

## **MARINE AIR EMISSIONS:**

### **An Industry Perspective on International Regulation**

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I am very grateful to the organizers of this conference for the invitation to be with you today. There probably should be a requirement that, whenever we gather to discuss issues affecting protection of the marine environment, we convene in a place of great natural beauty. This reminds us of the importance of our efforts and the immense implications of failure. The Puget Sound area is very much such a place. It uniquely combines enormous volumes of maritime commerce with extraordinary natural blessings of climate, location, and biodiversity. It focuses the mind wonderfully.

I have spent a good part of my career representing what I consider to be progressive elements of the maritime industry in efforts to promote technically sound and effective approaches to acknowledged marine environmental issues. In the last two decades of the 20<sup>th</sup> Century, great emphasis was placed on response to and prevention of environmental damage caused by cargo and fuel spills. These issues, brought home to the general public through several dramatic tank vessel casualties, demanded action on multiple fronts. Governments, Industry, and Environmental advocates aggressively addressed navigation safety, vessel design, crew training, the creation of financial and insurance structures, and international cooperation between port and flag states. The progressive elements of the maritime industry recognized as

quickly as any other actor on the scene that an honest assessment of strengths and weaknesses was essential to preventing accidents in the future. It was also necessary to resist (respectfully but insistently) ill-conceived “solutions” based more on politics or emotion more than on sound, practical policies. Finally, given the international and constantly mobile nature of the maritime business, the enlightened elements of the industry became champions of strong international standards. Absent such standards, local and even national efforts were destined to be ineffective. Casualty data in the United States and elsewhere reveal a tremendous decline in the number and extent of damage from tanker casualties over the past twenty years. But we cannot rest on past accomplishments. Vessel safety is and always will be a work in progress. The same can be said of efforts to control other types of marine pollution

This reality has placed the responsible maritime industry very much in the camp of those who favor global environmental standards and approaches. This position frequently has created the irony of a forward-leaning maritime industry advocating an internationalist approach to marine environmental protection while being berated by certain environmentalists who favor strong local measures. This tension is probably unavoidable and, in some instances, is productive. But I can candidly say that the international maritime industry has been, over the past twenty years, very much a leader in constructive thinking about protection of the marine environment and generally has held the high ground against groups that, however well-intentioned, would prefer to act in an insular and ultimately counter-productive manner.

This brings us to the current topic of marine air pollution. Most sectors of the international maritime industry have been positively engaged on this issue for many years. Although the issue is not regarded, for sound empirical reasons, as being as acute as navigational safety, criminal liability of crews, and spill prevention, there is little dispute within the industry

that vessel-source air pollution is a global problem that merits the attention of national governments and international organizations. This has been an issue in which the regulated industry has had to drag the national governments behind it, but there are hopeful signs that the inertia of the last seven years is over and that we will soon have in force and effective international framework for attacking air emissions from vessels.

The issues are enormously complex. We are speaking of many types of vessels from a multitude of countries, all of which emit a variety of air pollutants in ports of varying climates and topographies. The major concerns are oxides of nitrogen and sulfur, volatile organic compounds, greenhouse gases, and particulate matter. As I will note later in this presentation, the data are far from definitive as to whether this problem is more relative than absolute<sup>2</sup> But most major maritime organizations understand that improving the emissions profiles of vessels is desirable and a legitimate interest of citizens and their national governments.

Since the mid-1990s the marine industry has, despite reservations and concerns, supported the development of a targeted regulatory regime under the aegis of the International Maritime Organization. In late 1997, with strong participation from the United States, IMO members were able to develop Annex VI to the International Convention on the Prevention of Pollution from Ships (“MARPOL”). The Annex establishes NO<sub>x</sub> standards for new engines, fuel quality standards and mechanisms for special SO<sub>x</sub> control areas to limit sulfur emissions, and addresses ozone depleting gases and volatile organic compounds. The mechanisms of the Annex create a system of certifications and inspections that are structurally compatible with existing flag and port state regimes used to monitor vessel safety.

As is often the case with international agreements, the provisions of Annex VI did not please everyone. Agreement on fuel sulfur content limits rested on a number that is almost

universally regarded as being very high (45,000 ppm). There is near consensus across many affected sectors that new NOx standards will evolve within the structure of a ratified Annex VI, given advances in engine technology in the past seven years. But, whatever, its limitations, the more than offsetting advantage of Annex VI is that it provides a framework for international cooperation in addressing what clearly is a problem that affects the entire world.

However promising was international agreement on the text of Annex VI, the international maritime industry has been dismayed at the glacial pace of national approvals. A major culprit was the world's largest maritime trading destination, a country that had a great deal to gain from international agreement on air emission standards - the United States of America. The United States had been an active leader in the negotiation of Annex VI. Its sluggishness in acting to ratify, in my opinion, was not only inexcusable in isolation, but had a negative ripple effect in convincing other maritime nations that there was no urgency to acting on Annex VI. I do not know why U.S. activity on Annex VI winked out after 1998. My theory is not a particularly pretty one. Fortunately, that is behind us and the position of the Administration, announced in 2002, is that the United States supports ratification of the convention.

Industry's response to delays in Annex VI ratification was admirable. Organizations like INTERTANKO, the International Chamber of Shipping, the Transportation Institute, the Chamber of Shipping of America and the World Shipping Council fanned out over the globe to urge national governments, including the United States, to get their acts together. As a direct result of that industry initiative, the required tonnage threshold was reached last year, and I am told by my colleagues at INTERTANKO that Japan, Cyprus and Poland have announced that they will formally acceded to the treaty this year, thus putting the Annex over the top on the 15-nation element of its entry into force requirements.

In the meantime, the U.S. EPA initially relied on the pendency of Annex VI to defer regulation of the large Category 3 marine diesel engines, but then found itself in litigation with environmental groups over that determination. Literally within the dying hours of the Clinton Administration, the EPA entered into a settlement agreement that required it to publish proposed rules addressing the possibility of a go-it-alone approach that would be either explicitly or implicitly corrosive of the international accord fashioned in Annex VI. While honoring the strict requirements of that settlement, the final rule published a year ago quite sensibly established a framework that is generally compatible with the standards and methods of Annex VI, while leaving open the possibility that the EPA might assert its authority in a “Tier II” context to advance post-Annex VI standards either nationally or under the Annex VI umbrella. For its troubles, EPA got itself sued (again) by Bluewater Network and that matter is submitted for decision before the Court of Appeals for the District of Columbia Circuit.

With that background, let’s return to what the “industry” is looking for in the marine air emissions discussion.<sup>3</sup>

First, industry seeks awareness that the technical issues are complex and that there is no magic bullet that address all situations. Cruise, container and tank vessels all use Category 3 marine diesels. There are nonetheless differences between these engines and the operational concerns that apply to each type of vessel.

Second, the maritime industry that the public sees, the vessel operators, are consumers of ships and engines. Ships are not cars, they are not trucks, they are not airplanes, they are not locomotives. Just because someone has a bright idea about regulating these other modalities does not mean that the same solution will work well in a maritime context. These engines weigh many hundreds of tons, cost millions of dollars, the ships are built around them, and both ship

and engine are expected to last for decades. Existing engines cannot reasonably be the focus of efforts to improve emissions profiles. Instead attention must be given to the stream of new engines. Lead times for change must reflect technical and financial realities.

Third, although NO<sub>x</sub> issues can be influenced by operating conditions within the engine itself, SO<sub>x</sub> issues are largely a function of fuel quality. Governments have been fairly timid about tackling the hard decisions that will be necessary to ensure uniform, low-sulfur fuel quality. There are huge variations from place to place around the world in the quality of marine bunker fuel. If governments are serious about tackling sulfur issues, they must be serious about the public investment necessary to ensure that fuel quality is consistent from port to port and that there are facilities for ensuring that fuel quality standards are monitored and maintained. In the United States, one cannot address fuel quality issues without being prepared to engage the overall difficult subject of national refining capacity, a daunting issue even when isolated from downstream considerations.

Fourth, not every solution is an “on-board” solution, and not every “on-board” solution is a sound one. As has been the case with other environmental issues (*e.g.*, ballast water and tank washings), local and national governments have been quick to consider ship-board solutions for matters that technically do not lend themselves to on-board resolution. Talk of scrubber technology, particularly as it applies to two-stroke Category 3 engines, is way ahead of the utility of the technology. The ship is a transport conveyance. It is designed to operate safely in extremely hostile and demanding environments. Add-ons not directly related to the primary function of the ship, safe delivery of its crew and cargo, must be approached carefully.

Fifth, do not trade off small improvements in air quality against large risks in other areas. For example, there has been much talk of “cold-ironing” vessels to reduce their emissions output

while in port. This is a catchy phrase, and there may, in some circumstances, be merit in these ideas. The discussion of such methods must, however, adequately weigh the enormous power requirements of sustaining shipboard systems and the fact that shoreside creation of power has its own emissions impacts. Second, particularly for tank vessels that frequently carry volatile cargo, switching power sources can create ignition hazards that are best avoided. The same concern applies to certain proposals for in-port or near-port fuel switching. Some “clean” fuels are extremely volatile. INTERTANKO personnel have brought to my attention proposals from Southern California that vessels use fuels in port that violate the flash point limitations of the International Convention governing Safety of Life at Sea (SOLAS). Of course, such a requirement would be illegal, but it is not unknown in the maritime context that state and local governments sometimes are willing to act illegally when they feel they are serving politically popular causes. Beyond volatility, fuel switching also raises structural issues in terms of storage of different fuels and raises concerns over human error and navigational safety as vessels adjust to different fuel use as they approach congested shipping lanes.

Sixth, let’s work to refine our data on the scope of the problem. Data are not unambiguous. They are complex, immature and still being collected. As noted above, there is no dispute within the industry that there are indeed negative impacts of vessel air emissions. Recent figures contained in a study by Professor Corbett of the University of Delaware posit global maritime contributions to man-generated NO<sub>x</sub> in the 17 per cent range. This number is not universally accepted, but it is sufficient to the day to acknowledge that maritime global impacts are larger than negligible. It is also accepted that these impacts vary widely and can be intensified in certain port areas. But unless we are confident that we have measured the problem correctly, we cannot calculate the relative cost of the solution. I have examined a lot of data on

this point and am frequently struck by the lack of comparability in the studies. In many cases international trade volume projections are directly extrapolated into emissions projections, without credit for offsetting improvements in engine technologies or awareness that larger vessels can lead to fewer port calls despite growing commerce. So-called “marine source” emission in ports are often not particularized in terms of origins (*e.g.*, ships, trucks, automobiles, locomotives). When we try to decide whether action is necessary, we need to have some absolute sense of what source to go after and how we prioritize our response options. We can’t do this now.

Seventh, don’t ignore the carrots. I’ve been around long enough to know that there is an almost subliminal instinct, particularly at the state and local levels, to approach maritime issues punitively, rather than collaboratively. For reasons alluded to above, this kind of approach can deliver superficially gratifying political effects, but it is rarely the optimal, environmentally-friendly solution. The international maritime industry is willing to bring its technical skills to bear on problems that concern local authorities. But it is increasingly unwilling to accept irrational or isolated approaches that cannot be sustained over the global trading patterns of vessels. The solution is to maintain a dialogue and to recognize that the industry has a point of view that is worthy of consideration. This type of dialogue is difficult to initiate, let alone sustain, if a boogiemán mentality is given easy play in public discourse. If you don’t think this is a problem, I have a file of press releases and op-eds that will set you straight right quick.

Despite the fact that the international maritime fleet carries the high standard of living of the developed world on its back there is a tendency to assume that this reliable, environmentally friendly beast can always absorb another brick on its load or another blow of the whip. One of

the reasons that governments think this way is that the maritime industry is almost never from “around here.” Whether it operates in Singapore, Rotterdam, or Tacoma, the industry is always from somewhere else. This often leads to the idea that we can push off problems without cost on the industry and the industry really can’t fight back. To a large extent this is true, at least in a political sense. But this reality doesn’t make it right or even environmentally helpful to impose half-baked ideas that scratch local political itches, but miss opportunities to effect meaningful global change through support of international solutions.

Where marine air emissions are degrading the environment or posing health hazards, I have no doubt that we will find solutions and that we will do so through a concerted dedication to international solutions. The industry will continue to lead the way and, in some instances, pull others behind it. We are hoping for constructive engagement by all interested parties.

Thank you again. I would be pleased to answer any questions you might have.

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<sup>2</sup>In other words, are marine emission on the increase in absolute terms, or are they simply more noticeable because of improvements in emission levels by other sources, notably automobiles?

<sup>3</sup> I use the term "industry" loosely based on observations of positions over the past few years. I do not purport to speak officially for any company or group. There are operational differences within the maritime community in terms of operational patterns of vessels, durations of port stays, configuration of the vessels, types of engines used, types of fuel burned, regularity of routes, *et cetera*. Despite these differences, there is a prevailing consensus that air emission issues must be dealt with through uniform international standards and that local initiatives are often suspect, either on technical or on policy grounds.