Prevention, Response, and Oversight Five Years After the Exxon Valdez Oil Spill
Proceedings of an International Conference

March 23-25, 1994
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About the Conference Proceedings

The International Conference on Prevention, Response, and Oversight Five Years After the Exxon Valdez Oil Spill was held March 23-25, 1994 in Anchorage, Alaska. March 24th was the fifth anniversary of the spill. The conference participants looked at the many local, state, and federal changes made in the United States since 1989 to assess whether enough as been accomplished regarding oil spill prevention and response preparedness for the next spill.

The conference was sponsored by the Alaska Sea Grant Program, University of Alaska Fairbanks in cooperation with the Alaska Department of Environmental Conservation, Cook Inlet Regional Citizens’ Advisory Council, Exxon Valdez Oil Spill Trustee Council, Hazardous Substance Spill Technology Review Council, Regional Citizens’ Advisory Council of Prince William Sound, U.S. Coast Guard, and U.S. Environmental Protection Agency.

Conference planning committee members were: R.K. Dearborn, Ernest Piper, Harry Bader, Kathryn Kinneal, Lisa Parker, Walter B. Parker, H.E. “Stan” Stanley, and Rick Steiner. The conference was organized and coordinated by Brenda Baxter.
Summary

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I think there is no need for all of us to go away with a single view of this meeting. In fact, I think it's important that we not go away with a single view of this meeting because we are each playing a different role in life, and trying to make life better. I think we should take from the meeting what helps us do that.

I said at the beginning of the meeting that I thought five years ago change was needed. Some change has taken place, in fact much of it for the better. I'm a bit more optimistic at this hour than I thought I might be as we began. However, as Ernie Piper said, yesterday helped us point out to him that some of these changes are only on paper. With respect to oversight, I think it is clear there are more people spending time and energy in the area of oversight than there were five years ago. Stan Stanley pointed out that those who have the most at risk are the least likely to become complacent; but his partner, Stan Stephens, reminds us that complacency is among the greatest challenges we still face. Jerry Aspland, of all people, warned the overseers not to become part of the bureaucracy which they are overseeing.

I believe that a certain oil spill groupiness has developed, and I think it breeds some false security. When you finally win an argument with Jerry Aspland, Alyeska, or pipeline, it's not only your group that should be satisfied by the progress you may or may not have made. The public also must be kept informed and concerned to the level of electing officials who will remember that it's our mutual responsibility to use the ocean as a common property resource.

With respect to response, planning has great educational value. Even if not followed explicitly, I think it does help react. Anytime I walk out of the woods after a hunt with 90 pounds of raw meat on my back through bear country I have thought of that ahead of time. I do have a plan, I have no idea whether it's adequate, but I suspect my reactions would be better. When our plans are complete, those many plans that we've been talking
about, what will we use next to keep our minds on the issue? What will we use to take place of the 80 pounds or 90 pounds of raw meat on our back? Maybe it will be the challenge of forgetting some of our past differences on appropriate technologies for cleanup. Maybe we ought to look again at burning and bioremediation and some of these other things.

With respect to training, I think clearly we have much more active training under way now than we did five years ago. I personally do worry that the scale of that training and of that technology may not be quite up to the task.

With respect to prevention, I think Jerry Aspland is right. We need to examine our ocean transportation system, including appropriate vessel traffic systems, information systems, location systems, and control systems. I personally don't believe we have a transportation system. I think we have an inheritance. I also agree that we must examine the training, testing of personnel, their development, and their discipline. We've made some progress in the area of discipline. Drug testing does make a difference.

I think prevention ought to remain our top priority. Trying to be realistic, many people in this room have said over the last few days "oh, there will be another one." I think we must stiffen our resolve to reduce that likelihood.

I've received a number of compliments for the quality of the meeting. It has been a good meeting. I remind you to look again at the membership of the planning committee on the back of your agenda and the organizations from which those people come; remember to thank them as well. I also remind you that to have a good dinner party, all you have to do is invite the right people, you folks.

Some of you have come some distance, and Jonathan Wills, we thank you especially for the long trip. I've appreciated the help in serving up the dinner from Rick Steiner, Walt Parker, Ernie Piper, Patty Ginsburg, and Stan Stanley. We did have a good time; I had a great time. I thank you for making our small effort very much worthwhile.
Welcome

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The fact that we are here indicates that the Exxon Valdez oil spill, 15 hours short of 5 years ago, has changed each of our lives at least a little. Change was due, not just in others, but in ourselves as well. One of the burdens of living in a democratic society is that we cannot fully shift the blame to others for the rules that are made and the fervor with which they are or are not enforced. Nor can we shift the blame to others for the consequences of our failures in oversight, response, or the prevention of social disasters.

We now begin three days of examining how we as citizens are doing. Have we learned? Have we learned enough? Does our vision remain clear? By Friday I hope we can grade the results of this self-examination. Even before yesterday’s presentation of the detailed scientific statistics at the Exxon Valdez Oil Spill Trustee Council’s forum, those of us who planned this meeting, had individually and collectively concluded, regardless of the statistical body count, that oil spills are not good and ought to be prevented.

Before I go any further, I’d like to acknowledge the conference planners:

Ernie Piper, former Oil Spill Response Manager for the Alaska Department of Environmental Conservation

Harry Bader, Chair of the Citizen’s Oversight Council on Oil and Other Hazardous Substances and faculty member in Resource Management at University of Alaska Fairbanks

Kathryn Kinneer, Citizen’s Oversight Council on Oil and Other Hazardous Substances
Lisa Parker, Cook Inlet Regional Citizens' Advisory Council

Walt Parker, Chair of the Hazardous Substance Spill Technology Review Council

Stan Stanley, Prince William Sound Regional Citizens' Advisory Council

Rick Steiner, faculty member and Sea Grant Marine Advisory Program agent for the University of Alaska Fairbanks in Prince William Sound

To introduce the topic of oil spill prevention, response, and oversight we are privileged to have a man whose at-sea experience includes the command of five cutters; who during four years at U.S. Coast Guard Headquarters in Washington, DC, had responsibility for environmental response; and who presently has responsibility for all Coast Guard operations in Alaska, Admiral Roger Rufe, Commander of the Seventeenth Coast Guard District.
Introduction

RADM Roger T. Rufe, Jr.
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Welcome to this Conference on Prevention, Response, and Oversight five years after the Exxon Valdez oil spill. That spill, an event whose effects are still with us, brought unprecedented attention to the need to do a better job of protecting our environment.

Those of you attending this conference have not forgotten the 1989 spill. That's good, because we cannot afford to let ourselves regress to the false sense of security that existed in March 1989.

Was it an isolated incident, one that couldn't happen again? The answer is, obviously, no. Soon after the Exxon Valdez spill we had the American Trader and Mega Borg spills in the United States and later the Braer spill in the Shetlands and several others overseas. Unfortunately, the transportation of oil will always present the potential for spills. We need to learn from these incidents and continually improve our spill prevention. But, recognizing we will never achieve a state of zero risk, we must also continually improve our spill response capabilities. And, through oversight, we can ensure everyone's guard is up.

We can't let an Exxon Valdez type spill happen again! None of us, by ourselves, can prevent a spill of this magnitude. But, together, working cooperatively we can achieve "environmental excellence" in Alaska. We can minimize the potential for a similar spill and improve spill response efforts, should they be needed. This conference is a step in that direction and can serve as the catalyst for setting the course for the future.

A lot has happened these last five years since the Valdez spill. A $2.5 billion spill response effort was undertaken to clean Prince William Sound and other oil-impacted areas, new federal and state laws were passed, millions of dollars of spill response equipment has been bought, we've added tanker escorts and large oil spill exercises, expanded vessel traffic service (VTS) coverage, and the list goes on. Now is a good time to pause, reflect on where we were, where we are now, and where we want to go.
Where were we on March 24, 1989? At that time many of us let our guard down—the pipeline had been in operation for 14 years—approximately 8,500 laden tankers safely made the transit of Prince William Sound without spilling any oil. The Coast Guard’s marine safety program underwent major cutbacks due to its focus on the current national concerns, drug interdiction, and military readiness. The state approved Alyeska’s spill response plans but Alyeska laid up its primary spill response vessel for repairs. The master of the *Exxon Valdez*, having made the trip many times before without incident, felt this was just another routine transit and left the bridge of the vessel. This was the setting for a major catastrophe—the rest is history.

Have we learned from this? Are we better off now than in 1989? Is there still more to be done? Yes, yes, and yes!

The public screamed; our legislators listened and responded by passing rigid environmental laws—not just in Alaska, but nationally and internationally. The Oil Pollution Act of 1990 was unanimously passed by Congress. When was the last time everyone in Congress agreed on anything? This law is truly comprehensive. It addresses increased penalties and liabilities—very strong incentives for industry to improve their spill prevention efforts. It also mandates many other prevention and response measures such as double hull tankers, drug and alcohol testing, improved navigational systems, tug escorts of tankers, increased spill preparedness by both industry and the Coast Guard, development of Regional Citizens’ Advisory Councils (RCAC) in Alaska, the conduct of regular oil spill exercises, and increased pilotage requirements, to name a few.

The spill response capabilities that existed at the time of the *Exxon Valdez* oil spill were abysmal in comparison to what exists today. Recent exercises in Prince William Sound, the North Slope, and Cook Inlet show just how much more equipment and capability we can roll out now. The best in the world is here in Alaska. I observed several drills this year. The one I saw this past fall in Valdez had several hundred personnel for the state, Coast Guard, industry, other governmental agencies, and the RCAC staff in a very effective “unified command.” Hundreds more operated the fleet of response vessels, skimmers, and aircraft. It was truly impressive. In a matter of a few hours the response fleet was underway and in position to recover oil. We never accumulated such an effective on-water response capability during the entire *Exxon Valdez* spill response. The equipment simply did not exist at that time.

I’ve also seen laden tankers underway in Prince William Sound with two escort vessels alongside. We had 8,500 vessels sail through Prince William Sound without escort out of VTS range without grounding before the *Exxon Valdez* spill occurred. I can’t see how that same incident could
happen now with expanded VTS coverage and two escort vessels. But there is no such thing as zero risk; that’s part of life. Thousands die in automobile accidents every year. We’ve progressively reduced the risk through lowered speed limits, and better designed cars, seatbelts, and airbags; but people still have accidents and we still need ambulances and tow trucks.

As long as oil is transported in tankers, there will always be a risk of oil spills at sea and we aren’t that good at recovering spilled oil. The law of physics and mother nature are very tough to overcome. So our best efforts must be spent on prevention. But when spills occur, as they inevitably will, we must be prepared to respond with the largest and most complete tool box there is. We still get a lot of resistance to putting some very effective tools in our arsenal, such as in situ burning and dispersants. That’s not progressive, that narrows our options. We must work together to gain pre-approval for all possible techniques and measures to combat oil spills.

The next several days you’ll hear presentations on prevention, response, and oversight. A lot has been done to date in all of these three areas, still more is under way.

With respect to Coast Guard programs and regulations, prevention is our priority. To this end we are installing the Automatic Dependent Surveillance System in our Valdez VTS—the first in the United States. Presently we can only monitor one-third of the VTS trackline in Prince William Sound. With the Automatic Dependent Surveillance System we’ll be able to closely monitor tanker movements throughout Prince William Sound and 50 miles into the Gulf of Alaska. Escorts of tankers are now required throughout the Sound and tankers are required to comply with stringent restrictions on transits in bad weather and extended one way traffic zones in ice conditions. What remains to be done? The Prince William Sound RCAC, industry, and Coast Guard are conducting a study to evaluate the best mix of towing vessels and gear to handle a disabled tanker. When we determine the best mix, industry will procure the right equipment.

The response posture in Prince William Sound is the best in the world. The TransRec equipped barges, lightering equipment, and offshore supply vessels strategically located in Prince William Sound present a formidable response capability that is augmented with local fishing vessels. This capability was put to a surprise test for the first time in January. This unannounced drill resulted in the mobilization of three TransRec skimming task forces, two nearshore cleanup task forces, and one hatchery protection operation. Over 18,000 feet of boom was deployed and 43 fishing vessels were activated to assist. This was the first
ever unannounced major drill in Prince William Sound and it was highly successful. We need to further expand the tool box through obtaining pre-approval to use dispersants and in situ burning when appropriate. When you have a big spill you need every tool you can get your hands on; we cannot solely depend on mechanical response to do the job. The Coast Guard is bringing its law enforcement and rescue vessels and aircraft into the response arena to augment and supplement industry’s response when needed.

With respect to oversight, the two Alaska RCACs are moving ahead smartly and adding value to the process of improving environmental protection in the state. They have good ideas, a different perspective, and a genuine—right from the heart—concern for their environment. The Coast Guard has also expanded oversight of the industry by implementing a critical area inspection program which leads to more stringent hull inspections of tankers calling on Valdez.

In summary, we are all stakeholders in this business. When oil is in the water, it’s our problem. We must fight spills from a united front; the unified command helps facilitate this. The efforts presently under way by the state and industry to expand nearshore response efforts through better employment of fishing vessels is great. We have industry, the state, the Coast Guard, and fishers all working together. That’s not as unusual a lash-up as it first sounds because I believe that no one can live and work in Alaska, or even visit this great state, without becoming an environmentalist. We all want to preserve this pristine environment and with teamwork we can.

Nobody wants an oil spill. We all have different ideas on how to prevent them and how best to respond. There is no single right answer. We must work cooperatively to develop a suite of approaches. This conference will be useful only if we adopt this attitude while we are here. I challenge you all to work toward environmental excellence in Alaska through leadership, teamwork, and continuous improvement. We’ve come a long way to date and have a great base to work from. I trust you will make this a productive conference and more importantly, ensure Alaska remains this nation’s crown jewel.
Beyond Prevention

Michael F.G. Williams

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A month or so after the Exxon Valdez accident I visited many of the communities impacted by the spill. The team I was heading had just put together the new Interim Oil Spill Prevention and Response Plan for Prince William Sound, and the first vessels necessary to implement the plan were arriving in Valdez. As I was explaining the new "prevention" approach to oil spill response to the various communities, a phrase developed in my presentations that characterized this new philosophy. It was "an ounce of prevention is worth 11 million gallons." Today I want to go beyond simple prevention. I want to go beyond what we did in Valdez, beyond the establishment of what is possibly one the best oil spill prevention and response organizations in the world and help you set your sights on what we must really do to reduce the damage that will be caused by a future oil spill. That there will be another major oil spill I have no doubt.

I am reminded of a conversation I had with one of the elders from Port Graham during the early days after the spill. I had made a presentation on all of the new equipment that we were getting, and how we, the Coast Guard, and the state were giving high priority to oil spill prevention. I described the new equipment and procedures, with the two large escort tugs each capable of towing a fully laden tanker, the new pilotage requirements, the reduced transit speeds in Prince William Sound, the one-way traffic in the narrows, and no sailing in bad weather. At the end of this speech, the elder looked at me and said "And now I suppose, there will be no more spills?" I responded immediately without thinking of any repercussions. "Hell no, of course there will be spills." After what seemed an eternity of silence, he just said "I like you, you are being honest." If we are all being honest, we will all agree that there will be oil spills as long as we use oil, and therefore we must look at ways to reduce the risk of spills and to mitigate their impacts.

There are a number people who honestly believe that the answer lies in obtaining bigger and better escort vessels, new tractor tugs, and ocean-
going salvage tugs, etc., at our oil ports. I hope that by the end of my
presentation, they will realize that attempting to get the last 10% improve-
ment out of the current prevention programs is wasteful of scarce re-
sources and that there are many other areas where we must and can
improve the safety of all marine transportation. That is why today I want
to look beyond prevention.

If you went out onto the street and asked a member of the public to
list the main causes of the *Exxon Valdez* accident, I am pretty sure that at
the top of most peoples’ lists would be the statement that Joe Hazelwood
had been drinking. There is no doubt that drunken crews have caused
accidents, but the concept that a ship should be dry is a uniquely American
tradition. To suggest that Hazelwood’s drinking caused the accident, or
that banning drinking on all ships would bring a dramatic improvement to
shipping is much too simplistic an answer.

Who or what would I blame for the *Exxon Valdez* accident? Some of
those who caused the accident are sitting in this room. Look around you
and see. Your neighbor is one of the culprits, I am one also and so are you.
We all wanted cheap oil and most of us benefited from high oil company
profits, since anyone who has life insurance, or a pension, or a mutual
fund investment benefited from their profitability. The oil companies and
the shipping companies only responded to the forces of the market, which
are determined by the consumer. Today I want to show you what the
demand for cheap oil and large profits have done to the marine industry
over the past 30 years. Add to this a gigantic program of social engineer-
ing, institutional conscience, governmental cowardice, and individual
greed in an unregulated economic environment, and you will see why
standards have deteriorated during this period.

When I first went to sea in the 1950s, the majority of the ships
trading in the world belonged to the traditional maritime nations, the
United States, the United Kingdom, the U.S.S.R., Germany, Holland,
Scandinavia, and Greece. The oil companies were completely integrated,
with a large percentage of the world’s tankers owned by them, and the
majority of the private ships chartered to them. Reliability of service was
more important than the cost of an individual sector or process. Cheap oil
could and would subsidize expensive transportation if the system as a
whole produced a satisfactory financial solution. Toward the end of the
1960s new larger ships were being constructed to meet the anticipated
growth in world demand. The independent ship owners were far ahead of
the oil companies in this building program. Then suddenly, in the early
1970s this business scenario changed. Cheap oil suddenly disappeared.
OPEC emerged and the predicted demand for oil nose-dived. The marketing
and refining organizations were cut free from their producing affiliates
and had to buy their crude oil from OPEC suppliers or from brokers. The oil company shipping organizations had to compete for business against independent owners. Companies such as BP reacted quickly and reduced their fleet of owned ships from over 100 to about 40. The new high prices demanded by OPEC caused a significant downturn in the world’s demand for oil. This, plus the large building programs for VLCCs, caused an extremely large surplus of crude oil tankers on the shipping markets. The cumulative effect was that effective control of shipping passed from the hands of the traditional owners into the hands of financial speculators and brokers. Although individual countries and individual ship owners have tried to maintain standards throughout this period, they have been forced to compromise their standards and principals in order to stay in business.

There have always been accidents at sea. Most accidents don’t just happen, but are caused. They may be caused by vessel crews, by vessel management, or by vessel design. It was no use blaming the iceberg for the loss of the Titanic; it was either Captain Smith’s fault for maintaining too high a speed for the prevailing conditions, or the company management’s fault for encouraging him to go for a record-breaking performance on the maiden voyage. When the Edmund Fitzgerald went down with all hands on Lake Superior, the cause was either faulty design or too high a speed, not the storm that night. Other ships who were in close company with the ships in both of my examples, proceeded safely on their voyages.

Since the Exxon Valdez accident, and some even more significant accidents to bulk carriers that resulted in serious loss of life, the world’s maritime authorities have attempted to improve the safety of shipping. The United States has introduced new rules to reduce crew fatigue. International Maritime Organization (IMO) is attempting to set bridge watchkeeping standards. The Port of Rotterdam is about to introduce a new Green Program that will make it economically advantageous for ships with good safety and environmental standards to trade to that port. All of these efforts may well improve the standards on some ships, but when the public still demands that oil prices do not rise, it does not matter what the responsible ship owner or oil company does, because some trader will fulfill that demand for cheap oil by chartering the cheapest vessel afloat that can be accepted in the country to which it is trading. Since we now live in a world economy, it will take more than the actions of one oil company, or one ship owner, or even one country to improve the abysmal state of the world’s shipping industry.

I would like to describe to you some of the areas where improvements must be made.
The Crew Effect

Crew Size

Thirty years ago tankers had crews of about 50 men. Each four-hour watch had an officer and three sailors. At night or in poor visibility, one of the sailors kept a lookout, one steered, and one rested. The sailors' roles were rotated on the hour. Tankers that were in busy trades had an additional senior officer who managed the daily routine of the ship and was responsible for all cargo work.

The best found ships today have a crew of about 28, but some tankers are operating with crews of 18. The concept of an extra mate to deal with cargo work disappeared some years ago as crews were reduced to lower costs. Would an increase in manning levels improve safety? The obvious answer is yes. But how can a ship owner compete against Third World manned ships if his wage bill cannot be reduced through manning efficiencies? This is not just a U.S. problem, but one shared by British, German, Dutch, and Scandinavian ship owners. In other words, what we knew as the traditional ship-owning nations cannot compete in the world market unless they have highly automated ships with small crews. Larger crews would help in the prevention of oil spills, but how can this be implemented without driving the best ship owners out of business?

Crew Training

In certain countries Certificates of Competency as Master have always been available for the right price from official and unofficial sources. Training programs around the world have ranged from marginal to excellent. Some training programs that may look good on paper are not always as practical as they might be. Academicians, whose business goal is to ensure that as many students as possible come their way, claim that all officers should have at least four years of college. With all due respect to those who live in ivy covered towers, how do you teach a junior officer seamanship in a classroom, or how do you teach him to deal with a bridge emergency without being on a bridge? I believe we have gone too far in the general education of our Mercantile Marine entries, and have ignored the efficiency of the hard school of at-sea training. I am not suggesting that the four years of virtual slave labor that was the old British apprentice system should be reintroduced, but I am advocating that before an officer is in sole charge of the bridge of a large tanker or cargo ship, he should have had at least two years of seagoing experience as a junior watch keeper. You cannot get an Air Transport Pilots license without 1,500 hours flying time, no matter what your academic achievements are, and it would
be a number of additional years before you were in charge of a plane on your own. The equivalent level of practical ship knowledge is not a requirement for ship's officer qualification in many countries.

Certification

Although much has been said about ship owners reducing their costs to stay competitive in the global markets, very little has been said about governments who have neglected their responsibilities to the public in order to save money. To be certified for a U.S. license, applicants are tested by inexperienced Coast Guard officers, and by multiple choice questions. We all know that the latter were introduced because it saves money marking the answers. I personally despise them because they kill ingenuity and favor the lucky. But in the United States my main complaint is the Coast Guard examiner. When I first came to this country, the Coast Guard still had some real old seamen in their senior ranks. Men like Admiral Benket and Admiral Ray and my old friend Jack Hays were seamen first and foremost. Some of them had come into the Coast Guard from the mercantile marine and understood how a ship really works, which, by the way, is rather different from the textbook. If any of those gentlemen questioned you about your profession or your ship, you could not bluff an answer past them. Today very few even want to be in the branch of the Coast Guard that deals with merchant ships. To reach the senior ranks of the Coast Guard, you have to be an specialist, not a generalist. Would you like the young doctor who is about operate on you to have been certified as competent by an examiner who had never even seen the operation performed, but had only read about it? We must get back to professional seamen being responsible for examining officers. These examinations should not only have a written part, but a three or four hour oral test too. The oral examination should be repeated every five years, and high standards should be maintained. We must not be afraid of failing people.

This again raises the question of what is the correct level of competency that should be mandated? If one country sets very high standards, the cost of training their officers would price them out of the world market. When questions have been asked in the past about the low standards set by some countries, certain Third World countries have protested, stating that requiring similar standards for all mercantile marine officers is back door colonialism, since such regulation could effectively limit trade to the traditional maritime nations.
Ship Design and Construction

Let's now examine the construction of tankers.

During the 1970s, prior to the start-up of the pipeline, there was a lot of pressure for ships to be fitted with retro thrusters, bow thrusters, twin screws, etc. Many of these suggestions were made by people who did not have a professional background, but were genuinely concerned about ship safety. For example, many thought that bow thrusters would improve maneuverability at operating speeds, not appreciating that the laws of physics were working against the concept. In the marine industry we continue to be besieged with ideas on how to improve ship design, including a suggestion I saw just after the Exxon Valdez accident. In that case, a lady wrote to suggest that the accident would not have happened if we had reloaded the oil back into the barrels that had been used to transport the oil down the pipeline. Although she did not know it, she had hit on a problem of modern ship design that has contributed significantly to the volume of oil spills.

It has always surprised me that not one of the marine industry's critics has to my knowledge commented on the design of the modern tanker and compared it to a ship built 30 years ago. Two major changes are apparent. In 1958 I went to sea on a “super tanker.” It carried 30,000 tons of crude oil. That is not much larger than one of SEVRS oil spill response barges (ship escort and response vessels system). Ships today carry up to 500,000 tons, with 250,000 ton vessels being common throughout the world. It is easy to see why such large ships are built. They have smaller crews than a 1950s super tanker, their fuel consumption is not much greater, and most significantly, the capital cost per ton of cargo carried is considerably less. This is due to the fact that there is much less steel in the ship per ton of cargo carried. One of the reasons for this is a significant change in design philosophy. The 1950s tanker’s cargo tanks were subdivided into 30 compartments. If one tank was holed, the maximum outflow of oil would have been about 5% of the cargo. When, in the late 1960s we suddenly launched into building 250,000 ton tankers, it was concluded that the traditional design was unnecessary and an equally strong, but much more cost effective design could be built with the cargo holds being subdivided into about eight or ten cargo tanks, thus saving considerable amounts of steel. If a tank was holed with these designs, up to 12.5% of the cargo could be lost, say about 31,000 tons—a volume greater than the 1950s ships even carried. Why did we scrap all of the small ships of the 1950s and the 1960s? To reduce costs and to meet the increased demand for oil. The resulting low
transportation costs fueled the economic advances we've enjoyed since then.

I do not have time to discuss the question of ship inspections with the problems of classification societies that are more interested in their profits than removing unseaworthy ships from the seas, or of governments who register ships under their flag without even inspecting them. Nor do I have the time to discuss ship operators who put so much fear into the Master that he refuses to take a salvage tug until he is in such a desperate position his ship cannot be saved.

Is There a Solution Beyond Prevention?

If we maintain our current attitudes about oil prices, very little can be done. If we believe anyone should be allowed to trade on the high seas no matter what their qualifications, then again nothing can be done. But if we believe that the major trading blocs, that is to say the North American Free Trade Agreement (NAFTA) countries, the EEC, and Japan, should and must be allowed to set high standards that must be met before ships can enter their waters, then we may get somewhere. We must set a high standard of professionalism for ships, their management, and their crews that must be met by all who wish to trade in the world's premier markets. We must get away from setting standards that reflect the lowest common denominator even if this means restraining trade. Ships that do not meet the agreed upon high standards should be barred from trading to these major blocs. The result would be that substandard ships would soon go to the scrap yard, and unqualified seafarers would soon find themselves on the beach. Such a system would encourage excellence in ship owning, a concept that has slipped from the world stage over the past 20 years.

Conclusions

Today I have only spoken of prevention. Since the Exxon Valdez we have all recognized that it is the responsibility of every ship and every port to ensure that it has a competent, well trained oil response organization, ready to respond to any spill. We can no longer rely on amateur oil spill responders, no matter how enthusiastic they may be. We must all ensure that the demands of cost cutting do not emasculate a good organization. We saw what that did five years ago.

The benefits to the world from demanding a different design of tug or a specific type of port operation are insignificant compared to what can be achieved if the whole picture is considered. The time has come for you, the public, to demand that the major trading nations go it alone. IMO is the traditional vehicle to solve these problems, but IMO makes the United
Nations look efficient. Any answer out of IMO must by its structure be a compromise, and we have seen where that has brought us over the past 30 years. The three major trading blocs should set up a commission to draft rules to ensure that only the best found ships trade in their waters. Governments should be allowed to tax imported goods to pay for the efficient policing of the new standards. Good ship owners would benefit, poor ones would be reduced to trading with nations who do not subscribe to these new standards, I predict that over time more nations would wish to join the initial few. Direct costs of transportation would rise, but indirect costs such as insurance and environmental costs would probably fall. The burden of these extra costs would fall on us. Are we prepared to accept that burden?
Prevention

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Summary

"Too many unknowns about oil spill prevention..."? On the contrary. The experts have known for decades how to prevent the most common kinds of oil spill at sea. The technology and the human skills exist. It is the political and economic conditions for safe transport of oil and other hazardous cargoes that are still largely absent.

The problem is that responsible corporations who try to do a decent job with safe technologies are placed at a competitive disadvantage. Only national governments and international organizations can set uniform, global safety rules which allow environmentally conscious companies to compete on equal terms. That is taking a long time and the process appears to move at a speed proportional to the frequency of pollution incidents and the publicity which each spill attracts.

What is often forgotten is that state and local governments, ship charterers, and the insurance industry can make immediate, effective changes, using commercial sanctions rather than new laws to enforce higher standards. The experience of BP and Exxon's Sullom Voe oil and gas terminal in the Shetland Islands since 1979 shows how it can be done. It was a unique collaboration between citizens' representatives and the oil industry. And it worked. But Shetland's much-admired safety net had a hole in it. On 5 January 1993 the U.S.-owned tanker Braer, which had nothing to do with Sullom Voe but happened to be passing the islands on a voyage from Norway to Canada with 84,500 tons of oil, ran aground and became a total loss.

The Braer disaster points to the continuing failure of national governments and international agencies to outlaw ships with serious design flaws and technical/organizational deficiencies. The dangers (and the answers) were known as far back as the Torrey Canyon in 1967 and the Amoco Cadiz in 1978. Exxon Valdez sounded further warnings and led to a unique collaboration between the local authorities in Alaska and Shetland.
But the warnings were ignored by the British Government and the *Braer* wreck was the result.

Learned conferences can create the impression that spill prevention is a very complicated subject. In fact, the issues are extraordinarily simple. Radar surveillance, interception by helicopters, radio interrogation, and assistance or intervention by escort/salvage tugs can massively reduce the risk of tanker grounding and collisions. It can happen now. There really is a quick fix. This is a political problem, not a technical problem. And, surprisingly, the ordinary citizen can do quite a lot to make things happen.

**Discussion**

Every disaster is different. Every disaster is the same. The government immediately sets up an inquiry. It may take a year or more to report. During that time government agencies take little or no action (in public at least) to prevent the next disaster. Even if there is an obvious and technically simple solution, it is delayed. Bureaucrats and ruling politicians are paralyzed, pleading “Wait for the results of the inquiry.” When the inquiry does report, a blizzard of conferences follows. Governments eventually sanction inadequate, mostly voluntary safety schemes whose marginal benefits were apparent to all knowledgeable people years beforehand and do little to prevent further trouble.

We are often told that there are “too many unknowns about oil spill prevention . . .” In fact, the experts have known for decades how to prevent the most common kinds of oil spill at sea. One good way is to stop tankers hitting each other or the bottom. The technology and the human skills exist. Radar can give us early warning of tankers straying into no-go zones; spotter planes and helicopters can identify tankers who refuse to answer radio calls from the Coast Guard; salvage tugs can patrol danger areas and move in to offer help to ships which appear to be in trouble—in time to stop them going aground. We have known how to do all that for many years. We also know how to maintain ships properly, how to train crews, how to prevent fatigue in navigating officers, and how to ensure safe navigation.

Developing technologies such as Differential Global Positioning Systems, ship borne transponders, double hulls, and intermediate oil-tight decks will greatly improve safety in 10 years’ time, but we do not have 10 years to spare. We can and should make better use of what is there today—and be prepared to pay for it. Governments, shipowners, and oil companies may pay in the short term. In the long term the consumer and the taxpayer will pay. That is as it should be.

It is the political and economic conditions for safe transport of oil and other hazardous cargoes that are still largely absent. Most politicians
in power, worldwide, do not yet regard oil spills as a big enough problem to do anything serious about reducing the risk to a level where accidents really are accidents, rather than incidents like the Exxon Valdez and the Braer. The politicians get away with this because, so far, not enough voters think it's a serious problem either. We're working on that. And I'm glad to see that President Clinton and Congress are too.

As a result of inaction by governments like mine, responsible corporations who try to do a decent job with safe technologies are placed at a competitive disadvantage. This is glaringly obvious from a brief survey of the world tanker fleet. At least a fifth of current tonnage should be scrapped. Some ship inspectors say a quarter. But elderly, cheap ships with poor standards of maintenance, crew training, and operation are still allowed to trade. They are getting cargoes because they undercut respectable companies who run safer, more modern ships with better qualified and better paid crews.

Unrestricted market forces can only make this situation worse because they have an innate tendency to destabilize the tanker charter market, encourage opportunism, and prevent the investment that is needed to improve standards. It would not be so bad if the profits made by older, cheaper ships were used to build new tankers. But, mostly, they are not. Vessels like the Braer (by no means the worst of them) are commonly owned by short-lived, self-liquidating companies whose only object is to maximize financial return for the shareholders. As little as possible is reinvested, and then usually in another elderly ship. In the tanker market of recent years, it is hard to blame owners for following this course. They can get away with it because governments allow them to get away with it.

Only international agreements between governments can set uniform safety rules which allow environmentally conscious companies to compete on equal terms. That is taking a long time and the process appears to move at a speed proportional to the frequency of pollution incidents and the publicity which each spill attracts.

What is often forgotten is that individual state and local governments, ship charterers, and the insurance industry can make some immediate, effective changes, using commercial sanctions rather than new laws to enforce higher standards. The experience of BP, Shell, and Exxon's Sullom Voe oil and gas terminal in the Shetland Islands since 1979 shows how it can be done. It was a unique collaboration between citizens' representatives and the 30 or so oil industry partners in the terminal. And it worked.

Following a spill of 1174 tons of heavy fuel oil from an Exxon tanker at a Sullom Voe jetty in late 1978, and a spate of ballast dumping incidents in the following months, the oil companies agreed to enforce
what was then a unique safety regime. It relied heavily on implementing
existing legal standards which many other ports had been ignoring. But
there were some special local rules also. Ships bound for Sullom Voe had
to radio in their speed, course, and position when 200 miles from the pilot
station. Masters were obliged to complete a faxed safety checklist before
arrival and to sign guarantees that essential ship systems were functioning.

The deal was in place by April 1979. I have described it in detail in my book A Place in the Sun—Shetland and Oil (Mainstream, 1991). Since
1979 it has been rigorously enforced, not so much by law as by commer-
cial sanctions. If a ship breaks the rules, she can be delayed and even
refused a cargo. This is written into the contracts for uplifting parcels of
oil and gas from the Shetland terminal.

I have mentioned this at a number of conferences now and in several
books, TV documentaries and films. People nod and say “That’s interest-
ing” and move on to the next topic. I see some of you nodding. So I’ll say
it again: Commercial pressures can be used to enforce safety standards and
can produce enormous improvements very quickly. You don’t need new
international laws to do something NOW—if, that is, you really want to
do something.

The question we have to ask ourselves is: “Do the oil companies
really want to do something globally or do they think they can escape bad
publicity by taking words like ‘Exxon’ and ‘Amoco’ off the names painted
on the bows of the tankers?” Wouldn’t it have been nice, some people
might think, if that ship had just been called the Cadiz, and the other one
Valdez (or even Sea River Valdez)? And who remembers that the Braer
was carrying a cargo for Ultramar? Or that she was managed by an
American company called B&H? Or that she was registered in Liberia—a
register that is run from offices in Reston, Virginia?

The effect of the Shetland Standard, as we like to call it, has been to
set enviable safety records at Sullom Voe. It has driven away from the port
most of the substandard tonnage. But the problem has just been shifted a
little further out to sea, because those bargain basement tankers still ply
their trade elsewhere and considerable numbers of them pass the Shetland
coastline on voyages to and from oil terminals in Norway, loading buoys
in the North Sea, and terminals elsewhere in northern Europe and arctic
Russia. There are no commercial sanctions on them.

So Shetland’s much-admired safety net had a hole in it. On 5
January 1993 the U.S.-managed tanker Braer ran aground and became a
total loss on the southern tip of the islands. On that voyage from Norway
to Canada with 84,500 tons of oil she had nothing to do with Sullom Voe,
although she had called there 99 times during her career until she fell foul
of the strict safety rules in October 1992. She just happened to be passing,
exercising her right of "innocent passage" through British territorial waters. She was actually following the mid-channel route recommended for Sullom Voe tankers between Fair Isle and Shetland when she broke down and drifted 10 miles in four hours during a storm. A rescue tug arrived too late to save her. The crew had been taken off by helicopter and there was no one aboard the hulk to take a towline. And she had no "grab n' clip" towing package.

The *Braer* disaster points to the continuing failure of national governments and international agencies to outlaw ships with serious design flaws and technical or organizational deficiencies, and to institute sensible traffic control and navigation information services. The dangers (and the answers) were known as far back as the *Torrey Canyon* in 1967 and the *Amoco Cadiz* in 1978. *Exxon Valdez* sounded further warnings and led to a unique collaboration between the local government and the oil industry in Shetland. But the warnings were ignored by the British Government and the *Braer* wreck was the result.

We have just gone through another winter with not much more protection than we had when the *Braer* grounded. There are new and purely advisory "areas of avoidance" (sort of "please-don't-go zones") which are supposed to keep tankers 20 miles off the western and northern shores of the islands. But it is still legal to bring a loaded tanker within a mile of the shore on the eastern side, where some of our biggest seabird and seal colonies are to be found, to say nothing of rich fishing grounds. And the new recommendations, thanks to what the charitable amongst us call a clerical error, do not apply to tankers in ballast—which can be carrying 30,000 tons of oil-contaminated water in their tanks. Not all tankers have segregated ballast, even now.

In any case, the new areas of avoidance are unenforceable, even if they are now sanctioned by the International Maritime Organization. They are unenforceable because there is no radar cover or aerial surveillance outside the approaches to the port of Sullom Voe—a small part of our islands' 900-mile long coastline. Without surveillance we do not know if the ships are breaking the rules at night—although many of them have come close enough, since the *Braer*, for us to see them in daylight. Midwinter daylight in Shetland is six hours, if you're lucky. The Sullom Voe radar may be extended next year—but at the expense of the local council, not the government whose duty it is to guard all of the British coastline, including those parts of Shetland which lie outside our council's legal responsibility. And the extended radar will still cover only a part of the huge area of Shetland coastline at risk.

As with the *Exxon Valdez*, academic research into the effects of the *Braer* oil spill continues. Partly because we are an archipelago in the
middle of the ocean, rather than a landlocked inlet like Prince William Sound, severe weather quickly dispersed the oil. We do not have anything like the problems you experienced. Our beaches really are clean again. Mother Nature did it for free.

This is very gratifying but all the research by the scientists into the subtle, long-term effects of the Braer will not stop the next one, even if it does give us some numbers upon which to base insurance claims. Don’t talk to me about insurance claims!

Oil spill clean-up technology also continues to develop, and we hear about it at conferences like this, which have become a major industry in themselves. But as far as I can see (and I read as much of the literature as a 46 year old layman with failing eyesight can be expected to) even the best of it usually does not work very well. Conditions have to be pretty good to recover more than 10 to 15 percent of the oil. At the Braer wreck it was too stormy to launch the booms and skimmers.

Nor would a double hull have saved the Braer—safer hull designs do nothing to keep tankers off the rocks. And our rocks are so sharp and our seas so violent that a double hull would just have delayed the inevitable—maybe long enough to pump off a little of the oil but, given the weather, maybe not. The Braer was a sturdy old ship. Today there is nothing much left of her on the seabed. The biggest bits are the size of domestic freezers and conference hall doors, apart from the main engine block, the propeller—and the bows, which sit like a dunce’s cap on top of a pointed rock, their anchors still firmly held in place by the clamps which were never released to slow her drift to destruction. (Now there’s another bit of simple technology that we could have on tankers but don’t—equipment to release the anchors from the bridge by remote control when it’s too rough to send crew to the bows to work the winches—it’s been used on big container ships for quite a while now).

Those anchors remind me that learned conferences often create the impression that spill prevention is a very complicated subject. In fact, the basic issues are extraordinarily simple. Radar surveillance, interception by helicopters, radio interrogation and assistance or intervention by escort/salvage tugs can massively reduce the risk of tanker grounding and collisions. That’s the answer until we have satellite beepers on every tanker so we know where all of them are, all of the time.

Radar, aerial surveillance and tugs can happen now. There really is a quick fix. This is a political problem, not a technical problem. And, surprisingly, the ordinary citizen can do quite a lot to make things happen. Just by raising hell and continuing to raise hell. In this room there are citizens who have done just that—members of the Prince William Sound Regional Citizens Advisory Council. They have done it by bringing these
supposedly complicated matters into the public arena, hiring their own experts, and insisting that their findings are presented to the public in clear language.

You have many remarkable citizens in Alaska and I'd like to conclude by paying tribute to three of them who have been at the forefront of this revolutionary activity of making the technical intelligible and bringing the facts before the people. They are my good friends Dr. Riki Ott, Professor Rick Steiner, and Dan Lawn. Two biologists and an engineer who share a great gift of honest communication and are not ashamed to campaign. They don't hide behind scientific 'impartiality' and the jargon of the "expert." They use plain, everyday words but they base their findings on fact. They have been an inspiration, not only to concerned citizens in Alaska and the Lower 48 but also, I can assure you, in places a long way east along our shared parallel of sixty degrees north.

And let's not forget a man whom I first met with in Valdez five years ago and whom I regard as an honorary citizen of Alaska—Chuck Hamel of Alexandria, Virginia. "The Virginian" as a certain Anchorage newspaper of loving memory used to call him. I've also heard him called "The Mouth Out Front." Well, he certainly put his money where his mouth was. He did more than most to bring the causes of the Exxon Valdez disaster before the court of public opinion. His reward was to be spied upon and brought to the brink of ruin. I am glad that happier times are here again for him and his wife, Kathy. So, thank you, Chuck, and thank you all for listening to me today.
Oversight

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I want to thank University of Alaska Sea Grant once again for putting together such a fine program. I know it has been hard work. We from RCAC really appreciate the work they put into putting this together.

As president of the Regional Citizens' Advisory Council I would like to recognize a number of people who are concerned, not only about the environment but also about the movement of oil. I think it is important that they be recognized for the amount of hard work they put in, especially over the last five years.

Alaska's Conservation Foundation held a public forum this week where the Celia Hunter and Olaus Murie awards were presented. One award was given to Riki Ott, a scientist and resident of Cordova, for her exemplary volunteer service to the environmental movement in Alaska. Riki Ott probably couldn't be a member of RCAC because Riki Ott, no matter what is going on, is going to speak her mind. And I think that has been very healthy for the rest of us. She was there when we needed her to give an opinion, and I think the award she received last night was well deserved. But just think, when it comes to Riki Ott, Exxon probably has to have five extra lawyers and 20 extra staff just to keep up with her. I think she does a great job for the state of Alaska.

Rick Steiner is another person who has always been there. He may be the quiet one, but he has always been there for us, the environmental community. He's always gotten the job done for us without raising a flag; he's been behind the scenes. He's constantly working to make things better and he's very concerned about what happened to PWS and what is going on out there now. Not just with the oil industry, but with the rest of us too: the lumbering, the pollution that you and I cause. He's really concerned about these things. He received the Olaus Murie award which I also think was well deserved.

Then there is Patty Ginsberg who made a statement about me just a minute ago. I'll tell you a little story about how I used to be and how I want to be again. I used to be one of the biggest backers of Alyeska that
they ever had. I used to take people by the terminal and I had nothing but
good to say about Alyeska, and what was going on. Even today, I move
some 25,000 people past the terminal between my three boats and we say
only good, positive things. But along about 1984, through the help of a
very dedicated individual, I started to realize we had problems with
Alyeska. I was starting to fall off a little bit from being the extreme backer
that I had been, and I was invited by Alyeska both to Anchorage and the
terminal. One of the things that really stands out in my mind was that
when I went to the terminal, everywhere I went, everywhere I looked, (and
I didn’t have the knowledge and the skills to know which way it was
which) I was told how hard and difficult Dan Lawn was for Alyeska to get
along with. I want you to know that was in 1984, five years before the oil
spill. I was able to look at some these things. I was able to get some of the
material that was sent to the state of Alaska warning the Department of
Environmental Conservation (DEC) that they had problems at the termi-
nal, that things needed to be done, that things needed to be corrected, but
they never were. The state never listened to Dan. And what happened? We
weren’t prepared. But worse than that, was what happened later.

Dan worked very hard at the oil spill. I met him the first morning as
he came back from coming off the tanker during the night and I was
heading to get my boats ready. I could see the concern in his face, the
hollowness in his face. Believe me, after you have spent your life, or a
good part of it, doing something which all of a sudden has a problem and
that problem hits you, who do you blame? You blame yourself. You blame
yourself for not doing more. But what did it get him? A cowardly act by
the state of Alaska that reduced his job position because he had done the
right thing, and they didn’t want to stand up to the oil companies. I think
we all owe Dan a great deal. Through the last five years he has stood in
there, he’s been behind us, and done a great deal of good for the environ-
mental movement and also for the movement of oil; he’s been very
balanced. He understands what the industry is all about; he’s just very hard
and honest and straightforward, and neither industry nor the state of
Alaska could take that. We have to change; that can’t continue. We have to
be able to speak out and without losing a position because of it.

I want to talk very briefly about another individual who is close to
us. He gave a couple of talks here, but he also does a great deal on the
Shetlands trying to make things right. He’s kind of a loner on an area that
needs someone like him to speak out and I’m glad Jonathan Wills is here.
Jonathan, we have a great appreciation for you.

The next two people I want to talk about, I have a great deal of
appreciation for, but I also have a many differences with. One of them is
Jerry Aspland. I have a great appreciation for Jerry Aspland. I’m going to
tell you a story I learned a while back. A pilot came to me and we were talking about wind conditions. He said he refused to bring a tanker contracted to BP, chartered to BP, because of the high winds. He said the captain of the vessel backed him up. The captain of the vessel refused to bring that vessel in during those winds. BP called Jerry Aspland and Jerry Aspland told BP that if his captain said that the vessel shouldn’t come in, it was not coming in. I think that speaks well for Jerry Aspland. I’m not sure how well it speaks for BP (because we can’t have that kind of pressure which implies that we have to move oil no matter what). Jerry Aspland understood that. I am concerned though about what has been said here by Jerry, and I think if I am going to talk, maybe I should talk a bit about myself to put it into perspective.

A couple of years ago, someone from ARCO said I was kind of a loose canon and very difficult to work with. And I think that probably fits me. I’ve had to learn to adjust. I now think that for the RCAC system to work, we have to work as a unit. We can’t work separately. I am going to try to stay within that range, but I don’t know when I am going to speak. Jerry is a little bit the same way. I think if I were to say anything to Jerry now, it would be, “Jerry, be careful you are not a loose canon because we can’t have a loose canon in another oil spill.” We saw how Exxon was. No one would listen to Exxon, though they knew what they wanted to do, they knew their direction. So we need to make sure that we work with an IC assistant. I think we do have problems with too many contingency plans, too much paperwork. I agree totally with that. But I think Jerry Aspland’s showing up here is a great thing and I have a great deal of respect for that and I think we all learned a lot from him.

There is one other individual that I would like to talk about but we haven’t heard much from him, he is sometimes on the quiet side. I also have many differences with him, he’s Roger Gale from BP. I started to know Roger back in the late 1970s-early 1980s when he worked for SOHIO. Roger was involved in figuring out whether the icebergs were going to be a safety hazard to the terminal. We had actually put a piece of equipment with infrared on one of my vessels, and we tried to see where the icebergs were. We took one of our vessels out and had one of the tankers come in so we could see whether the tanker could locate that iceberg, and whether the radar could pick it up or not. He’s done a great deal to try to make things safer. I have again a lot of differences with him. When one of his charter vessels hit a piece of ice, he immediately tried to solve that problem by having ice escorts, and he probably knew if he hadn’t we’d probably have put some pressure on to see it happened; but he reacted right away. I think there are people out there like Jerry Aspland and Roger Gale who in their own way are trying to do the right thing. And
they are under very tough operating conditions with the pressure these men have to operate under.

Another individual I have had differences with, whom I think hasn’t known exactly how to take me, but about whom I want to say something is Gary Bader from Alyeska. Gary has had to work with the opinionated individuals of RCAC, and he’s had to be the intertie between the two working with both Alyeska and RCAC. Believe me, that is not an easy job. And Gary, I think you do a great job and I have great appreciation for you.

In RCAC there are a couple people I want to mention. Joe Banta gets his regular pay but let me tell you, he also puts in as many hours as any other volunteer on his own to make sure that things go right. Along with Joe Banta is Joe Bridgeman from TOEM.

Stan Stanley, who is executive director, is one of the best things that ever happened to RCAC. The staff like him and he does a great job. He was voted in unanimously at our last meeting. No one had anything negative to say about Stan. He speaks out when he needs to speak out. But yet he keeps the rest of us in line. He does a good job.

I haven’t anything good to say about the legislators. I think it’s really too bad that at this point we have a legislature willing to back the oil industry in a tax cut instead of backing the citizens of Alaska. And I think if any of you have a chance, you should make that very clear to your legislators. I think the cutting and gutting of the 470 Fund is moving back, way back. And I think we need to take a look at it the next time we have an election and see if we can get people who represent us, not only the oil industry. We are an oil state, there is no doubt about it, but we can’t do anything about it if we don’t have a strong legislature when there are 40-50 lobbyists walking the halls in the state of Alaska. How can we as citizens overcome that? So we need to have strong legislators, and when you vote next time, vote for somebody who can at least balance the Alaska Legislature because oil is very important to the state, but so are the citizens and the rest of our industries.

This is the last comment before I start my speech. I can’t say enough for the Coast Guard and I don’t know if all of you realize under how constrained a budget these people have to work. These are some very dedicated people that put in many long hours, well over the eight hour day, trying to get the job done within a very reduced budget. We need to go to our congressmen to say if we are going to have safety in the water, we need a Coast Guard that has funding to back them up so that they can protect us. Right now funding is being cut and that’s going to affect the oversight by the Coast Guard that we need on the water. There are a very dedicated bunch of people in the Coast Guard and they risk their lives for
the fisherman of Alaska and there is very little return for them. Those are the people I wanted to mention before I start my talk.

I was asked to cover several topics at this luncheon, including citizen involvement, holding regulatory agencies accountable, and how oversight has improved since 1989, which I alluded to yesterday. Also, I am to give my views looking ahead 20 years from now, to a situation which might be a dream, but should be a reality.

Prince William Sound Regional Citizens’ Advisory Council (RCAC) has a contract with Alyeska that pre-dates the Oil Pollution Act of 1990 (OPA 90), but the similarities are not coincidental. Many of the people involved in the establishment of the RCAC had promoted citizen involvement provisions in the Federal law, also. Between the two, RCAC has a heavy load to carry in giving advice and recommendations.

Earlier I gave a talk on the changes since the Exxon Valdez oil spill. The Council also has produced a booklet called Then and Now. Another pamphlet which could help update you on our involvement is our report 1993, A Year in Review.

Since 1989, there is more openness in communication, sharing of ideas, participation in working groups, and listening on the side of the regulators, Alyeska, DEC, the Coast Guard, and now of citizens.

More and more, the citizens have had a chance to be part of the regulatory process. Both DEC and EPA keep us informed of their progress in air and water issues. We work with and offer advice to the Coast Guard. We also have a full-time person working with the Coast Guard on OPA 90 issues in Washington D.C.

Our working relationship with Alyeska has greatly improved, as both parties strive to open up communications. Independence is important to RCAC, as is being fair to all parties. Alyeska respects and realizes the importance of our need for independence.

What is citizen involvement and how well has Prince William Sound RCAC worked since the 1989 oil spill? When RCAC started it was as a newborn without parents to guide its future. The baby was also very emotional, mad, and hurt.

Citizens who represented this new formation had to lay a foundation for something almost never done before. The group had very little trust for the oil industry and had a long and bumpy road ahead. Also, I don’t think at the time the industry as a whole had any desire for oversight.

RCAC would never have been formed except for the vision of the dedicated individuals from the oiled communities, and the willingness and cooperation of Jim Hermiller, the president of Alyeska. This has been a completely new experience for everyone, from those who have been
involved from the beginning to those who have recently jumped on board. We think that through trials and tribulations, RCAC is now close to working the way the original founders envisioned it should work.

Alyeska and the regulators are still learning to work with us. And we are still learning to work with them. But I think that everyone has accepted the citizens' input as part of the process.

You have to ask the question, "What makes citizens put in so much time and energy to make these Regional Citizens' Advisory Councils work?"

In Eric Naider's book, *Tankers Full of Trouble*, he ends with three sentences that strike to the heart of the reason for citizen involvement. He says, in talking about tankers, "The difference between an uneventful trip and a disaster is attitude. Our real enemy isn't the elements or anything like that. It is complacency, indifference, and arrogance."

This statement really fits the period of time before the Exxon Valdez disaster, the disaster itself, and the months that followed. It fits the Braer disaster in the Shetlands. Our real enemies are complacency, indifference, and arrogance. This is why citizens have to be involved. This is why the grand experiment of RCAC must work. No industry, under any circumstances, has the right to destroy the environment or other industries for monetary gain.

One thing that Eric Naider's book left out in his last statement is that greed for its own sake is what leads to complacency, indifference, and arrogance.

This is where citizen involvement is good for both industry and the people. Offering advice and reminding industry of their environmental responsibilities will help keep us all in tune and on top of problems before they become an actuality. This is the driving force for the citizens who give from 5 to 40 hours a week of free, volunteer time. They want a future that has clean air and water, and to restore their land as closely as possible to its original state.

Citizens also think industry needs to survive, for they realize they are some of the heaviest users of oil. We demand big cars, RVs, boats, heated homes, and electricity. We expect industry to meet these high demands but we are critical when they move oil in unsafe conditions. So it is not just greed on the part of the industry, but greed on the part of the consumer.

Let me leave this subject for a minute and talk about myself; why I am involved with RCAC.

I will take you back to 1961, my first introduction to Prince William Sound. I just never could have believed that a fairyland like this existed if I had not experienced it. My relationship with Prince William Sound became an instant love affair that lasts to this day.
I'll never forget my first trip back into Port Fidalgo; every turn, every mile, I encountered scenery and wildlife I never dreamed possible. Birds of every kind wherever my eyes rested. Porpoise were so plentiful you couldn't travel on the water without them for companions. There were whales feeding on the unspoiled bounty of the Sound. And every few miles a bear was walking the beaches, feeding from the rich ecosystem. I remember brown bear trails as wide as a sidewalk and a foot deep. I couldn't step into the woods without smelling them. There were goats on every mountain and the streams were full of fish. Creek fishing was great for Dolly Varden and cutthroat trout. Silver salmon used to be so plentiful, I didn't have to fish them—they seemed to jump into the boat.

If I have seen changes, what about those whose heritage goes back long before we have records. These people totally lived from the Sound and survived and enjoyed a special way of life. It was a way of life only those who are part of that heritage can understand. They have survived winds and rains, storms and hurricanes, and earthquakes. It is the intrusion by white man that has changed their way of life.

I'll never forget the comment made by a father from New Chenega, a village recently built to replace the one lost 30 years ago this week because of a major quake. He was worried about his son, because he wasn't going to be able carry on the hunting traditions that he himself had known, to teach those traditions and let his son experience them. The oil spill was the last straw in destroying a life style. As he explained this, tears came to his eyes and he stopped the conversation so he could regain his composure. How do we restore this way of life that has been here for hundreds of years? I do not think it is an exaggeration to say that I believe the Sound can be restored. But we must stop abusing it!!!

It is not just earthquakes and oil spills that have hurt this area, but a total disregard for tomorrow by all of us. We are all to blame. The number of seals is depleted. Sea lions are endangered. You hardly see porpoise any more, or the whales. It is hard to find a goat on the mountains. The birds are fewer, and the wild stock salmon are nearly gone. Some of the fishing creeks, as in Irish Cove, are now mud streams from improper clear cutting at Two Moon Bay. Yes, we have carelessly overdone the harvesting of trees. We have overfished some of our waters. We have overharvested with hunting of wild game animals. We cannot control earthquakes, but we can control man-made problems. It is not just the oil companies that have damaged the Sound. We all have.

We surely cannot handle another oil spill. That is why citizen involvement must work! Citizens promoting environmentally safe operation of the Alyeska terminal and associated tankers is what RCAC is all about. This is why citizens of Chenega, Tatitlek, Cordova, Valdez,
Whittier, Seward, Homer, Seldovia, Kodiak, and other communities are giving their all to prevent another spill through RCAC.

Again I wish to say that I think RCAC, Alyeska, and the different regulators have come a long way. I also think it is fair to say that industry is only going to do that which they are required to do. The motive of private enterprise is profit. Free enterprise built this country, either for good or bad, depending on your perspective. Regulators were created by government to protect the citizens, not industry. It has tended though to work for the latter, at least in Alaska.

The oil industry is the economic backbone of this country, and also the main political force. You vote for your state and federal legislators, persuaded by a strong public relations media program to win your vote. Your single vote, for most of you, is the extent of your political involvement. That is where it ends. The oil industry spends millions, perhaps billions, of dollars controlling the political process. If you doubt this, spend a day walking the halls in Juneau. Look how many bills are before the Legislature that are there only because of oil lobbyists' hard work.

It is difficult for citizens to keep up with paid lobbyists, but we, the RCAC, try to on bills which directly affect us.

When you see an RCAC ad in the paper describing a bill and asking for help, it is a signal the citizens are losing once again. Remember, our real enemies are not the elements or industry. They are complacency, indifference, and arrogance, and outright greed. Cut the 470-Fund so we can give the oil industry a tax break, why? Change the way we deal with offshore drilling in bill 308 so citizens lose their input, why? It is more than industry that needs citizen oversight. It is also our state and federal legislators who sometimes forget whom they represent.

I think it is fair to say that because RCAC's oversight has improved, we have held regulatory agencies accountable for their actions. That's not to say that we always win, but the citizens' perspective is being heard.

There is still much that needs to be done to make moving oil safer. It is fair to say that we are closer than we have ever been in putting in place safeguards that are needed to make this a reality. Prevention is where our efforts should be. Once oil is spilled, the chance of a successful cleanup is very small. Better designed navigational systems and communication are almost a reality. Technology exists today which could nearly eliminate water and air contamination. The world is now using tractor tugs because of their advanced engineering and mobility, but we still reject them here. Improved weather reporting technology is available. Congress needs to be convinced to spend the money so we can use this tool to help prevent another spill. The tanker fleet must be upgraded with new technology.

I was asked to give my views looking ahead 20 years from now.
• I see the Valdez Marine Terminal as the safest, environmentally cleanest in the world. I see 90% of the tanker vapors captured and turned back into product.

• I see double hull tankers built to withstand the heavy seas of the Gulf of Alaska, carrying segregated ballast so that we no longer have any dirty ballast.

• I see a satellite traffic system for use with all vessels, so refined and so accurate that it is nearly impossible to have a navigation accident.

• I see the most modern technology in escort tugs being used.

• I see full weather reporting instrumentation throughout the Sound, and established weather restrictions enforced.

• I see most of the human factors solved so that overwork and fatigue are no longer problems.

• I see constant updates on new oil recovery equipment that will recover oil in high winds and 10 foot seas.

• I see true science, honest science, producing the one scientific answer for all, not suggested science for a price.

• I see 20 years without an oil spill.

• I see citizens and the oil industry working hand in hand to insure a healthy oil industry and a clean environment.

One last thing. Everything I just mentioned will cost money. There is a glut of oil on the market. It will get worse when Iran, Iraq, China, and Russia all start back into full production. Alaska might have a lot of oil, but it might cost too much to remove and still remain competitive. Production could slow way down.

If we move 700,000 barrels instead of 1.7 million, has the threat of a spill changed? No. As long as we are moving oil, we have a threat.

Can the oil companies afford technology to protect the environment? Yes, they can!!!

So far, according to Richard Fineberg's report, Hidden Billions, The TAPS DR&R Provisions, the profit to the oil industry's stockholders at today's inflation rate has been over $80 billion after taxes.
Plus, by the year 2015, they will have removed some $22 billion for restoration, which probably would only need $2 billion, at today's rate. If they were not to make another penny, they have already made profit enough to protect the environment.

The future depends on open communication, citizens working together with the oil industry, with a positive attitude, so that complacency, indifference, and arrogance do not once again set in.

Most important, the industry must be willing to spend profits for technology to protect the environment, so when the oil runs out, Alaska will be restored to the same undefiled condition that existed before oil.
Prevention Discussion

Moderator, Rick Steiner  
*Marine Advisory Agent*  
*Alaska Marine Advisory Program, University of Alaska Fairbanks*  
*P.O. Box 830, Cordova, AK 99574*

R. STEINER: This session is intended to be an open discussion between the audience and the presenters in the prevention session: G. Stock, J. Lee, J. Wills, J. Sikora, and J. Regg, with two additions, Capt. Jerry Aspland and Mr. Walt Parker.

Questions can be directed to the entire panel or to individuals on the panel.

I think prevention is without question the most important element of this conference. First, after the hundreds of millions of dollars that have been spent on damage assessment for *Exxon Valdez*, we find that oil, fish, water, and wildlife do not mix. That sounds trivial, but we knew that before, we know that now. Oil is harmful. Second, we generally cannot fix the harm that oil does in the marine environment, and third, once you've spilled it, seldom can you recover or contain more than 10% of it. There's a threshold phenomenon beyond which it probably wouldn't lessen the amount of biological damage any more than if you recovered none. So prevention is where it's at.

It's interesting that in putting this conference together we put out a call for papers and got flooded with papers on response and oversight. We also had good response for prevention, but there are many fewer discussions today than there will be tomorrow on response and the next day on oversight. I think to some extent that's symptomatic of the problem. We're much more prone to reacting after the bomb's gone off than preventing the bomb from going off in the first place. That's what this discussion should be all about. Any questions on oil spill prevention?

J. GRIKIS: A university is typically a major asset for research programs. Aside from the program that you're currently involved with at the University of Alaska, can you talk a little bit about any applied spill prevention programs that the university might be investigating?
R. STEINER: As far as I know there are none.

J. GRIKIS: Are there any efforts to develop those types of programs?

R. STEINER: Your question’s very well taken. I think it’s indicative of the sorry state of affairs that we’ve gotten into with focusing on damage assessment rather than on preventing these things from happening in the first place. We have long since passed the stage where we’ve learned anything about oil and marine life; we know it’s harmful. But for some reason, the lack of creativity among a number of scientists in every university that I know of points them to doing research that they’re used to doing. A lot of people I see use oil spills as an excuse to do projects they’ve always wanted to do, and we’re all human, we’re all prone to doing things like that, but I think your point is very well taken. Not only should the University of Alaska get involved in prevention and response research, but I think every coastal university has a responsibility to do that.

The Oil Spill Recovery Institute mandated by Congress in OPA 90 to be administered by NOAA through the Prince William Sound Science Center is established to do that. They were authorized but not appropriated. Part of their mission is to do research specifically on spill prevention and response technologies, but they have not yet been able to actually start anything.

M. O’LEARY: Jonathan, my question is for you. If I heard you right, you said that the tankers going into the terminal had a 50 knot wind restriction, is that correct? And the tankers exiting had a 30 knot restriction?

J. WILLS: No, Michelle, it’s the other way around. The wind speed restriction for inbound tankers in some directions of wind is 30 knots. That’s because of calculations of the windage on the side of the ship. When a tanker’s fully laden you can actually sail it in quite strong winds because most of the forces acting on the ship are below the water, they’re not affected by the wind.

M. O’LEARY: We recently had a tanker come into Prince William Sound in winds over 30 knots; they were actually in the 45 to 50 knot category. One of the issues that came up was the force of the wind on an unladen tanker versus a laden tanker. So if I am to understand you correctly, the Shetland Island Council feels that there’s a greater risk to an unladen tanker because of the windage?

J. WILLS: There’s a greater risk of losing control of an unladen tanker. Our requirement is that the ship must be 35% in ballast or she’s not
allowed in. That’s so that you keep the screws submerged and keep steerage way on the vessel. But it’s been recognized in a number of incidents that in high winds you can lose a big tanker. So it’s usually 35 knots. Our channel’s a long avenue that the ship comes down. If the wind is on the beam, then the windage effect is going to be worse, if it’s a headwind, it’s not so serious, and we have four tugs available for every berthing and every sailing. If you need them, the tugs can be there alongside. Because two of them are always tractor tugs, they can push sideways alongside a ship, and they make them fast to the ship as they come in. So it’s possible to control it very precisely. We have a system of leading lights and bearings and very close radar control as well so you can see what’s going on the whole time. But sailing tankers, 50 knots is normal. The port closes over a certain wind speed, I think it’s been reduced recently to 45 knots in certain directions.

One of the worst things that happened to us was with a nearly fully laden tanker, the Chevron North America. She’s one of the biggest ships we’ve ever had in; we get much bigger tankers than you do. A hurricane swung her around about 40 points and blew her off the berth, taking the bow line, the stern line, the spring line, and the loading arms. This was a very expensive and messy business. But she was saved by having the tugs always up and running, ready to roll. After that the wind limits were changed in certain directions. That’s how you learn to do things right; by making mistakes and preventing the ship going ashore.

M. O’LEARY: Hopefully we can learn from what you’ve experienced to bring our ships in through Valdez Narrows and having the four tugs tight alongside.

J. WILLS: The tractor tugs are there by agreement with BP, Exxon, and Shell and all the other partners in the oil terminal. The tugs are owned by a company which the local borough council has 50% share in, and the other 50% is with commercial tug companies. But the contract to provide towage is with the terminal. BP has just agreed to renew the contract, and on that basis new, bigger tractor tugs are being built. BP and Exxon certainly accept the concept of the tractor tug as the ideal tug for our conditions.

J. ASPLAND: I’d like to make a couple of comments to the question. First, there should be general guidelines for every port regarding when to operate and when not to operate, i.e., high winds, low winds, and sea conditions. The comment is correct that in windy environments there actually are worse conditions for unloaded tankers than for loaded tankers.
One thing we have to get better at is using the weather to our advantage. I think that we need to think about that across the United States and other places. In other words, it would be better to bring a ship in over the limit if the wind’s straight ahead than it might be to bring it in with a 20 knot beam wind, because the conditions change. So if we’re going to devise some guidelines and rules, we have to remember to consider their affect.

I’d like to give you my perspective on the tractor tugs. I think we at ARCO and Foss have probably done more than anyone in the world to understand what it is tractor tugs can and cannot do. It’s true that we have a contract for a tractor tug and the boat is on station; it is called the Lindsay Foss. She has 7900 horsepower and she’s over 150 feet long. We did this because in the Rosario Straits we run at 9 and 10 knots, which is a heck of a lot faster than anywhere else.

We, at ARCO decided that we wanted to be sure that we had a piece of equipment that in fact could help us in that situation. Our two organizations did a tremendous study which cost us almost $700,000. After the study we had to decide what we were going to do. We considered large tractor conversion, all kinds of different tractor tugs, cycloidal propulsion, Z drive propulsion, and other kinds of propulsion. The propulsion is a key point in what you want a tractor tug to do, because each one operates differently.

We decided all we wanted this boat to do was to be an escort. It wasn’t to be a oil spill boat, it wasn’t to be a docking boat, and it wasn’t to be a firefighting boat. The result is that we built the Lindsay Foss. The only change we made was to have firefighting capability, probably the largest firefighting unit in the world, and she can dock.

The Lindsay Foss is now in the process of training with the pilots, with the tugboat captains, and with our own people. We had to modify the sterns of the ships so that we could use this piece of equipment. The reason we have the equipment there is because in those circumstances at Rosario Straits going somewhere between 9 and 11 knots we wanted to have a piece of equipment that in fact could help us.

Tractor tugs do not work in all places; sometimes they get in their own way. The application has to be right for tractor tugs.

E. NALDER: I’d like to ask Jerry a question. First, why do you want to run 9 to 11 knots in Rosario Strait? And second why don’t you do the same thing with tractor tugs up in these waters?

J. ASPLAND: First question. We run 9 to 10 knots because the currents and the wind are such that we can’t go any slower because we can’t keep
steerage that way. The reason we slowed down is a pilot in the Puget Sound was at the simulator doing some work and said, "we’re going too fast," and that slowed us down. And that also led to development of the tractor tug.

Quite frankly, I believe if we’re going to go 6 knots or less through the Valdez Narrows it is not necessary to have a tractor tug because we’re at a speed where conventional tugs can do the work. We can argue this for days because I know some in the audience have a whole different view. But at this point in time, we do not advocate tractor tugs going that slow.

E. NALDER: As a follow-up, what about the 10 knots out on Prince William Sound, then?

J. ASPLAND: I think 10 knots on Prince William Sound is too slow; we ought to get out of there. This is because escorts can’t keep up. I think we’re kidding ourselves when we delay ships’ passage through wide open waters.

E. NALDER: Would a tractor be appropriate out in Prince William Sound as an escort?

J. ASPLAND: I say no.

E. NALDER: Jim Atkinson, the ex-Coast Guard captain who did the study in the early 1970s, used your vessel the ARCO Fairbanks as a test. He said then that there ought to be tractors here.

J. ASPLAND: At that time there were no tractor tugs big enough to do the job.

J. WILLS: I had the great pleasure to be on board the Lindsay Foss in Anacortes on Sunday afternoon, and she’s a magnificent vessel. I think it’s ideal for escorting when you’re just approaching or in the harbor. I hope to take a trip on her in rough weather, because it was certainly rough outside on Sunday afternoon but that part of the deal fell through, so I can’t say what it’s like as an escort boat. It’s certainly highly maneuverable. In fact, at one point I suggested they should have an annual championship. You know, like these hydraulic diggers; they have formation dancing teams of them; it’s a big thing in Britain. I think you could have formation dancing with tractor tugs, they’re so nimble.

We have slightly smaller vessels as harbor tugs, and we find them ideal, very maneuverable. Our big issue at present is getting escorts like the Prince William Sound escorts, but a few other councilors and I would
like our escorts also to be able to act as ocean-going salvage tugs, because we are out in the middle of the ocean, not an inland sea. I have some doubts still whether a tractor tug is ideal for that ocean-going escort and salvage role. I may be wrong, I just haven’t seen it proved yet. So perhaps the stern drive conventional twin-screw tug is the right one for that. But I’m sold on tractor tugs in the approaches to harbors, and I can’t honestly see how the Valdez Narrows scenario is any different from the opening to Sullom Voe. If anything, it’s more hazardous. I would’ve thought a tractor tug is the ideal tug to have there; and have two of them, one forward, one aft, made fast to your incoming and outgoing tanker.

J. ASPLAND: I have two points. First, Jon I think I have the same kind of doubts about how one of those big boats will work in the open sea. I would caution you about one thing. If you take a platform as big as a tugboat and put too many different features into it, you sacrifice the primary purpose. That’s why we were very careful on the Lindsay Foss not to sacrifice her ability to escort. If you’re going to use the tugs you have to go to sea for salvaging I think you’ll compromise so much that you’ll end up with nothing. Second, two big surprises to us were the amount of training necessary for the tractor tug operators, and that the pilots have to learn how to use them correctly, and they have to be willing to use them. The key to the whole issue is how quickly can the boat get hooked up and begin to pull full force from the time you tell it go. We’re not talking about minutes, we’re talking about seconds. It is very critical how fast you can hook up. We’re very proud of what we have so far, both vessels going in the same direction and the tug boat turning around to come and pick up the tanker. The little boats can do it in a minute and a half, and that’s picking up the line and pulling full. The best the big boats have done at this time is about two and a half minutes.

S. STEPHENS: We can sit here today and say we’re not going to take laden tankers out when the winds are 40 knots, but that’s really not the case. If the West Coast oil is shut down and we have four or five days where the line is shut down, they’re going to move oil. The decision is not going to come from the oil companies, it’s going to come from political power somewhere else. So the 5 or 6 knot speed that we’re going to travel at through the Narrows is no longer valid because if you’re going to move it in 55 or 60 knots, you’d better be doing 8 knots or better in order to get through the Narrows. The conventional tugs we have now don’t meet the requirements we need in order to be able to handle a tanker under those conditions, at least not with the computer modeling I saw. I want to be very careful that we don’t take a chance with Prince William Sound
because of economics, and that we take a good look at what the most extreme condition is going to be.

My question is, do you feel that you can avoid moving a laden tanker under any conditions if the winds are above 40 knots?

J. ASPLAND: Everything is always possible. I can’t sit here and say to everyone that that won’t happen. I think all of us at one time in our careers have been in a situation where we promised we wouldn’t do something and somewhere along the line the circumstances changed so that it occurs. I notice on the slide today that the David Taylor Basin is guaranteeing that if we put on double hulls we’re not going to have spills on small tankers. I really want to ask that gentleman if he will guarantee that, and if we have a spill will the government pay for it?

Stan, I think your question is very good. I struggle with that question in all kinds of operations every day as I’m sure you do in your business. No one could say you wouldn’t take a ship out in over 40 knots, regardless of the circumstances. I don’t believe you can take a look at every circumstance that occurs because economically you can’t afford it. There’s some risk in everything we do.

E. NALDER: I’d have to look at the logbook again for the exact number, but when we came out on the ARCO Anchorage in January of 1992 the winds were really screaming. Two more escort vessels were added to our little parade on our way out of Valdez Harbor and through the Narrows.

J. WILLS: Jerry has a point, it does depend very much on the conditions. And one of those conditions is the number, type, and capability of the tugs that are available. You can move a ship in 60 knots if you’ve got the right tugs there. But there is a definite cut-off point at Sullom Voe where you stop operating. One reason we can do that is we’ve got plenty of storage space. As an outsider, I think most of the problems at Valdez arise from the fact that that terminal does not have sufficient storage capacity. It would cost a lot less to put in some more storage capacity than to pay for some of the very expensive other safety measures that may be needed.

S. STEPHENS: If we can’t say for sure that we’re not going to move a tanker at 40 or 50 knots because we need to, it’s not going to be safe to take it through the Narrows at 5 or 6 knots. So if we’re going to take it through at 8 or 10 knots, we’d better have the same equipment available that works in Puget Sound which might work in the Narrows.

E. NALDER: Yes, and what Jerry said is probably true. I think the important factors are whether the tanker’s laden or light, which direction