

# Annual Report 2000





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## 1. Executive summary

Several initiatives by the Paris MOU will enhance efforts to eradicate substandard shipping in the 21st century. Increased transparency and more selective targeting will make it more difficult for sub-standard ships to operate in the region and at the same time should ease the burden on bonafide shipping. An enhanced targeting system introduced in 2000 has resulted in more inspections of high priority ships, in particular of ships registered with flag States considered as very high risk, and in a greater number of detentions.

The Paris MOU is still generally recognised as the leading regional port State control agreement in terms of harmonised enforcement, selective targeting and transparency of information. However the search for greater consistency continues. The need to train port State control officers to implement agreed guidelines is recognised. The revised targeting system means that ships with a good port State control history and registered with a responsible flag State will be visited less frequently.

On the other hand, ships which operate at the rogue end of the industry will be rigorously targeted. Examples are published as "Rustbuckets" on the internet site of the Paris MOU.

A new list of performance of flag States was published last year. Flags were ranked in the Black, Grey and White list, according to risk. Registers with a consistently poor performance measured over 3 years appeared on the black list, and compared with

last year's list few changes are found in the "very high risk" category. Following a downward trend in the detention rate from 1995, the detention rate has increased slightly in the last 2 years to 9.5 percent.

The number of deficiencies recorded during port State control inspections in 2000 (67,735) showed a substantial increase for the third year in a row and is 12% higher when compared with last year. The increasing trend in operational deficiencies related to safety and environmental procedures is still continuing at an alarming rate. Over a four-year period these deficiencies have increased by 78%. Ships older than 15 year show over 13 times as many operational deficiencies as ships less than 5 years old.

The close relation between standards of training, safety management and operational performance should result in an improvement. Instead, figures indicate that the human element is the weak link in safety on board and should remain a focus of attention for port State control.

For the second year in a row, the performance of classification societies that have been authorised to conduct surveys and issue certificates on behalf of the flag State has been monitored in accordance with agreed criteria. In 22% (390) of the total number of detentions (1,764), class was held responsible for one or more detainable deficiencies. Compared with last year this is an improvement of 2%.





## 2. Paris MOU developments

### General

Once a year the Port State Control Committee, which is the executive body of the Paris MOU, meets in one of the Member States. The Committee considers policy matters concerning regional enforcement of port State control, reviews the work of the Technical Evaluation Group and task forces and decides on administrative procedures.

The task forces, of which 7 were active in 2000, are each assigned a specific work programme to investigate improvement of operational, technical and administrative port State control procedures. Reports of the task forces are submitted to the Technical Evaluation Group (TEG) at which all the Paris MOU members and observers are represented. The evaluation of the TEG is submitted to the Committee for final consideration and decision making.

The MOU Advisory Board advises the Port State Control Committee on matters of a political and strategic nature, and provides direction to the task forces and Secretariat in between meetings of the Committee. The board meets several times a year and in 2000 was composed of participants from Canada, Greece, Norway, the United Kingdom and the European Commission.

### Port State Control Committee

The Port State Control Committee (PSCC) held its 33rd meeting in Southampton, United Kingdom on 10-13 May 2000. It was opened by Shipping Minister Keith Hill.

The Committee discussed a range of issues and made a number of decisions in order to improve the



targeting of sub-standard ships, the sharing of information on ship safety with industry, and training of inspectors.

In the wake of the ERIKA disaster the Committee of the Paris MOU announced a concentrated inspection campaign on oil tankers from September to November 2000. The campaign targeted oil tankers over 15 years of age and over 3000GT and focused on both structural and operational aspects. (See section 4 below)

As part of a continuing efforts to eradicate sub-standard ships the Committee also agreed a revised target factor. The new factor greatly increases the weighting given to the poorest performing flag States.

Based on the targeting factor, ships will be given a priority rating for inspection. This is part of the continuing campaign to focus resources on the worst ships.

At the same time it was agreed that the Paris MOU should produce a "Black, Grey and White List" of flag State performance.

Following the introduction of criteria for class related detentions it was agreed that statistics on the performance of class societies would be included in the Annual Report for 1999.

The Committee unanimously accepted Iceland as the latest full member of the Paris MOU, bringing the total to 19 maritime Administrations. Membership of Iceland took effect from 1 July 2000. The Committee accepted Slovenia as a co-operating member.

In a new initiative the Committee invited representatives of the International Chamber of Shipping (ICS), International Transport Workers' Federation (ITF) and International Association of Classification Societies (IACS) to a half-day session during which areas of mutual interest such as improved targeting, seafarers' hours of work and class responsibility were discussed.

The Committee also ratified an agreement to supply information to EQUASIS from the SIRENAC database.

#### Technical Evaluation Group

The Technical Evaluation Group (TEG) convened once during 2000. Several task forces submitted reports to the TEG for evaluation before submission to the Port State Control Committee.



Issues considered by TEG included:

- Development of a new SIRENAC information centre
- delivery of advanced and specialised training for PSCO's
- preparations for a Concentrated Inspection Campaign on Securing of Cargo in 2001
- preparations for a Concentrated Inspection Campaign on ISM implementation in 2002
- improvement of the reporting system for PSC inspections
- development of PSC guidelines for electronic charts
- liability aspects of publishing information

#### Port State Control Seminars

##### 30th PSC Seminar

The 30th Port State Control Seminar of the Paris MOU was held in Hamburg, Germany on 27-29 June 2000. The Seminar was attended by Port State Control Officers from the Paris MOU, as well as

participants from the Tokyo MOU, Viña del Mar Agreement, Estonia, Latvia and Slovenia. The seminar was dedicated to securing of cargo on board in preparation for the Concentrated Inspection Campaign which is scheduled to take place between March and May 2001.

#### *31st PSC Seminar*

The 31st PSC Seminar was held on 3-5 October 2000, in Reykjavik, Iceland. It was attended by Port State Control Officers from the Paris MOU, as well as participants from the Tokyo MOU, Latvia, and Slovenia.

The Seminar covered the latest developments in the Paris MOU, control procedures for the ISM Code and procedures for expanded inspections. Participants also discussed investigations under MARPOL 73/78, particularly following oil pollution.

#### **New Information System**

Fast developing database and internet technology have made it necessary to replace the current version of the SIRENaC F information system, which has been operational since 1998.

In addition, several amendments in port State control policy, such as targeting of ships, new inspection procedures and measuring performance of classification societies have made it necessary to develop a new database/information system.

The Committee agreed the financial basis for a new system which will be designed by the French Centre Administratif des Affaires Maritimes (CAAM) in St. Malo.

The new system will make full use of internet technology and an ORACLE database architecture. Port State Control Officers will be able to access the system for interrogation and updating by means of portable PC's and cellular phones.

The system is expected to become operational on 1 January 2002.

#### **Paris MOU on the internet**

The Paris MOU Internet site has undergone a major face-lift. Improvements during 2000 include easier access, a new database for PSC inspections which is updated every week, and up-to-date monthly statistics. The advanced search options of the database, in particular, have been in increasing demand from a variety of visitors. These include flag and port States, government agencies, charterers, insurers, classification societies, ship owners and a wide range of other users.

Another item of great interest to visitors has been the publication of the "Rustbucket". Particular detentions are described in detail and supported with photographic material to make the general public aware of unsafe ships that have been caught by port State control. Several "Rustbuckets" have found their final destination: a one way voyage to the scrap yard.

Other information of interest such as the monthly list of detentions, the annual report, the statistics of the "Blue Book" and news items can be downloaded from the website, which can be found at "[www.parismou.org](http://www.parismou.org)".



### 3. Looking ahead

Port State control results for 2000 indicate that there is no room for complacency. The Port State Control Committee is already looking ahead in order to anticipate new developments and to take concerted harmonised actions. Such actions need to enhance the effectiveness of the region in combating substandard shipping.

The Paris MOU Advisory Board (MAB) has considered several policy issues of a political or strategic nature and will submit proposals to the Committee for consideration.

Actions agreed by the Committee during its 33rd session (2000) and 34th session (2001) are in the process of being implemented.

#### Concentrated Inspection Campaigns

- From 1 March 2001 cargo ships loaded with freight units will be the focus of a 3-month campaign to check securing arrangements.
- On 1 July 2002 the Paris MOU will launch a campaign on ISM compliance. All ships will be subject to this control, which is carried out in co-operation with the Tokyo MOU.
- A number of recent incidents on passenger ships and longer term statistics have underlined the need for strict compliance with operational standards on board ship. New guidelines adopted by the Committee will provide a useful tool to establish whether the crew is able to respond effectively to emergency situations on large passenger ships. The Committee has adopted a CIC for Operational Safety on cruise ships starting in May 2003.

#### Compliance with STCW requirements

Starting on 1 February 2001 all inspections will include a stringent check on STCW documentation of seafarers to verify whether the new requirements have been complied with.

#### Electronic charts

Inspections reveal that an increasing number of ships are equipped with electronic chart systems. Guidelines are being developed to ensure a harmonised approach to checking that such systems comply with the regulations.

#### Recording of inspections

Under the present system information is recorded on deficiencies found and what actions were taken. A new method of reporting is presently under consideration in which the areas that were inspected are recorded in order to provide a more complete picture of the scope of inspection.

#### Performance of classification societies

The Paris MOU has published information on the performance of classification societies in relation to statutory surveys over the last 2 years, and is considering the development of a performance list of classification societies and looking into the possibility of targeting societies with a consistently poor performance.

#### Ships of Quality

Following the trial of the multiplier system which discourages the selection of good ships by PSC Officers, the next step could be to consider a reward system where ships from a quality flag and which have a good safety and port State control history should be subject to less frequent inspections. This would relieve operators of quality ships from frequent inspection and at the same time enable port State control Authorities to direct their resources more effectively. There may also be a case for Quality ships to be rewarded by publication as such.

#### Recording of charterers

It has been recognized that charterers also play a role in the chain of responsibility in maritime transport. If the only ships chartered are ships with a good safety record, there will be no market for sub-standard ships. Therefore, the Paris MOU is considering publicising the charterer of a ship engaged in the transport of liquid or solid bulk cargoes in order to encourage charterers to avoid poor tonnage.

#### Training of Port State Control Officers

Following the pilot training course held in Gijon, Spain, in March 2001, the Paris MOU is to review the package with a view to establishing a comprehensive training programme starting in 2002. This programme will be additional to the regular bi-annual seminars for Port State Control Officers.

## 4. Concentrated Inspection Campaigns

Several concentrated inspection campaigns have been held in the Paris MOU region over the past years. The campaigns focus on a particular area of compliance with international regulations with the aim of gathering information on, and enforcing, the level of compliance. Each campaign is prepared by experts and focuses on a number of specific items for inspection. Experience shows that they serve to draw attention to the chosen area of compliance.

The concentrated Inspection Campaign in 2000 was dedicated to the structural condition of large bulk carriers, which has been a growing cause for concern for many years.

In the wake of the Erika disaster, the Paris MOU Port State Control Committee agreed to mount a Concentrated Inspection Campaign on the structural and operational safety of oil tankers more than 3000 GT and more than 15 years old. The campaign ran from 1 September to 30 November 2000.

Paris MOU Authorities have inspected as many tankers as possible meeting the above criteria. In addition to the regular port State control inspection, specific items checked included the cargo deck area, ballast tanks, cargo tanks, pump rooms, inert gas system, pressure relief valves and the engine room.

It was recognised, however, that there were some limitations on the number of spaces which could be inspected safely and the detail to which some areas within spaces could be examined.

In preparation for the concentrated inspection campaign, the Committee agreed special inspection guidelines including an itemised inspection report giving an indication of the condition of the ship, and in June 2000 a PSC seminar was held in London for Port State Control Officers from the 19 participating authorities.

The results of the campaign highlight an increasing rate of detention of tankers, lack of structural maintenance, and defects in fire fighting equipment. Deficiencies were found on 47% of 205 inspections carried out. Twenty three ships were detained.

The results show:

- a rate of detention of 11.2% compared with 8.1% for all ships inspected in the region in 2000, and a detention rate for tankers in 1999 and 1998 of 5.9% and 5.5%.
- all 23 detained ships had been surveyed by members of the International Association of Classification Societies (IACS). 5 detentions (21%) involved items for which class is responsible.
- 2 vessels were found with hull cracking and severe corrosion in bulkheads or frames.
- fire fighting equipment accounted for the greatest number of detainable deficiencies.
- the detention rate of ships of 25 years or more, a quarter of the vessels inspected, was 13.7%.

42.5% of the ships inspected, and 47% of the ships detained, were flagged with Malta at the time of inspection. Two had serious structural defects. Inspection of one of these vessels, the 26 year old MARIA S, revealed 31 defects covering all convention certificates, manning levels, ship stability and strength, hull corrosion and cracking and cracks in the bulkheads.



## 5. Membership of the Paris MOU

In preparation for prospective new members of the Paris MOU the Port State Control Committee has adopted provisional criteria for co-operating status or observer status for non-member States and newly developed PSC regions.

Specific criteria, including a self-evaluation exercise, have to be met before co-operating status can be granted. Authorities which are a member of another regional agreement, or located in the region of another regional agreement, or located outside the regional scope of the Paris MOU are not eligible for co-operating status.

Regional agreements seeking observer status must demonstrate that their member Authorities have an acceptable overall flag State record and have a similar approach in terms of commitment and goals to that of the Paris MOU.

The maritime Authority of Iceland, which has been a co-operating member to the Paris MOU since May 1996, applied for full membership during the 32nd meeting of the Port State Control Committee in 1999. On the basis of the results of an in-depth fact finding mission by representatives of Canada, Denmark, the European Commission and the MOU



Secretariat in March 2000, the Committee agreed unanimously that Iceland should become the 19th Member of the Agreement.

The Committee also considered a detailed self evaluation prepared by the maritime Authorities of Slovenia. The self evaluation should indicate to what extent the qualitative criteria for new Members to the MOU have been met or can be met in the future. The Committee agreed unanimously that Slovenia should be granted co-operating status.

The maritime Authorities of Estonia have been requested to submit a self evaluation to the Committee in 2001.



## 6. Co-operation with other organisations

The strength of regional regimes of port State control bound by geographical circum-stances and interest is widely recognised. Seven regional MOU's have been established. The Committee has expressed concern that some of these MOU's are dominated by Members who have not made efforts to exercise effective control over their own fleet. Many flag State of some regional MOUs appear on the Black List of the Paris MOU.

Two regional agreements have obtained official observer status with the Paris MOU: The Tokyo MOU and the Caribbean MOU. The United States Coast Guard is also an observer at Paris MOU meetings. This co-operation on an administrative level will help to ensure that port State control efforts remain compatible as far as practicable. The other regions have not applied for observer status, and would need to meet the criteria (see section 5).

The International Labour Organization and the International Maritime Organization have participated

in the meetings of the Paris MOU on a regular basis. The IMO took the initiative in June 2000 of organising a workshop for the Secretariats and database managers of regional agreements on port State control. Participants from all 7 agreements attended the workshop as well as some representatives of their Members.

The workshop agreed a set of "Recommendations", to be submitted for consideration by the Committee of each region.

The 1999 Annual Report, including inspection data, has been submitted by the United Kingdom to the Sub-Committee on Flag State Implementation (FSI). Attention was drawn in particular to the new Black, Grey and White list of flag State performance. IMO members appearing on the Black List were invited to comment on what steps will be taken to improve their safety record. Unfortunately there seems to be no serious interest by many of these flags to recognise their responsibility or to take adequate measures to improve their safety record.



## 7. Facts and figures

### Introduction

During 2000, 18,559 inspections were carried out in the Paris MOU region on 11,358 foreign ships registered in 101 different flag States. The number of inspections is slightly higher than the inspection figure for 1999 (18,399), and overall, the figures show a steady increase from 1996.

The number of individual ships inspected in 2000, 11,358, shows a slight increase of 110 compared with the number inspected in 1999 (11,248). Over a 3 year period the number has levelled off, indicating that the Paris Memorandum is slowly reaching the ceiling of ships qualifying for an inspection.

The overall inspection rate in the region was 28.6% in 2000, compared with 27.6% in 1999, 26.5% in 1998 and 25.6% in 1997.

A chart showing the individual efforts of the Paris MOU members is included in the statistical annexes to this Annual Report.

### Detentions

Detention rates are expressed as a percentage of the number of inspections, rather than the number of individual ships inspected. The change was introduced in 1999 to take account of the fact that many ships have been detained more than once during any one year. The number of ships detained in 2000 for deficiencies clearly hazardous to safety, health or the environment amounted to 1,764. It compares with the number of 1,684 detained in 1999, 1,598 in 1998, and 1,624 in 1997.

The figures suggest that the use of the target factor as a tool has led to more rigorous targeting of potentially substandard ships.

### "Black, Grey and White list"

In last year's report the traditional "black list" of flags was replaced by a "Black, Grey and White List". The tables are still based on performance over a 3-year rolling period but now indicate the full spectrum between quality flags and flags with a poor performance which are considered high or very high risk.

Again, a "hard core" of flag States appear on the "Black List". Most flags which were considered "high risk" in 1999 remain so in 2000. "Newcomers" in the category of very high risk and at the top of the list are Bolivia and Sao Tome and Principe.



The flags of Mauritius, Bangladesh and Pakistan do not appear on any list. Apparently these registers have withdrawn most of their fleet from the region. The Faeroe Islands and Lithuania have moved up from the "Grey List" to the lower levels of the "Black List".

The "White List" represents quality flags with a consistently low detention record. The Paris MOU flags of Finland, United Kingdom, Sweden, Germany and Ireland are placed highest in terms of performance. The Bahamas has moved to the "Grey List" and new to the "White List" are China, Luxembourg and the Isle of Man.

Flag States with an average performance are shown on the "Grey List". Their appearance on this list may act as an incentive to improve and move to the "White List". At the same time flags at the lower end of the "Grey List" should be careful not to neglect control over their ships and risk ending up on the "Black List" next year.

### Ship Types

Looking at detentions by ship type over several years, it is noted that general dry cargo ships and bulk carriers still account for over 77% of all detentions.

This year's detention percentage showed a rise in detentions of tankers and combination carriers. This has probably been influenced by the

concentrated inspection campaign on these ships which took place in 2000, but demonstrates there is no room for complacency in this sector. Statistical annexes to this report show the detention percentage for each ship type in 2000, 1999 and 1998.

#### Banning of Ships

At the end of 2000 a total of 16 ships were banned from the Paris MOU region, because they failed to call at an agreed repair yard (8), jumped detentions (7) or were not certified in accordance with the ISM Code (1). During the year 8 ships were placed under the banning measures, the remaining ships were banned in previous years.

By the end of 2000 the ban had been lifted on 2 ships after verification that all deficiencies had been rectified. An up-to-date list of banned ships can be found on the internet site of the Paris MOU on Port State Control.

#### Performance of Classification Societies

Details of the responsibility of classification societies for detainable deficiencies have been published since 1999. When one or more detainable deficiencies is attributed to a classification society in accordance with the criteria it is recorded and class is informed. Out of 1,764 detentions recorded in 2000, 22% (390) were considered class related. This is an improvement of 2% on 1999.

When considering the rate of class related detentions as a percentage of inspections, Register of Shipping (Albania) 25.0%, Registro Cubano de Buques (Cuba) 20.0%, Honduras International Naval Survey and Inspection Bureau 15.4% and International Naval Surveys Bureau (U.S.A.) 13.7% scored highest as indicated in Model 2 in the Statistical Annex.

#### Deficiencies

A total of 67,735 deficiencies were recorded during port State control inspections in 2000, again a substantial increase (12%) on the number of 60,670 recorded in 1999 (57,831 in 1998).

Vital safety areas, such as life saving appliances, fire fighting equipment, safety in general and navigation account for 55% of the total number of deficiencies. An increase of 14% in SOLAS and MARPOL operational deficiencies compared with last year indicates closer attention to the human element by PSC Officers but remains a cause of concern. SOLAS related operational deficiencies increased from 831 in 1998 to 1132 deficiencies in 2000, MARPOL related operational deficiencies from 546 in 1998 to 618 in 2000. Garbage management violations increased from 70 in 1998 to 742 in 2000.

The International Safety Management Code came into force for certain categories of ships from 1 July 1998. In the year under review 929 deficiencies were recorded, an increase of 87% when compared with the 1999 results.

The figures also indicate that older ships have more problems with the implementation of a management system. On ships older than 15 years the number of deficiencies is 19 times higher than on ships of less than 5 years old.

Despite high hopes for improvement of older ships through a safety management system, the documentation has not always been followed by practice.

The numbers of deficiencies for major categories of deficiencies may be expressed as a ratio of the number of inspections. On this basis, the deficiency ratio for 2000 amounted to 3.65 (1999: 3.30, 1998: 3.28, 1997: 3.17).

The above deficiency ratios are calculated in relation to all port State control inspections, irrespective of whether or not deficiencies were found. Obviously, only inspections in which deficiencies were found contribute to the total number of deficiencies. In 2000, deficiencies were recorded in 10,746 inspections (57.9% of all inspections), and it is this number that is responsible for the total of 67,735 deficiencies. This means that the deficiency ratio for inspections in which deficiencies were noted amounted in 2000 to 6.30 (1999: 5.92; 1998: 5.98; 1997: 6.02) which is an increase for the first time in four years.



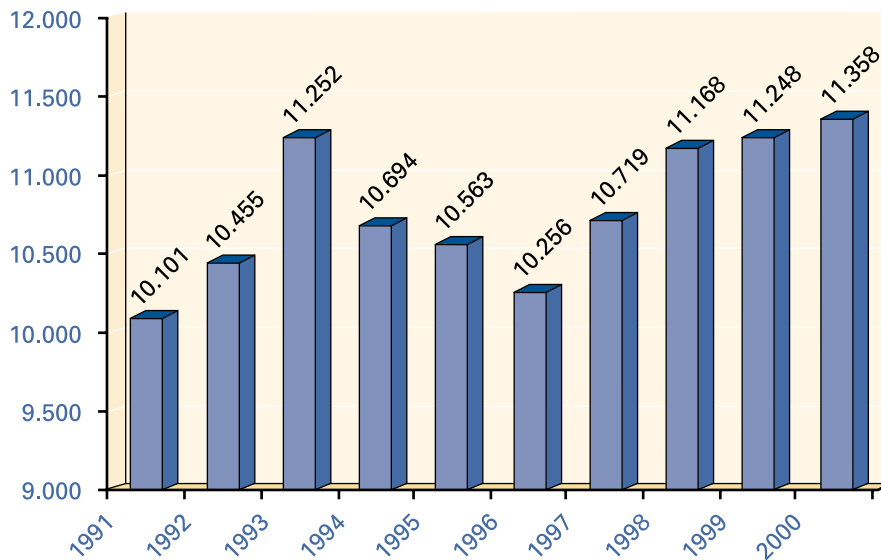


# Statistical Annexes to the Annual Report 2000

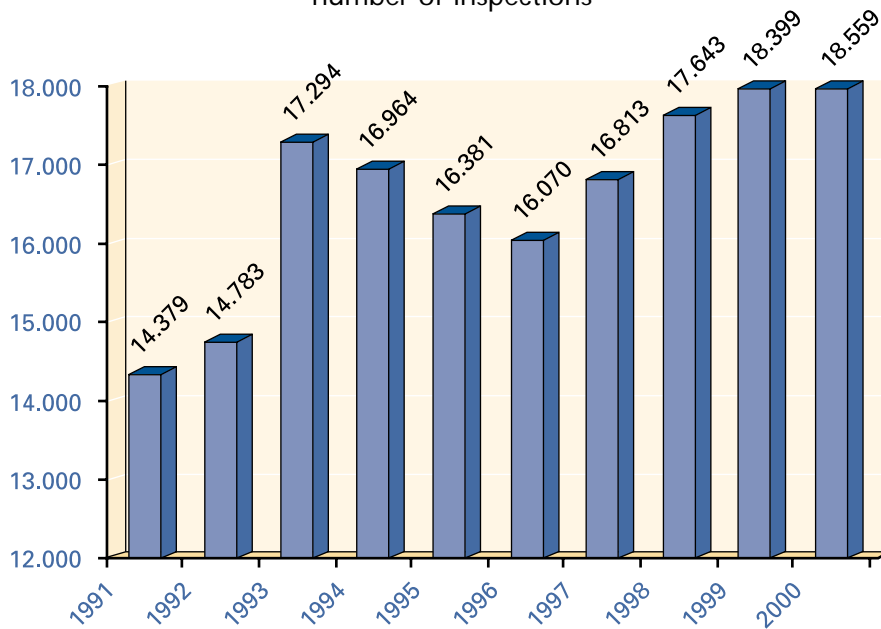


### Basic port State control figures 2000 - 1

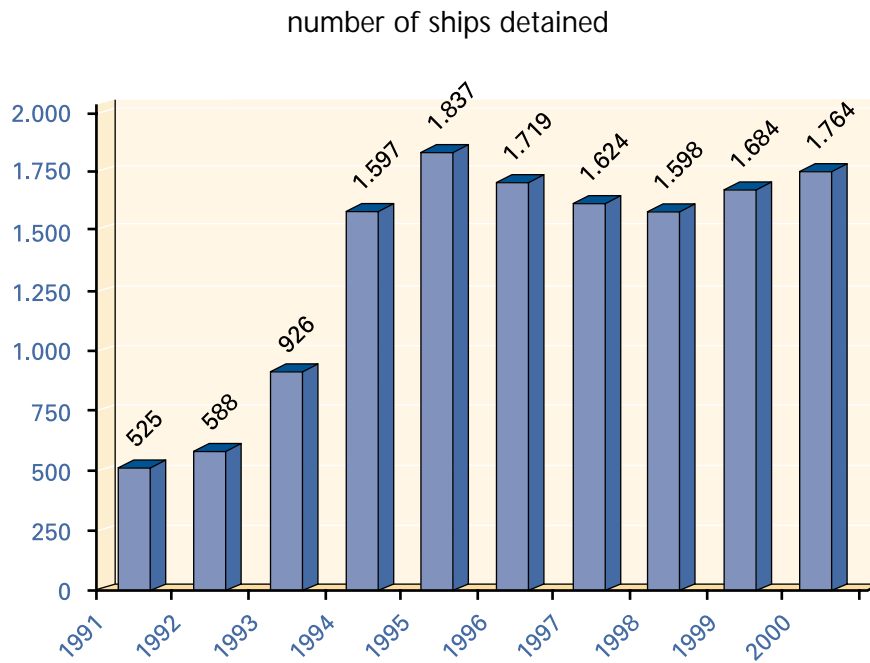
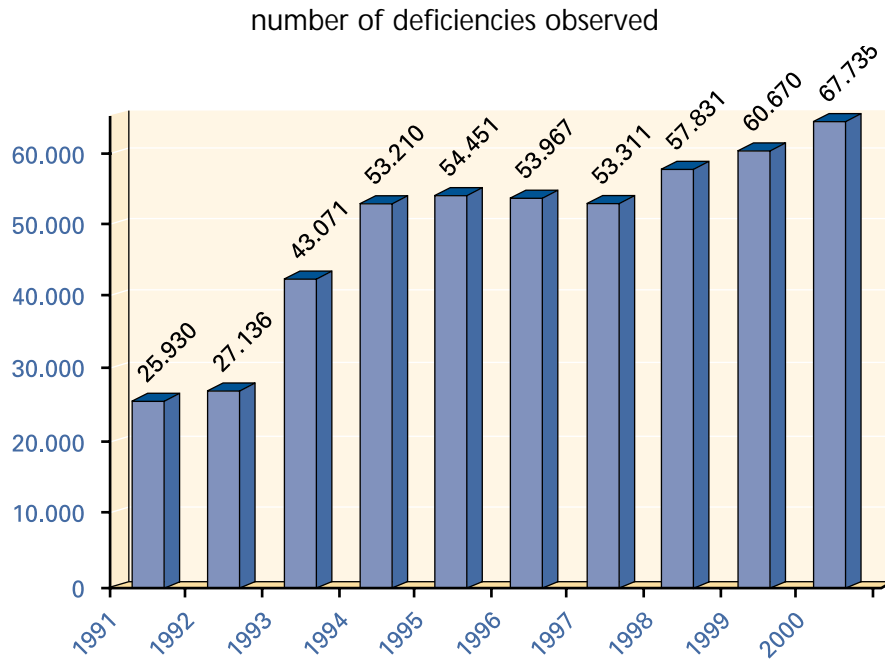
number of individual ships inspected



number of inspections

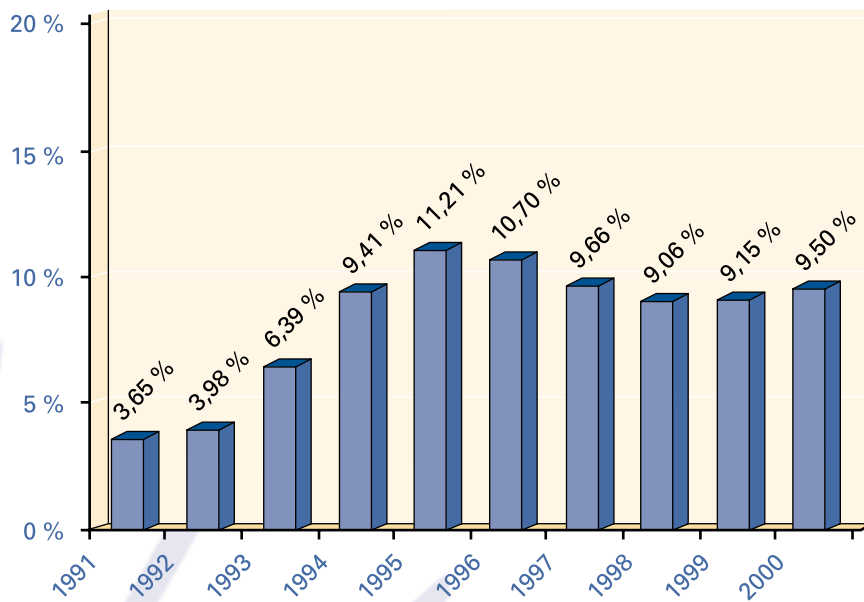


### Basic port State control figures 2000 - 2



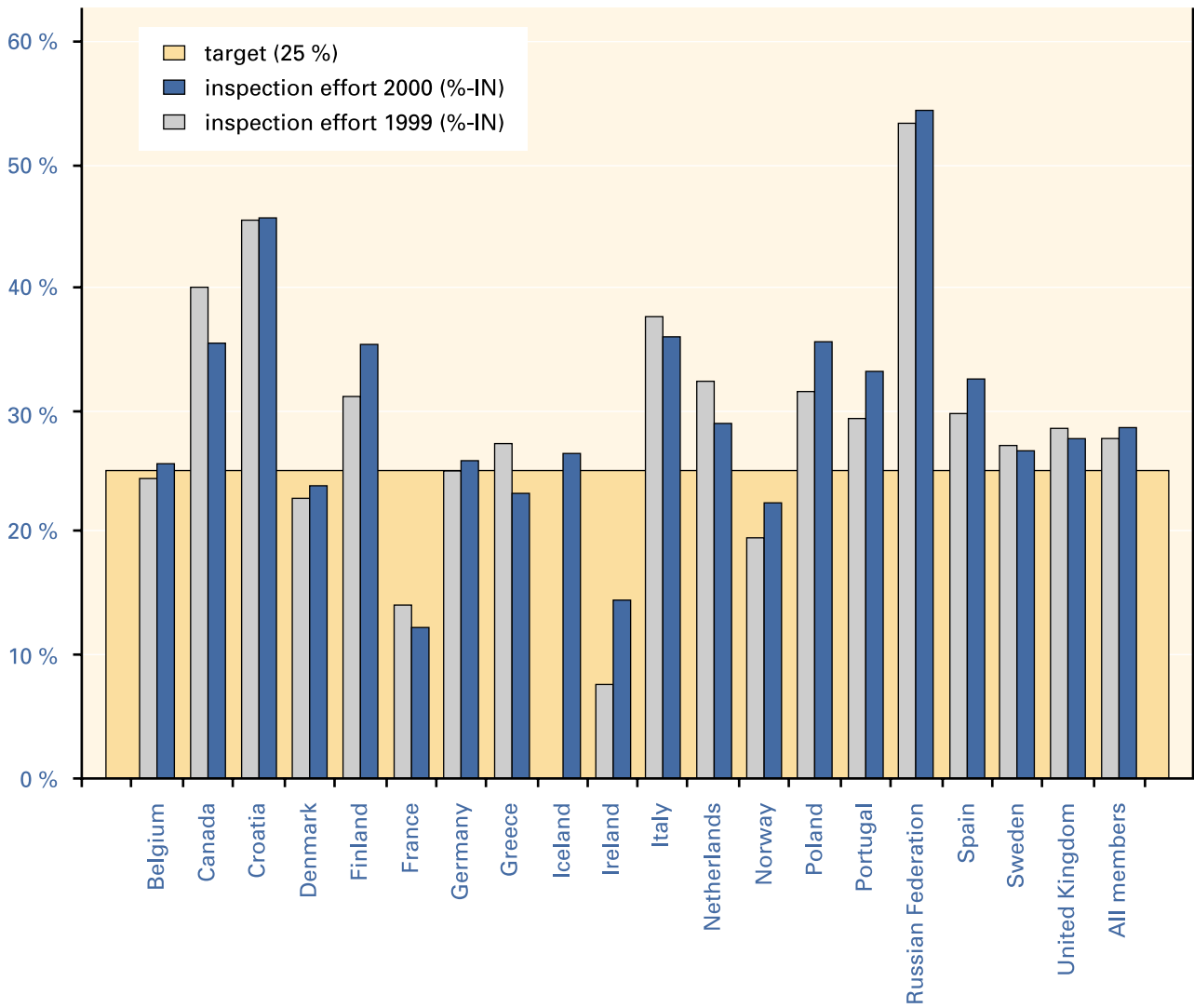
### Basic port State control figures 2000 - 3

detentions in % of inspections

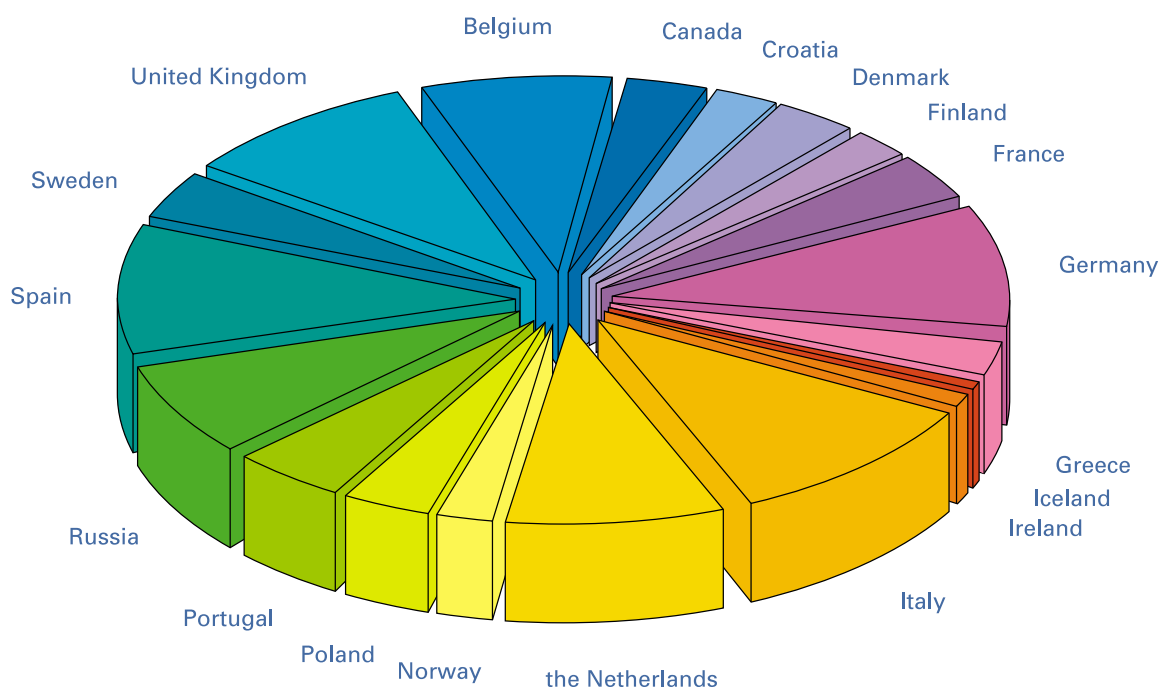


### Inspection efforts – 1

Inspection efforts of members compared to target



### Inspection efforts – 2



MOU port States' individual contribution to the total amount of inspections

MOU port State	Estimated Ship calls	Inspections	Inspections with deficiencies	Detentions	Detents with Class related deficiencies	%-Insp. With deficiencies	% Detained	% Inspected Ship calls (25% commitment)	% Inspection of MOU total
Belgium	5686	1458	817	139	48	56,0	9,5	25,6%	7,9%
Canada	1760	627	278	48	0	44,3	7,7	35,6%	3,4%
Croatia	964	439	259	44	3	59,0	10,0	45,5%	2,4%
Denmark	2500	596	212	35	8	35,6	5,9	23,8%	3,2%
Finland	1442	509	196	24	4	38,5	4,7	35,3%	2,7%
France	5792	707	444	118	30	62,8	16,7	12,2%	3,8%
Germany	6980	1805	1046	161	44	58,0	8,9	25,9%	9,7%
Greece	2670	618	460	85	5	74,4	13,8	23,1%	3,3%
Iceland	323	85	31	6	2	36,5	7,1	26,3%	0,5%
Ireland	1330	194	143	21	5	73,7	10,8	14,6%	1,0%
Italy	5850	2104	1109	283	85	52,7	13,5	36,0%	11,3%
Netherlands, the	5645	1630	805	141	20	49,4	8,7	28,9%	8,8%
Norway	1800	404	172	31	9	42,6	7,7	22,4%	2,2%
Poland	1914	679	404	35	4	59,5	5,2	35,5%	3,7%
Portugal	2600	858	561	121	26	65,4	14,1	33,0%	4,6%
Russia	2726	1481	1019	145	3	68,8	9,8	54,3%	8,0%
Spain	5594	1815	1178	205	56	64,9	11,3	32,4%	9,8%
Sweden	2850	762	335	14	2	44,0	1,8	26,7%	4,1%
United Kingdom	6457	1788	1277	108	36	71,4	6,0	27,7%	9,6%
<b>Total</b>	<b>64883</b>	<b>18559</b>	<b>10746</b>	<b>1764</b>	<b>390</b>	<b>57,9%</b>	<b>9,50%</b>	<b>28,6%</b>	<b>100,0%</b>

## Black – Grey – White Lists

Flag state	Inspections 1998-2000	Detentions 1998-2000	Black to Grey Limit (last grey detentions)	Grey to White Limit (first white detention)	Excess Factor
<b>BLACK LIST</b>					
Bolivia	50	28	6	very high risk	13,16
Albania	64	33	8		12,23
Sao Tome & Principe	33	16	5		9,82
Honduras	344	128	32		9,63
Lebanon	225	72	22		7,64
Syrian Arab Republic	370	109	34		7,20
Cambodia	480	139	43		7,19
Belize	486	139	43		7,09
Algeria	198	57	20		6,53
Libyan Arab Jama.	101	28	11		5,54
Turkey	2112	463	167		5,49
Romania	209	49	21		4,92
Georgia	49	14	6		4,81
St. Vincent & Gren.	2088	353	165	high risk	3,86
Morocco	175	31	18	medium to high risk	3,07
Egypt	240	40	23		2,97
Ukrainia	800	109	68	medium risk	2,57
Malta	4740	523	361		2,10
Panama	4812	502	366		1,91
Thailand	125	18	13		1,89
Cyprus	4440	453	339		1,82
Russian Federation	2856	256	222		1,37
Latvia	101	13	11		1,32
Faeroer Islands	38	6	5		1,16
Lithuania	391	38	36		1,14
Croatia	196	21	20		1,13
<b>GREY LIST</b>					
Portugal	606	53	53	32	0,99
Bulgaria	312	29	29	13	0,95
Azerbaijan	110	12	12	2	0,94
Cayman Islands	213	19	21	8	0,81
Cuba	44	5	6	0	0,79
Malaysia	129	12	14	3	0,78
India	220	19	22	8	0,77
Kuwait	58	6	7	0	0,76
Qatar	47	5	6	0	0,75
Gibraltar	61	6	8	0	0,73
Italy	683	53	59	36	0,73
United Arab Emirates	31	3	5	0	0,65
Brazil	54	4	7	0	0,53
Tunisia	68	5	8	0	0,53
Estonia	422	30	38	20	0,53
Tuvalu	72	5	9	0	0,50
Iran	158	11	16	5	0,49
Philippines	288	20	27	12	0,49

Flag state	Inspections 1998-2000	Detentions 1998-2000	Black to Grey Limit (last grey detentions)	Grey to White Limit (first white detention)	Excess Factor
<b>GREY LIST</b>					
Antilles, Netherlands	270	18	26	11	0,44
Ethiopia	36	2	5	0	0,41
Taiwan	86	5	10	1	0,38
Saudi Arabia	81	4	9	1	0,30
Vanuatu	121	6	13	3	0,26
Poland	352	20	33	16	0,22
Spain	139	6	15	4	0,16
Greece	1440	89	117	84	0,14
Switzerland	56	1	7	0	0,10
Hong Kong	305	14	29	13	0,03
Bahamas	3160	198	245	197	0,02
Israel	92	2	10	1	0,01
<b>WHITE LIST</b>					
USA	172	6		6	-0,01
Korea, Republic of	118	3		3	-0,08
Barbados	279	11		12	-0,15
China, People's Rep.	412	18		19	-0,18
Luxembourg	131	3		3	-0,31
Antigua & Barbuda	2578	133		158	-0,35
Marshall Islands	340	12		15	-0,42
Liberia	2715	134		167	-0,44
Man, Isle of	453	17		22	-0,46
Japan	90	1		1	-0,46
Bermuda	195	4		7	-0,73
Austria	137	2		4	-0,73
Singapore	688	23		36	-0,75
Denmark	1280	46		74	-0,80
Norway	2710	99		167	-0,90
Netherlands, the	2384	82		145	-0,96
France	305	6		13	-1,01
Ireland	224	3		8	-1,15
Germany	1763	46		105	-1,23
Sweden	816	15		44	-1,40
United Kingdom	562	8		28	-1,48
Finland	476	5		23	-1,60

\* Explanatory note on page 38

p = 7%

z 95% = 1.645

q = 3%



## Inspections, detentions and deficiencies 2000

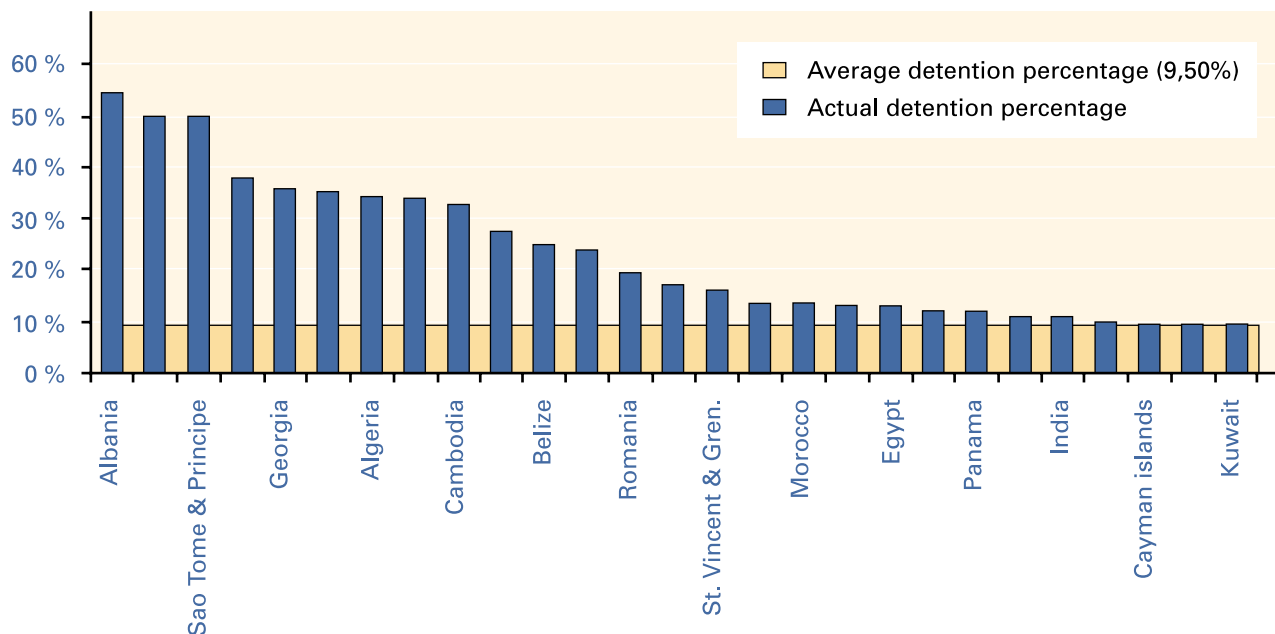
Flag state	Inspections	Detentions	Inspections with deficiencies	Detention-%	Inspection-% with deficiencies
Albania	35	19	32	54,3%	91,4%
Algeria	76	26	65	34,2%	85,5%
Antigua and Barbuda	1006	54	561	5,4%	55,8%
Antilles, Netherlands	90	5	54	5,6%	60,0%
Australia	1	0	0		0,0%
Austria	53	1	28	1,9%	52,8%
Azerbaijan	43	4	34	9,3%	79,1%
Bahamas	1016	68	565	6,7%	55,6%
Bahrain	7	1	5	14,3%	71,4%
Bangladesh	4	1	3	25,0%	75,0%
Barbados	85	5	35	5,9%	41,2%
Belgium	4	0	1		25,0%
Belize	133	33	114	24,8%	85,7%
Bermuda	61	0	22		36,1%
Bolivia	36	18	29	50,0%	80,6%
Brazil	8	0	6		75,0%
Bulgaria	97	7	60	7,2%	61,9%
Cambodia	233	76	207	32,6%	88,8%
Canada	4	0	2		50,0%
Cape Verde	8	1	8	12,5%	100,0%
Cayman Islands	94	9	48	9,6%	51,1%
Chile	1	0	0		0,0%
China, People's Rep.	103	4	48	3,9%	46,6%
Croatia	55	7	37	12,7%	67,3%
Cuba	9	1	8	11,1%	88,9%
Cyprus	1401	136	858	9,7%	61,2%
Denmark	464	16	206	3,4%	44,4%
Egypt	79	10	54	12,7%	68,4%
Equatorial Guinea	11	3	10	27,3%	90,9%
Estonia	136	9	75	6,6%	55,1%
Ethiopia	9	1	7	11,1%	77,8%
Faeroe Islands	9	1	4	11,1%	44,4%
Finland	176	0	72		40,9%
France	95	3	43	3,2%	45,3%
Georgia	25	9	20	36,0%	80,0%
Germany	514	16	202	3,1%	39,3%
Gibraltar	38	4	19	10,5%	50,0%
Greece	443	25	201	5,6%	45,4%
Honduras	76	27	63	35,5%	82,9%
Hong Kong	124	6	54	4,8%	43,5%
Iceland	3	1	2	33,3%	66,7%
India	77	8	59	10,4%	76,6%
Indonesia	3	2	3	66,7%	100,0%
Iran	60	3	44	5,0%	73,3%
Ireland	70	2	42	2,9%	60,0%
Israel	23	0	2		8,7%

Flag state	Inspections	Detentions	Inspections with deficiencies	Detention-%	Inspection-% with deficiencies
Italy	265	19	139	7,2%	52,5%
Japan	25	1	11	4,0%	44,0%
Jordan	1	0	1		100,0%
Korea, Democratic Rep.	6	4	6	66,7%	100,0%
Korea, Republic of	28	1	11	3,6%	39,3%
Kuwait	21	2	10	9,5%	47,6%
Latvia	26	2	14	7,7%	53,8%
Lebanon	83	28	70	33,7%	84,3%
Liberia	884	45	430	5,1%	48,6%
Libyan Arab Jama.	29	11	26	37,9%	89,7%
Lithuania	120	10	82	8,3%	68,3%
Luxemburg	57	1	22	1,8%	38,6%
Malaysia	43	4	24	9,3%	55,8%
Malta	1760	208	1121	11,8%	63,7%
Man, Isle of	163	4	56	2,5%	34,4%
Marshall Islands	125	6	57	4,8%	45,6%
Mauritius	7	1	5	14,3%	71,4%
Morocco	59	8	52	13,6%	88,1%
Myanmar, Union of	9	1	6	11,1%	66,7%
Netherlands, the	884	38	411	4,3%	46,5%
Norway	903	35	424	3,9%	47,0%
Pakistan	5	1	4	20,0%	80,0%
Panama	1664	192	996	11,5%	59,9%
Philippines	82	4	48	4,9%	58,5%
Poland	104	5	56	4,8%	53,8%
Portugal	231	22	131	9,5%	56,7%
Qatar	16	2	11	12,5%	68,8%
Register Withdrawn	3	2	3	66,7%	100,0%
Romania	47	9	34	19,1%	72,3%
Russia	866	62	498	7,2%	57,5%
Sao Tome and Principe	28	14	25	50,0%	89,3%
Saudi Arabia	25	1	10	4,0%	40,0%
Singapore	235	6	97	2,6%	41,3%
Slovakia	1	1	1	100,0%	100,0%
South Africa	8	0	5		62,5%
Spain	53	3	27	5,7%	50,9%
Sri Lanka	3	1	2	33,3%	66,7%
St. Vincent & Grenadines	764	123	555	16,1%	72,6%
Sudan	2	1	2	50,0%	100,0%
Sweden	288	4	109	1,4%	37,8%
Switzerland	13	0	4		30,8%
Syrian Arab Republic	134	37	122	27,6%	91,0%
Taiwan	28	2	14	7,1%	50,0%
Thailand	35	6	20	17,1%	57,1%
Togo	1	1	1	100,0%	100,0%
Tunisia	20	1	15	5,0%	75,0%

Flag state	Inspections	Detentions	Inspections with deficiencies	Detention-%	Inspection-% with deficiencies
Turkey	726	173	621	23,8%	85,5%
Turkmenistan	3	0	3		100,0%
Tuvalu	23	2	16	8,7%	69,6%
U.S.A.	51	2	15	3,9%	29,4%
Ukraine	248	34	198	13,7%	79,8%
United Arab Emirates	12	0	9		75,0%
United Kingdom	211	0	84		39,8%
Vanuatu	32	2	19	6,3%	59,4%
Yugoslavia	1	0	1		100,0%
Totals and averages	18559	1764	10746	9,50%	57,9%

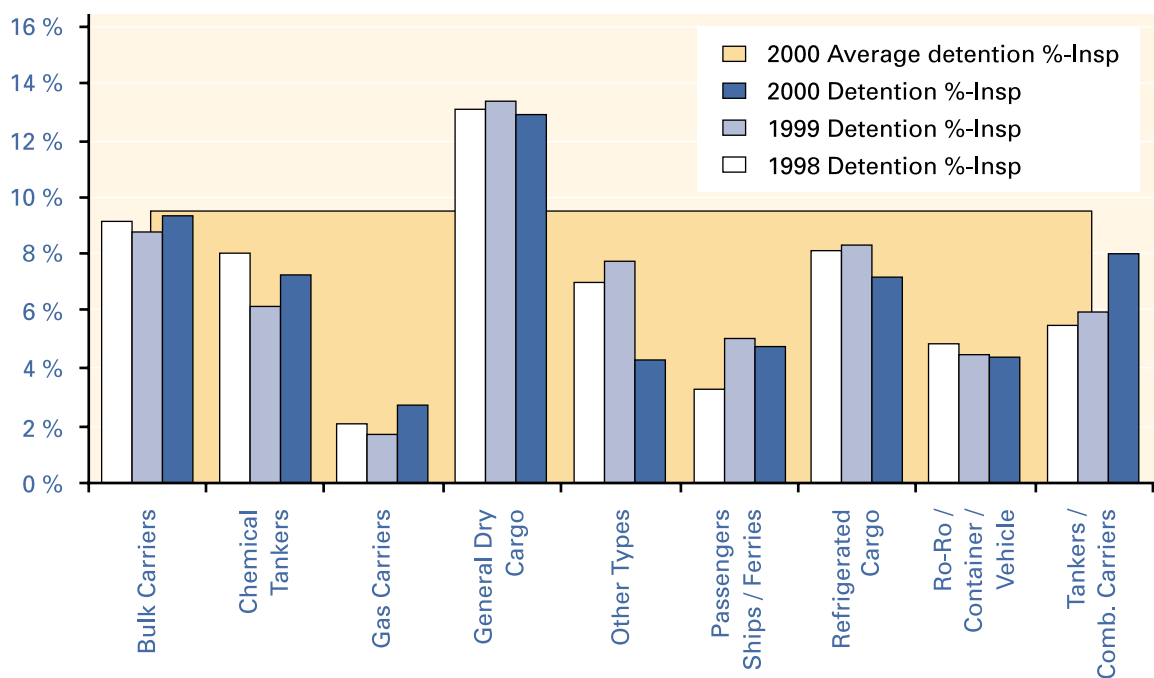
## 2000 detentions per flag State, exceeding average percentage

- Only flags with more than 20 port State control inspections in 2000 are recorded in this table and the graph on the next page
- The light area at the bottom of the graph represents the 200 average detention percentage (9,50%)



Flag	Inspections	Detentions	Detentions %	Excess of average %
Albania	35	19	54,3%	44,79%
Bolivia	36	18	50,0%	40,50%
Sao Tome and Principe	28	14	50,0%	40,50%
Libyan Arab Jama.	29	11	37,9%	28,43%
Georgia	25	9	36,0%	26,50%
Honduras	76	27	35,5%	26,03%
Algeria	76	26	34,2%	24,71%
Lebanon	83	28	33,7%	24,23%
Cambodia	233	76	32,6%	23,12%
Syrian Arab Republic	134	37	27,6%	18,11%
Belize	133	33	24,8%	15,31%
Turkey	726	173	23,8%	14,33%
Romania	47	9	19,1%	9,65%
Thailand	35	6	17,1%	7,64%
St. Vincent & Grenadines	764	123	16,1%	6,60%
Ukraine	248	34	13,7%	4,21%
Morocco	59	8	13,6%	4,06%
Croatia	55	7	12,7%	3,23%
Egypt	79	10	12,7%	3,16%
Malta	1760	208	11,8%	2,32%
Panama	1664	192	11,5%	2,04%
Gibraltar	38	4	10,5%	1,03%
India	77	8	10,4%	0,89%
Cyprus	1401	136	9,7%	0,21%
Cayman Islands	94	9	9,6%	0,07%
Portugal	231	22	9,5%	0,02%
Kuwait	21	2	9,5%	0,02%

## 2000 Detention % of Inspections per ship type



## Inspections and detentions per ship type

Ship type	Inspections	Inspections with deficiencies	% of inspections with detentions	Individual ships	Detentions	Detention. %	Detention. % 1999	Detention. % 1998	+/- average detention %
Bulk Carriers	4235	2522	59,55%	2912	392	9,26%	8,78%	9,19%	-0,24%
Chemical Tankers	907	468	51,60%	615	66	7,28%	6,17%	8,00%	-2,22%
Gas Carriers	301	124	41,20%	213	8	2,66%	1,64%	2,03%	-6,84%
General Dry Cargo	7532	4918	65,29%	4215	968	12,85%	13,34%	13,04%	3,35%
Other Types	370	207	55,95%	312	16	4,32%	7,71%	6,95%	-5,18%
Passengers Ships / Ferries	662	332	50,15%	413	32	4,83%	5,09%	3,22%	-4,67%
Refrigerated Cargo	697	392	56,24%	522	50	7,17%	8,31%	8,14%	-2,33%
Ro-Ro / Container / Vehicle	2161	956	44,24%	1504	95	4,40%	4,43%	4,84%	-5,10%
Tankers / Comb. Carriers	1694	827	48,82%	1151	137	8,09%	5,93%	5,52%	-1,41%
<b>All types</b>	<b>18559</b>	<b>10746</b>	<b>57,90%</b>		<b>1764</b>	<b>9,50%</b>	<b>9,15%</b>	<b>9,06%</b>	

## Major categories of deficiencies in relation to inspections/ships

	NUMBER OF DEFICIENCIES			DEF. IN % OF TOTAL NUMBER			ratio of def. To inspections x 100			ratio of def. to indiv. ships x 100		
	1998	1999	2000	1998	1999	2000	1998	1999	2000	1998	1999	2000
Ship's certificates and documents	3204	3596	3465	5,5%	5,9%	5,1%	18,2%	19,5%	18,8%	28,7%	32,0%	30,8%
Training certification and watchkeeping for seafarers	1404	1232	1179	2,4%	2,0%	1,7%	8,0%	6,7%	6,4%	12,6%	11,0%	10,5%
Crew and Accommodation (ILO 147)	1931	1889	1963	3,3%	3,1%	2,9%	10,9%	10,3%	10,7%	17,3%	16,8%	17,5%
Food and catering (ILO 147)	1105	954	1031	1,9%	1,6%	1,5%	6,3%	5,2%	5,6%	9,9%	8,5%	9,2%
Working space (ILO 147)	518	507	678	0,9%	0,8%	1,0%	2,9%	2,8%	3,7%	4,6%	4,5%	6,0%
Life saving appliances	10445	10882	10942	18,1%	17,9%	16,2%	59,2%	59,1%	59,5%	93,5%	96,7%	97,3%
Fire Safety measures	7749	8052	8789	13,4%	13,3%	13,0%	43,9%	43,8%	47,8%	69,4%	71,6%	78,1%
Accident prevention (ILO147)	1008	1336	1506	1,7%	2,2%	2,2%	5,7%	7,3%	8,2%	9,0%	11,9%	13,4%
Safety in general	7603	7965	9243	13,2%	13,1%	13,7%	43,1%	43,3%	50,2%	68,1%	70,8%	82,2%
Alarm – signals	267	292	330	0,5%	0,5%	0,5%	1,5%	1,6%	1,8%	2,4%	2,6%	2,9%
Carriage of cargo and dangerous goods	813	722	836	1,4%	1,2%	1,2%	4,6%	3,9%	4,5%	7,3%	6,4%	7,4%
Load lines	3161	3308	3816	5,5%	5,5%	5,6%	17,9%	18,0%	20,7%	28,3%	29,4%	33,9%
Mooring arrangements (ILO 147)	552	603	878	1,0%	1,0%	1,3%	3,1%	3,3%	4,8%	4,9%	5,4%	7,8%
Propulsion & aux machinery	3128	2966	3671	5,4%	4,9%	5,4%	17,7%	16,1%	20,0%	28,0%	26,4%	32,6%
Safety of navigation	6426	6643	8055	11,1%	10,9%	11,9%	36,4%	36,1%	43,8%	57,5%	59,1%	71,6%
Radio communication	2112	2439	2638	3,7%	4,0%	3,9%	12,0%	13,3%	14,3%	18,9%	21,7%	23,5%
MARPOL - annex I	4112	4276	4875	7,1%	7,0%	7,2%	23,3%	23,2%	26,5%	36,8%	38,0%	43,3%
Oil tankers, chemical tankers and gas carriers	190	151	212	0,3%	0,2%	0,3%	1,1%	0,8%	1,2%	1,7%	1,3%	1,9%
MARPOL - annex II	79	67	71	0,1%	0,1%	0,1%	0,5%	0,4%	0,4%	0,7%	0,6%	0,6%
SOLAS related operational deficiencies	831	975	1132	1,4%	1,6%	1,7%	4,7%	5,3%	6,2%	7,4%	8,7%	10,1%
MARPOL related operational deficiencies	546	558	618	0,9%	0,9%	0,9%	3,1%	3,0%	3,4%	4,9%	5,0%	5,5%
MARPOL - annexe III	46	36	31	0,1%	0,1%	0,0%	0,3%	0,2%	0,2%	0,4%	0,3%	0,3%
MARPOL - annexe V	70	632	742	0,1%	1,0%	1,1%	0,4%	3,4%	4,0%	0,6%	5,6%	6,6%
ISM	373	498	929	0,6%	0,8%	1,4%	2,1%	2,7%	5,0%	3,3%	4,4%	8,3%

	NUMBER OF DEFICIENCIES			DEF. IN % OF TOTAL NUMBER			ratio of def. To inspections x 100			ratio of def. to indiv. ships x 100		
	1998	1999	2000	1998	1999	2000	1998	1999	2000	1998	1999	2000
Bulks carriers - Additional safety measures			9			0,0%			0,0%			0,1%
Other def. clearly hazardous safety	68	41	44	0,1%	0,1%	0,1%	0,4%	0,2%	0,2%	0,6%	0,4%	0,4%
Other def. not clearly hazardous	90	50	52	0,2%	0,1%	0,1%	0,5%	0,3%	0,3%	0,8%	0,4%	0,5%
<b>TOTAL</b>	<b>57831</b>	<b>60670</b>	<b>67735</b>									

### Model 1 - Detentions with class related detainable deficiencies in % of total number of detentions (per classification society)

Classification Society		Total number of detentions	Detentions with class related deficiencies	Number of individual ships	Percentage Detentions with class related deficiencies	+/- Percentage Average
No Class Recorded		109	22	96	20,18 %	-1,93 %
Class Withdrawn		86	15	79	17,44 %	-4,67 %
Class Not Specified		43	19	33	44,19 %	22,08 %
American Bureau of Shipping	ABS	108	11	93	10,19 %	-11,92 %
Biro Klasifikasi Indonesia	BKI	1	0	1	0,00 %	-22,11 %
Bulgarski Koraben Registar	BKR	17	9	13	52,94 %	30,83 %
Bureau Veritas (France)	BV	222	40	196	18,02 %	-4,09 %
Ceskoslovensky Lodin Register	CS	3	0	3	0,00 %	-22,11 %
China Classification Society	CCS	9	4	8	44,44 %	22,34 %
China Corporation Register of Shipping	CCRS	1	0	1	0,00 %	-22,11 %
Croatian Register of Shipping	CRS	19	10	17	52,63 %	30,52 %
Det Norske Veritas	DNVC	116	24	105	20,69 %	-1,42 %
Germanischer Lloyd	GL	180	27	166	15,00 %	-7,11 %
Hellenic Register of Shipping (Greece)	HRS	43	9	36	20,93 %	-1,18 %
Honduras Inter. Naval Surv. and Insp. Bur.	HINSIB	3	2	2	66,67 %	44,56 %
Inclamar (Cyprus)	INC	11	2	11	18,18 %	-3,93 %
Indian Register of Shipping	IRS	2	1	2	50,00 %	27,89 %
International Naval Surveys Bureau (USA)	INSB	21	7	19	33,33 %	11,22 %
Isthmus Bureau Shipping Class. Div. (Panama)	IBS	2	2	1	100,00 %	77,89 %
Korean Register of Shipping (South Korea)	KRS	12	3	11	25,00 %	2,89 %
Lloyd's Register of Shipping (U.K.)	LRS	250	52	221	20,80 %	-1,31 %
Nippon Kaiji Kyokai (Japan)	NKK	98	27	88	27,55 %	5,44 %
NV Unitas (Belgium)	UN	0		0		
Panama Bureau of Shipping	PBS	1	0	1	0,00 %	-22,11 %
Panama Maritime Surveyors Bureau Inc	PMSB	0		0		
Panama Register Corporation	PRC	1	0	1	0,00 %	-22,11 %
Polski Rejestr Statkow (Poland)	PRS	67	18	54	26,87 %	4,76 %
Register of Shipping (Albania)	RS	6	3	6	50,00 %	27,89 %
Register of Shipping People's R.C. (China)		0		0		
Registro Cubano De Buques	RCB	2	2	2	100,00 %	77,89 %
Registro Italiano Navale	RINA	95	27	85	28,42 %	6,31 %
RINAVE Portuguesa	RP	5	2	5	40,00 %	17,89 %
Romanian Naval Register	RNR	16	6	16	37,50 %	15,39 %
Russian Maritime Register of Shipping	RMRS	152	38	130	25,00 %	2,89 %
Russian River Register	RR	8	1	8	12,50 %	-9,61 %
Seefartsaht Helsinki (Finland)		0		0		
Turkish Lloyd	TL	55	7	39	12,73 %	-9,38 %
Viet Nam Register of Shipping	VRS	0		0		

\*) The information contained in the statistical material of Models 1-4 concerning classification societies were collected during the calendar year 2000 on the basis of provisional criteria for the assessment of class responsibility. Due to updating anomalies the figures may include a small margin of error. This margin is not greater than 1,5 percent to either side.

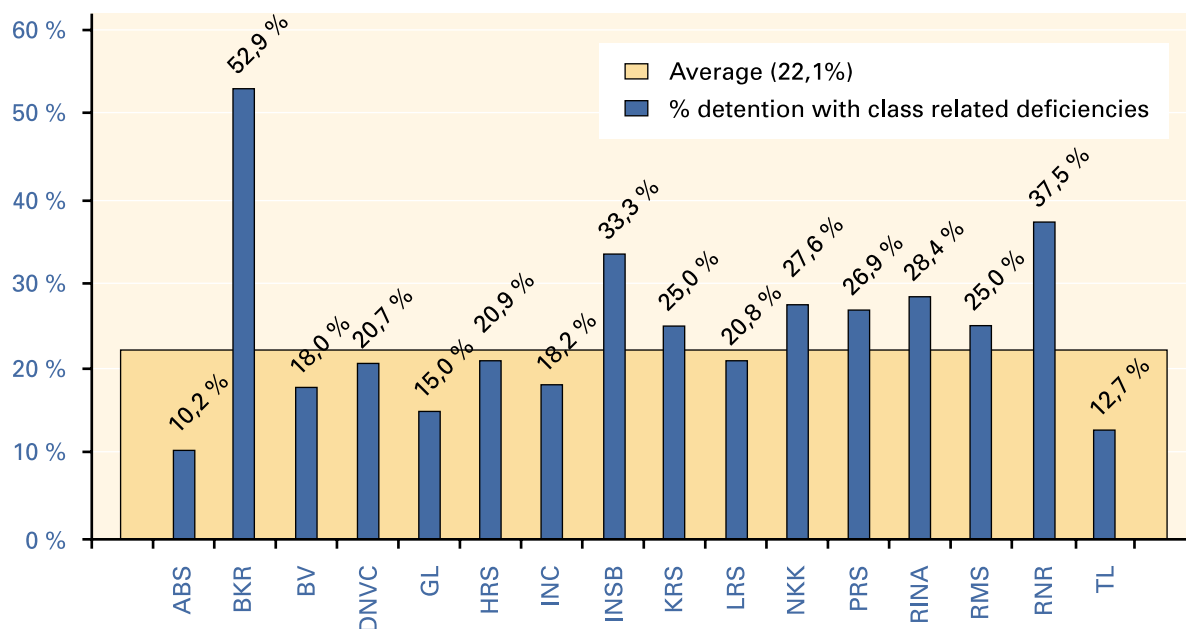


## Model 2 – Detentions of ships with class related detainable deficiencies per Classification Society (Cases in which more than 10 inspections are involved)

Classification Society		Total number of inspections	Number of individual ships inspected	Total number of detentions	Detention-% of total number of inspections	+/- Percentage of Average	Detention-% of individual ships inspected	+/- Percentage of Average
No Class Recorded		854	615	22	2,58 %	0,48 %	3,58 %	0,23 %
Class Withdrawn		361	277	15	4,16 %	2,06 %	5,42 %	2,07 %
Class Not Specified		133	85	19	14,29 %	12,19 %	22,35 %	19,01 %
American Bureau of Shipping	ABS	1168	792	11	0,94 %	-1,15 %	1,39 %	-1,95 %
Bulgarski Koraben Registar	BKR	113	67	9	7,96 %	5,87 %	13,43 %	10,09 %
Bureau Veritas (France)	BV	2305	1386	40	1,74 %	-0,36 %	2,89 %	-0,46 %
Ceskoslovensky Lodin Register	CS	11	8	0	0,00 %	-2,09 %	0,00 %	-3,34 %
China Classification Society	CCS	139	103	4	2,88 %	0,78 %	3,88 %	0,54 %
China Corporation Register of Shipping	CCRS	17	14	0	0,00 %	-2,09 %	0,00 %	-3,34 %
Croatian Register of Shipping	CRS	119	64	10	8,40 %	6,31 %	15,63 %	12,28 %
Det Norske Veritas	DNVC	2100	1415	24	1,14 %	-0,95 %	1,70 %	-1,65 %
Germanischer Lloyd	GL	3202	1788	27	0,84 %	-1,25 %	1,51 %	-1,83 %
Hellenic Register of Shipping	HRS	219	120	9	4,11 %	2,02 %	7,50 %	4,16 %
Honduras Inter. Naval Surv. and Insp. Bur.	HINSIB	13	7	2	15,38 %	13,29 %	28,57 %	25,23 %
Inclamar	INC	29	18	2	6,90 %	4,80 %	11,11 %	7,77 %
Indian Register of Shipping	IRS	26	19	1	3,85 %	1,75 %	5,26 %	1,92 %
International Naval Surveys Bureau	INSB	51	34	7	13,73 %	11,63 %	20,59 %	17,25 %
Korean Register of Shipping	KRS	127	101	3	2,36 %	0,27 %	2,97 %	-0,37 %
Lloyd's Register of Shipping	LRS	3127	1989	52	1,66 %	-0,43 %	2,61 %	-0,73 %
Nippon Kaiji Kyokai	NKK	1219	881	27	2,21 %	0,12 %	3,06 %	-0,28 %
Polski Rejestr Statkow	PRS	359	192	18	5,01 %	2,92 %	9,38 %	6,03 %
Register of Shipping	RS	12	8	3	25,00 %	22,91 %	37,50 %	34,16 %
Registro Cubano De Buques	RCB	10	5	2	20,00 %	17,91 %	40,00 %	36,66 %
Registro Italiano Navale	RINA	806	462	27	3,35 %	1,26 %	5,84 %	2,50 %
RINAVE Portuguesa	RP	27	10	2	7,41 %	5,31 %	20,00 %	16,66 %
Romanian Naval Register	RNR	51	38	6	11,76 %	9,67 %	15,79 %	12,45 %
Russian Maritime Register of Shipping	RMRS	1678	955	38	2,26 %	0,17 %	3,98 %	0,64 %
Russian River Register	RR	94	68	1	1,06 %	-1,03 %	1,47 %	-1,87 %
Turkish Lloyd	TL	167	86	7	4,19 %	2,10 %	8,14 %	4,80 %

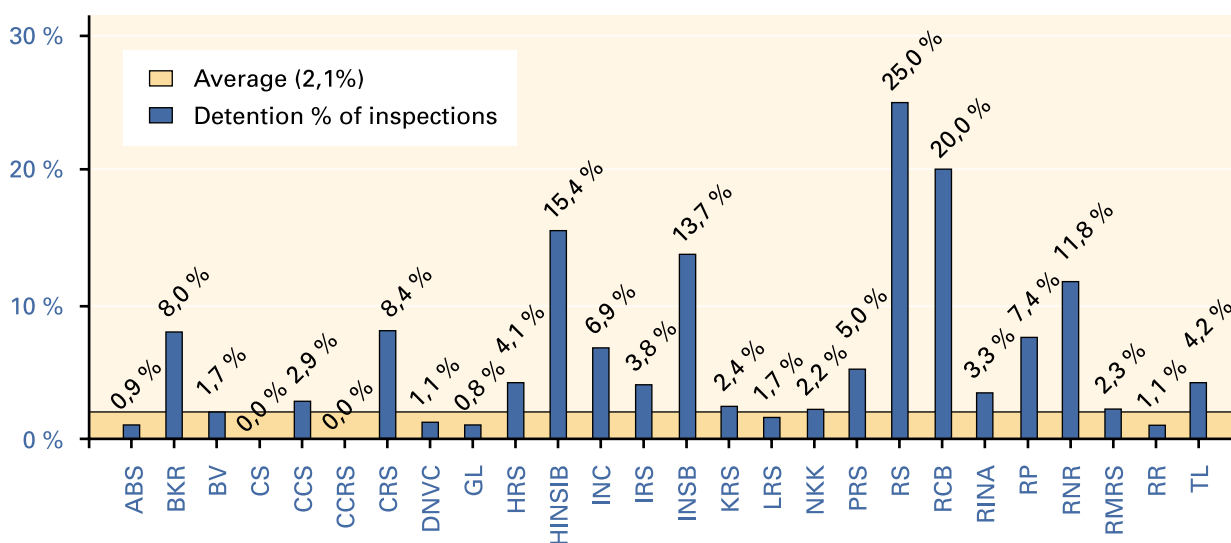
### Model 1 - Detentions with class related detainable deficiencies in % of total number of detentions (per Classification Society)

(Cases in which more than 10 detentions are involved, see table on page 30)



### Model 2 – Detentions of ships with class related detainable deficiencies per Classification Society

(Cases in which more than 10 inspections are involved, see table on page 31)



### Model 3 – Number of detentions per Classification Society

(individual ships with class related detainable deficiencies)

Classification Society	Number of ships with class related detainable deficiencies, <sup>1</sup>		
	<i>detained once</i>	<i>detained twice</i>	<i>detained trice</i>
No Class Recorded	20	1	0
Class Withdrawn	15	0	0
Class Not Specified	12	2	1
American Bureau of Shipping	11	0	0
Biro Klasifikasi Indonesia	0	0	0
Bulgarski Koraben Registar	7	1	0
Bureau Veritas (France)	38	1	0
Ceskoslovensky Lodin Register	0	0	0
China Classification Society	2	1	0
China Corporation Register of Shipping	0	0	0
Croatian Register of Shipping	10	0	0
Det Norske Veritas	22	1	0
Germanischer Lloyd	27	0	0
Hellenic Register Of Shipping (Greece)	7	1	0
Honduras Inter. Naval Surv. and Insp. Bur.	2	0	0
Inclamar (Cyprus)	2	0	0
Indian Register of Shipping	1	0	0
International Naval Surveys Bureau (USA)	7	0	0
Isthmus Bureau Shipping Class. Div. (Panama)	0	1	0
Korean Register of Shipping (South Korea)	3	0	0
Lloyd's Register of Shipping (U.K.)	46	3	0
Nippon Kaiji Kyokai (Japan)	22	1	1
Panama Bureau of Shipping	0	0	0
Panama Register Corporation	0	0	0
Polski Rejestr Statkow (Poland)	16	1	0
Register of Shipping (Albania)	3	0	0
Registro Cubano De Buques	2	0	0
Registro Italiano Navale	23	2	0
RINAVE Portuguesa	2	0	0
Romanian Naval Register	6	0	0
Russian Maritime Register of Shipping	34	2	0
Russian River Register	1	0	0
Turkisch Lloyd	7	0	0

<sup>1</sup> No ship has been detained more than 3 times in 2000.

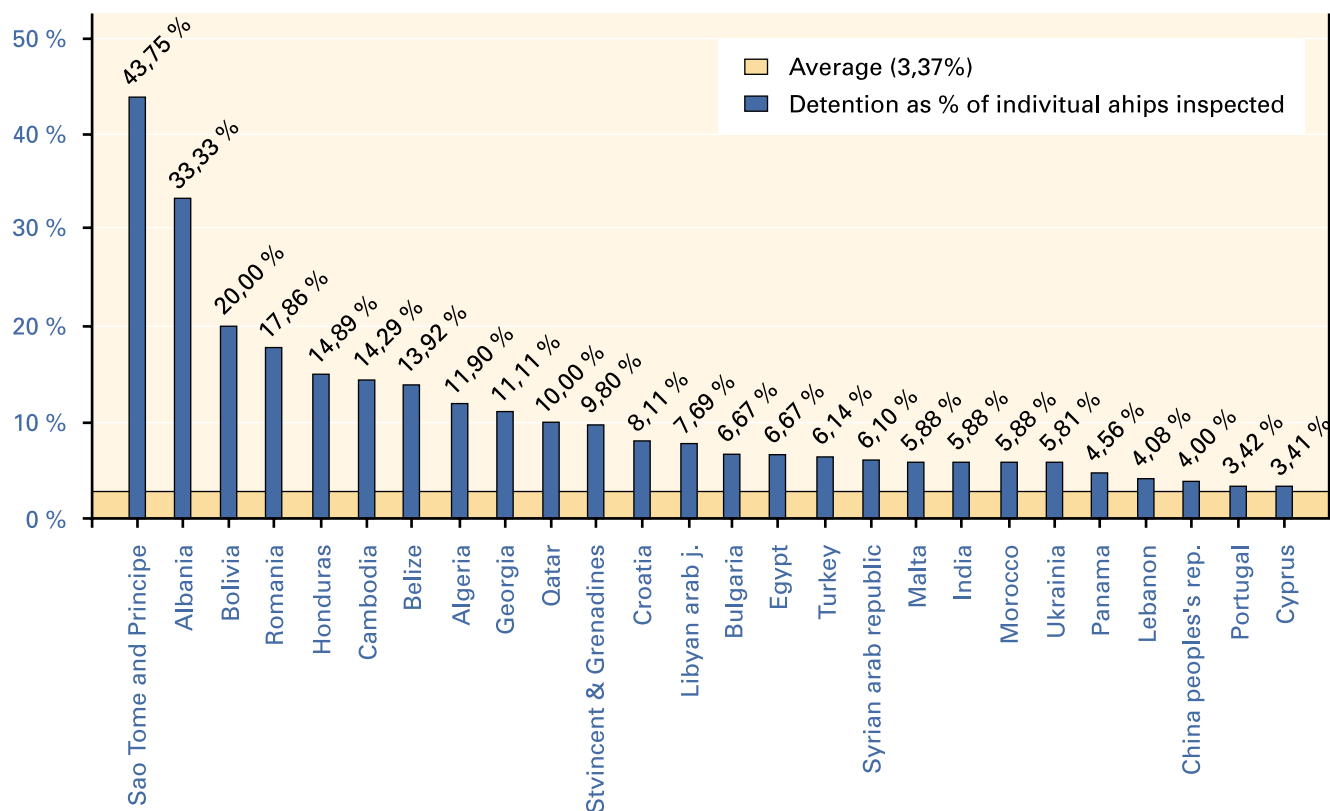
**Model 4 – Detentions of ships with class related detainable deficiencies**  
**per flag state**  
(individual ships with class related detainable deficiencies)

Flag state	Number of individual ships inspected	Number of ships detained (ships with class related deficiencies)	Detentions as % of individual ships inspected	+/- Percentage of average
Albania	24	8	33,33 %	29,97 %
Algeria	42	5	11,90 %	8,54 %
Antigua and Barbuda	522	5	0,96 %	-2,41 %
Antilles, Netherlands	65	0	0,00 %	-3,37 %
Australia	1			
Austria	22	0	0,00 %	-3,37 %
Azerbaijan	22	0	0,00 %	-3,37 %
Bahamas	632	13	2,06 %	-1,31 %
Bahrain	5	1	20,00 %	16,63 %
Bangladesh	3	1	33,33 %	29,97 %
Barbados	51	0	0,00 %	-3,37 %
Belgium	4			
Belize	79	11	13,92 %	10,56 %
Bermuda	50			
Bolivia	25	5	20,00 %	16,63 %
Brazil	5			
Bulgaria	60	4	6,67 %	3,30 %
Cambodia	119	17	14,29 %	10,92 %
Canada	4			
Cape Verde	4	0	0,00 %	-3,37 %
Cayman Islands	66	1	1,52 %	-1,85 %
Chile	1			
China, People's Rep.	75	3	4,00 %	0,63 %
Croatia	37	3	8,11 %	4,74 %
Cuba	5	1	20,00 %	16,63 %
Cyprus	822	28	3,41 %	0,04 %
Denmark	309	2	0,65 %	-2,72 %
Egypt	45	3	6,67 %	3,30 %
Equatorial Guinea	5	0	0,00 %	-3,37 %
Estonia	72	2	2,78 %	-0,59 %
Ethiopia	6	1	16,67 %	13,30 %
Faeroe Islands	6	0	0,00 %	-3,37 %
Finland	110			
France	68	0	0,00 %	-3,37 %
Georgia	18	2	11,11 %	7,74 %
Germany	342	3	0,88 %	-2,49 %
Gibraltar	24	0	0,00 %	-3,37 %
Greece	327	6	1,83 %	-1,53 %
Honduras	47	7	14,89 %	11,53 %
Hong Kong	98	2	2,04 %	-1,33 %
Iceland	2	0	0,00 %	-3,37 %
India	51	3	5,88 %	2,51 %
Indonesia	2	0	0,00 %	-3,37 %
Iran	37	1	2,70 %	-0,67 %
Ireland	36	0	0,00 %	-3,37 %
Israel	17			

Flag state	Number of individual ships inspected	Number of ships detained (ships with class related deficiencies)	Detentions as % of individual ships inspected	+/- Percentage of average
Italy	190	4	2,11 %	-1,26 %
Japan	21	0	0,00 %	-3,37 %
Jordan	1			
Korea, Democratic Rep.	5	2	40,00 %	36,63 %
Korea, Republic of	24	0	0,00 %	-3,37 %
Kuwait	16	0	0,00 %	-3,37 %
Latvia	18	0	0,00 %	-3,37 %
Lebanon	49	2	4,08 %	0,71 %
Liberia	643	4	0,62 %	-2,75 %
Libyan Arab Jama.	13	1	7,69 %	4,32 %
Lithuania	61	0	0,00 %	-3,37 %
Luxemburg	37	1	2,70 %	-0,67 %
Malaysia	32	0	0,00 %	-3,37 %
Malta	1003	59	5,88 %	2,51 %
Man, Isle of	107	0	0,00 %	-3,37 %
Marshall Islands	81	2	2,47 %	-0,90 %
Mauritius	4	1	25,00 %	21,63 %
Morocco	34	2	5,88 %	2,51 %
Myanmar, Union of	7	0	0,00 %	-3,37 %
Netherlands, the	528	2	0,38 %	-2,99 %
Norway	590	3	0,51 %	-2,86 %
Pakistan	2	0	0,00 %	-3,37 %
Panama	1141	52	4,56 %	1,19 %
Philippines	68	2	2,94 %	-0,43 %
Poland	57	1	1,75 %	-1,61 %
Portugal	117	4	3,42 %	0,05 %
Qatar	10	1	10,00 %	6,63 %
Register Withdrawn	2	1	50,00 %	46,63 %
Romania	28	5	17,86 %	14,49 %
Russia	538	14	2,60 %	-0,77 %
Sao Tome and Principe	16	7	43,75 %	40,38 %
Saudi Arabia	20	0	0,00 %	-3,37 %
Singapore	172	3	1,74 %	-1,62 %
Slovakia	1	0	0,00 %	-3,37 %
South Africa	4			
Spain	37	0	0,00 %	-3,37 %
Sri Lanka	2	0	0,00 %	-3,37 %
St. Vincent & Grenadines	398	39	9,80 %	6,43 %
Sudan	1	0	0,00 %	-3,37 %
Sweden	185	0	0,00 %	-3,37 %
Switzerland	10			
Syrian Arab Republic	82	5	6,10 %	2,73 %
Taiwan	21	0	0,00 %	-3,37 %
Thailand	23	0	0,00 %	-3,37 %
Togo	1	1	100,00 %	96,63 %
Tunisia	11	0	0,00 %	-3,37 %

Flag state	Number of individual ships inspected	Number of ships detained (ships with class related deficiencies)	Detentions as % of individual ships inspected	+/- Percentage of average
Turkey	407	25	6,14 %	2,77 %
Turkmenistan	2			
Tuvalu	11	0	0,00 %	-3,37 %
U.S.A.	39	0	0,00 %	-3,37 %
Ukraine	155	9	5,81 %	2,44 %
United Arab Emirates	7			
United Kingdom	156			
Vanuatu	23	0	0,00 %	-3,37 %
Yugoslavia	1			

**Model 4 – Detentions of ships with class related detainable deficiencies per flag state above average**  
(cases in which more than 10 individual ships are inspected)





## Explanatory note – Black, Grey and White lists

The new normative listing of flag States provides an independent categorization that has been prepared on the basis of Paris MOU port State inspection results. Compared to the calculation method of previous year, this system has the advantage of providing an excess percentage that is significant and also reviewing the number of inspections and detentions over a 3-year period at the same time, based on binomial calculus.

The performance of each flag State is calculated using a standard formula for statistical calculations in which certain values have been fixed in accordance with agreed Paris MOU policy. Two limits have been included in the new system, the 'black to grey' and the 'grey to white' limit, each with its own specific formula:

$$u_{black-to-grey} = Np + 0.5 + z\sqrt{Np(1-p)}$$

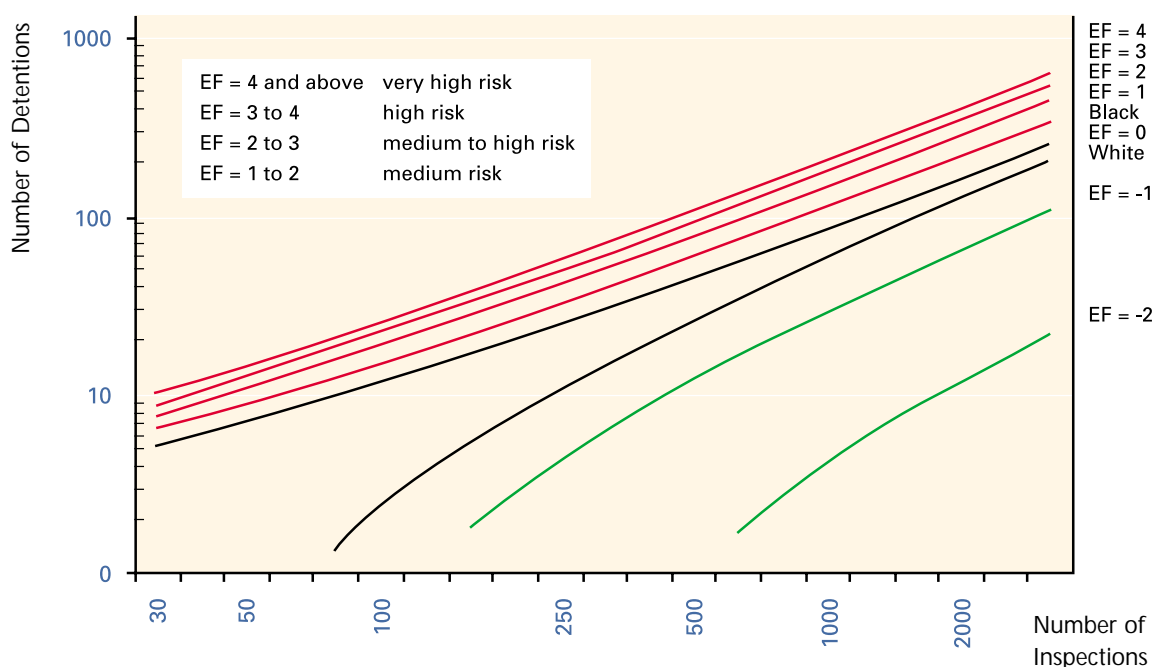
$$u_{white-to-grey} = Np - 0.5 - z\sqrt{Np(1-p)}$$

In the formula "N" is the number of inspections, "p" is the allowable detention limit (yardstick), set to 7% by the Paris MOU Port State Control Committee, and "z" is the significance requested (z=1.645 for a statistically acceptable certainty level of 95%). The result "u" is the allowed number of detentions for either the black or white list. The "u" results can be found in the table as the 'black to grey' or the 'grey to white' limit. A number of detentions above this 'black to grey' limit means significantly worse than average, where a number of detentions below the 'grey to white' limit means significantly better than average. When the amount of detentions for a particular flag State is positioned between the two, the flag State will find itself on the grey list. The

formula is applicable for sample sizes of 30 or more inspections over a 3-year period.

To sort results on the black or white list, simply alter the target and repeat the calculation. Flags which are still significantly above this second target, are worse than the flags which are not. This process can be repeated, to create as many refinements as desired. (Of course the maximum detention rate remains 100%!) To make the flags' performance comparable, the excess factor (EF) is introduced. Each incremental or decremental step corresponds with one whole EF-point of difference. Thus the excess factor EF is an indication for the number of times the yardstick has to be altered and recalculated. Once the excess factor is determined for all flags, the flags can be ordered by EF. The excess factor can be found in the last column the black, grey or white list. The target (yardstick) has been set on 7% and the size of the increment and decrement on 3%. The Black/Grey/White lists have been calculated in accordance with the above principles.

The graphical representation of the system, below, is showing the direct relations between the number of inspected ships and the number of detentions. Both axis have a logarithmic character.





### Example flag on Black list:

Ships of St Vincent & Grenadines were subject to 2088 inspections of which 353 resulted in a detention. The "black to grey limit" is 165 detentions. The excess factor is 3.86

$N$  = total inspections

$P$  = 7%

$Q$  = 3%

$Z$  = 1.645

How to determine the black to grey limit:

$$u_{blackto\ grey} = N \cdot p + 0.5 + z \sqrt{N \cdot p \cdot (1-p)}$$

$$u_{blackto\ grey} = 2088 \cdot 0.07 + 0.05 + 1.645 \sqrt{2088 \cdot 0.07 \cdot 0.93}$$

$$u_{blackto\ grey} = 165$$

The excess factor is 3.86. This means that 'p' has to be adjusted in the formula. The black to grey limit has an excess factor of 1, so to determine the new value for 'p', 'q' has to be multiplied with 2.86, and the outcome has to be added to the normal value for 'p':

$$p + 2.86q = 0,07 + (2,86 \cdot 0,03) = 0,1558$$

$$u_{excessfactor} = 2088 \cdot 0.1558 + 0.5 + 1.645 \sqrt{2088 \cdot 0.1558 \cdot 0.8442}$$

$$u_{excessfactor} = 353$$

### Example flag on Grey list:

Ships of Estonia were subject to 422 inspections, of which 30 resulted in a detention. The "black to grey limit" is 38 and the "grey to white limit" is 20. The excess factor is 0.53.

How to determine the black to grey limit:

$$u_{blackto\ grey} = 422 \cdot 0.07 + 0.5 + 1.645 \sqrt{422 \cdot 0.07 \cdot 0.93}$$

$$u_{blackto\ grey} = 38,662$$

How to determine the grey to white limit:

$$u_{greyto\ white} = N \cdot p - 0.5 - z \sqrt{N \cdot p \cdot (1-p)}$$

$$u_{greyto\ white} = 422 \cdot 0.07 - 0.5 + 1.645 \sqrt{422 \cdot 0.07 \cdot 0.93}$$

$$u_{greyto\ white} = 20,418$$

To determine the excess factor the following formula is used:

$$ef = \frac{\text{Detentions} - \text{white to grey limit}}{\text{grey to black limit} - \text{white to grey limit}}$$

$$ef = \frac{30 - 20.418}{38.662 - 20.418}$$

$$ef = 0,525$$

### Example flag on White list:

Ships of Singapore were subject to 688 inspections of which 23 resulted in detention. The "grey to white limit" is 36 detentions. The excess factor is -0,75.

How to determine the grey to white limit:

$$u_{greyto\ white} = N \cdot p - 0,5 - z \sqrt{N \cdot p \cdot (1-p)}$$

$$u_{greyto\ white} = 688 \cdot 0.07 - 0.05 - 1.645 \sqrt{688 \cdot 0.07 \cdot 0.93}$$

$$u_{greyto\ white} = 36$$

The excess factor is - 0,75 This means that 'p' has to be adjusted in the formula. The grey to white limit has an excess factor of 1, so to determine the new value for 'p', 'q' has to be multiplied with -0,75, and the outcome has to be added to the normal value for 'p':

$$p + (-0.75q) = 0.07 + (-0.75 \cdot 0.03) = 0,0475$$

$$u_{excessfactor} = 688 \cdot 0.0475 - 0.5 - 1.645 \sqrt{688 \cdot 0.0475 \cdot 0.9525}$$

$$u_{excessfactor} = 23$$

## Secretariat Paris Memorandum of Understanding on Port State Control



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Paris MOU fact sheet - organizational structure

