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MARITIME SAFETY CONTROL INSTRUMENTS IN THE ERA OF THE GLOBALISATION.

F. Piniella[1] , J. C. Rasero[1] and J. Aragonés[1]

Abstract

For more than 30 years the International Maritime Organization (IMO) has carried out valuable work and invested a great deal of effort in implementing rules and regulations covering maritimemaritime transportation to ensure compliance with vitalin order to reach an standards of shipping safety and marine environmental protection. The SOLAS and MARPOL Conventions have been adopted in respect of ninety per cent of the international fleet. From the current situation, however, it is clear that sub-standard vessels are proliferating, and representwhat constitute a serious hazarddanger to the safety of marinemaritime navigation. The largesheer number of different nationalities , involved in maritimethe maritime transportation has motivated a cause forCoastal/Port States to try and developget into the way of protecting policies. The Paris Memorandum of Paris 1982 and other agreements are examples under consideration by thefor been considering the implementation of Port State Control (PSC). The aim of this paper, within the analysis already described, is to study the influences of these policies regarding open Register (FOC).

Keywords: Maritime Transport, Safety, Globalisation

INTRODUCTION

At the "barricades" of the new social revolution, radical protesters now rage at a common enemy: Globalisation. Some see this as the bloodiest face of the ruling world economic situation, dominated by the World Trade Organisation, the International Monetary Fund or the all-powerful World Bank. Underlying the policy

[1] Department of Maritime Studies, University of Cádiz, (francisco.piniella@uca.es), Telf. 956.01.61.44, Campus Río San Pedro, E-11510 Puerto Real, Cádiz, Spain.

considerations of each of these three institutions is a common denominator: world trade. And this trade, at least of physical goods, depends on a critical technological element – the ship. But ships in turn depend critically upon an appropriate operational environment with the necessary infrastructure to enable the transfer of the merchandise traded. This operational environment is the port.

Maritime transport, therefore, is an instrument of the world economic system. At the expense of being critical, we must acknowledge that in the western world, some 40% of all energy used is derived from petroleum as the primary source. Despite the investment in long-distance pipelines, experience shows that maritime transportation continues to be less harmful, in respect of risks to the natural environment, considered on a distance/load basis. Also in its favour is the existence of a substantial record of international consensus on the regulation of safety in navigation matters. Over the last 30 years, the demand for this type of transport has doubled. In the transport of crude oil and petroleum products there has been an increase of 50% over the same period (ANAVE 2000).

But the "family photo" of the world fleet in no way presents a pretty picture: there are far too many "old tubs", ships with an average age of more than 20 years, operating under an established system of flags of convenience (FOC) that constitutes a "safe haven" for substandard ships and unscrupulous owners and operators (although the relationship is not always direct). And the trend is towards such a system: while the world fleet increases, the fleets of vessels registered in the USA or the countries of the European Union suffer a continual leakage, their numbers diminishing year after year.

The creation of a specialised agency, the International maritime Organisation (IMO), for which the constituting convention was signed in 1948, represents an element of control that, through its existence, can count on more than fifty years of experience. But under the policy established by the European community, self-regulation by the sector itself should be the means by which a commitment to quality and therefore to safety should be ensured among all the parties: ship owners and operators, classification societies, brokers, shipping agents, professional associations and trades unions. The substandard ship is rightly considered the cancer of the maritime transport industry, since it is the source of a large part of its problems.

And the first of the problems arises from the impetus towards cost reduction on the part of many ship owners in detriment to the safety of their ships, which is the motive behind the registration of ships under flags of convenience (FOC).

According to the International Shipping Federation (ISF 2000), the salary of a first officer from Norway may be four times that of his Philippine counterpart. These salary differences, ultimately reflecting differences in training, are even greater in lower level jobs such as ordinary seaman or greaser.

To this should be added the changes undergone by the world of maritime transport, which constitutes a veritable transformation in the way ships are man-

aged. Never in previous centuries have merchant seamen passed through such profound changes in such a brief period of time. The ships continue sailing between the same ports carrying the same cargoes, but those on board them have to live their lives in conditions of complete lack of confidence.

On the ships flying flags of convenience, scarcely the captain, first officer and chief engineer come from countries where levels of training are acceptable, while the rest of the crew consist of seamen drawn from such a diverse range of countries, languages and cultures that not even coexistence and mutual tolerance can be safely assumed. The average age of these ships, as at 1st January 2000, was 20 years, and Panama is the most important FOC state in the world context, with more than one hundred million in Gross Tonnage registered: this is almost 20% of all the world's merchant ships (ANAVE, 2000).

The present article therefore discusses the Port State Control (PSC) as one more means of inspection which is aimed, like the other inspection bodies, at ensuring that ships operate in conditions of safety. But the PSC is considered, from a more philosophical viewpoint, as representing the control mechanism exercised by States over maritime transport in general (regardless of a ship's Flag), faced with the reality of the globalization of trade.

EVOLUTION OF THE INSTRUMENTS OF CONTROL.

The function of the PSC consists of the inspection of foreign vessels in national ports, for the purpose of verifying that the conditions of the ship, its equipment and crew comply with the requirements demanded in International Conventions (Hoppe, 2000). The origin of the system of inspections must be sought in a problem on which the IMO has, since its inception, concentrated its efforts: assuring that all ships meet certain minimum requirements so that they do not present a danger to safe navigation, and guaranteeing that the living conditions of crews are acceptable.

These efforts of the IMO have been channelled into two different lines of action: on one hand, the preparation of International Conventions that oblige signatory Flag-issuing states to comply; and on the other, the real and effective implementation of these Conventions by the states ratifying them. If we analyse separately these two lines of action, one legislative and the other executive, we come to the conclusion that in respect of the International Conventions, the efforts of the IMO have borne fruit, but not so the work of implementation by the Flag-issuing states (Piniella, 1997).

This means that some states that on paper accept the commitment that the ships flying their flag should comply with specified conditions, in practice either do not accept this commitment or are unable to accept it. Their ships can thus avoid the provisions of these International Conventions. Clearly in this situation, competition can develop between FOC states regarding the conditions or lack of conditions attached to the registration of ships.

In some cases, this dysfunction is due to lack of political will on the part of FOC states, whereas in other cases, the problem lies more in the lack of the human and physical resources needed by these states to exercise control over their registered fleet, particularly over registered ships that do not frequent their own ports. In a brief summary of the problem, we can state that we are describing a world in which the two sides of the coin in question are the Flag-issuing states (FIS) and the PSC of the states into which the ship sails.

To seek a solution, this question was discussed in a plenary session of the IMO at the beginning of the 1990's. The outcome was the creation in 1992 of a new Sub-committee. This was to report to two main Committees, the Maritime Safety Committee (MSC) and the Marine Environment Protection Committee (MEPC), and was designated the Flag State Implementation or FSI Subcommittee.

The functions of the FSI Subcommittee are, among others, to determine what difficulties the Flag States face in implementing the International Conventions that they have ratified; to estimate the extent to which these states are complying with the obligations contracted under these Conventions; and to put forward proposals for providing assistance to those states in putting into practice these obligations as specified and contracted (Piniella, 1997).

These functions of the FSI Subcommittee are carried out through three main channels of action: 1. Preparation of Directives for the Flag States; 2. Preparation of statistics and investigation of accidents; and 3. Technical assistance

However, the creation of the FSI Subcommittee has not been a panacea. The harsh reality is that maritime accidents continue to happen, with loss of life, goods and damage to the marine environment. Although other causes intervene, these are mainly due to[1] :

a) An increase in the average age of the world's merchant fleet;
b) Insufficient maintenance of material and equipment;
c) A growing shortage of experienced crews;
d) Failure to observe international safety standards.

In the light of this situation and even before the formation of this IMO Subcommittee, the PSC authorities, the other party involved in supervising international maritime traffic, recognised the need to ensure maritime safety and the protection of the marine environment in their own ports and coastal waters. The action proposed for this was to monitor foreign ships that visit their ports, and if justified to detain or prohibit the entry of ships not complying with the provisions of the International Conventions, which ships were henceforth designated "substandard ships".

When a state, in function of registering ships to sail under its flag, has ensured that all the ships of its fleet conform to the requirements demanded in the International Conventions, the next step for it is to take measures to avoid the

[1] http://www.sudnet.com.ar/ciala/iniciala.htm

occurrence of "incidents" in its coastal waters. For this, the state must ensure that foreign ships visiting its ports comply with the same requirements as its own registered ships.

As we have already seen in its definition, this principle of action or authority is what constitutes the Port State Control. The origin of this system of control, in existence prior to the formation of the FSI, as already noted, is found in two previously developed models:

— The American model of the U.S. Coast Guard (1970).
— The European model of the Memorandum of Understanding (MoU) of París (1978).

With respect to the North American model, this does not involve a system of transfer of information between countries like the European approach, but rather, it is a unique model that arose in response to the decrease of the fleet registered under the US flag. At the present time, US-registered ships account for barely 5% of the total ships entering US ports. The U.S. Coast Guard makes control inspections of some 7,500 ships each year. Its PSC system was standardised effectively in 1994 when the Federal Government put into practice its program for the detection of substandard ships.

The responsibility and management of the PSC is carried out by means of the 45 Captaincies of the Coast Guard among which all the coastal zones of USA territory is divided. The system of selection of ships for inspection used by the US Government is very particular to that country, and is based on a priority matrix known as the Boarding Priority Matrix or BPM. Under this method, four levels of priority are established on the basis of a series of points that the ship accumulates in function of whether or not it is registered with one of a series of black-listed countries, shipowners or classification societies. In the compilation of these black-lists, statistical data of the past three years are used. The system of information is fundamental to the US approach, and this information is available on the Net and is universally accessible.

The MoU of Paris is based on the previous experience of what was known as the Memorandum of The Hague, signed in 1978 by a group of 8 European countries with the aim of reaching an agreement to adopt uniform criteria for the inspection of working conditions on board ships, according to the provisions of Convention 147 of the International Labour Organisation (ILO).

However, the agreement of The Hague had hardly come into effect when the oil tanker *Amoco Cadiz* ran aground in the English Channel. This incident and its disastrous consequences spurred these countries into reappraising their preventive policies. As a result the original agreement was remodelled and extended to cover other matters contained in other International Conventions related to maritime security and protection of the marine environment. Thus was born in 1982 the first international agreement on the unification of criteria for the inspection of foreign ships by PSC authorities, signed in principle in Paris by 14 countries and termed the Memorandum of Understanding of Paris.

The framework of the MoU of París is based on mainly geographical criteria, although an Annexe has been included specifying quality conditions for the inspection services. At that time the signatory countries were: Belgium, Canada, Croatia, Denmark, Finland, France, Germany, Greece, Holland, Ireland, Italy, Norway, Poland, Portugal, Russia, Spain, Sweden and the United Kingdom. The fundamental principles of the MoU are:

— Responsibility for the safety of ships rests with the ship owner or operator.
— The PSC authorities must inspect, in accordance with the International Conventions, at least 25% of the foreign ships entering their ports.
— Favourable treatment must not be shown towards ships of any particular flag.
— And inspection procedures must be adequately harmonized among these countries.

The information used by the MoU of París is that known by the initials SIRENAC, although currently there is a trend towards a new system of information known as EQUASIS. This new system is an initiative of the European Union which was introduced in 1997 and was set up at the Conference on Quality in Maritime Transport, during the Portuguese presidency of the European Union in 1998. The participants in EQUASIS not only comprise the European countries but the US Coast Guard and some Asian countries such as Singapore and Japan are also partners.

Does this development mean a diminishing of the traditional role of the Registering or Flag-issuing State as ultimately responsible for the safety of its ships? (Plaza, 1997). Not necessarily. These regional MoU's should be regarded as tools of prevention, aimed at the eradication of the substandard ship, as is the FSI Subcommittee. The principles of action are different but complementary to those of the FSI. Whereas the function of the FSI Subcommittee consists of providing technical assistance to the registering State so as to put into effect the requirement of the International Conventions, the PSC for its part pursues the ships not complying with the provisions of these Conventions, even ships registered by states that have not ratified these Conventions.

Promoted by the IMO, in recent years seven more agreements have been signed on PSC procedures, all of them regional in character; an eighth is still in the project stage:

a) Agreement of Viña del Mar (1992), between the Maritime Administrations of the coastal states of South America;
b) Memorandum of Tokyo (1993), between the Administrations of the coastal states of the Asiatic region of the Pacific.;
c) Memorandum of the Caribbean (1996);
d) Memorandum of the Mediterranean (1997);
e) Memorandum of the Indian Ocean (1998);
f) Memorandum of the Western and Central regions of Africa (1999);

g) Memorandum of the Black Sea region (2000);
h) Memorandum of the Persian Gulf (Projected).

The IMO continues to promote the signature of new agreements, concentrating its work on two fundamental aspects:

a) The States that carry out PSC have to be supported by efficient maritime Administrations, that can count on properly trained, experienced staff who are adequately remunerated.
b) The establishment of new agreements requires not only the collaboration among the signature states but also external support and collaboration. Each signature state depends on the others when it comes to allocating the financial resources necessary for the establishment and continuing operation of the agreement; as well as requiring technical and financial assistance, they also need access to the information and data bases maintained by third countries (Plaza, 1997).

SUBSTANDARD SHIPS AND FLAGS OF CONVENIENCE.

Background

Previously we had to place on record the legal and economic questions that stem from the irregular behaviour of the control of the fleet, to the detriment of a generalized implementation of inspections by the State of the port. Up to the 1960's, the manifest dangers from maritime transport did not cause public alarm to anything like the extent provoked by later events. These more recent years have been marked by a seemingly interminable list of ship's names like "Amoco Cádiz", "Exxon Valdez", "Aegean Sea" or "Erika".

Consequently the proliferation of flags of convenience (FOC) now represented not only the diversion of fiscal funds from the developed countries to others, which offered their flags to the shipowners of the First World as a means of obtaining foreign currency: this practice was clearly giving rise to the phenomenon of substandard ships with the characteristics that are widely acknowledged: insufficient safety equipment; poorly trained crews; ineffective control by the registering State. All this has constituted a latent danger of marine accidents on the coasts of the States on the receiving end of world maritime traffic. The evolution of the international fleet by flag of registration can be appreciated in Tables 1 and 2, which shows the generalized decrease

Table 1: Evolution of the registered fleets of the EU and the USA, in relation to that of the total world fleet.

	1975	1980	1985	1990	1995	2000
USA	14587	18464	19518	21328	13655	12026
European Union	113014	127436	93432	63116	72423	75082
World Fleet	342162	419911	416269	423627	457914	543610

Source: Authors' own, using data from the ANAVE 1999-2000 Report (data in'000 GT).

Table 2: Comparison between three Western and three FOC countries

	1975	*1980*	*1985*	*1990*	*1995*	*2000*
USA	*14587*	*18464*	*19518*	*21328*	*13655*	*12026*
Spain	*5433*	*8112*	*6256*	*3807*	*1560*	*1903*
France	*10746*	*11925*	*8237*	*3832*	*4348*	*4425*
Panama	*13667*	*24191*	*40674*	*39298*	*64170*	*105248*
Liberia	*65820*	*80285*	*58180*	*54700*	*57648*	*54107*
Bahamas	*190*	*87*	*3907*	*13626*	*22915*	*29483*

Source: Authors' own, using data from the ANAVE 1999-2000 Report (data in '000 GT)

of the European and North American flags in comparison with the growth of FOC. Among these FOC states should be noted the pronounced leading role of Panama, which in the year 2000 exceeded the total of 100 million gross tons for the first time, followed by Liberia and the Bahamas.

Against the negative element of this *"flagging out"*, note should be taken of an inverse process of control that has caused an authentic revolution in the Law of the Sea, with the aim of closing a loophole that should make it impossible for a ship not to comply with the minimum levels of safety, including in respect of contracting crews with minimal maritime traditions. Since the end of the 1970's, a series of International Conventions have been approved more favourable to the exercise of control by the coastal State. These began with the establishment of a ruling on minimum levels of training, with the approval of the STCW in 1978, which came into force in 1984.[2]

In respect of the Maritime Administrations of the FOC States, in addition to the problem that their registered ships very rarely put into port in their flag country (a typical example of a FOC country: a Caribbean island often of minuscule size), it happens that the actual work of controlling ships amounts to little more than whatever can be done by the consuls and by the Classification Societies. This problem of "delegation" to "recognized organizations" is another even more negative factor. For Fernández Beistegui (2000): *"the causes are mainly economic in nature, connected with the commercial interests of certain companies, although political interests are also involved in certain States that wish to depend on their own Classification Societies to help them in the development of their fledgling maritime industries"*. In any case, the instructions and regulations of minimum requirements established by the IMO in respect of "recognized organizations", of which we have spoken, to which the administration of FOC fleets are delegated, have represented a qualitative leap of improvement in the reduction of risks of maritime accidents.

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[2] In any case, the generalization of the so-called white list of countries of approved training, under pressure from the shipowners, has created a crisis for the validity of the system.

[3] These sources have been utilized since other MoU's, such as that of Viña del Mar, restrict the information available on the Net thus preventing access to all the data that have been obtained for the three systems selected: the MoU's of París, Tokyo (especially AMSA –Australia-) and the system of the American USCG.

In order to analyse the level of effectiveness of the system of control exercised by the coastal states, we have consulted the following Reports:[3]

1) Annual Report MoU Paris (+Blue Book).

2) Annual Report on PSC in the Asia-Pacific Region (+PSC Report Australia).

3) Port State Control Report U.S. Coast Guard.

Based on these sources of information, we shall determine firstly certain quantitative aspects, and finally we shall carry out a qualitative study of aspects relevant to Maritime Safety.

Index of the Rigorousness of the Controls.

In Europe the proportion of inspections has evolved over the past 10 years by less than 4%, from 23.7% in 1991 to 27.6% in 1999, with all the countries members of the MoU of Paris presenting a uniform rate of inspections apart from Ireland. However, in the countries of the MoU of Tokyo such uniformity of action is not seen, and there are variations between the countries such as Australia and New Zealand which inspect 60% of foreign ships, and others such as Singapore and Malaysia where the rate does not exceed 10%; in between are countries such as

Table 3: Index of inspections by Entry in ports. Total numbers of inspections made.

Country	% Index of inspections by Entry in ports.	Total numbers of inspections made.	Country	% Index of inspections by Entry in ports.	Total numbers of inspections made.
Belgium	20,4	1383	UK	28,4	1870
Canada	27,4	707	USA	22	11540
Croatia	90	438	Australia	59,46	2753
Denmark	20,4	590	Canada/Pacific	18,34	350
Finland	31,1	448	China	21,29	1510
France	14,1	819	Fiji	45,87	100
Germany	25	1743	Hong-Kong	16,13	900
Greece	27,3	730	Indonesia	15,24	853
Ireland	7,5	100	Japan	32,75	3579
Italy	37,5	2194	Korea	19,68	1846
Holland	32,3	1825	Malasya	6,38	338
Norway	19,6	358	New Zealand	60,26	743
Poland	31,4	601	Philippines	5,55	135
Portugal	29,2	758	Russia	45,53	428
Russia	53,3	1454	Singapore	9,18	1019
Spain	29,6	1654	Thailand	2,32	83
Sweden	26,9	727	Vietnam	24,77	270

Source: Authors' own, using data from the Reports of 1999 of the MoU's of París, Tokyo and the USCG.

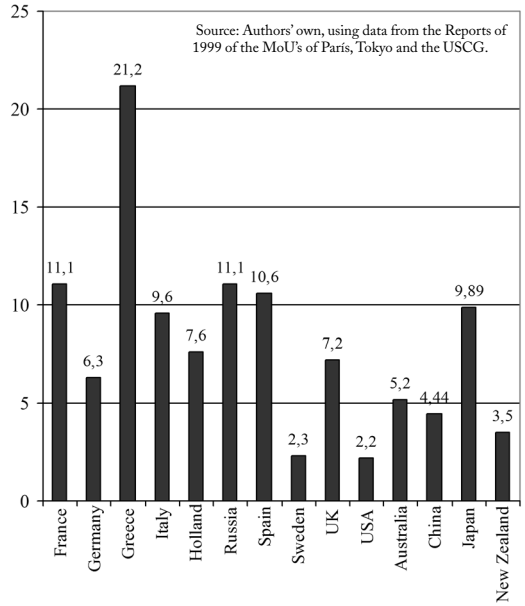

Fig.1: Index of detentions as a percentage of inspections.

China, Canada and Japan with inspection rates of 20-30%. In the case of the USA, the Coast Guard presents a rate of inspections of around 22% or more.

In Table 3 we can see a comparison of some of the countries of the world in respect of the total number of inspections made in 1999.

If the general picture is one of lack of uniformity in the level of control exercised by countries that take the responsibility of inspections seriously, as shown in the two preceding graphs, this is seen even more clearly in the comparison of the percentages of detentions. Some of the cases, but not all, are seen to be quite significant.

Based on a simple cluster analysis (the unweighted pair-group method using arithmetic average UPGMA (Ludwig *et al.*, 1988) (Sneath *et al.*, 1973) (Dillon *et al.*, 1984), using the standardized variables: number of inspections, detentions, and deficiencies), we shall determine the results that are shown in the following dendogram (Figure 2).

In order to determine some relevant aspects of the relationship of these variables, and by means of a Multidimensional scaling (MDS) we shall obtain a representation of two dimensions of the similarity of the observed countries.

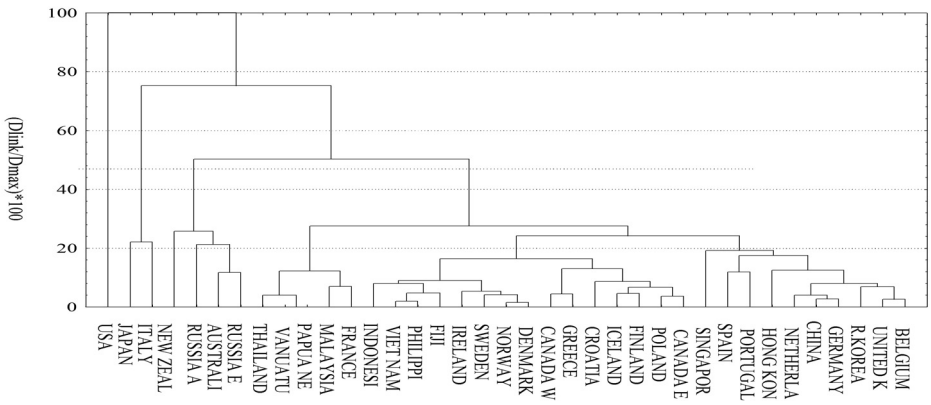

Fig.2: Dendogram.

Two previous conclusion can be drawn from these results:

a) Those countries that are relatively rigorous in their control, such as the USA, generate a degree of self-control on the part of shipowners, in self-protection. Although the USA maintains a reasonable rate of inspection – 22% - the rate of detentions is relatively low, representing 250 ships detained from a total of 11,000 inspections. A similar result occurs in Europe, with Sweden, but with much lower totals. In Australia and New Zealand, a similar situation can be seen.

b)The number of detentions shoots up when two factors come into play: a high rate of inspections and the habitual presence of substandard ships. A typical case of this is Greece, where the level of detentions in 1999 was more than 21%.

Typology of ship detentions.

The detentions represent the most important part of the wider scope of the instruments of control. Therefore two basic initial questions arise: What is the predominant basic deficiency for which substandard ships are detained? and What types of ship are most frequently detained?

The answer to the first is that deficiencies under the safety provisions are numerically the most significant; these divide into three main groups: 1) those referring to survival and life-saving equipment; 2) those related to elements of the fire-fighting systems on board; and 3) those classified as "deficiencies of safety in general"[4]. One of the most striking figures is from the MoU of Paris, in which 96.75% of all ships with deficiencies have some deficiency in their life-saving equipment. Also significant are the deficiencies detected in Navigation systems: navigation equipment, radar, giro-compass, navigation lights and signals (COLREG), as well as in respect of charts and nautical publications.

The foregoing are the most significant of the total deficiencies. These are followed by non-compliance with Annexe I of the MARPOL: hydrocarbons record book, bilge separators, oleometers, etc. These levels of deficiency can be observed quantitatively in Table 4 (from which have been eliminated the deficiencies of minor significance).

Although there exists a clear similarity between the MoU's of París and Tokyo in respect of which groups of deficiency are most important, in the case of the PSC inspections carried out by the USCG, the group of "Operational deficiencies related to SOLAS" stands out from all the rest, being followed in importance by those of life-saving and fire-fighting equipment already mentioned. This finding indicates the importance that the North American inspectors attach to questions such as the Training Manual, emergency plans, instructions to the crew, skills of the crew in relation to safety operations, communication of safety, bridge routines,... all related to the operational compliance with the SOLAS Convention.

[4] In this section are included deficiencies related to: watertight doors, signing, servo-rudder, means of evacuation, electrical equipment, real and practice scale, etc.

	MoU Paris	MoU Tokyo
Certificates	3596	2204
Crew	1232	1234
Accommodation	1889	717
Stores And Galley	954	462
Life-Saving	10882	10266
Fire-Fighting Systems	8052	6407
Labour Risks	1336	521
Safety In General	7965	5550
Cargo Lines	3308	3844
Propulsion/Auxiliary Equipt.	2966	1555
Navigation	6643	5813
Radio Communications	2439	2504
Marpol Annexe I Deficiencies	4276	2944
Solas Operational Deficiencies	975	2641

Table 4: Number of deficiencies, by most important groups, in the MoU's of París and Tokyo.

Source: Authors' own, using data from the Reports of 1999 of the MoU's of París, Tokyo and the USCG.

	MoU Paris	MoU Tokyo	USCG USA
Bulk-carriers	442	195	74
Chemical tankers	55	22	4
Gas tankers	4	4	1
General cargo	849	611	119
Passenger	34	8	5
Refrigerated ships	37	48	-
RoRo/Containers	70	106	30
Other tankers	105	56	23
Other ships	88	21	1
TOTAL	1684	1071	257

Table 5: Number of PSC detentions by type of vessel

Quantitatively and despite talking of zones widely separated geographically, it is very surprising that in USA ports, where a high proportion of foreign-flagged ships are inspected, the number of detentions is very low, in comparison with those made under the European and Pacific agreements. The total numbers of PSC detentions in 1999 are very revealing.

— MoU París 1.684
— MoU Tokio 1.071
— USCG-USA 257

This could mean that the traditional demands of the USCG have given rise to a culture of safety that is imposed drastically on the ship-owners that decide to operate in US waters, independently of whether they may have opted to register under FOC. The breakdown of types of ship detained is as Table 5.

Influence of the Flag States on the detection of deficiencies

As methodology for a first comparative analysis of the possible relationship between FOC fleets and the detection of substandard ships, we shall take as a basis those flag fleets with the highest index of detentions under each of the MoU's studied: Table 6.

In spite of the divergence seen in the data under the two systems of control[5], it is evident that the ships on these three so-called "black lists" belong to FOC states. The correlation is therefore direct. Similarly, it is demonstrated that not all FOC have the same result in this particular ranking. It must be of great concern that the ships of the world's leading ship-registering state, Panama, which has over 100 mil-

MoU Paris	Albania; Honduras; Belice; Lebanon; Syria; Romania; Cambodia; Turkey; Georgia; Algeria; Libya; St.Vincent/Granada; Egypt; Morocco; Mauritius; Bangladesh; Ukraine; Malta; Pakistan; Cyprus; **Panama**; Malaysia; Cuba; Russia; Bulgaria; Thailand; Lithuania; Croatia; Azerbaijan.
MoU Tokyo	North Korea; Cambodia; Belize; Vietnam; Indonesia; Turkey; St.Vincent/Granada; Honduras; Malta; Thailand; Egypt; Russia; Iran; Antigua and Barbados; Malaysia; Cayman Islands; China; South Korea; Taiwan.
USCG-USA	Belice; Honduras; Venezuela; St.Vincent/Granada; Turkey; India; Cyprus; Vanuatu; Thailand; **Panama**; Malta; Russia; Antigua and Barbados; Philippines.

Table 6: Flag fleets with the highest index of detentions under each of the MoU's studied

lion GT under its flag, tables in two of these three black lists. However, it is also striking how another of the traditional FOC states, Liberia, or the relative newcomer, the Bahamas, are not found in the above but in the "white list" of the MoU of Paris, while countries that have actually signed the Memorandum itself, such as the Russian Federation, make up much of the black list. The utilization of Caribbean states like Belize, St. Vincent and Granada or the Cayman Islands, also demonstrates an arbitrary interpretation of the meaning of international responsibility on the part of some of these states.

Evolution and incidence of the instruments of control.

The importance of any of these instruments of control is based not only on its capacity for establishing lists that reflect the fleets that are most guilty of failure to comply with minimum safety provisions, but also on whether these instruments serve to create a culture of prevention, even of an aggressive position towards those who do not comply with the system of International Conventions.

In order to study the relationship between the following variables: inspection ships, detentions, number of inspections, number of deficiencies and year, we have obtained the following table 3. The table shows three numbers of each pair: Pearson coefficient of correlation, number (11) of years (period between 1991 and 2001) and p (when p is less than 0.05 implies that exists a significant correlation with a level of 95%).

The results of this table implies an important relationship in nearly every pair, with the only exception of ships and detentions. It would appear from the data in these reports that even though the level of inspections proposed has been achieved, this has not produced, as a general rule, any reduction in the numbers of deficiencies. In fact, the Pearson coefficient of correlation between the number of inspections and

[5] This consideration of "black flag" is different from that which we have seen throughout this Manual, but this has not stopped it from being referred to over very similar criteria. In the case of the MoU of París, the so-called "black list" has been considered calculated on the basis of a formula that takes into account the trend of detentions/inspections, in the MoU of Tokyo, the flags that exceed the average level of detentions, and for the USA, comprise their "priority list".

	Year	Inspections	Ships	Detentions	Deficiencies
Year		0.8746 11 0.0004	0.7495 11 0.0079	0.7825 11 0.0044	0.9268 11 0
Inspections			0.9189 11 0.0001	0.7066 11 0.0151	0.905 11 0.0001
Ships				0.4134 11 0.2063	0.7053 11 0.0153
Detentions					0.9223 11 0.0001

Table 7: Multivariate Analysis

the number of deficiencies is positive, meaning a direct relationship between the variables instead of an inverse relationship, which would be desirable. (Figure 4).

It can be observed how from the year 1992, coinciding with a series of significant accidents such as that of the "Aegean Sea" in Spanish waters, the European countries made a substantially increased effort in their inspections, greatly increasing the number of detentions by almost double, to reach annual totals of around 1,000 ships detained in waters under the MoU of Paris regime. The number of inspections and ships inspected has maintained a regularity that would comply with the minimum objective of 25%. Bearing in mind that the aim of the PSC system of control is the reduction of substandard ships, it seems that this is not being achieved, for several reasons (Pérez *el al.*, 2000):

1) The number of ships detained is not following a curve of decline.
2) The number of deficiencies detected is being maintained or even increasing year on year.
3) The countries with the more shipping movements are practically the same, thus the status of the substandard fleets remains unchanged, with the instruments of control failing to make any impression in fostering a culture of prevention.
4) The Classification Societies that act in the name of the governments of the FOC states are the same.

Perhaps, as some studies suggest, consideration should be given to the way in which the inspectors act, that is to say, inspections by non-selective sampling. This method would not meet the condition that all the equipment or systems of the ship should have the same probability of being checked. The operational control of the safety elements established in the SOLAS is pointed to as one of the keys to the

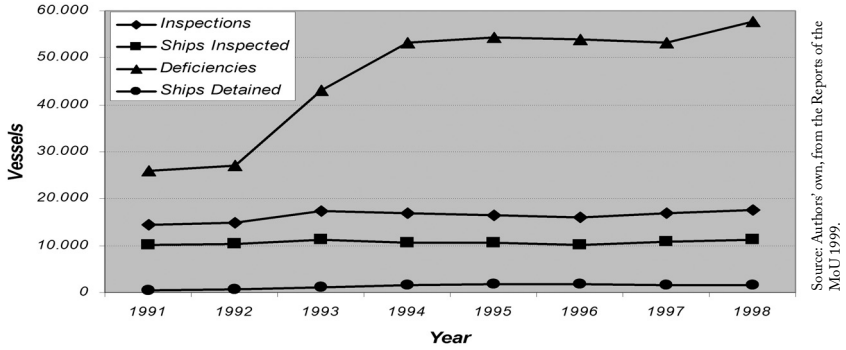

Fig.4: Comparison of: ships detained and nº of deficiencies in those inspected, and with the nº of inspections in the Memorandum of París between the years 1991-1999.

improvement of the system. This has occurred, as already commented, with the North American system of control, where the group of these deficiencies is seen to be predominant. This trend is also indicated in the Tokyo MoU.

Other causes of the ineffectiveness of the system, in respect of the professionalism in the detection of deficiencies, are the failure to keep instructions up-to-date and the absence of documented operative procedures for carrying out inspections. Uniform criteria for the treatment of deficiencies can and should be set by international organizations, or at least, by the regional ones, with responsibility for the PSC system. Do we need a European Agency for Maritime Safety, independent of the national Maritime Administrations? This could be a solution, accompanied by a European Standard, dealing with the technical competences of the bodies performing these inspections and incorporating the relevant requirements of the EN/ISO 9000 series of standards applicable to the quality control systems of inspection bodies (Pérez *el al.*, 2000).

CONCLUSIONS

Maritime transport has been shown to be one of the most ecological systems of the multi-modal chain of the 21st Century, but in spite of this, it is in a permanent state of crisis in respect of Maritime Safety. In fact, on many occasions, it raises genuine public alarm, particularly in the countries of the European Union. The globalization of trade and of the maritime transport sector itself makes it difficult to achieve the correct application of preventive policies on the part of those authorities with the competence and the means to do so: the Flag States of the ships. This abandoning of responsibilities has given rise to a reaction on the part of the Coastal States and Port Authorities, which is producing a progressive modification of international legislation. A further step has been taken with the approval of specific

national regulations in the USA; these have even breached the previous international consensus on this subject.

The European Community law and the policies of the Commission are also tending in this direction. The universality of the PSC is evident by the appearance of a significant number of regional agreements between the Coastal States; however, in spite of this, the PSC is failing to remain universal and homogeneous. The North-South differences demonstrate systems that are incapable of applying the controls thatexist in the mechanisms already in force in the western countries. The system of regional Memoranda requires a homogeneous procedure that is uniformly effective and rigorous in the elements of control. The case of the tanker "Erika" is an example of the distrust existing between States members, which generates a centrifugal tendency in the implementation of regional policies, to the detriment of those favouring national action.

A similar jealousy already exists in other scenarios, for example where some are trying to emulate the North American system rather than consolidate the South American Agreement of Viña del Mar. Or the primacy of the oceanic countries (Australia and New Zealand) over the rest of the countries signatories of the Memorandum of Tokyo.

We might go beyond the flags of convenience and consider what are already beginning to be known as "ports of convenience" where a blind eye is turned by the authorities with the aim of favouring the competitivity of their port. This occurred in Europe in the rivalry between Belgium and Holland, and may represent yet another phenomenon of "every man for himself" in the so-called global jungle.

For we should not fool ourselves. We should realize that, in reality, the evolution of the problem will lead to more satisfactory results when more investments are made by the leading countries towards these purposes. The example of the US Coastguards is most significant: this can be considered the PSC system that provokes the most "fear" among the owners and operators of substandard ships, who as a result either choose to improve the level of their vessels or else deploy them in other maritime zones, in order to avoid submitting to the USCG degree of control.

In short, we in Europe at least, are faced with a system that, as we have described and tried to analyse in detail, does not reduce the number of deficiencies in the safety of vessels – vessels that are themselves frequently deficient. Neither does this system reduce the accident rate; it has repercussions on political actions, at times demagogic; and it does not always respond to technical measures that are necessary. This is the case of the perfunctory implementation of the double hull in Europe, as if this were a universal panacea, and as if once this were implemented, no other serious problems would exist, such as the vitally important training of merchant seamen, or the management of emergency situations on board ships, or the necessary professionalisation of a competent Maritime Administration in all the coastal states of Europe.

Only the awareness of individual citizens and the global management of the problem under the authority of the International Maritime Organisation will enable this situation to be properly dealt with. The dangers and risks faced, which should never be minimised for obvious reasons, at least demand much more rigorous regulation in order to protect the natural environment, which in the last analysis is the best legacy that today's society can bequeath to future generations.

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EL CONTROL DE LA SEGURIDAD MARÍTIMA EN LA ERA DE LA GLOBALIZACIÓN.

RESUMEN

Por más de 30 años la Organización Marítima Internacional ha llevado a cabo un gran esfuerzo por desarrollar un cuerpo legislativo importante para el aseguramiento de unos mínimos de seguridad y protección del entorno marítimo. Los Convenio SOLAS y MARPOL han sido adoptados por la normativa internacional en un porcentaje superior al noventa por ciento de la flota. A pesar de ello la realidad contradice esta situación con hechos significativos como la aparición de buques "sub-standard" y la proliferación de los registros abiertos con un déficit considerable en la seguridad de la navegación marítima. Son muchos los países que se involucran en la mejora de esta situación, por una parte los estados de bandera pero también de forma significativamente creciente, los estados costeros o portuarios que sufren los efectos de un siniestro, especialmente desde el punto de vista de la contaminación de su entorno marino. El Memorandum de Paris firmado en el año 1982 y otros acuerdos regionales son ejemplos de una nueva política de control del estado rector del puerto for been considering the implementation of(Port State Control PSC). El propósito de este artículo es analizar la efectividad de estos mencionados sistemas de control y estudiar la influencia de estas políticas especialmente en lo referente a los pabellones de conveniencia.

Palabras claves: Transporte Marítimo, Seguridad, Globalización

INTRODUCCIÓN.

El transporte marítimo es una herramienta del sistema económico occidental. A fuerza de ser críticos tenemos que asumir que el Mundo occidental utiliza en más de un 40%, el petróleo como fuente de energía primaria. A pesar de ello el transporte marítimo sigue siendo, desde el punto de vista ambiental, el menos nocivo en su relación de distancia/carga. Así mismo existe una trayectoria internacional importante, de consenso internacional en la regulación de la seguridad de la navegación. En los últimos treinta años se ha duplicado la demanda de este tipo de transporte. En el transporte de crudo y productos del petróleo tenemos que hablar de un aumento del 50% en el mismo periodo de tiempo. Pero la foto fija de la flota mundial presenta un panorama nada halagüeño: en definitiva "barcos viejos", con una media que no abandona los veinte años desde su construcción y bajo un sistema establecido de banderas de conveniencia que constituyen el lugar reservado para el abrigo de los buques "sub-

standards". Mientras la flota mundial crece, la flota abanderada en EE.UU. o los países de la Unión asisten a un goteo continuo que reduce su flota año por año.

El buque subestandard es el cancer de la industria marítima pués es en gran parte el origen de sus problemas. Y el primero de los problemas surge de la reducción de costes de algunos navieros en detrimento de la seguridad de los buques, materializado en el empleo de pabellones de conveniencias.

EVOLUCIÓN DE LOS INSTRUMENTOS DE CONTROL POR ESTADO RECTOR DEL PUERTO.

El Control del Estado Rector de Puerto (*Port State Control*), consiste en la inspección de buques extranjeros en puertos nacionales, con el propósito de verificar que las condiciones del buque, su equipo, y su tripulación cumplen con los requisitos exigidos en los Convenios Internacionales. El origen de este sistema de inspecciones debemos buscarlo en un problema en el que la Organización Marítima Internacional (IMO), desde su constitución, ha concentrado sus esfuerzos: asegurar que todos los buques cumplen con unos requisitos mínimos para que no constituyan un peligro para la navegación segura, así como para garantizar que las condiciones de vida de sus tripulantes son aceptables.

BUQUES SUBSTANDARDS Y PABELLONES DE CONVENIENCIA.

Hasta la década de los setenta la peligrosidad manifiesta del transporte marítimo no suponía una alarma social como la desencadenada por los sucesos posteriores, que han jalonado una lista interminable de nombres de buques como "Amoco Cádiz", "Exxon Valdez", "Mar Egeo" o "Erika". Consecuentemente la proliferación de banderas de conveniencia (FOC) ya no suponía sólo la desviación de fondos fiscales desde los países desarrollados a otros, que con el objeto de obtener una fuente de divisas prestaban sus pabellones a los armadores del primer Mundo, sino que esta práctica desencadena un fenómeno de buques subestandards con las características de todos conocidas: equipamiento en seguridad insuficiente, tripulaciones con un perfil de formación deficiente, control inefectivo por parte de los Estados de pabellón. Todo ello ha constituido un peligro latente en cuanto a siniestrabilidad marítima en las costas de los Estados receptores del tráfico marítimo mundial. Frente al elemento negativo del *"flagging out"*, cabe destacar un proceso inverso de control que en los últimos años ha propiciado una auténtica revolución del Derecho del Mar, al objeto de cubrir una laguna que hiciera imposible el incumplimiento de los niveles mínimos de seguridad en los buques. Al objeto de analizar cuál ha sido el nivel de efectividad del sistema de control de los Estados ribereños hemos tomado como partida los siguientes Informes:

— *Annual Report MoU Paris (+Blue Book).*
— *Annual Report on PSC in the Asia-Pacific Region (+PSC Report Australia).*
— *Port State Control Report U.S.Coast Guard.*

CONCLUSIONES.

El transporte marítimo a pesar de revelarse como uno de los sistemas más ecológicos de la cadena multimodal del siglo XXI, supone desde el punto de vista de la Seguridad Marítima un elemento en crisis permanente y que levanta en ya numerosas ocasiones una auténtica alarma social, especialmente en los países que conforman la Unión Europea. La globalización del comercio y del propio negocio marítimo dificulta la correcta aplicación de políticas preventivas por parte de aquellos que cuentan con la competencia y los medios: los Estados del pabellón de los buques. Esta dejación de responsabilidades origina una reacción por parte de los Estados ribereños y rectores de puerto, que desemboca en una progresiva modificación de la legislación internacional. Un paso más se da con la aprobación de determinadas regulaciones nacionales en los EE.UU. que llegan incluso a romper el consenso internacional en esta materia. El Derecho comunitario y las pretensiones de la Comisión van también en este sentido. La universalidad del PSC es evidente por la aparición de un importante número de acuerdos regionales entre los Estados ribereños, sin embargo, y a pesar de ello, deja de ser universal y homogéneo. Las diferencias Norte-Sur ponen de manifiesto sistemas incapaces de asumir los controles que existen en los mecanismos vigentes en los países occidentales. El sistema de Memorandums regionales requiere de un procedimiento homogéneo de igual rango en efectividad y rigurosidad en los elementos de control. El caso del buque tanque "Erika" es un ejemplo de la desconfianza entre Estados miembros, que genera una tendencia centrífuga en la implantación de políticas regionales en detrimento de los partidarios de acciones nacionales. El mismo recelo que ya existe, por ejemplo, en otros escenarios, que pretenden emular el sistema norteamericano en vez de consolidar el Acuerdo Suramericano de Viña del Mar. O la primacía de los países oceánicos (Australia o Nueva Zelanda) sobre el resto de los países que componen el Memorandum de Tokio. Podemos ir más allá de los pabellones de conveniencia e inventarnos los que ya empiezan a conocerse como puertos de conveniencia en manifiesta alusión a los Estados donde se hace la "vista gorda", pretende favorecer la competitividad del puerto. Ocurrió en Europa entre Bélgica y Holanda y puede suponer un fenómeno más del "sálvese quién pueda" de la llamada jungla global. Porque no nos engañemos y pensemos que en realidad, la evolución del problema resulta más satisfactoria cuanto más sea la inversión económica que los países destinen a estos fines: el caso del Guardacostas de los EE.UU. es el más significativo, puede considerarse como el sistema de PSC que genera más "temor" frente a los armadores de buques substandards, que optan por mejorar el nivel de sus barcos o bien destinarlos a otras zonas marítimas donde poder eludir la acción de control. En definitiva estamos, al menos en Europa, ante un sistema, que hemos intentado analizar con detalle, que si bien identifica, no reduce, el número de deficiencias de seguridad en los buques, ya de por sí deficientes. Tampoco reduce la siniestrabilidad, y que repercute en actuaciones políticas, a veces demagógicas y que no siempre responden a medidas técnicamente necesarias. Es el caso de la implantación "a la ligera" del doble casco en Europa, como si eso fuera la

panacea universal, y como si a partir de ese momento no existieran problemas tan importantes como la formación de los marinos o la gestión de situaciones de emergencias a bordo de los buques, o a la necesaria profesionalización de una Administración Marítima competente en todos los estados ribereños europeos. Sólo la conciencia de los ciudadanos y la gestión global del problema desde el punto de vista de la Organización Marítima Internacional, permitirá hacer frente a una situación que nunca podrá ser minimizada por razones naturales, pero que sí al menos requerirá de una regulación más severa en pro de la protección del medio ambiente, que al fin y al cabo es la mejor de las herencias para las futuras generaciones.