The III Code

An essential consideration for all maritime administrations

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The Audit Scheme

Very much in the forefront of planning for all flag state administrations must be the "IMO Instruments Implementation Code" (known generally as the "III Code"), and the mandatory audit programme that will use this Code as its basis for the audits of administrations. The schedule of the mandatory audits is available (see IMO Council Information Paper C 112/INF 3. 16th June 2014 and the Annex to paper C 116-6(1) available on the IMO GISIS site). This is the latest development in a process that began some time ago but which has now reached the stage of being compulsory as a key part of the various IMO conventions. Being in the Conventions means the Code becomes a mandatory obligation for all member states that have acceded to the conventions. While there are no explicit sanctions associated with failure to comply with the Code, or with a poor audit result, there are a great many ways in which pressure can be applied, politically, diplomatically and commercially to a state that is found not to be in compliance with the standards in the Code. This paper looks at the background to the code and highlights some of the requirements in it and in related documents that are likely to cause the most difficulties for flag states and their maritime administrations.

The United Nations Convention on the Law of the Sea (1982) (UNCLOS) sets the environment for the current practice of public maritime law. UNCLOS codified much of what was previously custom and practice and is now the base standard for the law on ship registry amongst its other areas of coverage. It creates a right for any state to grant its nationality to ships (Article 90), and requires them to fix conditions for the grant of its nationality and to issue documents to confirm registry in the state (Article 91). Every state that operates a shipping register is effectively bound by the basic legal requirements in UNCLOS once those ships attempt an international voyage.

The right to grant nationality in UNCLOS is not unfettered and a number of requirements attach to using the right. These mean that a state which chooses to operate as a flag state by registering ships and conferring its nationality on them has to conform to a range of important duties and responsibilities. For example, a flag state must:

- Exercise its jurisdiction in administrative, technical and social matters over its ships,
- Maintain a register of ships,
- Take the necessary measures to ensure safety at sea with regard to:
    a. Construction, equipment and seaworthiness of ships,
    b. Manning of ships, labour conditions and the training of crews (taking into account applicable international instruments)
    c. The use of signals, the maintenance of communications and the prevention of collisions

According to UNCLOS the necessary measures should include regular surveys and measures to ensure the crew are qualified and sufficient and in doing all of this, flag states are required to conform to generally accepted international regulations, procedures and practices. This means the conventions made at the International Maritime Organisation (IMO) and the International Labour Organisation (the ILO). So, the right to register ships is tied to a duty to apply the IMO and ILO conventions.

The registration of ships has become an important revenue earner for many states. For shipowners, the choice of flag for their ships was once simply determined by where the shipowner was based. For a variety of reasons this changed and following the second world war, a number of states began to offer ship registry to owners as a service, regardless of the owner's location. These states and others that joined them are often known today as "open" registers, open to owners from anywhere. Owners who use their services pay annual dues, usually based on ship tonnage and receive all the services of a traditional flag state. Some of these states have outsourced the operation of the ship register to commercial organisations acting on the state's behalf, providing an efficient and business oriented approach. In some cases, as well as annual dues, the owner has to create a local company which in turn pays an annual filing fee which enhances the overall revenue from the ship registry business.

A number of features make the open registries attractive. Typically they do not discriminate on grounds of nationality, so that owners from anywhere are welcome, and those owners can employ seafarers from anywhere they choose as long as they are competent. The result is a buoyant marketplace in ship registry. Some of the larger "open" registries make a great deal of money from the business, money which feeds into the national income stream and is important for many of those countries. Other countries have seen the potential in this marketplace and seek to build their registered fleets and enjoy some of that income. With around one hundred flags competing for a finite number of the world's ships, the market is inevitably very competitive, especially so when it is considered that it costs an owner a considerable sum to change flag for his ships and therefore he has to have a compelling reason or advantage in changing once he has initially chosen a flag for his ship.

Because of its particular nature, governed by international law, there are therefore really only three possible strategies to gaining business in this market; compete on price, compete on standards, or compete on quality of service. Nowadays, almost all the larger registries make their prices available online and it is quick and easy to check on the estimated costs for the initial registry, and subsequent annual fees, for any particular size and type of ship. While all the online price checkers show the most attractive figure, making some look much cheaper than others, there are almost always a range of "hidden" costs that apply and it is not always easy to locate all the "additions" that make up the full cost, or to see the possible discounts that are available. But any reasonably detailed and knowledgeable analysis shows that the cost per ship over a sensible period such as five years actually varies little from flag to flag. The larger flags have an advantage in scale for their operations and can offer attractive discounts, but all flags are caught by the basic minimum costs of doing business brought about by their obligations under the conventions.

Given the financial power of the larger flag administrations that allows them to offer discounts and attractive terms, competition on price is not really effective for new entrants. That leaves standards and service as two options on which to compete. The growth of the world's port state control inspection regime is putting pressure on lower standards. This regime grew from the power in some of the conventions for coastal and port states to inspect visiting foreign ships to determine if they were in compliance with the conventions. A ship that is inspected and found not to comply with the minimum standards in the conventions can be prevented from sailing until such time as it does meet minimum standards. The use of this power has grown into the present system where most of the world is covered by a network of regional structures within which the members work together and pool their information. The result is that any visiting ship can be inspected in one port, detained if it is seriously deficient, or be given a short period in which to repair less serious defects, and be followed up in another port in the region. Ships with a seriously bad detention record can even be banned from whole regions. This whole effort has been enhanced by publicity and the publication of comparisons like the white/grey/black lists and the other flag state assessment reports of flag state performance, all of which have pressured poorly performing flag states to improve their work and remove sub-standard ships from their registers.

But despite the efforts and successes of this system it has remained a fact that non-compliant ships continued to be registered and operated and this has caused concerns both at the IMO and in many coastal states. Accidents have happened where ships have stranded, spilt large quantities of oil or dangerous goods, or failed structurally when at sea leading to loss of life or to major coastal pollution, even when the ship in question was not even in the coastal waters of the affected state. Many of the inquiries into these accidents highlighted serious failings in the way the international standards had been applied to the ships in question and logically back to the way in which their flag states had dealt with their duties and responsibilities under UNCLOS and the maritime conventions. At the same time, major reports in several countries highlighted the risks to vulnerable coastal infrastructure and environments posed by sub-standard ships. The media took on these concerns and the problem of sub-standard ships became political and public.

The first move by the IMO in response to this situation was to adopt a string of resolutions providing guidance to flag states on meeting their obligations to implement IMO instruments. But concerns remained and in 2001 the IMO Flag State Self-Assessment Form was promoted; the SAF Form. This was intended as a methodology for flag states to assess their own performance and capability based on completing a questionnaire and calculating some basic statistics. Completing the questionnaire was intended to highlight to flag states the areas where they might need to apply additional effort to meet their convention obligations. Nothing had to be submitted to the IMO and it was an entirely voluntary methodology although many flag states actually submitted their questionnaires to the IMO and some published them on their websites. Some concerned states chose to apply additional pressure, for example the United States Coastguard, which made submission of a self-assessment form to the IMO a condition for inclusion in its QUALSHIP21 programme.

By the end of 2004, some 58 submissions and 14 updates from flag states covering about 83% of the world's tonnage had actually been submitted to the IMO. However, the effort was not seen as having sufficient effect. About 17% of the IMO membership ignored the SAF process and substandard ships continued to amount to about 10% of the world's tonnage and continued to raise concerns amongst coastal states. Concerns over sub-standard ships remained as did the political pressure to deal with the problem.

The next step from the IMO was the Voluntary IMO Member State Audit Scheme (VIMSAS). The audit scheme was established by Assembly Resolution A.946(23) in 2003 and began with a set of pilot audits involving six member states to develop the methodology and processes. Following the pilot scheme many member states volunteered and the audits commenced. The scheme remained voluntary and, like the self-assessment process, tended to be adopted by the better-quality flag states while others, perhaps those most in need of attention, ignored it. The European port state control area, the Paris MOU, applied a bit more pressure, as did the US Coastguard, by raising the risk profile in its inspection methodology for ships flying the flags of states that had not completed a VIMSAS audit but ultimately VIMSAS didn't have the impact that was hoped.

It went a lot further than SAF and the audit reports contained details of non-conformities and observations which were to be followed up by submitted corrective action plans but there was no form of enforcement and it was open for flags to ignore the process. It was also anonymous. Hence work began on creating a mandatory scheme. This took time as it required the development of a mandatory standard against which audits could be performed and amendments to all the IMO instruments to include within them a requirement to follow that mandatory standard. The standard was developed from earlier guidance and emerged as the IMO Instruments Implementation Code, the III Code. Amending the conventions takes time and it was not until 2014 that the process was complete and the mandatory instruments (the conventions) all amended to contain a requirement for member states to comply with the new III Code as the standard against which audits would be conducted. The amendments came into force in 2016 and the mandatory audit scheme is now in place. There are, of course, practical problems in finding and training sufficient auditors and in scheduling audits but the IMO remains very determined that this process is an essential step forwards.

With over 100 member states, and each audit planned for a three-man team of volunteer auditors to spend about a week on site as well as the time off-site to follow up and write reports, there is a huge logistical challenge for the IMO in making the process work. The current plan is to first cover all the member states that have not completed a VIMSAS audit and then the remaining members in the order they completed their VIMSAS audits and with repeat audits at seven year intervals. For various reasons that schedule has been amended slightly and the latest version showing the actual planned dates for each member state is available on GISIS. It will probably be amended again as time passes.

The amendments to the conventions creating the new mandatory audit scheme apply to all aspects of those conventions and the conventions go beyond the equipment and operation of ships. When they are examined it is clear that the Safety of Life at Sea convention (SOLAS) and the Prevention of Marine Pollution convention (MARPOL) create duties on member states other than those related directly to ships. SOLAS, for example requires signatories to issue at least twice daily, weather information suitable for shipping, and to arrange for the collection and compilation of hydrographic data and the publication of nautical information necessary for safe navigation. MARPOL in turn requires signatories to make available at oil terminals, repair ports, and other ports facilities for the reception of oily residues and garbage from ships. The scope of the conventions therefore extends beyond the obvious duties on flag states and embraces the duties laid on coastal states, and on port states. The III Code recognises and includes this broad scope of responsibility and the IMO audit scheme covers all three areas of responsibility. This makes the audits complex and wide ranging. Inevitably the areas of concern are those where Governments generally have a responsibility and as a result the audits almost always involve several different Departments. The auditors examine the operation of ports and those responsible for them as well as other agencies and Departments with responsibility for Search and Rescue, hydrographic survey, navigational marks and all the facets covered by a coastal state as well as by ports. However, it remains the case that the role of the administration as a flag state is the largest element and probably the most important.

The III code sets out the standard that the IMO expects from each of its member states. Being a mandatory instrument, subject to a mandatory audit (which the flag state has to pay for), and with the audit results available to the IMO, compliance and achieving a "clean" audit is something that is seen as important and something that is very much exercising flag states now. The III Code is effectively the current "operating manual" for flag states.

Looking at the Code itself, Part 1 addresses aspects common to all three areas of responsibility:

"in order to meet the objectives of this code a state is recommended to;

> *1. Develop an overall strategy to ensure its international obligations and responsibilities as a flag, port and coastal state are met,*
> *2. Establish a methodology to monitor and assess that the strategy ensures effective implementation and enforcement of relevant international mandatory instruments, and*
> *3. Continuously review the strategy to achieve, maintain and improve the overall performance and capability as a flag, port and coastal state."*

Further on the general section notes that

"*Records, as appropriate, should be established and maintained to provide evidence of conformity to requirements and of the effective operation of the State. Records should remain legible, readily identifiable and retrievable. A documented procedure should be established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records.*"

Quality Management

In general terms, a flag state has to develop a methodology to ensure that its strategy ensures effective compliance, it has to continuously review the strategy and to keep comprehensive records. That, in a nutshell, defines a typical quality management system. While the Code does not say that states must have such a system, the clear words of the Code and its references to documented procedures, records and processes make it clear that the way of working should closely resemble a typical quality management system. From that, it follows that the optimum way to demonstrate to any auditor that there is a strategy, a methodology and a system of review is to have a certified quality management system in place. The most appropriate standard that is acceptable generally is the ISO:9001 standard and many maritime administrations have implemented systems and procedures that have led to certification under this standard.

Creating a quality management system to be certified as ISO:9001 compliant is not easy for a typical maritime administration given the dual nature of the business. On the one hand a maritime administration is a service business, providing value to its customers by registering their ships and making profits from the exercise, but on the other hand, unlike a normal service business, the same organisation is also an enforcement organisation with a legal duty to take action against those same customers when they transgress. This latter role does not fit comfortably within the ISO standard, which does not readily deal with enforcement. It refers to the end result as the "product", and while it is clear in the standard that a service can be a product, it is still sometimes hard to see how the dual operations of a maritime administration, as sales organisation and police at the same time, fit easily into the standard. One approach is to think of the "product" as being "Safe ships operated by competent seafarers". That is really what underlies the flag state's legal duties and is the clear intent behind the UNCLOS obligations. While there can certainly be, and should be, business KPI's aimed at growing and improving the business, the core role arising from the flag state's duties is intended to deliver this product.

Flag states that do not deliver this "product" tend to appear on the port state control "black" lists and low in the rankings for other comparison tables with the result that their ships are targeted world-wide causing delays and making it harder for their owners to operate commercially. Hence it is reasonable to assume that a flag state characterised by a good reputation for overseeing safe ships and competent seafarers will also be an attractive flag for owners. With that in mind as the "product", a range of measures pointing towards safety performance are essential within the quality management system to meet the general objectives of the Code.

That means a Flag State must have available a methodology to assess the performance of its ships, and the seafarers it certifies, and be in a position to measure its effectiveness and enforcement success. It does this by looking at statistics derived from those performance measures and it can then review trends and formulate strategy based on that data.

To measure how safe its ships are, maritime administrations must collect a range of data from a wide set of sources to create comparative statistics, something that cannot realistically be achieved on paper. In reality, it can only be achieved through a comprehensive electronic system, one that can take all the inputs; the port state control data, inspection data, accident data, casualty data, incident reports, exemptions issued, certificates revoked and all the other factors that provide clues as to how well any ship is performing. The system then needs to provide meaningful outputs that can be used to demonstrate effective implementation and effective measures to enforce implementation as well as to inform reviews.

There is a further element to quality management systems. The ISO:9001/2008 standard is now superseded by the 9001/2015 standard, which comes into effect in the run up to 2018 with an expectation that the transition to the 2015 standard will be complete by about October 2018 after which the 9001/2008 standard will no longer be recognised. The 2015 amendments introduce a number of changes, of which the addition of a risk management requirement is one of the major ones. Organisations wishing to retain the ISO quality management standard under the 2015 amendments will need to introduce processes and procedures to be able to demonstrate to an ISO auditor that they have analysed the risks and opportunities facing the business and have introduced strategies to minimise the risks and enhance the opportunities.

Risk management is an all-pervasive concept in the modern world and it is inescapable that understanding the risk can only be achieved through having sufficient data and analysis tools to see where the risks lie, and how large they might be. The realistic analysis of risk must be based on factual data. Like so many aspects that lie within the ISO standard or the III Code, there is an inevitable need to have access to large quantities of data on the "product". That means setting a range of meaningful KPIs and collecting and analysing sufficient data across the whole operation from performance of ROs, ISM Managers and flag state inspectors, to performance of ships in detail in order to identify where the risks lie and inform the reviews that set strategy to minimise them. Achieving this is effectively impossible without a comprehensive and integrated electronic system capable of storing the data elements from all sources in a single place, collating them and producing meaningful reports that provide the essential inputs to management.

Given the wide spread of responsibilities, the keeping of accurate and comprehensive records is, in itself, a major task specifically referred to in the III Code and one that is unlikely now to be achievable using paper based methods. An integrated electronic system is the only approach likely to meet the Code's objectives. It is also now a mandatory requirement for the STCW obligations.

Like any Quality Management System, the implications behind - "*ensuring effective implementation*" and "*review its strategy*" point directly to a need to have the data and statistics available to see if the implementation is effective, to identify aspects that need attention and detect gaps. Reviewing is only effective if there is data and statistics to review. Any good auditor looking at an administration will be asking the key auditor questions - "*How do you measure the effectiveness of your implementation?*" and "*How do your review and improve your overall performance?*".

The only answer to these questions is to be able to show ready access to comprehensive and accurate data sets showing over time, the values of the various performance indicators and hence the trends. The specific requirement to retain records means that any audit will be looking at the records for its objective evidence, if the records are inadequate, or hard to retrieve then the basis for a non-conformity is established.

Records in electronic form bring another key factor; security. Security of electronic data is a major consideration today, whether it is the security of personal data for seafarers, financial data for shipowners, credit card data for receiving payments, or simply address and contact data. These and any other elements have an increasing value to those who would try and obtain them and need to be protected as well as being accessible to authorised users. Not only do administrations need to collect and maintain a large body of electronic data they must also ensure that its security is at the top of the agenda.

Delegation

The section aimed at flag states is the largest of the three sections in the III Code. It requires flag states to put in place the policies, resources and processes to ensure compliance with the conventions, conduct investigations, and provide guidance and advice. Of particular importance is the section on delegation of authority. While all the conventions allow for a flag state to delegate work to recognised organisations and many flag states delegate the majority, if not all, of their survey and certification work, the III Code makes it clear that delegation cannot be without responsibility or supervision. Legally, and as the conventions say, authority to do the work can be delegated but *responsibility for the wor*k and for any certification that is issued in response to it remains with the flag state and can never be delegated. This is enhanced by the requirements in the IMO's new mandatory Code for Recognized Organizations (the RO Code) which came into place in 2015. The RO Code is intended to govern the process of delegation to recognised organisations and define the minimum standards for an organisation to take on delegated work, it says that the Code:

"…. serves as the international standard and consolidated instrument containing minimum criteria against which organizations are assessed towards recognition and authorization and the guidelines for the oversight by flag States."

Thus, meeting the III Code standards also means taking into account the applicable parts of the RO Code. Taken together the two codes require that flag states must establish a monitoring programme for recognised organisations and use a set of performance indicators to measure their performance. The RO Code itself suggests several performance indicators that should be considered when evaluating the performance of recognised organisations. They include the port state performance of ships with which the RO is involved, and the condition/compliance of ships that receive survey and certification from the ROs. A flag state must therefore, specifically authorise its recognised organisations, must maintain oversight of them, and must monitor their performance. This might appear straightforward but in practice, it is not. A flag state might recognise 10 organisations, all of which are undertaking survey and certification work for them. The flag might have 500 registered ships, any of which might change recognised organisation from time to time and indeed any of which might be classed with one of the ROs and have some of the survey and certification work carried out by another and other work carried out by a third. Out of this complexity the flag state has to have access to data that allows it to continuously see how well each RO is doing in terms of its port state control inspections, and in terms of the objective assessment of its work on board ships.

All the ROs grant access to their online databases for flag states to see the certification status of the ships they have undertaken work on. But that access, while useful and important, is only applicable to that one RO and to the ships or the work for which it has a delegated role. When there are several recognised organisations, it becomes impossible to access all their online resources sufficiently often to collect all the data and the flag state needs its own single integrated and consolidated system capable of examining data from across its whole fleet and of also looking at comparative and objective performance of all the ROs. Without being able to look at the performance of all ROs in a single place and make objective comparisons across the whole fleet, the state may not be fulfilling its duties under the RO Code. As with other aspects, the complexity of modern ship operations and certification mean that only an integrated electronic system is likely to be able to provide meaningful insights to demonstrate compliance with the Codes.

Survey and Inspection

In a similar manner, the Code says quite a lot about flag state survey and inspection. It says that the state should take measures to ensure compliance and those measures should include periodic inspection of its ships. It also says that a flag state should develop a monitoring programme to provide for the collection of statistical data so that trend analysis can be conducted to identify problem areas. Most flag states have a system for the inspection of their ships over and above the surveys carried out by the recognised organisations. This is a requirement from the III Code. The monitoring requirements from the RO Code also now mean that a flag state must have such a system and it must go further than simply inspecting the ships, it must be capable of reporting back on the effectiveness of the work that the ROs are conducting on its behalf. That actually points towards a need for the flag state to have some inspectors qualified to the level of a surveyor, and that standard is the subject of a large section in the III Code.

Collating, analysing and evaluating the statistics on RO performance based on these inspections is taking the effort to a much higher level than where it has traditionally been. The Codes not only deal with inspections and monitoring; They also address the personnel undertaking these tasks. Section 28 of the Code says that a flag state should;

"define and document the responsibilities, authority, and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention".

It says that personnel responsible for conducting surveys, inspections and audits should have a range of experience and qualifications and that the flag state should implement a documented system for qualification of personnel and continuous updating of their knowledge as appropriate to the tasks they are authorised to perform. And they should each have an identity document from the flag state. Again, this sounds very like a quality management system and it is clearly expected to be a flag state responsibility. By the very nature of ships, inspections will take place all over the world and the need to ensure that inspectors have the right skills and are applying the right standards means that every one of typically as many as 250 world-wide inspectors for a flag state needs to have a documented set of qualifications, experience and skills and the flag state must be able to show an auditor that this data is available, current and has been assessed as suitable. Further the flag state must be able to show that the skills and knowledge of these inspectors is updated where necessary.

Allied with inspections are the investigations of accidents and casualties. The investigation of casualties is seen by the IMO as a critically important function and there is a separate Code devoted to the practice of casualty investigation. Flag states not only have to ensure that casualties are investigated in accordance with the Code but that the investigators are properly trained and experienced for the task.

Looking at these requirements, it is clear that each flag state needs to define the qualifications and experience of the persons making inspections, and needs a way to monitor those qualifications and ensure that only persons with the right experience and qualifications are assigned to any particular task. And in terms of monitoring the performance of ROs, the inspectors need to be clearly guided on how to report back so that the RO monitoring effort is meaningful. That is again reasonably straightforward until the complexities of a medium sized fleet are taken into account. Typically, a medium sized flag state may have in the region of 250 appointed inspectors who undertake work in their particular port or region as required by the flag state.

Those inspectors will have to be recruited and authorised according to their skills, training and experience, but their knowledge and skills will inevitably decline over time unless updated, and unless they practice regularly. The knowledge updating and experience requirements in the Code mean that this has to be taken into account by the flag state, which in turn means the flag state needs to monitor not only how much work an inspector is doing but what type of work and in some cases the length of time that has elapsed since he last undertook a particular task. Therefore the flag state needs a system that can record the qualifications of flag state inspectors, assess their experience, assign their competencies and track their work in a way allows the flag state to select the right inspector for any task, but also identify areas where an inspector's experience may need updating, for example, as a result of not having undertaken a particular task for some time. This again is a fruitful area for the auditors who will inevitably ask to see how any external inspectors are trained, assessed and how the flag keeps track of their competency and qualifications. Pulling out a few files and finding an inspection that has been done by a flag state inspector when the administration is unable to locate evidence that the inspector has been trained for the task or show that he has adequate experience to undertake it, is a guaranteed non-conformity and often an easy one to locate.

The whole business of managing inspections is complex and a fertile ground for any auditor. Typically, when a ship is inspected, there will be a range of items that are deficient in some way or which are possibly less than perfect. Not unreasonably so, a ship is a harsh working environment where any item of equipment can deteriorate or fail. The inspection report might typically note that an item is worn, but not so much as to need immediate replacement, but to a sufficient degree that it should be repaired within 6 months, or before the next survey. It is entirely normal for an inspector or a surveyor to leave a defect list on board with a list of items to be repaired or replaced in the period following the inspection.

The problem comes in tracking these "to do" lists. It is the easiest job in the world to make a list, leave it with the ship, file a copy of it with the ship's file back at the office then go on to the next ship; Then the ship changes crew, the inspector moves to another job and the items get forgotten. For an auditor, this is a gold mine. He has only to call up a ship's file, locate a couple of defect lists from the last few inspections and then attempt to find positive proof that any outstanding items have been closed out. If he can't locate the positive close out in the audit trail, then it is a non-conformity.

Dealing with just these two aspects of inspections; the people and organisations carrying them out, and the results of the actual work itself so that nothing is missed and there is always an audit trail to show an auditor is a huge task. It is one that can only realistically be accomplished using an integrated and comprehensive electronic system which can record the people undertaking the work, monitor their skills and performance and into which the inspections are recorded, with outstanding items, close-by dates, and reminder mechanisms to ensure that no defect "falls through the cracks" and gets forgotten. Creating such a comprehensive data management system that is user friendly, secure, scalable and which can not only hold the data, but output reports and analyses to inform management is a complex and expensive task. It is one that administrations need to face as quickly as possible.

Reporting

Within the conventions there are also a range of particular reporting elements that must be compiled with. Reporting is seen as an important aspect by the IMO and it is not always easy in a traditional system, for example, to prepare an accurate list at the end of the year of all SOLAS or Loadline exemptions issued, the reason for them and the regulations affected. This is especially hard when exemptions are issued by ROs but it is the administration that must prepare the annual report to the IMO. The time required in a traditional system to sort through files, lists of certificates issued by ROs, and other storage areas where such documents are retained is expensive in staff resources and time. It also easily leads to errors and omissions. A good electronic system that provides the ability to call up a comprehensive and accurate list ready to transmit and ensures that the audit will show the requirement is complied with is essential; saving staff time and resources that can be better used on more useful tasks. The adoption of an integrated system is vital to allow the gains that are possible and manage the data output.

There are two other mandatory tasks that are not covered directly by the III Code but which remain important. These come from the Maritime Labour Convention 2006 (the MLC). The MLC convention was made at the ILO and so is outside the IMO mandatory instruments and hence outside the IMO audit scheme. But it is mandatory for member states and for ships trading internationally and it contains two important elements. Like all ILO Conventions, it is monitored through the ILO Article 22 reporting mechanism. The MLC contains a requirement to maintain records of inspections of the conditions for seafarers and to publish an annual report on inspection activities within 6 months from the end of each year. It also mandates a need to keep comprehensive statistics of occupational accidents and occupational diseases, to analyse them and publish them and to follow these up, where appropriate, with research into general trends.

Where MLC inspections are completed by ROs on behalf of the flag state, there needs to be a mechanism that allows the results and details of each inspection to be returned to the flag state and recorded there along with inspections that might be carried out by flag state inspectors in a manner suitable for informing the overall annual report on inspection activities. When accidents are reported there needs to be a mechanism that allows them to be recorded and subsequently analysed with outputs that enable the creation of organised data to go into the published report. The task of analysing that data to produce meaningful trend reports and statistics requires an electronic system with access to all the data and tools to consistently compare like with like. The task ideally requires a sound electronic system that can take in the required facts of each accident, and then produce analyses that show trends. Not only is this a specific requirement from the MLC Convention but it is implied in "*continuously review to maintain and improve*" in the basic III Code objectives.

The CSR System

The SOLAS Convention includes a particular requirement that was introduced into Chapter XI-I/5 in 2004; the Continuous Synopsis Record. At the time of creation, it seemed a simple and manageable process. Essentially it required flag states to create a document for each ship that listed the ship's status in respect of name, classification society, ownership, charterers, ISM managers, ISM and ISPS certification and the dates of joining and leaving the register. Every time one of the data elements changes, a new CSR is to be issued with the next sequential number so that collectively the set of CSRs form a log of the ship's critical data. Each ship is then to maintain a file of these documents throughout its life and each flag state is to send its copies to the next flag when a ship changes flag. On the face of it, this seems easy. In practice, it is not. Traditionally in maritime administrations, the legal functions of registry were separated from the technical functions of survey and certification. The separation is still commonly seen in both small and large maritime administrations. In some of the largest registries, functions are handled by a different division from the mainstream technical functions. In some administrations, the ownership register is operated by a different department from the technical administration of ships. But the CSR requirement bridges the two sides of the operation. The document contains data traditionally held by the registry including name of the owner, name of any bareboat charterer, date of registry as well as data traditionally held by the technical division such as name of the classification society, issuing authority and auditors for the DOC and the ships ISM certificate etc.

The CSR is a creature of SOLAS and therefore a mandatory requirement. It is another document that is checked by port state control officers. It is therefore important to ensure that it is absolutely accurate and matches the data on owners, managers, and audits shown on the DOC, the registry certificate, and the ISM and ISPS certificates. As a requirement of SOLAS, it falls within the IMO audit scope. Creating and maintaining it however, brings a wealth of practical problems. In a typical situation, audits on board ships are completed by either ROs or flag state surveyors - but any change in audit status needs to be communicated to whoever is dealing with CSRs. Likewise, the division or organisation dealing with Company audits for the DOC needs to ensure that its results and changes are also fed to whoever is dealing with CSRs and, of course, the registry division need to ensure that any registered changes to the ship's particulars or owners that are included on the CSR are fed to whoever is dealing with CSRs. In the IMO guidance, a new CSR is created whenever the ship or her owner send in a notification of change on a CSR Form 2. In practice this can be easily forgotten and even when it happens someone has to check that the change notified on the Form 2 matches the changes known to have happened elsewhere. Take, for example, the situation where an owner changes his address or his company name. These are data elements that would normally be recorded in the register once the owner has submitted the legal paperwork to prove the change and will normally appear on the ship's certificate of registry. Often the registered change will only happen in the register on receipt of legal documents to confirm the change, and when these are received the change is registered and that is it. So, the legal register will be up to date and correct.

But the owner's details appear on the CSR, so at sometime within the next 3 months, the owner or the ship's Master will need to send in a Form 2 to point out the changes. If they forget then there will be a mismatch between the CSR and the ship's other certificates, the sort of mismatch that can throw up port state control problems. But when the Form 2 arrives, what happens if the data on it does not match for some reason the data already registered in the register? What happens if there has been another change inside the 3 month "window?" It is disastrous if the Company DOC, the ship's ISM certificate, the ship's certificate of registry and the CSR, which all show some of the same data elements, do not agree with each other. In effect the CSR requirement mandates an electronic system that ties all the aspects together across whatever parts of the administration are responsible for registered data on ships and ensures that changes are properly recorded and that CSRs are correctly maintained. The system should also flag up any mismatches between the data elements.

Seafarers

There is a further element, seafarers. The Standards of Training Certification and Watchkeeping convention 1978 (STCW) requires flag states to take responsibility for the documents issued to seafarers and their competency either by testing and examining them for the issue of a certificate of competency or by recognising their existing certificate of competency through the issue of an endorsement. From 1st January 2017, all flag states need to operate an online facility that allows any interested party to verify the authenticity of a seafarer's document. To do that there is a need for an effective system for retaining seafarer records and details of their certification and ID. By its nature, such a system holds seafarer's personal data and should therefore be constructed and operated with care for the security of that data in a world where the security of personal data held online is the subject of more and more concern.

Compliance with the STCW convention by flag states is the subject of a separate independent assessment at five yearly intervals as a requirement of that convention but STCW is also an IMO mandatory instrument and covered under the III Code. Flag states need to be able to show that their process for evaluating applications, verifying documents and identity, confirming sea service and competence, and ultimately issuing certificates is absolutely robust and correct. An auditor will want to see sample cases with supporting documents, and when there are large numbers of seafarers involved the only way to effectively address the processes of assessing applications and retaining records for audit is to have them all in a comprehensive electronic system, which also holds digital copies of all the supporting paperwork for each seafarer.

Evaluation and Review

Finally, the III Code addresses evaluation and review. In this it is again similar to most quality management standards where there is always a requirement for a regular high level review that considers a range of performance indicators and their trends. The review can then make informed decisions on strategy, policy, and actions to reverse undesirable trends. The Code suggests a range of areas for review including:

1. Fleet loss and accident ratios
2. Cases of detention
3. Verified cases of incompetence
4. Responses to port state deficiencies or interventions
5. Investigations into casualties
6. Technical and other resources committed
7. Results of inspections, surveys, and controls
8. Investigation of occupational accidents
9. Number of incidents and violations occurring under applicable maritime pollution regulations
10. Number of suspensions or withdrawal of certificates, endorsements etc

The list in the Code is suggestive and not exhaustive but all of these suggested items rely heavily on access to consolidated data across the fleet of registered ships. Some of them hide a degree of complexity that is only apparent when they are looked at in depth.

Item 7 for example, - "*results of inspections, surveys and controls*" hides a great deal. Results of inspections has to cover all types of inspections, and the results must, by implication include lists of deficiencies, their severity, and the actions taken to remedy them. Results of controls refers to controls in the form of port state control inspections. So, the results of these have to be included in the review. All the port state control regions allow access to their databases and flag states can readily filter the data to show the inspections for their ships in a selected period etc. But they all operate slightly differently and there is no uniform international port state control inspections database. Currently there are nine regional port state control areas as well as the United States Coastguard, which is not within any of the regional groups, but which is of major importance. Even more confusing, there are some ports that fall into more than one region. Each of the regions, except the USCG, operates a public database of inspections which can be accessed. The III Code expects one of the performance indicators to reflect responses to port state deficiencies or interventions, and another to reflect results of inspections. It follows that there is an expectation that the flag state will monitor the performance of its ships in the port state control field. But ships, by their nature, move between regions. A ship might be inspected in the Paris MOU region one month, sail to the US and there be inspected by the UCSG, then to a port in the Caribbean MOU area with another inspection, then via the Panama Canal and across the Pacific to a port in the Tokyo MOU region. Four port state control inspections in quick succession, each recorded in a different database for the same ship. Unless all of them are recorded by the flag state as well in a single system the analysis of port state control performance is flawed. The flag state has to collate these inspections and understand what the results mean to the overall performance of the ship. Port states are not required to report deficiencies to flag states, (as opposed to detentions which they must report) and so the flag state must either ensure that owners and managers report all port state control inspections back to the flag so that they can be recorded, or must interrogate each database regularly and set up a contact with the USCG to get their data regularly then enter the data into its own system so that it is held in a common system.

Port state control inspections are only part of the overall process of survey and inspection. There are also flag state inspections, detention follow-up inspections by the flag, MLC inspections, ISM audits by ROs, ISPS audits, and the range of statutory surveys. Any and all of these may result in one or more identified deficiencies in need of rectification. Some will be very minor and closed out on the spot but they are still important to painting a picture of the ships performance. Others will be more serious. To paint a true and meaningful picture of the ship performance over the whole range of "*7. Results of inspections, surveys and controls*" means that they all have to be collated in one place within a suitable system. Only then is it possible for the flag state to make a meaningful analysis of those ships (or managers or ROs) that have a performance that suggests falling standards. Only by detecting such ships can the flag state take action to reverse trends. It is exactly this sort of monitoring, analysis of data, and pro-active action that the III Code points towards and that the IMO auditors will expect to see clearly demonstrated.

The whole scope of the III Code and the obligations associated with the maritime conventions point to a pressing need to collect and analyse a vast amount of data. The days when a maritime administration and registry could be operated using a few ledger books, a paper file for each ship, and possibly some basic spreadsheets have gone forever. The only way the III Code expectations can be met and the administration deliver the level of customer service that will keep it in the market, is by developing and using a comprehensive and fully integrated software solution capable of holding all the data, outputting essential certificates, and analysing administration performance, vessel performance and inspection efforts and performance.

The Future

Now the IMO has created a mandatory flag state audit system, it is worth considering what it may mean in the future. Currently the results are not published. Summary reports highlighting commonly found areas of concern are made available and the idea is still that the audit is an informative process that will assist flag states to improve. But the audit process with its feedback and request for submission of corrective action plans does suggest, by its very nature, that the pressure is mounting. Looking at the history of the development of the audit scheme from the early days of guidance, the self-assessment form, through VIMSAS to the III Code audit there is a clear direction emerging. It may be that a clue lies in the "White List" approach that was created at the time of the 1995 amendments to the STCW convention. That process required flag states to submit their processes for giving the convention "*full and complete effect*" and created panels of IMO experts who examined submissions.

Those that were held to be giving "*full and complete effect to the convention*" were added to a list prepared by the IMO Secretary General and referred to as the "white List". Certificates issued by countries not included on the white list were essentially not recognised internationally. While the "white list" process was criticised for being very easy to get through and not requiring any objective assessment on the ground in the state concerned, it had a major impact on flag states. It has to be seen as likely that the next development of the III Code audit process could create a similar approach and that would have a major impact on the operation of flag states. hence ensuring full compliance with the III Code and having the data and evidence to show compliance is crucial to the future of all flag states.