of State tax, but in a more general sense doing whatever is possible at State level to minimise the impact of whatever environmental legislation is in place so as to reduce at least the time delay inherent in the current systems.

Overall legislation should be a blend of the various competing objectives. Achieving that blend is no easy task but will be facilitated by bringing the various alternative objectives into plain view where they can be discussed by all interested parties. It seems reasonable to assume that a significant number of potentially attractive exploration, development and re-investment opportunities remain in the North Slope area onshore and offshore and it would seem prudent to try and encourage the necessary activities to produce these resources.

APPENDIX

Base Case Summary

Ongoing operator (i.e. not a new player)

Includes allocated exploration and bonus costs

Government take includes state and federal revenues but not bonuses except in the case of the analysis of the effect of the 900 million bonus

NPV's and IRR's are for Real \$ Cashflows

Discount Rate is 12.5% real (i.e. 17% if there is 4.5% inflation) (except where stated)

Prices and Costs were escalated at 4.5% p.a.

Oil price was \$14.50 a barrel wellhead price Prudhoe Bay, with quality and transportation adjustments for the other fields as necessary. This is equivalent to a sale price of about US\$20.00/Bbl

The Prudhoe Bay base case is for a full life cycle of the field from 1975 through 2016 and the Real \$ are 1975 dollars for Prudhoe Bay as against 1990 dollars for the analysis of the remaining Prudhoe Bay production and all other fields

Analysis Details and Comments

The base case for each field in each legislation was taken from 1990 with a median oil price, median costs, inclusive of an exploration program and assuming an existing investor. In addition a number of sensitivities were run.

As indicated elsewhere the discount rate chosen for the valuation was 12.5% real 17% and ranged about 10-15%. The oil price chosen for the base case was \$14.50 per barrel wellhead price Prudhoe Bay, with quality and transportation adjustments for the other fields as necessary. Prices were escalated at 4.5% p.a. as were capital and operating costs. High and low oil price cases at the equivalent of minus \$3.00, that is \$11.50 per barrel Prudhoe Bay, and plus \$6 which is \$20.50 per barrel, were also examined to note price effects. The impact of different operating and capital costs from the base case was evaluated by examining the effects of increasing or decreasing such costs by 25%.

The net present values and rates of return determined for type fields, were not meant to reflect exactly what companies achieve but instead to provide a base for comparison. Some companies may have incorporated additional exploration costs in their assessment of the Alaskan fields, others may allocate costs differently.

Indeed, the base data may not reflect exactly how the new projects might be carried out in future. We have examined some measure of the impact of exploration by considering the allocation of some, but by no means all, unsuccessful efforts. Similarly the analysis has been carried out at the wellhead and does not attempt to evaluate the impact on, for instance, the TAPS pipeline. Further it should be clear that this analysis is centred around developments and production in the North Slope region, production using the TAPS Pipeline for export. It is not meant to give comparisons with other parts of Alaska where transportation methods are more or less costly and where other factors could be more relevant.

Sensitivity analyses to price, cost, the impact of whether one was a new investor or was an existing investor and therefore had ongoing tax right-offs, were carried out to give some idea of the impact of these aspects. The benefits of an existing player, particularly in the United Kingdom, are very significant under current legislation and this has no small impact in attracting new capital to explore for and indeed develop existing discoveries.

Extensive analysis was carried out to compare the value of North Slope crude to other market crudes in the key countries considered. However, bearing in mind the complexities involved, the decision was to treat the analysis as though the legislation had been moved to Alaska rather than to bring in the impact of different crude price and market regimes.

Similarly, extensive investigation was carried out to look into the allocated costs for discoveries in the countries considered with a view to using different exploration costs for each region, but again in the interests of making comparisons on basis of legislation alone, this approach was left for consideration if necessary at some later stage.

Other measures of performance.

Marginal Tax Rates on Prudhoe Bay

In order to make an assessment of historical taxes, it was necessary to make a judgement on marginal tax rates. To be conservative relatively high marginal tax rates were assumed to apply for the past period. This almost certainly overstates the relative amount of tax that the government might have obtained and also overstates the amount of tax the companies would have paid. The time and the complexities involved did not justify running this analysis significantly further at this time.

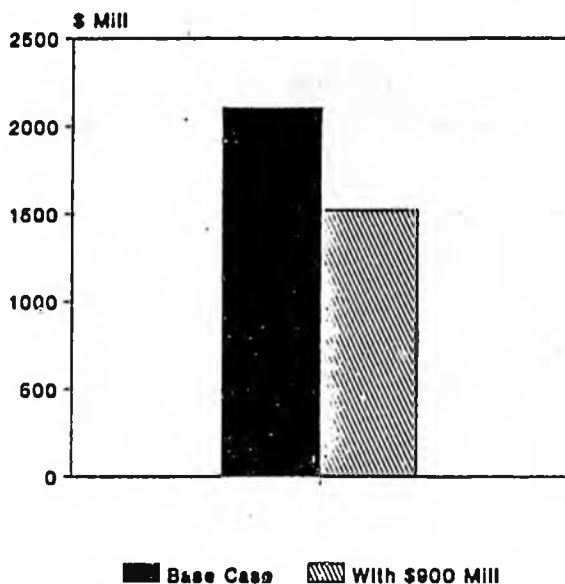
\$900 Million (1969) Bonus

Impact of allocating full \$900 Million (1969) Bonus payments to Prudhoe Bay is shown in the following charts.

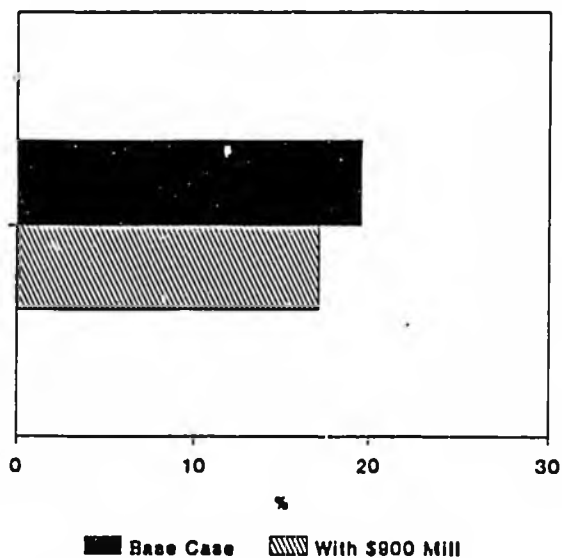
Base Data Note

In the data presented by the revenue group some fields were kept in production after they had a negative cash flow - this was necessary in order to present a full data set for use under the other regimes. For comparative purposes it was necessary to "produce" these fields where possible to similar points although an economic cut-off was used. This aspect produces some inconsistencies but it is believed these are not meaningful in the broader-brush comparisons illustrated.

COMPANY NPV \$ REAL Prudhoe Bay Alaska Sensitivity to \$900 Mill Bonus



COMPANY IRR % REAL Prudhoe Bay Alaska Sensitivity to \$900 Mill Bonus



Countries and Fields Selected for Comparison

The countries selected for comparison were the United Kingdom, Norway, Indonesia and Australia. They have been chosen because they represent jurisdictions where the legislation has either led to continued industry attention, or where there have been problems in maintaining investment.

U.K.

The United Kingdom was chosen in view of the very considerable proportion of major exploration funds which continue to be spent in the North Sea. This has occurred partly as a result of the very attractive tax driven exploration policy adopted by the government, where at the margin some 83-87% of costs of exploration are borne by the government by way of tax. However, these tax concessions combined with prospects still have to be good for the industry to invest. Continuing high success ratios, albeit with smaller fields, have continued to make the United Kingdom an attractive exploration and development arena.

Norway

Norway was included in the comparison mix because of the large size of its fields and also because it had demonstrated a more aggressive approach to legislation than that of the United Kingdom. Larger and more expensive projects and long periods before development can take place have made a number of international companies recently offer for sale their interests in Norway. This has confirmed the view that Norway largely remains an arena for the long term players with requirements for large producing volumes and one where it is difficult for companies not currently involved to justify investment.

Indonesia

Indonesia was incorporated in the assessment as it has remained an attractive arena over the last 15 or more years. Offshore field sizes, of course, are small by comparison with both the North Sea and Alaska but the

production-sharing contracts and pragmatic government approach have continued to encourage investment.

Australia

The Australian Bass Straits area largely contain older fields which represent a large proportion of Australia's production. This production has been subject to special tax handling (excise tax), and new development has been plagued by stop/start industry policy as perceived returns under the then current legislation/price scenarios became more or less attractive.

Thus in general, the United Kingdom and Indonesian legislations demonstrably were situations where industry was investing and has continued to invest heavily during the recent period, while the Australian and Norwegian legislations were of a more aggressive type where industry was less able to justify continued investment.

Alaskan Fields Selected for Comparison

The four Alaskan fields selected for comparison were Prudhoe Bay, West Sak, North Star (Seal Island) and Niakuk.

Prudhoe Bay

Prudhoe Bay is a large mature oil field. It was developed in the mid 1970s, with first production in 1977. Current estimates of ultimate reserves are in excess of 11 billion barrels.

West Sak

West Sak is a relatively large higher cost oil field with estimated recoverable reserves of 633 million barrels, with first production due in 1992.

North Star (Seal)

North Star is a medium sized higher cost oil field with estimated recoverable reserves of 178 million barrels. Development expenditure is due to commence in 1997, with first production in 2000.

Niakuk

Niakuk is a smaller or relatively lower cost oil field with estimated recoverable reserves of 58 million barrels. Development expenditure is taken to start in 1990, with first production in 1994.

UNITED KINGDOM

In the United Kingdom the state owns any oil or gas in place that is discovered. The Government has the power to award licences which permit exploration or development in the areas covered by the licences.

Exploration licences entitle the holder to conduct preliminary exploration activities in the area and have recently been issued every 2 years. The exploration period is typically 6 years. A production licence entitles the holder to appraise and develop fields subject to the consent of the Department of Energy. Consent is usually obtained following the submission of a detailed development plan.

The Government take from oil and gas revenues is essentially made up of the following elements

- Government Royalties
- Petroleum Revenue Tax (PRT)
- Corporation Tax (CT)

Government Royalties - on the first to fourth Round Licences (i.e. pre 1972) royalty is payable at 12.5% on the wellhead value of the petroleum, i.e. certain costs of conveying and initial treatment are deducted from the landed value of production. On fifth and later Round Licences (i.e. post 1976) royalty is payable at 12.5% of the market value of the petroleum. On fields given development approval after April 1st 1982 there is no royalty charged. Royalty where applicable is taken in cash.

Petroleum Revenue Tax (PRT) is assessed on a field basis for six-monthly chargeable periods at 75% of the assessable net profits.

Net Profit	=	Market Value of Oil Sales
	+	tariff receipts less allowance
	+	Asset disposal receipts
	+	Conveying and treating receipts
	-	Royalty payable
	-	Allowable Field Expenditure

- Uplift
- Exploration and appraisal expenditure
- Research and development expenditure
- Cross field allowance

Allowable field expenditure essentially means any expenditure relating to the search for, production of, transportation of, treatment and storage of petroleum. Uplift is a supplementary allowance intended to compensate for the inability to offset loan interest against tax. It is set at 35% of expenditure mainly related to the appraisal and development of the field and is allowed only prior to payback. The oil allowance is currently set to 500,000 tonnes per chargeable period up to a maximum of 10 million tonnes for fields given development consent after April 1st, 1982*. Crossfield allowance gives an opportunity for 10% of the development costs of a field incurred after March 1987 outside of the Southern Basin to be offset against the PRT payment on existing U.K. production.

Corporation Tax (CT) is charged on a company basis at a rate of 35% of trading profits.

Trading Profits	=	Gross revenues
	-	Royalty
	-	PRT
	-	Operating Costs
	-	Capital allowances

Capital allowances are essentially depreciation on plant and machinery assessed at 25% of the prior year's written down balance. Most development drilling is 100% for first year. CT is payable in that year following the chargeable period.

* This means in effect that smaller fields pay little or no PRT.

NORWAY

In Norway the state participates in each licence through Statoil (the 100% state- owned oil company). The requirement for foreign companies to carry the state through the exploration and appraisal stage was removed for licences issued after January 1st, 1987. The state awards production licences which allow for an exploration period of 6 years and a production period of 30 years. Field development requires the approval of the Storting (Parliament).

The government take from oil and gas revenues consists of the following elements:

- Government Royalties
- Income tax
- Special Petroleum Tax (SPT)

Royalty - Fields receiving development approval after January 1st, 1986 are exempt from Royalty payments. Post 1972 licences have a varying rate for oil between 8% and 16% of the wellhead value depending on the rate of production. Gas and NGL are subject to a constant rate of 12.5% of the wellhead value. On new fields the royalty is zero. The market value 'norm' is fixed for each field for each calendar quarter by a board appointed by the Ministry of Energy.

Income Tax - this includes	Municipal Tax	23%
	State Tax	27.8%
	Capital Tax	0.3%

Municipal tax is levied at the rate of 23% of Profit before Tax. The State Tax is levied at the rate of 27.8% of Profit Before Tax less dividends paid. Capital Tax is paid at the rate of 0.3% of net worth. Net worth is Book Asset value less debt (excluding income tax).

Special Petroleum Tax (SPT) is assessed at a rate of 30% of profits adjusted for 'norm' price. For fields given development approval before January 1st, 1987 an annual uplift deduction from profits is allowed. The uplift is calculated as 6.666% of total assets used in oil production and pipeline transportation and lasts for a period of 15 years. For fields given development approval after January 1st, 1987,

SPT is calculated on net income exceeding a production allowance'. The production allowance is set at 15% of the value of produced petroleum based on 'norm prices'. Depreciation for both income tax and special tax is on six year straight line basis.

INDONESIA

In Indonesia the state participates in oil and gas activity through the use of Production-Sharing Contracts. The exploration period lasts for 6-8 years and should a commercial discovery be made, the contract period is extended to 30 years.

The Government take from oil and gas revenues is made up of the following elements.

- Bonus Payment
- Production-Sharing Contract (PSC)
- Income Tax

Bonus Payment - A negotiable signature bonus of several million U.S. Dollars is payable on signing the contract. In addition, production bonuses may be payable when specified rates of production are reached.

Production-Sharing Contract - the PSC allows a sliding scale government share (between 51.9 to 80.77%) dependent of the age and area of the contract and type of development. In this study the pre-tax government share is 71.1538% on new fields.

The Contractor is allowed to recover his costs from production but the maximum annual cost recovery is now limited to 80% of annual production. Allowable costs include exploration costs, capital costs depreciated on a declining balance, plus an uplift of 17% of oil field development costs and operating expenses. Any costs in excess of the annual allowable cost recovery may be carried forward for up to five years. The PSC also obliges the Contractor to supply the state with up to 25% of total field production for which it is paid the market price for the first five years of production and thereafter 10% of the export price, but of course the company then recovers all costs associated with the domestic obligation under the cost recovery program.

Income Tax - Corporation tax is charged at an effective rate of 48% of the total value of the Contractor's taxable income (35% income tax and 20% dividend tax). The depreciation rules under the post 1984 time permits some assets to be reserved at 50% declining balance, some at 25% and some at 10%.

AUSTRALIA - BASS STRAIT AREA

In Australia, offshore permits are administered by the Australian Commonwealth Government under the control of the Petroleum (Submerged Lands) Act of 1967. The permits take two forms, exploration permits which have an initial duration of 6 years with possible extension of 5 years up to a total of 26 years and production permits having an initial period of 21 years with an extension of 21 years so long as the field is commercial. The Government take for the Bass Strait area consists of

- Royalty
- Excise Tax
- Corporation Tax (CT)

Royalty - for production from an exploration permit or initial production permit royalty is levied at the rate of 10% of wellhead value. For production from an extended production permit, royalty is levied at a rate between 11% to 12.5% of wellhead value fixed by the Government.

Excise Tax - The Excise Tax is on sliding scale levy based on field oil production rates. The applicable rates are dependent on the timing of the discovery and development of the individual field. There are three categories of crude oil - old, middle and new. Applicable Excise rates are shown below:

Annual Production 000s Bbls	Excise Rate, %		
	Old oil	Middle oil	New oil
0 - 315	0	0	
315 - 629	5	0	0
629 - 1259	15	0	0
1259 - 1888	20	0	0
1888 - 2517	40	15	0
2517 - 3146	70	30	0
3146 - 3776	75	50	10
3776 - 4405	75	55	20
4405 - 5034	75	55	30
5034 +	75	55	35

Corporation Tax - CT is charged on a company basis at the rate of 39% of trading profits. Depreciation of developments costs can be either under fiscal terms for "prescribed petroleum operations", in which case the rate is currently 10 year straight line or under normal tax rates. In the latter case the rate for plant and machinery is 20% straight line basis and 33.3% for drilling plant and downhole equipment.

FINANCIAL AND OTHER ASPECTS OF OIL INDUSTRY
ACTIVITIES AND INVESTMENT

Prepared for

THE INTERNATIONAL TAX COMPARISON COMMITTEE,
THE STATE OF ALASKA

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FINANCIAL AND OTHER ASPECTS OF OIL INDUSTRY
ACTIVITIES AND INVESTMENT

Outline

Executive Summary

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A cross-country comparison

Two - Other Aspects of Oil Industry Investment:
A comparative analysis
(both across countries and within countries)

Three - Interaction of Government and Oil Industry:
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EXECUTIVE SUMMARY

This part of the study, prepared for the International Tax Comparison Committee of the State of Alaska Legislature, focusses on the financial and other dimensions of oil industry activities and investment.

An attempt is made to show that, while tax is an important factor, there are others which play a part in any investment decision-making process, in particular when a company considers entering a new area. Thus, a comparison of different petroleum fiscal regimes would not be complete without reference to these specific aspects.

Accordingly, the factors highlighted in Parts One and Two can be applied as a checklist when the superiority of one region over another is being assessed. The components of this checklist are featured in sections 1.6, 1.7, 1.8, 1.9, 2.2 and 2.3 of this part of the study. Going through the checklist, Alaska scores favourably as an investment climate.

The interaction between industry and government in the countries chosen for comparison is examined in Part Three. Here are shown cases where relationships have deteriorated to the point of exodus of industry, and situations where relationships have improved over time.

The importance of coordinated government policy is stressed in Part Four where examples are given from other countries, and the encouragement and role of independents is discussed in Part Five.

Finally, in Part Six, it is concluded that in the current climate of the oil industry there would be neither a lack of finance nor a shortage of companies willing to enter Alaska, should the opportunities present themselves. The international petroleum industry today is both cash-rich and highly acquisitive.

One - FINANCIAL ASPECTS OF OIL INDUSTRY ACTIVITIES

Preface

This part of the report is written for a wide readership including the non-expert. Those with some knowledge of the oil industry may well be familiar with some or indeed most of the points raised here. They are mainly intended to help demonstrate various facets of the industry for international comparisons.

1.1 - Introduction

Traditionally the oil industry has been characterized as one of extremes, with giants and very small players and few in between. Either a company had adequate cash flow and did not require long-term finance or it simply wasn't large enough to obtain such funding.

This pattern has changed substantially over time and today the international petroleum industry accommodates all sizes of companies. Large amounts have been raised externally in the last two decades for major capital expenditure programmes and for acquisition financing in the oil and gas sector.

The interplay of finance and the activities of the international petroleum industry are, thus, quite significant. Indeed this dimension is so vast that the comparative analyses of the countries chosen for this report could be the subject of a separate study (given the mixture of companies in operation in these regions). Nevertheless, an overview is presented here of some of the financial issues and other aspects of industry investment (discussed in Section Two below) that have direct relevance for this particular report. This should form a checklist that can be used when examining complaints from industry about the tax structure.

In short, when international comparisons are drawn, two key questions have to be the guiding principle: i) Is there ready finance available for the development of oil and gas projects in the area chosen for comparison? ii) What are the comparative advantages and limitations of sinking funds in the region?

1.2 - Sources of Finance

Finance for the development of the oil and gas industry is made available through three major sources: i) internal finance; ii) external finance through bank loans; and iii) external finance through the issue of shares (or some other instruments such as royalty units, etc.) in the case of publicly quoted companies. Further details on modes of financing are given in section 1.10 below.

1.3 - Industry Background

In the context of this particular report, it is worth pointing out some of the day to day workings of industry and its interaction with the financial world.

Companies with public ownership of shares are always interested in attracting new shareholders as well as convincing existing ones to buy more of their stock. Usually when a company gives an account of its activities to the financial community it tends to draw attention to the more positive aspects of its future prospects - highlighting information that makes investment in the company as attractive and profitable as possible. For instance, they would point out development of new fields that will enhance their oil and gas production in future years, or an increase in their exploration activities, etc.

Conversely the same company lobbying the government for tax reduction or for prevention of a tax revision would place the emphasis elsewhere. Both pieces of information are wholly accurate. They are made available to the public and are not in the least false. The question is, which statistics are highlighted at which presentation. Indeed, the legislature has to look at both sides of the story when in receipt of evidence of a loss on the basis of an ad hoc calculation for a single oil field.

Usually, for a publicly quoted company, the annual report is a good starting point to form an overview of the profitability of a subsidiary (such as one based in Alaska) and its future prospects. The size of a company's profit for each segment of its activities (in relation to the assets) provides some basis for consistency of argument.

For ultimately, if in the light of the tax revisions the subsidiary becomes unprofitable for a period of time, corporations have a responsibility to their shareholders to pull out of a loss-making operation. They either have to sell off or shut down the subsidiary. The reader should be cautioned here, though, not to interpret every sale of assets as a consequence of high taxes - for it could be the result of company rationalisation decisions. This aspect will be further discussed in section 2.1 below.

1.4 - Structure of Petroleum Industry

Oil companies are run in a decentralised manner. It tends not to matter how large or small each subsidiary unit or outfit is. The rule is that each subsidiary must stand on its own by producing a positive net return (unless the operation is set up purely as a tax vehicle). Thus, when a new subsidiary starts, ample time is given by the parent company to recover initial investment and produce a positive cash flow.

After an initial gestation period, however, an operation has to be profitable. If it continues making losses which are not caused by exogenous factors such as the sudden collapse of oil prices or a stock market crash, then the parent looks closely at the operation. Persistent losses call for a shutdown of the entire operation of the subsidiary or for submerging it under another subsidiary to reduce overheads. In particular, if the company in question is a publicly quoted company, its stockholders would require it to secure the maximum return.

In the final analysis one can ask how far can oil taxes rise before companies put their oil and gas operations up for sale, and what would be the asking price? Alternatively, a real test would be at what price would a company be willing to depart from the area and give up its entire operations.