Chapter 8

Sustainable Shipping

Today, the shipping industry is faced with one of its greatest challenges. Will its players embrace the "safety culture" and protect not only the bottom line, but also safeguard the environmental health of the oceans and rivers upon which oil is transported? In other words, will the shipping of oil become sustainable? In the answer to this question lies the future viability of shipping.

Industry has the tools and the knowledge needed to affect good stewardship: to prevent costly accidents and to activate "best response", reducing environmental impact if spills happen. The policy considerations for environmental stewardship have been identified clearly:

- Adoption of the safety culture in all aspects, including proactive safety management,
- Long-term contingency/vessel response planning,
- Creation of a quality system with responsibility and accountability for each link in the chain,
- Training of qualified mariners who can perform their jobs,
- Use of best technology and science in response, and
- Restoration endpoints considered from the beginning in clean-up decisions.

These new policy goals should replace current, short-term thinking of "business as usual" profit maximization and crisis reaction.

Sustainable development has been defined in many ways. The most comprehensive statement was made by the United Nations in 1987: "Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs". Two other definitions contribute to shaping an understanding of a sustainable "safety culture". In order to frame this new culture, there must be a balance between economic and environmental sustainability: "Sustainability in the economic sense means the efficient allocation of scarce goods and resources. Sustainability in the environmental sense means not exceeding the limits of environmental impact and maintaining the natural basis of life" (Ullring, 1996a).

Even in the act of defining sustainability, two competing paradigms emerge. One is the anthropocentric, human-centered approach. The other is the ecosystemic view. These are comparable to the warring cultures in the shipping industry, "the evasion

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and compliance culture" as opposed to the "safety culture". The human oriented view is that sustainability is achieved so long as the total stock of resource capital is preserved for future generations. There are no irreplaceable resources, and capital, labor and natural resources are all interchangeable. The value of resources is in how they function for the benefit of humans (Norton, 1995).

The opposing approach views natural elements as being irreplaceable resources, constituting "natural capital". The job for today is to pass onto future generations a world with clearly defined constraints on alteration of these physical and ecological elements, which have value independent of human welfare (Norton, 1995). The synthesis of these competing viewpoints is what drives good resource management. More is required than just a "sustained flow of goods". Sustainable management "... must take care to ensure the continued function of natural processes and the integrity of natural systems. For it is upon these, ultimately, that human resources and human well-being depend" (Callicott, 1992).

The European Communities' "Maritime Industry Charter on Quality" defines sustainability in concrete terms for the shipping industry. The goal of this charter is to create a quality culture throughout the industry as a whole and to implement the international regulatory standards so as to provide shipping services, "... of high technical, safety and environmental quality", a business climate that protects people, the environment, ships, and fair competition (EC, 1999). The Center for Maritime Leadership applies the term "Ideal Maritime Vision", to this new concept of sustainable shipping: "Pristine, renewing oceans, lakes and rivers that produce abundant life for humanity and nature... Water everywhere that is a continuous and sustainable resource that provides livelihood, enjoyment, nourishment, inspiration, healthful living, and peace for our children and their children after them" (CML, 1998). The challenge of becoming a total "safety culture" cannot be met by using past solutions to solve past problems, which exist today. New thinking is needed is to solve the old problems.

Once regulations for the tanker industry are well-settled and implemented, the next area of attention for IMO and the US is that of bulk carriers. These vessels carry other cargo primarily and use bunker fuel to power their ships, as opposed to oil tankers that are devoted to transporting oil (ITOPF, 1998). ITOPF, for example, has defined a tanker to mean "any ship (whether or not self-propelled) designed, constructed or adapted for the carriage by water in bulk of crude petroleum, hydrocarbon products and any other liquid substance". So significant is trade by non-tankers and potential spill problems, that as of February 1999, ITOPF established an "Associate Status" for non-tanker owners or demise charterers (ITOPF, 1999). ITOPF estimated response to oil spills of non-tankers for the last 15 years. 28% of all spills attended by ITOPF over the past 15 years have been for non-tankers, with that percentage increasing to 38% during the last 5 years, and as high as 50% during 1999 (ITOPF, 1999a).

The increased incidence of spills from these vessels stresses the importance of establishing the safety culture in the tanker oil industry, so that the same elements and framework can be applied to other vessels. Passenger ships are not excluded from

significant pollution concerns, as for example, the most recent pollution activity of the Royal Caribbean Cruise Lines and one of their latest fines of $18 million for dumping oil and toxics into US waters. Sustainability of shipping will require addressing oil spills, their prevention and response, from all types of vessels. In response to the increasing number of bunker spills, IMO proposed a diplomatic conference to adopt an international convention for liability and compensation for damage by oil from ships' bunkers. This convention establishes a regime for oil carried as fuel, which would be similar to that existing for tankers under the International Convention on Civil Liability for Oil Pollution Damage, 1969. (IMO, 1999). At its 81st Session, the Legal Committee of IMO completed consideration of a draft international convention on bunker oil pollution and agreed that the draft convention be forwarded to diplomatic conference for adoption. The Committee proposed that the conference by held in the first half of 2001 (IMO, 2000a).

Sustainable activities follow certain long-term rules:

- "Renewable resources: consumption does not exceed production.
- Non-renewable resources: consumption does not exceed production of a renewable substitute (e.g., a part of the income from oil production is invested in developing alternative energy sources to maintain the level of energy supply the day the wells are empty).
- Pollution: emissions do not exceed nature's ability to recirculate, absorb or render harmless..." (Ullring, 1996a).

The importance of the third factor, "pollution", cannot be underestimated when considering the future of oil transport. Scientists in the US and international communities debate basic scientific policies: the ability of the environment to handle oil pollution, whether natural recovery will restore the resource to pre-spill condition, what pre-spill condition is given natural fluctuations, how much clean-up should be used, whether response and human intervention may be more harmful in some instances than natural recovery, and the need for or the type of restoration/reinstatement of the environment to be undertaken. [See discussion, Sections 1.3, 2.6, 3.2 of this book.]

Even in the face of strong differences of opinion, most responders agree that oil from ships can have substantial negative impacts on natural resources (GESAMP, 1993) and that it is better to be prepared than to conduct "management by disaster", dictated by public perception. There is concurrence that long-term contingency planning is best. Responders recognize that more research is needed to develop scientifically based response techniques, and that "best response" means using the proper tools from the tool box at the right time in the right place. Systems like "Technology Windows-of-Opportunity" can deliver the response arsenal.

However, tools are only as good as the people who wield them. Another positive shift, focus on the human element, has occurred in all levels of the shipping business. But, this reorientation needs constant refinement. Open policy questions must be answered so that the worldwide trend of reductions in accidents continues. The

human factor has become a crucial element of sustainability. Conventions, laws and regulations are in place and establish a framework for the safety culture: MARPOL 73/78, SOLAS and its ISM Code, STCW '95, the Paris MOU and other Port State Control agreements, OPRC, the Bonn Agreement and others, Intervention on the High Seas, and OPA 90. This body of law requires a high level of safety management throughout the business of shipping oil. The US Coast Guard Prevention Through People program and the international incorporation of the concept of partnership between industry and regulators is changing the face of how businesses conduct their activities.

Self-motivation, self-instigated audits, self-improvement, communication between different facets of the industry produce results, focus more on the human element, and lead to truer prevention and safety. Regulation establishes the minimum safety conditions. Self-regulation produces the optimum area of safety and effective management. Best Response involves all stakeholders in the process of protecting the environment and choosing the optimum path to recovery of natural resources. Sustainability results from all parts of the safety net working together to meet the challenge. William O'Neil, in his World Maritime Day 2000 address, stressed the "universal culture of safety" and the importance of each element of the "safety net" that "underpins the safety of international shipping":

> "Shipping is a modern, international and multifaceted industry that eventually touches just about everyone on the planet. And there is not a single individual or group involved with shipping that stands alone, outside the network of partnerships. It is fundamental that we all commit to a process of continually re-examining the standards that we have established and the mechanisms we have created for ensuring their proper, uniform implementation" (IMO, 2000b).

Just as the positive aspects of a legal framework exist, so too are the motivators present to foster the safety culture. These incentives are often like the proverbial double edged sword, positive and negative. While there are differences in compensation regimes, application of liability and limitations on defences, the "polluter pays" concept is a given worldwide. Civil penalties, environmental criminal actions, public perception, demands for responsible actions and punishment of irresponsible spillers are the factors which are shaping the future of shipping. All links in the safety net are geared toward driving substandard operators out of the business or causing reform of their practices so that all ship owners/operators conduct their business on a level playing field:

- International Maritime Organization ISM Code Certification regulation.
- The US "zero tolerance" policy to those ships without such certification.
- STCW Code and the "white list".
- Industry refusal to allow membership, or support ships unwilling to convert to higher standards and appropriate safety models.

- Flag State Administration action on Classification society recommendations such that companies cannot trade.
- Classification society recommendations of removal of Safety Management Certificates and withdrawal of Documents of Compliance.
- Contract clauses in P&I Club rules and insurance syndicate rules limiting/denying coverage without proper certification.
- Blanket unwillingness of insurers to provide hull, equipment, salvage, pollution policies to substandard ships.
- Increasing Port State Control, inspections, detentions.

What these diverse drivers represent is a realization that the environment is "... not a 'free good' or 'externality', but an asset like human capital and capital goods. ... Moreover, there is a growing integration of ecology and economy" (Ullring, 1996a). Safety is good for business (Card, 1996). Integrating this basic concept of true cost accounting into the industry requires redefining the criteria for sustainable shipping. The new concept must be environmentally and therefore, economically feasible.

The model is far from complete. To create it poses a set of challenges. One of the most important is to level the playing field so that the "good" companies have a competitive edge and the "bad" players face environmental/economic penalties. The best operators, including major oil companies, must choose charterers of the highest quality so that oil travels first class, based on the sophisticated vetting procedures already in place. Regulators must implement the legal framework. Enforcers must eliminate substandard operators by civil and criminal fines and penalties. In the long run, economic incentives, in the form of the market, of repeat clientele, strong customer base, public stock support, a strong bottom line picture, will be the most vigorous forces for a proactive, safety-oriented approach to shipping (Ullring, 1997). Public acceptance of shipping as environmentally friendly requires not only good public relations, but also actual, measurable environmental performance by industry. The standards for measurement now exist. Education of the public sector is yet another millennium challenge. Double-hulled vessels by the year 2015 under OPA 90 and international standards, (or sooner, if proposals for amending 13FG of Annex I of MARPOL 73/78 are recommended by the Marine Environment Division of IMO) (IMO, 2000b), the Green Ships Programme of Det Norske Veritas, and the proposed "Ecoship" of the future all represent positive moves to produce a safety oriented, measurable and environmentally friendly product (Ullring, 1996a).

DNV designates these three challenges as being crucial to the outcome of this next millennium's sustainable shipping culture:

- "To continuously improve and document the environmental performance.
- To move from compliance to self-motivated improvement.
- To create incentives encouraging environmental excellence" (Ullring, 1997).

To these we must add two more:

- To use the best technology available: computerized modeling tools to establish safety management systems, simulated alternative safety measures, good data to determine causes for accidents and near misses, quantifiable behavior models for human error, determination of the fate and effect of oil and what tools should be used and when to combat the spill, with restoration being the primary concept (Ullring, 1996b).
- To improve the public's perception and response to the shipping industry. Some members of the public regard ship owners/operators with almost the same dislike they show toward Mafia "hit" men (du Moulin, personal interview, 1999).

Many industry leaders believe in the safety culture, fight for a change in industry preconceptions and working models, and affirm the tacit agreement that substandard ships must go. The shift in attitude from an "avoidance and compliance culture" to a "safety culture" is regarded by ABS, the third largest classification society in the world, as a primary goal for the future of the shipping industry:

> "Industry must make the decision whether to continue being overregulated (shipping being the most regulated industry in the world) or to be mature and become self-regulated. Each company must look on an individual basis at its problems and deal with them. The ISM Code requires more than just paper compliance. To comply with the code, the ship owner/company must use the code for its intended purpose, as a guide for good management, and create real, workable safety management systems throughout all facets of the company. No longer can a shipping company look at its ships in isolation. Failure of one ship to comply with ISM certification requirements may place the whole company in jeopardy .... The sphere in which bad ships can continue to trade is getting smaller, as such ships are being excluded from increasing numbers of regions worldwide" (Pearson, personal interview, 1999).

All members involved in the shipping industry safety net are making a difference and creating the safety culture according to John Ostergaard, Senior Advisor for the Marine Environment Division of the International Maritime Organization:

> "The ISM Code is bringing substandard ships up to better operating standards, in some instances, just because the company establishes someone who has overall, operational responsibility for what is going on and because the company must review all its safety procedures to properly document them. Port States have access to IAC's database to see who's been detained for non-compliance or non-conformity with the code. There is now more international cooperation between Port States, with Memoranda of Understanding covering most of the world. The STCW 95 gives IMO, for the first time, some real teeth, to see if a company has in place the training and procedures to ensure that mariners are properly trained to perform their jobs at sea. For countries like the Philippines, which is the biggest provider of seafarers to other countries, not being placed on the

> "White List" would be an economic catastrophe. Their focus is now on upgrading their maritime educational system, with help from countries like Norway" (Ostergaard, personal interview, 1999).

Insurers and P&I Clubs can impact significantly the old way of doing business:

> David Martowski of Thomas Miller (Americas) Inc, which represents the UK P&I Club in the Americas states: "It is clearly in the interests of P&I Clubs and their members who share risks on a mutual basis, to ensure that ships, systems and people comply with international safety regimes. The real politic is that ocean going vessels are not permitted to enter the worlds' major ports without P&I coverage. This provides a very efficient screening mechanism. Responsible ship owners and operators are very concerned by environmental risks and well aware of the aggressive standards taken by US and other major Port States. Substandard ships, as a rule, are not trading to these countries and the few that do, are detained, their deficiencies noted and reported, and if allowed to proceed, rarely ever return. This most conservative, traditional and misunderstood industry has undergone dramatic change. It remains to be seen how long it will take for substandard ships to be driven from the seas" (Martowski, personal communication, 1999).

Richard Hobbie, President of WQIS, one of the largest American shipping industry insurers, echoes these sentiments:

> "The insurance industry, by reducing rates, doesn't make meaningful impacts because, for good operators, we are already operating at reduced rate premiums. But, for the bad operators, people not in compliance with safety management regulations and other regulations, they will either have significantly higher premiums or won't be able to find insurance at any cost. These people will eventually go out of business or suffer uncovered losses" (Hobbie, personal interview, 1999).

Richard du Moulin, CEO for Marine Transport Corporation and former Chairman of the Board of INTERTANKO believes that enforcement of the safety culture is the biggest challenge for future of the industry:

> "There are three types of cultures in shipping. One is the old culture, those who view regulations as something that must be met, but not exceeded. The other is the substandard operator who will barely meet regulations, and if possible will shave a corner. This group is growing smaller. The third are the operators who really care about the marine environment and will exceed standards. To reach the safety culture, what is needed is not so much the development of adequate standards. Those now exist. What we need is enforcement by industry and third parties. Port States have taken on this job. We as industry need to look at them

> as our greatest ally and help them to rid us of substandard shippers" (du Moulin, personal interview, 1999).

Captain Gilmour, former Director of Field Activities for the US Coast Guard (now Chief of Staff of the USCG 13th District), best states the obvious:

> "I think the folks who want to be here 10 or 15 years from now are saying, 'this safety culture is going to happen" (Gilmour, personal interview, 1998).

The next decades will shape the viability of the shipping industry, for tankers and other vessels using and/or transporting oil. The road of the "safety culture" is clearly defined. Many in industry have set foot firmly upon that road. Others have not. Sustainable shipping can only become a reality if the great weight of the majority takes up this journey, moving those who will not embrace the new culture into smaller and smaller byways.

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