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SHIP MANAGEMENT

CAPTAIN J W DICKIE



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Preface

When starting to write this book, it was important to try to change the layout and content of the subject matter. Key to this was not to make this book the same as others but to engage readers and ask them questions so that they evaluate how their company operates and compare it with the contents of the book.

This is not to say that this book gives a perfect answer to all questions, but it aims to encourage ship managers or potential ship managers to question how their company's safety management system (SMS) operates and see if there is room for improvement. How others perceive the proposed improvement may not always be as expected. There may be opposition to the proposal, it may be discarded or it may be supported. The way that it is presented will have a major impact of whether it is accepted or rejected.

The most important part of the ship management process is the personnel who perform the work of ship managers. They need to be fully aware of all aspects of the ship management model that the company operates and apply them.

A key component of this is the company's SMS, which is required by the International Safety Management (ISM) Code. This code is made mandatory by the Convention for Safety of Life at Sea (SOLAS), 1974, as amended; the particular chapter to be consulted is Chapter IX (Management for the safe operation of ships).

What must never be forgotten is that for every company it is people who are its most important asset and resource, whether it is the personnel on board ship or those that work in the offices. The existence of the best SMS in the world means nothing if the people who have to use it do not comprehend it. Also, information technology is wonderful, but it still requires people to use it and operate the systems in its support. Without people, an SMS becomes another set of books lying unread or a set of folders and files in a computer hard drive that lie dormant until someone activates them.

The shipping industry is very demanding and it operates 24/7 without breaks. People come and go, but the ships keep operating – if there are no ships there is no company. The people on board ship depend on those ashore to support them, and one of the key personnel and first point of contact can be the ship manager. That is why ship management depends on the interaction of people and not the completion of files and forms.

Welcome to the world of ship management and all of its demands.

Captain J W Dickie

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I would like to express my thanks and appreciation to everyone who assisted me in this venture. Without their help I would not have been able to write this book and make it into what I hope to be an aide to ship managers and would-be ship managers.

A particular thank-you must be made to the Liberian Ship Registry which so kindly supplied me with copies of a certain number of certificates and allowed me their reproduction. In these times of fraudulent certificates being procured and used, this provides valuable assistance to readers who can compare the model format of the certificates as presented by the International Maritime Organization (IMO) and individual flag administrations.

Contents

List of abbreviations	xv
1 A brief history of ship management	1
The history of managing ships	1
The three main management models	2
• Traditional management model	2
• Outsourcing management model	2
• Hybrid management system model	3
• Why outsource the management of ships?	3
Relationship between owner and ISM Code	3
Ship management contracts	4
Shipping trade and global economics	4
Specialisation by ship management companies	6
• Ship types	7
The complexity of shipping and the ship manager	8
Computing and information management systems	9
2 Legislation: the four pillars – SOLAS, MARPOL, STCW and MLC	11
Structure of maritime legislation	12
• United Nations Convention on the Law of the Sea (UNCLOS)	12
• International Maritime Organization (IMO)	13
SOLAS Convention	14
• Structure	14
• Using the SOLAS 2009 consolidated edition	15
• Chapter I, regulation 11: maintenance of conditions after survey	17
MARPOL Convention	17
• Structure	17
• Contents	18
• Certificates and documents	19
STCW Convention	20
• STCW and the demands of shipping	22
• Additional certification	22
• STCW and ship security	23
• STCW and MLC 2006	23
• STCW in the future	23

MLC Convention	23
• Contents	25
• MLC and other conventions	27
• Potential detainable items in respect of PSC and MLC	27
• Certification process	28
• Audit process	29
• MLC and the future	30

3 Ship certificates and documents 31

Certificates and documents	31
Ship certificate file	33
Non-mandatory certificates and documents	33
• Tanker inspection programmes	33
• Tanker Management and Self-Assessment 2	34
• Offshore Vessel Inspection Database (OVID)	35
Other certificates and documents	36
• Different documents for different organisations	36
• Navigation publications	36
Retention of certificates and documents	37

Appendix 3.1: Permanent Certificate of Registry	39
Appendix 3.2: Interim Document of Compliance	40
Appendix 3.3: Full-term Document of Compliance	41
Appendix 3.4: Interim Safety Management Certificate	43
Appendix 3.5: Full-term Safety Management Certificate	45
Appendix 3.6: Interim International Ship Security Certificate	48
Appendix 3.7: Full-term International Ship Security Certificate	49
Appendix 3.8: Declaration of Maritime Labour Compliance – Part II	52

4 What is required of a ship manager? Relationships and other factors 55

How organisations are structured	56
Tools of management	56
• Hierarchy	57
The ship manager and the management process	58
Activities and principles of management	58
Strategic and operational management	60
Planning	60
Management control	61
The ship manager and management principles	61

5 ISM Code 63

Relationship with SOLAS 74, Chapter IX	64
• Relevant SOLAS excerpts	64
• Relevant ISM Code excerpts	65
• SOLAS IX contents, compared with the ISM Code	66

Effect of the ISM Code on the maritime industry	68
• History	68
• Post 1 July, 1998	68
The organisation's safety management system	69
• Structure	70
• Use of quality assurance	71
Constructing a safety management system	72
• Design	72
• Development	74
• Implementation	74
Audit schedule and compliance	75
• Depth, scope and types of audits	76
ISM Code certificates	78
ISM Code audits for certification	79
Interim certification	82
Special note	83
Maintaining certification	83
Multinational fleets	84
Dealing with non-conformities	85
• Types of non-conformities	85
Summary	87
Appendix 5.1: Interim Document of Compliance	88
Appendix 5.2: Interim Safety Management Certificate	89
Appendix 5.3: Document of Compliance	90
Appendix 5.4: Safety Management Certificate	92
6 ISPS Code	95
Security personnel	97
Safety versus security: same or different?	98
The company security officer and the ship manager	98
The ship security plan	99
• Methodology of certification	99
• Maintenance of certification	100
Implementing the ISPS Code into a company	100
• Step 1: Identify team members	101
• Step 2: Identify the CSO	102
• Step 3: Send CSO on course	102
• Step 4: Identify the SSO	102
• Step 5: Send the SSO on course	103
• Step 6: Identify flag administration and ROs	103
• Step 7: Discuss the options	103
• Step 8: Choose an option	104
• Step 9: Decide on RSO consultancy or own system	104
• Step 10: Organise SSA	104

● Step 11: Dealing with the SSA findings	105
● Step 12: Construct the SSP	105
● Step 13: Have the SSP approved	106
● Step 14: Implement the SSP	106
● Step 15: Record keeping	106
● Step 16: Organise audits	107
● Step 17: Attaining ISSCs	107
● Step 18: Complete all ships to ISPS Code	108
● Step 19: First cycle	108
● Step 20: Second cycle	108
Living with the ISPS Code	109
● Security levels	109
● Training, drills and exercises on ship security	110
Audits and certification	110
Ship security alert system (SSAS)	111
Security equipment	111
Ship security plan	112
● Amending the SSP	112
Relationship between SSO, CSO and PFSO	113
Conclusion	113
Appendix 6.1: Interim International Ship Security Certificate	116
Appendix 6.2: International Ship Security Certificate	117
Appendix 6.3: Statement of Compliance for a Port Facility	121
Appendix 6.4: Declaration of Security	123

7 Port state control	125
Inspection and degree of inspection	125
● Inspection and more detailed inspection	127
● More detailed inspection	131
● Detentions	132
Memorandum of understanding (MoU)	135
● Language	136
Dealing with deficiencies and non-conformities raised at PSC inspections	136
● Deficiencies	136
PSC and the ship manager	138
Paris MoU New Inspection Regime (NIR)	139
● Ship risk profile	140
● Reporting obligations	140
● Paris MoU deficiency codes	141
PSC annual reports	142
Tokyo MoU NIR	142
PSC MoUs for global coverage	143
Conclusion	144

8 Third-party inspections	147
Distinguishing between the various third-party inspections	148
• IACS membership	148
• P&I clubs	150
• Flag administrations	151
• Charterer	151
Third-party inspections and the ship manager	153
9 Working as part of a team	155
Being an effective ship manager	155
Teams and team working	156
• Stages of team working	157
Leadership in teamwork	158
Operating as part of a team	159
10 Job descriptions	161
Minimum requirements	161
• Job title	162
• Who reports to you	162
• Whom you report to	162
• Responsibilities	163
• Authority	163
The ISM Code and job descriptions	164
• ISM Code A/1.2.2.3	164
• ISM Code A/1.4.3	164
• ISM Code A/3.2	165
• ISM Code A/6.2	165
• ISM Code A/6.3	165
• ISM Code A/6.4	165
• ISM Code A/6.5	166
• ISM Code A/6.6	166
• ISM Code A/6.7	167
• ISM Code A/9.1	167
• Identifying potential duplication and/or triplication	167
11 An introduction to commercial ship practices	169
• Commercial management	169
• Basic vessel characteristics	169
• Maximum cargo lifts to meet charter party expectations	170
• Voyage costs	170
• Charter parties	170
• Bills of lading	170
• Cargo measurement	171
• Management of fuel and consumables	171
• Financial planning	171

12 Operational management and ship types	173
Ship types	174
The voyage cycle	174
• Discharge ports	174
• Ballast passage	175
• Load ports	175
• Loaded passage	176
Ship and cargo legislation	177
Cargo documentation and cargo claims	178
Other important considerations	179
• Meteorology	179
• The use of material safety data sheets (MSDS)	180
• The proper completion of records	180
Cargo terminology and definitions	180
• Relationship between ullage and sounding	181
• Full and down calculations	182
International Gas Carrier (IGC) Code	182
Chemical tankers: legislation and codes	184
13 Fatigue at sea and in the office	185
Physical and mental fatigue	185
Relevant legislation	186
• STCW Convention	186
• The ILO Maritime Labour Convention, 2006	187
Keeping records of hours of work and rest	188
Safe manning document and levels of manning on board ship	188
Duration of contracts for work on board ships	189
14 Emergency response and the role of the ship manager	191
Members of the emergency response team	191
• Emergency response team co-ordinator	192
• Chief executive officer	192
• Operations department	193
• Personnel department	193
• Technical department	193
• Legal department	193
• Public relations	193
• Master of vessel	193
• Third-party interests	193
Record keeping of the event	194
Emergency response rooms	194
Emergency response and SOPEP manual	194

15 Effective communications	197
Concepts	197
• Transmission	198
• Reception	199
• Barriers to communications	199
Categories of communications	199
• The message	200
• Senders and receivers	201
• The medium	203
• Use of the media	206
16 Introduction to chartering and marine insurance	209
Chartering	209
• The charter parties	210
• Parties involved in the movement of cargo	211
International trade terms (INCOTERMS)	213
• Terms for any transport mode	213
• Maritime only terms	214
Dictionary of chartering terms and abbreviations	214
Marine insurance	215
• Hull and machinery (H&M)	215
• Protection and indemnity (P&I)	215
• Constructive total loss (CTL) and actual total loss (ATL)	216
• Average in respect of marine insurance	216
• Excess and co-insurance	217
Specialist insurances	217
• Newbuilding risks	217
• Open cargo or shipper's interest insurance	217
• Yacht insurance	217
• War risks	217
• Increased value	217
• Overdue insurance	218
• Cargo insurance	218
Institute Warranty Limits	218
International Group of P&I Clubs	218
17 Budgets and statistics	221
Budgets	221
• Trading budget	222
• Operating budget	222
• Financial budget	223
• The ship manager and budgets	223
• Use of the budget to monitor and control performance	224
• Identifying variances and dealing with them	225
• Communicating budget performance to the correct personnel	225

● What to do in a potentially fraudulent situation	226
● Preparing a future budget	227
Statistics	227
● Definitions	227
● Presentation of statistics	228
● Useful terminology	230
18 Relations between ship manager, master, CSO and designated person	233
Lines of communication	233
The master	234
The CSO and the designated person	235
The ship manager	235
Record keeping	236
● Written records	236
● Automatic recorders	237
● Requirement for accuracy	238
Bibliography	241
Recommended reading	243
Useful websites	244
The ISM Code in this book	245
General Index	249

List of Abbreviations

AFS	Anti-fouling system
AIS	Automatic identification system
ATL	Actual total loss
B/L	Bill of lading
BIMCO	Baltic and International Maritime Council
BPQ	Barge Particulars Questionnaire
CAS	Condition Assessment Scheme
CCC	Sub-Committee on Carriage of Cargoes and Containers (IMO)
CDI	Chemical Distribution Institute
CEFIC	Conseil Européen des Fédérations de l'Industrie Chimique (European Chemical Industry Council)
CoFR	Certificate of financial responsibility
COSWP	Code of Safe Working Practice for Merchant Seamen (MCA)
COW	Crude oil washing
CSO	Company security officer
CTL	Constructive total loss
DGAC	Dangerous Goods Advisory Council
DO	Diesel oil
DOC	Document of Compliance
DSV	Diving support vessel
DW	Distilled water
DWAT	Deadweight all told
DWCC	Deadweight cargo capacity
dwt	Deadweight
ECDIS	Electronic chart display and information system
ED	European directive
EEDI	Energy efficiency design index
ESP	Enhanced survey programme
FO	Fuel oil
FPSO	Floating production storage and offloading
FSU	Floating storage unit
FW	Fresh water
GA	General average
GMDSS	Global maritime distress and safety system
GPS	Global positioning system
gt	Gross tonnage

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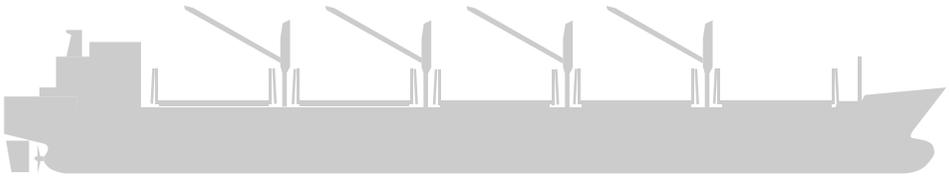
H&M	Hull and machinery
HRS	High-risk ship (PSC – NIR)
HSSC	Harmonized System of Survey and Certification
HTW	Sub-Committee on Human Element, Training and Watchkeeping (IMO)
IACS	International Association of Classification Societies
IAPH	International Association of Ports and Harbours
IBC Code	International Bulk Chemical Code
ICS	International Chamber of Shipping
ICS	Institute of Chartered Ship Brokers
IDOC	Interim Document of Compliance
IFSM	International Federation of Shipmasters' Associations
IGC Code	International Gas Carrier Code
IGPandi	International group of P&I Clubs
III	Sub-Committee on Implementation of IMO Instruments (IMO)
ILO	International Labour Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
IMLI	International Maritime Law Institute
IMPA	International Marine Pilots Association
IMSBC	International Maritime Solid Bulk Cargo
ISMA	International Ship Managers' Association
INCOTERMS	International commercial terms
INTERTANKO	International Association of Independent Tanker Owners
IPTA	International Parcel Tankers' Association
ISF	International Shipping Federation
ISGOTT	International Safety Guide for Oil Tankers and Terminals
ISM	Interim Safety Management Certificate
ISM Code	International Safety Management Code
ISO	International Standards Organization
ISPS Code	International Ship and Port Facility Security Code
ISSC	Interim International Ship Security Certificate
ISSC	International Ship Security Certificate
IV	Increased value
IWL	Institute Warranty Limits
KPI	Key performance indicator
LNG	Liquid natural gas
LO	Lubricating oil
LPG	Liquid petroleum gas
LRIT	Long-range identification and tracking
LRS	Low-risk ship (PSC – NIR)
MAIB	Marine Accident Investigation Branch (UK MCA)
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973
MEPC	Marine Environmental Protection Committee
MLC 2006	Maritime Labour Convention 2006
MNTB	Merchant Navy Training Board (UK only)
MOC	Major oil company

LIST OF ABBREVIATIONS

MoU	Memorandum of understanding
MSC	Maritime Safety Committee
MSDS	Material safety data sheet
NCSR	Sub-Committee on Navigation, Communication and Search and Rescue (IMO)
NGO	Non-governmental Organisation
NIR	New inspection regime
NO _x	Nitrogen oxide
NP	Nautical publication
nt	Net tonnage
NTC	NO _x Technical Code
NVOC	Non-vessel owning carrier
OBO	Oil bulk ore
OCIMF	Oil Companies International Marine Forum
OLB	Official log book
OO	Oil ore
OPA 90	Oil Pollution Act 1990 (USA only)
OSHA	Occupational Safety and Health Administration (USA only)
OSRO	Oil Spill Response Organization
OSV	Oil supply vessel
OVID	Offshore Vessel Inspection Database
OVPQ	Offshore Vessel Particulars Questionnaire
PA	Particular average
P&A Man	Procedures and arrangements manual (chemical tankers only)
P&I	Protection and indemnity
PCC	Pure car carrier
PFSO	Port facility security officer
PPR	Sub-Committee on Pollution Prevention and Response (IMO)
PR	Procedural requirement (IACS only)
PROBO	Product oil bulk ore
PSC	Port state control
PSCO	Port state control officer
RO	Recognised organisation
Ro-ro	Roll on, roll off
RSO	Recognised security organisation (ISPS Code)
QI	Qualified individual
SBM	Single buoy mooring
SDR	Sub-Committee on Ship Design and Construction (IMO)
SEP	Safety and environmental protection
SIGTTO	Society of International Gas Tanker and Terminal Operators
SIRE	Ship inspection report
SMC	Safety management certificate
SMM	Safety management manual
SMPEP	Shipboard marine pollution emergency plan
SMS	Safety management system
SOLAS	Safety of Life at Sea

21ST CENTURY SHIP MANAGEMENT

SOPEP	Shipboard oil pollution emergency plan
SRS	Standard-risk ship (PSC – NIR)
SSA	Ship security assessment
SSAS	Ship security alert system
SSE	Sub-Committee on Ship Systems and Equipment (IMO)
SSO	Ship security officer
SSP	Ship security plan
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978
STOPIA	Small Tanker Oil Pollution Indemnification Agreement
TEU	Twenty foot or equivalent unit
TLO	Total loss only
TMSA 2	<i>Tanker Management and Self-Assessment – 2</i>
TOPIA	Tanker Oil Pollution Indemnification Agreement
TOSCA	Transfer of Ship Class Agreement
ULCC	Ultra large crude carrier
UNCLOS	United Nations Convention on the Law of the Sea
USCG	United States Coast Guard
VDR	Vessel data recorder
VIQ	Vessel Inspection Questionnaire
VLCC	Very large crude carrier
VLOC	Very large ore carrier
VOC	Volatile organic compounds
VPQ	Vessel Particulars Questionnaire
VRP	Vessel response plan (OPA 90 USA)
WHO	World Health Organization
WMU	World Maritime University



1 A BRIEF HISTORY OF SHIP MANAGEMENT

Ship management comes in many different models and within these models the client will receive the services that have been agreed – no more and no less.

With the changing demands of the shipping industry due to ever increasing legislation it is becoming more difficult for companies with a small number of ships to survive. This is not because they are not good at what they do, but because the number of personnel required to meet all of the legal demands is raised. This equates directly to the number of persons per ship (i.e. the number of people required to operate the office divided by the number of ships operated or under the control of the company). The higher the number, the greater the costs involved. The result has been to see the rise of a few ship management companies with a large number of ships under their management.

Ship management is centred on providing shipowners with a diverse set of options at a competitive price. In the following sections of this chapter, the history and need for ship management are explored and discussed.

The history of managing ships

Shipowners manage their own ships and ship management companies manage the ships of shipowners. At a first glance this appears to be a contradiction, but it is not.

The concept of who is a shipowner has greatly changed. In the past, shipowners were people who had paid for the ship and had it built to carry the cargoes chosen by them on trades determined by them to specific geographical areas. If successful, shipowners would build more ships and, as the number grew, they would eventually have a fleet of ships.

As the fleet grew there would be a diversification of cargoes and routes travelled. At this time, shipowners would have the crews of the ships employed directly by the company and there would be a career path for those that remained with the company. People would join the company and stay with it for the whole of their working lives – this would be a very rare circumstance in modern shipping.

These days, a shipowner may be a bank or a fund manager. It may also be a group of individuals who have the money and want to invest in shipping. Sometimes ships are owned by a group of companies that have combined to fund their purchase but have no shipping knowledge or experience. Therefore, in many cases, the people, companies or organisations who own the ship have no expertise in shipping. If this is the case, the need

to find a good ship management company becomes extremely important to ensure that there is a return on the investment.

The shipowner may manage and operate the entire company or sub-contract parts such as ship management or crewing management to other organisations. In special cases, they may sub-contract the ownership of the ship by bareboat charter, which is also known as a demise charter.

The shipowner will decide how the ship is used or be responsible for how the ship is used. In addition, and most importantly, the shipowner will be the ultimate beneficiary of the net income generated by each ship.

For the ship manager, knowing who they will have as a contact person when dealing with the shipowner is very important. It may be that the ship manager does not have any direct contact and all matters relating to the ships will be dealt with by a line manager who is one or more steps higher on the company ladder of seniority.

The complexity of shipping has progressed and ship management companies as well as the shipowners have had to amend their position to respond to new requirements. Much of this was brought about by changes in legislation and the demands this placed on companies and ships to be able to operate. This can be broken down into new legislation that made new demands and existing legislation that was revised and grew over the years as it expanded its remit and contents.

To meet this challenge, there has been a shift to ship management companies with a large number of ships under their care, which can deliver cost-effective management fees compared with smaller companies.

Modern communications systems have also changed the way ships are managed and it is important to understand how these can be used effectively but also know about their cost implications and the effect this has on the monthly budget.

The three main management models

The choice of the management model that a shipowner may choose is dependent on what is required from the ship management company. The main options are traditional management, outsourcing or a hybrid management system.

Traditional management model

This is a fully integrated management system where the owner has created an in-house management system for the ship or ships. The owner holds on to the full responsibility of operating the ships and employs personnel to work directly for him or her. This will necessitate an office and an organisational structure to deal with all aspects of the ships' operation, including meeting the requirements of the ISM Code and achieving the relevant certification for the office and each ship.

Outsourcing management model

This is where the management of the ship is contracted out to a third-party organisation or company. As a result, all the day-to-day operation of the ships is carried out by a specialist company. This may include all of the following functions: technical, crewing, operations, commercial, accounting and financing. In effect, the management company takes control

of the ship and reports to the owner how this is progressing. The owner still has the final say and will be responsible for funding the operation of the ship and supplying the management company with a monthly fee for the services contained in the contract.

Hybrid management system model

This is where there is a partial outsourcing of the functions from the owner to the management company. This will be agreed in advance and a fee structure set for the services provided. This kind of set-up may lend itself to joint venture capital.

Why outsource the management of ships?

There can be many reasons why the shipowner has decided to outsource the management:

- Cost savings (overheads reduced by an economy of scale);
- Flexibility (allows the freedom to invest, divest or diversify or any combination);
- Benchmarking (how well and cost-effectively the ship is operated);
- Reducing the problems of legislative demands (and the resources needed to meet them);
- No in-house expertise to operate the ships (this may be because the shipowner has no experience of operating ships).

Globalisation, finance and economic pressure all place the shipowner in a position to find ways to reduce the costs of operating a ship or fleet. This has resulted in a change of business practice and expected standards. What had once been a set of established corporate values has been replaced by contractual obligations. Whether these changes can be regarded as an improvement varies depending on who is determining their success or lack of it.

One of the major changes has been the relationship between master and owner. Previously, the master was the owner's representative on board and, as a direct result, the relationship was close and direct. With the change to management companies, masters have to answer to many different entities. They need to be given direct advice and orders identifying where their responsibilities and authority start and end and what the relationship is with each of the entities demanding their attention.

Relationship between owner and ISM Code

The ISM Code, part A/3.1, states: 'If the entity who is responsible for the operation of the ship is other than the owner, the owner must report the full name and details of such entity to the Administration.'

This is further supported by part A/1.1.2: 'Company means the owner of the ship or any other organization or person such as the manager, or the bareboat charter, who has assumed the responsibility for operation of the ship from the shipowner and who, on assuming such responsibility, has agreed to take over all duties and responsibility imposed by the Code.'

The above two sections from the ISM Code mean that there needs to be proper identification and control of who is responsible for the ship and will appear on the ISM

Code certification. If the shipowner does not ensure that all of the requirements of the ISM Code are handed over to the ship management company, then the ISM Code certification audits will be held against the shipowner.

If the shipowner has handed over all the responsibility of the ISM Code to another entity, then the onus is on the shipowner to ensure that the full details are passed to the flag administration where the ship is registered. Prudent shipowners would ensure that there is a record of this correspondence and that the flag administration has acknowledged this fact for future reference.

Ship management contracts

There are a number of options open to parties involved in setting up a ship management contract. One of the best known and most used is the Baltic and International Maritime Council's (BIMCO) standard ship management agreement, known as *Shipman 2009*. This 22-page document can be found online at www.bimco.org/Chartering/Documents/Ship_Management.aspx.

It contains a standard contract that can then be amended as needed to fit the unique requirements of each completed contract. It is important to note that this is a globally recognised contract in a set structure dealing with the specifics of ship management contracts.

Structure of the BIMCO standard ship management agreement

Part I – Standard information concerning parties to the agreement

Part II

Section 1 – Basis of the agreement

Section 2 – Services

Section 3 – Obligations

Section 4 – Insurance, budgets, income, expenses and fees

Section 5 – Legal, general and duration of agreement

Annex A – Details of vessel or vessels

Annex B – Details of crew

Annex C – Budget

Annex D – Associated vessels

Annex E – Fee schedule

A review of this document gives any ship manager a basis for identifying the various parts of a ship management contract and how it should be presented. This can then be used as a template to compare against other contracts that your company is using.

Shipping trade and global economics

Shipping is the only viable method for transporting goods around the world. The cargo that can be carried on board different ship types and the size of those ships will determine the freight costs and their viability.

The evolution of container ships (All dimensions are in metres)

Nomination	Date	TEU Capacity	Dimensions (in metres)			Container Stowage						Container Stowage Location		
			LOA*	Beam	Draft	On Deck	Under Deck	On Deck	Across	High	Fore Deck	Mid Deck	Aft Deck	
Early Container ships	1956 -	500 – 800	137	17	8.0	6	4	0	0	0	Yes	No	No	Yes
Fully Cellular	1970 -	1000 – 2500	200	20	8.0	8	4	0	0	0	Yes	No	No	No
Fully Cellular	1970 -	1000 – 2500	215	20	10	10	5	10	4	4	Yes	No	No	Yes
Panamax	1980 -	3000 – 3400	250	32	12.5	13	6	13	5	5	No	Yes	Yes	Yes
Panamax Max	1985 -	3400 – 4500	290	32	12.5	13	8	13	6	6	Yes	No	No	Yes
Post Panamax	1988 -	4000 – 5000	285	40	13.0	15	9	15	5	5	Yes	No	No	Yes
Post Panamax Plus	2000 -	6000 – 8000	300	43	14.5	17	9	17	6	6	Yes	No	No	Yes
New Panamax	2014 -	12500	366	49	15.2	20	10	20	6	6	Yes	No	No	Yes
Post New Panamax	2006	15000	397	56	15.5	22	10	22	8	8	Yes	Yes	Yes	Yes
Triple E	2013	18000	400	59	15.5	23	10	23	8	8	Yes	Yes	Yes	Yes

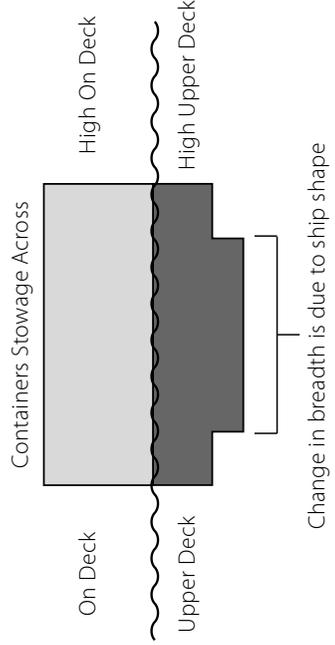
LOA* - Length Over All

Source: Ashar and Rodrigue, 2012, and reorganised to specific reading.

Fore Deck is area in front of the Navigation bridge and the bow
Mid Deck is an area aft of the Navigation Bridge and forward of Engine Room Area

Aft Deck is area aft of Engine Room Area

NB: in many cases the Navigation Bridge and Engine Room Area are in one block



Globalisation has seen great changes to the recognised trading patterns for ships and how they operate. What has become important is the perceived economy of scale. An example of this is the container ship explosion in capacity. The diagram on the previous page illustrates the 'evolution of container ships', showing the increase in dimensions and maximum number of containers carried. In their early days in the 1950s, container ships had a capacity of 500 TEU; now there are ships capable of carrying 18,000 TEU. In effect, one container ship of today can carry the same number of containers as 36 container ships of the 1950s.

The resulting savings in the number of crew employed, fuel, insurance and operating costs are all economies of scale. The same can be said for oil tankers and bulk carriers, which have over the years increased in size with a larger cargo-carrying capacity. Oil tankers, however, are restricted in their cargo tank capacity to reduce potential pollution from oil spills.

Some other facts about ship sizes and capacities:

- The world's largest ore carrier is the *Vale Brasil*, a 400,000dwt VLOC.
- The largest LNG carrier, *Mozah*, has a 266,000m³ capacity.
- The largest cruise liner, *Oasis of the Seas*, can accommodate 6,296 passengers and 2,394 crew.
- The largest crude oil tanker to date was *Knock Nevis*, a 565,000dwt ultra large crude carrier (ULCC), which was scrapped in 2004.

With these large ships there are special considerations; each has particular requirements that do not appear on other ship types. There is still a very large number of smaller ships operating worldwide with specialised trades and cargoes that could not be served by very large ships.

Ship managers need to be aware of the particulars of the ships for which they are responsible; how they operate and if any specialised systems are needed for their safe operation.

Specialisation by ship management companies

Like all good companies, ship management companies may specialise in the operation of certain ship types to ensure that they have the expertise on board and ashore to operate at maximum efficiency and effectiveness. There is a problem with this – the earning capacity of ships fluctuates by market demands and if a company specialises only in the management of crude oil carriers and the market has a drop in freight rates then it could find itself with problems.

To counteract this, companies need to spread the risk by choosing a few ship types from different parts of the shipping industry. It is important for the ship manager to understand and, preferably, have some knowledge of the operation of the ship type for which they will be responsible and the specialist systems used in its operation.

It is not possible to know all ship types and their particular requirements. There are a number of systems and operations common to all ships types, but mostly there is a huge diversity. To better understand this diversity, the following sub-section lists a number of ship types and tries to group them together. It is not an exhaustive list of all ship types operating at sea.

Ship types

There are a few main groupings of ship types that can be placed together. The four main groups can be described as wet, dry, passenger and offshore.

Wet

- Liquid natural gas carrier (LNG)
- Liquid petroleum gas carrier (LPG)
- Chemical tankers (NLS carrier)
- Vegetable oil tankers (can be chemical tankers used for specialist trade)
- Molasses (can be chemical tanker used for this specialist trade)
- Bitumen carrier
- Crude oil tanker
- Clean petroleum products carrier

Dry

- Bulk carrier
- Ore carrier
- Combination carrier (oil bulk ore [OBO] or oil ore [OO] or product oil bulk ore [PROBO])
- Self-discharge bulk carrier
- General cargo
- Container
- Reefer
- Freight ro-ro
- Freight high-speed craft
- Cement carrier
- Livestock carrier
- Pure car carrier (PCC)

Passenger

- Passenger cruise ship
- Passenger liner
- Passenger ferry
- Passenger high-speed craft
- Passenger ro-ro
- Passenger sailing ship

Offshore

- Oil supply vessel (OSV)
- Anchor handler
- Diving support vessel (DSV)
- Stand-by vessel
- Seismic survey
- Crane ships (for heavy lifts up to 5,000 tons)

21ST CENTURY SHIP MANAGEMENT

- Floating production storage and offloading (FPSO)
- Floating storage unit (FSU)
- Tugs
- Tugs for towing, including ocean towage
- Semi-submersible oil rig
- Drilling ship

In addition, there are specialist ships such as semi-submersible heavy lift ships, fishing factory ships and fishing vessels (various types).

Crude oil tankers can be sub-divided into groups by size. The following table shows the breakdown of crude oil tankers by deadweight tonnage. These are arbitrary tonnages accepted in the maritime industry.

Crude oil tankers by deadweight			
<i>Designation</i>	<i>Tonnage</i>	<i>Tonnage</i>	<i>Tonnage Type</i>
Handysize	Up to	50,000	DWT
Panamax	50,000	70,000	DWT
Aframax	70,000	100,000	DWT
Suezmax	100,000	200,000	DWT
Very Large Crude Carrier (VLCC)	200,000	300,000	DWT
Ultra Large Crude Carrier (ULCC)	300,000	565,000	DWT

Other ship types such as bulk carriers also have many permutations. It is important to note that the focus should not be on the size of the ship but on its operating restrictions.

The complexity of shipping and the ship manager

Ship managers need to have or absorb certain skills sets to be able to be effective and efficient in how they operate the ships under their control.

One of the core documents they will use is the company's safety management system (SMS), which is contained in a safety management manual (SMM). Although the word 'manual' is used, it is understood that the manual can be made up of many volumes and is not necessarily contained in one document.

This manual will give the ship manager a guide as to how the company operates and what is expected to be carried out. It directs the ship manager to other publications and builds up a complete picture of the requirements surrounding the operation of the company and how each department interacts with one another.

Computer and information management systems have transformed shipping companies and provide a great deal of support to ship managers in carrying out their responsibilities as per their job description. In the next section this topic will be discussed.

The ship manager is one person at one location. The role involves being part of a team and being fully aware of its responsibilities and authority to be able to function fully at that level of management within the organisation.

This means knowing whom you report to, who reports to you, who is at the same level in the organisation and which of these people you will be required to work with to ensure that the company functions effectively and that there are clear lines of communication. This part of the external communications can be clear-cut and developed, unless the company has a number of offices dealing with different functions located in different countries and regions of the world.

Once the external communications are added to this set-up, there are a number of additional factors to be taken into account to be able to function effectively. An example of this may be as follows:

Company official language:	English
Ship manager:	British
Office location:	Dubai
Ships registered:	Liberia
Officers:	German
Crew:	Filipino
Owner:	Norwegian
Charterer:	American
P&I club:	Danish
Voyage load port:	Brasil
Voyage discharge port:	China

As can be seen, there are a number of nationalities involved and the only common denominator is the use of English to communicate between all parties. In addition, there are a number of time zones and this can result in delays when sending communications and receiving replies. This is a physical factor that has to be allowed for and complicates matters further.

The ship manager has to communicate with all of the parties mentioned and because of modern communications systems is able to do so without time delay, using either email or phone and keeping all parties updated of events. What has to be reviewed is the cost factor: email is fast and cheap, while telephone calls are more expensive and consideration needs to be given as to whether they are really necessary.

Emails with attachments can convey large amounts of information that could formerly only be sent by post. The main constraint of email is the amount of data that can be attached per message and this restricts the amount of data that can be transferred at any one time.

Computing and information management systems

The use of computers and their advancement in speed and processing power have transformed how companies operate and how they retain and use information. The ability to create databases and retrieve information from them or analyse the information to

determine trends is an important factor in operating ships. Information technology is also a tool for continuously updating and assessing the accounts of individual ships and being able to compare them for assessing operational costs.

One important factor is key performance indicators (KPIs). The information needed and the way it is interpreted to give indications of how each ship, each group of ships and the entire company fleet are performing can really only be assessed using computer modelling and databases to give like-for-like comparisons and trends within the fleet.

To do this work without computers would require dedicated personnel and a time delay while the figures were being put together and analysed. Even with computers it still requires time to enter the data and, of course, the final figures and data output will reflect the input and, if there are mistakes, will give false indications. There is a need for speed and accuracy to ensure that the data input is correct and this is only one part of the ship manager's duties among a host of other responsibilities.

This data may also be used to produce planned maintenance systems for each ship, using either an off-the-shelf software package or a custom-made system, and will thereby affect the operational performance of the ship. An added bonus is that if the planned maintenance system is constructed correctly it will be able to supply a lot of information in respect of the ship and its operating costs. Although this may be seen as the domain of the technical superintendent responsible for the ship, the ship manager should be aware of how it operates and have access to the relevant data to review anything to do with his or her responsibilities as set out in the job description.

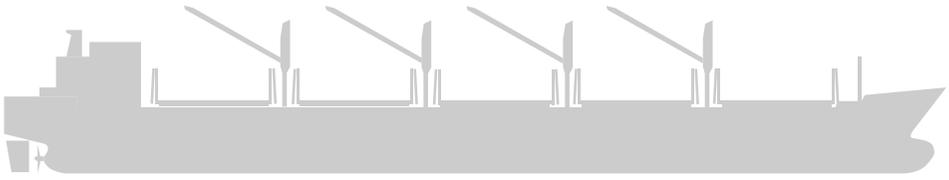
In respect of ship maintenance, the ISM Code (Part A/10 – Maintenance of the ship and equipment) has to be taken into account. It does not actually mention the words 'planned maintenance system', but this is inferred: 'The Company should establish procedures to ensure that the ship is maintained in conformity with the provisions of the relevant rules and regulations and with any additional requirements which may be established by the Company.'

However, this statement leaves the company room for interpretation. Other parts of the ISM Code make yet more demands – to achieve them without using computers would be a monumental task requiring an increase in office staff to record data and find ways to link them together.

Information systems can also include all the documents and certificates for each ship and how they are achieved, to ensure that the ship remains in compliance with all requirements and can continue to trade.

Self-assessment

- In your current company, look at the management system that is in place and the ship types that the company operates. After reviewing the management system and how it operates do you believe that it is as efficient and effective as it could be?
- As a ship manager, how do you find the time to be effective and meet all of the responsibilities set out in the job description?



2 LEGISLATION: THE FOUR PILLARS – SOLAS, MARPOL, STCW AND MLC

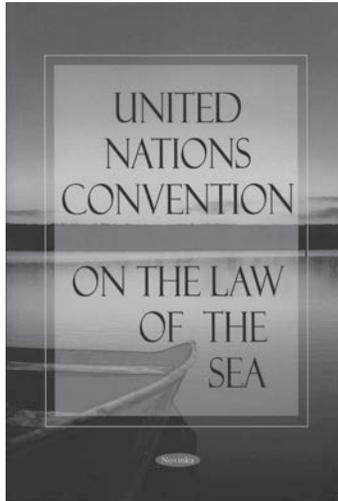
The demands of legislation are increasing all the time. Ignorance of the law is not a defence. Ship managers are expected to have sufficient knowledge of the subject matter relating to the ships for which they are responsible and be able to apply the law to these ships as required, especially the particular requirements of ship types such as oil tankers, chemical tankers and gas carriers. However, in the modern commercial shipping fleets there are particular requirements for every ship type.

For the ship manager it is important to know where to find the relevant legislation. Time and energy should never be wasted on trying to learn it as there are frequent amendments to the legislation. One key factor in this demand for knowledge of legislation is found in the ISM Code under A/6.4: 'The Company should ensure that all personnel involved in the Company's safety management system have an adequate understanding of relevant rules, regulations, code and guidelines.'

This is further supported by the ISM Code A/1.2.3: 'The safety management system should ensure: 1. compliance with mandatory rules and regulations; and 2. that applicable codes, guidelines and standards recommended by the Organization, Administrations, classification societies and marine industry organizations are taken into account.'

In this case, the 'Organization' is the International Maritime Organization (IMO), 'Administrations' are the flag states of countries that have registered ships, classification societies are taken to be the members of the International Association of Classification Societies (IACS) and marine industry organizations are those organisations that have expert knowledge of particular fields of the shipping industry, many of whom have non-governmental organisation (NGO) status at the IMO.

It is not possible for any one person to know all maritime legislation, but it is important to be aware of it and able to locate and apply the relevant legislation to the ships under your care. In the following sections of this chapter we will explore the world of legislation and how it works and what it means to a ship manager in performing the duties designated by the job description.

*Structure of maritime legislation***United Nations Convention on the Law of the Sea (UNCLOS)**

*Cover page of United Nations Convention on the Law of the Sea.
Reproduced with permission from Nova Science Publishers Inc.*

The core element of the international legislation for the maritime industry is the *United Nations Convention on the Law of the Sea* (UNCLOS). This document lays out the different sea areas and the jurisdiction of coastal states for control over their sea areas. The legalities therein apply only to signatories to the convention and must be seen in the context of their application to the IMO, the maritime agency of the UN.

There is no easy way to read and apply this publication. It is a matter of reviewing it and finding the applicable chapter to a certain situation, read it and interpret it as necessary. The contents are broken down into a preamble, 17 parts and an index. The articles contained in the parts are in arithmetical progression and need to be viewed in the context of their chapter title and applied in respect to that title. Below is an example of the convention's content, taken from page 50 of UNCLOS:

UNCLOS Part VII – High seas**Section 1. General provisions**

Article 91. Nationality of ships

- 1** Every State shall fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag.
Ships have the nationality of the State whose flag they are entitled to fly.
There must exist a genuine link between the State and the ship.
- 2** Every State shall issue to ships to which it has granted the right to fly its flag documents to that effect.

International Maritime Organization (IMO)

The IMO is the UN agency concerned with maritime matters. Its headquarters are in London and this is where the assemblies, councils, committees and sub-committees meet and where the secretariat works from. It is best for anyone, especially ship managers, to view the structure and works of the IMO from its website at www.imo.org. Certain parts of the website are password-protected, but there is a wealth of information available on the rest.

The IMO's main function is to progress maritime safety through the work of its committees and sub-committees. The committees are:

- Maritime Safety Committee
- Marine Environment Protection Committee
- Legal Committee
- Technical Co-operation Committee
- Facilitation Committee

In 2014 the sub-committees were reduced from nine to seven and the majority were given new titles. The two sub-committees that were discontinued had their work distributed to other sub-committees. The titles of the sub-committees in effect from 2014 are:

- Sub-Committee on Ship Design and Construction (SDC)
- Sub-Committee on Pollution Prevention and Response (PPR)
- Sub-Committee on Human Element, Training and Watchkeeping (HTW)
- Sub-Committee on Ships Systems and Equipment (SSE)
- Sub-Committee on Navigation, Communication and Search and Rescue (NCSR)
- Sub-Committee on Implementation of IMO Instruments (III)
- Sub-Committee on Carriage of Cargoes and Containers (CCC)

The IMO has a large agenda to cover each year and this includes the work that is continued and researched between meetings and the involvement of the member states and the support and input of NGOs.

The ship manager needs to be aware of what is taking place at the IMO to be able to understand new legislation and its impact on the company.

The IMO produces international legislation and it is up to member states to apply it to their national legislation and sign off against it. All ship managers are advised that nothing can be taken for granted and to check with the IMO, which has a complete list for every member state. On it are not only the conventions that member states have signed up to, but also in many cases, such as the MARPOL Convention, the annexes that are being adhered to.

World Maritime University (WMU)

The World Maritime University (www.wmu.se) was established by the IMO in Malmö, Sweden, in 1983 and has become an outstanding institution, bringing together young people of various educational, cultural and social backgrounds to study and live together for two years. It is a centre of excellence for maritime postgraduate education and research,

promoting the highest standards in teaching maritime affairs, including maritime law and policy, maritime safety and environmental administration and management, maritime education and training, shipping management, port management, marine environment and ocean management, international maritime transport and logistics. From its Malmö campus, outreach teaching locations in Shanghai and Dalian and via professional development courses, WMU promotes the international exchange and transfer of maritime ideas and knowledge.

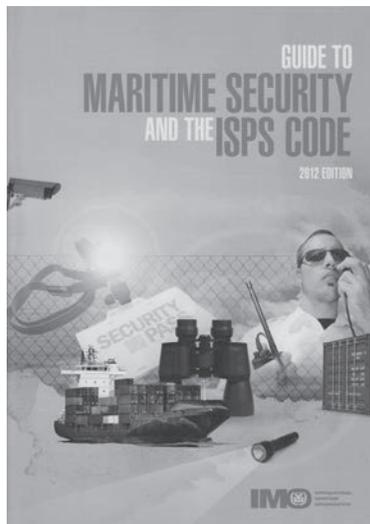
International Maritime Law Institute (IMLI)

The International Maritime Law Institute (www.imli.org) was established by the IMO in Malta in 1988, to help ensure that sufficient maritime law experts would be available to assist in the implementation and enforcement of international maritime law and, more particularly, the vast body of rules and regulations developed under the aegis of the IMO, especially within developing countries. The institute provides suitably qualified candidates, particularly from developing countries, with high-level facilities for advanced training, study and research in international maritime law. Special emphasis is given to the international regulations adopted by the IMO.

SOLAS Convention

Structure

The Safety of Life at Sea Convention (SOLAS) needs to be understood by those that use it and the very first point to note is that it cannot be used by itself. To use this convention, there must be an awareness of references to all IMO resolutions, 27 volumes in total, and all Maritime Safety Committee (MSC) and Marine Environmental Protection Committee (MEPC) circulars – and then there are codes needed.



Cover page of the ISPS Code. Reproduced with permission from the IMO

LEGISLATION: THE FOUR PILLARS – SOLAS, MARPOL, STCW AND MLC

On the facing page is the cover for the volume containing the ISPS Code. This code by itself has no mandatory application, but because it is linked to a chapter of SOLAS it does have mandatory application to SOLAS ships. In this case, it is SOLAS Chapter XI-2 that makes the ISPS Code mandatory. A sample of additional codes referred to by SOLAS are:

- *Code of Safe Practice for Cargo Stowage and Securing*
- *Code of Safe Practice for Ships Carrying Timber Deck Cargoes*
- *International Maritime Solid Bulk Cargoes (IMSBC) Code*
- *Guidelines on the Preparation of the Cargo Securing Manual*
- *Recommendations for Material Safety Data Sheets (MSDS)*
- *International Maritime Dangerous Goods (IMDG) Code*

For SOLAS to be mandatory, a ship must be engaged on an international voyage and be of convention size. The convention size is not constant. The mandatory minimum gross tonnage is not constant and a ship manager must read the relevant application to ensure it is correct. For example, for bulk carriers the convention size is 500gt and above, whereas for passenger ships it is any ship that is classed and meets the requirements of being a passenger vessel, which can normally be taken to mean 12 or more fare-paying passengers. If the company operates larger ships this is no problem, but if the company operates smaller ships near the limitations of convention size then this needs to be reviewed and considered.

Ship managers need to keep up to date with SOLAS. The current edition is the 2009 consolidated edition, but there have been many amendments made since. These need to be read to ensure that the correct applications are made. They can be checked in the MSC circulars and published amendments. Amending is a continuous process and reflects the work done at the IMO; this does not only apply to SOLAS but to all publications.

Using the SOLAS 2009 consolidated edition

There is no easy way to learn to use SOLAS. It is long and hard, with many hours needed to become proficient. The first step is learning where to find the relevant materials. This becomes easier with sections used on a day-to-day basis. It is when legislation is required for a special task that careful reading is required. This is when marrying up the various circulars and codes becomes vital to ensure a correct interpretation of the part of SOLAS being used.

Even when checking SOLAS for the correct interpretation, it is always advisable to check what the flag state of the ship has put in place with its own national legislation, because this is what must be met. The national legislation can have the same or higher application as SOLAS but never less.

SOLAS – List of Contents	
	Foreword
	Part 1
	Articles of the International Convention for the Safety of Life at Sea, 1974
	Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974
	Consolidated text of the annex to the International Convention for the Safety of Life at Sea, 1974, and the 1988 Protocol relating thereto
Chapter I	General Provisions
Chapter II-1	Construction – Structure, subdivision and stability, machinery and electrical installations
Chapter II-2	Construction – Fire protection, fire detection and fire extinction
Chapter III	Life-saving appliances and arrangements
Chapter IV	Radiocommunications
Chapter V	Safety of navigation
Chapter VI	Carriage of cargoes
Chapter VII	Carriage of dangerous goods
Chapter VIII	Nuclear ships
Chapter IX	Management for the safe operation of ships
Chapter X	Safety measures for high-speed craft
Chapter XI-1	Special measures to enhance maritime safety
Chapter XI-2	Special measures to enhance maritime security
Chapter XII	Additional safety measures for bulk carriers
Appendix	Certificates
	Part 2
Annex 1	Certificates and documents required to be carried on board ships
Annex 2	List of resolutions adopted by the SOLAS Conferences
Index	

*Table showing the contents of the SOLAS 2009 consolidated edition.
As can be seen, it deals with a large diversity of items.*

Chapter I, regulation 11: maintenance of conditions after survey

- a** The condition of the ship and its equipment shall be maintained to conform with the provisions of the present regulations to ensure that the ship in all respects will remain fit to proceed to sea without danger to the ship or persons on board.
- b** After any survey of the ship under regulations 7, 8, 9 or 10 has been completed, no change shall be made in the structural arrangements, machinery, equipment and other items covered by the survey, without the sanction of the Administration.
- c** Whenever an accident occurs to a ship or a defect is discovered, either of which affects the safety of the ship or the efficiency or completeness of its life-saving appliances or other equipment, the master or owner of the ship shall report at the earliest opportunity to the Administration, the nominated surveyor or recognized organization responsible for issuing the relevant certificate, who shall cause investigations to be initiated to determine whether a survey, as required by regulations 7, 8, 9 or 10, is necessary.

If the ship is in a port of another Contracting Government, the master or owner shall also report immediately to the appropriate authorities of the port State and the nominated surveyor or recognized organization shall ascertain that such a report has been made.

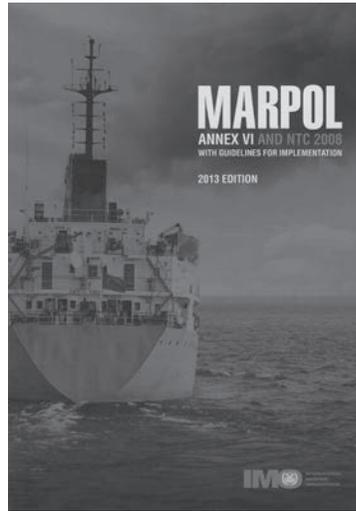
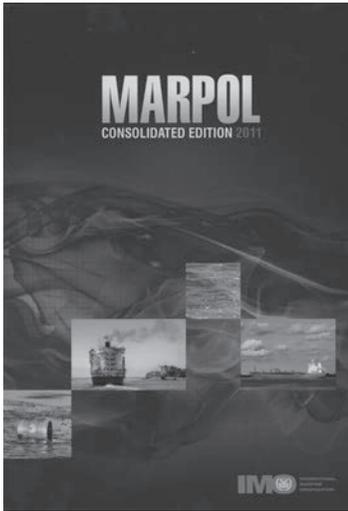
The above regulation is important to ship managers and their work. The ship manager, along with the technical manager or technical superintendent, should ensure that all of the work is completed and kept up to date to ensure that the ship retains its certification, but at the same time he or she must also ensure that there is no violation of requirements and that the correct organisations are informed, as well as receiving approval.

SOLAS is not so much complex as vast in its content and requirements. The ship manager needs to ensure that its requirements are met at all times.

MARPOL Convention

Structure

MARPOL consists of the 2011 consolidated edition, articles, protocols, annexes and unified interpretations of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 and 1997 protocols, MARPOL Annex VI and NO_x Technical Code 2008 (NTC) with guidelines for implementation, 2013 edition. What has to be remembered is that MARPOL and its associated publications are dealing with pollution prevention, not environmental management.



MARPOL, Annex VI and NTC cover pages. Reproduced with permission from the IMO

Contents

MARPOL – List of Contents

Introduction

International Convention for the Prevention of Pollution from Ships, 1973

Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973

Protocol I: Provisions concerning reports on incidents involving harmful substances

Protocol II: Arbitration

Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto

Annex I – Regulations for the Prevention of Pollution by Oil

Annex II – Regulations for the Control Of Pollution by Noxious Liquid Substances

Annex III – Regulations for the Prevention of Pollution by Harmful Substances carried by Sea in Packaged Form

Annex IV – Regulations for the Prevention of Pollution by Sewage from Ships

Annex V – Regulations for the Prevention of Pollution by Garbage from Ships

Annex VI – Regulations for the Prevention of Air Pollution from Ships

List of contents of MARPOL

MARPOL Annex VI and NTC

Foreword

MARPOL Annex VI – Regulations for the Prevention of Air Pollution from Ships

Resolution MEPC.176(58)

Amendments to the Annex of the Protocol of 1997 to amend the international Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto

(Revised MARPOL Annex VI)

Resolution MEPC.203(62)

Amendments to the Annex of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (Inclusion of regulations on energy efficiency for ships in MARPOL Annex VI)

NOx Technical Code

Resolution MEPC.177(58)

Amendments to the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines

(NOx Technical Code 2008)

List of contents of MARPOL Annex VI and NTC

MARPOL is a difficult convention to use for the ship manager as well as everyone else. The problem lies in the way it is written: it is not a simple document and the constant referencing means that in many cases a reader is directed to a section elsewhere in the document and then redirected again. Sometimes it is difficult to remember the original section. The most important thing is to figure out which annex is appropriate and find your way around it.

One of the anomalies of the maritime conventions is the IMDG Code, which requires both MARPOL and SOLAS to make it mandatory. This is because the pollution considerations come under MARPOL and safety considerations under SOLAS.

Certificates and documents

The following is not an exhaustive list of certificates and documents but more of an indication of what the ship manager should be looking for when dealing with this convention and the administration required to be completed on board to ensure that each ship complies with its requirements.

- International Oil Pollution Prevention Certificate (MARPOL 1/7)
- Oil record book (MARPOL 1/17 & 36)
- Shipboard oil pollution emergency plan (SOPEP) (MARPOL 1/37)
- International Sewage Pollution Prevention Certificate (MARPOL IV/5)
- Garbage management plan (MARPOL V/9)
- Garbage record book (MARPOL V/9)
- International Anti-fouling System Certificate (AFS – Annex IV, reg 2.1)
- Declaration on Anti-fouling System (AFS – Annex IV, reg 5.1)
- International Air Pollution Prevention Certificate (MARPOL VI/6)

- Ozone-depleting substances record book (MARPOL VI/12.6)
- Fuel oil changeover procedures and log book (record of fuel changeover) (MARPOL VI/14.6)
- Manufacturer's operating manual for incinerators (MARPOL VI/16.7)
- Bunker delivery note and representative sample (MARPOL – VI/18.6 & 18.8.1)
- Technical file (NO_x Technical Code 2.3.7)
- Record book on engine parameters (NO_x Technical Code 2.3.7)
- Record of oil discharge monitoring and control system for the last ballast voyage (MARPOL I/31)
- Oil discharge monitoring and control (ODMC) operational manual (MARPOL I/31)
- Crude oil washing operation and equipment manual (COW manual) (MARPOL I/35)
- Condition Assessment Scheme (CAS) statement of compliance, CAS final report and review record (MARPOL – I/20 and I/21)
- Subdivision and stability information (MARPOL I/28)
- VOC management plan (MARPOL VI/15.6)
- International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk (NLS Certificate) (MARPOL II/8)
- Cargo record book (MARPOL II/15.2)
- Procedures and arrangements manual (P&A manual) (MARPOL II/14)
- Shipboard marine pollution emergency plan for noxious liquid substances (MARPOL II/17)

Although this is but a sample, it shows the diversity of demands for ships to meet pollution prevention requirements. Included in the list are parts of the anti-fouling legislation. This is to ensure that ship managers remember to look beyond MARPOL when dealing with pollution prevention and environmental legislation.

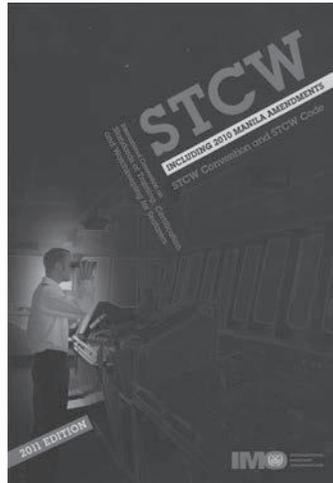
In addition, this does not mention national legislation that affects ships trading to certain countries and areas. An example of this is the US Oil Pollution Act 1990 (OPA 90), which requires certificates of financial responsibility to be put in place and the retention of qualified individuals (QI) and oil spill response organisations (OSROs) to meet the demand should a pollution incident occur in US waters.

As environmental issues take precedence, all eyes will turn on the maritime industry and its commitment to preserving the marine environment and watch how it responds to incidents and investigations that take place in their aftermath.

STCW Convention

The International Convention and Code on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) is one of the major cornerstones of maritime legislation. The STCW Code is split into two parts:

- **Part A:** mandatory provisions to which specific reference is made in the annex to the STCW Convention and which give the minimum standards required to be maintained by parties in order to give full and complete effect to the provisions of the STCW Convention; and
- **Part B:** recommended guidance to assist parties to the STCW Convention and those involved in implementing, applying or enforcing its measures to give the STCW Convention full and complete effect in a uniform manner.



STCW cover page. Reproduced with permission from the IMO

The STCW Convention is still the 1978 version, with the 1995 STCW Code, as amended. Its full title at this time is *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended, including the Final Act of the 2010 Conference of Parties to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, and resolutions 1 and 3 to 19 of the Conference*. The 2010 amendments to the STCW Code have become known as the 2010 Manila Amendments.

The STCW Convention entered into force on 28 April 1984, with amendments in 1991, 1994, 1995, 1997, 1998, 2004, 2006 and 2010. This shows the constant evolution of the convention to meet the maritime industry's need for change in the education and training of seafarers to keep up with ship operational requirements.

STCW Code contents	
Introduction	
Chapter I	Standards regarding general provisions
Chapter II	Standards regarding the master & deck department
Chapter III	Standards regarding engine department
Chapter IV	Standards regarding radio operators
Chapter V	Standards regarding special training requirements for personnel on certain ship types
Chapter VI	Standards regarding emergency, occupational safety, security, medical care and survival functions
Chapter VII	Standards regarding alternative certification
Chapter VIII	Standards regarding watchkeeping

STCW Code, Part A: list of contents

STCW and the demands of shipping

The STCW Convention and Code set out the minimum standards to be achieved to obtain the relevant certification required to hold certain positions on board ships of all types. A number of issues need to be understood in this respect.

Crew can be trained and certified and be ready to work, but without ships there is no work. Therefore, the primary concern is to match the crew with the ships and ensure that the requirements of SOLAS 74, Chapter 5, regulation 14 (Ship's manning) are met. This includes the ship holding a minimum safe manning document issued by the flag administration of the ship – refer to IMO Res A.890 (21), as amended by Res A.955 (23).

Additional certification

Depending on the ship types, there are a number of additional certificates required to be held by certain ranks on board. These are duly noted, but for each and every person there are a number of issues that need to be met and maintained:

- All seafarers must hold a valid medical certificate, stating that they meet the requirements.
- Deck officers require to have special eyesight tests, not only for clarity of vision but also for colour testing, to ensure that they can discharge the duties required of them when watchkeeping.
- There is a discharge book recording the sea service of the individual.
- For seafarers progressing their certification, there are requirements for sea service testimonials.
- There is a need for checking for certificates of equivalency, where an individual holds a certificate issued by one flag administration and is required to sail on a vessel of another flag. In some cases, this might not be accepted and therefore the individual is required to hold a full set of certificates for that particular flag, as well as for original certificates.
- Seafarers need to hold a set of immunisation certificates for certain potential threats such as yellow fever.
- They also need to hold a passport or equivalent to allow them to travel.
- In some cases, seafarers are required to provide a dental certificate to show that their teeth have been checked.

Seafarers need to bring the originals of all certificates and endorsements with them on board. All certificates and documents should have a validity of at least the duration of the contract or a minimum of six months from the time of joining the ship.

Because many companies employ manning agencies to recruit their seafarers, there is a one-step removal of control for the seafarers serving on board. There are many excellent manning agencies, but there are also some that are not so good. The master must check and ensure that every crew member signing on has a full set of valid certificates.

STCW and ship security

This means STCW Code A-VI/5 and A-VI/6. A-VI/5 deals with mandatory minimum requirements for the issue of certification of proficiency for ship security officers and A-VI/6 covers mandatory minimum requirements for the security-related training and instruction for all seafarers. The IMO model courses, taken in conjunction with the ISPS Code, will ensure that all factors can be brought together. These changes are a welcome addition to shipping.

STCW and MLC 2006

The focus of these two conventions has been reducing fatigue and bringing in regulations for limiting the hours of work and rest (see STCW Code A-VIII/1 – Fitness for duty and MLC 2006, 2.3 – Hours of work and hours of rest). But this issue is also linked to the right manning levels of the ship, as found in the Minimum Safe Manning Document. If the correct number of people are on board the workload is spread and excessive hours of work leading to fatigue can be avoided.

The bigger picture of these two conventions is that the STCW deals with training and education of seafarers and the MLC 2006 is becoming known as a bill of seafarers' rights. In the next section, the MLC is looked at more closely.

STCW in the future

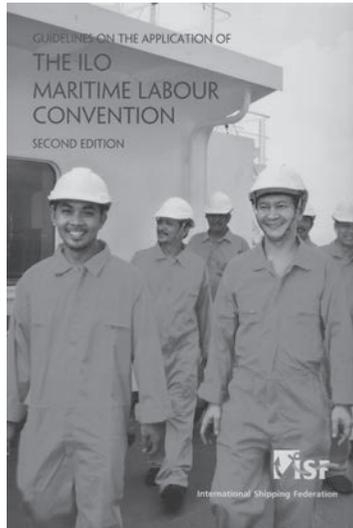
The STCW Convention and Code is the main document for ensuring that the seafarers needed to operate the ships sailing around the world have the skills to operate them safely and securely against all possible threats. It is designed to create the minimum set of standards needed and perhaps this needs to be reviewed in light of maritime incidents and the demands of shipowners for the skills set needed to operate their ships.

As ships evolve into more complex designs and operations, the need for people who can operate them changes and their skill sets evolve to meet these new demands. There is also an industry demand for the reduction of crew members as this impacts directly on the cost of operating ships, but perhaps it is not time for reduction but for reorganising those on board and what they are expected to achieve while serving on board.

The STCW has not been written to encompass the ever increasing demands of environmental legislation, the demands of which on the crew mean that additional training may become necessary in the future. As environmental considerations become embedded into design criteria of ships this additional training will be needed, but it will introduce an expensive additional cost.

MLC Convention

The Maritime Labour Convention 2006 (MLC) is seen as a major piece of legislation to change the way that the maritime industry operates. The requirements contained in this convention will alter the relationship between the shipowner, manning agents and the crew on board ships. This change will be minor for the good companies but may become an impossibility for those that can be perceived as bad.



Cover page of the MLC guidelines

The MLC came into force on 20 August, 2013 and even at this date many flag administrations had not signed up to it. In time it will come to the forefront and progress its aim to deliver a charter of seafarers' rights, but what does this mean?

For many shipowners who already follow and meet the majority of the requirements contained in the MLC it will mean some changes in the way they operate and record how the ships are operated and the crew are presented. For the ship manager it will mean more paperwork and records to produce the required objective evidence. But if the MLC is looked upon as another paper exercise rather than a change of mindset then the main objectives will be lost and never be recovered. If the main aim is to obtain another certificate and retain it by audit it will never meet its aspirations.

Where the problems will lie (and this will be detrimental to the whole concept) is with companies that do not provide for their crew and are adrift of the concept of MLC. This will be an ongoing problem as the maritime industry tries to move forward, but the same companies that are trying to circumvent the MLC will have done their best to circumvent all legislation.

The responsibilities of all concerned will be to ensure compliance and exposure of those who are not complying and to work continuously to improve the conditions of all seafarers working for them.

The following notes are a short introduction of the MLC for the ship manager. There are many courses and publications on this. In addition, there are a number of PowerPoint presentations available for free on the internet for those who want to pick up basic information, but care must be taken to ensure that the information shown is accurate and not the personal opinion of a person or organisation.

One point that has caused a lot of discussion and debate has been the identity of the shipowner or who will be the person or organisation responsible for MLC certification. Part of this is about the person or organisation that will be responsible for the crew under the MLC section for abandonment.

Contents

The contents of this publication are laid out for easy reference and are aimed at assisting people to have a better understanding of what it is trying to achieve. When dealing with people rather than machinery or equipment, it must be remembered that people do not function as robots. They have good and bad days, they get tired, they have to work shift patterns with broken sleep cycles that impact on their performance. One of the topics contained in this convention is the hours of work and hours of rest, an attempt to reduce fatigue.

MLC Guidelines List of Contents

<i>Section</i>	<i>Title</i>
	Introduction
	Contents of CD Accompanying this Guide
	ILO Maritime Labour Standards
	Why the MLC was Adopted
A	Key issue, certification and enforcement, and seafarers' rights
1	The ILO MLC – an overview
1.1	Purpose of the MLC
1.2	Labour standards covered
1.3	Certification
1.4	Entry into force
1.5	Enforcement
1.6	Convention structure
1.7	Application
2	Certification and enforcement
2.1	Certification of ships
2.2	Maritime labour certificate
2.3	Declaration of maritime labour compliance
2.4	Flag state enforcement
2.5	Port state control
2.6	On board complaint procedures
3	Rights
3.1	Fundamental rights
3.2	Seafarers' rights

B	MLC labour standards incorporated in the regulations and code
1	Minimum requirements for seafarers to work on a ship
1.1	Minimum age
1.2	Medical certificate
1.3	Training and qualifications
1.4	Recruitment and placement
2	Conditions of employment
2.1	Seafarers' employment agreements
2.2	Wages
2.3	Hours of work and hours of rest
2.4	Entitlement to leave
2.5	Repatriation
2.6	Seafarer compensation for the ship's loss or foundering
2.7	Manning levels
2.8	Career and skill development and opportunities for seafarers' employment
3	Accommodation, recreational facilities, food and catering
3.1	Accommodation and recreational facilities
3.2	Food and catering
4	Health protection, medical care, welfare and social security protection
4.1	Medical care on board ship and ashore
4.2	Shipowners' liability
4.3	Health and safety protection and accident prevention
4.4	Access to shore based welfare facilities
4.5	Social security
	Annexes
1	Example of certification
2	Example of completed declaration of maritime labour compliance (Part II)
3	Checklist to help shipowners ensure compliance
	Appendices
1	ILO Conventions superseded by the MLC
2	ILO Resolution on definition of seafarer
3	Information to be included in medical certificates
4	Commentary on MLC requirements concerning hours of work and rest

LEGISLATION: THE FOUR PILLARS – SOLAS, MARPOL, STCW AND MLC

5	Sample table of shipboard working arrangements and seafarer's rest hour record
6	STCW 2010 'Manila Exceptions' to normal rest hour requirements
7	Advice on disciplinary procedures
8	Guidance on living conditions for ships constructed before August 2013
9	Guidance for food storage and galley
10	Relevant international conventions and codes
11	Relevant industry publications
12	National shipowners' organizations with whom competent authorities may consult
13	List of countries that have ratified the MLC

Contents of the MLC guidelines

The MLC guidelines produced by the ICS assist individuals and companies towards compliance with this convention. The interpretations given are not mandatory but allow people to make reasoned judgment as to how to apply the wording of the convention and ensure that they are not misguided in their own interpretation of the convention.

MLC and other conventions

The MLC deals with many items covered in other conventions and codes, some of which have been in use for some time. There must be no contradiction between these publications, for example:

- The hours of work and rest: MLC B/2.3 versus STCW A-VIII/1
- Port state control: MLC A/2.5 versus UNCLOS and IMO Res A.1052(27)

There are other instances that are not so obvious but need to be reviewed to ensure that there are no inconsistencies.

Potential detainable items in respect of PSC and MLC

MLC and PSC Detainable Items

#	<i>Potential Detainable Item</i>
1	The presence of any seafarer on board under the age of 16
2	The employment of any seafarer under the age of 18 in work likely to jeopardise their health or safety
3	Insufficient manning, including that caused by the removal from the Safe Manning Document or underage seafarers

21ST CENTURY SHIP MANAGEMENT

4	Any other deficiencies constituting a violation of fundamental rights and principles of seafarers' employment and social rights
5	Any non-conformity applied in a way that violates those fundamental rights (<i>for example, the allocation of sub-standard accommodation based on the race or gender or trade union activity of the seafarers concerned</i>)
6	Repeated cases of seafarers being without valid certificates confirming medical fitness
7	Seafarers on board the same ship repeatedly not being in possession of valid seafarers' employment agreements (SEAs), or seafarers with SEAs containing clauses constituting a denial of seafarers' rights
8	Seafarers repeatedly having less than the required minimum hours of rest
9	Ventilation and/or air conditioning or heating that is not working adequately
10	Accommodation, including catering and sanitary facilities, that is unhygienic or where equipment is missing or not functioning
11	Quality and quantity of food and drinking water not being suitable for the intended voyage
12	Medical guide, medicine chest or medical equipment, as required, not being on board
13	No seafarer qualified to be in charge of medical care on board
14	Repeated cases of non-payment of wages or the non-payment of wages over a significant period, or the falsification of wage accounts or the existence of more than one set of wage accounts

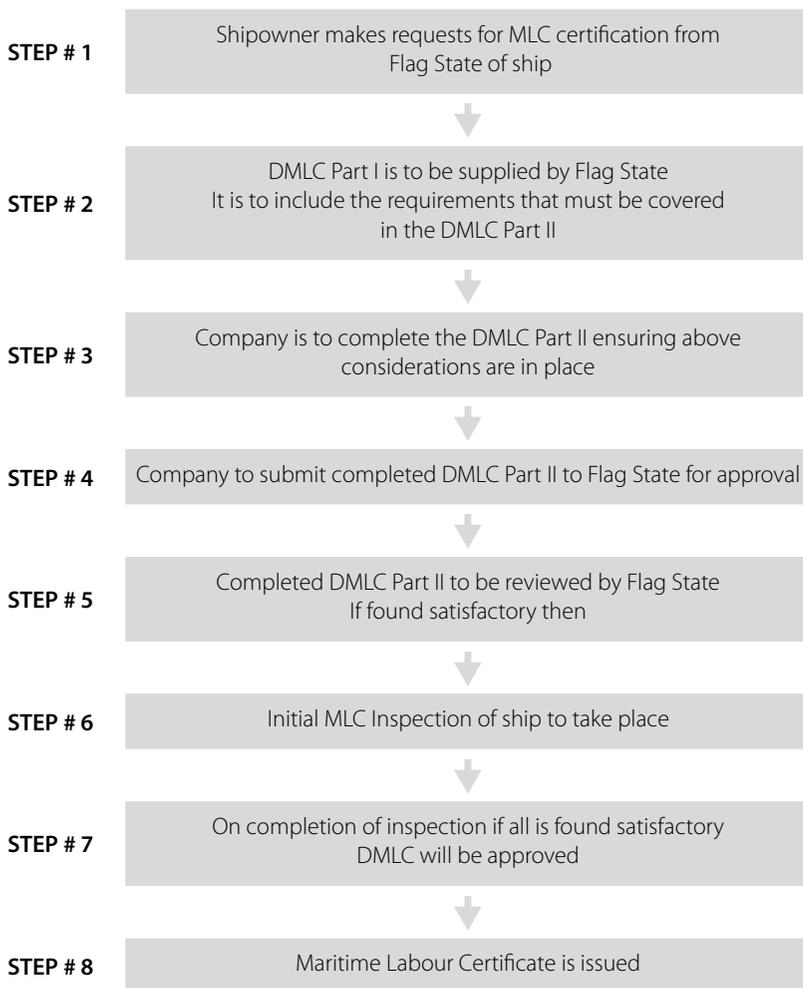
This list is not to be taken as an absolute but as a potential from PSC when inspecting ships and checking compliance with the MLC Convention.

It is important for the ship manager to be aware of this list and ensure by communication with the ships that they have prepared for any PSC inspection, taking into account the contents of this list, and can report back that they are able to meet any of the mentioned items.

Certification process

It is important to note that the process to certification varies from country to country and depends on how each section of the MLC Convention is interpreted by a flag administration. For a ship manager who has ships registered under different flags this means that the process can be quite simple for one flag but more complex for another. That is why it is so important to be aware of what is actually required as objective evidence.

MLC CERTIFICATION PROCESS



This flow diagram is taken from the ICS MLC guidelines and adapted to give a clearer view of what each step is. Each step must be completed before it is possible to move on to the next step of the certification process. This flow diagram's first cycle ends at the point of achieving certification, but this is only the first cycle and, in many cases, it will be more difficult to retain certification than to achieve it in the first place.

Audit process

The MLC Convention, like the ISM Code and the ISPS Code, is verified by an auditing process for certification. However, it will be inspected by PSC inspectors to verify compliance with the convention. At present various organisations are using auditors and inspectors specially trained in the MLC Convention for verifying compliance. Sometimes this can be confusing as there is no universal standard for ensuring that compliance is met, which causes confusion to those being audited.

Full-term certification

A full-term Maritime Labour Certificate will be valid for a period of five years from the date of completion of the initial inspection. The intermediate inspection will take place between the second and third anniversary dates. The renewal inspection must take place before the expiry of the certificate at the end of the five-year period. This cycle is the same as for the Safety Management Certificate for each ship under the ISM Code and the International Ship Security Certificate under the ISPS Code.

Interim certification

The conditions for interim certification to be issued are:

- a** New ships being delivered from the shipyard and brought into service can have an interim certificate for six months.
- b** If the owner of the ship changes then an interim certificate can be issued for a period of six months.
- c** If the ship changes flag then an interim certificate can be issued for a period of six months.

It must be noted under points b and c that a renewal inspection is conducted within this six-month window of the interim certificate and a new Maritime Labour Certificate can be issued. This will allow for a new five-year cycle to be introduced for the ship.

MLC and the future

There will be much to learn with regards to the application of the MLC Convention as it is used in the maritime industry. Increased use will bring out anomalies due to differences in application. As databases are filled with statistics, trends are found and KPIs produced, the performance of compliance will be questioned and other changes will be made. This will also be the case with changes in the maritime legislation that affect how the MLC can be used.

At the moment the MLC is just starting out and, as it gains support and feedback is achieved, it may in many cases highlight how the maritime industry takes care of those that operate the ships. Only time will tell. Any ship manager is going to be on a very steep learning curve as the fundamentals of living with the MLC Convention become apparent.

Self-assessment

- As a ship manager, how would you rate your working knowledge of these conventions?
- How can you improve your knowledge and application of them?
- What support does your company supply for you to increase your knowledge?
- Choose a ship type with which you are familiar and try to identify which parts of each convention apply to it. (This is something that will take time to do and will not be completed in a short space of time.)



3 SHIP CERTIFICATES AND DOCUMENTS

This chapter deals with all the certificates and documents a ship is required to carry to trade. This means not only those required by SOLAS 74, as amended, Part A, Annex B, but also others required to ensure that the ship is fully covered. These include test certificates for mooring lines and wires or, for a tanker, the reports from SIRE or CDI inspections. There are so many and they all require detailed inspection and are constantly being updated. It is important to remove and preferably destroy all out-of-date or obsolete certificates and documents so that they cannot be used by mistake.

All certificates issued to a ship are original certificates and they must be placed on board the ship, rather than copies. The only copy of a certificate on board the ship should be the Document of Compliance (DOC) for the company as per the ISM Code. This also applies to Interim Documents of Compliance (IDOC).

It is normal for the master to have a set of certificate files in his office and these must be current and up to date. Apart from the list found in SOLAS 74, as amended, there are other standards that request certain certificates not found in this standard.

No certificate can have a longer life span than five years. This is from the date of completion of whichever survey or audit was held and met the requirements of the work identified to be carried out. In some certificates, additional time has been entered to take the life span of the certificate beyond the five-year limit. This is simply to allow the ship to continue to trade. When the survey or audit is eventually carried out within the time window allowed, the new certificate reverts back and starts its life cycle from the expiry date of the previous certificate. There is no advantage to be gained.

The various certificates and the documents need to be maintained at all times. In many charter parties there is a clause stating that if the ship fails to maintain a full set of certificates for the duration of the charter, then the charter party is void.

In the appendices to this chapter there are eight certificates supplied by the Liberian Registry (LISCR UK Limited), to give readers a chance to review the format of real certificates. In chapters 5 and 6, there are a number of model formats for certificates as found in IMO Conventions.

Certificates and documents

Every ship must carry a full set of original certificates and documents relevant to that particular ship. These must be kept valid at all times for the ship to be able to trade and

21ST CENTURY SHIP MANAGEMENT

meet the requirements of any charter party. In ensuring that the ship has a full set of certificates, ship managers should refer to the following publications:

- SOLAS 74, as amended, 2009 consolidated edition, Part 2, Annex 1 – Certificates and documents required to be carried on board ships. This was updated on 28 September, 2011 by MSC Circ. 1409, 'Revised list of certificates and documents to be carried on board ships'. The presentation format of the information for each certificate is as shown below.

1 All ships	Reference
International Tonnage Certificate (1969)	
An International Tonnage Certificate (1969) shall be issued to every ship, the gross and net tonnage of which have been determined in accordance with the Convention.	Tonnage Convention Article 7

- Marpol consolidated edition, 2009, additional information 6 – certificates and documents required to be carried on board ships.

While the presentation format for each certificate is presented as shown above from SOLAS, it must be noted that not all certificates are the same as for SOLAS and that there are a number of certificates not in the SOLAS list. An example of this is the coating technical file as required by SOLAS 1974, regulation II-1/3.2.

In preparation for port state control inspection, two further publications need to be consulted to ensure that the ship will pass inspection:

- *Procedures for Port State Control 2011*, Appendix 12 – List of certificates and documents (Once again, there are differences in the certificates and documents listed in both SOLAS and MARPOL, such as the Long-range Identification and Tracking Conformance Test Report.)
- *Paris Memorandum of Understanding on Port State Control, including the 35th amendment adopted on 23 May, 2013* (effective 1 July, 2013), Annex 10 – Examination of certificates and documents

The list in *Procedures for Port State Control* is different from the *Paris Memorandum of Understanding on Port State Control*, which includes a few additional certificates. More importantly, the latter applies only to the Paris MoU countries for the port state control new inspection regime (NIR), which is being adopted by the Tokyo MoU, with some amendments. One such example is Energy Efficiency Design Index (EEDI) Technical File, found in MARPOL Annex VI, regulation 22.

The ship manager has to ensure that all of the above are met – and these lists are not exhaustive. They do not include all the certificates and documents that the ship will be required to carry, such as certificates for the lifeboat fall wires, mooring wires and

ropes or test pressure certificates for the compressed air bottles used by compressed air breathing apparatus. All certificates must remain valid and, upon expiry, must either be removed and replaced or retested and certified for the continued safe operation of the ship.

Ship certificate file

Every ship should carry a certificate file on board. This contains the original certificates relevant for each particular ship. The only certificate on board the ship that is a copy rather than an original is the Document of Compliance (DOC) for the ISM Code, which is issued to the company and not the ship.

The master should be responsible for maintaining and updating the file to ensure that all certificates and documents relevant to the ship are available for inspection by interested parties. It is recommended that a duplicate file with copies of all certificates is maintained in the office and available for the ship manager and other personnel. This may be kept as an electronic file, but it must be maintained in the same order as that on board ship. It may also be part of the planned maintenance system of the ship.

Old or obsolete certificates and documents should be removed from the certificate file so that only valid certificates and documents are available for inspection. This is a requirement of the ISM Code and the company needs to ensure that this is understood and complied with, both on board ship and in the office. As the ISM Code A/11.2.3 states: 'The Company should ensure that: obsolete documents are promptly removed.'

This only requires that obsolete documents are removed and does not state what should be done with them. The company must decide how to ensure that out-of-date certificates and documents are not only removed from circulation but also cannot be used by mistake. This could be interpreted that they must be destroyed. It should be noted that this requirement applies not just to the ship certificate file.

Non-mandatory certificates and documents

So far in this chapter there has been a focus on the mandatory requirements for certification and documentation of the ship in compliance with the rules and regulations demanded by various conventions and national, regional and international legislation. But there is a lot more to be followed and maintained. Many of these will depend on the ship type and its operating patterns.

It is not possible to cover all and every option and permutation in this book, but it is possible to give the ship manager some guidance to think about what is needed and how it is recorded and maintained within the company. Guidance should be taken from the contents of the company's SMS, which is contained in the SMM.

Tanker inspection programmes

Examples are available for tankers of various types. There are the Oil Companies International Marine Forum (OCIMF) Ship Inspection Report (SIRE) Programme and the Chemical Distribution Institute (CDI), which specialises in the inspection of chemical and gas carriers. The OCIMF SIRE has preformatted documents, of which the principal is the *Vessel Inspection Questionnaire for Oil Tankers, Combination Carriers, Shuttle Tankers, Chemical*

Tankers and Gas Tankers (VIQ 5), 2012 edition. In addition, there are the *Vessel Particulars Questionnaire for Bulk Oil/Chemical Carriers and Gas Carriers* (VPQ) and the *Barge Particulars Questionnaire* (BPQ). All of the above can be found on the OCIMF website at: www.ocimf.com/SIRE/Sire-Documents.

Tanker Management and Self-Assessment 2

The ship manager who is working with tankers needs also to be fully aware of the OCIMF *Tanker Management and Self-Assessment 2* (TMSA 2) – a best-practice guide for vessel operations. This deals with many aspects that the ship manager will be required to contribute to. The need for good record keeping and the insertion of the relevant details are important for the production of KPIs as required by this publication.

The core theme of the TMSA 2 is to give the responsible operator of any tanker a framework, which in many ways is standardised to allow the management system in use to be assessed. This is not a one-off process but a continuous one so that at certain times the KPIs created can be compared to show if the continuous improvement cycle is being achieved or not. Numerous websites offer assistance in understanding and applying TMSA 2 and there are also courses on this topic. Contained in Part 3 of this publication are its 12 main elements:

- 1** Management, leadership and accountability
- 2** Recruitment and management of shore-based personnel
- 3** Recruitment and management of vessel personnel
- 4** Reliability and maintenance standards
- 5** Navigational safety
- 6** Cargo, ballast and mooring operations
- 7** Management of change
- 8** Incident investigation and analysis
- 9** Safety management
- 10** Environmental management
- 11** Emergency preparedness and contingency planning
- 12** Element 12 – Measurement, analysis and improvement

Although this is a tanker-related product, it could be applied to other ship types and be used as a tool of measurement as to how the company is performing.

At this time it must be stated that SIRE inspections, TMSA 2 and CDI inspections are non-mandatory. But in commercial practice it would be nearly impossible to have a tanker chartered to any major oil company if it was not a participant in these programmes and passing inspections and audits. Therefore they have a major impact on the operation of the company and its position in the marketplace. There is also a link to port state control now, where port state control has been obtaining the results of these inspections to use as part of its pre-inspection formulation of a ship's status and its safe operation.

Offshore Vessel Inspection Database (OVID)

The offshore industry also has a set of voluntary inspections. The following explanation was taken from the OCIMF website:

The Offshore Vessel Inspection Database has been developed by OCIMF in response to a request from its members to provide a database of offshore inspections broadly following the format of SIRE; OCIMF's inspection protocol for oil, chemical and gas tankers that has been successfully operating since 1998. Recognition that the offshore industry has different processes and procedures than the tanker world for assurance and chartering has been taken into account.

The aim of OVID is to provide a robust web-based inspection tool and database of inspection reports; this will be underpinned with professional, trained and accredited inspectors. In the long term it is an aspiration that OVID will form criteria that is central to the selection and assurance of offshore vessels enhancing the safety of operations in the industry.

OVID has been designed to provide a number of positive benefits to OCIMF/ OGP members and vessel managers. By using a database where inspection reports are available to OVID participating members experience has demonstrated that inspection numbers will drop over time.

Assurance checks as a part of the chartering process may be speeded up as the assurance personnel have instant access to credible information on the vessel and its safety performance.

OCIMF members have co-operated to develop a common inspection document and format that will eliminate the need for inspectors to conduct inspections using a core document and client specific supplements; this should simplify the inspection process for both inspectors and ships staff and also provide assurance personnel in the oil companies with increased confidence in the inspection report content.

The provision of a document detailing vessel/unit principal dimensions and equipment will give vessel operators the ability to 'showcase' its capabilities and provide a tool to project teams to pre-screen vessels that are capable of undertaking the required activities. Having this document controlled by the vessel/unit operator allows for rapid amendment to reflect upgrading activities, and hence allowing project teams to quickly evaluate the vessel's new capabilities.

Proactive owners of offshore vessels will quickly see the benefit of keeping an active inspection on the database as it will streamline the pre-chartering process and, for competent vessel operators, reinforce their positive image with the clients.

Offshore Vessel Particulars Questionnaire (OVPQ)

The Offshore Vessel Particulars Questionnaire master template can be found at: www.OCIMF-apps.com/ovidresources/templates/OVPQ-Master-Full.pdf

It is important to read through the questionnaire and find out which sections apply and see whether all questions can be furnished with answers.

Other certificates and documents

Different documents for different organisations

In previous sections of this chapter there has been a discussion of the maritime legislation and the rules and regulations, but there are a lot of other surveys, inspections and audits for certification required for a ship to retain full compliance. The following list is not exhaustive but can be used to construct an overall view. While non-mandatory, some of these can be used to enhance the company and the operation of its ships.

- Class surveys and certification (certificate of class)
- Cargo inspections
- Charter inspections
- On-hire/off-hire surveys
- P&I club inspections (insurance)
- H&M inspections (insurance)
- ISO 9000 audits – quality management
- ISO 14000 audits – environmental management
- ISO 18000 audits – occupational safety and health

Depending on whether the company has committed to other standards as part of its ongoing continuous improvement cycle, there will be other reports, the results of which need to be addressed. This can mean that deficiencies, non-conformities, defects or malfunctions are found and need to be rectified. All of which raise more administration and a paper trail, whether virtual or hard copy, to create objective evidence of what has been completed to resolve any issues raised.

Navigation publications

To cover all certificates and documents, there must be a mention of the requirements for safe navigation of the ship. The STCW 78 Convention with 2010 Manila Amendments is contained in the STCW Code Part A, Chapter VIII – Watchkeeping part 2, Voyage planning, Section 5 Planning prior to each voyage:

Prior to each voyage, the master of every ship shall ensure that the intended route from the port of departure to the first port of call is planned using adequate and appropriate charts and other nautical publications necessary for the intended voyage, containing accurate, complete and up-to-date information regarding those navigational limitations and hazards which are of a permanent or predictable nature and which are reliant to the safe navigation of the ship.

This means that the ship must at all times have a complete and up-to-date set of charts, whether electronic or hard copy, and a full set of navigational publications. To understand the minimum requirements for the carriage of nautical publications, please consult *The Mariner's Handbook* (NP100), 9th edition, 2009, particularly Annex A – Requirements for the carriage of charts and publications.

This is further to SOLAS 74, as amended, 2009 consolidated edition, Chapter V, regulation 27, which states: 'Nautical charts and nautical publications, such as sailing directions, lists of lights, notice to mariners, tide tables and other nautical publications necessary for the intended voyage, shall be adequate and up to date.'

Keeping all of these documents up to date is a major job, but many companies take out a contract with specialist companies such as Kelvin Hughes Charts. This guarantees an automatic replacement service, so that the chart portfolios and publications are kept up to date. At this time there is major ongoing work as ships convert to electronic navigation charts. If this type of service is not used it can be one of the responsibilities of the ship manager to ensure that the navigation publications are all in line and up to date, especially for each port visit, as port state control inspections will be looking at how these are maintained.

Retention of certificates and documents

There is a difference between retaining certificates and documents for review and the mandatory requirements issued for the retention of certain completed documents on board the ship. This can vary, depending on which flag administration a ship is registered under. A number of record books required to be used on board have to be retained on board for a designated time period before they can be removed. If they are relevant to any ongoing claim at the date of expiry they should be retained until such a time as the case is resolved. These can include, among others:

- Deck log books
- Engine room log books
- Official log books
- Bridge movement books
- Engine movement books
- Oil record books part I and II
- Garbage record book
- Cargo record book
- Cargo temperature log book
- Bilge sounding and pumping record book
- GMDSS log book
- Ship safety management committee meeting minutes (these can be produced under a number of different titles)
- Ship familiarisation records
- Material safety data sheets (MSDS)
- Permit-to-work system – various operations

The ship manager needs to ensure that all relevant documents are kept and filed as required by the company's SMS. This should have taken into account the relevant requirements of more than one flag administration if the ships are registered under more than one flag administration.

Self-assessment

- How does your current company deal with the issue of keeping all documents and certificates up to date at all times?
- What system does the company use to ensure that all charts and publications in relation to navigational practices are kept up to date at all times?
- How does the company deal with the use and retention of material safety data sheets?
- What permit-to-work system is employed by the company for the safety of crew members?

Appendix 3.1: Permanent Certificate of Registry

	<p>THE REPUBLIC OF LIBERIA LIBERIA MARITIME AUTHORITY</p> <p>Permanent Certificate of Registry</p>	<p>99 Park Avenue, Suite 1830 New York, NY, 10016, USA Tel: +1 212 697 3434 Fax: +1 212 697 5655 E-mail: registrations@lisr.com Website: www.lisr.com</p>
		<p>Certificate Number</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">000-00-NYC</div>
<p>VESSEL NAME : _____</p> <p>OFFICIAL NUMBER: _____ CALL SIGN: _____ HOME PORT: _____</p> <p>IMO NUMBER: _____ FORMER NAME: _____</p>		
<p>Vessel Particulars</p>		
<p style="font-size: 2em; opacity: 0.5; pointer-events: none;">EXAMPLE</p>		
<p>TYPE: _____ YEAR BUILT: _____</p> <p>HULL MATERIAL: _____ NO. OF DECKS: _____ BUILDER: _____</p> <p>NO. OF MASTS: _____ COUNTRY BUILT: _____</p> <p>CLASS SOCIETY: _____</p> <p>LENGTH OVERALL: _____ LENGTH (ITC)*: _____ PROPELLING POWER (KW): _____</p> <p>BREADTH*: _____ DEPTH*: _____ NO. AND TYPE OF ENGINES: _____</p> <p>NET TONS*: _____ GROSS TONS*: _____ ENGINE MAKER: _____</p> <p><small>* acc. International Convention on Tonnage Measurement of Ships 1969</small></p>		
<p>Ownership declaration</p> <p><i>THIS IS TO CERTIFY THAT pursuant to the provisions of Chapter 2 of Title 21 of the Liberian Code of Laws 1956, as amended _____, having submitted the required declaration of ownership, does depose and say that:</i></p> <p>COMPANY NAME: _____ CITIZENSHIP: _____ PROPORTION: _____</p> <p>RESIDENCE: _____</p> <p><i>is (are) the sole owner(s) of the herein named and described vessel.</i></p> <p><i>and WHEREAS the Maritime Administrator, on behalf of the Government of Liberia, approved the application of the aforesaid owner for registration of the vessel and whereas the owner has complied with the requirements for registration and submitted same, the vessel is therefore duly registered under the Laws and Flag of the Republic of Liberia.</i></p> <p style="text-align: center;"><i>Issued by the Authority of the Government of the Republic of Liberia at New York, USA this _____ day of _____ 20_____.</i></p> <p style="text-align: center;">_____ Yvonne Clinton Deputy Commissioner Maritime Affairs R. L.</p> <div style="text-align: right;">  </div> <p><small>TO WHOM IT MAY CONCERN: Authenticity of this certificate can be verified on the Flag Administration website at www.lisr.com based on Tracking Identification Number TID and IMO number or issue date, or by contacting the Flag Administration directly at DhnsOffice@lisr.com or Registrations@lisr.com or by calling the number at the top of the certificate.</small></p>		
<p>TID: 00000 - 00000 - 00000 - 00000</p>		
<p>REV. 06/12</p>		

Appendix 3.2: Interim Document of Compliance



INTERIM DOCUMENT OF COMPLIANCE

Certificate No.

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, as amended
under the authority of the Government of

The Republic of Liberia
by the Office of the Deputy Commissioner, Liberia Maritime Authority

Name and address of the Company:

Company identification number:

THIS IS TO CERTIFY THAT the safety management system of the Company has been recognized as meeting the objectives of paragraph 1.2.3 of the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) for the types of ships listed below (delete as appropriate):

- Passenger ship
- Passenger high-speed craft
- Cargo high-speed craft
- Bulk carrier
- Oil tanker
- Chemical tanker
- Gas carrier
- Mobile offshore drilling unit
- Other cargo ship

This Interim Document of Compliance is valid until **June 9, 2013**

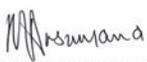
Issued at:

Date of issue: **December 10, 2012**

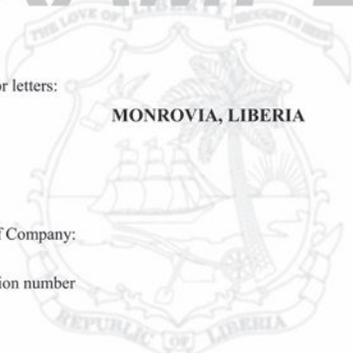


DEPUTY COMMISSIONER
OF MARITIME AFFAIRS OF LIBERIA

Appendix 3.3: Full-term Document of Compliance

	
DOCUMENT OF COMPLIANCE	
Certificate No.	
Issued under the provisions of the INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, as amended under the authority of the Government of The Republic of Liberia by the Office of the Deputy Commissioner, Liberia Maritime Authority	
Name and address of the Company:	
	
Company identification number:	
THIS IS TO CERTIFY THAT the safety management system of the Company has been audited and that it complies with the requirements of the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) for the types of ships listed below (delete as appropriate):	
Passenger ship Passenger high-speed craft Cargo high-speed craft Bulk carrier Oil tanker Chemical tanker Gas carrier Mobile offshore drilling unit Other cargo ship	
This Document of Compliance is valid until December 25, 2017 subject to periodical verification. Completion date of the verification on which this certificate is based: 26/12/2012	
Issued at:	
Date of issue:	 DEPUTY COMMISSIONER OF MARITIME AFFAIRS OF LIBERIA
217-v2	REV. 06/12

Appendix 3.4: Interim Safety Management Certificate

INTERIM SAFETY MANAGEMENT CERTIFICATE	
	Certificate No.
<p>Issued under the provisions of the INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, as amended under the authority of the Government of The Republic of Liberia by the Office of the Deputy Commissioner, Liberia Maritime Authority</p>	
EXAMPLE	
Name of ship:	
Distinctive number or letters:	
Port of registry:	MONROVIA, LIBERIA
Type of ship:*	
Gross Tonnage:	
IMO Number:	
Name and address of Company:	
Company identification number	
<p>THIS IS TO CERTIFY THAT the requirements of paragraph 14.4 of the ISM Code have been met and that the Document of Compliance/Interim Document of Compliance of the Company is relevant to the ship.</p> <p>This Interim Safety Management Certificate is valid until February 20, 2013 subject to the Document of Compliance/Interim Document of Compliance † remaining valid.</p>	
Issued at: Vienna, Virginia	
Date of issue: January 15, 2013	 _____ DEPUTY COMMISSIONER OF MARITIME AFFAIRS OF LIBERIA
<p>* Insert the type of ship from among the following: passenger ship, passenger high-speed craft, cargo high-speed craft, bulk carrier, oil tanker, chemical tanker, gas carrier, mobile offshore drilling unit, other cargo ship. † Delete as appropriate</p>	
213 - V2	TID: 01151 - 38409 - 08211 - 29617
	REV. 06/12

Appendix 3.4: Interim Safety Management Certificate (cont.)

Certificate No. _____

The Validity of this Interim Safety Management Certificate is extended to **February 20, 2013**

Date of Extension...**January 15, 2013**.....

**DEPUTY COMMISSIONER
OF MARITIME AFFAIRS OF LIBERIA**

EXAMPLE



Appendix 3.5: Full-term Safety Management Certificate



SAFETY MANAGEMENT CERTIFICATE

Certificate No. _____

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, as amended
 under the authority of the Government of
The Republic of Liberia
 by the Office of the Deputy Commissioner, Liberia Maritime Authority

EXAMPLE

Name of ship: _____

Distinctive number or letters: _____

Port of registry: **MONROVIA, LIBERIA**

Type of ship:* _____

Gross Tonnage: _____

IMO Number: _____

Name and address of Company: _____

Company identification number: _____

THIS IS TO CERTIFY THAT the safety management system of the ship has been audited and that it complies with the requirements of the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code), following verification that the Document of Compliance for the Company is applicable to this type of ship.

This Safety Management Certificate is valid until **January 22, 2016**, subject to periodical verification and the Document of Compliance remaining valid.
 Completion date of the verification on which this Certificate is based **November 25, 2010**

Issued at: **Vienna, Virginia**

Date of issue: **February 01, 2012**





**DEPUTY COMMISSIONER
OF MARITIME AFFAIRS OF LIBERIA**

* Insert the type of ship from among the following: passenger ship, passenger high-speed craft, cargo high-speed craft, bulk carrier, oil tanker, chemical tanker, gas carrier, mobile offshore drilling unit, other cargo ship.

214 - V2

TID: 02011 - 29292 - 04614 - 07183

REV. 06/12

Appendix 3.5: Full-term Safety Management Certificate (cont.)

Certificate No. _____

**ENDORSEMENT FOR INTERMEDIATE VERIFICATION AND
ADDITIONAL VERIFICATION (IF REQUIRED)**

THIS IS TO CERTIFY THAT, at the periodical verification in accordance with regulation IX/6.1 of the Convention and paragraph 13.8 of the ISM Code, the safety management system was found to comply with the requirements of the ISM Code.

INTERMEDIATE VERIFICATION Signed:
(to be completed between the second and third anniversary date) (Signature of authorized official)

Place:

Date:

EXAMPLE

ADDITIONAL VERIFICATION* Signed:
(Signature of authorized official)

Place:

Date:

ADDITIONAL VERIFICATION* Signed:
(Signature of authorized official)

Place:

Date:

ADDITIONAL VERIFICATION* Signed:
(Signature of authorized official)

Place:

Date:

* If applicable. Reference is made to the relevant provisions of section 3.2 "Initial verification" of the Guidelines on implementation of the International Safety Management (ISM) Code by Administrations adopted by the Organization by resolution A. 1022(26).

Appendix 3.5: Full-term Safety Management Certificate (cont.)

Certificate No. _____

ENDORSEMENT WHERE THE RENEWAL VERIFICATION HAS BEEN COMPLETED AND PART B 13.13 OF THE ISM CODE APPLIES

The ship complies with the relevant provisions of part B of the ISM Code, and the Certificate should, in accordance with part B 13.13 of the ISM Code, be accepted as valid until.....

Signed:
(Signature of authorized official)

Place:

Date:



ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF VERIFICATION WHERE PART B 13.12 OF THE ISM CODE APPLIES OR FOR A PERIOD OF GRACE WHERE PART B 13.14 OF THE ISM CODE APPLIES

The Certificate should, in accordance with part B 13.12 or part B 13.14 of the ISM Code, be accepted as valid until

Signed:
(Signature of authorized official)

Place:

Date:

Appendix 3.6: Interim International Ship Security Certificate



INTERIM INTERNATIONAL SHIP SECURITY CERTIFICATE

Certificate No. 27170

Issued under the provisions of the INTERNATIONAL CODE FOR THE SECURITY OF SHIPS AND PORT FACILITIES (ISPS Code) under the authority of the Government of The Republic of Liberia by the Office of the Deputy Commissioner, Liberia Maritime Authority

EXAMPLE

Name of ship:
Distinctive number or letters:
Port of registry: MONROVIA, LIBERIA
Type of ship:
Gross Tonnage:
IMO Number:
Name and address of Company:
Company identification number

Is this a subsequent, consecutive Interim Certificate?
If yes, the date of issue of initial Interim Certificate:
This is to certify that the requirements of Section A/19.4.2 of the ISPS Code have been complied with.
This certificate is issued pursuant to section A/19.4 of the ISPS Code.

This Certificate is valid until:

Issued at: Vienna, Virginia

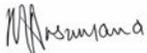
Date of issue: January 15, 2013



Handwritten signature of the Deputy Commissioner.

DEPUTY COMMISSIONER OF MARITIME AFFAIRS OF LIBERIA

Appendix 3.7: Full-term International Ship Security Certificate

INTERNATIONAL SHIP SECURITY CERTIFICATE	
Certificate No. _____	
<p>Issued under the provisions of the INTERNATIONAL CODE FOR THE SECURITY OF SHIPS AND PORT FACILITIES (ISPS Code) under the authority of the Government of The Republic of Liberia by the Office of the Deputy Commissioner, Liberia Maritime Authority</p>	
Name of ship	EXAMPLE
Distinctive number or letters	MONROVIA, LIBERIA
Port of registry	
Type of ship	
Gross Tonnage	
IMO Number	
Name and address of Company	
Company identification number _____	
THIS IS TO CERTIFY:	
<ol style="list-style-type: none"> 1. that the security system and any associated security equipment of the ship has been verified in accordance with section 19.1 of part A of the ISPS code; 2. that the verification showed that the security system and any associated security equipment of the ship is in all respects satisfactory and that the ship complies with the applicable requirements of Chapter XI-2 of the Convention and part A of the ISPS Code; 3. that the ship is provided with an approved ship security plan. 	
Date of renewal verification on which this Certificate is based _____	
This Certificate is valid until _____ subject to verifications in accordance with section 19.1.1 of part A of the ISPS Code.	
Issued at:	Vienna, Virginia
Date of issue:	February 01, 2013
	
	 _____ DEPUTY COMMISSIONER OF MARITIME AFFAIRS OF LIBERIA
211 - VS	TID: 02011 - 29292 - 04614 - 12650
	REV. 06/12

Appendix 3.7: Full-term International Ship Security Certificate (cont.)

Certificate No. _____

ENDORSEMENT FOR INTERMEDIATE VERIFICATION

THIS IS TO CERTIFY that at an intermediate verification required by section 19.1.1 of part A of the ISPS Code the ship was found to comply with the relevant provision of Chapter XI-2 of the Convention and part A of the ISPS Code.

INTERMEDIATE VERIFICATION Signed:
(to be completed between the second and third anniversary date) (Signature of authorized official)
Place:
Date:

Endorsement for additional verification *
ADDITIONAL VERIFICATION Signed:
(Signature of authorized official)
Place:
Date:

ADDITIONAL VERIFICATION Signed:
(Signature of authorized official)
Place:
Date:

ADDITIONAL VERIFICATION Signed:
(Signature of authorized official)
Place:
Date:

*This part of the certificate shall be adopted by the Administration to indicate whether it has established additional verifications as provided for in section 19.1.1.4

Appendix 3.7: Full-term International Ship Security Certificate (cont.)

Certificate No. _____

Additional verification in accordance with section A/19.3.7.2 of the ISPS Code

THIS IS TO CERTIFY that at an additional verification required by section 19.3.7.2 of part A of the ISPS Code the ship was found to comply with the relevant provision of Chapter XI-2 of the Convention and part A of the ISPS Code.

Signed:

Place:

Date:

Endorsement to extend the certificate if valid for less than 5 years where section A/19.3.3 of the ISPS Code

The ship complies with the relevant provisions of part A of the ISPS Code, and the Certificate shall, in accordance with section 19.3.3 of part A of the ISPS Code, be accepted as valid until

Signed:.....

Place:

Date:

Endorsement where the renewal verification has been completed and Section A/19.3.4 of the ISPS Code applies

The ship complies with the relevant provisions of part A of the ISPS Code, and the Certificate shall, in accordance with section 19.3.4 of part A of the ISPS Code, be accepted as valid until

Signed:.....

Place:

Date:

Endorsement to extend the validity of the certificate until reaching the port of verification where section A/19.3.5 of the ISPS Code applies or for a period of grace where section A/19.3.6 of the ISPS Code applies

This certificate shall, in accordance with section 19.3.5/19.3.6* of part A of the ISPS Code, be accepted as valid until.....

Signed:.....

Place:

Date:

Endorsement for advancement of expiry date where section A/19.3.7.1 of the ISPS Code applies

In accordance with section 19.3.7.1 of part A of the ISPS Code, the new expiry date † is.....

Signed:.....

Place:

Date:

* Delete as appropriate

† In case of completion of this part of the Certificate, the expiry date shown on the front of the certificate shall also be amended accordingly.

Appendix 3.8: Declaration of Maritime Labour Compliance – Part II

Declaration of Maritime Labour Compliance – Part II

Measures adopted to ensure ongoing compliance between inspections

The following measures have been drawn up by the shipowner, named in the Maritime Labour Certificate to which this Declaration is attached, to ensure ongoing compliance between inspections:

(State below the measures drawn up to ensure compliance with each of the items in Part I)

- 1. Minimum age (Regulation 1.1)
.....
- 2. Medical certification (Regulation 1.2)
.....
- 3. Qualifications of seafarers (Regulation 1.3)
.....
- 4. Seafarers' employment agreements (Regulation 1.4)
.....
- 5. Use of an agency or certificate of registration for recruitment and placement services (Regulation 1.5)
.....
- 6. Hours of work or rest (Regulation 2.3)
.....
- 7. Manning levels for the ship (Regulation 2.7)
.....
- 8. Accommodation (Regulation 3.1)
.....
- 9. On-board recreational facilities (Regulation 3.1)
.....
- 10. Food and catering (Regulation 3.2)
.....

DRAFT

*Appendix 3.8: Declaration of Maritime Labour Compliance – Part II
(cont.)*

- 11. Health and safety and accident prevention (Regulation 4.3)
.....
- 12. On-board medical care (Regulation 4.1)
.....
- 13. On-board complaint procedures (Regulation 5.1.5)
.....
- 14. Payment of wages (Regulation 2.2)
.....

DRAFT

Appendix 3.8: Declaration of Maritime Labour Compliance – Part II (cont.)

I hereby certify that the above measures have been drawn up to ensure ongoing compliance, between inspections, with the requirements listed in Part I.

Name of shipowner:¹

Company address:

Name of the authorized signatory:

Title:

Signature of the authorized signatory:

Date:

(Stamp or seal of the

The above measures have been reviewed by the *Chief of the Deputy Commissioner, Liberia Maritime Authority, Republic of Liberia* and, following inspection of the ship, have been determined as meeting the purposes set out under Standard A5.1.3 paragraph 10(b), regarding measures to ensure initial and ongoing compliance with the requirements set out in Part I of this Declaration.

DRAFT

Name:

Address:

Signature:

Place:

Date:

(Seal or stamp of the authority, as appropriate)

¹ *Shipowner* means the owner of the ship or another organization or person, such as the manager, agent or bareboat charterer, who has assumed the responsibility for the operation of the ship from the owner and who, on assuming such responsibility, has agreed to take over the duties and responsibilities imposed on shipowners in accordance with this Convention, regardless of whether any other organizations or persons fulfil certain of the duties or responsibilities on behalf of the shipowner. See Article II(1)(j) of the Convention.



4 WHAT IS REQUIRED OF A SHIP MANAGER? RELATIONSHIPS AND OTHER FACTORS

The requirements set out for a ship manager are normally laid down in the job description and are called responsibilities. But that is only the start of what it takes. Chapter 10 deals with this in depth and should be read and related to this chapter.

No person is an island and can work in a vacuum. This is especially true of shipping. As a ship manager, you are required to be up to date with all legislation affecting the ships for which you are responsible. There are also codes and guidelines that affect the ship and need to be adhered to; these are under constant review.

You have the option to say that the people responsible for reviewing and updating the company's SMS should have made sure that the SMS is up to date and meets all requirements. This sounds good, but in practice if a ship manager relied on being handed materials and had the disposition to accept them without question, it would not take long before something went wrong. This is not to say that the people responsible for reviewing the SMS don't do the best job possible, but mistakes happen, especially clerical errors.

In addition, there is the matter of office politics, which is not necessarily a bad thing. You will need to build relationships with other personnel to make the workload easier to handle. This is not a matter of calling on someone when you need assistance, but more a matter of expanding your understanding of how the organisation works and the many issues affecting it. These may never be written down but, if unknown, will make the job more difficult.

This chapter is about working with people and building relationships. It is also about managing time and making the most of the time available to you. In addition, there must be a work-life balance, which is not easy to achieve in a very demanding industry. Time management is important, but even more important is being able to identify when the workload is too much to cope with. If the managers are supportive of their personnel and understand the variance in workloads then it should not be held against people if they request assistance. However, in some cases this can be considered a sign of weakness and an inability to cope. Still, it is better to request assistance than continue and end up making a major mistake or destroying your own health.

How organisations are structured

To be able to manage effectively, any ship manager must understand the principles behind organisations and the structures that govern their existence. From this understanding, ship managers can then identify their place within the organisation and how they will interact with the other people making up the organisation. It does not matter what the organisation is, how it is made up or which functions it performs; the one constant is the human beings and where they fit into the organisation. Even if the organisation is 'fully automated' there is still a need for human presence to oversee and control the automation.

An organisation is constructed of individuals who are then formed into groups. The groups will be dependent on each other to incorporate their functions, to give the organisation its overall function. As an organisation grows, so will the number of groups needed to ensure that it can fully function.

The structure of an organisation can be shown in an organisational chart (sometimes referred to as a flow chart) or organogram. This shows the pattern of relationships that exist between individual members and groups, as well as that of group to group within the organisation. Its complexity depends on the number of individuals involved and the management structure to control them. By examining the flow chart indications of over-management or under-management may become apparent.

The structure divides the work of the organisation among its members and coordinates their activities to ensure that all are working to a common goal in the most effective and efficient way. This may appear to be so, but in many cases organisations are not as efficient or effective as they believe themselves to be.

Tools of management

The tools for ensuring that the framework created will operate effectively are:

- Identification of activities
- Planning
- Organisation
- Direction
- Control
- Clear definition

This can be further understood and controlled by identifying clearly what effects these will have on the personnel required to perform the work. Sometimes assumptions are made without giving the workforce a clear explanation of what is trying to be achieved. In many cases the expected efficiencies do not materialise because of a breakdown in communications or because the necessary training has not been given consideration by those in control. It is necessary to define the following clearly:

- Tasks
- Responsibilities
- Roles
- Relationships
- Lines of communications

As the structure exists to co-ordinate efforts and improve the organisational performance, the need for a formal structure increases with the size of the organisation. The structure itself should be continuously reviewed to ensure that it remains effective and is in keeping with the internal and external environmental developments of the organisation.

What must never be forgotten is that the organisation and structure is there to assist personnel in becoming better and more efficient at how they perform work and this in turn benefits the organisation. The organisation and structure are not implemented to be self-serving and for personnel to be developed to fit the structure for its own ends.

There are a number of organisational models that can be used as a basis for any organisation. Models that stress a rigid structure are viewed as 'bureaucracies' or 'hierarchies'. An example of such a model is the traditional structure on board a ship.

Hierarchy

The responsibilities within a hierarchical structure must be clearly defined. Hierarchies share the following characteristics:

- 1 The presumption of a clear logic between the organisation's goals and the actions needed to achieve them. A belief in the rational approach.
- 2 A specialised workforce is created by clearly defining responsibilities and duties.
- 3 Centralising the decision-making at the most senior level ensures harmony among the specialists.
- 4 Clear procedures are laid down for the specialists to follow.
- 5 A hierarchy of staff is established to enforce the requirements, resulting in a typical pyramid staffing structure.
- 6 Lines of accountability are clearly drawn between the levels in the structure.
- 7 Accountability is between one holder of office and another, rather than between individuals.
- 8 Vertical, rather than horizontal, communication between specialists in the structure is encouraged.

The ISM Code requires that certain structures must be identified and documented so that the SMS can function effectively. The ISM Code is found in IMO Resolution A.741 (18), as amended by MSC 104 (73), MSC 179 (79), MSC 195 (80) and MSC 273 (85). This document explains the need for an organisation and structure on board ship. The ship manager must remember that this is nothing new, but legislation has made the demand that it be identified and placed in an orderly manner. This is mandatory for all ships and companies affected by the ISM Code (see SOLAS 74, as amended, Chapter IX).

The concept of an organisation based on a hierarchy seems fairly straightforward, and it is probably the type of organisational model that dominates our own concept of an organisation. However, attention must be given to the different elements of organisational activity and how each can influence the actual shape that an organisation can take. These are outlined below:

- **Structure:** This is related to the goals of the organisation and the tasks that must be performed to achieve them. The structure will be influenced by what has to be done and the operational context in which tasks have to be done.

- **Human resources:** The members of the organisation. The way in which personnel are managed and the leadership style(s) of the managers are fundamental to the actual shape and effectiveness of the organisation.
- **Politics:** The diffuse and perhaps competing nature of individual and organisational goals. The way in which individuals pursue their own goals within the organisation can be to the benefit or the detriment of other individuals and the organisation as a whole.
- **Culture:** The assumptions, norms and values deemed to be acceptable and desirable and which give the organisation its distinctive character.

These elements cannot be considered in isolation as each has an influence on the others. Considering the elements above, it becomes apparent that the individuals and groups making up the organisation and the way they are managed and led have a great bearing on the effectiveness of the organisation and the structure that is adopted in practice. These issues are further discussed in the following sections.

The ship manager and the management process

A ship manager may be described as someone who is responsible for and accountable for the work of others or someone who performs the tasks of management whether or not he or she has any power over others. The fundamental role of the ship manager is, in the first instance, to anticipate and avoid problems and then to solve any problems that may still arise. Someone who manages does not need to have the word 'manager' included in their job title, and managers are to be found at all levels of an organisation and in all the groups identified in the flow chart.

The process of management is not a separate function within the organisation, but relates to all the activities of the organisation. There may be many departments within an organisation (technical, operational, chartering and human resources, for example) and all of them will have management functions and their own internal management structure. The ultimate purpose of management is to achieve the objectives of the organisation.

Ship managers should be aware of their immediate contacts in the organisation. It is also important to have a basic knowledge of what these other people do so that it is possible to have a better understanding of what they can or cannot do to assist you.

Activities and principles of management

Management is a complex subject and there are many theories on its exact definition, activities and principles. These have common central themes, but depending on the author the application can vary. Certain well-known theorists are followed because of their recorded success rate, but that does not mean their principles will be best for any organisation. The theorist Henri Fayol divides management activity into five basic elements:

- **Planning:** Examining the future and forecasting developments, deciding what has to be achieved and formulating a plan to achieve it. This is also known as setting objectives or targets.
- **Organisation:** The provision of the resources (human and material) and infrastructure that will enable the organisation to pursue its objectives.

WHAT IS REQUIRED OF A SHIP MANAGER?

- **Command:** Maintaining an optimum return from personnel in the interests of the organisation as a whole. May also be termed motivation.
- **Co-ordination:** Pulling together the various activities of the organisation to ensure the maximum return for effort expended.
- **Control:** Ensuring that all activities are carried out in accordance with company policy, strategic plans and recognised guidelines (possibly statutory).

A number of further management principles have been suggested by other theorists. The list below is neither definitive nor exhaustive:

- **Division of work:** Specialising to increase the return from a given amount of effort. However, there are limits to the amount of specialisation and division of labour that is effective.
- **Authority and responsibility:** With authority comes responsibility. Exercising one's authority is essential to control and direct actions, but the abuse of authority demonstrates a lack of personal responsibility on behalf of the manager.
- **Discipline:** The policies declared by an organisation, and the agreements made between it and its members, are essential to its efficiency. Any flouting of these policies and agreements must be dealt with by appropriate and fair disciplinary procedures. To neglect to do so would be to undermine the structure of the organisation and to devalue the policies and agreements made.
- **Unity of command:** If an individual receives orders from more than one superior then the authority of those superiors is in danger of being undermined and devalued.
- **Unity of direction:** Where a group of activities are required to achieve a single objective, there must be a purpose in the shape of a single authority and a single plan.
- **Subordination of individual interest to general interest:** The overall needs and well-being of the organisation outweigh those of the individual or group within it.
- **Remuneration of personnel:** The level and structure of pay should be such that it encourages good performance, provides an incentive to progress and adequately rewards effort. It must also be such that it does not lead to complacency and inefficiency or financially restrict the organisation.
- **Centralisation:** The degree of centralisation will be related to the size and diversity of the organisation.
- **Scalar chain:** An organisation must have a structure that includes a recognised chain of command. This command structure must be flexible enough to accommodate the requirement for urgent action and some measure of initiative.
- **Order:** Social order is the structure of personnel within the organisation. Maintaining social order requires good organisational and interpersonal skills and good recruitment. Material order is the control of 'things' (e.g. deck spares and paint). Maintaining good order of materials involves good housekeeping and record keeping.
- **Equity:** Fairness or impartiality, qualities that should be aspired to by all managers when dealing with other members of the organisation.
- **Stability of tenure personnel:** A high turnover of personnel is generally not conducive to good performance. Personnel changes are inevitable and can be beneficial, but stability should not be compromised.

- **Initiative:** Represents a major source of strength for an organisation. It must be encouraged but also managed effectively to retain discipline and the structure of authority.
- **Esprit de corps:** The morale and spirit within the organisation. A feeling of unity and harmony can improve effectiveness within the organisation.

The above 14 principles of management were originally developed by Fayol and have been adapted over the years to fit various business models, although the original concepts still hold good today.

Strategic and operational management

There are two basic types of manager or management levels: strategic and operational. Strategic managers are concerned with the design, rather than the implementation, of the strategy or long-term plan, setting objectives that position the organisation as a whole so it may operate more efficiently and effectively. Operational managers must implement the chosen strategy in relation to their particular operational or functional area, dealing with everyday problems that arise in the management of functions or personnel.

Planning

Planning is carried out to ensure that everyone involved in an operation is aware of what is going to happen and what is required of them during the operation. This ensures that sufficient resources are available and that there are contingencies in the case of unforeseen occurrences. Planning should include the following activities:

- Setting objectives
- Collecting and collating information
- Identifying risks and hazards
- Preparing contingencies
- Establishing communications
- Identifying resources required
- Managing time

The traditional approach to planning is to use a very structured or linear approach, where lists are drawn up, perhaps under the headings listed above. This approach is said to be very 'left brain dominated', i.e. it uses the part of the brain that governs language, sequential thinking and analysis, all of which are essential to effective planning. However, this approach also means that the assets located in the right side of the brain, such as the ability for simultaneous thinking or 'seeing the big picture', are not being used. To bring this ability into play, a technique called mind mapping may be employed.

To create a mind map, the main concerns or aspects of an operation or activity are placed around the central theme and then links are formed to the next level of concerns associated with each of the main concerns. The advantages of mind mapping are that it provides a good, quick reference and record of discussion, it allows a wider aspect of the operation to be appreciated and the mind map can be easily expanded in case of developments.

This holistic approach to planning moves towards the concept that people, and life in general, are not rational and mechanistic. A more adaptable approach is better suited to what might transpire in the actual event.

Management control

Control is concerned with gauging the measure of success in achieving the objectives of an organisation. The manager needs to understand the nature of control and how best to implement control systems in order to improve performance. There are five essential elements in a management control system:

- **Planning:** As discussed in the previous section, planning involves the clarification of the objectives. Planning provides the framework against which the process of control can take place.
- **Establishing standards of performance:** Standards of performance have to be identified in order to measure the level of 'goal achievement'. Unless the objectives are clearly stated by planning and standards of performance identified, there can be no effective control.
- **Monitoring actual performance:** Monitoring actual performance requires accurate and relevant information to be available at such time intervals and in such a form that will enable management to identify any deviations from planned performance.
- **Comparing actual achievement with the planned target:** To make a comparison between the planned targets and the actual achievement, the information noted above must be processed to provide progress indicators and to identify deviations from the plan and their probable causes. This information must then be related back to those concerned. Providing feedback is a vital part of the management process.
- **Rectifying and taking corrective action:** If objectives are not met or other non-conformances occur, corrective actions must be implemented. The implementation of a corrective action programme begins with the detection of a problem and the immediate actions taken to restore or mitigate the consequences of the problem. Longer-term actions are to determine the root cause and put in place measures to prevent recurrence.

The ship manager and management principles

Ship managers have so much going on in doing their work and discharging their responsibilities that in many cases they are unaware that they are already employing the above management principles in their daily work. As they develop their skills it becomes apparent that these principles fit into the overall strategy. If ship managers can find the time they will be able to explore what management styles are best for them and best fit into their company structure and operational practices. It is not always easy to devise a plan of work and intended progression, but this has to be explored to give ship managers the opportunity to grow as individuals and enable them to expand their skill base.

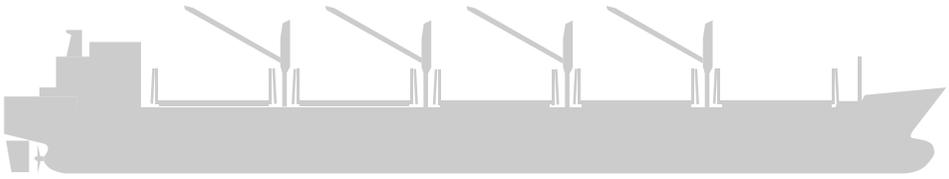
Management is always evolving and, for many companies, there have been problems when they have taken on board new concepts that do not really fit into the corporate

function. This is something that is learned; a company cannot stay static or it becomes obsolete and will have problems in maintaining its position within the marketplace.

A company is only as good as its workforce and the workforce needs to be assured of the company's commitment to moving forward and introducing new concepts and ideas into the workplace. Sometimes this can go wrong if the workforce has not been prepared and the changes explained. This can result in difficulties in operating at maximum efficiency, which has a knock-on effect of a short reduction in achieving projected targets and budgets. The ship manager needs to be adaptable but also needs to be supported to ensure that new systems put into use are effective.

Self-assessment

- Find a copy of the company's organisational chart and identify where your job title is placed.
- Make a list of people with their job titles and then identify them on the organisational chart.
- Now trace the lines of communication between you and them. From this identify if there is a direct link or if there are other job titles between you and the people you've identified. This exercise shows that the organisational chart does not always follow actual operational practices.



5 ISM CODE

A very basic question arises from the relationship between the ISM Code and the ISPS Code: which is more important – safety or security? In modern shipping, both safety and security are needed. You could have a secure ship that is not safe, which in turn could lead to the ship being lost, no matter how secure it is. But if the ship is not secure, it can be lost to acts of piracy and other related matters.

The following sub-section of the ISM Code (Part A, section 1.2.3) can be used to justify the above position: 'The safety management system should ensure:

- .1** compliance with mandatory rules and regulations; and
- .2** that applicable codes, guidelines and standards recommended by the Organization, Administrations, classification societies and maritime industry organizations are taken into account.'

Section 1.2.3.1 means all rules and regulations relevant to any ship type. The ISPS Code (see chapter 6) is covered under this heading. For clarification, the Organization is the IMO, Administrations are the flag states signatory to the IMO conventions, classification societies are the members of the International Association of Classification Societies (IACS) and maritime industry organizations include such organisations as the International Chamber of Shipping (ICS), International Marine Pilots Association (IMPA), International Federation of Ship Masters' Associations (IFSMA), Intermanager and Intercargo. Port state control (see chapter 7) can be said to be the final line of defence in matters relating to the above.

There is a need for the ship manager to understand the relationship between these standards and the way they are applied. There is a relationship between the different standards and a need to cope with the issued certificates; a full set of certificates has to be retained at all times (see chapter 3).

Port state control (PSC) inspections have a mechanism that will increase their severity; which parameters cause this needs to be understood by those dealing with the results. Understanding this and giving the necessary support and direction to the ships under your care will improve results. Certain items cannot be changed, but others can be reduced so that the ship is viewed more positively.

It is important for ship managers to understand each of these mechanisms and how they affect the day-to-day operation of the ship or ships under their control. A lot of guidance can be found in the company's SMS, but it cannot cover every possible event or permutation of events. When something unusual occurs it is important for ship managers

to know the limit of their responsibility and authority and pass the problem on to other personnel more qualified to deal with the situation.

The ISM Code is nothing new and, in fact, it has now been about in the shipping industry since the early 1990s. That is when it became available to the shipping industry and its mandatory application commenced on 1 July, 1998. The latest edition of the ISM Code is the one contained in the ISM Code 2010 edition (ISBN 978-92-801-5151-0), which is identified by IMO Resolution A.741 (18), as amended by MSC 104 (73), MSC 179 (79), MSC 195 (80) and MSC 273 (85). The latest amendments contained in MSC 273 (85) entered into force on 1 July, 2010. The full text of this can be found in IMO Resolution A.1022 (26). All previous resolutions are revoked.

This shows how the ISM Code has been amended over the years and adapted to keep in step with the demands of the shipping industry. This continuous updating reflects the evolution of the ISM Code to meet the ever-changing demands of the shipping industry and stay in line with current legislation.

Relationship with SOLAS 74, Chapter IX

When dealing with the ISM Code, the contents of SOLAS 74, as amended, need to be read. The ship manager needs to be aware that there are some differences between SOLAS Chapter IX in the consolidated 2009 edition and the version found in the ISM Code's 2010 edition. SOLAS Chapter IX makes mandatory the ISM Code.

The contents and restrictions placed by the SOLAS Convention must never be forgotten. It must always be remembered that the contents written are the minimum requirements necessary to achieve accreditation and application. If your company or a flag state that you use sets a higher level of application then that is its choice. Your company's choice is voluntary, a flag state's is mandatory.

Relevant SOLAS excerpts

Article II

Application

The present Convention shall apply to ships entitled to fly the flag of States of Governments of which are Contracting Governments.

Chapter I – General provisions

Part A – Application, definitions, etc.

Regulation 1 – Application

- a** Unless expressly provided otherwise, the present regulations apply only to ships engaged on international voyages
- b** The classes of ships to which each chapter applies are more precisely defined, and the extent of the application is shown, in each chapter

Chapter IX – Management for the safe operation of ships**Regulation 2 – Application**

- 1** This chapter applies to ships, regardless of the date of construction, as follows:
 - .1** passenger ships including passenger high-speed, not later than 1 July 1998;
 - .2** oil tankers, chemical tankers, gas carriers, bulk carriers and cargo high-speed craft of 500 gross tonnage and upwards, not later than 1 July 1998; and
 - .3** other cargo ships and mobile offshore drilling units of 500 gross tonnage and upwards, not later than 1 July 2002.
- 2** This chapter does not apply to government-operated ships used for non-commercial means.

Relevant ISM Code excerpts**Part A – Implementation****Regulation 1 – General**

1.3 – Application

The requirements of this Code may be applied to all ships.

The above various pieces of legislation give the outline of what has to be applied and how it affects shipping companies and their ships.

- 1** If the flag state is not a signatory to SOLAS then the ISM Code does not need to be applied. This holds good only when the vessel remains in the national waters of the flag State.
- 2** Ships of less than convention size as stated above in SOLAS, IX Reg. 2 are not required to comply with the ISM Code.
- 3** Ships that are not engaged in international voyages do not need to comply with the ISM Code.
- 4** SOLAS – Chapter I Part A – Regulation 3 Exceptions
 - a) The present regulations, unless expressly provided otherwise, do not apply to:
 - i) Ships of war and troopships
 - ii) Cargo ships of less than 500 gross tonnage
 - iii) Ships not propelled by mechanical means
 - iv) Wooden ships of primitive build
 - v) Pleasure yachts not engaged in trade
 - vi) Fishing vessels

It is possible that by further inspection other ship types and operations could be identified and, of course, there can be special exemptions to the requirements that can be agreed by the ship manager and the flag state on behalf of the owner.

SOLAS IX contents, compared with the ISM Code

SOLAS IX

- Regulation 1: Definitions
- Regulation 2: Application
- Regulation 3: Safety management requirements
- Regulation 4: Certification
- Regulation 5: Maintenance of conditions
- Regulation 6: Verification and control

ISM Code

- Preamble
- Part A – Implementation
 - 1** General
 - 1.1 Definitions
 - 1.2 Objectives
 - 1.3 Application
 - 1.4 Functional requirements for a safety management system
 - 2 Safety and environmental protection policy
 - 3 Company responsibilities and authority
 - 4 Designated person(s)
 - 5 Master’s responsibility and authority
 - 6 Resources and personnel
 - 7 Shipboard operations
 - 8 Emergency preparedness
 - 9 Reports and analysis of non-conformities, accidents and hazardous occurrences
 - 10 Maintenance of the ship and equipment
 - 11 Documentation
 - 12 Company verification, review and evaluation
- Part B – Certification and verification
 - 13 Certification and periodical verification
 - 14 Interim certification
 - 15 Verification
 - 16 Forms of certificates
- Appendix – Forms of the
 - Document of Compliance
 - Safety Management Certificate
 - Interim Document of Compliance
 - Interim Safety Management Certificate

In addition, the ship manager should take note of the contents of the following publications, all of which can be found in the ISM Code's 2010 edition:

- Guidelines on Implementation of the International Safety Management (ISM) Code by Administrations (Resolution A.1022 (26));
- Guidelines for the Operational Implementation of the International Safety Management (ISM) Code by Companies (Annex to MSC – MEPC 7/Circ. 5);
- Guidance on the Qualifications, Training and Experience Necessary for Undertaking the Role of the Designated Person Under the Provisions of the International Safety Management (ISM) Code (Annex to MSC – MEPC 7/Circ. 6);
- Guidance on Near-Miss Reporting (Annex to MSC – MEPC 7/Circ. 7).

The ship manager needs to work in two stages:

- 1** Have an in-depth knowledge of the contents of the above publications.
- 2** Have an in-depth knowledge of how they have been applied in the construction and usage of the company's SMS.

This will involve researching the complete SMS and identifying the specific needs of the ISM Code to do with the job description and where other parts fit with other members of the office staff, as well as those on board. There is no one particular SMS that is used by all companies. The ISM Code is the framework that the company builds its particular practices on. If there was one particular SMS that was the best and met each and every section and sub-section and resulted in zero non-conformity at every audit, then every company would be using it.

The requirement for this unique structure of the SMS is found in the ISM Code at A/11.3: 'The documents used to describe and implement the safety management system may be referred to as the Safety Management Manual. Documentation should be kept in a form that the Company considers most effective. Each ship should carry on board all documentation relevant to that ship.'

This supports the concept of the SMS being uniquely written to reflect the way the company operates and complies with the ISM Code. It is important to work with the company's SMS. The variance in size of the SMS between companies can be considerable. What should be remembered is the fact that there is no right or wrong answer in the construction of an SMS, only that it is found suitable to be awarded the relevant certification after completion of the appropriate audit.

Self-assessment

- Review the company's SMS in respect of the responsibilities and authority of the ship manager.
- Choose one of the responsibilities and trace where it can be found in the SMS. (Be aware that it may appear in more than one of the volumes of the SMS.)

Effect of the ISM Code on the maritime industry

History

The ISM Code is nothing new to the shipping industry. Before its inception, the ISM Code was progressing through the IMO at a slow pace. The *Herald of Free Enterprise* capsized, followed by the *Estonia* incident in 1994, resulted in the EU making the decision to implement the ISM Code for passenger ro-ros from 1 July, 1996. This was two years ahead of the global implementation for phase I ships, on 1 July, 1998.

The driving force behind this was the large loss of life in both incidents and the expression that the fundamental design of large passenger ro-ros was flawed. This meant that any passenger ro-ro trading to any member country at that time had to have full certification of both ship and office. The result was chaos and in the Adriatic many ro-ros were detained or expelled from Italy.

By the time of the global implementation of phase I on 1 July, 1998, the backlog of companies and ships that left it to the last minute was incredible. This continued to 1 July, 2002 when phase II ships became mandatory.

Companies had a form of SMS in place way back in the 1960s and 1970s. These were known as the company procedures or company instructions. By the late 1970s there was a major shift in the shipping industry and shipowners were not operating their ships but passing them out to ship management companies, which were often based in countries new to the shipping world. At the same time, the rise of flags of convenience came to the forefront as a method of saving money.

These changes altered how the shipping industry was viewed. Supported by an increase in ship losses and a large increase in loss of life, the perception of the shipping industry as a 'quality' industry with good long-term benefits changed to that of a hazardous industry. By 1990 the results had become so bad that the insurance company Lloyd's of London took in US\$2bn in premiums and paid out US\$4bn in claims.

Shipping companies had already started on their own forms of a structured management system, which involved using the ISO9000 series of quality management systems. This evolved to the classification society Det Norske Veritas's (DNV) safety and environmental protection (SEP) system, which was based on the ISO9001 concept.

The IMO was working away and progressing slowly, but pressures from various bodies within the industry ensured that a structure was put in place. The result was the ISM Code.

At the same time as the ISM Code was progressing to mandatory application there was the International Ship Managers' Association (ISMA) standard, but this failed, not because it was bad, but because it did not have the support of the IMO and legislation to support it. Companies could have ISMA certification and ISM Code certification, but the cost would nearly double.

Post 1 July, 1998

The evolution of the ISM Code will result in companies having to amend their SMS to meet the changes introduced by the code. But this is nothing new to companies because the SMS is under constant change to meet the requirements of any changes in legislation which affect their ships. The ship manager should be guided by the contents of the ISM Code Part A/1.2.3.1 and 1.2.3.2 (see page 11).

In addition, every person who works with the SMS is required to be able to understand and interpret the legislation contained in the SMS. For example, Regulation A/6 of the ISM Code requires that the company identify the level of competence that a person needs to discharge the duties that a particular job description requires:

‘6.4 The Company shall ensure that all personnel involved in the Company’s safety management system have an adequate understanding of relevant rules, regulations, codes and guidelines.’

This does not mean that a person has to learn legislation and be able to recite it. The central theme must be in knowing which piece of legislation applies where and then knowing where to find it and how to apply the contents.

Many companies have SMS that are too large and still growing. This growth happens in response to new or amended legislation in the shipping industry or as a result of accidents, incidents and hazardous occurrences. It also includes near-miss reporting and reports from third-party inspections, audits and surveys.

There is a move at present to make near-miss reporting compulsory and to require that a copy of every near-miss report is sent to the flag state. This is under the control of the Marine Accident Investigation Branch (MAIB) in the UK. Many other flag states may take up this option in the future, which will place another large administrative burden on the ship and office.

Trying to control the size of the SMS and at the same time meet the demands of the maritime industry is not an easy task. Some organisations look back at where they were and where they want to be. What stops them from taking major steps is the fact that they could endanger the ISM Code certification. If the Safety Management Certificate is lost a ship stops trading. But if a Document of Compliance is lost, then all ships linked to that DOC could have their Safety Management Certificates withdrawn. No company can take the risk.

Therefore, a continuous process of small steps is required to keep up to date. This is not cheap and needs personnel fully conversant with the SMS so that they can make the necessary changes without endangering certification.

Self-assessment

- What training and experience do you have in using legislation?
- How does the company identify legislation in its SMS?
- Take one SMS volume and check the revision log to identify changes and the history of the volume.

The organisation’s safety management system

Every company will have constructed its SMS to meet the requirements of the ISM Code. The SMS will be unique to the company and should reflect the way it does business. Companies are not allowed to choose which sections or sub-sections of the ISM Code fit their profile. They must be able to provide objective evidence of how they meet each and every section and sub-section of the ISM Code. It is not optional.

An SMS can be in hard copy or in electronic format. In many cases, the SMS is a hybrid, where certain parts are electronic and others are hard copy. It makes no difference. To

obtain certification, a company must be able to show how its SMS meets the complete ISM Code.

Auditing will determine whether the SMS meets the requirements or not. Certification and continued certification will be awarded against compliance to the standard. The reporting from the auditors will be in the negative. That is to say they will report what they have found that is wrong/not meeting minimum requirements and needs to be rectified. It is not in their remit to tell you how good or bad your SMS is. It either meets the standard and passes and is awarded certification or continued certification, or it fails and needs work to meet the required minimum standard.

Structure

There is no descriptor identifying how to build an SMS. The only concern is how you go about it and that in the end there is an SMS that complies with all of the ISM Code. The vast majority of shipping companies have mature SMSs in place and are working on maintaining these systems and adapting them in response to new legislation.

The problem with these old systems is that they are not efficient or effective. This is not a criticism of those who had to do their normal duties and in addition create a new concept, namely an SMS. This was done with the best of intentions and a lot of hard work went into creating these systems. At that time there were no standards that could easily be compared with the ISM Code. The ISO9001 quality management systems came closest but did not quite fit. There were discrepancies and some sections of ISO9001 did not readily appear in the ISM Code. The classification society DNV had created its safety and environmental protection (SEP) system, which was closer but not quite in line with the ISM Code.

Many companies took the situation on board and decided to build their own system to meet the requirements and, starting at the first section of the ISM Code, built the system to meet that section and then moved on to the next, until they came to the end. It was an incredible journey and a lot of hard work. The people involved did not have the support they needed and in some cases met opposition to what they were trying to achieve. In some parts of the maritime industry there were groups who thought that the ISM Code would never be implemented and would fade away. They could not have been more wrong.

If the above process was used to build the SMS there would be a lot of duplication and even triplication of work. This produced another problem: which part of the SMS had precedence over other sections of the SMS? It also introduced a need to cross-reference the contents of the SMS to ensure that every section was being met and that there was no conflict.

One important factor was the readability of the finished product. The SMS had to be read and understood by all personnel involved in matters of safety and pollution prevention. This meant all of the ship's staff and the vast majority of those working in the shore offices.

The following section aims to give ship managers some guidance on how to approach the need for detail if they were tasked with developing an SMS.

Use of quality assurance

The design, development and implementation of a documented SMS require controls to be put in place from the start. The company has the option of using the tools and methodologies of quality assurance or constructing their own system to their own specification. If quality assurance is not used, the potential for the system to be created with certain flaws is increased.

Where certain problems lie for the shipping industry is in resolving quality and safety. Depending on who is speaking, safety is seen as a sub-set of quality, quality is equated with safety or the solution is seen to be in a position somewhere in between the two standards. It is worth bearing in mind that:

- Quality lies in the ISO9000 series or equivalent.
- Safety in shipping is now linked to the ISM Code.
- The ISM Code is mandatory through SOLAS 74 Chapter IX, whereas quality is voluntary and may be something that the company takes on board to enhance its position in the industry.

Before the ISM Code was implemented, many companies had already started on implementing quality systems into their company and seeking accreditation. From this, quality had become a core element in the company's management system. Therefore, to replace it with the ISM Code would have caused a major revision of the company's system.

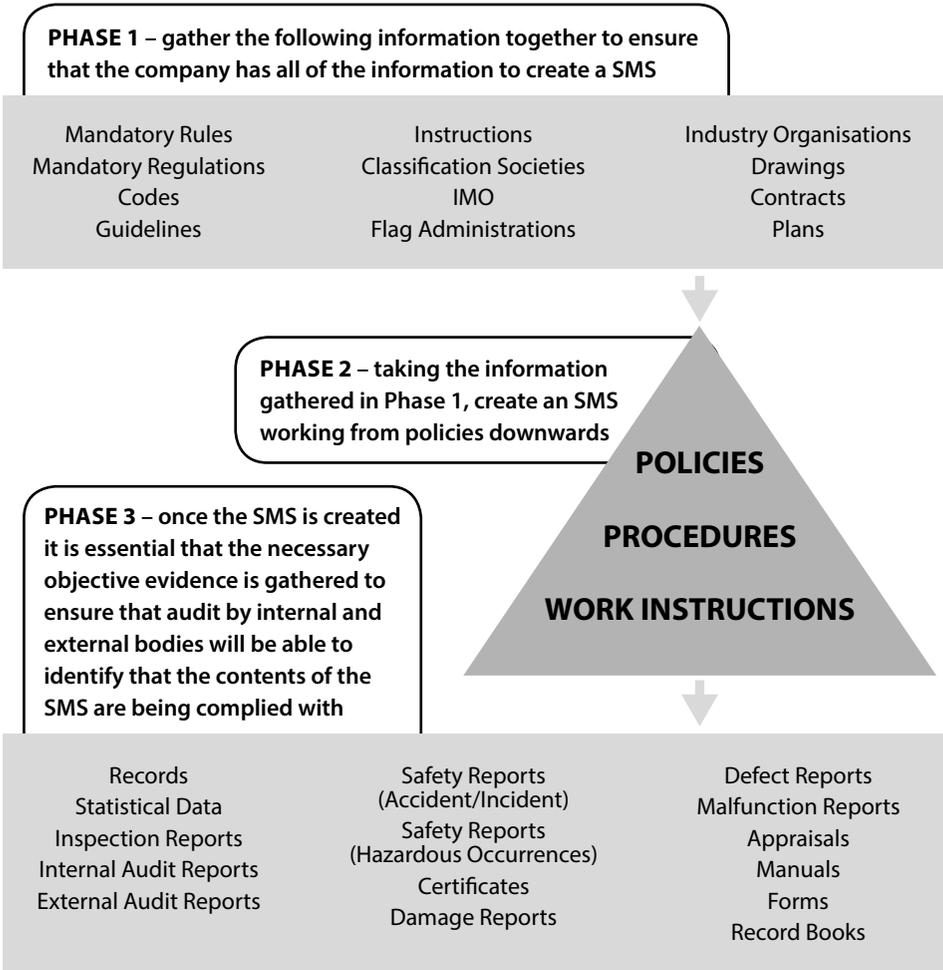
Initially, companies were dealing with ISO9001. The changes brought about by ISO9000:2008 have resulted in companies reviewing whether to continue with quality systems certification or not. Perhaps the best option for a shipping company is to use quality assurance/management for its guidance document but not progress to certification.

Problems arise once certification is gained and continued because costs rise and there are difficulties in maintaining certification through the audit regime for the two standards. The audit cycle for quality does not fit readily to the audit cycle for the ISM Code. Another problem is that ISO9000 certification is issued by an accreditation body, whereas ISM certification is issued by or on behalf of flag administrations.

How useful can quality be to a company when implementing the ISM Code SMS? The answer is very, if used in the right way. If a company has no experience with building a system or of implementing a structured code within the company, then starting without a guidance document to give details and directions can prove to be an extremely difficult task.

The quality document gives a structure, but to obtain the best out of it, the company must look at the quality standard as a whole and marry it up to the requirements of the ISM Code. What will become readily apparent is that there are sections of the quality standard that do not appear in the ISM Code. Therefore, the ISM Code does not require as involved a system as the quality standard – or does it?

Once this review has been conducted, the company has the concept of what is to be achieved and then decides on the path to get there. To follow a path means that the company has to develop a structure for implementing the system throughout the company offices and ships. This sounds simple. In fact, it should be kept simple, but once the company investigates the ISM Code requirements the concept becomes complex because of the diversity of the code's demands.



This diagram is laid out to give basic guidance on the steps from gathering information to be transferred into the style of an SMS to producing the necessary objective evidence

Constructing a safety management system

The concept to be followed should be simple. It demands design, development and implementation. Once these three have been completed within the company the SMS should be ready for audit to verify that the system meets the requirements to achieve certification.

Design

Before a system can be designed, a person or team should be appointed to the project. The make-up of the team will change depending on the stage reached and the requirements needed.

With the team now in place, a design is needed. Since the company is established, it should not be a matter of going back to the drawing board. The company already has a form of management system in place. Therefore, the team needs to review the current status, and from this revision the design of the SMS can be made.

The team needs to resolve the following issues:

- Where do parts of the current management system meet the requirements of the ISM Code?
- What parts of the current management system need to be revised and amended to meet the requirements of the code?
- What parts of the current management system do not need to be continued?
- What parts need to be constructed to meet the requirements of the ISM Code?

Factors that need to be addressed in the design of the SMS are:

- Number of shore offices
- Location of each shore office
- Number of personnel per office
- Nationalities of persons working in each office
- Number of ships
- Types of ships
- Flag state of ships
- Nationality of crews for each ship

When the above factors are answered, along with the review of the current system in place, then the design can be decided upon.

Other factors that need to be addressed are:

- Document control method
- Structure of the support mechanism (forms, reports, inspections, records)
- Number of volumes and contents per volume
- Education of personnel
- Training of personnel
- Critical path structure

The above allows the details of how the SMS will be built and the time frame for completion. Control is very important to ensure that all the various parts identified on the critical path are met within the time frame allocated. If this is not followed the implementation of the SMS will be delayed and the hold-up on one particular item can have a knock-on effect on other parts of the system.

Two important points must be remembered at the design stage:

- Keep it simple
- Make it flexible

The point of simplicity is that the SMS must be written in a manner that all staff involved in its use can understand it.

Flexibility is very important as companies and their structures are under review at all times and the make-up of the company changes. Therefore if the structure of the SMS is rigid, any revision and amendments will cause a major revision of the SMS as a knock-on effect.

The larger the system, the more prone it is to become static rather than dynamic and the problems arising from any amendment increase.

Development

Once the design of the system has been established and the form which the SMS is to take has been agreed, the development of the SMS can begin. At this stage it is important to ensure that the right people are in place and are committed to the project. Company personnel can be called in to assist the team with their particular expertise in certain fields. This will be an ongoing and constantly changing arrangement.

The rules and concepts developed at the design stage have to be translated into the product being constructed by the team. It may be found that certain design concepts do not translate into the practical development of the SMS, in which case a review is needed to amend the design. What needs to be consulted is if there will be any disruption of the critical path set; if there is, it will need to be amended. Disruption should be kept to the minimum possible.

As the ideas of the design stage become a reality it is the responsibility of the team to ensure that the future users of the SMS are testing it. This is important as their feedback will indicate where amendments have to be made.

The worst scenario is when a team completes the SMS and then puts it out to be used. During the development stage there has been no feedback and therefore the potential problems that can arise have not been resolved. The result will be a plethora of revisions and this in turn will slow down the implementation of the SMS.

With the development of the SMS reaching its final stages, the implementation should begin. There is no point in waiting until the SMS is complete. If the implementation is delayed until the SMS is complete the time frame for the project will be increased. This is not to the benefit of the company.

Implementation

The implementation programme of the system should be realistic. One of the fundamental and recurring flaws is the time frame for the implementation. There has to be dialogue with those who have to work with the system in order to have their input as to their understanding of how the system will work. Furthermore, the company offices and ships are workplaces, and the implementation of the SMS has to be integrated with the current workload.

Delays are inevitable. If these have not been factored into the implementation then the control and critical path will be lost and the result will be a large increase in the time and cost to bring the company to certification. The other extreme also has to be avoided. That is when the implementation is taking far too long. This creates the same problems as if the time frame is too short and the momentum of the project is lost.

The implementation takes time and needs to be phased correctly. If the whole of the SMS is dumped on an office or a ship then the process of understanding the SMS can be damaged. People need education and training in a system before it becomes acceptable. They need to be shown what the benefits of a system will be to them and the way they work. If it is forced on to them there will always be resentment, and this will filter through in the way the system works at a particular site. This resentment stops the SMS from realising its full potential and an important opportunity for the company will be lost.

Throughout this process from design and development to implementation there must be one repeated question that the team must ask to keep control and perspective: what are we trying to achieve?

The above gives a sense of what is needed to construct an SMS and bring it to certification. Once certified, the SMS has completed its first cycle. Many believed that once certified they could sit back and let the system run itself. Regrettably that has not turned out to be true and, in many cases, it has proved more difficult to maintain certification than to achieve it for the first time.

This comes from problems in the initial stages of the SMS design. If an SMS is built and hard-wired to meet the standard required it will not have the flexibility to evolve. This will have been brought about by the structure used. The result is that each and every revision or amendment of the SMS will cause a major amount of work to ensure that it is fitted in throughout the system. Additional checks will have to be made to ensure that nothing has been missed or the result could be that the SMS has sections in opposition to each other.

Problems will also arise when inserting new legislation and requirements to the SMS. The same can occur when removing sections.

Self-assessment

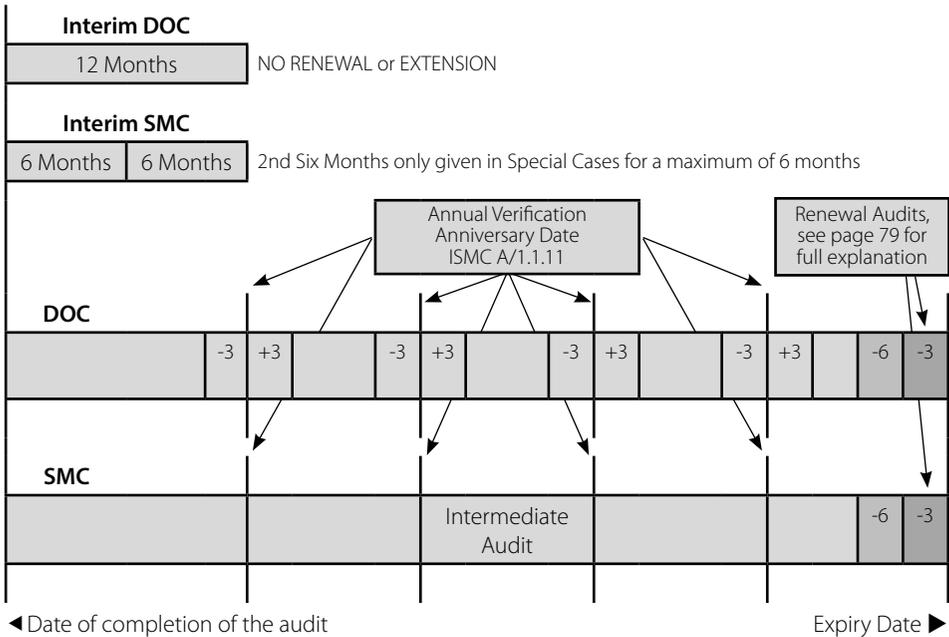
- Inspect the structure of the SMS that your company uses. How user-friendly do you find the contents?
- Is your SMS in an electronic, hard copy or hybrid format?
- Which format do you find most user-friendly?

Audit schedule and compliance

The ISM Code is an audit regime and, as a result, is dependent on auditing, rather than inspection or survey, as the method for ascertaining compliance. What must never be forgotten is that even if an audit does not report any non-conformity, that does not mean they do not exist. All it means is that the sampling taken by the auditor did not find any.

The ISM Code has its own cycle for auditing. It does not match the ISO9000 but is sympathetic with the ISPS Code. It should also be noted that the ISM Code is not part of the Harmonized System of Survey and Certification (HSSC) and never will be.

The following section will assist the ship manager in understanding the auditing cycle for certification.



ISM Code Certification Audits and windows for auditing

Depth, scope and types of audits

Auditing is one of the most misunderstood concepts in the maritime industry. An audit is not an inspection. It is not a survey. The methodology of conducting an audit has its own unique requirements and style of being conducted from beginning to end. The ship manager should understand the concept and practices of systemic internal auditing.

There are three types of audit:

- **Internal:** We audit ourselves.
- **External:** We are audited by an outside party.
- **Verification:** We are audited by a third-party organisation for the purpose of attaining certification.

In some countries the flag administrations have decided that the verification audit for certification will be called an external audit. This leads to some confusion. Companies and their personnel must always ensure that the type of audit and its purpose is clearly understood by all involved. When an audit is being conducted everyone must be made aware of what type of audit is being conducted.

Before anyone can conduct an audit, they need to be trained in the required techniques of auditing so as to be able to complete the task. Many people in the maritime industry have been trained as internal auditors to the ISO9000 series. This is a standard for quality assurance, not for SMS, which is the standard to which the company is being certified. The

reason for this was there used to be no courses for internal auditing of SMS and therefore the closest criteria that could be found were the internal auditors' courses for ISO9000.

- **A/12.1:** 'The company should carry out internal safety audits to verify whether safety and pollution-prevention activities comply with the safety management system.'

The best definition of an audit can be found in ISO9000:2000: 'Systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.'

A maritime definition of inspection can be found in IMO Res. A.1052 (27), section 1.7.5: 'A visit on board a ship to check both the validity of the relevant certificates and other documents, and the overall condition of the ship, its equipment and its crew.' This is the procedure for port state control inspections.

The ISM Code makes reference to internal auditing in the following sections:

- **A/12.3:** 'The audits and possible corrective actions should be carried out in accordance with documented procedures.'
- **A/12.4:** 'Personnel carrying out audits should be independent of the areas being audited unless this is impracticable due to the size and nature of the company.'
- **A/12.5:** 'The results of the audits and reviews should be brought to the attention of all personnel having responsibility in the area involved.'
- **A/12.6:** 'The management personnel responsible for the area involved should take timely corrective action on deficiencies found.'

In addition:

- **A/1.4.6:** 'Procedures for internal audits and management reviews: The company needs to review these requirements and decide how best to meet them.'

What cannot be dismissed is the fact that any person who is to become an internal auditor of the company's SMS needs to be trained. The company will be required to show how the auditors were trained. The decision on what course to take will have a knock-on effect on other sections of the code affected by the internal audit requirement.

The company can:

- Send personnel on recognised courses;
- Develop courses of their own and deliver them internally;
- Have trained personnel from outside of the company conduct the internal audits.

The first option obtains records of staff being trained in the generic style of auditing for SMS. It is not company-specific, but shows that the company has identified the need for training to enable personnel to conduct the required audits. The problem is that it is expensive.

The second option requires time and effort to develop to the right standard. It also requires identifying the people who will have to be trained and then designing, developing and implementing the training courses within the company. If the company has the resources, then this is the best option to follow.

The company is perceived as having a lack of commitment to the SMS when it uses this last option. Moreover, personnel who are not working daily with the company's SMS tend to produce a standard format of audit questions and responses.

The company is required by the ISM Code to produce procedures for internal auditing. To meet this requirement, certain criteria need to be established:

- **Scope:** The scope of the internal audit is to audit the company's SMS, both ashore and on board ship. This is by a sampling process and, where any non-conformities are found, of whatever grade, they are reported and the necessary corrective action is carried out.
- **Depth:** The depth of the internal audit is to check how well the company complies with its SMS. The sampling process used means that although no non-conformities were found in the sample taken that does not mean none exist in the SMS. When non-conformities are found, the auditor has to check how far-ranging and how deep into the SMS the problem goes.
- **Types:** The type of internal audit conducted by the company on itself has to be consistent. The style of auditing may vary between auditors, but the format, method of reporting and the raising of non-conformities must be consistent. To this end, the company is required to ensure that contained in its procedures is the complete set of requirements for internal auditing.

The internal audit can be accomplished by using a number of audits at various times of a predetermined interval to ensure that the complete SMS has been sampled. For the ship, the internal audits may be conducted by the ship's staff or by members of the shore staff. The principals involved carry over on to certification audits, but the standard changes from the company's SMS to the ISM Code.

ISM Code certificates

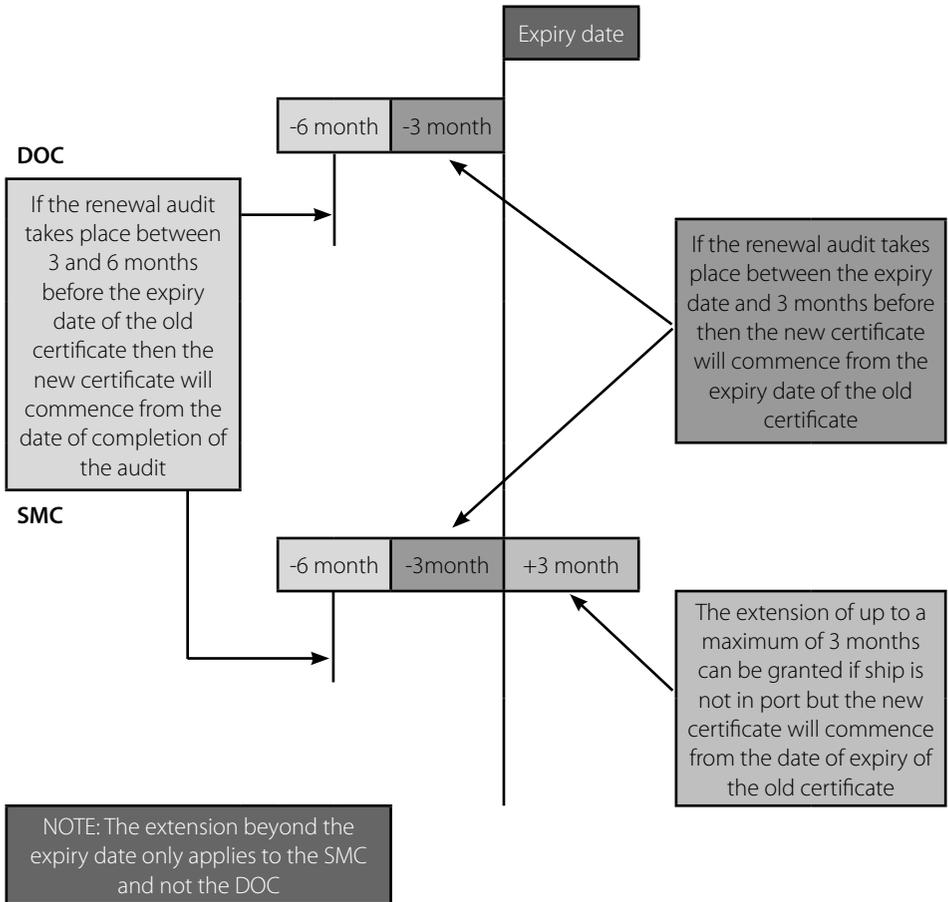
There are four certificates:

- **Interim Document of Compliance (IDOC):** This is a one-off certificate that has a maximum life of 12 months. Not one year, but 12 months. This certificate cannot be extended or re-issued.
- **Interim Safety Management Certificate (ISMC):** This is valid for a maximum of six months. In special cases it can be extended for a maximum of six months from the date of expiry of the original period of validity.
- **Document of Compliance (DOC):** This has a validity of a maximum of five years, subject to it being maintained by endorsement at annual verification.
- **Safety Management Certificate (SMC):** The SMC has a validity of a maximum of five years subject to it being maintained by endorsement at intermediate verification and additional verification (if required). Under special circumstances the date for the renewal audit can be extended past the five year maximum. This is laid down in part B of the code and is shown on the SMC. There must be a valid and relevant DOC in place before any SMC can be audited and a certificate issued.

A model format of these certificates can be seen in the appendices to this chapter. On board a ship there will be a copy of the DOC, which was issued to an office. It is the only certificate carried on board a ship that is not an original.

ISM Code audits for certification

- IMO Res. A.741 (18), as amended by MSC 104 (73), MSC 179 (79), MSC 195 (80) and MSC 273 (85) – The International Safety Management Code (ISM) Code Part B: Certification and verification.



The ISM Code has the above audits conducted for certification and continued certification. Special consideration must be given to full term DOC and SMC renewal audits

To achieve ISM certification the company needs to be audited. This audit can be conducted by the flag administration or administrations with which the company has ships registered or by a recognised organisation – see IMO Res. A.739 (18) and IMO Res. 789 (19). Audit windows will be identified, i.e. the time frame when audits can be conducted.

The company must be aware of the requirements of:

- IMO Res. A.1022 (26) – Guidelines on implementation of the International Safety Management Code (ISM) Code by Administrations;
- Any additional requirements imposed by any particular flag administration under which the ships are registered.

SOLAS Chapter IX gave the dates for mandatory compliance to the ISM Code. It also detailed the ship types and tonnage. Phase I was 1 July, 1998 and Phase II was 1 July, 2002. Therefore, any company now wishing to obtain ISM Code certification will be required to undertake the additional steps of interim certification before achieving full-term certification. An exception may be where a flag administration has mandatory compliance to the ISM Code for companies and ships that were outside the requirements imposed by SOLAS Chapter IX.

After the SMS has been completed, it must operate for a minimum of three months and have the objective evidence to hand to prove its operation before it can be audited. Included in the requirements is that a management review must have taken place: internal audits have taken place also.

The concept that must be shown in the initial verification audit for certification is how the company has met the requirements of each and every section of the code. This includes each sub-section. Objective evidence will be required to show how this has been achieved. The company will be required to achieve a DOC.

If the company has a multi-flagged and multi-typed fleet, then it will have to have made sure that the DOC from each flag administration is correctly issued, showing the ship types operated by the company for each flag. (Note: a blanket DOC cannot be issued. The term blanket means that a DOC is issued to the company by each flag state for all of the ship types that it operates. That means that the DOC will show ship types that under inspection are not registered under that particular flag state.) In addition, the company will have to show how it has met the particular requirements that any flag administration has made in respect of the ISM Code.

A further potential problem with a multi-flagged fleet is who will conduct the audits. Some flag administrations may have decided to conduct the audits with their own staff, while others may have delegated full authority to certain named recognised organisations (ROs). Another option is for flag administrations to delegate audits for some ship types but not for others. Alternatively, the flag administrations can delegate only certain audits to be conducted by ROs, while they retain jurisdiction to conduct the other named audits.

The company can face a further problem when various flag administrations will conduct the audits of the company and the ships under their flag separately. This can mean that the company will experience the initial verification audit at different times. It will be a repeat but will vary depending on the particular requirements that the flag has made.

Before the audit is scheduled, the company should have clarified exactly what it will be doing in respect of audits. This will have been planned well in advance and, if possible, one audit body would be able to conduct an audit covering all permutations and allowing certification to be progressed. Some flag administrations allow ROs to conduct the audits, while they retain the right to issue the certificates upon receipt of the audit report, including the recommendation of the auditor.

The company must obtain the DOC relevant to the ship and place a copy on board before the ship can be audited. This is to authenticate that the company named for the purpose of the ISM Code as being responsible for the vessel is the actual named entity.

In addition, the information contained on the DOC can be seen to be relevant or not to the ship. The format and information that must be inserted on to the DOC and SMC can be found in the latest edition of the ISM Code. Note: it is not possible to hold an SMC without a valid DOC being in place.

With the DOC in place and operating in the office, each ship now requires to be audited. This can only be conducted on board the vessel. Therefore, the audit has to take place on board the vessel while the vessel is in operation. On completion of the audit, the auditor will recommend or decline to recommend certification.

The restrictions and applications mentioned for the DOC also hold good for the SMC. For the SMC it is the original certificate that is to be held on board. Copies or certified copies are not acceptable.

With the certificates in place and the SMS operating, the real work begins. This is keeping the system operational and ensuring that continuous improvement is being made and measured. Where the company can now struggle is in keeping control of the administration that is generated. This is a major problem because the next cycle of audits will immediately ascertain if the administration of the system is working.

The audits are titled 'annual verification' for the office and 'intermediate verification' for the ships. The office audits take place within three months before or after the anniversary date every year. The ship audits take place within the second and third anniversary date. The anniversary date definition, as per ISM Code A/1.1.11, is 'the date and month of each year that corresponds to the date of expiry of the relevant document or certificates'.

The office and ships require a renewal audit. These audits have to take place within three months of the expiry date of the certificate in question. Should the audit take place within this time window, then on completion the new certificate will commence on the date of expiry of the old certificate. If the renewal audits are conducted before the three-month window, then the new certificate will commence from the date of completion of the audit. These windows for the audits are not subject to extension. The audits must be carried out within the time frames allowed.

The full-term certificates have a time frame of five years. This is from the date of completion of the initial audit. For SMCs under special circumstances, the ISM Code B/13.14 can be applied. This is not the norm but should only be applied in special circumstances. Therefore an extension beyond the five-year limit can be applied.

The cycle, once established, will be maintained and the company will need to ensure that the audit windows are met. For the offices it is not too difficult to meet these time windows. It is more difficult for the ships. Although in effect a one-year window is offered for the intermediate audit, many companies leave it until near the end of the window. This is where the problems start. Should the ship obtain a charter where it is not possible for an auditor to reach the ship and there is the possibility of losing the certification?

What the company must be aware of is that any non-conformity raised at any verification and/or certification audit must be resolved and closed out within the time agreed on in each non-conformity report. If this is not done, then the non-conformity will be raised to the status of major non-conformity. Any unresolved major non-conformity would result in the withdrawal of certification. If a major non-conformity is raised at the

initial audit, a certificate will not be recommended for issuing until such time as the major non-conformity is resolved.

Cycle of audits	
Office	Ship
Initial	Initial
Annual (every year)	Intermediate (between second and third anniversary)
Renewal	Renewal

Apart from these audits the company and ships can experience ‘additional audits’. These can be required for a number of reasons:

- Clearing of non-conformities
- Clearing major non-conformities
- As a result of PSC inspection
- As required by flag administration
- As required by an RO

Any of these audits may have specific criteria. It should also be noted that the criteria can be expanded if the auditor finds evidence that the SMS is not working in other areas.

Interim certification

This is now contained in the ISM Code Part B, Section 14. An IDOC is issued for newly established companies and for new ship types to be added to an existing DOC. The company has to show that it has an SMS to meet the objectives of A/1.2.3 and that a plan is in place to implement the system within 12 months.

An IDOC will only be issued once. There are no extensions and no renewals. If the IDOC is issued for a period of less than 12 months, then the company must implement and obtain a full-term DOC within the time stated.

An ISMC is issued to new ships on delivery, when a company takes on the responsibility for the operation of a ship which is new to the company and when a ship changes flag. It is issued for a period of six months. In special cases the ISMC can be extended for a further six months. This extension can only be given by the flag administration.

To allow the issue of an ISMC the following items must be verified:

- The DOC or IDOC is relevant to the ship concerned.
- The SMS provided by the company for the ship concerned includes key elements of the ISM Code and has been assessed during the audit for issuance of the DOC or demonstrated for issuance of the IDOC.
- The company has planned the audit of the ship within three months.
- The master and officers are familiar with the SMS and the planned arrangements for its implementation.
- Instructions that have been identified as being essential are provided prior to sailing.

- Relevant information on the SMS has been given in a working language or languages understood by the ship's personnel.

The IDOC must be in place before the ISMC audit can take place. The company must ensure that the full-term DOC is in place before the full-term audit of the ship can take place. This means that the company needs to obtain the IDOC in advance of the ship.

The 'special case' that the company presents to the flag administration for the extension of the ISMC needs to be exactly that, a special case. If the flag administration feel that the case presented to them is not special, they have the right to refuse the extension, which would have a major impact on the operation of the company.

Special note

In too many cases the company and its ships have a major problem with administering the SMS that was created for certification purposes. The auditor is not required to audit how good or efficient the SMS is, but whether it meets the criteria of the ISM Code. If the SMS is too heavy with administration (forms, files, inspections, reports, meetings etc.), then it will fail to meet its expectations. This will be found out at the next audit of the office. (This will cover both office and ship's files.)

In addition, if the SMS is not operating properly, this may well be found out at a PSC inspection, which will then raise non-conformities against the SMS, which will have to be dealt with. Non-conformities of whatever type have to be dealt with properly and in time. This applies to internal, external and verification audits.

No matter how good the SMS is, unless the personnel required to work with it are properly educated and trained in its use, it will never reach its full potential of effectiveness and efficiency.

If the SMS is working properly, then there will be no need to prepare for an audit. The system will work correctly and can be audited at any time. If time is needed to prepare for an audit, then the SMS is not working properly.

The company needs to understand that the SMS and its audits for continued certification work on a cycle pattern. The cycle is continuous and repetitive. Break the cycle and lose the certificates. Lose the certificates and the company stops trading.

Remember: lose the SMC and only that ship is affected. Lose the DOC and all ships connected to that DOC lose their SMC.

Maintaining certification

The company needs to ensure that the DOCs and SMCs are kept up to date. The ship manager needs to keep on top of the certification and know where the ship will be trading. The reason for this is to know where auditors will be available to conduct the audits. It does not matter what you do, the audit windows remain the same so you have to ensure compliance within the required time frame.

In respect of the SMC for the ships, the latest edition of the certificate has two additional parts:

- 'Endorsement where the renewal verification has been completed and Part B 13.13 of the ISM Code applies' and

- 'Endorsement to extent the validity of the certificate until reaching the port of verification where part B 13.12 of the ISM Code applies or for a period of grace where Part B 13.14 of the ISM Code applies.'

B/13.13 states: 'If a renewal verification has been completed and a new Safety Management Certificate cannot be issued or placed on board the ship before the expiry date of the existing certificate, the Administration or organization recognized by the Administration may endorse the existing certificate and such a certificate should be accepted as valid for a further period which should not exceed five months from the expiry date.'

B/13.12 adds: 'When the renewal verification is completed after the expiry date of the existing Safety Management Certificate, the new Safety Management Certificate should be valid from the date of completion of the renewal verification to a date not exceeding five years from the date of expiry of the existing Safety Management Certificate.'

Part of the remit of the IMO is that for all of the conventions it is understood that no certificate shall have a validity of more than five years.

Self-assessment

- In your company find the SMC for a ship, then match it up with the relevant DOC.
- What training do ISM Code internal auditors receive in your company?
- How is the audit schedule set for ISM Code certification audits of the company offices and ships?
- How closely is it followed?

Multinational fleets

For some of the larger companies and especially among the ship management companies the rise of the multi-type and multi-flag fleet brings its own problems and complexities in operation. When you add to that multinational crews the potential for things to go wrong are multiplied at more than an arithmetic progression.

The complexity for a ship management company is that the shipowner may have a number of issues that they require to be met if the management contract is to be satisfied. In some cases, these might not fit the profile that the company has and amendments have to be made. Some of the facts that have to be looked into are as follows:

- Ship types (as per SOLAS Chapter IX)
- Flag states where the ship types are registered
- Classification societies used for the ships
- Nationality of the crews
- Official language of the company
- Working language on board the ships
- Language that the SMS is written in

From these results you try to build a matrix of the company and then review who can conduct what audits and how many ROs you will be working with in respect of ISM Code audits and

certification. Remember some flag administrations do not delegate to ROs or only give partial delegation to ROs. Therefore, before building the matrix, you need to identify ship types for the fleet, as per SOLAS Chapter IX. Then identify the classification societies and/or flag administrations that will conduct the audits and the flag states where the ships are registered.

The main point of this exercise is to identify how many organisations are going to be involved in the auditing of the offices and fleet. The issue of language will become important if ROs have to supply auditors with additional language skills to conduct the audit because the working language on board is that of a particular nationality and is different from the official language of the company.

For the offices and the issuance of the DOCs, it must be borne in mind that because you have a DOC for bulk carriers from Cyprus that Liberia will not automatically grant you a DOC for bulk carriers. They will probably want to conduct their own audit. This makes keeping the dates for the initial audits and annual verification audits on one date impossible. But you do want to minimise the number of DOC audits taking place.

Each ship has its auditing requirements and maintenance of certification requirements, but it is subject to maintaining a relevant and valid DOC. The more complex the company, the more complex the demands and the harder it is to keep track and control the auditing.

Dealing with non-conformities

Ship managers should be involved in the clearance and closing out of any non-conformity that has been raised against any ship that is under their responsibility. As soon as any non-conformities are raised they should be transmitted to the ship manager and no time delay should be allowed to occur.

Apart from the objective evidence presented, the auditor must carry out checks to ensure that all the facts are known before the non-conformity is raised. Once a non-conformity is raised, it cannot be deleted. This means that an explanation of why the non-conformity needs no action is to be entered on to the non-conformity report (NCR). The auditor needs time to develop the skill of writing an NCR to ensure that what is being written is understood by those receiving it.

Types of non-conformities

The following definitions for non-conformities are taken from the ISM Code. Beneath each definition is an explanation of what it means.

- **Major non-conformity (ISM Code A/1.1.10):** ‘An identifiable deviation that poses a serious threat to the safety of personnel or the ship or a serious risk to the environment that requires immediate corrective action or the lack of effective and systematic implementation of a requirement of this Code.’ A major non-conformity needs to be dealt with immediately. There is no time delay allowed to attend to it. The existence of an unresolved major non-conformity will stop the certification of a ship or office. The existence of an unresolved major non-conformity will initiate the withdrawal process of any ISM Code certification held. A major non-conformity can be raised where there is objective evidence of repeated failure to meet the requirements of a section or subsection of the ISM Code. Any unresolved major non-conformity should be reported to PSC for action to be taken.

NON-CONFORMITY REPORT

AUDIT FILE # :		
AUDIT REPORT # :		
NON-CONFORMITY REPORT # :		
Date: Auditor Name: Office Location: Ship Name: SMS Ref: Area:	Description:	
Major Non-conformity Non-conformity Observation <i>delete the inappropriate</i>		
Signature of Auditor: Signature of Dep. Rep.		
Audit Comments:		
Proposed Completion Date	Proposed Corrective Action:	
Initials of the Dep. Rep.		
Date of Completion	Proposed Preventive Action:	
Comments:		
Person Signing off Item	Name:	Signature:
Auditor Signing off Item	Name:	Signature:
<i>Distribution List (delete the inappropriate)</i>		<i>Attachments:</i>
Designated Person		
Safety Manager		
Technical Super		
Ship Manager		
Master		
Chief Engineer		

A copy of a blank NCR

- **Non-conformity (ISM Code A/1.1.9):** 'An observed situation where objective evidence indicates the non-fulfilment of a specified requirement.' The auditor has the discretion to allow a maximum time limit of three months from the date at which the non-conformity is raised. If the non-conformity is not dealt with by the end of this period then it will generate into a major non-conformity and this will endanger the certification. A non-conformity can be deemed to be objective evidence showing what was said in the procedures is not being followed and as a result there is a failure to follow what was said to be carried out.
- **Observation (ISM Code A/1.1.8):** 'A statement of fact made during a safety management audit and substantiated by objective evidence.' An observation needs no action to be taken, but because of its existence, the auditor will check what action has been taken to avert the observation generating itself into a non-conformity. An observation can be taken as a warning that while what is found by objective evidence is not enough to be a non-conformity if action is not taken then in time it will become a non-conformity.
- **Objective evidence (ISM Code A/1.1.7):** 'Quantitative or qualitative information, records or statements of fact pertaining to safety or to the existence and implementation of a safety management system element, which is based on observation, measurement or test and which can be verified.' Objective evidence needs to be identifiable. It must never be based on hearsay or what an auditor may want to see being carried out and it must be supported by either the SMS content or the ISM Code.

Summary

The above is an introduction to the ISM Code. It is for the ship manager to develop the skills needed to fully appreciate and interpret the ISM Code and how it is presented in the company's SMS. Time and experience are needed to achieve this knowledge, but this is difficult to achieve as shipping operates on a 24/7 basis and the operation of ships cannot wait for the ship manager to catch up with the demands that will be made in this respect.

The ISM Code is one of the cornerstones of the international maritime legislation and needs to be respected. How the company uses it will reflect the way forward; is it being treated as a paper exercise to retain certification to allow the company to operate or does it reflect true working practices to allow a continuous improvement cycle to operate and a safety culture to be central to how the company operates?

There is no good or bad SMS. It is how well the company operates to the standards it has set itself beyond the minimum requirements of the ISM Code and its commitment to creating safer and environmentally friendly operation.

Self-assessment

- How many organisations are involved to keep your company's offices and ships fully certified to the standards of the ISM Code?
- SOLAS Chapter IX, reg. 2.1.3 has the ship type 'other cargo ship'. What ship type or types do you think fall into this category?

Appendix 5.1: Interim Document of Compliance

INTERIM DOCUMENT OF COMPLIANCE

(Official Seal)

(State)

Certificate No.

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR SAFETY OF LIFE AT SEA, 1974,
as amended

Under the authority of the Government of _____
(name of the State)

by _____
(person or organisation authorized)

Name and address of the Company
.....
(see paragraph 1.1.2 of the ISM Code)

THIS IS TO CERTIFY THAT the safety management system of the Company has been recognized as meeting the Objectives of paragraph 1.2.3 of the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) for the types of ships listed below (delete as appropriate):

- Passenger ship
- Passenger high-speed craft
- Cargo high-speed craft
- Bulk carrier
- Oil tanker
- Chemical tanker
- Gas carrier
- Mobile offshore drilling unit
- Other cargo ship

This Interim Document of Compliance is valid until

Issued at
(Place of issue of the Document)

Date of issue
(Signature of the duly authorized official
issuing the Document)

(Seal or stamp of issuing authority, as appropriate)

Appendix 5.2: Interim Safety Management Certificate

INTERIM SAFETY MANAGEMENT CERTIFICATE

(Official Seal)

(State)

Certificate No. _____

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974,
as amended

Under the authority of the Government of _____
(name of the State)

by _____
(person or organization authorized)

Name of ship:

Distinctive numbers or letters:

Port of registry:

Type of ship:*

Gross tonnage:

IMO Number:

Name and address of the Company

(see paragraph 1.1.2 of the ISM Code)

THIS IS TO CERTIFY THAT the requirements of paragraph 14.4 of the ISM Code have been met and that the Document of Compliance/Interim Document of Compliance of the Company is relevant to this ship.

This Interim Safety Management Certificate is valid until,
subject to the Document of Compliance/Interim Document of Compliance remaining valid.

Issued at
(Place of issue of the Certificate)

Date of issue
(Signature of the duly authorized official
issuing the Certificate)

(Seal or stamp of issuing authority, as appropriate)

The validity of this Interim Safety Management Certificate is extended to

Date of extension
(Signature of the duly authorised official
extending the validity)

(Seal or stamp of issuing authority, as appropriate)

* Insert the type of ship from among the following: passenger ship, passenger high-speed craft, cargo high-speed craft, bulk carrier, oil tanker, chemical tanker, gas carrier, mobile offshore drilling unit, other cargo ship.

Appendix 5.3: Document of Compliance

DOCUMENT OF COMPLIANCE

(Official Seal)

(State)

Certificate No.

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR SAFETY OF LIFE AT SEA, 1974,
as amended

Under the authority of the Government of _____
(name of the State)

by _____
(person or organisation authorized)

Name and address of the Company
.....
(see paragraph 1.1.2 of the ISM Code)

THIS IS TO CERTIFY THAT the safety management system of the Company has
been audited and that it complies with the requirements of the International
Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM
Code) for the types of ships listed below (delete as appropriate):

- Passenger ship
Passenger high-speed craft
Cargo high-speed craft
Bulk carrier
Oil tanker
Chemical tanker
Gas carrier
Mobile offshore drilling unit
Other cargo ship

This Document of Compliance is valid until
subject to periodical verification.

Completion date of verification on which this certificate is based

Issued at
(place of issue of the Document)

Date of issue
(Signature of the duly authorized official
issuing the Document)

(Seal or stamp of issuing authority, as appropriate)

Appendix 5.4: Safety Management Certificate

SAFETY MANAGEMENT CERTIFICATE

(Official Seal)

(State)

Certificate No.

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974,
as amended

Under the authority of the Government of _____
(name of the State)

by _____
(person or organization authorized)

Name of ship:

Distinctive numbers or letters:

Port of registry:

Type of ship:*

Gross tonnage:

IMO Number:

Name and address of the Company

.....
(see paragraph 1.1.2 of the ISM Code)

THIS IS TO CERTIFY THAT the safety management system of the ship has been audited and that it complies with the requirements of the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code), following verification that the Document of Compliance for the Company is applicable to this type of ship:

This Safety Management Certificate is valid until, subject to periodical verification and the Document of Compliance remaining valid.

Completion date of the verification on which this certificate is based

Issued at
(place of issue of the Certificate)

Date of issue
(Signature of the duly authorized official
issuing the Certificate)

(Seal or stamp of issuing authority, as appropriate)

* Insert the type of ship from among the following: passenger ship, passenger high-speed craft, cargo high-speed craft, bulk carrier, oil tanker, chemical tanker, gas carrier, mobile offshore drilling unit, other cargo ship.

Appendix 5.4: Safety Management Certificate (cont.)

Certificate No. _____

ENDORSEMENT FOR INTERMEDIATE VERIFICATION AND ADDITIONAL VERIFICATION (IF REQUIRED)

THIS IS TO CERTIFY THAT, at the periodical verification in accordance with regulation IX/6.1 of the Convention and paragraph 13.8 of the ISM Code, the safety management system was found to comply with the requirements of the ISM Code.

INTERMEDIATE VERIFICATION
(to be completed between the second
and third anniversary dates)

Signed:
(Signature of authorized official)

Place:

Date:

ADDITIONAL VERIFICATION*

Signed:
(Signature of authorized official)

Place:

Date:

ADDITIONAL VERIFICATION*

Signed:
(Signature of authorized official)

Place:

Date:

ADDITIONAL VERIFICATION*

Signed:
(Signature of authorized official)

Place:

Date:

* If applicable. Reference is made to the relevant provisions of section 3.2 "Initial verification" of the Revised Guidelines on Implementation of the International Safety Management (ISM) Code by Administrations adopted by the Organization by resolution A.913(22)

Appendix 5.4: Safety Management Certificate (cont.)

Certificate No. _____

ENDORSEMENT WHERE THE RENEWAL VERIFICATION HAS BEEN COMPLETED AND PART B 13.13 OF THE ISM CODE APPLIES

The ship complies with the relevant provisions of part B of the ISM Code, and the Certificate should, in accordance with part B 13.13 of the ISM Code, be accepted as valid until

Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of issuing authority, as appropriate)

ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF VERIFICATION WHERE PART B 13.12 OF THE ISM CODE APPLIES OR FOR A PERIOD OF GRACE WHERE PART B 13.14 OF THE ISM CODE APPLIES

This Certificate should, in accordance with part B 13.12 or part B 13.14 of the ISM Code, be accepted as valid until

Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of issuing authority, as appropriate)



6 ISPS CODE

To write this chapter, I thought it best to take you through the journey from starting out to certification, which is what companies and their personnel have to do. In this manner you will be learning what the ISPS Code requires of you and how it works in a company and on board ships. There is no one right way of approaching or complying with the ISPS Code. It is a matter of complying with all sections and sub-sections but in a way that reflects the working practices of the company.

In 2012, the IMO issued the *Guide to Maritime Security and the ISPS Code*. This is a major document, bringing together a number of publications relating to maritime security:

Contents of the IMO's *Guide to Maritime Security and the ISPS Code*

Section 1 – Introduction

Section 2 – Security responsibilities of governments and their national authorities

Section 3 – Security responsibilities of port facility and port operators

Section 4 – Security responsibilities of ship operators

Section 5 – Framework for conducting security assessments

- Resolutions of the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea, 1974, adopted in December 2002
- Conference resolution 1 – Adoption of amendments to the Annex to the International Convention for the Safety of Life at Sea, 1974
- Conference resolution 2 – Adoption of the International Code for the Security of Ships and of Port Facilities
- ISPS Code Preamble Foreword Part A – Mandatory requirements regarding the provisions of chapter XI-2 of the Annex to the International Convention for the Safety of Life at Sea, 1974, as amended Part B – Guidance regarding the provisions of chapter XI-2 of the Annex to the International Convention for the Safety of Life at Sea, 1974, as amended and part A of this Code
- Conference resolution 3 – Further work by the International Maritime Organization pertaining to the enhancement of maritime security
- Conference resolution 4 – Future amendments to chapters XI-1 and XI-2 of the 1974 SOLAS Convention on special measures to enhance maritime safety and security
- Conference resolution 5 – Promotion of technical co-operation and assistance
- Conference resolution 6 – Early implementation of the special measures to enhance maritime security

- Conference resolution 7 – Establishment of appropriate measures to enhance the security of ships, port facilities, mobile offshore drilling units on location and fixed and floating platforms not covered by chapter XI-2 of the 1974 SOLAS Convention
- Conference resolution 8 – Enhancement of security in co-operation with the International Labour Organization
- Conference resolution 9 – Enhancement of security in co-operation with the World Customs Organization
- Conference resolution 10 – Early implementation of long-range ships' identification and tracking
- Conference resolution 11 – Human-element-related aspects and shore leave for seafarers

As can be seen from the above list, there has been a large expansion of materials that personnel must be aware of when using and working with the ISPS Code.

The ISPS Code required mandatory compliance for ships of convention size by required dates. These are contained in SOLAS Chapter XI-2, regulation 2 – Application and regulation 6 – Ship security alert system. This details ship types as follows:

- Passenger ships: This will include passenger ro-ros, passenger high-speed craft such as WIG craft and fast cats.
- High-speed passenger craft.
- Cargo ships: 500gt and upwards. This will include bulk carriers, oil tankers, chemical tankers, gas carriers, general cargo ships and ships of all types that are not of the passenger ship design criteria. This can be quoted as being of the type 'other cargo ships', which will among others include ships such as livestock carriers, container ships and general cargo ships.
- High speed craft: 500gt and upwards.
- Mobile offshore drilling units.
- Port facilities serving such ships engaged on international voyages.

The ship security alert system had to be in place for survey for ship types and dates of:

- 1 July, 2004 for passenger ships, passenger high-speed craft, oil tankers, chemical tankers, gas carriers, bulk carriers, cargo high-speed craft.
- 1 July, 2006 for other cargo ships and mobile offshore drilling units.

For those familiar with the ISM Code it will become apparent that the ship types listed for the ISPS Code have the same notations as those given in the ISM Code. The problem faced by the maritime industry was that from the Diplomatic Conference of December 2002 the first phase had to be completed by 1 July, 2004 and the second phase by 1 July, 2006, not giving the industry a lot of time to put in place complex systems that required precise criteria for compliance.

Many of you will have already experienced the ISPS Code and the manner in which it has been included into the normal day-to-day operation of the company. SOLAS Chapter XI-2 makes the ISPS Code mandatory. The ISPS Code comes in two parts: Part A – Mandatory

and Part B – Guidance. It is not really possible to meet the requirements of Part A without taking into account the contents of Part B.

Security personnel

The legislation has also brought about the introduction of three new job titles and descriptions for personnel in the shipping industry:

- Company security officer (CSO)
- Ship security officer (SSO)
- Port facility security officer (PFSO)

The complete requirements for these job titles can be found in the following IMO model courses. I have referred to the 2003 edition for each one:

- IMO Model Course 3.19 Ship Security Officer (IMO T319E)
- IMO Model Course 3.20 Company Security Officer (IMO T320E)
- IMO Model Course 3.21 Port Facility Security Officer (IMO T321E)
- IMO Model Course 3.26 Security Training for Seafarers with Designated Security Duties
- IMO Model Course 3.27 Security Awareness Training for all Seafarers

The UK Merchant Navy Training Board (MNTB) has also set standards for approved courses for each of the new job titles.

Any person who is to hold one or more of the above job titles must have completed and passed the relevant courses, have been approved by the relevant administration and have the certificate or certificates to show that the required minimum standard has been achieved. There are no required entry standards for these courses, but it is expected that the people attending have relevant experience in the particular course they are taking and are employed or will be employed by an appropriate body.

When people take up the position of ship security officer, company security officer or port facility security officer, they must be fully conversant with the legislation and how it will affect the performance of their duties. For people working on board ship and/or in the office they must be able to place in perspective how the ISPS Code fits into the company's operations. No piece of legislation can exist in a vacuum. The other pieces of the company's operations impinge upon it. Therefore every ship manager should be aware of how the ISPS Code interacts with the company's SMS, which is required for compliance with the ISM Code.

Self-assessment

- Who is the CSO in your organisation?
- Which rank is chosen to be the SSO on board ships?
- Is there a deputy CSO? If not, what happens if the CSO is incapacitated?
- How is the relationship between masters and the ship managers?

Safety versus security: same or different?

There have been arguments surrounding what is more important: safety or security. The answer is that both have an equal footing. If a ship is not safe it should not sail. If a ship is not secure then it is in danger from external forces. Therefore a ship that is completely safe but not secure is in danger. A ship that is secure but not safe is also in danger. It does not matter where the danger comes from; if the ship is not prepared and able to protect itself then the consequences could potentially be extreme.

By ensuring that the SMS is taken into account and worked with in defining the security requirements of the ship it is possible to ensure that no frictions between the ISM Code and ISPS Code come into play.

For example, the security equipment carried on board is required to be kept certified and ready for use. Therefore the security equipment is liable for inspection and test at regular intervals. The SSO will be tasked to ensure its ongoing effective operation. This will be found in the manufacturers' operation and maintenance manuals. The question is in ensuring these tasks are carried out. The schedule for maintenance, test, calibration and continued certification needs to be identified. It may be that at times the equipment will have to be sent ashore for continued certification or perhaps qualified technicians will need to come on board and carry out the specialised work for certification.

If the SSOs are working in a vacuum they may miss the opportunity for the equipment to be recertified at one port where technicians are available and the port where they have decided to have the recertification done may not have the required skilled personnel.

The SSOs will be required to keep the records and data; if they integrate their requirements with that of the ship's planned maintenance system there will be less chance of something being missed and the problems that this will entail.

The company security officer and the ship manager

Depending on the way the company is structured it could well be that the ship manager is also a CSO. In other companies, the CSO will be a dedicated position. There is nothing in the ISPS Code to stop the company having more than one CSO. But as a minimum there should be at least one other person trained and qualified to the standard of CSO so that they can deputise for the CSO and be ready to cover for the CSO when he or she is not available for whatever reason.

Whatever the company set-up, the central point must be that the CSO and the ship manager need each other to function efficiently and effectively. If this is not the case, then if there is a lack of, or breakdown in, communications there could be problems for the safe and secure operation of the ships. Both need each other to operate at the optimum performance. If this is not understood, it should be communicated to the parties involved by senior management.

This is especially relevant when ships are trading into areas where security is more important due to the increased risk. Two such areas are that surrounding the Somalian coastline and out into the Indian Ocean and the Gulf of Guinea in West Africa. The Horn of Africa is one of the most dangerous areas in the world for ships to transit due to the piracy issues. Every ship needs full and combined support from the office. Fragmented support from the office resulting in miscommunication or contradicting communications could cause major problems.

Fragmentary support is the exception rather than the rule, but it should be noted that it is necessary for the two positions within the company to work together to achieve the best results.

Self-assessment

- How many CSOs does the company have?
- Is the CSO a separate position from the ship manager?
- How do the CSO and the ship manager communicate? Regularly, frequently, by email or face to face?

The ship security plan

Methodology of certification

The ISPS Code is certified by auditing and the maintenance of the certificates is based on verification, intermediate and additional audits. The requirements for auditing and the certificates required will be explored in more depth later on.

The ship requires to be certified, but not the office of the company. The certificate is titled International Ship Security Certificate (ISSC). The port facility is required to be certified and this requires a certificate called Statement of Compliance of a Port Facility. The audits for certification will be conducted by a recognised security organisation (RSO), which is defined in SOLAS XI-2, regulation 1-16 as ‘an organisation with appropriate expertise in security matters and with appropriate knowledge of ship and port operations authorised to carry out an assessment or a verification, or an approval or a certification activity, required by this chapter or by Part A of the ISPS Code’.

The auditing for certification is conducted by either flag administrations or an RO delegated to by flag administrations. In most cases, the ROs are classification societies. In particular, the International Association of Classification Societies (IACS) member societies have demonstrated to the flag administrations how they meet these requirements. To this end, IACS produced procedural requirements to accommodate the ISPS Code:

- Procedural Requirements for ISPS Code Certification
- Procedure for Training and Qualification of Maritime Security Auditors
- Procedure for Reporting the List of Ships complying with the ISPS Code
- Transfer of ISPS Code Certification (TOSCA)

Other ROs that can show they comply with the requirements for auditing and certification to the ISPS Code may also be granted the right to perform this work by the flag administration. The requirements to be fulfilled by an RO can be found in IMO Resolution A.739 (18) – Guidelines for the authorisation of organisations acting on behalf of the administration. The requirements for being granted delegation from a flag administration can be found in IMO Resolution A.789 (19) – Specifications on the survey and certification functions of recognised organisations acting on behalf of the administrations.

Self-assessment

- Who is or are the ROs conducting the ISPS Code audits of your company's ships?
- Who is issuing the ISSCs to your company's ships?
- Who is issuing the ISM certification to your company?
- Which RO classes the ships of the company?

Maintenance of certification

Once the process of certification is completed and the ships of the company hold the relevant ISSC, the second cycle of work begins in ensuring that the requirements of the ISPS Code are met and records are kept so that, by auditing, the ships will continue to be certified and able to trade. Failure to maintain the various documents and records will mean that there could be problems for trading the vessels and also with PSC inspections and with the classification societies.

It is important to ensure that there is an understanding by every person in the company as to what is to be achieved and must be maintained in respect of the ISPS Code. Therefore, training, training and retraining must be carried out in cycles.

The question that must be raised is how would the insurance company of a ship view paying out after a 'security incident' if it was shown that the ship security plan appeared not to be working to the standard stated?

Implementing the ISPS Code into a company

The options available to the company are many and varied. It would be best for the company to choose a process sympathetic to the way it operates. This will reduce the amount of disruption to the operation of the company during the process of implementing the system and training personnel to cope with the additional workload of the implementation and the reorganisation that will be put in place to ensure the system runs within the company's normal operating practices.

Due to the additional workload imposed by recent legislation, perhaps it may soon become necessary for ships to employ an administrator to support the officers and crew to ensure compliance is kept. Examples of recent changes to work practices are SOLAS revisions, the ISM Code, STCW 95 including the 2010 Manila Amendments, the ILO Convention 180 (now incorporated in the MLC 2006) and the ISPS Code.

The extra workload on smaller crews needs to be accommodated while at the same time, where applicable, complying with the restrictions of working hours from STCW Part A, Chapter 8, Part 1 – Fitness for duty and ILO Convention 180 – Seafarers' hours of work and the manning of ships. Both of these standards have to be taken into account when complying with SOLAS Chapter V, regulation 14 – Ships' manning and the IMO Resolution A.890 (21) – Principles of safe manning.

In the following sections we will explore how the process can be implemented and follow one possible option to ensure compliance. To explore the options of implementing the ISPS Code into a company and its ships, it should be understood that there are certain steps to be followed and that dealing with the code's requirements is an ongoing process.

The following steps are one option that could be taken and used. There are many other variations on this theme and a company must decide which best fits its operations and manpower.

- 1** Identify team members for the project of implementing the ISPS Code into the company.
- 2** Identify who will be CSO and who will be deputy CSO.
- 3** Send CSO and deputy CSO on approved course.
- 4** Identify which rank on board ship will be SSO and which personnel will be required to be trained as SSOs.
- 5** Send SSOs on approved course (this may require several courses, depending on the size of the company).
- 6** Identify the flag administrations for the ships, the ROs that class the vessels and the ROs that certify the vessels to the ISM Code.
- 7** Discuss with the flag administrations and ROs the options available for assistance with implementing the ISPS Code. (The simplest option would be a flag administration that also conducts its own statutory certification and ISM Code certification. Therefore, it would be the obvious choice for conducting ISPS certification.)
- 8** Choose the best option for the company and determine who will be the certifying body for the ISPS Code.
- 9** Decide whether to employ an RSO to give consultancy or build own system.
- 10** Organise the shipboard safety assessment (SSA) for each ship.
- 11** Identify from the SSA the work that is needed to achieve compliance.
- 12** Construct the ship security plan (SSP).
- 13** Have the SSP approved by flag administration.
- 14** Implement the SSP on board each ship.
- 15** Build up records on board ship, through training and drills and implementation of the SSP.
- 16** Organise audits of each ship (when ready) by an RSO.
- 17** Attain ISSC for each ship.
- 18** Complete all ships to the ISPS Code.
- 19** Complete first cycle of ISPS Code certification.
- 20** Commence second cycle of ISPS Code certification – Maintenance, control, revision and administration of the system.

Step 1: Identify team members

In identifying the members that will make up the team, the company needs to ensure that there is the relevant expertise and knowledge to ensure that the project will work. Not all members will remain in place for the whole of the project. Personnel may be brought in at particular times to ensure the ongoing process maintains its momentum with their particular skills.

There should be one person nominated to be in charge of the project who has been put in place by the senior management of the company. This may be the person who will be the CSO. This person will remain in place throughout the complete process of implementation. Apart from good technical skills the person in charge needs to have good interpersonal skills and be a good communicator.

Remember, in many cases, the personnel seconded to this team will still have their duties to conduct, as well as the additional workload generated by the implementation of the ISPS Code. To give a good balance, ensure that ship staff are included to give their views and expertise as to what will and will not work on the ships.

Step 2: Identify the CSO

The person who will be the CSO must hold a position that is senior enough to be listened to and make the system work. If not, then expect delays and problems in controlling the team and making them work as a cohesive unit.

If the person chosen is too senior, will they have the time to devote to this process? And will they achieve a proper balance in decision-making or will the other members of the team feel intimidated and as a result rubber-stamp the CSO's suggestions without proper discussion and thereby lose potential to improve the system?

If the CSO is at too low a position in the company then they will not be listened to and may have problems in having the necessary resources released to ensure compliance is reached within the time frame.

Deputy CSOs must be trained to the level and ability of the CSO. They must be kept up to date on the state of the ISPS Code requirements within the company and ships and be able to step in and cover for the CSO when he is out of the office.

Step 3: Send CSO on course

Once the CSO and deputy CSO are identified, they must be sent as soon as possible on the recognised course and attain the relevant certification. A prudent company may decide to send additional office personnel on the course to ensure that they have a proper understanding of the requirements of the ISPS Code and thereby be more able to assist in the implementation of the system.

Another practice to assist in the implementation process and construction of the SSP would be to ensure that at a minimum the CSO and deputy CSO also attend the SSO approved course. Additionally, to understand the performance and requirements of port facilities send the CSO and deputy CSO on a PFSO approved course.

Step 4: Identify the SSO

The first stage of this process is to ensure that a rank is chosen that will be responsible for being the SSO as well as the other duties of that rank. This will start the process of certification of SSOs. Depending on the size of the company and the number of ships it operates, the personnel may have to attend the approved SSO courses in planned phases.

It would be difficult for only one person per ship to be qualified as SSO. What about the captain and other senior officers? If only one of them is the SSO and trained for that position, how well will the others cope and understand the duties and responsibilities imposed on them by the ISPS Code?

Should there not be at least two people on board each ship who are qualified as SSOs so that if one is taken ill or unable to discharge his duties, the other can step in and ensure the continuity of the procedures and requirements?

Step 5: Send the SSO on course

Each company will have to examine how it will meet this requirement and how they are going to ensure that the correct number of personnel are trained and suitably qualified. There is a capital outlay for placing a large number of persons on such courses and they are not priced cheaply.

What must be ensured is that the courses attended by company personnel are properly approved and that the certificates issued are valid for the flags that the company's ships fly.

The cost of training personnel should be looked at, not only at the price of the course, but also the additional costs of travel, accommodation and incidentals, plus fitting it into leave schedules.

Step 6: Identify flag administration and ROs

The company will have to look at its current position with regard to its ships and where they are flagged and who classes the ships and who certifies them to the ISM Code. If the flag state also classed the ships and certified them to the ISM Code, then it is a simple matter of entering negotiations with the flag administration and setting out agreed tariffs and schedules for the work to take place.

This is not normally the case. A ship may be flagged in Liberia, with the classification being conducted by Lloyd's Register of Shipping and the ISM Code certification by Germanischer Lloyd.

Therefore it is important to note which RSOs the flag administration recognises and, if the ships are registered under a number of flag administrations, find out if there is one common entity that fits all flags and also conducts the classification and/or ISM Code certification of the vessels. If this is not possible, it will be a matter of finding out how to minimise the number of RSOs being used by the company to ensure all ships are certified with a minimum of disruption.

Of course, there is another option of using an RSO that is not currently conducting any business with the company. This is possible but will create further ripples in the management and operation of the ships and may not be beneficial to the company in the long term.

Step 7: Discuss the options

The company has some options to choose from in how it will go about implementing the ISPS Code into the company. It can either create its own system from the ground up or use a ready-made package and implement this through the company or use consultants to assist in constructing its own system. Another option is to use all three of the above and mix and match what is best suited to the company's needs.

In considering this the company should have discussions with its RSO or RSOs to ensure that what it is planning to do will meet the expectations of the RSO when it comes to the time for auditing and certification.

It may be assumed that the company is doing most of the work itself and only having assistance from outside organisations, i.e. it is taking the most difficult route with an increased additional workload. This is possibly true, but the learning curve that the

company will go through will be worth it in that the final system will truly represent the company and its work ethic.

Another side effect of this is that the team members will become more knowledgeable and conversant with the ISPS Code and thereby be in a better position to protect the company's interests.

Step 8: Choose an option

In step 6 we discussed the options available. The company must be sure that, whichever option it chooses, the RSO contracted to carry out the work will be most suited to its needs. With so much written about the ISPS Code and companies offering consultancy and other assistance (for a price), it would be quite easy for the company to become confused as to which organisation to choose. That is why it takes time. Remember that cheapest is not always best; neither is the most expensive a guarantee of receiving the best.

The company needs to construct a check-list of what services it requires. How long will it need these services and what is the price for each component? It may be that no organisation can supply the full spectrum of services; therefore it will be a matter of assessing who can supply the most. After that it is a matter of identifying the cost and comparing like for like. Remember, if someone is saying that they can supply everything, ask for references and ask if you can speak to previous clients. If they do not want to give such information then ask the reason why. It could be that they are not as good as they say.

Step 9: Decide on RSO consultancy or own system

It may be that the RSO chosen for certification may be able to supply consultancy as long as they do not compromise the independence of auditing. If this is the case it may well be worth investigating. Their consultants will have been trained in the RSO's approach to auditing and certification and therefore the system put in place will be sympathetic to the RSO.

The amount of consultancy you require will depend on the decisions reached earlier in the implementation stages. It could be that you use the RSO consultancy as a means of reviewing the work you have done and suggesting amendments to ensure compliance.

Another option would be to hand over control to the RSO consultants. But in doing so the company loses control over the project and may well end up with a system that does not reflect the company, which will also cause a number of revisions to be made to the company's SMS to ensure that everything fits in smoothly.

Step 10: Organise SSA

The SSA of each ship will need to be conducted. This is dealt with in the ISPS Code in Part A, Section 8 – Ship security assessment and Part B, Section 8 – Ship security assessment: security assessment and on-scene security survey. By following the steps as laid out, the company will have identified its strengths and weaknesses and which of the latter will have to be attended to.

What must be remembered is that the requirements for ships will vary for different ship types. Even when the ship type is the same, the variances between ships of different sizes and ages will make it a requirement to ensure that an SSA for each ship is carried out.

This will require that the correct type and quantity of security equipment identified by the SSA is supplied to the ship and that an allowance has been made for spare parts and

maintenance schedules to ensure the ship will always operate to the required standard determined by the security level that it will be trading in for any given port. An RSO must be in attendance for the on-scene security survey.

Step 11: Dealing with the SSA findings

On completion of the SSA the company needs to identify exactly where it stands in respect of its standard and awareness of security. Some of the findings may be unpalatable, but they need to be addressed if the required standard of security is to be achieved.

Without ensuring that all items identified in the SSA have been resolved it is not possible to make any real headway with the SSP. Ship security equipment may include all of the following:

- Automatic identification system (AIS)
- Ship security alert system
- Locks
- Lighting
- Hand-held radios
- Global maritime distress and safety system (GMDSS)
- Closed-circuit televisions
- Automatic intrusion detection device (burglar alarm)
- Metal detectors
- Explosive detectors
- Baggage screening equipment
- Container X-ray devices
- General alarms

The SSO will be expected to be familiar with the capabilities and deployment of such devices and systems. The CSO may be in the position to influence the purchase and installation of security equipment.

The SSO and CSO should be aware of the functional limitations and operating constraints of the security equipment that the company deploys on its ships. This should include considerations such as effective operational range, environmental sensitivities and operator error.

Step 12: Construct the SSP

Constructing the SSP needs careful consideration. The ISPS Code requires that the contents of the following sections be complied with fully:

- Part A, Section 9 – Ship security plan
- Part B, Section 9 – Ship security plan
 - General
 - Organisation and performance of ship security duties
 - Access to the ship
 - Handling of cargo
 - Delivery of ship's stores
 - Handling unaccompanied baggage

- Monitoring the security of the ship
- Differing security levels
- Activities not covered by the code
- Declaration of security
- Audit and review

Once the SSA has been reviewed and weaknesses identified and overcome, then the construction of SSP as required by the above can begin. Various organisations have offered templates for the SSP to be filled in to comply with the above legislation. It should be noted that the SSP will need to be reviewed for approval by the flag administration or an RSO delegated to by the flag administration for this purpose.

Once the SSP is approved, there can be no amendments made to it, unless the RSO or flag administration has first approved the changes. Therefore it is important that the company and ships of the fleet have in place the proper procedures and work instructions to ensure that the staff involved know exactly how the mechanism for amendments is invoked.

Step 13: Have the SSP approved

As mentioned above, the flag administration or an RSO delegated to by the flag administration will approve the SSP. When the SSP is presented for approval it is important that it has been reviewed for content, spelling and grammar.

This document is the cornerstone of the ISPS Code and, although there is restricted access to it, the contents will need to be exact and concise. This does not mean the language used should be complex and convoluted but rather the opposite, clear and concise.

The main problem that can arise is the delay in the approval process once the approval body receives it. This is where the choice of organisation for certification and approval needs to have been considered most carefully.

Step 14: Implement the SSP

As each SSP is approved for each ship, it becomes a matter of ensuring that it is implemented on board each ship. Remember that, although you may be using a template for the structure of the SSP, the contents must reflect the requirements of each individual ship. Certain sections of the SSP will be consistent for every ship. Therefore, the structure used and the way it is applied will be reflected in the training that is put in place.

The time allowed for implementation of the SSP must be realistic. Remember that the implementation will take place while the ship is still operating. Therefore the implementation will increase the workload of the ship officers and crew. If the time frame has not taken this into account and there is no support from the shore side then the requirements will not reach the efficiency and effectiveness that is possible. As a result, the concept put forward by the ISPS Code will not be met. This will further show up in inspections, surveys and audits conducted on board the ship.

Step 15: Record keeping

As the implementation process takes place the requirement for the construction and retention of records will become apparent. When the requirements of the SSO are reviewed, the need for proper record keeping becomes more apparent.

ISPS Code Part A, Section 2 states: ‘Ship Security Officer (SSO) means the person on board the ship, accountable to the Master, designated by the Company as responsible for the security of the ship, including implementation and maintenance of the Ship Security Plan and for liaison with the Company Security Officer (CSO) and Port Facility Security Officers.’

ISPS Code Part A, Section 12 details the minimum requirements of the responsibilities imposed on the SSO. ISPS Code Part A, Section 10 and ISPS Code Part B, Section 10 cover records, which will be generated especially in respect of:

- ISPS Code Part A, Section 13 – Training, drills and exercises on ship security
- ISPS Code Part B, Section 13 – Training, drills and exercises on ship security

The record keeping has to be co-ordinated and controlled to ensure that compliance to the ISPS Code is maintained.

Step 16: Organise audits

Once the company feels confident that the ISPS Code in the form of the SSP has been implemented and that the system is in place and conforming to requirements then the ship audits for attaining the ISSC can be organised. In many cases, it would be prudent to conduct mock audits internally by the company to evaluate exactly where they are in respect of meeting the requirements. These internal audits can identify weaknesses that may have been overlooked. They should not be viewed as a tool by the office to punish the ship and its crew. If handled in the correct manner, everyone understands what is trying to be achieved and the reasoning behind it.

When the audits for certification are being organised, the company should look at the disposition of the crew. The crew that have implemented the system should be on board for the audit. They will have an in-depth knowledge gained from implementing the system. If this crew is replaced before the audit, then the new crew may be audited shortly after joining the ship and, as a result, their knowledge could appear weak. This will be true because they are learning how to use the system and getting up to speed. Regrettably, the auditors will be auditing a system that is supposed to be fully functional and weaknesses in the crew will be noted and perhaps even non-conformities raised.

The flag administration and/or the RSO will try to accommodate the company, but be aware that if audits are left to near the deadlines for compliance they may not be so flexible due to the fact that they will have many companies seeking compliance for their ships.

The company should also consider where the ship will be for the audit. Most ships trade globally, and if the programme for auditing has not been viewed in advance it could be that the ship is at a port that is quite difficult to send an auditor to and this may cause delays to the vessel and an increase in cost.

Step 17: Attaining ISSCs

The result of all the hard work conducted by the company, the implementation team, the CSO, the SSO and the ships’ crews will be the awarding of the ISSC for each ship. The original will be placed on board the ship. The company may keep copies in the office.

The auditing and correction process from the audits of items found not to conform

will have taken time and in some cases felt not to be justified. After all, the work and dedication performed by all members to reach this stage was not taken lightly. Remember that the auditors are only doing their job and the audit is there to discover shortfalls and weaknesses within the system implemented. Is it not better to have a few paper problems to sort out and raise the standard of the system put in place, rather than find out weaknesses during a security incident?

Step 18: Complete all ships to ISPS Code

As each ship is certified, the list of outstanding ships becomes shorter, until at last there are no more ships and the company has all ships certified. When the last ship is certified the team brought together to implement to ISPS Code has completed their task. This is a time for the whole of the company personnel to be praised for their work and effort. It may seem like a small matter, but too often this is overlooked and can create misgivings or imagined slights.

The only reason that the company has reached this stage is because of the efforts of everyone employed in the company from the highest level to the lowest level. Everyone will have had an input into the final system.

This stage is a major achievement, especially when the time scale is reviewed and the workload is placed against the time allocated. The whole process was achieved while the ships were still trading and while all other matters of running a shipping company were being conducted.

Step 19: First cycle

You have now successfully attained the completion of the first cycle of work in relation to the ISPS Code. You have designed, constructed and implemented a system to meet the requirements of the ISPS Code. All ships are certified and the system is running smoothly. Now you have to prepare to move to the second cycle.

Life is not fair, but you have achieved another demand of the shipping industry. Now is the time to review how the system can be improved. This will depend on the objective evidence received from the ships and translated into continuous improvement. Now you can move on to step 20.

Step 20: Second cycle

Having completed the first cycle and attained the desired accreditation and certification it may well be a time to congratulate everyone in the company and sit back and catch your breath. But that would be fatal. Time would be lost that can never be recovered. As the first cycle is completed, the second cycle starts immediately. The work of maintaining, controlling, revising and administering the system in place must continue. There is no time off. The second cycle will run its course and then move on to the third cycle and so forth.

Security demands that there are no gaps or loss of control. It must be maintained to 100% efficiency 100% of the time. The consequences are not an option. Remember that in respect of a terrorist incident you have to be correct every time; the terrorists need only be correct once to achieve their goals.

Self-assessment

- How did your company implement the ISPS Code?
- How long did it take?
- Who were the members of the team?
- If there was no team, then who was responsible?
- If your company has not yet been certified, do you now look forward to being involved or not?

Living with the ISPS Code

Once the implementation stage has been completed and the ship is certified, the crew serving on board the ship have the responsibility of ensuring that the requirements of the ISPS Code are met every day. In this section we will look at various parts of the code and how it affects you as a ship manager.

Security levels

The ship will always operate at a security level. These are found in the ISPS Code and as the progression from the lowest level of security to the highest the expectations of the precautions that the ship's crew have to take increase.

SOLAS Chapter XI-2, regulation 1.14 states: 'Security Level means the qualification of the degree of risk that a security incident will be attempted or occurs.'

ISPS Code Part A, regulation 2 defines the different levels as follows:

- 'Security Level 1 means the level for which minimum appropriate protective security measures shall be maintained at all times.'
- 'Security Level 2 means the level for which appropriate additional protective security measures shall be maintained for a period of time as a result of heightened risk of a security incident.'
- 'Security Level 3 means the level for which further protective security measures shall be maintained for a limited period of time when a security incident is probable or imminent, although it may not be possible to identify the specific target.'

ISPS Code Part B, Section 1.8 talks about setting the security level: 'The setting of the security level applying at any particular time is the responsibility of Contracting Governments and can apply to ships and port facilities.'

One therefore needs to know at which level of security the ship is to operate to receive a 'declaration of security'. The requirements are found in ISPS Code Part A, Section 5:

The ship will request a Declaration of Security from the port facility that it will be arriving at next.

The port facility may request it from a ship.

The persons who can complete a Declaration of Security are:

- The Master
- Ship Security Officer
- Port Facility Security Officer

Any other body responsible for shore-side security, on behalf of the port facility or ship (if the Contracting Government determines otherwise).

The ISPS Code Part B, Section 4.8–4.13 deals with the requirements needed for setting the security level. The SSP will have identified the requirements of the ship's security that need to be implemented and followed depending on the level of security at which the ship will operate. More information can be attained from ISPS Code Part B, Section 9.14–9.49. Remember that it is possible for the ship to operate at a security level higher than the port facility, but never lower.

A copy of a declaration of security can be found in Appendix 6.4 at the end of this chapter.

Training, drills and exercises on ship security

Every ship complying with the ISPS Code will have to ensure that security drills and exercises are conducted at regular intervals and comply with the requirements of the code. These come under the ISPS Code Part A, Section 13 and ISPS Code Part B, Section 13, which is split into the following sub-sections:

- 13.1 deals with the training of the CSO, SSO and appropriate shore-based company having knowledge and training.
- 13.2 covers particular additional training of the SSO.
- 13.3 discusses shipboard personnel having specific security duties.
- 13.4 considers other shipboard personnel having knowledge of the SSP.
- 13.5 deals with objectives of drills and exercises.
- 13.6 covers time scale of drills and conditions that require a drill to be conducted.
- 13.7 discusses the various types of drills and who would take part, as well as ship and company personnel.
- 13.8 considers the recognition of drills conducted with another contracting government.

It is the responsibility of the company to identify which of the drills and exercises are relevant to the company and its ships and, once identified, how they will be conducted. The SSO is responsible for keeping the records for each and every drill and exercise.

Audits and certification

The ship will hold an ISSC. This will be liable to audit by either the flag administration or an RSO delegated to by the flag administration. At these audits the ship and its crew will be audited to ensure compliance to the ISPS Code. The main concern is to ensure that the ship's personnel are complying with the contents of the approved SSP.

The CSO is responsible for arranging the audits with the RSO. These audits can be:

- Initial
- Intermediate
- Additional
- Renewal

These audits are responsible for the issuing of an ISSC, verifying its continued validity or for the renewal of the ISSC. It is therefore essential when any of these audits are to take place that all crew members are up to date and aware of their duties and any new personnel are given the necessary training to comply with the SSP. The SSO is responsible for ensuring that all records are available for the audits.

The ship may also carry out internal auditing of the system. This is the responsibility of the SSO who should have an auditing schedule from the CSO. The internal security audits should be conducted, whenever possible, so as not to come into conflict with ship operations.

At internal and verification audits all and every deficiency and non-conformity raised needs to be resolved within the required time frame and objective evidence supplied to verify the actions taken.

Ship security alert system (SSAS)

This is covered by SOLAS Chapter XI-2, regulation 6. The details of the operation and control of the SSAS will appear in the SSP. The SSAS should only be activated when required due to a security incident occurring. It has to have as a minimum two activation points, one of which will be on the navigation bridge. The activation points must be designed so that they cannot be inadvertently activated.

Only a restricted number of people should know the location of the activation points and how to access them. When activated, the following will occur:

- Initiation and transmission of a ship-to-shore security alert to a competent authority identifying the ship, its location and indicating that the security of the ship is under threat or compromised.
- It will not send the security alert to other ships.
- It will not raise the alarm on board the ship.
- It will continue to send the security alert until deactivated or reset.

When an administration receives notification of a security alert, it shall notify the state or states in the vicinity of the ship. If an administration receives a security alert from a ship not registered under its flag it shall inform relevant administrations and the state or states in the vicinity of the ship.

The SSAS must conform and perform at least to the standards set by the IMO.

Security equipment

The SSO and the personnel delegated security duties shall be aware of the security equipment carried on board. They must be aware of how to operate it and of its limitations.

Security equipment must be stowed away and the necessary maintenance carried out and testing done before use.

Ship security plan

This is an approved document containing a vast amount of sensitive information that should not be for public consumption. Therefore the list of people with access to this document will be limited. It may well be that the master of the ship, the SSO and the CSO are the only people who have access to the original and copy in the office. This would be the minimum.

What should be taken into account is who can and cannot be given access to the SSP when the vessel is in port. It is important that this has been identified because it may be that certain people visiting the ship on business may wrongly believe that an inspection of the SSP is under their remit. To remove any potential for misunderstanding, the company should issue a list to the master. Any person who requests access to the SSP who is not on that list should be referred to the CSO.

Self-assessment

- How has the ISPS Code affected the way you do your work?
- What training have you received in ship security?
- What awareness do you have of the security equipment used in your company and do you know how to operate it and its limitations?
- What rating would you give your company out of 10 on its position in respect of the ISPS Code? (0 is very bad, 10 is very good.)

Amending the SSP

The SSP has a restricted distribution list for viewing and is supposed to be limited on board ship. Because it is approved by the flag administration it cannot be amended as and when required. It needs the approval of the flag administration before it can have any amendments inserted. This ensures that the SSP copy held by the flag administration and the original on board have the exact same contents. An additional copy may be kept in the office under the care of the CSO. That will mean all three copies must be kept in line at all times.

The procedure for change should be included in the SSP, but perhaps it may be kept by the company as it sees fit. The steps listed below are a suggested format. It may be that the company has secured an arrangement with the flag administration for making amendments to the SSP. When one SSP has noted an item for amendment the CSO will have to check if this applies to other ships to ensure that the amendment is conducted fleet-wide and improves the security of the fleet. The procedure for making an amendment is as follows:

- Item for amendment is identified.
- Item noted and suggested amendment is written down.

- Item is forwarded to office for the attention of the CSO.
- CSO reviews suggested amendment and makes decision.
- CSO supports amendment and constructs it to fit the SSP in the correct section and language.
- CSO forwards to flag administration requested amendment to SSP.
- Flag administration receives and reviews requested amendment.
- Flag administration approves amendment and informs CSO.
- CSO forwards amendment to ship with copy of approval from flag administration.
- Ship receives amendment and follows instructions and inserts amendment into SSP.
- Ship confirms to CSO that amendment has been inserted into SSP.

This may appear long-winded, but each step requires confirmation that all parties are in agreement so that there are no errors. It is important that whatever format is used for amending the SSP is followed exactly at all times.

Self-assessment

- If allowed, check your company's procedure for the revision of the SSP. Compare it to what is written in this section.

Relationship between SSO, CSO and PFSO

The relationship between these three people is most important because of the communications loop needed. The flag state sets the security level at which the ship has to operate. This might vary depending on where the ship is trading in the world. This is passed to the SSO who is made aware of the security level required for each ship.

The organisation that sets the security levels for ships operating under the UK flag is the Transport Security Committee, known as TranSec. This will vary from country to country.

Each ship is required to complete and send a declaration of security before it arrives in port. Every ship must be at the same level of security or higher than the port. If not, it will be refused entry. The person responsible for promulgating the security level at which the port is operating is the PFSO.

It is important that the protocols are followed and the appropriate person is making the communications in the correct sequence to ensure that there are no delays to ships arriving at the port.

Conclusion

The ISPS Code is relatively new to the shipping industry. We have all worked with security issues in the past. The events of 9/11 have made the maritime industry review its position in respect to acts of terrorism and ships.

Most security experts would agree that the next major terrorist incident could involve ships. What must never be assumed is that terrorists are stupid, mad or stand out in a crowd. They are sophisticated and raising the stakes at every atrocity they achieve. Shipping has to be ready to meet the challenges posed by terrorism.

If ships and the shipping industry as a whole can be perceived as not being 'soft targets' then this will redirect the focus of the terrorist to other potential targets. The problem lies in the fact that as shipping trades and patterns and the construction of ships advance, the potential for a major incident involving shipping increases.

Think about it:

- A passenger ship with 7,500 persons on board.
- A container ship carrying 12,000TEU.
- A 225,000m³ LNG carrier.

All have the potential to create a major incident that would receive major media attention.

Ships have their potential problems, but for an oil rig statically positioned these are vastly increased. In June 2012, a Nigerian rig was boarded by armed men and several of the personnel kidnapped and held for ransom. This was after a gun battle with armed security guards on board. The battle left two security guards dead and two security guards wounded. The escalation of violence in the Nigerian area is cause for concern and it is not the only area where such acts are being committed.

An act of terrorism or an act of piracy? It depends on your point of view. The question is: did the rig have an operational security system in place?

No person is expected to stand up to armed intruders; that is not what seafarers are employed for. Their job is to operate a ship safely and meet commercial requirements. This has resulted in the growth of armed security guards being carried on board ships and the problems associated with this. The IMO has put in place the ISO28007 standard for the control and certification of these organisations.

Piracy is a major problem for shipping in the areas of the Horn of Africa and the Gulf of Guinea and it is spreading. How the industry reacts and governments work together to find permanent solutions will determine the direction that shipping takes. The ISPS Code is giving the shipping industry a tool, which if used properly will help protect the crew and their ship from such acts.

Remember that security is the responsibility of everyone involved in shipping. Security is not just about countermeasures against terrorism. It is also about stopping piracy, stowaways, thieves and other people with no right to be there gaining access to ships.

This section has been written as an introduction to the ISPS Code. To go in depth as to the complete requirements of this code would require a book of at least four times the content as presented here.

The ISPS Code is in its infancy. It will mature, it will evolve, but it will never lose sight of its principal objective that prevention is better than cure.

As understanding and living with the code become the norm it will fade into the background of being just another standard and certificate that needs to be met so that the ship can be certified to trade. This should never be allowed to happen or the shipping industry will reap rewards it does not need. The responsibility will lie with the companies, the administrations and the RSOs to ensure that this never happens. Conducting strict audits and ensuring that companies are reminded of the consequences of failure to comply should hopefully maintain the standard.

Working with the ISPS Code has given me an insight into its requirements and how it will have to be applied to work with the other sectors for ship operation. Security

management is going to become one of the core skills that all companies are going to have to embrace to ensure maximum efficiency and effectiveness.

Reading this text and looking at the appendices will make the subject matter seem complex and convoluted. A complex item can be broken down into a number of simple items. It is a matter of building a secure base of knowledge and then expanding it with items that appear to be the natural building blocks on the base.

Everyone will have a unique perspective of how this works and how it can be achieved. And everyone is right. There is no one answer and one way to apply the ISPS Code. If there was, everyone would be using it and it would be the same for every company and every ship and every country.

The additional new step that the IMO has taken is that, for the first time, it has become involved with the auditing and certifying of port facilities. With the ISM Code the IMO first became involved with auditing and certifying companies and not just ships. The ISPS Code has taken it a step further.

I have not explored at this time the requirements of the port facility and the PFSO to any depth. The reason was to give a better insight to the personnel involved in shipping.

It will require in future that those working on or with the ships have an understanding of how the ISPS Code works for the port facilities to ensure that they are able to fully meet all the requirements of this code.

Self-assessment

- How does your company deal with the issue of armed security guards?
- How does your company deal with issues that are not mentioned in the ISPS Code but affect the operation of the ships with security issues?

Appendix 6.1: Interim International Ship Security Certificate

INTERIM INTERNATIONAL SHIP SECURITY CERTIFICATE

(official seal)

(state)

Certificate No.:

Issued under the provisions of the

INTERNATIONAL CODE FOR THE SECURITY OF SHIPS AND OF PORT
FACILITIES (ISPS) CODE

Under the authority of the Government of _____
(name of State)

by _____
(persons or organisation authorised)

Name of Ship:

Distinctive numbers or letters:

Port of registry:

Type of ship:

Gross Tonnage:

IMO Number:

Name and Address of Company:

Is this a subsequent, consecutive interim certificate? Yes / No *
If Yes, date of issue of initial certificate:

THIS IS TO CERTIFY THAT the requirements of section A/19.4.2 of the ISPS
Code have been complied with.

This Certificate is issued pursuant to section A/19.4* of the ISPS Code.

Issued at: _____
(place of issue of the certificate)

*(signature of the duly authorised official
issuing the Certificate)*

*(Seal or stamp of issuing
authority, as appropriate)*

* Delete as appropriate

Appendix 6.2: International Ship Security Certificate

INTERNATIONAL SHIP SECURITY CERTIFICATE

(official seal)

(State)

Certificate No.:

Issued under the provisions of the

INTERNATIONAL CODE FOR THE SECURITY OF SHIPS AND OF PORT
FACILITIES (ISPS) CODE

Under the authority of the Government of _____

(name of State)

by _____

(persons or organisation authorised)

Name of Ship:

Distinctive numbers or letters:

Port of registry:

Type of ship:

Gross Tonnage:

IMO Number:

Name and Address of Company:

THIS IS TO CERTIFY:

1. that the security system and any associated security equipment of the ship has been verified in accordance with section 19.1 of Part A of the ISPS Code;
2. that the verification showed that the security system and any associated security equipment of the ship is in all respects satisfactory and that the ship complies with the applicable requirements of chapter XI-2 of the Convention and Part A of the ISPS Code;
3. that the ship is provided with an approved Ship Security Plan.

Date of Initial / Renewal verification on which this certificate is based

This Certificate is valid until _____ subject to verification in accordance
with section 19.1.1 of Part A of the ISPS Code.

Issued at: _____

(place of issue of the certificate)

(signature of the duly authorised official
issuing the Certificate)

(Seal or stamp of issuing authority, as appropriate)

Appendix 6.2: International Ship Security Certificate (cont.)

ADDITIONAL VERIFICATION IN ACCORDANCE WITH SECTION A/19.3.7.2 OF THE ISPS CODE

THIS IS TO CERTIFY that an additional verification required by section 19.3.7.2 of part A of the ISPS Code the ship was found to comply with the provisions of Chapter XI-2 of the Convention and Part A of the ISPS Code

Signed:
(signature of duly authorised official)

Place:

Date:

(seal or stamp of the Authority, as appropriate)

ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID FOR LESS THAN 5 YEARS WHERE SECTION A/19.3.3 OF THE ISPS CODE APPLIES

The ship complies with the relevant provisions of part A of the ISPS Code, and the Certificate shall, in accordance with section 19.3.3 of part A of the ISPS Code, be accepted as valid until

Signed:
(signature of duly authorised official)

Place:

Date:

(seal or stamp of the Authority, as appropriate)

ENDORSEMENT WHERE THE RENEWAL VERIFICATION HAS BEEN COMPLETED AND SECTION A/19.3.4 OF THE ISPS CODE APPLIES

The ship complies with the relevant provisions of part A of the ISPS Code, and the Certificate shall, in accordance with section 19.3.4 of the ISPS Code, be accepted as valid until

Signed:
(signature of duly authorised official)

Place:

Date:

(seal or stamp of the Authority, as appropriate)

Appendix 6.2: International Ship Security Certificate (cont.)

ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF VERIFICATION WHERE SECTION A/19.3.5 OF THE ISPS CODE APPLIES OR FOR A PERIOD OF GRACE WHERE SECTION A/19.3.6 OF THE ISPS CODE APPLIES

The Certificate shall, in accordance with section 19.3.5 / 19.3.6* of part A of the ISPS Code, be accepted as valid until

Signed:
(signature of duly authorised official)

Place:

Date:

(seal or stamp of the Authority, as appropriate)

ENDORSEMENT FOR ADVANCEMENT OF EXPIRY DATE WHERE SECTION A/19.3.7.1 OF THE ISPS CODE APPLIES

In accordance with section 19.3.7.1 of part A of the ISPS Code, the new expiry date** is

Signed:
(signature of duly authorised official)

Place:

Date:

(seal or stamp of the Authority, as appropriate)

* Delete as appropriate

** In case of completion of this part of the certificate the expiry date shown on the front of the certificate shall also be amended accordingly

Appendix 6.3: Statement of Compliance for a Port Facility

STATEMENT OF COMPLIANCE OF A PORT FACILITY

(Official seal)

(State)

Statement Number

Issued under the provisions of part B of the

INTERNATIONAL CODE FOR THE SECURITY OF SHIPS AND OF PORT FACILITIES (ISPS CODE)

The Government of

.....
(name of the State)

Name of the port facility

Address of the port facility

THIS IS TO CERTIFY that the compliance of this port facility with the provisions of chapter XI-2 and part A of the International Code for the Security of ships and of Port Facilities (ISPS) Code has been verified and that this port facility operates in accordance with the approved port facility security plan. This plan has been approved for the following:

Type of Operations:

Types of Ships :

Types of Activities:

Other relevant Information:

(delete as appropriate)

Passenger ship

Passenger high speed craft

Cargo high speed craft

Bulk carrier

Oil tanker

Chemical Tanker

Gas Carrier

Mobile offshore Drilling Units

Cargo ships other than those referred to above

This Statement of Compliance is valid until subject to
verifications *(as indicated overleaf)*

Issued at:

.....
(place of issue of the certificate)

.....
*(signature of the duly authorised official issuing the
Certificate)*

.....
*(Seal or stamp of issuing
authority, as appropriate)*

Appendix 6.4: Declaration of Security

DECLARATION OF SECURITY

Name of Ship:

Port of registry:

IMO Number:

Name of Port Facility:

This Declaration of Security is valid from
to

For the following activities

(list the activities with relevant details)

Under the following security levels

Security level(s) for the ship:

Security level(s) for the port facility:

The port facility and ship agree to the following security measures and responsibilities to ensure compliance with the requirements of Part A of the International Code for the Security of Ships and of Port Facilities.

The affixing of the initials of the SSO or PFSO under these columns indicates that the activity will be done, in accordance with relevant approved plan, by

Activity	The port facility	The ship
Ensuring the performance of all security duties		
Monitoring restricted areas to ensure that only authorised personnel have access		
Controlling access to the port facility		
Controlling access to the ship		
Monitoring of the port facility, including berthing areas and areas surrounding the ship		
Monitoring of the ship, including berthing areas and areas surrounding the ship		
Handling of cargo		
Delivery of ship's stores		
Handling unaccompanied baggage		
Controlling the embarkation of persons and their effects		
Ensuring that security communication is readily available between the ship and port facility		

Appendix 6.4: Declaration of Security (cont.)

The signatories to this agreement certify that security measures and arrangements for both the port facility and the ship during the specified activities meet the provisions of chapter XI-2 and Part A of the ISPS Code that will be implemented in accordance with the provisions already stipulated in their approved plan or the specific arrangements agreed to and set out in the attached annex.

at

on the

Signed for and on behalf of	
The port facility:	The Ship:
<i>(Signature of Port Facility Security Officer)</i>	<i>(Signature of Master or Ship Security Officer)</i>

Name and title of person who signed	
Name:	Name:
Title:	Title:

Contact Details	
<i>(to be completed as appropriate)</i>	
<i>(indicate the telephone numbers or the radio channels or frequencies to be used)</i>	
For the Port Facility:	For the Ship:
Port Facility:	Master:
Port Facility Security Officer:	Ship Security Officer:
	Company:
	Company Security Officer:



7 PORT STATE CONTROL

Inspection and degree of inspection

The aim of this chapter is to make ship managers aware of the importance of dealing with PSC inspections in their role. Likewise, it is important to understand the legislation and workings of PSC organisations.

There is no ship that does not have at least some deficiencies. That is a fact of life. The problem arises when the ship's staff do not know of them and the shore-based staff are in the same position.

It is also important to understand the progression of PSC inspections from the ship being inspected to detention. On 1 July, 2002 Phase 2 of the ISM Code became mandatory. From the position of shipping companies, the impact was felt. The reason for this was that many PSC MoUs had stated their intention to conduct an intensive inspection regime on those vessels having attained mandatory certification for the ISM Code. By the end of 2002, the results were known and gave the shipping industry an indication of where problems lie. The finger of blame was pointed and then arguments arose. Each interested party took a stance.

It is hoped that this chapter will give some concepts to ship managers of what is to be done to ensure that their ships are not detained. It is not possible to give all the answers, but being able to understand better the role and position of the port state control officer (PSCO) will provide some guidance.

It is recommended that all staff having to deal with PSC have in their possession a copy of *Procedures for Port State Control 2011*, which is structured in the following way:

Table of Contents for PSC

Chapter 1	General
	1.1 General
	1.2 Purpose
	1.3 Application
	1.4 Provision for Port State Control
	1.5 Ships of Non-Parties
	1.6 Ships Below Convention Size

	1.7	Definitions
	1.8	Professional Profile of PSCOs
	1.9	Qualification and Training requirements of PSCOs
Chapter 2	Port State Inspection	
	2.1	General
	2.2	Initial Inspections
	2.3	General Procedural Guidelines for PSCOs
	2.4	Clear Grounds
	2.5	More Detailed Inspection
Chapter 3	Contravention and Detention	
	3.1	Identification of a Substandard Ship
	3.2	Submission of Information Concerning Deficiencies
	3.3	Port State Action in response to Alleged Substandard Ships
	3.4	Responsibilities of Port State to Take Remedial Action
	3.5	Guidance for the Detention of Ships
	3.6	Supervision of Inspection
	3.7	Procedures for Rectification of Deficiencies and Release
Chapter 4	Reporting Requirements	
	4.1	Port State Reporting
	4.2	Flag State Reporting
	4.3	Reporting of Allegations under MARPOL
Chapter 5	Review Procedures	
	5.1	Report of Comments
Appendix 1	Code of good practice for port State control officers conducting inspections within the framework of the regional memoranda of understanding and agreement on port State control (MSC-MEPC.4/Circ.2)	
Appendix 2	Guidelines for the Detention of Ships	
Appendix 3	Guidelines for Investigations & Inspections carried out under Annex I of MARPOL 73/78	
Appendix 4	Guidelines for Investigations & Inspections carried out under Annex II of MARPOL 73/78	

Appendix 5	Guidelines for discharge requirements under Annex I and II of MARPOL
Appendix 6	Guidelines for more detailed inspections of ship structural and equipment requirements
Appendix 7	Guidelines for control of operational requirements
Appendix 8	Guidelines for port State control related to the ISM Code
Appendix 9	Guidelines for port State control related to LRIT
Appendix 10	Guidelines for port State control under the 1969 Tonnage Convention
Appendix 11	Minimum manning standards and certification
Appendix 12	List of certificates and documents
Appendix 13	Report of inspection in accordance with IMO port State control procedures
Appendix 14	Report of deficiencies not fully rectified or only provisionally rectified
Appendix 15	Report of action taken to the notifying Authority
Appendix 16	Format for the report of contravention of MARPOL (article 6)
Appendix 17	Comments by flag State on detention report
Appendix 18	List of instruments relevant to port State control procedures
Appendix 19	Port State control regimes comparative table (extracts from document FSI 20/6/2)

Table of contents for *Procedures for Port State Control*

Inspection and more detailed inspection

Every ship will be inspected by PSC. The number of inspections per year will vary depending on the trading pattern of the ship and the results of previous PSC inspections. It is not always consistent and the fact of the matter remains that due to the disparity of the various PSC MoUs the application of the PSC procedures vary.

The global starting point for the procedures for PSC inspection is the IMO publication *Procedures for Port State Control 2011*. This contains IMO Resolution A.1052 (27) and is broken down into five chapters and 19 appendices, as shown in the table above.

With so much legislation in place and a diversity of interpretation of legislation by individual flag states, the problem facing ship managers is how to ensure that they keep abreast of each flag state's requirements. How can ship managers be competent in all legislation? The answer is simple. It is not possible. Therefore, specialisation and the support provided by a concise SMS are necessary to give ship managers the expertise to do their job.

Self-assessment

- Does the SMS of your company have procedures in place for dealing with PSC inspections and detentions?

Ships are not just detained; there is a progression leading to detention. In many cases, it is the lack of response from the ship and/or the office that results in the detention. In some cases there can be a breakdown in communication between the PSCO and the ship's crew. In other cases, there has been hostility from the crew and lack of co-operation. If the PSCO cannot complete his or her inspection then the ship can be detained. Every person has a job to do. The responsibilities imposed on the ship's crew and the lowering of numbers means that every person has an increased workload.

Ships are being continually inspected and audited. Certain ship types have more inspections and audits than others, such as oil tankers inspected under the OCIMF SIRE system. One issue that has recently come to the forefront is that PSC MoUs are requesting SIRE reports for tankers before conducting a PSC inspection to identify shortfalls in operational practice.

Due to this continuous inspection and audit, ships must be ready for inspection at all times. The preparation for inspections and audits is part of the normal day-to-day operation and maintenance of the ship. What must be borne in mind is that having excessive demands placed on them must not fatigue the crew. The hours of work and rest as contained within STCW 95 Part A, Chapter VIII, Section 1 should be followed. In addition to this, ILO Convention 180 – Seafarers' hours of work and the manning of ships – should be consulted until advised that the MLC has been ratified for that particular flag state; MLC 2006 regulation 2.3 then supersedes ILO 180. Some flag states have made this mandatory. There has been a major revision for the STCW 2010 to match the hours of work and rest more closely with that of the MLC requirements. There are still some differences, but these are open to interpretation.

Therefore, it requires the support of the company to allow the crew to meet all of the relevant legislation pertaining to each particular ship. Additionally, the work practices and record keeping should be kept to a minimum to reduce the administration of the working system and therefore release time for practical work. To understand the requirements and scope of an inspection and what it entails, the following section has been taken from the *Port State Control Procedures*:

In the pursuance of control procedures, under the applicable conventions, which, for instance, may arise from information given to a port State regarding a ship, a PSCO may proceed to the ship and before boarding gain, from its appearance in the water, an impression of its standard of maintenance from such items as the condition of its paintwork, corrosion or pitting or unrepaired damage.

At the earliest possible opportunity the PSCO should ascertain the year of build and size of the ship for the purpose of determining which provisions of the conventions are applicable.

On boarding and introduction to the master or the responsible ship's officer, the PSCO should examine the vessel's relevant certificates and documents, as listed

in Appendix 12 of the procedures. When examining 1969 International Tonnage Certificates, the PSCO should be guided by relevant appendices dealing with set items of inspection.

If the certificates are valid and the PSCO's general impression and visual observations on board confirm a good standard of maintenance, the PSCO should generally confine the inspection to reported or observed deficiencies, if any.

If, however, the PSCO from general impressions or observations on board has clear grounds for believing that the ship, its equipment or its crew do not substantially meet the requirements, the PSCO should proceed to a more detailed inspection, taking into consideration chapter 3 of the procedures.

In pursuance of control procedures under chapter IX of SOLAS 74 on the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code), the PSCO should utilize the guidelines in section 3.7.

Who may report a ship? Any interested party may report. The problem is that there is no exact definition of who is an interested party. Port state control must decide if the report is legitimate or not. This is a difficult position to take. If a report was not followed up and the ship then experienced difficulties, PSC would be required to explain its actions. What has to be taken into account is malicious rumour being presented to the port state. For that reason the PSC may take the action of inspecting the condition of the ship from ashore before deciding to board or not. These inspections can be generated outside the normal cycle of inspections.

The reason for an inspection is laid down in section 2.1.2 of the procedures. Such inspections may be undertaken on the basis of:

- the initiative of the party;
- the request of, or on the basis of, information regarding a ship provided by another party; or
- information regarding a ship provided by a member of the crew, a professional body, an association, a trade union or any other individual with an interest in the safety of the ship, its crew and passengers, or the protection of the marine environment.

The information required concerning the year of build and size of the ship is to ensure that the relevant legislation for a ship of its size are being referred to during the inspection. The inspection of the vessel's certificates and documents should confirm the current status of the ship with regard to the requirements of the legislation. From these two sources of information the vessel should be able to ensure that all relevant certificates and documents pertaining to the ship are on board and up to date.

On completing the inspection of certificates and documents, the PSCO will conduct an inspection of the vessel and ascertain the standard of the ship. Deficiencies may be found. Remember that all ships have deficiencies. The fact that none are found does not mean that there are none. It is the failure to meet the requirements laid down in sub-sections 1–4 that will generate the inspection to the level of a more detailed inspection.

The ISM Code is an integral part of the shipping industry. It is now mandatory for a large percentage of merchant ships. If the ship and company are certified to the ISM Code and hold valid full-term certificates, then they should never experience a more

detailed inspection. The fact that such a situation exists would indicate that the SMS is not functioning.

So what is to be done? The PSC inspection commences from the moment that the PSCO arrives at the quayside. Therefore, the ship, as normal practice, will have everything in good order, starting with the boarding arrangements, ship security and the path to the master's cabin or office. First impressions last. If the ship is not being presented well and the basic functions not being attended to, then the first hint of dissatisfaction will be raised in the mind of the PSCO.

Once in the master's office, the PSCO will want to inspect the certificates and documents. These should be ready and in place. One problem that does arise is that the ship's staff keep old certificates. If these are retained on board, they should be in a separate file and each expired certificate or document should be suitably identified. This will remove the possibility of confusion arising as to what is and what is not current and valid.

All certificates are issued to the ship, not the company and therefore only original certificates should be on board. The only exception is the DOC issued to the company in respect of the ISM Code. In many cases, the failure of the master to produce a complete set of certificates and documents and delays in completing a full set of certificates and documents may raise the inspection to the level of a more detailed inspection.

If the review of the certificates and documents is completed to the satisfaction of the PSCO, then an inspection of the ship will be conducted. This should be conducted with the PSCO being accompanied at all times by a ship's officer. If one is not available, then a member of the crew should be made available. At no time should the PSCO be left unaccompanied while inspecting the ship.

The main point being looked at is the general standard of the ship. This should reflect the current status of the certificates and documents. The ship should look well maintained. There may be maintenance ongoing during the stay in port.

Remember that the feelings gained by the PSCO should be that safety and pollution prevention are top of the agenda. All staff should be aware of their responsibilities and conduct themselves in a professional manner. Deficiencies may be found. If the ship is aware of them and these have been progressed and are integrated into the planned maintenance of the ship, then they should not be a problem.

If a deficiency is found that is not known, then this should be looked on as a problem to be fixed rather than a reason for an argument with the PSCO. Any unknown deficiency should be reviewed and discussed with the PSCO. It may be necessary to return to the place where the deficiency has been found and ensure that an agreement is reached on how best to resolve the problem.

Sometimes, ships accept the deficiencies without checking and then have a problem in identifying the necessary action to take after the PSCO has left the vessel. Masters should ensure that they are 100% aware of the exact nature of every deficiency raised against their ship before signing the PSC inspection report.

Remember that it sometimes takes a person looking in from the outside to identify problems within a system. If handled correctly, then a PSC inspection becomes a normal routine part of calls at port. It is not a major problem and positive and constructive dialogue between the PSCO and the ship's staff creates an air of professional courtesy. This leads to a better relationship while the inspection is being carried out.

More detailed inspection

A more detailed inspection does not automatically mean that the ship will be detained. It means that during the inspection of the ship, certain items were found that led the PSCO to believe that 'clear grounds' exist. If this situation arises, the ship should ensure that the company is made aware of the situation at the earliest possible time. The list of clear grounds is as follows:

Clear grounds (to conduct a more detailed inspection) [Res.A.1052 – 2.4.2]

- 1 The absence of principal equipment or arrangements required by the conventions.
 - 2 Evidence from a review of the ship's certificates that a certificate or certificates are clearly invalid.
 - 3 Evidence that documentation required by the conventions and listed in Appendix 4 are not on board, incomplete, are not maintained or are falsely maintained.
 - 4 Evidence from the PSCO's general impressions and observations that serious hull or structural deterioration or deficiencies exist that may place at risk the structural, watertight or weather-tight integrity of the ship.
 - 5 Evidence from the PSCO's general impressions or observations that serious deficiencies exist in the safety, pollution prevention or navigational equipment.
 - 6 Information or evidence that the master or crew is not familiar with essential shipboard operations relating to the safety of ships or the prevention of pollution, or that such operations have not been carried out.
 - 7 Indication that key crew members may not be able to communicate with each other or with other persons on board.
-
- 1 The emission of false distress alerts not followed by proper cancellation procedures.
 - 2 Receipt of a report or complaint containing information that a ship appears to be substandard.

Once the PSCO has explained the items of concern and explained that the inspection has now generated the next step, it is a matter of the ship's staff giving the fullest co-operation. Hostility and/or a lack of co-operation will not resolve the situation; in fact, it may well make matters worse.

Once the items of concern have been explained, it is a matter of taking the necessary action to resolve them. At this stage it is necessary to understand fully what the concerns of the PSCO are and what actions need to be taken to resolve them. In some instances, it may be necessary for ship's staff to take steps to rectify the items or it may mean bringing shore-side contractors on board to resolve the necessary items. In some cases, it may not be possible to rectify the items at the port due to the fact that there are no necessary facilities available. The work may be completed at the next port.

Remember that the PSCO needs to ensure that the ship is safe and not sub-standard. This can only be accomplished by the crew working with the PSCO during the inspection. It is a matter of both parties working together to achieve the best result. If this attitude does not exist and there is a failure to conduct the necessary work and resolve matters,

then the ship will be heading for a detention. If this occurs, the time and effort required to resolve the situation are greatly increased. In addition, there is the commercial impact on the ship and the company that a detention can have on the suitability of the ship for future charters. Although safety and pollution prevention are paramount, we live in the real world and the effects that detentions can have on a company cannot be underestimated.

If the ship is not detained and the items raised at a more detailed inspection are resolved, then after departure from the port the crew and the company would be well advised to review the event and initiate the necessary amendments to the SMS to ensure that such a situation does not arise again. Other ships within the fleet should be made aware as soon as possible after the event and before the amendments are completed to ensure that the necessary inspections and preventative actions are taken so that they do not experience a similar situation.

A more detailed inspection means that problems exist in the way the ship is operated. How these are rectified is a matter for the company and crew. Only full co-operation with the PSCO will resolve the matter.

Self-assessment

- What system is in place in your company to deal with deficiencies raised by a PSCO?
- Is there an early warning system in place, should a ship experience a more detailed inspection?

Due to the nature of a more detailed inspection and the variety of potential items that can be raised, it is not possible to go into full details here. A review of the contents of 'clear grounds' should be made and it should be identified where these items relate to sections of the company's SMS. A more detailed inspection is generated due to the failure of the ship at an inspection.

Detentions

The detention of a ship is not taken lightly by any PSCO. It must be justified by clear and concise evidence that indicates the failure of the ship to meet the requirements. A detention is defined in Section 1.7.4 of the *Procedures for Port State Control 2011* and clear grounds are found in section 1.7.2. Contained within 1.7.2 is a direction to readers to section 2.4 of the *Procedures*, which lists examples of clear grounds situations. Ship managers should take note of this and, apart from reading these sections, need to be able to make interpretations.

Section 3.5 of the *Procedures for Port State Control* states: 'Notwithstanding the fact that it is impracticable to define a ship as substandard and solely by reference to a list of qualifying defects, guidance for the detention of ships is given in appendix 2.'

Contents of Procedures for Port State Control Appendix 2 – Guidance for the Detention of Ships

- 1** Introduction
- 2** General

3 Detainable deficiencies

- Areas under the SOLAS Convention

- Areas under the IBC Code

- Areas under the IGC Code

- Areas under the Load Lines Convention

- Areas under the MARPOL Convention, Annex I

- Areas under the MARPOL Convention, Annex II

- Areas under the MARPOL Convention, Annex IV

- Areas under the MARPOL Convention, Annex V

- Areas under the MARPOL Convention, Annex VI

- Areas under the STCW Convention

- Areas which may not warrant a detention, but where e.g. cargo operations have to be suspended

Any detention must be responded to quickly and effectively. It will usually require the assistance of the shore-based office to assist and organise the necessary assistance to resolve the situation. The sooner the detention is lifted, the sooner the vessel will be back in operation.

Whether the crew feel that the detention is justified or not or if there are grounds for an appeal against the detention, the detention is in place and must be resolved. Therefore the company must have in place a system of dealing with detentions.

The first step is that the lines of communications must be laid down and everyone is made aware of what has taken place. The page from *Procedures for Port State Control* entitled 'Detentions – passing of information' gives a proposed chain of communications. The following paragraphs discuss the relevant bodies and their responsibility in resolving a detention.

On receiving the detention report the items listed must be identified and what were the causes of the deficiencies. A copy of this report should be sent immediately from the ship to the company. This should be for the attention of the person responsible for dealing with detentions as laid out in the SMS. Additionally, a telephone call should be made to the same person to ensure that he or she is aware of the situation and the correspondence that will be sent. Once received at the office, the person responsible will then follow the relevant procedures for dealing with the detention.

The ship manager needs to become familiar with the various reports and their formats that are found in the appendices for PSC Inspections and the results generated. These can be found in appendices 13, 14, 15, 16 and 17 of *Procedures for Port State Control*.

The company should immediately inform the relevant ROs so that they are aware and can render assistance. Where problems arise is when the company has been trying to deal with the detention itself and the PSC sends a copy to the RO. This results in the RO contacting the company instead of the other way round. Also a time delay has transpired and this results in the RO arriving later in the detention and then having to try to catch up on what has taken place before being able to render effective assistance.

It should be noted that under 'Detentions – passing of information' the RO has been identified three times: RO – Class; RO – DOC; and RO – SMC. This is due to the fact that the company can have three different ROs responsible for the issuing of the different certificates involved. What must be remembered is that if the ship is certified to the ISM Code and is

detained the RO responsible for certifying to the ISM Code will want all the information regarding the detention. The reason is simple. A ship certified to the ISM Code should never be detained if the SMS is working correctly. The detention indicates that the SMS is not functioning correctly. This may result in an additional ISM Code audit being requested.

If deficiencies are raised directly against the ISM Code, then the ship and company do have a major problem and the continued existence of the ISM Code certification could be put at risk, especially if there is a delay in informing the relevant RO.

The second step is ensuring that the flag administration for the ship is informed. If this is not done and it is first informed by PSC, there can be a shift in the response and the way the detention is dealt with. Flag administrations do not like to be told by PSC that one of their ships is detained and not be aware of it or able to give an answer as to what steps are being taken or initiated.

Once all necessary people and organisations have been made aware of the situation, it is important that rapid and effective action is taken. The ship's staff should have identified clearly which items they can deal with and which require assistance. The items that have been identified as being able to be resolved by the ship's staff should be commenced immediately, informing the company of progress made.

The company needs to find the relevant expertise available to render assistance to the ship. This will probably require assistance by the ship's agent at the port, who should have a complete knowledge of which companies are most suitable for giving the required assistance for resolving each of the detainable deficiencies. In some cases, it may require that those people and/or equipment are sent to the port of detention.

Detentions occur to sub-standard ships. The deterioration in the ship is usually gradual and there will have been indicators that the ship is heading towards detention. These may be:

- An increase in workload to retain class and statutory certificates;
- An increase in the deficiencies recorded at PSC inspections;
- Problems in meeting the requirements of charter parties;
- An increase in maintenance budgets; or
- An increase in the number of malfunctions, breakdowns and repairs.

The above list is not exhaustive and other factors may affect the ship.

There are, of course, recorded instances of ships being detained that should not have been. These are in the minority. What has to be learned is that no ship is exempt from the potential of a detention.

It is important that the company has in place the relevant support mechanism to resolve a detention. Crews and office staff need to be trained in PSC inspections and the methodology used. They also need to be trained in the practicable application of PSC and how to deal with the inspections.

Remember that it is a long way from a PSC inspection to a PSC detention. What went wrong that the ship passed through the stages until it was detained? Serious questions must be asked of the management of the ship. The blame should not be shifted solely to the master and crew.

In some cases, ships have the detention lifted without completing all of the deficiencies. Appendix 14 of the *Procedures for Port State Control – Report of deficiencies not fully rectified or only provisionally repaired* – may be issued.

All too often, once the ship has the detention lifted and sails from the port, the items contained on it are not rectified. Or they are rectified without the proper follow-up by the PSC to ensure that the records are completed and recorded to the satisfaction of all parties. This can lead to further inspection by other PSC organisations.

The file containing the records of a detention can only be closed when all matters relating to the detention are 100% completed. This includes all the required follow-up action and the reporting requirements attached to it.

When a company is of the opinion that a detention was not warranted for its ship, then it must make a protest to the PSC. Section 2.1.4 of *Procedures for Port State Control* states: 'All possible efforts should be made to avoid a ship being unduly detained or delayed. If a ship is unduly detained or delayed, it should be entitled to compensation for any loss or damage suffered.'

Regrettably, there have been a few cases in which this course of action has been taken. The best action is to ensure the ship is not detained in the first place.

Self-assessment

- What training do ship managers at your company receive in respect to PSC inspections and dealing with matters raised at inspection?

Memorandum of understanding (MoU)

Appendix 19 of *Procedures for Port State Control* lists the current MOUs. What this shows is that PSC is now global – there is no escape from inspection. An MoU can best be explained as a group of countries from a region getting together and agreeing on a best practice and commonality for performing PSC inspections and reporting procedures. Information and reports will be exchanged between members in respect of PSC inspections conducted.

The first PSC MoU was the Paris MoU, which covered countries in Europe. This has been expanded from the initial signatories. The benefits of the MoUs are that countries acting together with a common reporting system for a global region have access to more information. Already the databases of the Paris and Tokyo MoUs have been electronically linked for the passing of PSC inspections and detentions.

The use of electronic databases is on the increase. The EQUASIS database in France gives information concerning ships and their records of PSC inspection and results, listing deficiencies and detentions. This is available to interested parties and access may be given on application.

As the use of computers and databases increases, in the end there will be one global database for PSC inspections and detentions. If all MoUs are party to it the full and exact history of a vessel will be available to a PSCO before attending a ship for inspection. At present, there is no one set of identical forms being used by all the MoUs for the reporting of PSC inspections.

Although the *Procedures for Port State Control* contains the required details of the construction and information to be contained therein, all parties have not yet accepted this. This is regrettable, because companies and ships would be able to compare like with like when reviewing performance and the results of PSC inspections.

While there are many rumours and accusations of the disparity between the various MoUs in completing their tasks, there has been no action taken to resolve the situation. This can be reflected in the fact that there is no one global standard being used for the training of PSCOs. The *Procedures of Port State Control 2011* identifies the professional profile of PSCOs (section 1.8) and the qualification and training requirements of PSCOs (section 1.9). The IMO has further assisted in this matter with the publication of its model course 3.09 (*Port State Control Course and Compendium*). The use of this would go a long way in dispelling some of the uncertainty held by shipping companies as to the veracity of the PSC inspections carried out on their vessels.

A number of countries have very stringent course requirements for the training of PSCOs. These can take up to three months to complete and are full-time attendance courses with examinations throughout the course.

Language

In the past, part of the problems with PSC inspections has been because of the difficulty of communications, but this has now been resolved. Legislation is moving to make English the official language of shipping. It is no accident that this has taken place and it should resolve many of the previous problems encountered, not just at PSC inspections. In the *Procedures for Port State Control*, section 1.9.2, it is stated that 'the PSCO should be able to communicate in English with the key crew'.

This language issue further reinforces certain requirements for the application of the ISM Code, namely Part A, Section 6.6: 'The Company should establish procedures by which the ship's personnel receive relevant information on the safety management system in a working language or languages understood by them.'

Since the legislation mentioned above requires the use of English, perhaps in time English may be used as the language of choice for meeting the requirements of this section of the ISM Code. This would then further the integration of certain work practices and reporting methodologies.

Furthermore, it would prove useful and helpful to a PSCO during an inspection. Some items that may pose the potential of a deficiency or even a detention could be resolved by the ability of the PSCO to inspect fully the records and other items contained in a company's management systems.

Self-assessment

- How does your company deal with language in both the communications within the company and the external parties/interested parties?

Dealing with deficiencies and non-conformities raised at PSC inspections

Deficiencies

Section 1.7.3 of *Procedures for Port State Control* defines a deficiency as 'a condition found not to be in compliance with the requirements of the relevant convention'. The six main

conventions are: SOLAS, MARPOL, STCW, Tonnage and Loadline. Consideration of ILO MLC 2006, the sixth convention, must be taken as it becomes universally accepted by flag states. See page 144 for full list of conventions applicable to PSC.

Each of these conventions contains a large amount of information and requirements to meet international legislation. Not all legislation applies to every ship and therefore the company must be aware of which pieces of legislation apply to which ship. This is further reflected in the matter of which certificates and documents relate to ship type.

This is further defined by Appendix 18 of *Procedures for Port State Control* – List of instruments relevant to port state control procedures. This lists 68 instruments that are applicable to all ship types. Ship managers must ensure all instruments that affect the ships under their responsibility are known and a certain amount of content from each one is understood.

Because of the diversity in the way that deficiencies can be written, it is necessary to have a methodology of identifying deficiencies. To assist in this matter there is a four-page document called *Port State Control Code*, which is used by the Paris MoU.

The PSCOs must ensure that any deficiency raised is accurate and reflects correctly against a certain piece of legislation. They must be able to justify a deficiency exactly and there can be no room for misinterpretation. Although sometimes they may observe items that do not appear to be correct in their own mind and experience, deficiencies should not be raised unless justified by legislation.

The labyrinth of legislation makes it difficult for a ship to be in complete compliance at all times. Assistance in maintaining compliance can be shown by the status of the relevant certificates and documents. To ensure compliance, a maintenance system is required on board the ship. How this maintenance system is constructed and what methods are used are totally at the discretion of the company. Many companies have or are about to change to an electronic system and either have one custom-made or take a ready-made one.

The main point is that no matter what system is used, the identification of all the structure of the ship, its components and systems needs to be fully assessed. If this initial assessment is flawed the system put in place will be flawed.

The PSCO will raise deficiencies against the ship, its systems and its personnel. In addition, deficiencies can be raised against failure to meet the requirements of the ISM Code. Therefore, it is important that the hardware, software and personnel are totally integrated. This will result in a uniform working practice, whereby the structure of work practices removes duplication of work and reduces the administration to accomplish it.

Every PSC deficiency will have to be dealt with and should be identified in the maintenance system. The problem that is raised is how to resolve a deficiency raised against the ISM Code. Any PSC deficiency is raised against the SMS, which will have the maintenance system as part of its structure. But how do you resolve a deficiency against a system that is not inspected but audited and has non-conformities raised against it, not deficiencies?

Procedures for Port State Control, Appendix 8 (Guidelines for port state control related to the ISM Code) gives guidance to the PSCO, when dealing with ISM Code matters. The company and ship's staff should be aware of this section and its application when dealing with such matters at an inspection and when deficiencies are raised.

On each page the category 'other' appears. It is where a deficiency cannot be exactly categorised under a specific heading. The majority of deficiencies found are not unusual but fundamental problems that have to be addressed. It would appear that many of the deficiencies raised show a failure to meet basic standards of good seamanship.

Ship managers should review these guidelines and compare them with PSC deficiencies raised against their ship. Or, if office-based, refer to the PSC inspection deficiency database for the company against the items raised here. Do the trends match?

Self-assessment

- How does your company keep records of PSC deficiencies raised against each ship and for the fleet?
- Are these statistics circulated throughout the fleet?

The lack of consistency of PSC inspections makes it more difficult to deal with the issue of deficiencies. The frequency of inspections and the diversity of results may lead to a lack of understanding as to the supposed condition of the ship. In the example below, the geographical locations were chosen at random and should not be taken as any inference to the PSC inspection regime practised in these locations.

An example may be that the ship is inspected in the USA and two deficiencies are raised. Both are rectified while in port during cargo operations and the vessel sails without delay. Three weeks later the ship is in West Africa and the PSC inspection raises 15 deficiencies and the vessel is detained. Time lost: three days.

The first question to be asked is how did the ship deteriorate to such a degree within such a short time? Was the inspection in the USA not conducted correctly? Was the inspection in West Africa conducted incorrectly? How does the company/ship appeal against the detention?

Having complete records of all PSC inspections of the ship will show how it has performed. If the inspection is completely out of character for the ship, an investigation must be carried out. But first and foremost the necessary work must be completed to lift the detention and have the ship back at work. The investigation must take place later.

This disparity in the conduct and results of PSC inspection by various MoUs has a detrimental effect on how PSC inspections are viewed by sections of the maritime industry. The main context is to identify the deficiencies, deal with them and move on. Constructive arguments or requesting a clearer identification and understanding of the contents of deficiencies go a long way to resolving situations. Constructive dialogue will resolve matters. Once the dialogue has broken down, then it is usual for the situation to deteriorate, rather than be resolved.

PSC and the ship manager

The ship manager has an important part to play in setting up the PSC inspections, dealing with the results and giving support and assistance to the master. The ship manager will need to liaise with the designated person and with those who have responsibility for dealing with deficiencies or non-conformities raised at inspection.

Depending on what has been raised and the actions to be taken, the ship manager will need to ensure that all actions are resolved within the allotted time period. Should a ship be detained, the ship manager will need to work to have the ship released and in the aftermath identify what went wrong. This will mean working with others in a team to follow up every action to ensure the ship is cleared and no outstanding issues are left open.

There will also be the matter of having the deficiencies and non-conformities raised and the actions taken entered into the database for the fleet. An additional problem can be if the ship has experienced a bad inspection result up to and including a detention and the ship also holds full-term ISM certification. This could result in the ship being required to undertake an additional ISM audit.

Paris MoU New Inspection Regime (NIR)

Further to the requirements set out in the *Procedures for Port State Control 2011*, the countries that are members of the Paris MoU have set out additional ones. On 1 January, 2011, changes to the reporting and targeting regimes for ships calling at ports under the Paris MoU jurisdiction were introduced. Details of the new reporting requirements are explained and shown in this section.

In accordance with reporting and other requirements, individual member states will remain responsible for implementing the rules on pre-arrival reporting, both 72 and 24 hours in advance, noting that the 72-hour period will apply to vessels eligible for an expanded inspection. The NIR will take account of the historical performance of a company when assessing whether a ship is subject to an inspection. If a vessel is deemed a low-risk ship, the number of inspections in Paris MoU ports might be as few as one in every 24–36 months.

The main document for advice in the way that the Paris MoU for PSC works can be found and downloaded at www.parismou.org. Titled *Paris Memorandum of Understanding on Port State Control*, this 37-page document should be read to ensure that the specific requirements for NIR inspections are understood and that all ships under the care of the ship manager are ready for inspection. The contents are laid out as shown below.

Paris Memorandum of Understanding on Port State Control: list of contents

- Section 1: Commitments
- Section 2: Relevant instruments
- Section 3: Reporting, ship risk profile, selection, inspection and detention
- Section 4: Banning
- Section 5: Provision of information
- Section 6: Operational violations
- Section 7: Organisation
- Section 8: Amendments
- Section 9: Administrative provisions
- Annex 1: Ships of non-parties and below convention size
- Annex 2: Merchant Shipping (Minimum Standards) Convention, 1976 (ILO 147) and (ILO 147 Protocol, 1996)
- Annex 3: Information system on inspections
- Annex 4: Publication of information related to detentions and inspections
- Annex 5: Qualitative criteria for adherence to the memorandum
- Annex 6: Minimum criteria for port state control officers
- Annex 7: Ship risk profile

Annex 8: Inspection and selection scheme
Annex 9: Inspection type and clear grounds
Annex 10: Examination of certificates and documents
Annex 11: Inspection commitments of authorities
Annex 12: Reporting obligations for ships

Ship risk profile

The ship risk profile will play a major part in PSC inspections because on completion of the ship risk profile form, which can be found in Table 1 of Annex 7 of the *Paris Memorandum of Understanding on Port State Control*, the ship will be awarded the notation of either:

- HRS: high-risk ship
- SRS: standard-risk ship
- LRS: low-risk ship

The result of this will determine the duration between PSC inspections. The time interval for periodic inspections will be as follows:

- HRS: 5–6 months after last inspection in Paris MoU
- SRS: 10–12 months after last inspection in Paris MoU
- LRS: 24–36 months after last inspection in Paris MoU

Reporting obligations

The reporting obligations for ships are found in Annex 12 of the *Paris Memorandum of Understanding on Port State Control*. These are categorised as follows:

- 72-hour message (72 ETA)
- 24-hour message (24 ETA)
- Actual arrival message (ATA)
- Actual departure message (ATD)

Each message has a set of minimum criteria that must be included to ensure that the message is valid. Failure to send such messages in the correct format or not sending the required message can result in a PSC inspection of the ship. The responsibility lies with the master, but the ship manager should ensure that such messages are sent and that a copy has been sent for the attention of the ship manager to ensure there is evidence of the communications having been sent.

The ship's agent for the port of call may be put in copy but has no responsibility for ensuring that the message has been received by the PSC office.

Paris MoU deficiency codes		
<i>Section #</i>	<i>Section Title</i>	<i># of sub-sections</i>
01	Certificates & Documentation	80
	<i>011 Certificates & Documentation – Ship Certificates</i>	37
	<i>012 Certificates & Documentation – Crew Certificates</i>	17
	<i>013 Certificates & Documentation – Documents</i>	26
02	Structural Condition	34
03	Water / Weather-tight Condition	15
04	Emergency Systems	14
05	Radio Communications	18
06	Cargo Operations including Equipment	08
07	Fire Safety	25
08	Alarms	11
09	Working & Living Conditions	74
	<i>091 Working & Living Conditions – Living Conditions</i>	38
	<i>092 Working & Living Conditions – Working Conditions</i>	36
10	Safety of Navigation	38
11	Lifesaving Appliances	35
12	Dangerous Goods	12
13	Propulsion & Auxiliary Machinery	08
14	Pollution Prevention	62
	<i>141 Pollution Prevention MARPOL Annex I</i>	21
	<i>142 Pollution Prevention MARPOL Annex II</i>	09
	<i>143 Pollution Prevention MARPOL Annex III</i>	05
	<i>144 Pollution Prevention MARPOL Annex IV</i>	05
	<i>145 Pollution Prevention MARPOL Annex V</i>	04
	<i>146 Pollution Prevention MARPOL Annex VI</i>	14
	<i>147 Pollution Prevention – Anti-Fouling</i>	04
15	ISM	01
16	ISPS	01
17	Other	03

Paris MoU deficiency codes. The original list is set out over 11 A4 pages and needs to be read and understood in the context of a PSC inspection report. This table gives a structural outline. The right-hand column gives the number of actual independent items identified under each heading.

All ship managers who have ships trading to countries that are part of the Paris MoU need to become familiar with its deficiency codes and be prepared for action should any deficiency be raised at an inspection.

In some ways the ship manager and company as a whole should look at any deficiency raised as a negative that can be turned into a positive. The PSC inspection can be viewed as an independent evaluation of how the ship is performing. The deficiencies raised may have been items that were overlooked by internal methods and resolving them may have broken an error chain that could have resulted in an incident. The action taken to rectify any deficiency can be viewed as part of the continuous improvement process.

PSC annual reports

The PSC annual reports give an incredible amount of information and, if reviewed correctly, can be an aid for internal inspections, audits and surveys to ensure that information contained in them appears to exist on board company ships. This is part of taking a proactive approach to PSC inspections.

Take the following from the Paris MoU PSC annual report 2012:

Top 5 categories of deficiencies in 2012 – category of deficiencies

- 1 Fire safety
- 2 Safety of navigation
- 3 Working and living conditions – working conditions
- 4 Life-saving appliances
- 5 Certificates and documentation – documents

Top 5 categories of deficiencies in 2012 – deficiencies

- 1 ISM
- 2 Nautical publications
- 3 Charts
- 4 Fire doors/openings in fire-resisting divisions
- 5 Oil record book

There is nothing remarkable or unusual in these deficiencies, but the fact that they occur year after year shows that there is a problem with the preparation of ships for a PSC inspection.

Tokyo MoU NIR

The West Of England P&I Club website published the following news item in June 2013, explaining changes to the Tokyo MoU inspection regime:

The Tokyo MoU on port state control (PSC) has announced that it will be introducing a New Inspection Regime (NIR) from 1 January, 2014, replacing the existing ship

target factor system. The move will further harmonise the PSC regimes of the Tokyo and Paris MoUs, the latter having introduced an NIR on 1 January, 2011.

The new Tokyo MoU NIR will closely mirror the system already in place in the Paris MoU region with vessels assigned a ship risk profile from one of three categories: low-risk ship (LRS), standard-risk ship (SRS) and high-risk ship (HRS). The profile will be determined automatically by the Tokyo MoU computer database by considering a number of factors covering the preceding 36 months:

- Performance of the ship's flag state; whether it appears on the Tokyo MoU black, grey or white list of flag states, and the status of the flag's adherence to the IMO Member State Audit Scheme which, although voluntary at present, is due to become mandatory in 2015.
- Type of ship
- Age of ship
- Performance of the ship's Recognised Organisation (RO)
- Performance of the company responsible for the vessel's safety management in accordance with the ISM Code
- Number of deficiencies
- Number of detentions

The PSC inspection interval will depend on the ship risk profile assigned to a vessel. Low-risk vessels will have a less frequent inspection burden, whereas those vessels deemed high risk will be subjected to more regular inspections. Vessels considered low risk will be inspected nine to 18 months after a previous inspection, standard-risk vessels will be inspected after five to eight months and a high-risk vessel will be inspected every two to four months. Although the Tokyo MoU NIR is aligned closely to the Paris MoU NIR, the Tokyo MoU NIR inspection interval is more frequent.

If a vessel calls at a Tokyo MoU port within the inspection time window it will be considered Priority II and may be inspected. If the inspection time window has passed it will be considered Priority I and will be inspected.

If a vessel has any 'overriding factors', which may include situations where class has been suspended or withdrawn or if the vessel has very recently been involved in a casualty, such as a collision, then it is likely the vessel will be inspected by PSC regardless of when the last inspection took place.

PSC MoUs for global coverage

The ship manager needs to be aware of the various PSC MoUs that exist around the world and which one applies to a ship trading to that area. The MoUs are set by regional areas around the world and while most follow the procedures set down by the *Procedures for Port State Control*, a prudent ship manager should be aware of the different interpretations of this publication by certain countries.

- Paris: EU countries
- Tokyo: Pacific Rim
- Indian Ocean

21ST CENTURY SHIP MANAGEMENT

- Mediterranean
- Acuerdo Latino: South America
- Caribbean
- Abuja: West Africa
- Black Sea
- United States Coast Guard (USCG)
- Riyadh: Arabian Gulf and Red Sea

Procedures for PSC Annex 19

	Relevant Instruments													
	LL 66	LL PROT 88	SOLAS 74	SOLAS PROT 78	SOLAS PROT 88	MARPOL 73/78	STCW 78	COLREG 72	TONNAGE 69	ILO 147	IL 147 PROT 96	AFS 2001	CLC	BUNKERS 2001
Paris MoU	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Acuerdo de Vina del Mar	X	X	X	X	X	X	X	X	X				X	
Tokyo MoU	X	X	X	X	X	X	X	X	X	X		X		
Caribbean MoU	X		X	X		X	X	X	X	X				
Mediterranean MoU	X		X	X		X	X	X		X				
Indian Ocean MoU	X	X	X	X	X	X	X	X	X	X				
Abuja MoU	X		X	X		X	X	X	X	X		X		
Black Sea MoU	X	X	X	X	X	X	X	X	X	X	X	X		X
Riyadh MoU	X		X	X		X	X	X	X	X				
USCG	X	X	X	X	X	X	X	X	X	X				

This table shows the application of conventions by the various PSC MoUs.

Conclusion

Very few people in the maritime industry are not aware of PSC and the effect a detention can have on the company and its ships. Yet, how many people have the time to really study the procedures and mechanism that comprise PSC?

Courses are run for managers, crew and others to attend. But the real answer is education by the company for its employees. This further strengthens the understanding and application of the company management system as a whole in relation to the PSC regime. This covers more than the SMS put in place for the ISM Code.

With a better understanding of what the objectives and targets are for PSCOs and the way that they conduct their inspections, the ship's staff will be able to respond better to the questions and requirements.

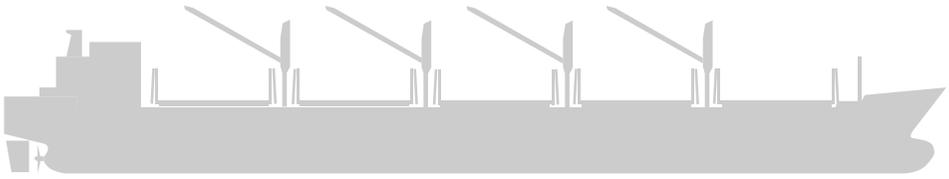
All ships have deficiencies. If there are ships out there that have none and continue to trade with none, then those companies are to be commended. It is a target that all others should strive to attain. The process from inspection to detention is taken in steps. It is not taken lightly. Port state control is a safety net. Its job is simple: stop sub-standard ships that do not conform to the relevant conventions and ensure that ships will not sail until they can proceed to sea without presenting a danger to themselves or the people on board or without presenting an unreasonable threat of harm to the marine environment. It is not a lot to ask and as companies and their ships work with PSC regimes the statistics will soon show those companies that strive for successful inspections and those that do not. Of course, other factors make this a more complex matter and statistics are only as good as the data put in.

Co-operation, consideration and understanding of what others are doing, such as PSCOs, go a long way to resolving items that have the potential to create problems for the ship.

Self-assessment

- Check your PSC inspection results for the company over the last year.
- Check if you can identify any trends (repeated items) within the deficiencies raised.
- In the last three chapters we have dealt with ISM Code, ISPS Code and PSC. By reviewing the company's SMS are you able to see relationships between the three standards and how the company deals with them?
- Identify one ship and review one year's reports on ISM Code and ISPS Code audits and PSC inspection reports and identify if any non-conformities are carrying over from one standard to another.

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8 THIRD-PARTY INSPECTIONS

The contents of this chapter are wide and varied and it is expected that for many ship managers this can be confusing. The third-party inspection programmes vary depending on the ship type. For a number of ship types this can be further sub-divided by the cargo type carried by the ship in question.

Many of these third-party inspection programmes do not have any mandatory or statutory authority, but failure to comply will result in the ship not being able to carry cargoes from certain influential companies or organisations, which will result in it being more difficult to trade the ship to its maximum potential. This will be explained in depth during this chapter.

Not all third-party inspections are carried out on board ship. There can be changes to the requirements and responsibilities of companies and there can be a number of issues for the company to resolve concerning the shore-based office. Ship managers will probably find that part of their duties require them to ensure that all relevant third-party inspections are conducted within the correct time interval and any issues raised, such as deficiencies and observations, are dealt with in the agreed time frame and resolved to the satisfaction of all.

This requires that ship managers must be familiar with, and able to aid the master in, all matters concerning the ship inspections. If ship managers don't have the appropriate technical skills to resolve any issues raised then it is a matter for them to identify who has the right set of skills and authority within the organisation. Ship managers should never abdicate the responsibilities on such matters and should work with the identified person to assist in the resolution of these matters and use it as a learning platform to enhance their own skill set.

The results of an inspection, audit or survey by interested parties will be circulated. A non-exhaustive list of interested parties is given below:

- Port state control
- Verification audit
- P&I insurance
- Hull & machinery
- Classification society
- Flag administration
- Charterer

Distinguishing between the various third-party inspections

Many of the types of third-party inspection have been recorded elsewhere in this book. What is important to note for any ship manager is the effect on the operation of any ship that these inspections can have. There is a whole spectrum of cause and consequence and it is important to be aware of when these inspections will take place and ensure all is done so that the inspection is conducted smoothly and with a positive result.

It may be noted that I did not use the word prepare or preparation. This is because of the fact that any ship holding full-term certification to the ISM Code (SMC) should be ready at any time. Therefore there is no need to prepare. Everything should be in place and up to date, so it is only a matter of doing a few checks to ensure all is ready.

Although we are talking about inspections, any of the work conducted by third parties can be inspections, audits or surveys and it is a matter of ensuring that the ship and ship manager are aware of the status of all certificates and documents relevant to any particular ship.

As discussed in chapter 3, every certificate has a limited time span and where it is linked to international conventions through the auspices of the IMO the maximum life cycle for any certificate is five years. This will depend on the inspection, audit or survey cycle that has been declared to ensure that the full-term certificates are maintained.

There is also the matter of separating the mandatory inspections, the voluntary and the commercial requirements. It is important to note that many of the mandatory inspections are safety-related and they have to be conducted by the flag state or delegated to an RO. In many cases, the RO will be a classification society and, in particular, a member society of the International Association of Classification Societies (IACS).

The IACS has 13 member societies and these class societies serve the vast majority of commercial ships. This is due to the fact that IACS is an NGO at the IMO and its member societies all comply with the requirements set out in the IMO resolutions. However, it must be remembered that these classification societies are working on behalf of a flag administration. This delegation is not uniform for all members and it is the responsibility of each member society to apply for and receive delegation from each flag state for which it wants to conduct work.

IACS membership

The 13 IACS members

- ABS: American Bureau of Shipping
- BV: Bureau Veritas
- CCS: China Classification Society
- CRS: Croatian Register of Shipping
- DNV: Det Norske Veritas
- GL: Germanischer Lloyd
- IRS: Indian Register of Shipping
- KR: Korean Register of Shipping
- LR: Lloyd's Register
- NK: Nippon Kaiji Kyokai (ClassNK)

- PRS: Polish Register of Shipping
- RINA: Registro Italiano Navale
- RS: Russian Maritime Register of Shipping

The IACS publication *Classification societies – what, why and how?* is available at www.iacs.org.uk/document/public/explained/class_whatwhy&how.pdf and covers the following:

Classification societies – what, why and how?: list of contents

- A** Introduction
- A1** Classification societies today
- A2** Why ‘classification’?
- A3** The International Association of Classification Societies – IACS
- B** Classification
- B1** Scope of classification
- B2** Assignment, maintenance, suspension and withdrawal of class
- B3** Classification surveys
- C** Development of rules, regulations and guidance
- C1** Historical development
- C2** Future development
- C3** IACS resolutions
- C4** Other publications
- D** Surveyors
- D1** Qualities and qualifications of surveyors
- E** Statutory certification of ships
- E1** Framework
- E2** Recognised organizations

- Appendix 1** – The language of classification and surveys
 - 1** Classification societies – definition
 - 2** Classification notations
 - 2.1** Class symbol
 - 2.2** Construction mark
 - 2.3** Service notations
 - 2.4** Navigation and operating area notations
 - 2.5** Additional class notations
 - 3** Assignment, maintenance, suspension and withdrawal of class
 - 3.1** Assignment of class
 - 3.2** Maintenance of class
 - 3.3** Suspension of class
 - 3.4** Withdrawal of class
 - 3.5** Notification of suspension or withdrawal

- 4** Surveys – an overview of requirements
- 4.1** Definitions and procedures related to classification surveys
- 4.2** Class surveys periodicity and scope
- 4.3** Class certificate
- 4.4** Definitions and procedures related to statutory surveys and inspections
- 4.5** Statutory certificates

Appendix 2 – The members of IACS and IACS permanent secretariat

The contents of this publication should be core reading for any ship manager as it gives instant awareness of what is required by IACS for ship certification and allows the ship manager to know what has to be done to obtain or retain compliance.

P&I clubs

The International Group of P&I Clubs (IGP&I) has brought together the members of most of the various individual members to work towards a common ground. The individual members are still in competition with each other and look for business, but the shipowners have the right to choose which club they join. Entry into the P&I club needs to be recorded and the fees are paid on an annual subscription, normally based on a number of US cents per gross ton.

A problem now being found is that the number of ships without P&I cover is rising and this will probably continue. This is creating an imbalance in shipping and its risks and coverage should an accident or incident occur. To combat this, the OCIMF SIRE programme Vessel Inspection Questionnaire (VIQ) requires that the following must be provided: '2.1.14 Name of P&I club: The name of the owner should be the same as that on the certificate of registry. A P&I club certificate of entry should be provided to prove membership for the current year, which usually begins on 20 February.'

All members of the IGP&I provide automatic entry into TOPIA 06 (Tanker Oil Pollution Indemnification Agreement 2006) or STOPIA 06 (Small Tanker Oil Pollution Indemnification Agreement 2006). However, a small number of domestic coastal vessels in a few countries opt out of the STOPIA and TOPIA elements of their P&I coverage. The list of current IGP&I members can be obtained at www.igpandi.org.

Record in comments if the vessel has opted out of either STOPIA or TOPIA. If the vessel is entered into a club that is not part of IGP&I, record in comments the name of the club and whether the vessel has STOPIA and TOPIA coverage. The monetary value of the coverage must not be recorded.

This is a start to ensure that P&I insurance cover is being met. There is also an additional problem in that unless the shipowner can prove that there is in place an equivalent to offer the same amount of cover the ship will probably not be accepted for charter by a major oil company (MOC). Also, if there is no P&I cover, how will the company demonstrate that it meets the requirements of MLC 2006?

Flag administrations

Flag administrations can delegate some or all of its duties to another organisation. They have the right to do this, but they should also ensure that they are receiving the correct information and be aware of the standard of the ships under their control.

The approach varies from flag to flag and, in some cases, the delegation is only partially given and this moves up until full delegation is awarded. Part of this is due to the financial constraints of having a global presence for inspecting ships.

Many flags conduct an annual safety inspection of the ship to ensure that the ship is complying with international and national requirements to operate. Even in this case, the flag administration may have retained personnel who are not full-time employees but are retained on a case-by-case basis.

Ship managers need to be aware of which flags are being dealt with for the ships under their control. It is important to know and differentiate what can be expected from this type of inspection. It may be the case from previous experience that there is a difference in the application, scope and result of this inspection because of the interpretation made by the personnel performing it.

In many cases, it is a pro forma inspection report that will have a set number of questions and a date for the ship to be completed. It has a number of similarities to a PSC inspection and all questions must be answered and data supplied. Inspectors will want to see the actual certificates and documents from which they are taking the data so the certificate and document file should be ready.

There will also be a short inspection of the ship and this will require that an officer is made available to accompany the inspector on the rounds to be made. This is an added workload to the ship's staff and should not be carried out when other inspections, surveys or audits are being conducted.

Charterer

The charterer will want to check the condition of the ship and have a lot of information. The data requested will depend on the type of charter. In many cases, there will be a charterer's on-hire inspection before the charter commences and then an off-hire inspection when the charter is completed. This has a number of items at its core and additional requirements specific to the individual charterer. There are also other inspections that can take place before a charter party is signed to determine the suitability of the ship for acceptance.

For on-hire/off-hire surveys the following may be considered as a minimum:

- 1 Checking the certificates and documents.
- 2 A full check of the fuel (bunkers) on board and stores.
- 3 A check of the cargo holds for dry cargo ships, for cleanliness and/or condition. Tankers pose a particular problem because of the limitations for inspection, but liquid cargoes are not prone to having bulldozers and grabs working in the tanks.

The reason behind on-hire/off-hire surveys is to be able to compare the condition of the ship and what was found on board with the delivery condition. When chartering out the ship, the owner has to be aware that it may well suffer some wear and tear during the period of the charter and this is part of business. But if this is excessive or there is actual

damage that could affect the ongoing trading of the ship, this has to be resolved before the ship is delivered back to the owner and/or manager.

To give some idea of the extent to which these inspections go, the following is given as an example and may vary depending on the demands of the charterer.

- **All accommodation spaces:** In most cases, the accommodation spaces include the navigation bridge, all lockers, cabins, common spaces, galley, storerooms and fridges. It is important to identify the wear and tear of these spaces and the likelihood of deterioration during the period of the charter party. This is important because of the potential of the ship being detained by port health and/or PSC as a result of the findings.
- **Passenger spaces, if applicable:** If such an inspection is dealing with a large passenger ship, it may require a team of inspectors to carry out the work. There are many working cargo ships that have some accommodation spaces; this used to be quite prevalent in days gone by, but not so much now. The main question to determine is whether the ship is a passenger ship or a passenger cargo ship.
- **Safety equipment:** The starting point here is to check the fire and life-saving certificates and the training records as required by SOLAS 74, as amended. This gives the full rundown of what the ship is carrying and allows the inspector to sample what is in place. The record of maintenance and repair may well be found in the planned maintenance records, but care should be made to identify a couple of important documents from SOLAS: Chapter II-2, Part E (reg. 14–16) and Chapter III, Part B (reg 19.20, 35, 36, 37). This is a large area to cover and, depending on the ship type, can be more complex because of the additional equipment carried.
- **Cargo areas:** This varies from ship type to ship type and there are questions in respect of accessibility to all areas. A bulk carrier is different from an ore carrier, a container ship or a livestock carrier. As identified in chapter 1, the diversity of ship types is immense and the construction varies so that the ship can meet the operational requirements to meet the trade it is expected to carry out. This will impact on the cargo areas to be inspected and the extent to which they can be reported as inspected.
- **Engine room and attendant spaces (steering gear, generators, etc.):** The engine room condition and state of the bilges needs to be observed and recorded. There will also be an inspection of the entries in the oil record book part I – machinery spaces as well as others such as the incinerator log (if fitted). The inspection of the planned maintenance system should show how the ship is performing and that the consumption of spare parts is within acceptable limits.
- **The planned maintenance system for the ship and company:** This would include checking on outstanding items and a review of how the work is scheduled to ensure that compliance to full certification is maintained.
- **Inspection of accessible spaces on board the ship:** This can include ballast tanks, cofferdams and other spaces. But this can only be conducted in the permit-to-work system for entry to enclosed spaces that has been completed and declared safe.
- **Classification society records:** These are inspected to ensure that all are in order and there are no outstanding deficiencies or conditions of class that could affect the ship's ability to meet the charter party requirements. This will include the requirements of dry docking and repair periods, which could interfere with the planned trading of the ship.

This will also include the inspection of certificates and documents to identify the expiry dates and renewal windows and this will be checked against the charter party period to identify if there might be an interruption of the ship's operation. It is important to note that the ship must maintain a full set of valid certificates and documents throughout the period of the charter party. Anything else is not acceptable.

- **Crew:** A set of sample interviews with the crew will identify how long they have been on board the duration of the contract and if this meets the requirements of the MLC. It is also important to identify how long the crew members have been employed by the company.

Bunkers and consumables

This is a very important part of the on-hire and off-hire survey. The quantities found and agreed need to be reconcilable. There can be fuel oil (FO), diesel oil (DO), lubricating oils (LO), fresh water (FW) and distilled water (DW). In addition, depending on where it is intended to trade the ship, there may be a need to carry low-sulphur fuel oil. Each of these items needs to be gauged, then calculated and final figures agreed.

There should also be an analysis of the fuel and oil to ensure that it is on specification. The inspection should also check all fuel tanks and then assess the compatibility of fuels or whether new bunkers should be kept separate to avoid the potential of contamination.

The initial figures will then have the bunkers received added and then the final figures deducted. From the consumption of fuel for the various parts of the charter it will be seen if the ship performed against the clauses of the charter party and whether it was more efficient or less efficient, which could result in a claim being raised.

Depending on where the ship is returned to the owner and/or manager there will need to be agreement reached as to how the ship will be returned with the same quantities it had on board at the on-hire inspection. This may involve agreeing a transfer of money or that the ship will proceed to a port to have the balance made good.

An important point to remember is the value of the bunkers at the on-hire survey and the cost at the off-hire. Bunker prices fluctuate greatly and need to be allowed for. The same can be said for fresh water on board and even more so if distilled water is required. There are marked costs involved, especially for larger ships.

Depending on the charter party, it may be that a stock take of the paint on board has to be made. In addition, the charterers may want the ship or the funnel to be painted in their colours. This is more usual with a bareboat charter. What is important is knowing the amount on board at the start against what is on board at the end and any supplies received during the charter.

Third-party inspections and the ship manager

The above sections of this chapter show that there are a number of issues with third-party inspections. The different bodies and organisations involved at different times will generate deficiencies, observations and non-conformities and all of these have to be dealt with.

Ship managers need to keep up to date with the results of all third-party inspections of ships under their care, which translates into monitoring all items until they are cleared

within any agreed time frame. A possible problem is that by taking all these inspections as separate entities the potential for identifying trends can be missed, not just for the group of ships for which any particular ship manager is responsible, but for the fleet as a whole.

The important part here comes back to effective communications and that everyone is aware of what is going on. In certain companies, a vetting department is made responsible for dealing with all these matters and maintains a database so that nothing falls through the cracks and is missed. Even though this department may have responsibility, it is important that the ship manager is made aware of, or at least kept up to date on, these matters.

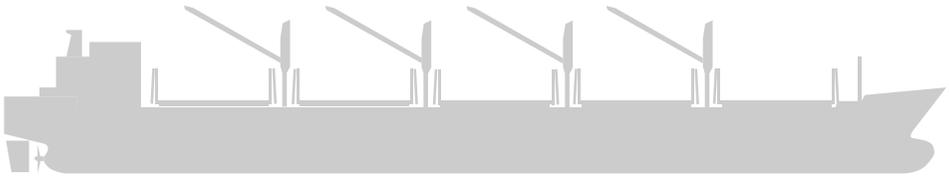
This is when the reality of working as part of a team brings to the forefront what is needed and how matters can be handled. The number of inspections, surveys and audits is increasing rather than decreasing. This places an additional workload on the crew and the ship manager must ensure that there is control over the number of inspections that can be allowed at any port visit. The crew need to rest and the work being conducted is a normal part of ship operations and therefore there can be no suspension of the hours of work and hours of rest for the crew. In addition, the ship has to perform cargo operations and may be experiencing crew changes, all of which impose additional work and stress on the crew.

Ship managers need to be aware of this and ensure that the crew is protected. By negotiating with others in the operations department they can arrange that third-party inspections are staggered as best as possible. Of course, if surveys and inspections need to be conducted so that the ship has a full set of certificates, then alternative solutions need to be found. This may require superintendents to be placed on board while the ship is in port.

A number of the third-party inspections have been dealt with in other chapters and do not need to be revisited here.

Self-assessment

- Check the company records and find a ship that has undergone an on-hire and off-hire inspection in the recent past. Check the numbers generated and find out how matters were resolved and whether or not it was in favour of the company or the charterer. From this identify what you believe could be improvements in this matter. It may be that everything was conducted correctly, which is very good indeed.



9 WORKING AS PART OF A TEAM

This subject has already been discussed in part in chapter 4, but there is a need to investigate more deeply into what it means to be part of an existing team and continue its work compared with being seconded into a team for a project. Perhaps the existing team can be looked upon as a long-term project. There are a number of similarities and differences that must be carefully navigated to ensure the team's effectiveness and efficiency.

Ship managers must look at what it means to be part of a team or to be a team leader and the different expectations this will impose on the way that work is conducted and completed. Teamwork is not easy and it is important to identify the various members, their strengths and weaknesses and the way they interact with the other team members.

The dynamics of teamwork need to be considered in deciding how many persons are necessary to make the team work. Too few and the workload can be too high, which can result in objectives not being met. Too many and the internecine politics will rise and stop the team from functioning, or worse it can be hijacked and the original goals and targets lost.

All of the above relate to how human beings interact and how relationships will affect the outcomes of any given task or project. Technical ability has not been discussed at this stage, because if the fundamentals of making the team work cannot be achieved the technical requirements will be lost. Therefore the rest of this chapter will focus on human relationships and dealing with them and then adding the technical expertise to ensure the desired outcomes.

Ship managers need to look at where they are now in respect of how they deal with other people and then review their stance at the end of the chapter. If there is no change they possess the necessary skills to be a diplomat; if not, join the rest of the world and try to refine the skills needed to achieve better results.

Being an effective ship manager

Ship managers require good communication skills to be effective at their job. They need to be able to understand what is being said by the people on board ship. They talk in the language of things and translate it into a language that will be readily understood by the senior management of the company. That can be said to be the language of money. If ship managers present a message from another party in the wrong language then it will be misunderstood and its effectiveness or impact will be lost. So being able to visualise the language to be used to ensure a successful conclusion is important.

The ISM Code Section A/4 states that the designated person will 'provide a link between the Company and those on board'. How this is accomplished and how well it

works is for the company to decide and monitor. Ship managers need to ensure that this function is being met and in doing so need to build a relationship with those on board the ships for which they are responsible. If the ship manager and designated person work well together, this can enhance the level of communications and trust between those on board and those in the office.

This will impose some additional problems due to the fact that most people will be communicating in a language that is not their native language. There will also be issues of nationality, race and religion that influence societal perceptions of what is right or wrong or shape the interpretation of what is being said. Ship managers need to be aware of such issues and ensure that the necessary steps are taken to avoid such pitfalls.

An explanation of how these problems can arise is best summed up by the playwright George Bernard Shaw who is reported to have said: 'Britain and America are two countries separated by a common language.' Think about it!

Teams and team working

All ship managers work as part of a team. They may well have to work on their own for much of the time, but even then they are interacting with others through the communications systems in the company or by the simple act of talking to another person in respect of the work that is taking place. In this section the emphasis is on teams and team working and the effect of forming a team for a project and the demise of the team once the project is completed.

Leadership should not be associated with an authoritarian figure at the head of an organisation, but as being intrinsic to the management of relationships within an organisation. People's leadership qualities are measured by how well they relate to others in the management of their own behaviour and the behaviour of those with whom they work. This may be most apparent when working in teams.

The team is now well established throughout management practice and has become established within the maritime context, as evidenced by the adoption of bridge team management courses for sea-going personnel. Effective teams are, for example, seen to reduce stress and to manage the processes of change better than individuals working in isolation. However, the management of teams is not easy and an ineffective and unco-operative team can have a very negative effect on morale.

There is a popular assumption that everyone knows what a team is and how to work within one. After all, have we not all been part of a team at some point in our lives? In fact, there are a number of aspects that must be understood in order to work effectively in a team and to manage a team effectively; perhaps the starting point is to differentiate teams and groups.

A group may be described as a number of people who have come together and who have some characteristics that differentiate them from other groups; a group of science students studying for a particular degree, perhaps. Although they share common characteristics, they cannot be described as a team until they share a common purpose and join together to achieve it. The group will only become a team by undergoing a process, a transformation, from a loosely defined gathering of people to a mature and effective unit.

Listed here is a non-exhaustive list of reasons for forming teams in organisations:

- To distribute work;
- To manage and control work;
- To solve problems and make decisions;
- To process information;
- To collect ideas and information;
- To test and rectify decisions;
- To co-ordinate and liaise;
- To increase commitment and involvement;
- To negotiate and resolve conflict;
- To hold inquests and inquiries.

Sound reasons, but could not most, if not all, of these functions be undertaken quite successfully by sticking to a rigid hierarchical structure? The importance of the team approach is that it makes greater use of individuals' skills to form a unit that may achieve far more than the individuals operating in isolation. An effective team creates a synergy – the whole is greater than the sum of the individual parts.

The team approach has some distinct advantages:

- More complex problems are dealt with by pooling expertise.
- Problems are exposed to a greater diversity of knowledge, skill and experience.
- All will be involved in decision-making, leading to greater individual satisfaction.
- Cross-departmental boundaries can be dealt with to alleviate conflict.
- The quality of decision-making will generally be higher, so decisions may be acted on more readily.
- Teams can agree to convene according to their own rules and structures.

Of course, there are disadvantages; decisions by committee may take forever, discord can frustrate the goal, power issues and personality clashes can fragment the group. These problems can be mitigated by recognising the psychology of teams and by understanding the roles adopted by people within them.

It has been recognised that for any team to operate effectively it needs to have a clearly defined task and that the leader's role is to define the task and then to achieve it by co-ordinating the team effort. Bingo! So what is the problem? One of the problems is that teams go through several developmental stages on their way to becoming effective and, if these stages are not understood, the team may not develop successfully. These stages, as identified by Bruce Tuckman in 1965, may not be sequential, they may not all occur and some stages may be revisited during the development and life cycle of the team, but all teams will experience some if not all of them.

Stages of team working

Stage 1: Forming

There is anxiety and dependence on the leader to define objectives and set goals. Attempts will be made to establish a 'code of conduct', shared values and acceptable behaviour. Who is 'in' and who is 'out'? Who will lead and who will follow? Listening skills are poor as the hierarchy is established.

Stage 2: Storming

Experimentation and conflict as the leadership is challenged. Opinions become polarised and there may be emotional resistance to the task. Feet are dragged, sub-groups are formed and the knives are out. There is counter-dependence.

Stage 3: Norming

Norms are now established. Leadership may take a back seat. Members are used as resources and conflicts are put aside. Mutual support is offered and a determination to achieve the task develops. Working practices and agreed procedures are developed.

Stage 4: Performing

This is the phase of interdependence as the team is doing its job. Roles are functional and flexible. Power and influence are distributed depending on expertise. The leader is a participative member. Differences can be discussed and solutions found. There is a feeling of intimacy between members, dissenters are confronted and/or excluded.

Stage 5: Mourning

The task has been achieved and the group is dissolved. Discussion focuses on past shared experiences or on how the team may be maintained. There is a reluctance to let the team end.

Leadership in teamwork

Leadership in the context of teams requires an appreciation of the nature of teams, a high level of interpersonal skills, confidence, maturity, resilience and a sense of humour. The style of leadership adopted must reflect the various stages that the team may go through, as outlined above. The selection of the team can play a vital part in ensuring team effectiveness or in a situation where team selection is outside the leadership's control, an understanding of the characteristics of the individuals involved is crucial.

The psychologist Meredith Belbin devised nine categories of roles adopted by individuals when placed in teams and research has shown that the interrelationship between these roles is a major detriment to a team's effectiveness. There are carefully constructed instruments of assessment designed to clearly identify an individual's Belbin category. This is an approach to follow should you want to find out. It is not the only option; ship managers should find an author on the subject with a style of writing to fit their needs.

All of Belbin's categories displayed desirable and undesirable characteristics, as do all individuals, but when brought together in a team the desirable characteristics of different categories can complement each other. For example, teams need both extrovert members (co-ordinator, innovator, shaper) and introvert members (monitor, team worker, completer, finisher). Where one category may be confrontational (shaper), another will be the peacemaker (team worker). Each one of the roles may exert leadership over the others, but the effectiveness of the team relies a great deal on the way in which individuals manage their own dominant characteristics.

Operating as part of a team

As a ship manager there may be times when you are seconded into a team because of your knowledge and abilities. It may well be that you have no say as to the make-up of the team. This is not a problem. Understanding the dynamics and playing to your strengths, it is possible to be a major contributor to the team and the project without vying for leadership.

It is always best to understand the project, its objectives and time frame. This will then affect the time you expect to consume in carrying out the work demanded. Remember that in many cases you will find that the project will demand more time than has been stated. Be aware that this might affect the performance of your core responsibilities and authority. If this is the case, you need to bring it to the attention of your line manager and the project team leader. Do not continue on until there is a major problem with the team or the project.

Be careful of the politics of team work. Some team members may have been chosen not for their technical ability but for their relationship with the project leader. This becomes readily apparent when the division of work is being made. Suddenly a number of members have a light workload while others are given a workload bordering on excessive. This needs to be resolved or the team will never work. The five stages help with this, but be aware of what is going on around you and the relationships that were in place before the project came into being.

No matter what the project demands, the core of your focus must be on the responsibilities and authority that you have under your job description – forget that at your peril.

Self-assessment

- As a team player you may have worked on a project in the past. How did the project work out? Armed with what has been presented to you do you believe that it could have been conducted in a more refined fashion if the principles given above were used?
- Think about and write down how you would go about recruiting the members of a team where you are the leader.

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10 JOB DESCRIPTIONS

No organisation can succeed unless everyone working for it can identify where they are within the organisation and what their responsibilities and authorities are. How the organisation writes the job descriptions will determine how successful everyone will be. There must be a clear vision of what is to be expected of each person and the authorities they have been given to achieve these responsibilities.

A job description by itself will not work because it is in isolation and therefore has no links to other job descriptions to show how these requirements can be met without impinging on other personnel's responsibilities and authority. There needs to be a distinct view of what is required and how it can be achieved. For many organisations the use of flow diagrams or organograms shows the set-up and where everyone fits in. If written correctly, it will also show what is needed to find promotion within the organisation. Part of this must be met by including in each job description a full description of what qualifications and experience are needed to be able to hold it.

This chapter will also outline what the minimum requirements of the ISM Code are in respect of job descriptions. If these are written correctly, they will meet the full requirements of the ISM Code and reduce the size of the company's SMS. Bearing the above in mind, there is a need to look carefully at the requirements of the ISM Code.

Minimum requirements

Before deciding on the structure of the job description and how it is written, there are a few fundamentals that must be applied to and maintained for every job description in the organisation:

- Job title
- Who reports to you
- Whom you report to
- Responsibilities
- Authorities

Once we have discussed these we will then expand the job description so that it can be used effectively.

Job title

One of the most important points is to clearly title a job description and the use of this title needs to be maintained throughout the organisation. All too often more than one title is awarded to a position and then inconsistencies appear, which can cause confusion to auditors and other people working with the organisation. This is never a deliberate error. It occurs when SMS are expanded to meet the growth of the company. This growth in turn demands an increase in personnel to operate it. The expansion of personnel requires that they are trained to operate the SMS effectively. This applies to both ship and shore personnel. One of the problems that comes with this is when new manning agents are used to supply crew, especially if they are from a nationality new to the company.

When choosing a title or a set of titles it should be borne in mind that an organisation may grow and, if it does, there will be an increase in the number of personnel employed and this will result in new titles being created to accommodate the new employees. The title should also be easy to translate into other languages without losing the significance of the title in the original language.

Who reports to you

This part of the job description allows the person holding the identified position to know who reports to them and when to expect reports or oral feedback from certain ranks on board ship. It must always be remembered with job descriptions that the name of the person holding the position is never mentioned on the official listing of the company. This may appear elsewhere in the company literature, but not within the context of the original job description. The simple reason behind this is that in most companies people join, leave, are promoted and retire. If their names appeared everywhere, it would be a constant battle to update the documents to ensure that they were accurate.

It should also be remembered that people from other departments or offices of the organisation may be required to report to you. So there can be interaction with staff of the same level within the organisation reporting to you. In many cases, there will be a reciprocal requirement where you will report to them as well. This is where a properly constructed and useable flow diagram can show accurately the relationships between positions. There can be a tendency to make these overly complicated, which will reduce their effectiveness and use.

Whom you report to

By definition the people you report to as a ship manager will be found in the SMS. This will identify what is to be reported and when, which allows the ship manager to prepare in advance for certain work that will be repeated in a cyclic manner. Take, for example, the monthly report from each ship for the Health, Safety, Quality and Environmental Committee, held on the 20th of each month. As ship manager you will need to read the minutes of the meeting from each ship and make comments as appropriate. But it may be that you are identifying trends in near-misses from each ship. These would need to be forwarded to the person to whom you report so that they can check with other ship managers if the same potential problem is being identified. If it is, a solution needs to be found.

This highlights the need for a ship manager to be able to pick up on things. Not skim through reports and file them away because there are so many of them. Be aware that there will never be any spare time.

If you look at the flow diagram, it will be apparent how the chain of command is constructed. This should also warn you that not only the immediate person to whom you report will be reading and reviewing your work but also those at even higher levels. So make sure that any report completed is factual and accurate. Do not jump to conclusions and report matters that do not exist.

The number of reports will vary from company to company and each ship manager will have to be aware of what is expected on a weekly, monthly, quarterly, six-monthly and annual basis.

There will also be informal reporting to line managers so that they know what is going on. This requires the ship manager to have good relations with other personnel in the company to know what is going on, which normally works on an exchange of information, gossip and facts. If it is only one-way traffic with you receiving information but not supplying any, you will quickly find that nothing is being passed to you. This is a required part of doing business and dealing with office politics. Learn to understand how it works and use it to your advantage. Office politics do not have to be destructive; they can actually be constructive.

Responsibilities

There is one thing you can be certain of as a ship manager: you are going to be given lots of responsibilities. The company will decide what they require you to do and when to do it. If you were thinking about a normal job working Monday to Friday from nine to five, then forget it. You will work longer hours and, when necessary, be on call at weekends.

A lot will depend on the ship type or types that you manage and their trading patterns. These details will affect the frequency of reports and the amount of information contained therein.

There is also the final responsibility written into the job description and that will be worded as follows or similar: 'Any additional items that the line manager or above require of you for the good of the company.'

This means a large number of additional responsibilities can be loaded on to you should it be required. The wording is so vague that there is no way anyone can identify what it means exactly, but it does give management the opportunity to amend the workload or working requirements of any ship manager.

Authority

There is a fundamental understanding that must be known so that ship managers can carry out their responsibilities: everyone will want to load you up with as many responsibilities as possible, but there is an unwillingness to give you the authority to do the job. The rationale behind this is that authority equates to power and power gives the holder control. It is not about money but about the ability to control others and determine the direction to be taken. Give someone else power and it diminishes your authority and in essence reduces your power to control.

This is a misplaced belief, but it is difficult to break down the barriers that it builds and also has a major influence on how work is conducted and, as a ship manager, on your ability to request or demand that certain items of work or reports are completed.

An effective job description would state the authority given against each responsibility so that everyone knows exactly what they are able to accomplish and where the limitations of their authority over others lie in the organisation. This occurs very rarely and, if it does, staff are very fortunate indeed.

Good management practice should dictate the level of authority given to people of whatever rank. Ship managers should know and have been trained to understand when a situation arises that needs to be passed up the management chain as the dynamics of the decisions to be made are beyond them. This is not saying that the ship manager is not capable of making a decision; it is that the implications to the company need to be appraised and then decided on by a higher level of management.

It can be that the final decision will be made at a higher level than the line manager. The ship manager needs to be able to look at situations arising and be able to make the right decision and not become overloaded. That is why the authority in a job description is so important. There is also a need for the senior management to support the line manager and ship manager.

The ISM Code and job descriptions

The most important point of this section is understanding how companies meet the requirements of the ISM Code for job descriptions, whether they are explicit or implicit. Each relevant section of the ISM Code is followed by a brief description of what it means. The final section will debate how to bring it all together and have fully functioning job descriptions that will remove the need for duplication or triplication.

ISM Code A/1.2.2.3

‘Safety management objectives of the Company should, inter alia: continuously improve safety management skills of personnel ashore and aboard ships, including preparing for emergencies related both to safety and environmental protection.’

This is a never-ending task; when one cycle is completed, the next cycle will commence. How this is achieved is for the company to decide and that may involve internal and external training. This must be tailored to the company’s SMS and its ethos. Safety and environmental protection need to be dealt with evenly, with neither being dominant. The training on board is more difficult to achieve and to fit into the ship’s operational practices and the restrictions due to the hours of work and hours of rest regulations.

ISM Code A/1.4.3

‘Every Company should develop, implement and maintain a safety management system which includes the following functional requirements: defined levels of authority and lines of communication between, and amongst, shore and shipboard personnel!’

This has been dealt with in other chapters of this book. It is important that job descriptions are exact and that there is consistency in the job titles given. Sometimes it is found that there are a number of variations of titles given to the same job. This can cause confusion to anyone working with the SMS or during inspections by external personnel.

ISM Code A/3.2

'The Company should define and document the responsibility, authority and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention.'

This links to A/1.4.3 and gives the overall picture of what is required. These two subsections give the full scope of what job descriptions should bring together to ensure that the company is operating at a more efficient and effective level.

ISM Code A/6.2

'The Company should ensure that each ship is manned with qualified, certificated and medically fit seafarers in accordance with national and international requirements.'

The company has the responsibility of ensuring that the crews on board the ship are the best possible and that they have been thoroughly checked to ensure that they are able to carry out the tasks required of them. The necessity of having additional qualifications to operate certain ship types such as tankers means that unless these qualifications are in place and there is a wealth of experience available the ship does not work.

There is also the need to ensure that the crews chosen are the correct personnel and that they hold the correct, original certification for the rank. For many companies, the use of manning or crewing agencies is the norm, but this exposes the company to certain potential problems in that if this trust is misplaced and the crews supplied are not of the standard required then there can be operating problems for the company and not the manning agent. However, in the majority of cases there is a good relationship between the company and the agent. Fraudulent certification is also a problem. In some cases, personnel arrive on board with original certificates that have been purchased and not gained through accreditation by completing courses.

ISM Code A/6.3

'The Company should establish procedures to ensure that new personnel and personnel transferred to new assignments related to safety and protection of the environment are given familiarization with their duties. Instructions which are essential to be provided prior to sailing should be identified, documented and given.'

This is a growing problem of compliance. How far is familiarisation training to be taken? It is not just about knowing the basics as required and found on the muster list – there is a lot more to be considered. An example is a deck officer on a bridge watch. There is a need to understand and operate a plethora of equipment in addition to being able to interpret alarms. The same goes for cargo operations, which can be taken to the extent of mooring operations.

The question to be answered is if officers or crew members can fully discharge their responsibilities to be effective on board in matters of safety and pollution prevention.

ISM Code A/6.4

'The Company should ensure that all personnel involved in the Company's safety management system have an adequate understanding of relevant rules, regulations, codes and guidelines.'

In every job description there must be a section dealing with the level of knowledge and application of rules and regulations. Setting the level of knowledge is important as it should never be assumed that someone will have the required knowledge. The amount of legislation is very challenging and growing all the time. For a ship manager it is necessary to ensure that all of the relevant legislation for the ship type and flag is in place.

When vying for promotion, it is important that all personnel need to know the level of knowledge needed. If this is not detailed, it is left open to personal interpretation.

ISM Code A/6.5

‘The Company should establish and maintain procedures for identifying any training which may be required in support of the safety management system and ensure that such training is provided for all personnel concerned.’

Training is an important topic, but it also should not be a one-off situation. Training is cyclical and continuous. But the training needs to be good; bad training is worse than no training at all. One of the main tools in identifying training needs can be found in the completed appraisal forms for all personnel where identified specific needs are highlighted.

There is also a question of whether to conduct in-house training or bring in external training providers. This choice is determined by cost and feedback. Financing training can be a problem. It is not cheap but has to be done. Finding a balance of good training and meeting financial outlay while maintaining safety standards is very difficult.

Every company will have its own way of dealing with this continuous demand on the company and the way it operates. There is no easy answer and each company faces this challenge. There is no way to avoid training as long term this will have a far more detrimental effect on the company and its future. When no training is conducted the effectiveness and efficiency of the crew and office staff are reduced. The longer this is continued, the greater will be the investment needed to catch up on what has been missed out and return the company to its former standing. In certain sections of the industry, if there are no training records to show the continuous commitment to training, there may be a problem in achieving business for the ships to operate.

ISM Code A/6.6

‘The Company should establish procedures by which the ship’s personnel receive relevant information on the safety management system in a working language or languages understood by them.’

The simplest solution is one nationality of crew and one language that is understood by all crew members on board ship and in the office. The more nationalities added to the mix, the more difficult this requirement is to achieve. Once the company has chosen an official language for the company, it is expected to be used by all employees.

But where this is not complied with, the company has to make allowances to ensure that lines of communication can be followed, especially in respect of safety issues. Language in this respect is not just about the spoken word but will be supported by the written word and other forms of communication.

ISM Code A/6.7

'The Company should ensure that the ship's personnel are able to communicate effectively in the execution of their duties related to the safety management system.'

The effective communication in this respect is more about the use of speech and other media such as photographs, pictograms and diagrams that can be used to explain a message where the spoken word is not successful. The company needs to identify which is the most successful method or methods for their crews. There is no right or wrong answer; it is about finding the methods that work best.

ISM Code A/9.1

It is important to review the ISM Code, in particular Part A, and look at where there are important tasks to be addressed to complete a fully functioning SMS. An example is section A/9.1: 'The safety management system should include procedures ensuring that non-conformities, accidents and hazardous situations are reported to the Company, investigated and analyzed with the objective of improving safety and pollution prevention.'

This section has been highlighted because contained in the wording is the need for personnel to be trained in accident investigation and analysis. This is specific training with strict requirements for being a competent accident investigator using the company's systems. Bringing together information into a usable set of data needs a mathematical inclination and, with the advent of KPIs, the ability to use statistical formulae to determine trends. This highlights training needs that are partially hidden in the ISM Code and have to be looked for using careful inspection and interpretation.

Identifying potential duplication and/or triplication

If all of these items are reviewed, a certain amount of duplication is identified. Why duplicate and increase the size of the SMS when these items can be integrated into a more comprehensive job description, which while increasing the size and complexity of the job description will reduce the overall size of the SMS?

An example is the job description of the master, the rank most mentioned in the ISM Code. If we take a number of sections and sub-sections of the ISM Code and integrate them into the master's job description it will remove the duplication and gather a number of items into one area instead of being scattered throughout the ISM Code. If this principle is followed for all job descriptions, whether shore-based or on board, then the SMS can be fully restructured to give a better understanding of what is needed.

Self-assessment

- Review the job description that has been created for you in your current employment. Identify its strengths and weaknesses. From this rewrite the job description so that it best reflects the job that you do.
- Review your job description and try to match your responsibilities to the various sections and sub-sections of the ISM Code.

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11 AN INTRODUCTION TO COMMERCIAL SHIP PRACTICES

This chapter is an introduction to commercial ship practices and how they affect ship managers. Ship managers need to understand that in many instances there are other people in the organisation who will carry out these duties, but it is still important for ship managers to understand what is being done and why it is necessary to do so.

Budgets and spreadsheets need to be read and charter parties and their contents understood. Reading reports from the ships is necessary, as is correlating the results from individual ships to see if there are trends materialising. Reviewing the audits, surveys and inspections from third-party organisations and ensuring that any of the items raised, whether they are non-conformities, deficiencies or observations, are dealt with in the prescribed time allowed. Each item affects others and it is for the ship managers to bring all of the facts together and run an overview to form a clear picture of what is going on with their ships.

In constructing this book it has been a matter of trying to bring certain topics together to ensure that the reader has an easier time of placing information into certain groupings. Therefore a lot of the subject matter for this chapter can be found in other chapters. I have tried to avoid a lot of duplication, which would only confuse matters instead of clarifying them.

The ship manager is not expected to be an expert on all matters and there are certain prerequisites that they cannot fulfil for which the company will retain experts. What is important is that all ship managers have a basic working knowledge of what is taking place. This will allow them to discuss matters with others and to direct crew members on board ships to meet certain requirements.

Commercial management

Making up a package of commercial management requires certain information and advice. Depending on the ship types operated, there are further refinements. Failure to meet the agreed terms will result in lawyers becoming involved in disputes; at this time everything is checked and any errors will move the distribution of blame.

Basic vessel characteristics

Ship managers need to have to hand all of the pertinent information in respect of the ships under their control. This includes deadweight scales, load line marks, cargo capacities,

bunker capacities, ship performance curves, cargo equipment specifications (pumps for liquid cargoes, crane capacity for dry cargoes and TEU capacity for container ships).

Maximum cargo lifts to meet charter party expectations

Charter parties are written to maximise the amount of cargo carried and how it is distributed throughout the ship. In many cases, this is homogeneous cargo, which is a single grade loaded throughout the ship. Matters become more complicated for multi-grade cargoes, especially if they are linked to a number of berths or ports with their own draught or air draught restrictions. On rare occasions this is not a problem, but more usual are restrictions of one kind or another. Ship managers need to be aware of these restrictions in the charter party and ensure that the ship is capable of meeting the quantity agreed. A shortage of cargo will result in a claim being made.

Other restrictions may be found due to the voyage of the ship where it is intended to pass through restricted areas such as the Panama Canal, Suez Canal or Kiel Canal or certain restricted depths such as One Fathom Bank in the Malacca Straits, the Dover Strait or Chesapeake Bay in the USA. There are also restrictions on ships transiting the load line zones reflected in the load line regulations. Furthermore the Institute Warranty Limits (IWL) impose restrictions on where the ship can trade, more so for ice and icebergs.

Voyage costs

This is more complex than just the importance of the ship costs. Calculations are needed to establish the viability of a venture, taking into account a number of factors relating to the ship; these factors may not come under the remit of the ship manager. They will only really come to light when the post-fixture calculations are completed. Depending on the type of charter party, there will be differences in who pays for what (see chapter 16), but some of the voyage costs can be:

- Worldscale rates (tankers)
- Operating costs of the ship (capital, operating and voyage)
- Canal tolls
- Brokerage
- Commissions
- Hire rates
- Cash-flow statements

All of these are expenses that have to be met. Additionally there are port agent charges, disbursements, stevedore costs, tugs, pilots and so on. All have to be recorded and the costs identified and placed against the correct party concerned with the voyage.

Charter parties

Charter party types and details are covered in chapter 16.

Bills of lading

There are lawyers who deal only with claims against bills of lading (B/Ls). These are covered in The Hague Visby Rules and York Antwerp Rules. There are also the Hamburg Rules, but

regrettably they have not been widely adopted. These evolve mainly due to the resolution of cases where new precedents have been set.

It is important for ship managers to have a working understanding of these and the implications for the ship and the voyage and potential litigation claims. More important to protect the ship's interests is that the ship manager and captain have a good working relationship and clean B/Ls are not signed, should there be the potential for a claim against the cargo. Endorsed B/Ls will have noted any discrepancies or potential problems with the cargo and this is noted.

Cargo problems can arise during the voyage due to inclement weather and a lack of cargo monitoring. All of these will affect a claim being generated. For example, a ship loads a cargo of iron ore which has water content. During the voyage the cargo hold bilges are regularly pumped out and this is repeated as the bilges fill up again. The problem is that all of this water was part of the cargo and included in the B/L. On arrival at the discharge port the cargo calculation by draught survey finds that there is less cargo on board. This will result in a claim. This does not normally occur, but it can happen if a full set of instructions have been received by the ship and are adhered to.

Cargo measurement

The way that cargo is measured and the final quantities determined vary by an inordinate amount. There is a difference between wet and dry cargoes, and with wet cargoes there is a difference between crude oil, products, chemicals, vegetable oils, LPG and LNG cargoes. For many cargoes the ship will be supplied with a computer-generated lading programme. This will take remote readings from the cargo tanks and produce a set of cargo figures, which will also have determined draughts, shear force and bending moments.

There are amended versions of the programmes for bulk carriers. These are reliable and usually certified by a classification society before they will be accepted for use.

Cargo measurement needs a book in itself to cover the various permutations, including how to conduct a draught survey calculation.

Management of fuel and consumables

Fuel is a major factor in the cost of operating a ship and this needs to be constantly monitored for efficiency and performance. Bunker consumption actually used is compared with that contained in the charter party and can be a major claim if the ship fails to meet this standard. There is also a need for recording and controlling fresh water and distilled water as well as lubricating oils; all of these are expensive. Apart from the quantities involved, there is also a question of the quality of the fuels and other items.

Calculations need to be refined as limits are reached and the data generated is analysed to identify if further improvements can be made. The ship manager is not expected to conduct such work but should be involved and be able to understand what is being discussed.

Financial planning

Every company needs to have budgets and targets and this will result in determining the operation of each particular ship and the fleet overall. To be able to work through this, there must be a basic understanding of some or all of the following:

21ST CENTURY SHIP MANAGEMENT

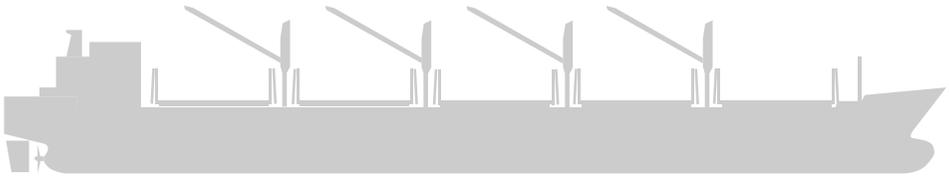
- Return on investment
- Payback period
- Capital budget factors
- Compound interest
- Cash-flow analysis
- Annuity
- Mortgage payments
- Depreciation

To name but a few factors in the overall picture of how the company is performing.

The ship manager will deal with the ship accountants to identify the position of each ship and see how it is performing and if it is making a profit or loss. From this information it is possible to determine where changes have to be made and then initiate them to improve performance. Analysing spreadsheets and identifying any points that stand out and need investigation will assist ship managers in performing their role in the company.

Self-assessment

- If possible, obtain a copy of a monthly spreadsheet for one ship and check the contents to see if it is possible to identify shortfalls of performance or budgetary restrictions.



12 OPERATIONAL MANAGEMENT AND SHIP TYPES

There are so many different types of ship that the requirements to operate them safely and effectively are very demanding. The first point is to have a good master and crew. They are the people who will take the ship forward, meet charter party requirements, raise the standard of the ship's maintenance and hopefully reduce the cost of running the ship. All of this must be achieved without reducing the standard of safety and security on board. Ship managers need to support the crew and, in many cases, this cannot be achieved without them understanding the operation of the particular ship type for which they are responsible.

In addition, ship managers must be able to speak in two languages when items of concern are raised, the languages of money and things. The management and especially the senior management of the company talk in the language of money. The master and crew talk in the language of things. It is the responsibility of the ship manager to be able to convert the languages being used from one to the other so that the items under discussion are fully understood by the other party. This applies not only to the ship manager but also to the designated person. It must not be overlooked as in the past this failure to understand where the other party is coming from has resulted in miscommunication and delays for ships.

The various ship types can be itemised as the following main groups which can then be divided into a number of sub-groups: passenger ships, wet cargo ships, dry cargo ships, offshore and fishing vessels. SOLAS Chapter IX identifies the ship types and their tonnage as follows:

- Passenger ships: all
- Passenger high-speed craft: all
- Oil tankers: 500gt and above
- Chemical tankers: 500gt and above
- Gas carriers: 500gt and above
- Bulk carriers: 500gt and above
- Cargo high-speed craft: 500gt and above
- Other cargo ships: 500gt and above
- Mobile offshore drilling units: 500gt and above

Even this requirement takes time as there is so much to learn and then apply. This is where prudent ship managers would use the expertise around them in the company to assist in

the development of the required knowledge and skills. The superintendents, whether they are operational, technical or safety, all have in-depth knowledge, which will be most useful in developing and increasing the knowledge and skills that a ship manager has to have.

Ship types

Ship types were already dealt with in chapter 1, where a breakdown is given of the ship groups and sub-groups. One such sub-group that should be included under offshore but has a special set of requirements are jack-up rigs (unless able to manoeuvre under their own power) and production platforms. Most production platforms are constructed and placed in location; where the base is built up from the seabed, it cannot be called a ship. These are not ships if they are barges and have no means of propulsion. But if they do have a means of propulsion, they become a sub-class of tankers.

From the above it is clear that the variety of ships is very large, but when you realise that there are a number of sub-groups to each type of ship, the variety increases greatly.

The question is how to attain the knowledge. The best way is by working with ships and their cargoes and all the documentation associated with that. This chapter will help direct you towards items that must be understood for a ship to function and for cargo to be carried safely.

The voyage cycle

Ships of all kinds have a cycle of operations. The operations needed to complete each section of the cycle vary greatly, but the overall requirements are the same. The voyage cycle is used because once the ship is in service it is necessary to follow the cyclical manner in which it conducts the operations. To make it easier to understand, the following notes have been produced in a linear form. However, once the cycle is operating, a person can join or leave the cycle at any point or complete a full cycle and return to the point of joining.

Depending upon the cargoes carried and the ports of call being visited the duration of a voyage can be just a day or months. The main cycle of operation is discharge port to discharge port. An example of a voyage cycle is: departure from shipyard or discharge port—ballast passage—load ports—loaded passage—discharge port—ballast passage for dry dock.

Discharge ports

This is where the cargo on board is removed from the ship and placed ashore. This can be at one or more ports or at a number of berths in the same port. Depending on the type of cargo, the amount of cargo per port or berth will determine the time taken. The ports and berths may have restrictions such as the depth of water in the berths and in the navigable channels to the berths.

Some ship types and cargoes might not enter the port but manoeuvre to man-made purpose-built facilities such as sea islands for large oil tankers, single buoy moorings for large oil tankers or offshore terminals for bulk carriers.

There are numerous permutations of berths and cargo equipment supplied. In many cases, the ships will have their own equipment for cargo handling and this alters the need for stevedores. The main criteria is that the ship can manoeuvre safely to the berth and tie up safely for the duration of its stay and not experience sitting on the bottom or coming

free of the berth because the mooring patterns were not suitable. In some cases, air draught restrictions cause problems for discharging the cargo and loading the ballast. All of these items should have been checked and agreed before the charter party was signed.

Ballast passage

During this part of the cycle the ship will clean and prepare the cargo tanks or holds for receiving the next cargo. It is also a time for maintenance of the holds and, if possible, the cargo tanks. All are entry to enclosed space areas and the necessary safety measures need to be put in place. When conducting such work the ship needs to be operated safely with the correct manning levels and no need to exceed the hours of work and rest regulations.

All of the work conducted during this passage is normal work for a ship and therefore the regulations need to be complied with so that the crew do not become fatigued because they are working excessively above the maximum stipulated hours.

It is also during this part of the cycle that the ship must comply with the Ballast Water Management Convention and the contents of its ballast water management plan and conduct a ballast water exchange while on passage. Depending on where the ship is and where it has to go this may be a full exchange or none at all, with the ballast water discharged to a reception facility.

Load ports

The cargo will be loaded on board in set amounts as laid down in B/Ls. This can be at one port and berth or a number of ports and berths. The permutations are numerous and completely dependent on the ship type and the cargoes being carried. A super tanker may load one grade of crude oil at a single berth and then proceed on the loaded voyage. A container ship may have numerous ports and in some of them more than one berth for loading cargo. It may even load some containers at one port and discharge them at another in the same rotation of berths. This is normal practice: a container ship may arrive in north-west Europe and have several load and discharge ports before departing again on an ocean passage.

Certain ship types, such as container ships, may never have a ballast passage because they are always carrying cargo while in operation. Therefore certain different operational practices need to be employed to ensure that the ship is inspected and maintained in good order.

The terminals where ships load/unload have different sets of equipment depending on the cargo. It should also be stressed that the cargo is not always waiting beside the berth to be loaded. An example is Tubarão in Brazil for loading iron ore. The stock piles for the cargo can be up to 45 miles away and are transported by conveyor belt to the berth to be placed on the ship. Some of the iron ore berths in north-west Australia are built at the end of long trestles away from the shore to have water deep enough for the ships to berth safely.

As previously mentioned, large tankers may berth to single buoy moorings, which can be situated well offshore. In other cases, you may have a general cargo ship that berths at a traditional quay and is close to the centre of town. It does not matter what the berth type is or where it is located; the important criteria here is that it is safe and can accommodate the ship without problems.

Loaded passage

During this part of the cycle the ship and its crew are responsible for the care of cargo to ensure that it is delivered in the correct condition for discharge. For certain ship types such as gas carriers this will be called 'cargo conditioning'. But all cargoes must be delivered in a condition acceptable to the cargo receiver or legal action and cargo claims may result involving the vessel's protection and indemnity association, also known as the P&I club.

In many cases, ships are required to keep and maintain extensive log books and records relating to the cargo and the environment, which have been requested, normally through the charter party, to ensure that it is possible to defend against a claim that the cargo is off specification when it arrives at the discharge port.

During the loaded passage the ship may be weather routed to ensure that any inclement weather encountered is kept to a minimum. Certain ship types such as container ships and those with deck cargoes need to be protected from bad weather by ensuring that the lashings holding the cargo in place on deck are subjected to the minimum stress possible.

In addition, the ship will need to prepare and test cargo equipment for the discharge of the cargo at the next port. It must be understood that cargo ships of all types only really make money when they are carrying cargo. Ballast passages from one port to another when empty and not chartered will only cover the expenses of the voyage.

There are also certain variations that may need to be understood. This can be that running the ship to break even or at a loss is better than laying the ship up and decommissioning it. This is a tough option and has to be looked at most closely so that the figures add up and can be supported. The majority of seafarers will agree that a ship is never the same after it has been laid up and decommissioned for any length of time.

Passenger ships form another type of voyage and carry the most dangerous of all cargoes: human beings. This ship type and its variations, which include passenger ro-ro ferries, operate on a different criteria from the ship types designed to carry cargoes of inanimate materials, which, although dangerous at times, do not compare with a cargo of people.

Passenger ships do not have ballast passages. They want to have passengers on board at all times and their ports of call are chosen to let the passengers ashore to see the sights and spend money. The latest generation of large passenger ships can carry up to 7,500 passengers and crew and designs are in hand for even larger vessels.

There is also a demand for small passenger ships carrying only 100–200 passengers. These are purpose-built for specialised voyages only after market research has been carried out to identify that it is a sustainable trade.

The old established types of ocean liners versus cruise ships have changed. The rise of the plane, which can traverse an ocean in just a few hours compared with days for the liner, brought about the change. In addition, the traditional voyage of the passenger ship has changed. People want to travel to places such as the polar regions, both north and south, or to out-of-the-way places that were not normally considered before.

Cruising is no longer seasonal. It is year-round, with the ship shifting location to supply the demands of potential passengers. An example of this is Port Everglades in Florida, USA. This has become a hub for passenger ships using the US Eastern Seaboard, Bermuda, the Bahamas and the Caribbean Sea. Part of the reason behind this is the travel connections by air to and from the USA to other countries. In addition, Florida has a large tourist industry of its own, which integrates with people using the passenger ships.

The offshore industry has a lot of specialist ships that are not found anywhere else. The development of these ships has been spectacular, along with the complexity of the systems on board. Many are constructed to be able to handle multi-purpose operations. In doing so they have increased in size from the original converted fishing trawlers to large ships with moon-pools and other specialist equipment such as hyperbaric chambers for the support of deep-sea or saturation divers working at great depths.

The offshore ship types are brought into play to meet the demands of the stage that a potential oil field is at. This can start with the seismic survey vessel testing to see if oil or gas is present and in quantities that will make it viable to invest in drilling and bringing the field on line. Then drill ships and/or rigs will take the project to the next stage, with OSVs and anchor handlers being used.

If the field is viable and is to go into production then production platforms or FPSOs will be brought into play and these will need diving support vessels and other specialist ships to complete the tasks, the majority of which will require dynamic positioning systems.

Once in operation the OSVs will become the main means of bringing supplies and materials to the rigs, platforms or FPSOs that are in place. This is a very simplistic picture, but it is only an introduction and requires more study to become knowledgeable about the processes.

The offshore industry has been developing new ship types required for its particular needs. Examples are heavy-lift crane ships, which can lift up to 4,500 tonnes at a time, and semi-submersible heavy-lift ships, which can carry oil rigs of up to 60,000 tonnes on deck and transport them from one region of the world to another. This type of ship has drastically reduced the requirements for deep-sea towage operations.

The demands of the oil industry are pushing the changes to ship design and requirements to extract oil and gas from the seabed. For these ship types, the conventional voyage cycle does not really apply.

Ship and cargo legislation

At this point there is a need to return to SOLAS 74, as amended, 2009 consolidated edition. Part 2, Annex I covers the certificates and documents required by the IMO and its conventions and standards. But what about other industry standards, such as *OCIMF Mooring Equipment Guidelines* for tankers or the *OCIMF Tanker Management and Self-Assessment 2* (TMSA 2), which need to be complied with if the vessel is to operate and be accepted by major oil companies?

This list grows with each ship type or maritime industry sector, which have their own codes for operation. The ship manager must be at least aware of them and the basic outline of their contents. This is when being a good communicator comes to the forefront. If the ship manager is not fully versed in the particulars relating to the vessel types, then by talking with the relevant superintendents a lot of information can be picked up and processed.

More importantly, for ship managers to obtain a real picture of the ship types for which they are responsible, they should spend time on board the ship. This will allow them to see the SMS in action and how the crew cope with the demands of operating a ship and meeting all of the requirements of legislation and industry codes of practice.

When it comes to all of these codes, guidelines and standards of the maritime industry, there is so much that at times it can be difficult to choose which are centrally critical to

the operation of the ships. This decision must be correct. The ship manager must build up a lot of experience and knowledge on how to apply these codes to the ships so that they will work and not be an academic exercise which results in an increased workload for the crews with very little increase in performance.

In many cases, with a mature SMS established, this matter has already been identified and put in place. It will be working, but because the requirements of the industry are always being updated and reviewed the SMS must be able to respond to the changes without causing major revisions to the system. The use of computers and the ability to shift information and identify changes that are needed are of great assistance, but on the downside it means that the SMS becomes more complex to accommodate these demands.

The ship manager needs a system in place to support this need for updating. Certain companies produce a system that identifies change and automatically replaces publications. It will also identify and suggest new publications that it believes will affect the company. If these are not used, the company has to develop its own method of keeping up to date with the changes and ensuring they are applied correctly to the company and its ships.

Cargo documentation and cargo claims

The cargo carried on board ship has a whole raft of legislation covering its loading, carriage and discharge, along with the obligation for it to be in good order when loaded and in the same condition when discharged. The first tier of the documentation covers the description of the cargo and the quantity loaded. This is normally found on a B/L. If there are a number of B/Ls, these can be placed together in a cargo manifest.

One of the contentious requirements is that the vessel is in a seaworthy condition to be able to carry the cargo and the definition and interpretation of what constitutes seaworthiness. To support this, classification societies will issue a certificate of seaworthiness for a particular ship or a certificate of class to show that at a certain moment in time the ship was fully compliant with all requirements of certification. But it is not a certificate that has a lifetime like most certificates because at any instant there could be a change in the condition of a vessel.

Charter parties are varied and the clauses contained therein will vary significantly to make the best-suited set of conditions that will apply to the ship for the carriage of the cargo for the agreement between the shipper and receiver for the cargo. A copy of the charter party recapitulation should be on board the vessel. This abbreviated document of the charter party will contain the necessary clauses for those on board to be able to meet the terms of the charter party in respect of: the quantity of cargo or cargoes to be loaded, the performance of the vessel (speed and bunker consumption, etc.), load port or ports and discharge port or ports. Also included with the charter party dates will be the cancellation dates should the vessel fail to arrive on time at the first port for loading the cargo.

In the event that there is a cargo claim the ship's P&I club should be contacted early in order to have an early intervention and protect the owner's interest against claims. In many cases, the P&I club is not informed until the claim has progressed and then it becomes involved in a weakened position.

Ship managers are required to have a working knowledge of charter parties and their contents. This is dealt with in greater depth in chapter 16. In addition, they should be

aware of the workings of any P&I club, but in particular those clubs that represent the ships in the company's fleet. Ship managers may become involved in any cargo claim because of their unique position within the company and the interaction between the SMS and the operation of the ships, as well as cargo matters.

The SMS will have incorporated all the relevant matters for cargo operations, which will include the procedures, work instructions and records necessary for any cargo operation on the ship types that the company operates, such as:

- Preparation of a ship for the loading of cargo;
- Documents for recording the loading of the cargo;
- Documentation for the care of cargo during the loaded passage;
- Documents for recording the discharge of the cargo.

These will vary depending on ship type and the cargoes to be carried. There will also be documents required to be completed for the charterer, shipper and receiver and these must be completed in full and copies kept on board the ship. All must be completed correctly and give a 100% accurate record of the operations that took place on board the ship.

There are certain documents that are particular to only certain vessel types, for example the OCIMF International Safety Guide for Oil Tankers and Terminals (ISGOTT) Ship/Shore Safety Check-List for oil, chemical or gas tankers. This form is not used on other ship types.

As ship managers build up experience and exposure to these requirements and documents, they will have a better understanding of their ships' operation and be more able to integrate all such matters to the SMS and its operation. Although safety and pollution prevention are the first priorities, the company interests in the operation of its ships must also be protected. Part of the problem that the ship manager faces is being able to understand and use all these various requirements.

Other important considerations

This section introduces some subjects that would be beneficial to ship managers in the discharge of their duties, especially in respect of cargo operations and voyages.

Meteorology

This involves:

- Understanding weather patterns.
- Understanding how weather routing operates.
- Being able to view weather maps and understand the information displayed.
- Being able to discuss with the master certain weather conditions included in the charter party.
- Understand tropical revolving storms and the safe navigation of ships in close proximity to them.
- The effect of weather conditions on cargo operations and cargo care.

The use of material safety data sheets (MSDS)

It would be useful to understand fully the contents of the MSDS and realise that they are not only for cargo carried but also other materials on board (paints, boiler chemicals, bunker fuels and so on). Ship managers should ensure that the correct training has been given to personnel to use the MSDS and protect the crew, ship and environment.

The proper completion of records

Below are just a few examples of records needing to be kept on board. Ship managers should be in the position of advising and assisting ship staff on the correct completion of such documents.

- Oil record book part I;
- Oil record book part II;
- Garbage record book;
- Ballast water exchange;
- Cargo history records for holds and cargo tanks;
- Ballast tank coatings;
- Enhanced Survey Programme, where applicable;
- PSC records of inspections and replies to deficiencies and non-conformities.

Cargo terminology and definitions

The following is a basic introduction to cargo terminology and definitions. Each type of cargo has its own vocabulary and publications, such as ISGOTT. These definitions are generic and can be used for a variety of cargoes and will guide ship managers to certain phrases that they must know and understand. A number of these definitions appear in several publications produced for specific cargo types. This is because they transcend the specific requirements of a particular cargo.

- **Load displacement:** This is the weight of a ship's hull, machinery, equipment, spares, cargo, bunkers, fresh water and crew when the ship is immersed to her summer load line. The difference between the load displacement and the light displacement is the ship's deadweight.
- **Light displacement:** This is the weight of a ship's hull, machinery, equipment and spares. It is often the basis on which ships are paid for when purchased for scrapping.
- **Deadweight:** This is the difference between a vessel's load displacement and light displacement. For cargo work purposes, this is further clarified as deadweight all told (DWAT), i.e. the total weight that, when loaded, will take the ship down to her deepest permissible draught. The term DWAT is necessary to distinguish the above definition of deadweight from deadweight cargo (or carrying) capacity (DWCC).
- **Grain capacity:** This is the cubic capacity (m^3) of a cargo space when the length, breadth and depth of that space are measured to the surrounding plating. An allowance is made for the space occupied by frames, beams and stiffeners. The grain capacity of a hold will generally be used for cargo calculations involving solid bulk cargoes such as grains, fertilisers and coal.

- **Bale capacity:** This is the cubic capacity (m^3) of a cargo space when the breadth and length are measured from inside of the frames and the depth is measured from the deck to the underside of the deckhead beams. When loading cargoes such as pipes, bales or pallets, the bale capacity must be used on calculations. The bale capacity will generally be less than the grain capacity of a hold, unless the hold is 'boxed' (sheet steel fixed over the strengthening frames to make the inside of the hold smooth), in which case they will be the same.
- **Freight:** Freight is the revenue earned for the transport of goods by sea, in other words the money earned by the shipowner for the carriage of cargo. Freight rates are generally quoted in US\$ per tonne of cargo. However, many cargoes will fill a ship's hold before the ship is down to her marks. In some instances, therefore, freight will be charged by volume and not weight, per m^3 , instead of per tonne. Such a cargo is termed a measurement cargo as opposed to a deadweight cargo.
- **Stowage factor:** This is the volume occupied by a unit weight of cargo and is expressed as cubic metres per tonne (m^3 /tonne). Cargoes with a low stowage factor are dense cargoes, e.g. iron ore can have a stowage factor of $0.46m^3/t$. Cargoes with a relatively high stowage factor are therefore less dense, e.g. grain may have a stowage factor of $1.48m^3/t$. Cargoes with a high stowage factor will occupy more space in the hold per tonne than those with a lower stowage factor. The stowage factor of a cargo is a vital piece of information for a ship's officer planning the cargo stow.
- **Broken stowage:** Broken stowage is the space between cargo items stowed in a cargo space, either void or filled with dunnage, and is expressed as a percentage of the volume of the cargo, not the space into which it is to be stowed. The amount of broken stowage will vary with the nature and shape of the cargo. For example, a stow of small uniform cartons will create less broken stowage than large pieces of identical construction steel. Stowing smaller items can reduce the amount of broken stowage within a space and lighter packages can be used in gaps created by those that are more irregular.
- **Ullage:** This is the measurement between the surface of a liquid cargo and the top of the tank. However, sometimes the reference point will be the lip of the ullage port, in which case an allowance will be made in the calibration tables. Calibration tables are tables by which the volume corresponding to the measurement of ullage or sounding may be found.
- **Sounding:** A sounding is the measurement from the surface of the liquid to the bottom of the tank, i.e. the depth of the liquid. Both ullages and soundings are affected by list and trim. Tables are used to correct the reading obtained by ullage or sounding to take account of list and/or trim.

Relationship between ullage and sounding

On a general cargo vessel, a deep tank may be used for the carriage of liquid cargoes. These may be fuel oils, edible oils such as palm oil, or liquid latex. Deep tanks will be fitted with heating coils to facilitate the heating of the cargo during passage to the discharge temperature specified by the shipper. Heating the cargo will make it less viscous and therefore easier to discharge.

As the temperature of an oil cargo increases, the density of the cargo will decrease, with the effect that the volume of the cargo will increase. An ullage space is always left

between the surface of the cargo and the top of the tank to allow for this expansion and to safeguard against overflow. On the loading plan, a minimum ullage will be shown, which should not be exceeded, or a maximum percentage of the tank capacity will be stated.

Full and down calculations

In calculations of this type, two commodities with different stowage factors will be given and the calculation will be made to determine the quantities of each commodity that will both fill the cargo spaces of the vessel and also put the vessel down to her maximum draught. This is achieved by using the information provided to form a mathematical equation.

International Gas Carrier (IGC) Code

Below is the outline of the contents of the International Gas Carrier (IGC) Code. If the company operates gas carriers, ship managers are required to be familiar with this document. Its purpose is to provide an international standard for the safe carriage by sea of bulk liquefied gases and certain other substances listed in its chapter 19. It covers the design, construction, equipment and operational standards for gas carriers.

The IGC Code is applied to vessels regardless of size, engaged in the carriage of liquefied gases having a vapour pressure exceeding 2.8 bar absolute at a temperature of 37.8°C and other products as shown in its chapter 19 when carried in bulk.

List of Contents for IGC Code

1	General	Application – Hazards – Definitions – Equivalents – Surveys & Certification (International Certificate of Fitness)
2	Ship Survival Capability & Location of Cargo Tanks	Ship types 1G, 2G, 2PG, 3G – Freeboard & Intact Stability – Damage & Flooding Assumptions – Standards of Damage – Location of Cargo Tanks – Survival Requirements after Flooding
3	Ship Arrangements	Cargo Segregation (cofferdams, void spaces, etc.) – Accommodation, Service & Machinery Spaces – Control Stations – Pumprooms & Compressor Rooms – Airlocks – Bilge & Ballast Arrangements
4	Cargo Containment	Tank Types (Integral, Membrane, Semi-Membrane, Independent, Internal Insulation) – Design Loads (Pressure, Thermal, Sloshing, Tank & Cargo Weight, Insulation Weight, Dynamic, etc) – Secondary Barriers – Insulation – Tests
5	Process, Pressure Vessels & Liquid, Vapour, & Pressure Piping Systems	Scantlings – Low Temperature Piping – Design Pressures – Stressing – Tests (Minimum 1.5 x Design Pressure) – Valving Requirements – Cargo Transfer Methods
6	Materials of Construction	Tables 6.1 to 6.5 containing materials to be utilised for various vessel sections & operating temperatures – Testing

OPERATIONAL MANAGEMENT AND SHIP TYPES

7	Cargo Pressure / Temperature Control	Pressure Regulation by Refrigeration, Utilisation of Boil-Off Vapour as Fuel, Adequate Design Pressure Vessels, Venting @ SES, or other – to cope with SES temp 32, air 45
8	Cargo Tank Vent Systems	Pressure Relief Systems (at least 2 per cargo tank of the volume is > 20m ³) – Vacuum Protection Systems – Valve Sizes
9	Environmental Control	Means for Purging & Gas Freeing Cargo Tanks & Pipelines – Interbarrier Spaces Inerting – O ₂ < 5% by volume
10	Electrical Installations	Certified Intrinsically Safe Equipment & Wiring for Gas-dangerous Spaces & Zones. Automatic Alarmed Shutdowns for Submerged Pumps, Pressurised or Flameproof Lighting for Cargo Compressor Rooms & Cargo Pump Rooms, etc.
11	Fire Protection & Fire Extinction	Fire Safety Requirements – Fire Water Main Equipment – Water Spray Systems (for exposed cargo tank domes, liquid & vapour manifolds etc.), Dry Chemical Powder Systems, Additional Fireman's Outfits
12	Mechanical Ventilation in the Cargo Areas	Spaces normally entered during cargo handling operations – spaces not normally entered, air changes per hour
13	Instrumentation (Gauging, Gas Detection)	Means for Measuring Level, Pressure & Temperature for Each Cargo Tank, Alarms for High Level & Pressures Alarms, Fixed & Portable Gas Detection Equipment
14	Personnel Protection	Protective Equipment, including Eye Protection – Safety & First Aid Equipment (SCBAs, O ₂ resuscitators, Antidotes for Cargoes, Showers, Eyewash, Stretchers)
15	Filling Limits for Cargo Tanks	Normally not to exceed 98% volume @ "Reference Temp" (Master must have a list of max. tank loading limits)
16	Use of Cargo as Fuel	Only LNG boil-off gas allowed & intrinsically safe equipment utilised plus gas detectors in machinery spaces with mechanical ventilation. Alarms @ 30% LEL with main gas valve shut down @ 60% LEL. Main boiler requirements.
17	Special Requirements	Additional provisions for column "I" in the table in Chapter 19
18	Operating Requirements	Essential Cargo information to be provided, compatibility, training, low temp cargoes, systems & controls, etc.
19	Summary of Minimum Requirements	Table Sample

Published by the IMO

This code is for gas carriers only and there are a number of such codes available for different ship types and the cargoes.

The above code is applied only to gas carriers built as of 1 July, 1986. For ships built before that time another code exists and that must be followed. There are also other publications that need to be used to ensure that a specific ship of a specific ship type is operated to the maximum efficiency and effectiveness.

Chemical tankers: legislation and codes

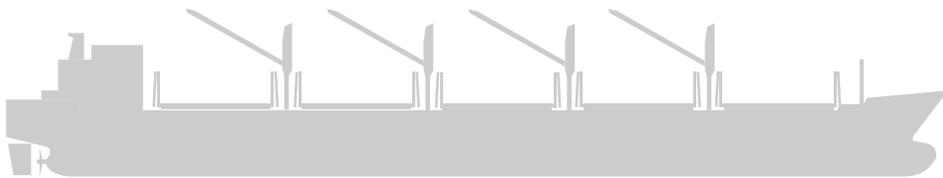
Chemical tankers are an example of how legislation comes together in both mandatory and industry codes. The following must be taken into account:

- **The International Bulk Chemical (IBC) Code:** The IBC Code is made mandatory by SOLAS Chapter VII, Part B – Construction and equipment of ships carrying dangerous liquid chemicals in bulk.
- **MARPOL 73/78, as amended, Annex II:** The contents are mandatory for any chemical tanker that can be said to be a sub-grouping of noxious liquid substance carriers.
- **The ICS Tanker Safety Guide – Chemicals:** This gives guidance on industry best practice for the operation and safety on board chemical tankers. A latest edition copy must be on board every chemical tanker inspected by either SIRE or CDI.

As can be seen from the above, ship managers need to be able to link various publications into groupings appropriate for certain ship types. If each publication is dealt with in isolation, the task becomes all the harder to accomplish.

Self-assessment

- Identify the various ship types operated by your company.
- Choose one ship type and try to establish the various legislation, codes, guidelines and standards that apply to it.
- Check your findings against the technical library that the company uses and identify any differences.



13 FATIGUE AT SEA AND IN THE OFFICE

Fatigue is one of the major contributors in respect of incidents and accidents. In many cases, the fact that hazardous occurrences have taken place will probably result in some of the core issues being related to fatigue. Yet the maritime industry has only put in place legislation to combat this matter for seafarers and not for those working in the office. Therefore, the focus of this chapter is on seafarers and how they need to work and rest to maintain them in the best state, both mentally and physically, to complete their assigned work tasks.

For the ship manager there may not be much in the way of involvement with fatigue issues until something goes wrong. Then the ship manager is expected to have known what was going on and checked that the records had been maintained correctly so that there should be no problem with the records on board and the copies ashore in the event of a third-party inspection.

So for a ship manager there is a need to understand how the records are maintained and how to access and check them. Interpretations may vary from flag administration to flag administration. It is best to know what they require and what PSC inspectors and MLC 2006 auditors will be looking for. This will also transcend to the SMS, to what has been written there and how this is identified.

It will be too late to start learning about it when a deficiency or non-conformity has been raised or, in the worst-case scenario, the ship is detained. Remember that completing the forms is only part of the overall scenario in preventing crew fatigue.

Physical and mental fatigue

Fatigue can occur in two different forms: physical and mental. For many, these do not exist separately but in a mix of both and, as one form becomes more dominant, the effect of the other does not diminish. In physical fatigue there will be tiredness due to physical demands on the body to do work. This can be because of a lack of food to nourish the body or dehydration due to sweating during work. One of the side effects of sweating is the need to replace the salts that have been passed by the body during the sweating process. A loss of natural body salts is a dangerous condition to be in and must be counteracted with salt tablets or electrolyte drinks to cover the full range of salts that the body carries.

Where the body suffers the most is due to 'heat stroke', also known as 'heat exhaustion'. This is where the body has reached a temperature of more than 40°C and the sweating mechanism ceases to function. If this occurs, the person should be taken to a cool area with no direct sunlight and made to rest and given cool water to rehydrate the body.

If this is not done and the person continues to work, they can become delirious and eventually die. It is the responsibility of all seafarers to take care of themselves, to look out for the condition of others and to take steps to stop the onset of this condition by giving assistance to others who are exhibiting the symptoms.

Other forms of physical fatigue can be combated by resting, having a meal to replenish food stores and some sleep. If the physical work has been very strenuous, it may take a couple of days to recover and work the kinks out of the body.

Mental fatigue has the more serious effect on a person's well-being. If this is not identified and allowed to progress, the effects take longer to rectify. In some cases, they can lead to permanent damage to the person's mental health and ability to live a useful life. Mental fatigue takes longer to recover from and, in many cases, people require specialist help to make a recovery.

To help combat fatigue at sea there have been a number of studies and there is ongoing progress in studying the human element issues affecting staff working on board ships. The legislation for combating fatigue has been laid out in two main conventions, which are discussed in the next section. Both are in force at the time of writing and need to be viewed in the context of the other conventions.

An interesting research programme into fatigue is the Project Horizon, which took a new approach on identifying fatigue and determining how it affects personnel on various shift patterns, ship trading patterns as well as ship types. This research is proving to be a useful tool and, as it expands its diversity, more useful data will be learned to assist in the fight against fatigue. This is not the only research going on – there is a lot more being progressed in different countries and organisations. The information emerging needs to be correlated to give a more dynamic picture that supports theories and turns them into practical solutions.

Relevant legislation

The STCW Convention

The STCW Convention's full title is International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, including the Seafarers' Training, Certification and Watchkeeping Code. At present, the 2010 Manila Amendments are the latest revision and update of the convention and code. For more information on this convention and the STCW Code, see chapter 2.

The main sections that deal with the matters relating to fatigue is STCW Code, Part A, Chapter VIII, Section A-VIII/1 – Fitness for duty and Part B, Chapter VIII, Section B-VIII/1 – Guidance regarding fitness for duty.

STCW B-VIII/1 – Guidance for fitness for duty

Prevention of fatigue

- 1** In observing the rest period requirements, 'overriding operating conditions' should be construed to mean only essential shipboard work which cannot be delayed for safety, security or environmental reasons or which could not reasonably have been anticipated at the commencement of the voyage.

- 2 Although there is no universally accepted technical definition of fatigue, everyone involved in ship operations should be alert to the factors which can contribute to fatigue, including, but not limited to, those identified by the Organization, and take them into account when making decisions on ship operations.
- 3 In applying regulation VIII/1, the following should be taken into account:
 - .1 Provisions made to prevent fatigue should ensure that excessive or unreasonable overall working hours are not undertaken. In particular, the minimum rest periods specified in section A-VIII/1 should not be interpreted as implying that all other hours may be devoted to watchkeeping or other duties.
 - .2 The frequency and length of leave periods, and the granting of compensatory leave, are material factors in preventing fatigue from building up over a period of time; and
 - .3 The provisions may be varied for ships on short sea voyages, provided special safety arrangements are put in place.
- 4 Exception provided for in section A-VIII/1, paragraph 9, should be construed to mean the exceptions laid down by the ILO Convention on Seafarers' Hours of Work and the Manning of Ships, 1996 (No. 180) or the Maritime Labour Convention 2006, when it enters into force. The circumstances under which such exceptions are applied should be defined by the Parties.
- 5 Based on information received as a result of investigating maritime casualties, Administrations should keep their provisions on prevention of fatigue under review.

The ILO Maritime Labour Convention, 2006

If using the *Guidelines on the Application of the ILO Maritime Labour Convention* (2nd edition) published by the Maritime International Secretariat Services, the following should be understood: Section A of this guide provides an overview of the convention's requirements and explains the certification and enforcement regime applicable to shipowners. It also explores the fundamental rights of seafarers which the MLC seeks to protect. Section B of the guide covers the detailed MLC requirements. It addresses the different aspects of seafarers' employment with detailed advice on compliance.

It is useful to note that the annexes and appendices to this guide allow you to further explore and reach a better understanding of the requirements impinging on the application of this convention.

Part B – MLC labour standards incorporated in the regulations and code

- 2 Conditions of employment
- 2.3 Hours of work and hours of rest
 - 2.3.1 MLC and STCW 2010 rest hours
 - 2.3.2 MLC requirements
 - 2.3.3 Work and rest hour regime
 - 2.3.4 Schedule of working arrangements
 - 2.3.5 Individual records
 - 2.3.6 Permitted exceptions
 - 2.3.7 Emergencies
 - 2.3.8 Young seafarers

MLC Regulation 2.3 states that its purpose is to 'ensure that seafarers have regulated hours of work or hours of rest'.

Keeping records of hours of rest and work

Every seafarer is required to keep a record of the hours of work and rest for each day spent on board the ship. There should be a complete record showing how the requirements of the legislation are met and that the seafarer is not working in excess of the legislation. If there is an excess of work that would at first appear to be a breach of the rules, this must be investigated to identify why this has occurred and an explanation given. If, for example, there had been an emergency on board ship then that is an acceptable explanation, but where the explanation is not acceptable, steps must be taken to ensure it is not repeated. This must be recorded, including what action has been taken. The check on the records of hours of work and rest over a monthly period should be completed by a competent person other than the named seafarer.

There are also a number of software packages available to create the data and ensure that all staff are complying with the legislation. An example is ISF Watchkeeper 3 – IMO/ILO seafarers' work/rest hour compliance software. There are other software packages, but these must be checked to ensure that they meet the requirements. Other options are for companies to create their own software and use it on board.

Ignorance of the law is not a defence and non-compliance with the requirements of this legislation will probably result in the ship being detained by PSC inspectors. Another factor that will affect the company's performance is that failing to comply with the hours of work and rest legislation means that the SMS is not functioning correctly. This can be seen by the contents of the ISM Code, A/1.2.3.1: 'The safety management system should ensure: compliance with mandatory rules and regulations.'

Non-compliance could be grounds for an additional audit of the ship and possibly the offices to check if this is an isolated case or in fact an operational problem throughout the company, both on board ship and in the offices. The worst-case scenario could be that the ISM Code certification is affected.

Safe manning document and levels of manning on board ship

So far we have discussed fatigue and the legislation that has been put in place to try to reduce fatigue on ship's crews. This is only part of the story. The beginning is when the ship is being built and the original safe manning document was issued. In many cases, the accommodation for the ship was constructed to reflect the safe manning document so that there were no spare cabins. As time went by, the demands of shipping legislation changed, but it was not possible to change the accommodation. New legislation and the demand for the control of working and rest hours placed other pressures on how to man a ship effectively.

This can be seen more in the purchase of second-hand ships, where the accommodation was built for the original nationality of the crew. The new owner has a different set of crew members recruited from other ethnic backgrounds. They may find the accommodation not to their liking. There is nothing the ship manager can do about this, but it can be one of the root causes of low morale on board. Over time the MLC will address this issue, but in the immediate future it is one to think about.

When discussing the topic of manning levels for ships there are two central pieces of legislation that need to be addressed. These are: SOLAS 74, as amended, Chapter V, regulation 14 – Safe manning and IMO Resolution A.890 (21), as amended by Resolution A. 955 (23) – Principles of safe manning.

The resolution contains the model format for producing a Minimum Safe Manning Document. This is the minimum number of people and the required set of qualifications needed for the ship to be considered safe to sail. If the trading pattern changes and there will be a greater demand on the crew then the Minimum Safe Manning Document should be reviewed with the option to increase the number of crew to spread the workload. But if there is no space in the accommodation for the extra crew, this is not an option.

This leaves the option of the crew being involved in operations – to the detriment of maintenance. But if maintenance is reduced, there is the potential for machinery and systems failures or an increase in downtime, which could lead to off-hire periods for the ship. This is also not a viable option.

One solution would be to have a group of people who would attend on board when the ship is in port and carry out the maintenance programme, but this increases the costs of operating the ship. Are there other options available?

Decisions on solutions to the predicament have to be made at a level higher than that of the ship manager. However, the ship manager needs to be kept in the loop so as to be able to implement the decisions and discuss with the master how they are to be carried out on board and the effect this will have on the ship operation.

Duration of contracts for work on board ships

The ship trading pattern and workload created by it should have an impact on how long crew members are expected to serve on board the ship. Whether it is a direct employer or uses a manning agent to supply crew members, the company has to ensure that the contract being offered is sustainable and appropriate for the ship type and its operation.

There are a number of variables to be considered. By taking two extremes in ship operation, ULCC and OSV, the effect on the crew members can be more easily understood and how fatigue can be reduced by identifying the duration of their contracts. This is only part of the problem and solution. The company has to find a solution that will work, taking into account the cost factor and the availability of crew members.

Over a six-month contract, a ULCC trading between the Arabian Gulf and north-west Europe may load cargo three times and discharge cargo three times, transit the Suez Canal three times, load at single buoy mooring systems and discharge at either single buoy moorings or alongside a berth. A large percentage of time will be spent at sea with set watch patterns; during this period the crew can also conduct ship maintenance.

The opposite extreme is an OSV trading out of Aberdeen, Scotland, and delivering mixed cargoes to oil rigs in the North Sea area. Loading in Aberdeen alongside and discharging to rigs located in the North Sea, the ship will be in and out of port at least once per week. The discharge of the cargo requires the ship to be held on station, while cranes lower hooks to have pre-slung cargo attached by crew members. This is a dangerous task for crew members, even in good weather.

This very basic comparison shows the difference in the workload for the two sets of crew. Add to this how weather conditions affect the motion of the ship, which is a factor

causing fatigue, and the need for both ships to operate on a 24/7 basis, it would show that the crew of the OSV have a far greater workload to accomplish during the contract. This, in turn, raises fatigue levels, which can initiate the cycle for accidents and incidents to occur. There will be a number of warnings given by the increase in hazardous occurrences that take place, but many of them will go unreported, which in effect nullifies the warnings. The ship manager will probably have the first indication that all is not well when an accident occurs and someone is injured.

Part of the prevention process can be a well-working ship safety committee which reports on the actual situation on board the ship. The ship safety committee is only one possible title for a committee on board ship that is made up of crew members and reports on how well safety matters are being handled on board. It can have many names such as the health, safety and quality committee or the ship management committee or the health, safety, quality and environmental committee.

The title is not so important. What is important is how it functions and implements safety measures on board that have come from the company and initiatives on board and reports back on the level of success achieved. An example of what can be expected of such a committee and its structure can be found in chapter 3 of the MCA's *Code of Safe Working Practices for Merchant Seamen*.

What is important is that the committee works and is effective; that crew members believe in what the committee is trying to achieve and how it delivers a quantifiable result in certain areas of operations. The committee should include in its remit the check on fatigue factors affecting crew members and the performance of their duties.

One option to reduce fatigue is the duration of the contracts. However, the company has to review the costs of crew members joining and their repatriation. If the contracts for the crew were reduced from six to three months in the above cases, this would reduce fatigue factors, especially to crew serving on board the OSV. To the company, it would appear that there is an immediate doubling of the costs for crew travel. Can it support and sustain such an increase?

There is no easy answer to this problem and it will be raised in less obvious ways. One factor that is certain: the way that ships are operated and the demands, both physically and mentally, on the crews will have a major effect on the recruitment of young people into the industry.

Self-assessment

- If you are working on board ship you will be familiar with the completion of these records and therefore you should be looking at methods to be used to combat fatigue on board.
- If you are working ashore and are not familiar with these records you should ask for permission to take a few samples and check them for accuracy. From the method that you find in the company, think of a possible way to improve the recording and reduce the work in verifying the compliance with legislation.
- Do your own research on the options available for recording the hours of work and rest and determine what you believe is the best option available. Then compare how your company does this work.



14 EMERGENCY RESPONSE AND THE ROLE OF THE SHIP MANAGER

Ship managers will probably find themselves included in the office emergency response team should one of their ships become involved in an emergency situation. The reasoning behind this is simple: the ship manager should have the latest and most up-to-date data on the ship and its operation, which are important when dealing with any emergency situation.

The company will have to decide how to set up its shore-based support for emergency situations as found in the ISM Code A/8.3, which states: 'The safety management system should provide for measures ensuring that the Company's organization can respond at any time to hazards, accidents and emergency situations involving its ships.'

There are a number of factors to be taken into account to meet this and the important point is to identify where the ship manager fits into this structure and can best assist in the successful resolution of any situation.

Members of the emergency response team

The structure of the emergency response team will depend on the structure of the company, how people are employed in the office and who possesses the necessary tools to be a productive member of the team. One of the first points that must be addressed is who will be the team member for each of the disciplines identified and then appointing a deputy for each team member able to step in and take over to allow the original members to rest. Fatigue is not good for making rational decisions in an emergency situation and many situations will not be resolved in a short period of time.

This has a further impact on the company as the personnel identified because, while the members of the emergency response team and their deputies are involved in dealing with the emergency situation, the company still has to function and continue with its day-to-day business. Does the company employ enough people to be able to cover all of these situations in the numbers required?

It may be that sub-contractors will be retained, to be brought in only when the situation demands it. The cost of retaining such people with the required expertise has to be factored in.

There is no definitive answer as to who should be in the team, but there are certain considerations to be made. The following example is one of a number of possible solutions.

The ship manager needs to understand the dynamics of the group, what position they hold and how their input can affect the final outcome.

The company is required to ensure that it has the ability to respond to any of the identified situations 24 hours a day, every day of the year. The make-up of the 'shore-side emergency response team' requires careful thought and a proper process for operation. The company needs to identify the members required and their ability to handle and control emergency situations.

Ship managers need to know what part they will play in any emergency response team and attend practice drills and table top exercises where the personnel in the office simulate various situations and drills involving the ships of the fleet. Any major incident will last longer than 12 hours and people exposed to highly stressful situations will lose the ability to make reasoned judgments due to fatigue. Two teams, one made from each of the posts identified above and another made up from the nominated deputies, can rotate with each other and deal with the emergency. One factor that needs to be addressed in the long run is what happens if an emergency situation arises while members from the identified two teams are on holiday or elsewhere in the world on company business.

A company emergency response organisation with two teams is only a suggestion. It is for each company to decide on which people make up the team and their responsibilities. The emergency response team is required to give a full set of contact details that have to be updated and circulated throughout the fleet when any change occurs. This should be done immediately and not delayed. The company must ensure that there is no difference between the details given for the team and the details found inside each vessel's SOPEP manual.

Emergency response team co-ordinator

The emergency response team co-ordinator should be the first point of contact for the master and responsible for activating the team. This link should be maintained for the duration of the emergency. The only change should be when the deputy takes over. All communications should be directed through this person to avoid unnecessary distraction for the master while dealing with the situation. Co-ordinators should have an in-depth knowledge of the vessel and its operation, but more importantly they should have the confidence of the master. One option for this role, depending on how the company is structured, is using the designated person responsible for the ship.

Chief executive officer

The chief executive officer (CEO), or whichever title the company confers on its head person, may be part of the team or will require to be given updates of the situation. In this manner, he or she will be able to make reasoned judgments about the severity of the situation. The CEO should only be given factual information, not rumour or abstract thoughts.

Keeping the CEO updated on a regular basis ensures that he or she is able to assess how the event is progressing; whether it is deteriorating or improving and what direction the company should be taking for a successful resolution, while protecting its best interests.

Operations department

The operations department may be the ship manager. If he or she is not the co-ordinator, it has to be someone who has in-depth knowledge of the operation of the ship in question, is able to give expert advice when needed and support for the master and has to hand the details of the recent ship operation and of any reported problems.

Personnel department

The personnel department person may be the head of department. He or she must have access to all crew files and contact details, should be able to contact the manning agency if the crew is not directly employed by the company and has to be able to pass on information regarding the state of the health of the crew members.

Technical department

This will probably be the technical superintendent of the ship in trouble. This person needs to have an in-depth knowledge of the vessel and its current state in respect of certification and outstanding deficiencies that may impair its ability to handle an emergency situation.

Legal department

Regrettably, businesses now have to watch the legal implications of every action taken, especially in emergency situations. This person may be directly employed by the company or retained only for use in such situations.

Public relations

Public relations should be retained as part of the team, unless the company has had the members of the emergency response team trained in public relations. In today's world, the media are very quick to find out about maritime incidents. An expert in such matters is of great benefit to the company to stop the wrong information being extracted from statements and giving the wrong perspective of a situation. This person may be employed by the company or retained for such situations.

Master of vessel

The masters of the vessel will be under great stress and will require the support of the emergency response team to aid them by giving accurate information and spread the load among the team. The team should ensure that the correspondence is kept simple and avoid duplication or requests for non-essential information. It must be remembered that while the masters are communicating with the outside world, they are not devoting their full ability to the situation. Masters should also decline to speak with any outside parties and instead direct them to the contact number of the team.

Third-party interests

This can include the owner, charterer, P&I insurance, hull and machinery insurance, flag administration of the vessel, classification society or the national administration of the

waters where the vessel happens to be. All of these parties need to be informed and kept up to date with the progress of the incident. The team should carry this out and these parties should not be contacting the vessel directly and causing unnecessary duplication of information or misinterpretation of information.

Record keeping of the event

The emergency response team will need to keep full and accurate records of the event and ensure that the time lines and identity of all communications are logged. It may require an additional team member to be appointed to cover the task of record keeping, which includes the records of every communication made as well as any video or DVD communications. If there have been recordings made of all voice communications, these will need to be detailed and filed.

It should be noted that this material can be used in legal proceedings under disclosure and that everything recorded will be reviewed and put in context. Therefore all people involved should be forewarned about use of language, content and the context in which statements are made. This does not mean that everyone needs to be silent, but staff should be aware of the ramifications of what is said in the heat of the moment under stress.

Emergency response rooms

A number of companies have been in the fortunate position to be able to prepare a room within the office space for dealing with emergencies. This room has been fitted out with equipment for dealing with emergency situations, such as large-screen TVs, computers, dedicated telephone lines, access to ships' plans and drawings, recording devices for both visual and audio of all events that take place.

There will also be directories of names and contact details for external organisations involved in such situations. These will include P&I clubs, hull and machinery insurance, manning agencies, national authorities (where the event is taking place), charterer, owner, cargo interests and so on. Having their contact details to hand and available for use removes the need for searching and finding such information, especially when time is of the essence.

Information will need to be continuously updated to reflect current circumstances. It is important for the ship manager to learn how to use all the equipment installed that is to be used in an emergency situation. This will also involve being able to retrieve the relevant information and display it on a large screen for everyone to see. It is too late to learn when dealing with a real situation.

Emergency response and SOPEP manual

Emergency response is for every possible situation that the company and its ships can find themselves in. The SOPEP manual is for dealing with emergency situations where oil pollution is involved. Many of the requirements of the SOPEP manual will be found in the emergency response manual and can be of valuable assistance to those dealing with an emergency situation. Everyone involved in dealing with these matters must be aware of the differences between SOPEP and the emergency response manual before

becoming involved and directing others to make decisions that could be flawed. This may sound a very fundamental concept, but in times of high stress it is very easy to make a mistake. That is why everyone should be in agreement to ensure that such simple errors are not made.

Other relevant documents, depending on the ship type and the location of the ship, are the shipboard marine pollution emergency plan (SMPEP) for noxious liquid substances (chemicals) and the vessel response plan (VRP) as approved by the USCG under the Oil Pollution Act 1990 (OPA90). Both contain definitive requirements for certain conditions and these must have been read and understood by the ship manager if the ship types and trade involve such requirements.

Self-assessment

- How does your company deal with emergency situations? There is no right or wrong answer to this question; it is more concerned with finding out what is available and how it is used.
- Compare what you find with what has been discussed in this chapter. Then identify strengths and weaknesses. Is it possible to improve matters? This is not a matter of criticising what the company does, but about identifying real improvements (see ISM Code A/1.2.2.3).

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15 EFFECTIVE COMMUNICATIONS

To be an effective ship manager you must be an effective communicator. This is a core requirement for the job. It is important to communicate with personnel in the company and external organisations to ensure that you are aware of all of the factors affecting your ships. In many cases, it takes time to build up relationships and this is important as you do not want to be discussing matters for the first time with people to whom you have never spoken before. That is not to say that you will know everyone, but having a number of contacts will ease some of the workload.

This chapter focuses on how communications work and how to improve the way you use communications. Many people believe that they are good communicators when in fact they are not as good as they think they are. When factoring in nationality, culture, ethnic background, religion and the use of a common language which for many is not their native language, there are a number of areas where mistakes can easily be made. This is not deliberate but the culmination of several minor factors, which individually are not so important, when brought together can result in a major problem.

In communications there should always be one thought in place to reduce or even remove the potential for barriers and that is: 'Treat others in the way you want to be treated yourself.' If this is kept in mind you will find that a lot of issues can be removed right at the start. No one wants to be talked down to or belittled in front of others or denigrated for something over which they had no control. Being constant and fair with people at all times will gain far more respect and enhance working relationships rather than shouting and screaming abuse at personnel who have no way to defend themselves.

In many accident investigations, one of the root causes is said to be a breakdown in communications at a critical time, which then helped turn the situation into an accident instead of a near-miss. Many believe that they are good communicators when in fact the opposite is true. The problem is that we do not see our mistakes and do not like to be shown them by others. This is part of human nature and affects everyone to a varying degree.

The following sections are an attempt to identify traits of communications and how we should try to overcome them to become better communicators. As the ISM Code A/6.7 states: 'The Company should ensure that the ship's personnel are able to communicate effectively in the execution of their duties related to the safety management system.'

Concepts

Effective communication is the key to the successful performance of any function involving a group of people. One function of communication is to make our needs and desires

known, to get our message across. Another function is to facilitate an understanding of the needs and desires of others.

It is important to remember that any communication will contain much more than the literal meaning of any words; communication consists of an exchange of messages expressed by various 'codes', such as speech, writing, gestures and expressions. Research has indicated that the total impact of a message is roughly only 7% verbal (the actual wording), 38% vocal tone and inflection and 55% non-verbal expressions and actions (body language).

To understand the real meaning of a message the receiver must translate the code, and the translation of the code depends very much on the context in which the message is delivered and the cultural language of both the transmitter and the receiver. A different 'cultural language' does not necessarily mean a different linguistic language; it may be a difference in race, gender, class, geographical origination, rank, age or context, e.g. time spent with another company or on another trade.

The maritime industry has a very large vocabulary all of its own and to the outsider it may appear flawed as words used in shipping may have an entirely different meaning to the outside world. Moreover, certain countries have a different set of words for the same technical detail. An example is the difference between the fore and aft draughts of the ship, which is called trim in Britain but drag in the USA. Therefore, the differences of local and national phraseology can compound the problems of effective communications.

There is also the continued problem of using abbreviations, which can lead to all kinds of misunderstandings. Take an example of the abbreviation RO. What can it mean? It depends on the context in which it is being used. It could be: recognised organisation, responsible operator or radio officer. There are also abbreviations that have become locally understood without meaning anything outside specialised group of people.

The worst case is when a number of abbreviations are linked together in a written communication. This is especially so in charter parties and charter party communications. Much of the communication is made up of abbreviations and these need to be understood to make sense of the message. There is a dictionary of chartering terms and abbreviations and this should be available to all ship managers to avoid mistakes.

All ship managers will need to make themselves aware of these points and ensure they do not fall into the same traps as previous personnel. It is easy to do and, as phrases become abbreviations and are repeated, the group corresponding will drop the phrases and their communications become dominated by abbreviations.

Transmission

To transmit a message effectively the transmitter must be sure of the content and consider how best to deliver it. Being aware of the tone used, having an appreciation of the importance of personal space and being sensitive to the use of body language can all help to prevent any instinctive barriers to interpersonal communication from forming.

Before transmitting a message, the transmitter must:

- Appreciate the receiver's cultural language;
- Establish what the receiver knows prior to the communication;
- Establish what the receiver needs to know to comply or reply to the communication;

- Check the message to minimise the risk of ambiguity;
- Allow for the availability of the receiver to deal with the communication.

Reception

When receiving a message the receiver must:

- Make an effort to receive and understand the message.
- Reply by some means to clearly demonstrate that the message has been understood or request clarification.
- Continue with any previous activity correctly (management of interruptions).

Barriers to communications

Barriers to effective communication may include:

- Autocratic or egocentric leadership style;
- Different professional or competence levels;
- Stress;
- Fatigue;
- High workload;
- Race, culture and gender issues.

Categories of communications

There are three main categories of communications:

- Written
- Spoken
- Visual

These categories can be further broken down to give us a number of channels of communication. Spend a little time thinking about the range of options open to you. Now write down a list of those channels you already use the most. Do you think you could improve your efficiency by using any of the others? For example, would a telephone call be quicker and more appropriate than a letter? Would a meeting better solve a major problem than a series of memos?

When it comes to writing reports, you usually have no choice of channel. A report has been requested and so you will have to write one.

First give some thought to communication in general – its purpose, the use of different channels, what can go wrong? Start with a simple diagram:



A has a message to communicate to B. A has to decide on a channel, which will deliver the message in the most effective way. This means it must be:

21ST CENTURY SHIP MANAGEMENT

- Meaningful
- Clear
- Well-timed
- Unambiguous
- Accurate
- Appropriate
- Complete

The above list can be used as a check-list for messages or it can be amended to suit your own needs. The most important point is that the message is received. The only way that A can tell this is via the feedback from B.



This may be stating the obvious, but it is a model that you should bear in mind while considering the following topics:

- The message
- Senders and receivers
- The medium

The message

The purpose of communication is to ensure that a message is received, understood and acted on. This message may be:

- Information
- Instruction
- Opinion
- Advice

It is important that both the sender and the receiver are aware which of these the message is. All too often the receiver treats a message that is an expression of the sender's opinion as a fact. Sometimes senders deliberately make an opinion sound like a fact, to reinforce their own prejudices or for some other motive. Sometimes it is not deliberate, but it is one of many examples of how a message can become distorted.

The key to how a message is received lies in its presentation. Facts can be presented in a number of different ways, either deliberately or accidentally. If the sender does not meet the criteria, then the message will be distorted. Distortion can also happen because of the reaction on the receiver. For example, the message might be:

- Misheard
- Misunderstood
- Exaggerated
- Underplayed

- Taken out of context
- Lied about
- Ignored
- Not passed on

The more people there are in a communication chain, the more likely it is that the message will end up distorted. (Consider the children's game Chinese whispers, where a message is whispered throughout a group and ends up being totally different to the original.) Distortion can therefore be the result of poor delivery or deliberate sabotage.

If you are sending a message, you should be sure that you meet the right criteria. If you are receiving a message, you should be prepared to have to verify some of the 'facts' it contains.

Senders and receivers

Internal communications

Within a company you need to be able to envisage the lines of communication. The company flow chart will show the lines between the various departments within the organisation and, for a shipping company, the lines of communication within the office, each ship and between the ships and the office. The channels of communication can be observed to be in three directions:

- Horizontal: To staff in other departments;
- Vertical upwards: To the management;
- Vertical downwards: To the workforce.

Traditionally, in the shipping industry most communication was vertical downwards, in a well-defined line of authority coming from top management. This line still exists, of course, with instructions and sometimes information being the main message being passed down. The communication can be distorted in a number of ways:

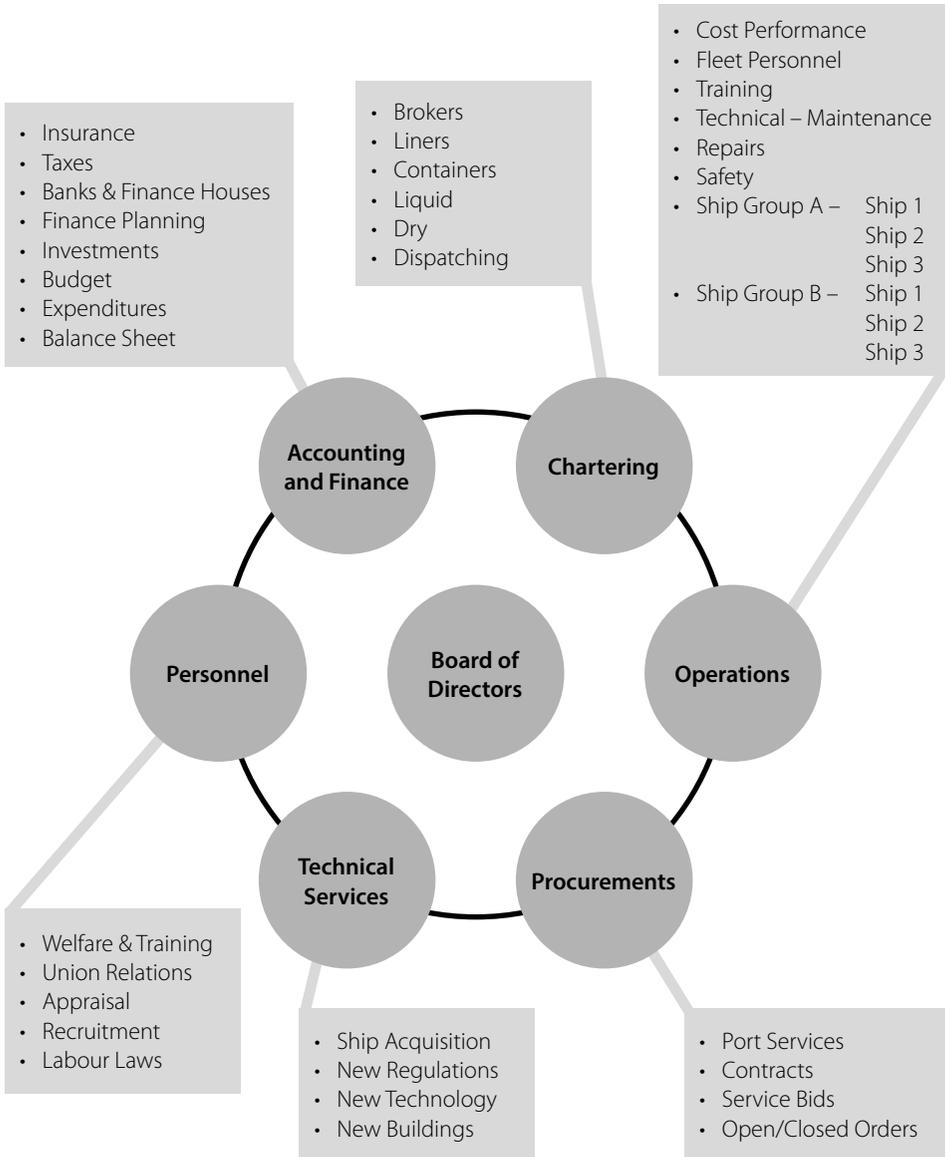
- The chain of command is too long and the message is gradually changed.
- The person at the top of the chain is too remote from the experience of the workforce and sends out messages that are meaningless.

Nowadays, some vertical messages are sent in the other direction. Diversification has resulted in a number of people who have to give information and advice to senior management. Trade unions present the views of their members in communications to management.

Messages upwards can often be deliberately distorted for political reasons ('tell him what he wants to hear' or 'tell him what we want him to hear'). More recently, there has been an increase in staff relationships in the shipping industry and this has led to more horizontal communication. These are messages passed between departments and they are vital for the efficient running of the ship. If the different functions are unaware of what is happening elsewhere, a decision made in one part of the company could have an adverse knock-on effect on another.

21ST CENTURY SHIP MANAGEMENT

Distortion in horizontal communication has very serious implications for a shipping company. It often arises when morale is low and inter-departmental rivalry and suspicion high. Technical people may hold 'pen pushers' in contempt and vice versa. The result can be an excess of time-wasting irrelevant messages and a withholding of important, relevant ones. Another potential problem for horizontal communication can be the language used by different disciplines. Computer jargon, for example, can be very hard to follow.



Internal and external communications of a company

External communications

In the shipping industry, the shipping company is just one part of a very large industry. This industry has many external agencies, many of which need to communicate with the others to survive. What must not be lost sight of is the fact that without shipowners and shipping companies the rest of the maritime industry does not exist. The reason that ships exist is because of the shipper.

The shipper organises the business that generates the money, which allows the shipowner and shipping companies to exist. Therefore good communications with the shippers is crucial. The shipper's message seems simple: 'I want to deliver my cargo from port X to port Y by such a date.' Even with such a simple message, distortions can still creep in. This may be through the delivery of the message.

Consider these implications:

- Can the job be done in time?
- Is the cargo hazardous?
- Will the ship fit in the required berth?
- Will the price be acceptable to both parties?

These points are the chartering department's problems initially, but are likely to set up communications throughout the organisation and with a number of external agencies. Shippers may think they have made themselves quite clear, but their request has set up a whole network of communication and it is important that they are kept in the picture. Anything that is hidden in their message that might affect what happens to it should be found out as early as possible.

A company is judged by its ability to deliver the goods and its communication system. If something goes wrong with the first, it had better make sure that the second works!

The medium

There are many different ways in which messages can be passed. Before we looked at written communication, now we are going to consider some of the other frequently used media for communication. We also need to understand how to avoid the distortion that may accompany them. This section considers: face-to-face communication, use of the telephone, meetings, forms and the grapevine.

Face-to-face communication

This is often the most satisfactory way to communicate. The spoken message can be reinforced by body language, such as gesticulation and facial expression. The receivers usually nod and answer to show that they have understood. However, even with all this assistance, distortion can occur. Everyone remembers things differently and receivers may unconsciously take what they want to from the conversation. How often has somebody reminded you of something you said, which they clearly regarded as very important and you cannot remember at all?

If you have one very important point to communicate, then you must reinforce it. If necessary, follow it up in writing. The great advantage of written material is its permanency. Face-to-face communication is not the easiest of ways for the sender to deliver bad news

or disciplinary action. If the message is an unpleasant one, then many senders prefer not to have to watch the receiver's reaction. The unpleasantness of the task is, however, no reason to shirk it. It is important that the receiver is given the chance to respond properly.

Telephone

If you cannot speak to a person directly, then the telephone is probably the next best option. It is quicker than writing and allows for an immediate response. It does have some drawbacks, however. It can be expensive, particularly when people are hard to get hold of (as they frequently are in the shipping industry). The main distortion to communication, though, is the loss of the reinforcing body language. Some people are not keen on the phone and it makes their voices sound unnatural. You have no real clues as to whether they are listening or not and you have no permanent record.

To put people at their ease on the phone, use the following guidelines:

- State clearly who you are, giving your full name and organisation if you are speaking to someone outside.
- Come to the point directly.
- Speak clearly: and spell out anything difficult, e.g. place names or numbers (three zero – 30).
- Do not hang up abruptly, but finish the conversation firmly. ('It's been nice talking to you. I will be in touch again soon. Goodbye:')

Meetings

Meetings are a means of spoken communication, which often do have a permanent record in the form of minutes. They can be time-consuming, but they are necessary to all businesses. Meetings can be as informal as two people having a five-minute discussion or as formal as a full meeting in a boardroom with an agenda, minutes, standing orders and voting. The main point about meetings is that they have a specific purpose, which should not be strayed from.

If you have decided to call a meeting – or are responsible for holding a regular one – use the following check-list to help you:

- What is the purpose of the meeting?
- When and where should it be held?
- Should there be a time limit?
- Who will chair it?
- Who will take minutes?
- What is the agenda?
- Who will attend the meeting?
- What briefing papers are necessary?
- Is any equipment necessary? (e.g. audio visual aids)

If you are attending a meeting, you should ensure that you are properly briefed yourself. If you are the chair, then it will be up to you to keep the meeting to the subject and make sure that all the relevant issues are addressed. You can do this by:

- Sticking to the agenda;
- Clarifying issues;
- Summarising progress.

The major distortion of communication at a meeting is the different perceptions of the same conversation. We have already seen that two people will see things differently. If you have seven people reporting on a meeting, you are likely to obtain seven very different perceptions of it. If there is any rivalry between any of these people, then the distortion becomes much worse and there is a real danger of losing sight of the meeting's purpose. It is also often the case that in the effort to reach consensus, a compromise is adopted, which does not really reflect anyone's view (except perhaps the chairperson's if he or she is skilful).

Having said all that, meetings are your best chance to find out what is going on elsewhere in the company (even a departmental meeting can throw up this sort of information). They are also your best chance of ensuring that a piece of information you wish to discuss does not become stuck with just one receiver.

Forms

Sometimes there are standard forms on which reports are written. A company produces forms in response to a need to communicate on a particular subject matter regularly and in a way that allows easy reference. The key to form design, then, is relevance. A form should contain information, which is:

- Necessary
- Concise
- Pertinent
- In a logical sequence
- Easy to complete
- Easy to read
- Easy to control

If you find you are writing a regular short report or are constantly being asked for the same information, you may think about designing a standard form to make life easier for you. (If it is not going to do so, then you should not bother.) Ensure you know exactly what sort of information you will need. It is worth consulting a colleague in case you have missed anything. Now find a logical sequence for this information. You may want to use numbers or alphabetical order in your sequence; it depends on your subject. If the information is to be handled by a computer, think about ease of input for the operator and the ease of retrieval from the system.

Now consider the type of paper the form should be on:

- Who will be using it?
- Does it have to be robust?
- Where is it to be kept?
- For example, if it is in a loose-leaf folder, will the perforations be a problem?
- Who is to be responsible for controlling the completed forms? You may have to design a system for easy access.

The form can be an excellent means of communication if it is carefully designed and controlled. Too often, the procedure is never reviewed from one year to the next and you find people filling in forms that other people never read simply because that is the 'system'.

The grapevine

The importance of the grapevine cannot be underestimated. You can use the grapevine if you are skilful and it can often be quicker than more formal methods of communication. But the ship manager must be aware of the grapevine being considered in another form and that is 'office politics'. This can result in positive or negative results, depending on who is playing.

However, nowhere is distortion more evident than on the grapevine. The grapevine tends to be the bearer of bad news rather than good news and, because the origin of the communication can never be found, it provides an excellent opportunity for 'stirrers' and 'gossips'.

Keeping other channels of communication open all the time goes some of the way to minimising the damage caused by the grapevine. If management is secretive, then the grapevine has an even greater hold since people like to be kept informed.

To use the grapevine to your advantage, you have to be able to pass on messages through people who can be guaranteed to spread the word without making it clear that it is coming from you. Sometimes management does this to good effect to soften the blow of bad news. However, it requires good judgment of people and, like all manipulative behaviour, it can backfire.

Once you are in a position of authority, you are likely to lose the messages from the grapevine – or have them censored before you receive them. This is part of the nature of organisations and there is nothing you can do about it. Even 'moles' cannot be entirely relied on.

Use of the media

You are already a sender and receiver of information. We have emphasised the problem of distortion. There are a number of things you can do to help yourself both to transmit and to receive messages. The two skills are interrelated and rely on effective:

- Reading
- Listening
- Speaking
- Writing and presentation

Effective reading

Effective reading is concerned with absorbing as much relevant information in the quickest possible time. Not everyone can speed-read and for some people reading a large document is going to entail a fair amount of time if it is to be absorbed fully. However, even they can train themselves to ensure that all their reading is relevant.

If a writer has followed the guidelines set out in the following sections on report writing, there should be a clear structure to follow. An overview should enable readers to note key words, headings and conclusions and thus have a basis on which to follow up

their reading. They may still end up reading the whole thing, but they are less likely to fear that they might be wasting their time.

Unfortunately, not all writers will set out the material in such an ordered way. However, you will notice that almost every paragraph will have certain key words in it. Try skim-reading to pick out these words. If you have difficulty, you may find that it comes with practice. The eye is far more inclined to settle on the centre of a page than to move slowly from side to side. Skimming is not skipping. If you are not concentrating, you may well find that you have turned over several pages without recalling anything of what you have read. Try to summarise frequently what has been written.

Effective listening

Effective listening is also dependent on concentration. It is very easy to be distracted when you are listening to someone else and the most distracting thing is often that you are thinking about what you are going to say yourself. Effective listeners feed back to the speaker what they are saying (e.g. 'Yes, I agree that we need more control over the maintenance programme.'). Doing this makes the speaker feel confident that the message has been received and makes the receiver concentrate on receiving the message.

Effective listening is one of the most important skills to cultivate. People like and respect you more when you clearly listen to what they have to say – and they are more likely to reciprocate. If you are an effective receiver of information you are more likely to be an effective sender of it.

Effective speaking

Effective speaking is often a matter of confidence. Even if you dislike speaking in public or initiating discussions, the chances are that you are going to have to do so every so often. The following points may help:

- Ensure that you know all the information.
- Do not take short cuts with the logic of what you are saying.
- Check that the receivers are following all you are saying. Do they appear to be thinking of something else, for instance? To find out, ask them what they think about what you are saying.

Self-assessment

- What would be the best way (letter, phone, etc.) to get across each of the following messages?
 - 1 Operations manager to the technical services manager, asking if he would be available for a meeting at 10:00 a.m. next Friday.
 - 2 Captain to the ship manager, asking for details of cargo to be loaded on the next voyage.
 - 3 Manager to subordinate, complimenting her on the thoroughness of an investigation report.

- 4** Chartering manager to shipbroker, agreeing to terms on a new voyage charter party.
 - 5** Operations manager advising employees of some complex changes in the terms and conditions of work.
 - 6** Operations manager to training manager, asking for initiation of a training programme for users of new computer equipment.
 - 7** Equipment overhaul order to a ship repairer.
 - 8** Monthly report of stores expenditure from the procurements department to the operations department.
 - 9** Operations manager to commercial manager, asking him to represent the company at the next meeting of the shipping conference.
 - 10** Ship manager to technical services manager, requesting action for an item arising from the minutes of a shipboard safety committee meeting.
- How would you assess your communication skills and which forms of media do you use the most?
 - How do you work with others? Do you try to have face-to-face meetings or prefer to communicate remotely?
 - How would you change your perception of the need for communication?



16 INTRODUCTION TO CHARTERING AND MARINE INSURANCE

Ship managers need to be aware of the chartering practice for the ships under their control. This does not mean that they have to be experts on all matters relating to chartering and chartering practice but able to understand the different aspects of charter types and how they are applied. Understanding how the ship is operated and who is responsible for which payments is important, especially when reviewing the accounts for a ship's port visit. In many companies, this is handled by a post fixture person, but as ship manager it is your responsibility to review the contents and payments and ensure there are no errors.

There is so much to ship chartering and so many variations are possible that this chapter will not be able to cover all of the permutations, but this can be rectified by reading relevant books and talking with the people responsible for the chartering of the ship.

In marine insurance there are a number of fundamentals and their application that need to be understood. Insurance brokers or set personnel in the company will have the responsibility for organising the insurance for the ship and paying the premium. The contents of the various insurances carried will need to be understood and their application to the ships under the control of the ship manager.

This is not to say that ship managers are fully responsible but they must be proactive in all matters relating to insurance and in many instances will be involved in claims, if they arise. Once again, it not for the ship managers to be experts in such matters, but they must be aware of what is being covered and how it will affect the ship and its operation.

To assist the reader, this chapter has kept chartering separate from insurance. This is for practical purposes and clearer, but in many cases the two subjects are intertwined. It is hoped that the introductory knowledge gained will be understood as well as the relationship between ship operations and the clauses of the charter party and insurance cover.

Chartering

Chartering has a vocabulary all of its own and its abbreviations need to be understood and taken in the context of the charter party used, the ship type and cargo. It is important that all ship managers are aware of what charter party each ship under their care is on.

The Institute of Chartered Ship Brokers (ICS) run a number of courses to allow participants to achieve qualifications in this discipline and in this book it is not a matter to trying to teach ship managers how to be ship brokers and organise charter parties but

more a matter of ensuring that ship managers understand the basics of ship chartering and the brokering of cargoes to allow them to operate effectively and understand what is taking place in respect of the ships

The charter parties

The charter parties are agreements made. They are contracts to ensure that the rights of all parties are protected. The concept is simple, but the practice is far more difficult. Here is an example to illustrate the complexities:

Person A has a cargo that has to be loaded on to a certain ship type at berth in a port located at point X. The ship is to arrive ready to load the cargo at set dates and times. The cargo is to be carried safely with no loss in quality or quantity and delivered to person B at another berth located at point Z. There is to be a full outturn of the cargo at point B. The voyage is to be completed within a set time, with allowances for time in both load and discharge port.

It could not be simpler if everything goes exactly as planned and everyone is paid the money and that is the end of it. But what if anything goes wrong? Who is to blame? What if the cargo arrives in a damaged and unusable condition? What if the ship arrives late or the voyage takes longer than agreed? So many questions that need to be asked and not so many answers are available to resolve them. That is why the agreements are written down so that all parties involved are aware of their obligations. You could say that charter parties protect everyone and tell them what is expected of them.

Definition

A charter party (Latin: *charta partita* – a legal paper or instrument, divided, i.e. written in duplicate so that each party retains half) is a written, or partly written and partly printed, contract between a shipowner and a merchant, by which a ship is let or hired for the conveyance of goods on a specified voyage or for a defined period. A vessel might also be chartered to carry passengers on a journey.

It can also be defined as a written contract between shipowner and charterer whereby a ship is hired; all terms, conditions and exceptions are stated in the contract or incorporated by reference. The charterer takes over the vessel for either a certain amount of time (a time charter) or for a certain point-to-point voyage (a voyage charter), giving rise to these two main types of charter agreement. There is a sub-type of time charter called the demise or bareboat charter.

In a time charter, the vessel is hired for a specific amount of time. The owner still manages the vessel, but the charterer gives orders for the employment of the vessel and may sub-charter the vessel on a time charter or voyage charter basis. The demise or bareboat charter is a sub-type of time charter in which the charterer takes responsibility for the crewing and maintenance of the ship during the time of the charter, assuming the legal responsibilities of the owner as what is known as the disponent owner.

In a voyage charter, the charterer hires the vessel for a single voyage and the vessel's owner (or disponent owner) provides the master, crew, bunkers and supplies.

This is a simplified overview of the main charter parties and there will be differences depending on how each particular charter party is written and presented. Ship managers need to examine each charter party for every ship under their responsibility.

Table of Costs Depending on Charter Party			
<i>Cost Element</i>	<i>Bareboat</i>	<i>Time Charter</i>	<i>Voyage Charter</i>
Pumping	Charterer	Charterer	Charterer
Load Port			
Discharge Port			
Voyage Expenses	Charterer	Charterer	Owner
Fuel			
Port Disbursement			
Canal Tolls			
Cleaning			
Heating			
Insurance AP			
Operating Expenses	Charterer	Owner	Owner
Crewing			
Stores			
Spares			
Lube Oil			
Repairs			
Surveys			
Insurance / P&I			
Management			
Capital Cost	Owner	Owner	Owner
Interest			
Capital repayment			
Insurance			

Costs depending on the charter party. Source: *ICS Tanker Chartering*, 2012, p. 95.

Parties involved in the movement of cargo

Ship managers need to be aware of the various people involved in the chain of moving cargo from one port to another. For the vast majority of cargoes there is no problem and

no contact with these people. It is when something does go wrong, no matter who is responsible, that ship managers need to be aware of who these people and organisations are and what their function in the supply chain is. The list of people/organisations involved in the movement of cargo can be as follows:

- Seller
- Shipowner
- Freight forwarder
- Carrier
- Consignee
- Receiver
- Notify party
- Banks

Each has an important role to play in the success of the venture and in the following pages we will look at what each party does during the movement of cargo from one place to another. The person or agent of the person who wants goods sent by sea will retain the services of a person or organisation known as a shipper that will then take responsibility for ensuring that the goods are moved and delivered safely.

The seller, however, may be employing the services of a freight forwarder to perform the various functions involved in exporting the goods and it may be the freight forwarder who contracts for carriage of the goods with the shipowner, making the freight forwarder the legal shipper.

Another possibility is that a certain amount of cargo space on board the ship has been contracted to a non-vessel owning carrier (NVO) and the seller or his agent has contracted with the NVO to transport the goods; in that case, the NVO will be the legal shipper in the contract with the shipowner.

Whoever the shipper is in law, however, the document evidencing receipt of the goods by the carrier (e.g. a B/L or sea waybill) will be issued by the carrier to that party and that party will be giving employment to the ship. In some countries, including the USA, the shipper may be called the consignor.

A freight forwarder is a transport intermediary, operating in the liner trades, who arranges the export of another party's goods (by land, sea or air) and 'forwards' the goods into the care of the sea carrier.

Freight forwarders can advise on routing, arrange carriage with a carrier (booking space, paying freight, etc.), prepare or assist in preparing customs documents, make customs entry (clearance) of goods, arrange packaging and warehousing of goods before shipment, arrange goods transit insurance and, in many cases, arrange 'groupage' or 'consolidation', meaning the more cost-effective shipment in one transport unit of several small parcels sent by different shippers, where they are all destined for the same delivery port or place.

A carrier is a party who contracts with a shipper for the transport of goods by sea. In the liner trades, where NVOs offer shipping services, the carrier with whom the seller or the seller's agent makes the carriage contract is not necessarily the carrier that actually performs the sea carriage. Furthermore, where a ship is chartered and operated commercially by the charterer (such as a time charterer), the identity of the legal carrier may depend on the information stated on the B/L or sea waybill.

The consignee is the party to whom the goods are consigned or sent by the shipper. The consignee may be the buyer of the goods or a party acting as import agent for the buyer.

The receiver is the party who takes receipt of the goods from the sea carrier at the port or place of delivery. Some consignees will take direct delivery of goods from carriers, but many consignees in the liner trades employ an agent such as a freight forwarder to act as a 'clearing agent' in the customs and other formalities of importing the goods and for transportation of goods to their ultimate destination. When loss or damage to goods is discovered on discharge, it is often the receiver who notifies the carrier.

The notify party (a term found in most B/Ls and sea waybills) is the party who must be informed by the carrier of the ship's arrival so that collection of the goods can be arranged. The notify party may be the consignee or a receiver.

Banks will form links in the transport document chain when payment for the goods is being made by means of a letter of credit, for example for notes on the documentary credit system or for notes on the B/L in the documentary credit system.

Depending on the trade terms, either the seller or the buyer will usually take out goods transit insurance with a cargo insurer.

International trade terms (INCOTERMS)

INCOTERMS is a set of rules, published by the International Chamber of Commerce, for the uniform interpretation of the most commonly used trade terms used in international trade contracts. The main purpose of INCOTERMS is to set out clearly the obligations of the seller and buyer with respect to the delivery of the goods and the division of functions, costs and risks associated with delivery.

By using INCOTERMS the chance of misinterpretations or uncertainties may be avoided or reduced. INCOTERMS are published in various languages used by the chief trading nations. The latest edition, INCOTERMS 2010, was issued on 1 January, 2011. A sales contract should contain an express reference to the edition used. The following was taken from the MIQ Logistics website at www2.miq.com/cms/INCOTERMS2013. INCOTERMS are grouped into two classes:

Terms for any transport mode

- **EXW:** ex works (... named place of delivery) The seller's only responsibility is to make the goods available at the seller's premises. The buyer bears full costs and risks of moving the goods from there to destination.
- **FCA:** free carrier (... named place of delivery) The seller delivers the goods, cleared for export, to the carrier selected by the buyer. The seller loads the goods if the carrier pick-up is at the seller's premises. From that point, the buyer bears the costs and risks of moving the goods to destination.
- **CPT:** carriage paid to (... named place of destination) The seller pays for moving the goods to destination. From the time the goods are transferred to the first carrier, the buyer bears the risks of loss or damage.
- **CIP:** carriage and insurance paid to (... named place of destination) The seller pays for moving the goods to destination. From the time the goods are transferred to the first carrier, the buyer bears the risks of loss or damage. The seller, however, purchases the cargo insurance.

- **DAT:** delivered at terminal (... named terminal at port or place of destination) The seller delivers when the goods, once unloaded from the arriving means of transport, are placed at the buyer's disposal at a named terminal at the named port or place of destination. 'Terminal' includes any place, whether covered or not, such as a quay, warehouse, container yard or road, rail or air cargo terminal. The seller bears all risks involved in bringing the goods to and unloading them at the terminal at the named port or place of destination.
- **DAP:** delivered at place (... named place of destination) The seller delivers when the goods are placed at the buyer's disposal on the arriving means of transport ready for unloading at the named place of destination. The seller bears all risks involved in bringing the goods to the named place.
- **DDP:** delivered duty paid (... named place) The seller delivers the goods – cleared for import – to the buyer at destination. The seller bears all costs and risks of moving the goods to destination, including the payment of customs duties and taxes.

Maritime only terms

- **FAS:** free alongside ship (... named port of shipment) The seller delivers the goods to the origin port. From that point, the buyer bears all costs and risks of loss or damage.
- **FOB:** free on board (... named port of shipment) The seller delivers the goods on board the ship and clears the goods for export. From that point, the buyer bears all costs and risks of loss or damage.
- **CFR:** cost and freight (... named port of destination) The seller clears the goods for export and pays the costs of moving the goods to destination. The buyer bears all risks of loss or damage.
- **CIF:** cost insurance and freight (... named port of destination) The seller clears the goods for export and pays the costs of moving the goods to the port of destination. The buyer bears all risks of loss or damage. The seller, however, purchases the cargo insurance.

Dictionary of chartering terms and abbreviations

In the past, there were books specifically published with detailed definitions of chartering terms and long lists of abbreviations. These have now been superseded by websites containing the lists of abbreviations, along with some chartering terms. Many specific chartering terms can be found by searching online. Care has to be taken to ensure that the website being used is an official site from a reputable organisation that would have the relevant expertise.

Many of the chartering terms can be found on the BIMCO website and can be interrogated by looking at the various charter parties and the clauses contained therein. The Institute of Chartered Ship Brokers also has a useful website.

Ship managers should check the meaning of any chartering term they are not fully conversant with and check abbreviations to ensure they are using the correct ones. This is especially true for chemical cargoes, many of which are proposed in abbreviated form. If it is not clear which cargo is being proposed then the full name should be requested. It is also very easy to make a mistake by hitting a wrong key stroke. An example is EGMEE and EGBEE. These two chemical cargoes are ethyl glycol mono ethyl ether and ethyl glycol

butyl ethyl ether respectively. They may be very similar in name, but the cargo preparation and the necessary operations during loading, carriage and discharge are different. They require to be treated as individual cargoes, not as the same cargo.

This applies to all cargoes whether wet or dry and care must be taken to ensure that the particular requirements of each trade are understood and complied with. This is in respect of the ship types mentioned in chapter 1. Using a bulk carrier to carry an ore cargo is not the best use of the ship or to have an ore carrier carry a cargo of grain is a waste of a ship and will be totally inefficient and not cost-effective. The variance in the requirements of ships and their operations have been refined over the years to ensure that particular types meet particular trades to ensure the best operation and, of course, profitability without compromising safety.

Marine insurance

The ship manager does not need to be an expert in marine insurance but must be aware of the different types of insurance available and how they affect the operation of the ship. Once again it comes back to building relationships and being in contact with the personnel who will be handling any claim instead of only communicating with them when a claim is being made.

For marine insurance one of the most important points is being able to supply the objective evidence needed to support or defend a claim being made. Without it, the case is hard to win and no matter what is said in the spoken word it is a requirement to have full and exact records not only for the event that led to a claim but also for normal working practices.

Hull and machinery (H&M)

Marine insurance is split between the ships and the cargo. Insurance of the ships is known as hull and machinery (H&M). A more restricted form of cover is total loss only (TLO), generally used as a reinsurance, which only covers the total loss of the vessel and not any partial loss. Cover may be on either a voyage or time basis. The voyage basis covers transit between the ports set out in the policy; the time basis covers a period of time, typically one year, and is more common.

A marine insurance policy would normally cover up to three-quarters of the insured's liabilities towards third parties. These liabilities are in respect of collision with another ship, known as 'running down' (collision with a fixed object in a port), and wreck removal (a wreck may block a channel in a port or stop the use of a berth or berths).

Protection and indemnity (P&I)

Shipowners formed mutual underwriting clubs known as P&I clubs to insure the remaining one-quarter liability. These clubs exist today and have become the model for other specialised and non-commercial marine and non-marine mutuals, which can cover oil pollution and nuclear risks.

Clubs work on the basis of agreeing to accept a shipowner as a member and levying an initial premium known as a call. The normal way that the premium is calculated is against the gross tonnage of the fleet of the shipowner, with so many cents per gross ton. With

the fund accumulated, reinsurance will be purchased; however, if the loss experience is to the detriment of the club, one or more 'supplementary calls' may be made to ensure that the liability can be covered. Clubs try to build up reserves, but this can be looked on as against the perceived status of what these clubs are trying to achieve. Liability regimes vary throughout the world and, as a result, insurers are usually careful to limit or exclude certain liabilities.

Constructive total loss (CTL) and actual total loss (ATL)

These two terms are used to differentiate between the degree of proof where a vessel or cargo has been lost. An actual total loss is said to have occurred where the damage or cost of repair is clearly equal to or in excess of the value of the ship. A constructive total loss is a situation where the cost of repairs and the cost of salvage equal or exceed the value of the ship. There is a very fine line between an ATL and a CTL. This will be determined by the insurance loss adjusters. The ATL means the ship has been lost and there is nothing left. A CTL means the ship is still there, but the cost of trying to put it right is more than the value of the ship itself so it is better to scrap it.

In marine insurance it is not always possible to assess the damage as the ship may have sunk in deep water or, in some cases, the ship has been hijacked and all trace of the ship and cargo has vanished. Marine insurance differs from non-marine insurance, where the insured is required to prove the loss. Marine insurance is seen as an insurance of 'an adventure'; with insurers having a stake and an interest in the vessel and/or the cargo rather than simply an interest in the financial consequences of the subject-matter's survival.

Average in respect of marine insurance

The term 'average' has one meaning in marine insurance terms: 'an equitable apportionment among all the interested parties of such an expense or loss'. An average can be determined by two main groupings known as general average (GA) and particular average (PA).

A GA can be declared under the following circumstances:

- There must be an event beyond the shipowner's control that imperils the entire adventure;
- There must be a voluntary sacrifice;
- There must be something saved.

A voluntary sacrifice to save the venture may be to jettison some or all of the cargo, the use of tugs or a salvage company or damage to the ship by grounding it or working the engines to the extent that will result in damage to them. A GA act requires that all parties concerned in the venture (hull/cargo/freight/bunkers) to contribute to make good the voluntary sacrifice. They share the expense in proportion to the 'value at risk' in the venture.

A PA is the term applied to a partial loss whether it is to the ship or its cargo. Co-insurance is where an insured has under-insured the item. The average will apply to reduce the amount payable.

An average adjuster is a marine claims specialist responsible for adjusting and providing the GA statement. To ensure the fairness of the adjustment, a GA adjuster is appointed by the shipowner and paid by the insurer.

Excess and co-insurance

Excess is the amount payable by the insured. It is usually expressed as the first amount falling due, up to a predetermined maximum amount, in the event of a loss. An excess may or may not be applied. It may be expressed in either monetary or percentage terms. An excess is typically used to discourage what is called a moral hazard and to remove small claims, which are expensive to handle. In respect of marine insurance the term 'excess' can also be taken to mean the same as 'deductible' or 'retention'.

Co-insurance, which governs non-proportional treaty reinsurance, is an excess expressed as a proportion of a claim in percentage terms and applied to the entirety of a claim. It can be considered as a penalty imposed on the insured by the insurance carrier for under-reporting/declaring/insuring the value of tangible property or business income. This penalty is based on a percentage stated within the policy and the amount under-reported.

An example: A vessel actually valued at \$1,000,000 has an 80% co-insurance clause but is insured for only \$750,000. Since this insured value is less than 80% of its actual value, when it suffers a loss the insurance payout will be subject to the under-reporting penalty. The insured will receive 750,000/1,000,000th (75%) of the claim made, less the deductible.

Specialist insurances

Newbuilding risks

This covers the risk of damage to the hull while it is under construction. It should be noted that this is generally for the hull and not the components of the ship.

Open cargo or shipper's interest insurance

This policy may be purchased by a carrier, freight broker or shipper as coverage for the shipper's goods. In the event of loss or damage, this type of insurance will pay for the true value of the shipment, rather than only the legal amount for which the carrier is liable.

Yacht insurance

Insurance of pleasure craft is generally known as yacht insurance and includes liability coverage. Smaller vessels such as yachts and fishing vessels are typically underwritten on a 'binding authority' or 'lineslip' basis.

War risks

General hull insurance does not cover the risks of a vessel sailing into a war zone. A typical example is the risk to an oil tanker sailing in the Arabian Gulf during the Gulf War. The war risk areas are established by the London-based Joint War Committee, which has recently included the Malacca Straits as a war risk area due to piracy. If an attack is classified as a 'riot' then it would be covered by war risk insurers.

Increased value

Increased value cover protects the shipowner against any difference between the insured value of the vessel and the market value of the vessel.

Overdue insurance

This is a form of insurance largely obsolete due to advances in communications systems and data transfer. This was an early form of reinsurance and was bought by an insurer when a ship was late arriving at its destination port and there was a risk that it might have been lost. A point to note is that the overdue insurance of the *Titanic* was famously underwritten on the doorstep of Lloyd's.

Cargo insurance

Cargo insurance is underwritten on the Institute Cargo Clauses, with coverage on an A, B or C basis. A has the widest cover and C the most restricted cover. Valuable cargo is known as specie, a prevalent term for coin-money. Institute Clauses also exist for the insurance of specific types of cargo, such as frozen food, frozen meat and particular commodities including bulk oil, coal and jute. Often these insurance conditions are developed for a specific group.

Institute Warranty Limits

This is a set of warranties (conditions) in a hull policy that prohibit the vessel from entering certain waters (mainly ice areas) without the payment of an additional premium or a change in conditions. To identify the sea areas affected every ship manager should be aware of the *International Navigating Limits Map*; the 11th edition was published in 2005. The map itself is titled international navigation conditions – areas. This shows where it is safe for the ship to navigate without incurring the additional premiums and this is further refined for certain areas that are seasonal.

International Group of P&I Clubs

The following was taken from the home page of the IGP&I website, which has a lot of resources in respect of P&I insurance matters:

The 13 principal underwriting member clubs of the International Group of P&I Clubs ('the Group') between them provide liability cover (protection and indemnity) for approximately 90% of the world's ocean-going tonnage.

Each Group club is an independent, non-profit making mutual insurance association, providing cover for its shipowner and charterer members against third-party liabilities relating to the use and operation of ships. Each club is controlled by its members through a board of directors or committee elected from the membership.

Clubs cover a wide range of liabilities, including personal injury to crew, passengers and others on board, cargo loss and damage, oil pollution, wreck removal and dock damage. Clubs also provide a wide range of services to their members on claims, legal issues and loss prevention, and often play a leading role in the management of casualties

Self-assessment

- Review the charter party that a few of your ships are on. Try to identify ships that are on different types of charters, if possible. If the ships are all on the same type of charter, inspect if they are on different charters as a sub-group of the type and look for variances contained in each charter party.
- Speak to the person or department responsible for dealing with insurance matters for the company and the ships. Part of this will involve identifying if a number of P&I clubs are used to supply cover.
- If possible, speak to a ship manager who has been involved with a claim about how it progressed.

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17 BUDGETS AND STATISTICS

This chapter will be in two sections, budgets and statistics. For many people, the thought of reading a spreadsheet and understanding the figures presented can be a daunting task. After all, there is a finance department in the company dealing with accounts and delivering balance sheets to identify the financial position of the company.

This may be true, but any competent ship manager should be able to identify certain parts of the operation and review them in light of how well or badly the ship is performing. This can be set against the budget for the ship and whether it is meeting the target or spending more or less than budgeted. It is not a simple matter; identifying where the expenditure has been generated and why it was necessary should be conducted by the ship manager in conjunction with the technical superintendent or manager.

There is also a need to compare ships with each other. The question of why one ship is performing better than another is important, to see if any of the apparent performance savings can be shared with other ships in the company. This becomes even more important when charter rates are falling and costs are rising. Every penny saved becomes important in the operation of the ship, but being careful with the money and the budget allocated should not interfere with the safety and security of the ship. It must be understood that the safety and security of any ship should never be compromised by cost-cutting exercises. Such short-term savings usually result in long-term losses, but value for money needs to be looked at.

Statistics are becoming a major requirement in the shipping industry to prove that the company is performing well and improving. This can translate into producing statistics in the form of KPIs, but these are only part of the statistics that can be generated. In many cases, ships will be compared with each other by the KPIs they generate. This continues to the company being compared with other companies to assess how its performance has been and if it can be improved.

This, of course, depends on all companies concerned using the same method of measuring performance criteria, whether they are financial, operational, safety, security or other criteria. Sometimes it would be better to measure the company against itself and show whether it is improving on its path to achieving a number of zero. That is zero non-conformities, zero accidents, zero incidents, zero PSC deficiencies, in fact, zero everything. Could this be the question that needs to be discussed?

Budgets

The format below is one example of how a vessel's income and costs can be organised into logical groupings and used for creating budgets and monitoring performance. The

overall budget is divided into three distinct fields: trading budget, operating budget and financial budget.

Trading budget

The trading budget covers the income generated by the commercial activity of the vessel, such as freight income, charter hire or passenger revenue, and the costs directly related to earning that income. These costs include brokerage commission, port agency costs and, when trading on a voyage basis, bunker costs and the costs of preparing and surveying the holds or tanks for cargo. The budget should also make provision for ballasting and positioning voyage costs. In order to achieve manageable calculations, budgets for vessels spot trading are usually calculated using time charter equivalent rates multiplied by the number of trading days less estimated off-hire.

Trading costs are calculated for each separate voyage calculation – in effect, a mini project.

A trading budget can include the following:

- **Trading days:** the number of days within the budget period;
- **Off-hire:** periods when the vessel is off service and idle days when the vessel is unfixured;
- **Gross trading income:** this is made up from passenger receipts, container freight or charter hire. The charter hire may be a known or anticipated time charter rate, or if the vessel is predicted to work the spot market on a voyage charter basis, the time charter equivalent rate is used for ease of calculation. Since the budget will normally be stated in one currency and earnings may be in several, clearly stated predictions have to be made on foreign exchange rates.
- **Owner's expenses:** the costs incurred by trading the vessel. For time chartered vessels this will comprise the broker's commission and any bunkers for owners account, e.g. for positioning voyages and any initial cleaning of tanks/holds to meet charter descriptions. For voyage charters, these costs are considerable and include all bunkers and port expenses.
- **Net trading income:** the end of the trading budget but also often the start point for the presentation of the vessel's operating budget within the management accounting system. It is calculated as trading days minus off-hire multiplied by estimated charter rate.

Operating budget

This represents the cost of manning, maintaining, storing and insuring the vessel and having it in all respects ready to commence trading. It may also incorporate an allocation of the company's establishment costs (overheads and administration), which are outside of the vessel's control. These are costs directly related to the vessel. Often referred to as running costs, they are very much the province of the masters and their staff.

The running costs, which must cover the whole of the budget period, give daily running costs (DRC), a universal measure of vessel operating costs. These will appear again in the calculation of voyage charters. It is sometimes argued that depreciation should be shown as part of the operating costs since they reflect the historical cost of the vessel spread over its economic life.

An operating budget can include the following:

- Crew costs
- Dry-docking and classification
- Repair and maintenance
- Modifications
- Stores and repairs
- Running costs
- Victualling and pantry stores
- Overheads
- Insurance
- Administration
- Unrecovered average

Financial budget

This relates to the cost involved in owning the vessel and is primarily the province of the commercial or finance department. For a vessel financed by a bank loan it will include loan interest and depreciation (on a profit-and-loss accounting system) or loan interest and loan instalments (on cash-flow basis).

A financial budget can include the following:

- Loan interest
- Depreciation
- Profit and loss
- Loan instalments
- Cash-flow

The ship manager and budgets

The ship manager will be involved in the planning of the budget for a ship. This can be at the planning stage of a potential ship being brought in under management or as a new ship for the company, whether it is new from the shipyard or bought second-hand, becomes part of the fleet. The budget is needed to identify all of the costs involved and this will be compared with the marketable rate needed per day to pay for its operation. At this stage the cost of operating the office should be looked at to ensure a full picture is made of the situation.

Shipowners or managers have no control over many of the costs, but on some they do and the most contentious of these are crew costs. These can be reduced by a certain amount depending on how the company views the nationality of the crew used, the number of crew employed, the length of contracts, the daily cost of providing food per crew member and repatriation costs. There is a compromise in that there can be a perceived loss of safety standards, meeting the demands of charter parties and increased dry-docking costs and time. These perceptions need to be balanced by reviewing the past costs to justify the final decisions.

Ship managers need to be aware of the costs being incurred by each ship and review this against the budget that has been set for each month. Where the ship has

been operated over budget there is a need to identify how this occurred and have a full explanation of who, why and what were the reasons behind it. Fiscal awareness is a key part of the ship manager's role.

It is not that ship managers need to become accountants but they must be able to read and understand a spreadsheet and the various figures that are presented to them. This will then allow them to question figures and ask for clarification before making comment. In most companies, the ship accountants are more than happy to assist new ship managers in coming to terms with the layout of the spreadsheet and providing an explanation of how the figures are derived. The spreadsheet is the end product, not the beginning, of the process. Behind each figure presented there will have been a lot of processing of receipts, vouchers and so on.

One important fact to remember here is that in many cases there will have been a request for finance to spend money on certain items. It should be possible to track down where this has come from and from there be able to speak with the person involved and find out why this was necessary. If there are good relationships between the ship manager and others then this should not be necessary as this will have been discussed before the expenditure was made and all relevant personnel were made aware of it.

Use of the budget to monitor and control performance

Once the budget has been agreed, the major task is to monitor and control it. This is a very time-consuming practice, but you must remain in control and any variances must be quickly identified and recorded. The variances must not be ignored as they will have a major impact on the final figures and balances of the budget at the end of each allocated period.

The most difficult part is that when overruns do occur and costs increase it may be necessary to request discretionary funds to bring everything back in order. How you go about this and the presentation that you make will determine the success or failure of the request. It will also show whether you are a competent ship manager or not. This is a stressful situation as it can have a major effect on your career prospects. By showing good management skills and illustrating that the event could not have been predicted, with an investigation supporting this premise, it is possible to present a case that does not direct blame at individuals but deflects blame to personnel or situations outside the control of the person setting the budget.

This is not what should be discussed, but it is the reality of what working in the shipping industry is about. Big money is involved and big results are expected and failure is a stigma that no one wants to be associated with. Therefore, to avoid failure, the budget and actual expenditure need to be kept up to date and this may mean having to spend time each day checking the expenditure for each ship. This will then be transferred to weekly and then monthly expenditure. The end-of-month figures are always a work-up and these need to be produced as quickly as possible so that the accounts can be completed and the financial position of the ship can be examined. If line managers or senior management need to request these figures then it is already too late and questions will be asked about what is going on.

Identifying variances and dealing with them

When a variance comes to light it has to be investigated immediately. The finance already spent on it clearly must be identified and ship managers have to find out if there will be more expenditure incurred before it is resolved. The first and foremost need for ship managers is to resolve the situation and minimise the costs incurred. When it comes to costs, it means taking into account all costs incurred. At first, costs may not seem related, but when investigated they will become apparent. It is a complex matter.

The question is: has the variance affected the ability of the ship to meet its obligations under the current charter party? If on a time charter the ship is obliged to perform to certain speeds and consumptions and is restricted in its time to conduct cargo operations in port. If any of those have been compromised, the charterer will not pay the full daily rate for the ship and demand a refund. If the problem is continuing over a number of days or even into weeks, this can be a substantial sum. The failure of a piece of machinery may even incur an insurance claim, which can have major knock-on effects to future insurance premiums and means that there is the matter of who will pay the deductible. So what appears as a simple, clear-cut case can turn out to be a complex, expensive claim.

This is why it is important that the ship master and the ship manager have a good relationship and are able to communicate effectively. There needs to be respect and acknowledgement of each other's professionalism and ability so that together issues can be resolved as quickly as possible and costs kept down.

Ship managers cannot work in a vacuum and should ensure that other interested parties are informed of what is taking place. This may involve informing the line manager and seeking advice on who else to inform. This may be laid down in the company SMS procedures and, if it is, then ship managers are guided accordingly, but they should, as a matter of good practice, notify as a minimum the line manager of what is taking place and the next steps that are going to be taken in line with the SMS.

It is good working practice to ensure that all of this is recorded in communications and that copies are kept of them. This may sound like paranoia, but, astonishingly, it is frequently the case that line managers cannot remember conversations and their content. It is better to protect yourself and ensure that a complete history is in place. It may well be that the procedures guide you to do such work, but if not, it is better to err on the side of caution than to be exposed.

Communicating budget performance to the correct personnel

Communication is vital to the operation and all stakeholders need to feel that they are being kept up to date and aware of what is going on. Failure to do so means that stakeholders may feel that something is going on, even when it is not. There is always a question of how much should be revealed and where a line should be drawn to protect the employer and company. It is never written down anywhere, but it exists and needs to be understood. This is not to say that anything underhand or illegal is taking place. Companies need to protect themselves and ensure that everything is recorded and in place. This does not mean that there are no bad companies, but these are the exception, not the rule.

When a situation has arisen and the ship manager has been advised whom to keep up to date with information then that list should be used and anyone not on it should be

referred to the line manager or higher up the chain of command. In addition, everyone should be receiving the same information so that there is no imbalance, which can result in additional questions as to what is going on.

As progress is being made, there is also a need to calculate the cost and revise the final estimate accordingly. No one wants to be told an estimate at the beginning and then receive a final figure that is vastly different, unless, of course, it is a lot less. Therefore, by updating the information with dates and times for completion and revised final cost, the people who matter will be kept informed of what exactly is going on. Effective communications can remove problems before they start.

What to do in a potentially fraudulent situation

There is a very great difference between potential fraud activities and actual fraud activities. Before alerting anyone, it is imperative that the facts are checked and rechecked to show that they display a tendency towards this actual activity.

Fraud can be defined as 'a false representation of a matter of fact – whether by words or by conduct, by false or misleading allegations, or by concealment of what should have been disclosed – that deceives and is intended to deceive another so that the individual will act upon it to her or his legal injury' (legal-dictionary.thefreedictionary.com/fraud).

In the UK acts of fraud are covered by the Fraud Act 2006, which repeals certain provisions of the Theft Acts 1968 and 1978. Each country will have its own definition of fraud and its own way of dealing with fraud in its legal framework. The UK is only one jurisdiction out of many around the world. Therefore an act of fraud can grow in complexity until it is almost impossible to prosecute. This does not mean that it should be ignored, but the necessary supporting evidence should be available to be presented to the line manager and other personnel who will be involved in the investigation.

The greatest problem facing the ship manager is that they are either raising the alarm to a potential act of fraud or could be accused of being part of an act of fraud. The first stage would be for an in-house investigation into the allegations to identify if there are grounds for moving to the next stage of the investigation and making it official. This will have ramifications far beyond those expected and will involve people who are totally innocent of any wrongdoing, but by association will have to be investigated and cleared, as appropriate. As the ship manager who instigated the whole affair it should be noted that relationships will be strained as the investigation continues and if there has been criminal activity and people are charged, then the working relationship between the ship manager and others will change.

The problem here is that if fraud is suspected, nothing is done about it and later it is found out and prosecutions commence, during which it comes to light that a ship manager knew of it and did nothing, then that person would come under intense scrutiny to determine if they were involved or if they acted negligently. It is a very difficult decision to make, but doing nothing is not an option. It is to be hoped that there will be guidelines in place to assist anyone in the company who may come across or suspect that fraud is being committed in the company.

There are no set guidelines that will meet the exacting standards of lawyers who deal only with fraud cases. Maritime fraud is a major concern for the shipping industry and anyone who believes that they have found such an act needs to take action but must

also be aware of the consequences. It is not clear-cut and many cases collapse in court because of these complexities.

Preparing a future budget

Budgets are cyclical. They never go away and will always be there for you to check and control. The more budgets ship managers are involved in, the better their understanding of them and the variances between different budgets will become. It is not an exact science but more of a guide as to what expenditure can be expected in the forthcoming time period, usually one year. Factors that can be controlled will be and those that cannot will be used at the level imposed by external organisations.

The input of others and the review of the proposed budget by others will lead to the budget being refined until it is in an acceptable format and the numbers can be used. It will be hoped that any variances will be small and that these can be easily accounted for, but when there are large variances then these must be identified and the reasons behind them closely examined to ensure that they do not occur again.

Although much of the information is gained from previous budgets, it should not be the controlling factor as many of the changes that are likely to arise in the future can be predicted by reviewing relevant publications and gleaning information from discussion with those knowledgeable in certain aspects of operating a ship. If the budget is presented on a spreadsheet, the figures will need to be based on sound information and not on a whim. Every entry will be checked and the person constructing the budget must be able to answer any questions raised.

The history identifies trends and these may well help to predict the future, but it may not always be accurate. Changes in freight rates, charter party rates and even world scales all are dependent on intelligence gleaned from the maritime industry, which can change drastically depending on world events. Some events may not appear to have an effect on shipping, but there is bound to be one or more that will. This is when having a network of professional contacts can be of great assistance during the construction of a budget.

When the budget is completed and accepted, then the hard work comes in meeting it and ensuring that no major incidents or events occur that can ruin it. This is all in a day's work for a professional ship manager.

Statistics

Everyone wants statistics or statistical analysis completed to show what has been taking place in the company. When used correctly, statistics can identify trends and other useful information that can then be prepared for presentation in various formats. In many cases now the statistics are evolving into KPIs, which are used to determine how the company is performing compared with its own previous results and with other companies. It is important to differentiate between the statistics and KPIs, although they are related to each other.

Definitions

Statistics are 'a type of mathematical analysis involving the use of quantified representations, models and summaries for a given set of empirical data or real world observations. Statistical

analysis involves the process of collecting and analyzing data and then summarizing the data into a numerical form.’(www.investopedia.com/terms/s/statistics.asp)

Meanwhile, KPIs are ‘a set of quantifiable measures that a company or industry uses to gauge or compare performance in terms of meeting their strategic and operational goals. KPIs vary between companies and industries, depending on their priorities or performance criteria. Also referred to as key success indicators (KSI)’(www.investopedia.com/terms/k/kpi.asp)

Presentation of statistics

In the current climate of shipping, there has been a trend of presenting all data gathered in the form of statistics with the aid of graphs, pie charts and other visual aids to verify the findings. One major item now required is for the company to provide KPIs. The KPIs are then compared with each other to identify trends and improvements/deterioration. The problem with KPIs is that, as with any statistical analysis, they need to be investigated deeply to see if they are giving a true representation of the company’s position.

The use of statistics and graphical presentation means that it is quicker to see trends or directions that the company is taking and if there are improvements or not. Many people have a problem interpreting statistical definitions. Statistics have a language all of their own and this can be very confusing to anybody not familiar with the terms and how they are derived. This also applies to KPIs and how they are used.

KPI				
No	KPI Category	HSEQ*	KPI Target	Responsible Person
1	Reduce LTIF of crew injuries to 0.12 (1 case)			
2	Reduce RWCF of crew injuries to 0.24 (2 cases)			
3	Reduce TRCF of crew injuries to 0.60 (5 cases)			
4	Continuous Improvement of Safety – Zero Collisions			
5	Continuous Improvement of Safety – Zero Groundings			
6	Loss of Containment Oil Spills in Water – Zero Spills			
7	Loss of Containment Oil Spills On Board – Zero Spills			
8	Reduce Non-conformities at ISM EX Audits to 0.00 per Inspection			
9	Reduce Non-conformities at ISM Int Audits by 10% to 0.05 per Inspn			

10	Reduce Observations at PSC by 5% to 0.98 per Inspn			
11	Reduce Observations at Flag ASI by 5% to 0.81 per Inspn			
12	Reduce Observations at MOC Inspn by 5% to 6.67 per Inspn			
13	Reduce Observations at Company 6 M Inspn by 5% to 2.19 per Inspn			
14	Reduce PMS Overdue items to 6% per ship			
15	Reduce number of Conditions of Class to 0.60 per vessel			
16	Reduce Off-Hire Period to 0.80 Days per ship/year			
17	Office to share 12 Best Practices with all Fleet Vessels			
18	Increase number of Near Miss Reports received to 15 per Ship per Year			
19	Reduce number of fines due to Violation of regulations to Zero			
20	Reduce Freon R22 consumed by 5% to 50.00kg per vessel/year			
21	Reduce Category 4 waste discharged to sea to 10.70m ³ per vl/year			
22	Arrange Environmental Training (Videotel) for 50% of Office Staff			
23	Increase the Annual Sea Going Officer Staff Retention Rate to 90%			
24	Increase the Annual Office Staff Retention Rate to 94%			

* H – Health; S – Safety; E – Environmental; Q – Quality

This table gives an indication of KPIs identified by companies.

The need to identify which components should be recorded and which records maintained to produce KPIs is at the discretion of the company. But the core elements for tankers will be dictated to by the OCIMF TMSA 2 and its contents. The table above is a reflection of this. A company has to set standards and then benchmark them. Benchmarking has come to prominence quite recently and it is used to determine how the company is progressing and whether it is using the continuous improvement cycle or not.

Useful terminology

Benchmarking

According to businessdictionary.com, benchmarking is defined as a measurement of the quality of an organisation's policies, products, programmes and strategies and their comparison with standard measurements of its peers. The objectives of benchmarking are:

- To determine what and where improvements are called for;
- To analyse how the organisations achieve their high performance levels; and
- To use this information to improve performance.

Objective

An objective is a goal for health, safety, environment or quality stated as a direction. An example of a safety objective would be to 'reduce loss time injury frequency'. An environmental objective could be to 'reduce fuel consumption' and a quality objective to 'increase the customers' level of satisfaction with our services'. Each objective will have at least one supporting target.

Target

A target is a quantifiable level of performance associated with achieving an objective. An example of a target associated with a health and safety objective would be to 'reduce the number of hand injuries by 50% over the next year'. A target associated with an environmental objective could be to 'improve fuel efficiency through effective maintenance and good fuel combustion by 1% over the next year', while a target associated with a quality objective could be to 'reduce the third-party inspection observations by 20% per vessel over the next year'.

Stretch target

Stretch targets are used with KPIs, which are more challenging and difficult to achieve. An example of their use would be for the annual retention rates of officers and ratings. Based on five years' performance results for this KPI, the stretch target would be equal to the KPI target plus 25% of the difference between the KPI target and the minimum acceptable performance. The minimum acceptable performance is the average of the lowest two years and the KPI target is the average of the highest three years.

Action plan

This includes responsibilities and dates for achieving each objective and target. The KPI categories listed above give an indication of what the company is interested in with a view to assessing its performance and then checking at regular intervals to identify improvements and shortfalls.

The ship manager or designated person may not be required to conduct investigations into accidents and incidents but may be required to analyse the reports and results from each. It may be that the ship manager or designated person may have to interview

personnel and this is a major undertaking. The reason for these interviews is to find positive evidence for the root cause of the accident. The interviews need to be handled in a uniform way to ensure that any statistics generated from them fit into the profile of the rest of the report.

Targets of zero

Many organisations aim for a target of zero for incidents, hazardous occurrences and non-conformities etc. in inspections, audits and surveys. Now this is being questioned as to where it is achievable or sustainable. One of the points is that once zero is achieved it will be a requirement to maintain that. This is when the question must be asked if it is a true representation of the situation in the company.

There are many books written on human error and a particularly in-depth one is written by James Reason and entitled *Human Error*. People make mistakes and it is to be expected. The fact is that it is part of human nature. The old adage 'to err is human' comes to mind, so how can it be expected that no errors will occur on board ships?

The most important point is to be aware that the large majority of accidents result in an error chain being formed and if it is at any stage broken by identifying the warning signs, then the major incident does not take place. As a ship manager it is important to identify what is taking place on board the ships and look at the statistics and KPIs generated to see if trends are forming as warnings.

So is it realistic to expect or achieve zero errors in ship operation? What should be expected is that the severity of accidents and incidents can be reduced with safety programmes and crew training and that the time between incidents can be extended. The use of near-miss reporting should be encouraged so that it can be used as an effective early warning system and lessons can be learned.

One of the problems with benchmarking is that in too many cases it is being used to compare the ship manager's company with others from a similar sector. This is all well and good, but does it really reflect improvement in the company? A true test of benchmarking is monitoring improvement within the company towards achieving zero in various KPIs. Although it may not be possible to achieve this, it is in trying to achieve it that improvements are made. The ship manager will be involved in this process and needs to be aware of how each ship is performing and compare the ships with each other and then as a group with the rest of the fleet. This will then give a better indication of how the company is performing.

Self-assessment

- Check a spreadsheet for any ship and then, if possible, compare a spreadsheet for one ship with a sister ship or comparable.
- Find out how company statistics are generated and what is done with the information raised.
- What are the responsibilities of the ship manager in respect of generating and reviewing the information gained from the statistics?

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18 RELATIONS BETWEEN SHIP MANAGER, MASTER, CSO AND DESIGNATED PERSON (DP)

The positions of ship manager, master, CSO and designated person may be held by four individuals or less, depending on the structure of the company. For the purpose of this chapter, it is considered that each of these positions is held by a different person and that they have to co-ordinate with each other. Chapter 15 discussed the general concepts of communication and in this chapter we will be dealing with the specifics of how the relationship between these four roles affects the operation of the ship.

Each job title has specific responsibilities and these must be met. However, in their duties consideration for the other parties is important so that there is no breakdown of communication as this could result in problems for the ship's operation, which may result in delays or the ship being placed in the off-hire mode.

The main problems identified should be borne in mind when operating a number of ships where there are different people holding the job titles and the situation becomes more complex. A clear line of communication needs to be set for each permutation.

Lines of communication

Although we are talking about four separate job titles in this chapter, it is possible in some smaller companies that the ship manager, CSO and the designated person are one person. Therefore the lines of communication would be direct between the ship manager and the master. But if there are four people, it means that the lines of communication are more complex, with the potential of information not being passed to one or more people. That is why it is so important to identify the circulation list to ensure that everyone is kept in the loop in respect of the communications. This will be further expanded to ensure that discussions are held and decisions made that form the best option for the safe operation of the ship.

The variations on this theme can be that everyone works in the same office and can speak to each other directly or that the four roles are operating in different offices in different countries, making matters more complicated, especially when different time zones are involved. One of the effects of different time zones is that there can be a delay in communicating and reaching agreement and this can be compounded by the ship in question operating in yet another time zone.

While this can be accommodated in normal circumstances, it would pose a problem during an emergency situation. This is when time delays can cause a situation to worsen

and opportunities can be missed. Modern communication systems and information management systems can assist and remove a lot of potential pitfalls, but in the end it is people not computers who have to make decisions based on what information is made available. In an emergency it is important that the ship manager has good relations with the other people, in particular with the designated person and the CSO. Others will be included in such an event and the company emergency response must be able to act and respond at any time, night or day.

The master

The master needs to have confidence in the ship manager and others to support him or her during normal operations and this should lead to a better relationship in an emergency situation. If there has been no relationship built up, it is too late once an emergency is under way and trust is needed with each of the members of shore staff supporting those on board.

In chapter 15 there was a lot of discussion on how to achieve more effective and efficient communications and how to watch out for barriers to communications. Chapter 6 focused on the particular function of the designated person and company security officer. The role of the master has also been discussed and how the master has to function at all times and in particular in emergency situations.

A recent discussion has been whether to downgrade the role of master. In a number of recent emergency events there have been questions in respect of who was in control and how the master reacted to the situation and to advice given. This has given rise to a debate on the role of master, but this is only a debate. The master and others must be guided by SOLAS 74, as amended, 2009 consolidated edition, Chapter V, regulation 34.1 – Master's discretion: 'The owner, the charterer, the company operating the ship as defined in regulation IX/1, or any other person shall not prevent or restrict the master of the ship from taking or executing any decision which, in the master's professional judgment, is necessary for the safety of life at sea and protection of the marine environment.'

This is further reinforced by Preamble item 2 of the ISM Code: 'The Assembly adopted resolution A.443 (XI), by which it invited all Governments to take the necessary steps to safeguard the shipmaster in the proper discharge of his responsibilities with regard to maritime safety and the protection of the environment.'

This resolution was in force long before regulation 34.1 and was highlighted to protect the master in situations where pressure was being exerted to make decisions that were not in line with his or her assessment as the person on site at an emergency situation.

It is the duty of the ship manager, CSO and the designated person to give the necessary support to the master and the on-board management team, unless there is an apparent breakdown of professional conduct and ability. This is a very serious situation and since the master is the person on scene and the others are working remotely there is a problem of how to change the situation and put in place someone that they believe is capable.

Relieving the master in such a situation would be cause for concern and in the aftermath of an emergency situation everyone's conduct would be under scrutiny. Decisions made will be examined and checked for correctness in light of the event and its conclusion. This can either be successful and the situation resolved or in the worst-case scenario result in the loss of the ship, including casualties and fatalities. Everyone needs to examine their

conduct throughout the event. At this stage perhaps some people will be reviewing their relationships with others involved. Could the decisions be better due to the strength and continuation of their previous relationship?

Building respect and professional acknowledgement takes time and good professional relationships are founded on mutual respect. On the other hand, barriers can be erected instantaneously and take a long time to remove, if ever. Where barriers are in place due to a lack of respect and trust, these will become a main cause for an event not to be resolved satisfactorily.

The CSO and the designated person

There are not many companies that can afford the luxury of the CSO and the designated person conducting only the duties related to these job titles. For the majority, these positions are held in addition to other duties. Therefore the resource of time becomes important and there must also be a demarcation of where the duties of these job titles end and other duties begin.

There is potential for a conflict of interest in certain scenarios. This is not intentional, but it can influence decisions made and actions taken. This is possibly more prevalent in smaller companies where the ship manager could be CSO and designated person. Understanding this and making the best possible effort to remain impartial is one of the most difficult positions to attain. This is because it is not possible to switch off from all of the information being generated and commit solely to those imposed by some of the responsibilities given to the individual.

In an ideal world the CSO and designated person would be individual jobs conducted by persons who were impartial, but the extra cost loading on the company to achieve this would cause further problems. After all, going back to chapter 1, achieving economies of scale and keeping the number of staff down as low as possible while still maintaining efficiency and effectiveness is central to ship management.

The ISPS Code and the ISM Code place certain constraints and a minimum set of responsibilities that must be met. In the case of the ISPS Code, the CSO will need to liaise with master, SSO and PFSO to ensure the requirements of the declaration of security is met and that the ship is informed to set the level of security on board and what that entails. The ship manager and designated person need to know this to ensure that the ship can operate safely while meeting the demands of the security level imposed on the ship, especially if security level 3 is being enacted. Remember that security duties are in addition to the other workload involved when a ship is in port and conducting normal operations.

With effective communications and everyone aware of what is taking place, it is possible to look at what will need to take place on board and by discussion reach a consensus so that the workload can be accommodated by the crew without undue stress and so that the crew comply with the hours of work and rest requirements.

The ship manager

There is a need for the ship manager to be kept in the loop for everything that is taking place with the ship. While the other roles mentioned in this chapter have specific responsibilities

to meet, it is the ship manager and the master that must know what is taking place to do with the ship. The master is responsible for one ship only, but the ship manager may be responsible for four or five ships, depending on their type and operational trading patterns. This is when it is important that the ship manager keeps track of all that is taking place for each ship and records it correctly. If this is not kept up to date on more or less a daily basis, it would be very easy for matters to become confused and, as a result, certain records or reports could be filed or archived incorrectly. This would not be a deliberate omission but more of an accumulation of events. This occurs when you have set aside a period to bring your filing and archiving up to date and what happens is that something else comes up and that time disappears. Meanwhile, events are progressing and there is no let-up on the paperwork needed to run a ship and produce the objective evidence for audits, inspections and surveys. The set of records that the ship manager keeps should be exactly the same as that kept on board each ship. But the workload never eases off and at set times of the month, especially at the end of each month, there is the requirement of a set of performance figures and KPIs to be produced.

If the ship manager is behind with the required record keeping, this will increase the amount of outstanding record keeping to be worked through and will mean that the performance figures and KPIs cannot be completed for the month and any other time period until the data are input. Therefore a daily time allowance should be made and kept aside to ensure that everything is kept up to date as best as possible. The ship manager cannot very well demand that each ship is up to date with its performance reports if it is found that they are lying waiting to be acted on by the office and, in particular, the ship manager.

Record keeping

Written records

For any ship to operate it is required to have written records in place. These records can be broken down into certain categories:

- Those relating to the ship and its operation;
- Those relating to the personnel on board;
- Those relating to cargo and its operation;
- Those relating to safety;
- Those relating to insurance.

In many cases the ship has certificates and documents in place and these can be taken as a form of written record.

Every part of the operation of the ship depends on written records. Many can be electronically generated and remain in the computer, while others may be hard copy. The company has certain control over the medium used, but for certain items flag states will have determined the medium and format to be used. Examples of this are official log books, oil record books (part I & II), garbage record book, cargo securing manual, crude oil wash manual and procedures and arrangements manual.

What every company has to do is identify the records needed to be generated for each ship under its control and ensure that these are kept. This is not just good practice; these records are also required by the ISM Code and 'interested parties', which include flag state, PSC, classification society, ISM Code auditor, P&I club insurance, H&M insurance, charterer, owner and/or manager, ILO, WHO and port health.

The company and the ship also need to identify which records are to be sent to the office and which have to be kept on board. The decision for the keeping of records must take into account the requirements of the flag state administration and of any international legislation that applies to the ship. For example:

- Oil record books have to be kept for at least three years after the date of final entry.
- ESP file has to be kept for the life of the ship.
- OLB has to be returned to MCA within 48 hours of closing crew agreement.

Therefore, depending on the make-up of the company and the number of different flags used for the ships in the fleet, the archiving and storage time could be different. What should be done for records if a vessel changes flag and a different duration is required for the keeping of records by the new flag? What should be done with the records if the archiving completion date is arrived at, but there is still an outstanding claim?

A further point to note is that the company has to decide on the duration to be set for all the records generated by the SMS and contained in the SMM. There is no prescribed time span for the keeping of records and it does not include a mention of which medium the records are to be kept in. This can be either hard copy or an electronic format. If the medium chosen is to be electronic, how does the company ensure that the method of input allows for easy retrieval of the required written records? How can it protect the information stored and ensure that it is not erased by mistake? These questions need to be addressed by the company to ensure that these kind of errors do not occur.

Automatic recorders

Ships have more automatic data recorders than the office. These devices are inherent in the day-to-day working of the ship and some are specific only to certain ship types. Other recorders are required for every vessel. Examples of automatic data recorders are:

On the bridge:

- Course and speed recorder
- Echo sounder trace recorder
- GMDSS installation
- Vessel data recorder (VDR)
- AIS
- Bridge log book

Cargo operations:

- Oil discharge monitoring equipment
- NO_x recorder

- SO_x recorder
- Inert gas recorder pressure and oxygen content
- Sounding book
- Cargo record book

Engine room central processing unit for unmanned machinery space:

- Oily water separator
- Engine room log book

Safety:

- Cargo hold smoke detector

Double hull tankers:

- Hydrocarbon vapour detectors in ballast spaces

Health:

- Medical log (sick bay log)
- Record of contents of ship's medicine locker

In many cases of the above, the recorder is automatically making records but does not give out any information unless requested. Or in some cases the only time that the recorder gives an indication is when the alarm is activated due to set parameters being exceeded.

Where graphs, tacographs, charts or recording paper are used in conjunction with the automatic data recorder, it may be that a printout can be given at set time intervals showing the records for a particular unit of time. This may be once every hour or at any time required. The time interval is at the discretion of the person in charge of the cargo operation. What needs to be known is that the equipment is working correctly. When required, it has to have been calibrated. If records are printed off, what is the procedure for keeping these printed copies?

The introduction of the VDR will change many of the aspects of the record-keeping requirements of vessels. This automatic recording device will keep a complete log of the events on the navigation bridge for a four-hour cycle and will update on a continuous loop. The information contained on the VDR will help ensure that in the event of an incident a full set of details is available of how each ship acted leading up to the event.

In some cases, the companies constructing these devices have offered the extras of having visual and audio recordings included in the loop. The information would be picked up by having eight cameras and 16 microphones placed strategically around the navigation bridge. This information will complement the information transmitted from the radar, course/speed recorder, GPS, Navtex, gyro and magnetic compasses, ECDIS and so on.

Requirement for accuracy

At all times the person responsible for the completion of any record should ensure that the entry areas are as complete as possible and contain the information required. All

records on board ship are subject to inspection by 'interested parties'. The main cause for concern will arise if the ship is involved in an incident where the records of the ship will be inspected in minute detail for inaccuracies.

No one can keep all records 100% exact, but that is the standard to aim for. The standard should not be set lower than 100%; if it is, there are potential problems when the percentage of errors increases to the detriment of the ship. This can result in the ship being found liable for a case because it was unable to defend itself. The reason for the lack of defence is set in the fact that the objective evidence required for the defence could not be found in the records of the ship.

Self-assessment

- Take any ship in the company and draw up a list of the relationships of the personnel who work with it. This will include the ship manager, CSO, designated person, technical manager and others. Once the list is complete, the various job titles should be reviewed against the company's organisational chart to identify the flow between each of the job titles. (You may find that there are a number of titles being carried out by the same person.)
- Is this system the most efficient and effective use of the manpower available? This is for you to identify. Think about how the situation could be improved.

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For readers wanting to find books or publications, there are a number of websites that will give a lot of information and guidance and hopefully refine their search for materials (see list of useful websites below). The two suppliers below have been successfully used by the author on numerous occasions:

Marine Society & Sea Cadets (booksms-sc.org)

This organisation can supply all IMO publications as well as other publications which can be ordered if not in stock.

Kelvin Hughes Limited (bookharbour.com)

This organisation has a comprehensive listing of books, ebooks, publications, charts and other materials. The main skill is in navigating the site to find what you are looking for, but there is a help assistant for the site.

USEFUL WEBSITES

Baltic and International Maritime Council (BIMCO): www.bimco.org
Chemical Distribution Institute (CDI): www.cdi.org.uk
Cruise Line International Association (CLIA): www.cruising.org
Dangerous Goods Advisory Council (DGAC): www.dgac.org
European Chemical Industry Council (CEFIC): www.cefic.be
Institute of Chartered Shipbrokers: www.ics.org.uk
International Association of Dry Cargo Shipowners (Intercargo): www.intercargo.org
International Group of P&I Clubs: www.igpandi.org
InterManager: www.intermanager.org
International Association of Classification Societies (IACS): www.iacs.org
International Association of Independent Tanker Owners (INTERTANKO): www.intertanko.com
International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA-AISM): www.iala-aism.org
International Association of Port and Harbours (IAPH): www.iaphworldports.org
International Chamber of Shipping (ICS): www.ics-shipping.org
International Hydrographic Office (IHO): www.iho.int
International Organization for Standardization (ISO): www.iso.org
International Marine Pilots Association (IMPA): www.impahq.org
International Maritime Law Institute (IMLI): www.imli.org
International Maritime Organization: www.imo.org
International Shipping Federation (ISF): www.ics-shipping.org
International Transport Workers' Federation (ITF): www.itfglobal.org
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Nautical Institute (NI): www.nautinst.org
Oil Companies International Marine Forum (OCIMF): www.ocimf.com
Seafarers' Rights International (SRI): www.seafarersrights.org
Society of International Gas Tanker and Terminal Operators Ltd (SIGTTO): www.sigtto.org
TutorShip: www.ics.org.uk
United Kingdom Hydrographic Office: www.ukho.gov.uk
United Nations (UN): www.un.org
World Health Organization (WHO): www.who.int
World Maritime University (WMU): www.wmu.se

THE ISM CODE IN THIS BOOK

This section identifies where exact references to the ISM Code can be found in this book. In the contents of the ISM Code there are sections that have been omitted from the below list as they are not specifically referenced in this book.

		<i>Page reference</i>
Part A	IMPLEMENTATION	
1	General	66
1.1	Definitions	66
1.1.2		3
1.1.7		87
1.1.8		86
1.1.9		85
1.1.10		85
1.1.11		76, 81
1.2	Objectives	66
1.2.2.3		164, 195
1.2.3		11, 23, 82
1.2.3.1		11, 65, 68, 188
1.2.3.2		11, 63, 68
1.3	Application	66
1.3.1		65
1.4	Functional requirements for a safety management system	66
1.4.3		164
1.4.6		77

21ST CENTURY SHIP MANAGEMENT

		<i>Page reference</i>
2	Safety and environmental-protection policy	66
3	Company responsibilities and authority	66
3.1		3
3.2		165
4	Designated person(s)	66
4.1		155
5	Master's responsibility and authority	66
6	Resources and personnel	66
6.2		165
6.3		165
6.4		69, 165
6.5		166
6.6		136, 166
6.7		167, 197
7	Shipboard operations	66
8	Emergency preparedness	66
8.3		191
9	Reports and analysis of non-conformities, accidents and hazardous occurrences	66
9.1		167
10	Maintenance of the ship and equipment	66
10.1		10
11	Documentation	66
11.2.3		33
11.3		67
12	Company verification, review and evaluation	66
12.1		77
12.3		77
12.4		77
12.5		77

		<i>Page reference</i>
12.6		77
Part B	CERTIFICATION AND VERIFICATION	66
13	Certification and periodical verification	66
13.12		83, 84
13.13		83, 84
13.14		81, 83
14	Interim certification	66
15	Verification	66
16	Forms of certificates	66
16.2		40–7, 88–95

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GENERAL INDEX

This index is not exhaustive. It is only to be used to assist in finding information relating to the contents. The structure of the book and its chapters were built to keep certain topics together for easy reference to the collaboration.

- accident 17, 26, 53, 66, 69, 72, 136, 150, 167, 185, 190, 191, 197, 200, 221, 230–1, 267
- action plan 230
- actual total loss (ATL) 216
- additional audit 82, 99, 188
- anniversary date 30, 76, 81, 93

- ballast passage 174, 175, 176
- bareboat charter 2, 3, 54, 153, 210
- bill of lading (B/L) 170–1, 175, 178, 212–13
- BIMCO 4, 214, 242, 244
- bulk carrier 6, 7, 8, 15, 16, 65, 85, 88, 89, 90–1, 92, 96, 121, 152, 171, 173, 174, 215

- cargo 1, 4, 6, 7, 13, 15, 16, 20, 34, 36, 37, 63, 65, 87, 88, 89, 90, 92, 96, 105, 121, 123, 133, 138, 141, 147, 151, 152, 154, 165, 169–71, 173–83, 189, 194, 203, 207, 209–10, 211–18, 222, 225, 236, 237–8, 244
- cargo high speed craft 65, 88, 89, 90, 92, 96, 121, 173
- cargo ship, other 65, 87, 88, 89, 90, 92, 96, 173
- certificate of registry 39, 150
- charter party 31–2, 151–3, 170, 171, 173, 175, 176, 178, 179, 198, 207, 209–11, 219, 225, 227

- chemical tanker 7, 11, 34, 65, 88, 89, 90, 92, 96, 121, 173, 184, 242
- clear grounds 126, 129, 131–2, 140
- company security officer (CSO) 97–9, 101–2, 105–7, 110–13, 124, 233–5, 237, 239
- constructive total loss 216

- damage 72, 75, 128, 135, 152, 182, 186, 206, 210, 213, 214, 216–18
- deadweight 8, 169, 180, 181
- declaration of security 105, 109–10, 113, 123–4, 235
- defects 36, 132
- demise charter 2
- designated person 66, 67, 86, 138, 155–6, 173, 192, 230, 233–5, 237, 239, 246
- detention 125–8, 131–6, 138–9, 143–5
- discharge port 9, 171, 174–6, 178, 210, 211
- Document of Compliance (full term & interim) 31, 33, 40, 41, 42, 66, 69, 78, 88, 89, 90–1, 92, 122

- effective communication 154, 167, 197–208, 226, 235
- emergency response 191–5, 234
- emergency response team 191–5
- external audit 76

21ST CENTURY SHIP MANAGEMENT

- fatigue 23, 25, 128, 175, 185–90, 191–2, 199
- flag administration 4, 22, 24, 28, 37, 71–2, 76, 79–80, 82–5, 99, 101, 103, 106–7, 110, 112–13, 134, 147, 148, 151, 185, 193
- flag state 11, 15, 25, 29, 63–5, 69, 73, 80, 84–5, 103, 113, 126–8, 143, 148, 236–7

- gas carrier 7, 11, 33–4, 65, 88, 90, 92, 96, 121, 173, 176, 182–4, 242
- general average 216
- gross tonnage 15, 65, 82, 89, 116, 117, 215

- hazardous occurrence 66, 69, 72, 185, 190, 231, 247
- high-risk ship 140, 143
- hours of work and rest 23, 26–7, 128, 175, 188, 190, 235
- hull and machinery (H&M) 36, 215, 237

- IACS (International Association of Classification Societies) 11, 63, 99, 148–50, 241, 244
- ILO (International Labor Organization) 25–6, 63, 100, 128, 139, 144, 164, 170, 187–8, 237, 241, 243, 244
- IMO (International Maritime Organization) 11–15, 22, 23, 27, 32, 57, 63–4, 68, 72, 77, 79, 84, 89, 92, 95, 97, 99–100, 111, 114–15, 116, 117, 123, 127, 136, 143, 148, 177, 183, 188–9, 241, 243, 244
- incident 18, 20, 23, 34, 68, 69, 72, 100, 103, 108, 109, 111, 113–14, 142, 150, 185, 190, 192, 193, 194, 221, 227, 230–1, 238–9
- INCOTERMS 213
- initial audit 81, 85
- inspection 31–7, 52, 54, 63, 65, 69, 72–7, 80, 82, 83, 98, 100, 106, 112, 125–45, 147–54, 164, 167, 169, 180, 185, 228, 230–1, 236, 239, 242
 - more detailed 126–7, 129–32
- institute warranty limits (IWL) 170, 218
- intermediate verification 78, 81, 93, 118
- International Safety Guide for Oil Tankers and Terminals (ISGOTT) 179, 180, 241
- internal audit 72, 76–8, 80, 107, 111
- International Ship Security Certificate (full term & interim) 30, 48, 49–51, 99, 116, 117–20
- ISPS Code 14–15, 23, 29–30, 63, 75, 95–124, 145, 235, 241

- job description 8, 10, 11, 55, 67, 69, 159, 161–7

- key performance indicator (KPI) 10, 30, 34, 167, 221, 227–31, 236

- leadership 34, 58, 156, 158–9, 199
- light displacement 180
- load displacement 180
- load port 9, 174, 175, 178, 211
- loaded passage 174, 176, 179
- low-risk ship 139, 140, 143

- major non-conformity 81, 85–7
- malfunctions 36, 134
- marine insurance 209, 215–17
- MARPOL 11, 13, 17–20, 32, 126–7, 133, 141, 144, 184, 241
- material safety data sheet (MSDS) 15, 37, 180
- Memorandum of Understanding (MoU) 32, 127–9, 132, 135, 138, 139–44, 242
- MLC 11–30, 100, 128, 150, 153, 185, 187–8
- mobile offshore drilling unit 65, 88, 89, 90, 92, 96, 121, 173

- net tonnage 32
- new inspection regime (NIR) 32, 139, 142–3
- non-conformity 28, 67, 75, 81, 85–7, 111, 185

- observation 86, 87, 129, 131, 147, 153, 169, 227, 229, 230
- OCIMF 33–5, 128, 150, 177, 179, 229, 241, 242, 243, 244
- oil tanker 6–8, 11, 34, 65, 88, 89, 90, 92, 96, 121, 128, 173–4, 179, 217, 241, 242, 243

- OVID 35
 P&I club 9, 36, 142, 150, 172, 178–9, 194, 215, 218–19, 237, 244
 particular average 17, 234
 passenger high-speed craft 7, 88, 89, 90, 92, 96, 121, 173
 passenger ship 15, 45, 88, 89, 90, 92, 96, 114, 121, 152, 173, 176
 port facility security officer (PFSO) 97, 102, 106, 110, 113, 115, 123–4, 235
 port state control (PSC) 27–9, 63, 82, 83, 85, 100, 112, 125–45, 151, 152, 180, 185, 188, 221, 229, 237

 quality 36, 68, 70, 71, 76, 157, 162, 171, 190, 210, 229, 230

 RO (recognised organisation) 17, 79–80, 99–101, 103, 133–4, 143, 145, 198
 RSO (recognised security organisation) 99, 101, 103–7, 114
 renewal audit 78–9, 81

 safe manning document 22–3, 27, 188–9
 Safety Management Certificate (full term & interim) 30, 43–4, 45–7, 66, 69, 78, 84, 89, 92–4
 ship security alert system 96, 105, 111
 ship security assessment (SSA) 101, 104–6
 ship security officer 23, 97, 106, 110, 124
 ship security plan (SSP) 22, 99–102, 105–7, 110–13, 117
 SIRE 31, 33–5, 108, 128, 150, 155, 184, 187, 198, 242
 SMM (safety management manual) 8, 33, 237
 SMPEP (shipboard marine pollution emergency plan) 195

 SMS (safety management system) 8, 33, 37, 55, 57, 63, 67–87, 97–8, 107, 127–8, 130, 132–3, 137, 144–5, 161–2, 164, 167, 177–9, 185, 188, 225, 237, 243
 SOLAS 11, 14–17, 19, 22, 31–2, 37, 57, 64–6, 71, 80, 84, 87, 95–6, 99–100, 109, 111, 129, 133, 144, 152, 173, 179, 184, 189, 234
 SOPEP (shipboard oil pollution emergency plan) 19, 192, 194
 standard-risk ship 140, 143
 Statement of Compliance for Port Facility 121–22
 STCW 11–30, 36, 100, 128, 133, 144, 186–7, 241
 stretch target 230

 tanker management and self-assessment 2 (TMSA 2) 34, 177, 229, 241
 target 58, 61–2, 109, 114, 139, 143, 144–5, 155, 171, 221, 228, 230, 231
 teamwork 155–9
 Time Charter 210–12, 222, 225

 UNCLOS (United Nations Convention on the Law of the Sea) 12, 27, 242, 243

 verification audit 76, 80, 83, 85, 111, 147
 voyage charter 170, 207, 210–11, 222
 voyage costs 170, 222

 watertight integrity 131, 141
 weather-tight integrity 131, 141

 x-ray 105

 yacht insurance 217

 zero 69, 204, 221, 228–9, 231