



## Let's be proactive on safety

With classification societies under pressure as never before after a series of controversial sinkings, Harilaos Psaraftis\* examines issues surrounding the development of maritime safety policy

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IS there a working definition of a "substandard classification society"? I asked this question at the recent Mareforum conference, but received no answer.

The IMO and a number of other important players play key roles in the development, implementation and enforcement of maritime safety regulatory policy. These players include flag states, port states, IACS and classification societies, international bodies such as the European Union, labour organisations such as the ILO, and the whole spectrum of maritime industries such as shipowners, shippers, shipyards, P&I clubs, environment groups, and others.

Collectively, maritime safety policies advanced by the above players are classified into categories that include, among other things, training requirements and certification for seafarers, fitness for work, use of alcohol and drugs, fatigue, working and living conditions onboard, common working language between crew members, ship equipment and human-machine interface.

There is also ship-to-ship and ship-to-shore communication, vessel traffic management information services, global maritime distress and safety systems, ship reporting systems, port and harbour safety regulations, navigation and pilotage. Not to mention loading, stowage and discharging, fire-fighting, search and rescue, environmental protection, design, construction, and maintenance of ships, survival capability of ships, and emergency and evacuation procedures.

All of the above policies must surely take credit for the acceptable safety record of maritime transport. However, it does not take too much to realise that just the sheer number of players and the vast array of topics involved in the formulation of these policies may lead to some or all of the following situations: over-regulation, patchwork regulation, overlaps in regulation, inconsistencies in regulation, and gaps in regulation.

Such situations have been widely criticised by the shipping industry as contributing to both a reduction in competitiveness within the industry because of excessive regulation, and, to a lack of a comprehensive safety regime because of possible gaps in such regulation.

Many industry circles feel that existing safety rules are more than adequate, but lack of enforcement or uniformity of such rules is the main factor that causes accidents. This also causes a non-level playing field that discriminates against those who play by the rules versus those who do not. Thus, many circles profess that instead of developing new policies, the focus should be on how to best enforce existing ones.

Policies currently developed and pursued in the maritime safety area are often purported to be "proactive". Scientific methods such as Formal Safety Assessment are considered prime instruments for the development of proactive policies.

There is a long way to go toward that end. It is no secret that much of recent regulatory activity on maritime safety has been driven by major maritime disasters. These include the capsizing of the

**Herald of Free Enterprise** in 1987 (193 lives lost), the grounding of the **Exxon Valdez** in 1989 (major pollution), the fire onboard the **Scandinavian Star** in 1990 (158 lives lost), the sinking of the **Estonia** in 1994 (852 lives lost), several major bulk carrier losses (e.g. **Derbyshire** in 1980- 44 lives lost), and, last but not least, the **Erika** oil spill in 1999 (major pollution).

In that sense, maritime safety policy-making has been, and still is, very much "reactive". In principle there is nothing wrong with this approach. In fact, it would be irresponsible not to react to or draw lessons from maritime catastrophes. However, a fundamental proviso is that the policies that are ultimately adopted in the wake of an accident should correctly identify the most important contributing factors and prevent them from happening again.

It is precisely this point that constitutes, in my opinion, a controversy in the current approach to maritime safety regulatory policy. Many of the policies that have been adopted in the aftermath of major accidents focus on "technological" solutions, even though most of these accidents were due to failures in the human element part of the equation. In fact, such solutions include:

- Tanker design (double hulls, double bottoms): OPA '90 came out in the aftermath of the **Exxon Valdez** spill in 1989, even though the cause of the spill was human error. The EU deemed appropriate to act similarly after the **Erika** spill in 1999.

- Roro / Ferry design (internal subdivisions): The new SOLAS rules and Stockholm agreement will have a monumental impact on ferry design, economics, and operation in the future. These rules came out in the aftermath of the **Estonia** accident, even though this accident might not have happened if the ship's master had not driven the ship at high speed in such extremely bad weather or if proper maintenance were carried out.

- Bulk carrier design (transverse bulkheads, etc): The new IMO/IACS rules will redefine bulk carrier design in the years ahead. It is far from clear however, whether past bulk carrier major disasters were mainly due to design faults or to other factors such as faulty loading, combination of weather and speed, or to other factors connected to human judgement or lack thereof.

The central premise behind these rules is that they would enhance safety. An interesting question is to what extent related past accidents would be averted or their consequences mitigated if these rules were in place. This question is by and large unanswered.

The question that remains is what the global operational and economic consequences of these policies might be. The only thing we know is that they are non-trivial. Entire fleets of ships not complying with these policies are rendered obsolete. Shipowners are forced either to make very expensive conversions, or purchase new ships. Shipyards have to radically alter their designs to adapt to the new rules. The rules cut across the board, and force regulation-abiding shipowners to pay for the sins of those who are irresponsible.

However, fundamental questions such as what will be the benefit of such policies to maritime safety, at what cost this benefit will come about, and how these costs and benefits will be distributed remain largely unanswered.

To the best of my knowledge, many policies in maritime safety do not set explicit targets on what measurable improvements in safety they aim to achieve. "How safe is safe enough" is the relevant question here. If the policy target is, say, "reduce the frequency of tanker spills by a factor of 5 over the next 10 years", one would be able to assess the merits (or lack thereof) of the specific measures that are set forth to achieve that target. Was there a similar, well-defined target in OPA '90? I doubt it, and that makes the assessment of the Act very difficult.

Absent is also an explicit determination of society's willingness to pay to achieve safety improvements, or of society's opinion on who must bear the weight of such payment. Questions such as "what price safety" or "who pays for safety" are commonly asked, but I know of no definite answer to them. If the policy-maker who ultimately decides on Policy A versus Policy B has no clear knowledge of what the benefits and costs of these policies might be, or how these are distributed,

then his or her choice of policy may be arbitrary.

To be sure, these are not easy questions, and non-trivial analysis is necessary to deal with them. The use of the scientific method in maritime safety is growing, but is still significantly underdeveloped and so far has had little impact on policy formulation. Part of the difficulty stems from the fact that the quality of existing accident databases often leaves much to be desired, and transparency is often lacking. The Equasis database and the use of maritime black boxes are expected to alleviate this problem.

R&D sponsored by the EU and others has shown that the role of technologies that reduce the risk of maritime accidents could be important. VTMIS, ECDIS, integrated ship control and collision avoidance systems are prime examples. In most accidents that involved collisions and groundings, the existence of such systems might have averted many of these accidents. This would not happen just because these systems would exist, but because of the assistance to the human operator they would provide. The human factor would still be prevalent, but the ability of the human would be enhanced by these systems.

In my opinion, R&D should be carried out with the explicit purpose of evaluating maritime safety policy alternatives. These policy alternatives should be carefully assessed and compared in terms of well-defined criteria, so that the policy-maker is aware of the implications of each alternative before making a choice. There should also be more effort to analyse results of past or ongoing maritime safety R&D from a policy perspective. This would establish a better link between R&D and policy development, and guide the former so as to assist the latter. It would also help to move maritime safety policy closer to being proactive.

As to what is a substandard classification society, I still hope that somebody will enlighten me.

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