

TESTIMONY
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US Senate Commerce, Science, and Transportation Committee
Subcommittee of Oceans, Atmosphere, Fisheries, and Coast Guard
Oil Spills from Non-tank Vessels: Threats, Risks, and Vulnerabilities

Date: Tuesday, December 18th, 2007

Time: 2:30 pm

Room: 253 Russell Senate Office Building

My name is Dagmar Schmidt Etkin. For the past 19 years, I have been an independent environmental consultant specializing in oil spill risk analysis, spill statistics, costs, environmental impacts, policy analysis, and response issues in the US and internationally. I have been a consultant to the US Coast Guard, Minerals Management Service, Maritime Administration, Army Corps of Engineers, National Research Council Transportation Research and Ocean Studies Boards, EPA, NOAA, GAO, California Department of Fish and Game, and Washington Department of Ecology. I have been on three United Nations task teams on oil pollution and environmental risk assessments from shipping. I have also worked closely with non-governmental organizations and industry on oil spill issues. In my work, I have had the privilege of seeing many sides of this complex issue.

Spill *risk* is a combination of the probability of spills occurring multiplied by the consequences (environmental, economic, social, and political). The *probability* of spillage from a non-tank vessel has decreased in the last two decades despite the fact that there have been increases in worldwide shipping, but the potential consequences of a spill are still great. The risk remains. The data indicate that the greatest proportion of spills from non-tank vessels occurs during bunker transfers and other operations which result in relatively small spills. And there have been a number of significant spills related to accidental groundings, collisions, and allisions that have resulted in larger oil releases, notably the recent Cosco Busan spill in San Francisco.

The *consequences* of a spill are directly related to four main factors – volume, oil type, location, and timing. Heavy oil that often spills from non-tank vessels presents a particular challenge with regard to its persistence and its propensity to coat bird feathers and visibly impact shorelines. Spill size is certainly a factor, but even a relatively small spill (note that the recent Cosco Busan spill was actually a relatively small spill with regard to an accident-related non-tank vessel spill) in the wrong location can cause serious damage on many fronts. Timing is an important issue. Had the San Francisco spill occurred two months later, ten times as many birds may have been oiled!

There are three arenas in which we can make progress in reducing the impacts of spills from non-tank vessels – better efforts at PREVENTION, better PREPAREDNESS, and better RESPONSE, preferably in that order.

PREVENTION - It would be best to prevent spills from non-tank vessels in the first place. There are proven ways that this can be done. We know that the phasing-in of double hulls and better ship design, as well as increasing financial responsibility requirements, have reduced tanker spills in US waters in particular. We have a better class of tankers in US waters due to our more stringent requirements. This tactic can be extended to non-tank vessels. Double-hulled bunker tanks on cargo ships reduce the probability of spillage with a grounding, collision, or allision. Requiring tug escorts in challenging

waterways has proven to be an effective prevention measure in Washington state. Improvements in vessel traffic systems and crew training can help prevent accidents in the first place. We should also carefully study the issue of liability limits for non-tank vessels taking into account the amount of oil carried and potential for spillage.

PREPAREDNESS – Being prepared to respond promptly and effectively after notification of a spill is the key to success in spill response. Studies I have conducted for Washington Department of Ecology have shown that increasing the amount of spill response equipment and requiring it to be at the scene earlier than is currently required can result in significant reductions in impacts. Pre-booming of vessels and having response equipment on standby during oil transfer and bunkering operations – one of the most common times during which spills occur – can increase the chances of successfully mitigating spill damages. Maintenance of equipment and maintaining readiness with required spill exercises and inspections are important to keep prepared for the next spill. Spills will happen. We have been fortunate that we have never had a worst-case discharge from a tanker or from a large cargo ship in US waters. The situation in San Francisco Bay could have involved twenty times as much oil from a non-tank vessel and a thousand times as much oil with a fully-loaded tanker. We must maintain preparedness even if spill rates are going down!

RESPONSE – Finally, spill response presents an opportunity for improvement. There are many technological challenges in spill response. Despite decades of research and development, as well as experience on many actual spills, we are still left with relatively inefficient on-water mechanical containment and recovery options, occasional opportunities to apply chemical dispersing agents, and tedious, largely manual, shoreline cleanup methods. Booms and skimmers do not work well in high currents, such as those seen in much of San Francisco Bay. The forces of physics come into play. Even when all things are in favor it is rare that more than 10-25% of spilled oil is recovered. More – as was recovered in San Francisco – is considered a real success. Oil spill dispersants can be effective, but their use is limited in sensitive nearshore waters and on heavier oils.

But, there are ways to improve spill response in addition to timing. Positioning of boom to protect particularly sensitive sites can dramatically reduce damages. Ironically, I was in the midst of working with California Fish & Game on some new booming strategies to protect sensitive areas of San Francisco Bay when the recent spill occurred. I have worked with the Coast Guard on studies to improve oil detection through the use of laser fluorosensor technologies. Better detection of submerged and floating oil can improve spill response and reduce damages. Booming in fast-water conditions requires special techniques that can be applied by skilled responders. We need to continue to fund research and development efforts of the US Coast Guard and others. We have the best spill response testing facility at OHMSETT in New Jersey and many excellent researchers and practitioners to learn from.

Lastly, I think we have an opportunity and responsibility for **PUBLIC EDUCATION**. The public has unrealistic expectations of what spill responders and officials can do to magically erase the oil that has spilled. The oil is on the water. The oil is on the birds. It is unfortunate, but rather than pointing accusatory fingers at officials, we need to work together to *educate* the public about realistic expectations when a spill does occur and get their support rather than animosity. There is no time to be looking for “good guys” and “bad guys”. We need public support in continuing to fund spill prevention, preparedness, and response efforts. We need to make the public understand that rational, scientifically-based decision-making and planning is required to reduce the likelihood of future spills from non-tank vessels or any source and to respond effectively when they do occur. We are all in this together.

Thank you for your time.