The Effect of Port State Control on Substandard Shipping

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Executive Summary

Port State Control (PSC) is the inspection of foreign ships in the harbours of coastal states to verify the condition of the ship and to ensure compliance with major international maritime conventions. This article evaluates the effect that PSC has had on substandard shipping and its contribution to the International Maritime Organisation's goal of "safer shipping and cleaner oceans." The article begins by examining the institutional character, jurisdictional scope and operating conditions of PSC, and then proceeds to evaluate the regime using the criteria of political feasibility, distributive implications, and social consequences. The author demonstrates how PSC serves to create a clear legal framework and some limited impetus for action by ship owners wishing to deploy their vessels where PSC agreements exist. The paper discusses how PSC is indeed an international success when placed in the historical context that gave rise to its creation. However, it concludes by suggesting that the regime of PSC is indeed somewhat less successful when the criteria of the distributive and social consequences of substandard shipping are considered. The benefits of inter-jurisdictional co-operation, while necessary to solve the problem of substandard shipping, are not sufficient. Solving the problem of substandard shipping requires political and business leadership.

1 Introduction

The growth in international trade and the service requirements of modern logistics systems has placed increasing pressure on ship owner profits. One strategy to increase profitability favoured by some ship owners is to neglect the maintenance and repair of the vessels under their command. Other ship owners have chosen to prolong the working life of their vessels past the age at which they would usually be sold for scrap. Still other ship operators choose to crew and man their vessels with personnel who are poorly trained or inadequately equipped to safely navigate a ship and transport its cargo. Recent research by the Transport Division of the Organisation for Economic Co-operation and Development (OECD 2002) suggests that the cost to ship owners of maintaining the world merchant fleet to the minimum required shipping standards is approximately $US 4 billion per year. The competitive advantage gained by individual ship owners who do not observe the international rules and standards could amount to 15% of the annual running cost of each vessel--an amount equivalent to $US 250,000 per annum. With such financial incentives as these, it is not surprising that the issue of substandard shipping arises. A substandard ship is considered to be any vessel that fails to meet basic standards of seaworthiness because of its physical condition, its operation, or the activities of its crew. A substandard ship poses threats to both human life and/or to marine environments (SSY Consultancy and Research 2001).

One policy response adopted by governments to deal with the problem of substandard ships (and substandard shipping) is the concept of *Port State Control* (PSC). Port state control refers to the inspection of foreign ships in the harbours of coastal states to verify the condition of the ship and to ensure its compliance with major international maritime conventions.

2 The International Regime of Port State Control

In response to difficulties or challenges such as substandard shipping, the international community often develops an international regime to help address or resolve problems that cannot be solved by the actions of any one nation alone. An international regime is a system of rules and norms, together with a set of formal and informal institutions, with the express intent that these arrangements be applied to a given social or political problem (Valencia 1996). In 1948, the international community adopted a convention formally establishing the International Maritime Consultative Organisation (IMCO) (renamed the International Maritime Organisation (IMO) in 1982). The Convention entered into force in 1958. This United Nations IMO expresses it raison d'être in the motto "safer shipping and cleaner seas."

The definition of substandard shipping suggests that for the regime of PSC to be considered effective, it must effectively address two problems, the first being the threat to human life, and the second problem the risk to the marine environment. According to Valencia (1996), we can consider the threat to human life to be a dilemma of common interest, and the problem of marine pollution to be a dilemma of common aversion. Regimes established to deal with a dilemma of common interests require collaboration, while those created to solve a dilemma of common aversion require co-ordination (Valencia 1996). Thus, the first factor to consider when evaluating the effectiveness of PSC is whether the regime does indeed promote collaboration and co-ordination.

2.1 Regime Dynamics

A second factor to consider when evaluating PSC effectiveness is whether the institutional arrangements underpinning it are responsive to emerging needs and issues.

Young (1980) suggests that the question of how and when the PSC regime came into existence becomes an important yardstick for judging the political feasibility of the policy instrument. Negotiations for the 1982 United Nations Conference on the Law of the Sea (UNCLOS) took place during the years 1973 to 1982. As negotiations progressed, the international community came to the realisation that the problem of non-compliance with IMO regulations could not be corrected by flag state enforcement alone.

The 'freedom of the seas' doctrine (*Mar Librium)*, articulated in 1609 by Dutch legal scholar Hugo Grotius, claimed that ocean resources should be available to all nations that wish to harvest them. The 'freedom-of-the-seas' principle meant that outside its territorial waters, a nation could not claim sovereignty over the seas, except with respect to its own vessels (Kibel 2000). Article 221(I) of UNCLOS codified this principle of customary international law.

During the UNCLOS negotiating process, compromises were needed if the international community was to develop a new legal framework for ocean governance. UNCLOS resulted in coastal nations having rather limited power in the control they could exercise over vessels navigating in their territorial seas; however, coastal nations were given express powers within the internal waters in which their harbours were located (Valenzuela 1999). Article 25(2) of UNCLOS formally expressed this principle. It is from this basis that PSC officials are able to exercise their authority. Examples of the conventions that can thus be enforced (using the regime of PSC) by coastal states include the: a) **SOLAS 74**: International Convention for the Safety of Life at Sea 1974; b) **LL 66**: Internal Convention on Load Lines 1966; c) **MARPOL 73/78**: International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978; d) **STCW 78**: International Convention on Standards of Training, Certification and Watchkeeping for Seafarers; **TONNAGE 69**: International Convention on Tonnage Measurement of Ships, 1969; and e) **ILO 147**: International Labour Organisation Convention No. 147 Merchant Shipping (Minimum Standards).

2.2 Institutional Character

To evaluate the effectiveness of the PSC regime, it is essential to understand the central rights, rules, and choices that are available to those who operate commercial vessels or to those nations with international ports. The interaction of national maritime administrators with the individual actors in the international shipping community is based on Article 25 of UNCLOS. This clause specifically empowers nations to take necessary steps to prevent any breach of the shipping standard conventions by foreign vessels that call upon their harbours. In addition, Articles 216 and 218 enable a port state to enforce international antidumping and anti-pollution measures, while Article 219 permits nations to take administrative measures to prevent substandard vessels from sailing from their harbours. Legitimacy for PSC inspections is found in these articles. The only limitation is that any steps taken that invoke PSC must be reasonable, public, and not discriminatory.

2.3 Jurisdictional Scope

Understanding the jurisdictional scope of a regime is a necessary factor to consider when evaluating PSC's contribution to 'safer ships and cleaner seas.' While PSC clearly depends upon compliance with IMO conventions by individual states, over the past 20 years, nations that share common oceans have created 'regional' PSC agreements (or *Memorandums of Understanding*) to facilitate their work. Despite earlier IMO efforts to reduce substandard shipping, a number of high profile shipping accidents in the late 1980s and early 1990s led to an increased sense of urgency in finding solutions to the problems created by substandard shipping. Consequently, the IMO passed resolution A.682 (17) (Regional Co-operation in the Control of Ships and Discharges) in 1991. Canada's historical commitment to safer ships and cleaner sea has lagged behind that of the European Community. However, it predates the passage of the 1991 IMO resolution on regional co-operation. Canada became an associate member of the 19-country Paris MOU in 1988, and was accepted as a full member in 1994.

During the last decade, Canada has exercised some degree of leadership on the issues of substandard shipping by being instrumental in the creation of the 18-nation Tokyo MOU (Transport Canada 2001). The goals and objectives for PSC in each of the eight regions are based on the Paris MOU model, but with some regional variations. One of the most significant differences influencing the effectiveness of PSC agreements around the world is the rate of ship inspection.

Substandard vessels trading in the poor regions of the world have a significantly lower chance of being detained by PSC inspections. Table A, highlights the inspection target rate the members of the each MOU agreement have set as their performance standard.

Table A: Port State Control Agreements

MOU Region	Inception Date	Target Rate Ship Inspections
Tokyo	1993	50% regional
Paris	1982	25% per country
Acuderdo de Vina del Mar	1992	15% per country
Mediterranean	1997	15% per country
Abuja	1999	15% per country
Black Sea	2000	15% per country
Caribbean	1996	10% per country
Indian Ocean	1998	10% per country
Note: Persian Gulf agreement currently under development.		
Source: International Maritime Organisation		

Given the fact that the regime of regional PSC creates a new legal framework for enforcing existing IMO conventions, an important question for many observers is to what extent the jurisdictional arrangements of IMO conventions are (or are not) optional for member states. Since the 1970s, IMO technical conventions have adopted a new amendment system for the appendices.

Under the new procedures, amendments automatically enter into force on an agreed-upon date, unless the amendments are positively rejected by a specified number of state parties. This is in contrast to the previous method whereby a safety amendment to an annex entered force only after being positively accepted by a specified number of state parties to the convention (Valenzuela 1999). Consequently, nations exercising their rights and obligations under a PSC regime are automatically empowered to enforce the most recent internationally agreed upon safety standards.

2.4 Operating Conditions

As noted in previous sections, PSC control has evolved into a regional policy tool that supplements flag state control and responsibility in maritime matters. Thus, the effectiveness of PSC stems from the legal position of coastal nations vis-à-vis the flag state that has primary responsibility for enforcing IMO conventions. PSC operating procedures are governed by resolution A.787 (19) adopted by the IMO Assembly in 1995 (Sasamura 1998). Crucial to the successful operation of PSC is the sharing of information--gained about particular ships or their owners or operators--between jurisdictions in and out of which those ships trade. In recognition of this fact, the IMO has developed a global project to assist regional PSC agreements in the harmonisation of their operations, the development of their human resources capabilities, and in the co-operation and exchange of information amongst MOU signatories. As a United Nations organisation, however, the IMO can only encourage nations in these efforts; it cannot obligate their compliance (Hoppe 2000). One obstacle to compliance is the need for technical and financial assistance to enforce regulations. This is particularly apparent within the newly established regionally PSC agreements, the majority of whose members are from the developing countries and lack sufficient resources to enforce PSC. A second difficulty is ensuring the participation of all members within the regions, as active participation of all members is crucial in the successful implementation of the agreements.

3 Evaluation of Port State Control

3.1 Political Feasibility

According to Valencia (1996), the *political feasibility* of a policy regime refers to the political cost to achieve compliance with the principal behavioural prescriptions of the given regime: in other words, can the requirements of the regime be implemented and maintained to achieve the stated outcome. Valencia argues that in terms of political feasibility, regimes that are sector-specific have a greater chance of success than multipurpose systems that seek to perform a variety of functions within the framework of a single authority. He bases his conclusion on "inherent" political reality, despite the logic of, apparent need in some areas for, an integrated management system.

PSC regimes are regional in nature for a variety of reasons; however, the main reason is political feasibility. Proponents of a regional approach to PSC claim that unless such an approach is adopted, ship operators will simply divert their vessels to harbours in the region where no (or less stringent) PSC inspections are conducted. Consequently, a regional approach encourages co-operation and results in fewer places and economic opportunities for substandard ships to trade (Hoppe 2000). The regional PSC strategy implicitly acknowledges the fact that individual state action is insufficient to reduce the problem of substandard shipping, and that stronger international measures to deal with the problem (and/or greater political will and capacity to enforce IMO regulations) are not obtainable in the current political climate.

PSC is considered the last safety net when vessel owners, shipping classification societies, insurers, and flag state officials have in one way or another, failed to do their job (Plaza 1994). The regime of PSC state control is a right exercised by port states, and not an *obligation* (Plaza 1994).

Given the rather low political hurdle rate for judging PSC a success, one would expect to find a preponderance of evidence suggesting that indeed safer ships and cleaner seas have resulted from the PSC regime. Regretfully, this has not been the case, nor has substandard shipping been eliminated since the implementation of PSC. However, this is not to suggest that PSC has had no impact whatsoever. Data from Lloyd's Register of Shipping, based on all merchant vessel types, indicates a 35% reduction in the number of ships lost (absolute total loss and constructive total loss) since the 1970s. OECD (2000) research (Table B) reveals that the average merchant vessel losses per annum since the 1970's were as follows:

Table B: Average Annual Merchant Vessel Losses During the Decade			
	1970s	**1980s**	**1990s**
Number of vessels	373	308	242

OECD research indicates that there was a decline of 17.4% between the 1970s and 1908s in the average the number of merchant vessels lost per annum. In the decade of the 1990s, the decline was 21.4%. Since PSC was introduced, the rate of decline in total merchant ship losses per annum has been 4% more than during the previous period, although the decline in vessel losses among different vessel types has not been consistent. For example, the decline of dry bulk carrier losses has been far more modest than the general average. During the period in which PSC was introduced (the 1990s), the average number of dry bulk vessels lost per annum was 21, while the average number of seafarer fatalities associated with these loses was 84 (OECD 2000). Clearly, PSC has demonstrated at least modest success in this regard. Because of these developments, some authors such as Hare (1997) suggest that PSC has now matured to the stage where it recognises the need to accept the stark reality that some ships pose more of a problem than do others.

3.2 Distributive Dimensions

The distributive dimension of a particular regime deals with the allocation of benefits among the various participants affected by that regime, and it is this aspect that so often lies at the centre of political discussion as to the effectiveness of the governing arrangements (Valencia 1996). The 1982 Paris MOU required that PSC be conducted 'without discrimination as to flag;' it also required that each state ensure that no more favourable treatment be given to ships flying the flag of a state party to the MOU than to one that was not party to it. A policy of without discrimination would seem to imply that the benefits of PSC should be evenly distributed among nations; however, this has not been the case because the problem of substandard ships is not evenly distributed amongst vessels.

Canadian PSC data reveals that during the past six years, ships from Cyprus, Liberia, Malta and Panama were detained by Canadian authorities more frequently than ships from any other country, and represented 53% of all detentions. Vessels (ships of 100 gt and over) from these countries accounted for approximately 50% of the world ore and dry bulk merchant fleet in 1999 (OECD 2000). Transport Canada (2001) data reveals that in the year 2000, bulk carriers had the highest inspection rate (47%) and the highest detention percentage at 57%. Deficiencies in fire fighting equipment (17%), life saving appliances (13%), and navigation equipment were the main items where Canadian PSC inspections revealed that foreign vessels did not comply with the necessary IMO conventions. Clearly, this indicates that ship owners find the economic cost of PSC inspection cheaper than the alternative of voluntarily complying with international standards.

While PSC may have matured, its distributive dimensions remain uneven. It is for this reason that Hindell (1996) points out that the European Union has encouraged a much more rigorous PSC regime for targeting substandard ships.

In the future, individual ships will be targeted by a new inspection formula of which the main elements will be the deficiency and detention rate of the flag state; the conventions ratified by that state; the age of the ship; the type of ship; and the classification society used.

Despite the various regional initiatives that have evolved in recent years, in some parts of the world, application of PSC controls remains very limited (SSY Consultancy and Research 2001). The IMO's Senior Deputy Director of the Maritime Safety Division has noted that many countries have experienced difficulty not only in complying with existing legislation, but also in coping with the changes that have been made in more recent years (Plaza 1994). In addition, A January 2001 report from the OECD entitled *The Cost to Users of Substandard Shipping* observers that even PSC can only partially compensate for the laxity of some flag states in enforcing compliance with maritime legislation. Again, PSC has clearly resulted in some unevenness in the "distribution" of efforts to ensure compliance with maritime legislation.

3.3 Social Consequences

The social consequences of a particular regime refer to the most economically efficient means of resolving a problem. As noted in Section 2.4, a crucial element of regional PSC initiatives is the sharing of information gained about particular ships or their owners or operators, between jurisdictions in and out of which those ships trade. This exchange of information is important for two reasons. First, it does not unduly inconvenience vessels by inspecting them at each and every port, and second, it provides forewarning to maritime administrators of the substandard ships in their region (Hare 1997).

In measuring the effectiveness of PSC, it is important to note that those countries that are taking their PSC obligations seriously and have sufficient technical and financial resources to do so are narrowing the trading options of substandard ships (Hare 1997).

One of the unfortunate social consequences, however, has been to increase the exposure (to substandard shipping) of those nations and individuals less able to deal with the negative consequences substandard shipping engenders. This is hardly a ringing endorsement of the equity principle.

4 Conclusion

This paper reveals that the regime of PSC serves to meet three critical needs in relation to the threat to life and/or the environment from substandard ships. First, it establishes a clear legal framework with liability for actions. Second, it demonstrates that the eight regional PSC MOUs have improved the quality and quantity of information available to nations on substandard ships. Third, it reveals that by working together in regional groupings, nations have been able to reduce the transaction costs of enforcement, and reduce the impact of enforcement activities on commercial shipping (Valencia 1996). Evidence suggests that PSC has indeed had some success in contributing to "safer shipping and cleaner oceans." However, this paper's review of the different dimensions and institutional character of port state control suggests that all is not well. One is left wondering, for example, why substandard ships are still a problem in international shipping when substandard aircraft ceased to be an issue long ago. Canada's involvement in the PSC regime clearly indicates that the benefits of inter-jurisdictional co-operation, while necessary to solve the problem of substandard shipping, are not sufficient. One could almost conclude that PSC has inadvertently resulted in removing the pressure from flag states, and effectively absolved them from their international responsibilities. Thus, solving the problem of substandard shipping requires political and business leadership.

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