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WORLD MARITIME UNIVERSITY

Dalian, China

**STUDY ON CHINA'S PREPARATION FOR
IMO MEMBER STATE AUDIT OF STCW**

By

CHANG GUOGUANG

The People's Republic of China

A research paper submitted to the World Maritime University in partial
Fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE

(MARITIME SAFETY AND ENVIRONMENTAL MANAGEMENT)

2018

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DECLARATION

I certify that all the materials in this research paper that is not my own work have been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this research paper reflect my own personal views, and are not necessarily endorsed by the University.

Signature: Chang Guoguang

Date: June 28, 2018

Supervised by: Bao Junzhong

Professor

Dalian Maritime University

Assessor:

Co-assessor:

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ABSTRACT

Title of Dissertation: **Study on China’s preparation for IMO member state
audit of STCW**

Degree: **MSc**

IMO created member state audit to evaluate the implementation performance of member states and to harmonize their actions. China will be audited in 2021 according to the audit schedule, and this thesis aims to give some solutions for China’s preparation for this important audit. The paper first analyzed China’s current situation and shortcomings of STCW implementation. Then some solutions to the preparation for member state audit are given. The main methodologies are literature research, historical research, and statistics analysis.

There are five chapters of main body. Two kinds of audit schemes and their difference were analyzed. III code is the audit standard, and it defined audit areas and scopes. The author compared STCW 1995 amendment requirement and mandatory audit scheme. By analyzing 13 member state audit reports, some valuable experiences are illustrated. Regarding STCW implementation situation and challenges of China, the author picks out STCW related problems from China’s voluntary audit report and EMSA inspection report for analyzing. Some challenges can be concluded on implementation scheme, professionals and information database. Finally, the author gives six solutions in STCW implementation and member state audit preparation. China should promote its implementation through national legislation, RO monitoring, professional teams, management system, resources and instruments researching.

There are three innovation points of this paper. The first is the statistical analysis of historical audit reports. The second is China's current situation study of STCW implementation, and illustrate its challenges specifically. The last one is the six solutions for improving China's STCW implementation performance.

KEY WORDS: IMO audit, Audit scheme, Audit standard, Implementation.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
TABLE OF CONTENTS	vi
LIST OF FIGURES	ix
LIST OF TABLES.....	x
LIST OF ABBREVIATIONS	xi
CHAPTER 1.....	1
INTRODUCTION	1
1.1 Purpose	1
1.2 Methodology.....	1
1.2.1 Literature Research.....	1
1.2.2 Historical Research.....	2
1.2.3 NCs and OBs Statistics and Analysis	3
1.3 Research Significance	3
1.4 Main Contents	4
CHAPTER 2.....	6
BRIEFING OF MEMBER STATE AUDIT.....	6
2.1 Audit Scheme.....	6
2.1.1 Voluntary IMO Member State Audit	6
2.1.1.1 History	6
2.1.1.2 Purpose	7
2.1.1.3 Procedure	7
2.1.2 Member State Mandatory Audit	8
2.1.3 Comparison between Mandatory Audit and VIMSA	10
2.1.3.1 Auditors Qualification Clarification	10
2.1.3.2 Determining Audit Cycle.....	10
2.1.3.3 Member State Audit Mandated in Conventions	11
2.2 Audit Standard	11

2.3 Summary.....	12
CHAPTER 3.....	14
MEMBER STATE AUDIT UNDER STCW	14
3.1 STCW 1995 Amendment	14
3.1.1 Communication of Information	14
3.1.2 Control and Control Procedures	14
3.1.3 Quality Standards	16
3.2 Audit Areas under VIMSA	17
3.3 Audit Areas under Mandatory Audit Scheme	17
3.4 Comparison of STCW1995, VIMSA and Mandatory Audit	19
3.5 Audit Schedule of STCW	20
3.6 Historical Experiences	21
3.6.1 Communication of Information	26
3.6.2 National Legislation	27
3.6.3 Evaluation and Improvement	27
3.6.4 Recognized Organization	28
3.6.5 Recording	28
3.7 Summary.....	28
CHAPTER 4.....	30
STCW IMPLEMENTATION CHALLENGES OF CHINA	30
4.1 Current Situation	30
4.1.1 China’s Voluntary Audit Result	30
4.1.2 EMSA Inspection Result.....	33
4.1.3 STCW 2010 Amendment New Requirement	34
4.1.3.1 Able Seafarer Engine Certification	34
4.1.3.2 Revalidation of Certificates	35
4.1.3.3 Recognition of Certificate.....	35
4.1.3.4 Transitional Provisions	35
4.1.4 Preparation Progressing	36
4.2 Challenges.....	37
4.2.1 Ambiguity STCW Implementation Framework	37

4.2.2 Lack of Professionals of Implementation	38
4.2.3 Insufficient National Implementation Information Supporting System.....	39
4.2.4 Inadequate MET Monitoring Professionals	39
4.3 Summary.....	40
CHAPTER 5.....	41
SOLUTIONS TO IMPROVE STCW MEMBER STATE AUDIT PERFORMANCE OF CHINA	41
5.1 Improving National Legislation System	41
5.2 Enhancing RO Monitoring.....	41
5.3 Promoting Professionals of Implementation.....	42
5.4 Accelerating Implementation Management System.....	44
5.5 Integrating All Implementation Resources	44
5.6 Enhancing IMO Member State Audit Research.....	45
5.7 Summary.....	46
CHAPTER 6.....	48
CONCLUSION	48
REFERENCES	50
APPENDICES	55
APPENDIX A: Areas under the STCW convention to be covered by the VIMSA.....	55
APPENDIX B: Areas subject to mandatory audit	56
APPENDIX C: EMSA inspection summary of FDs.....	58

LIST OF FIGURES

Figure 1: IMO Audit process	9
Figure 2: STCW implementation and audit process.....	18
Figure 3: NCs distribution	23
Figure 4: OBs distribution	23
Figure 5: 2016 Chinese seafarers distribution.....	43

LIST OF TABLES

Table 1: Seafarers certificates related deficiencies in Tokyo - MoU.....	15
Table 2: STCW related certificates.....	15
Table 3: Comparison of STCW1995, VIMSA and Mandatory audit	20
Table 4: STCW audit NCs and OBs before 2016.....	22
Table 5: China audit result 2009.....	31
Table 6: Transitional provision for implementation of Manila Amendment	36
Table 7: Seafarers registered of different categories in China	43

LIST OF ABBREVIATIONS

CASR	Consolidated Audit Summary Report
CoC	Certificate of Competency
CoP	Certificate of Proficiency
COLREG	International Regulations for Preventing Collisions at Sea
EMSA	European Maritime Safety Agency
ERM	Engine room Resources Management
ETO	Electro-Technical Officer
ETR	Electro-Technical Rating
FAQ	Frequently Asked Questions
FD	Finding
FSC	Flag State Control
FSI	Flag State Implementation
ICAO	International Civil Aviation Organization
III	IMO Instrument Implementation (code)
IMO	International Maritime Organization
IMSBC	International Maritime Solid Bulk Cargoes (code)
IS	International Code on Intact Stability (code)
ISM	International Safety Management
ISO	International Organization for Standardization
ISS	Information Supporting System
MARPOL	International Convention for the Prevention of Pollution from Ships
MET	Maritime Education and Training
NC	Non-conformity
OB	Observation
PSC	Port State Control

QMS	Quality Management System
QSS	Quality Standards System
RO	Recognized Organization
SFA	Stochastic Frontier Analysis
SOLAS	International Convention for the Safety of Life at Sea
STCW	International Convention of Standards of Training, Certification and Watchkeeping for Seafarers.

CHAPTER 1

INTRODUCTION

1.1 Purpose

The purpose of the study is to analyze China's current maritime administrative situation and to find the best way to improve its implementation performance of STCW. Since STCW entered into force in 1984, there has been 33 years of implementation in China. It has created several national laws and regulations to fulfill the convention and code. Nevertheless, with the development of shipping technology and continuous amendment of STCW, there are more challenges China needs to face. In addition, as scheduled, China will be audited in 2021 under mandatory audit scheme (IMO, 2014). It is necessary to research on how China can fully prepare for IMO's audit on STCW implementation.

1.2 Methodology

1.2.1 Literature Research

IMO council continuously published Consolidated Audit Summary Report (CASR) periodically to show member states audit findings (FD). For example, CASR C 116/6/1 covering 8 audit reports was adopted in May 2016 (IMO, 2016). They are valuable for China's audit preparation. Regarding STCW implementation and audit countermeasures, there is few systematic or comprehensive research in China. Though there are some books, articles and papers under the topic, they just focus on parts of it. For example, Sha Zhengrong's *IMO mandatory instruments implementation rules* based on III code and describe general suggestions for audits (Sha, 2007). There are also several published papers on STCW implementation and

suggestions, such as Rao Gunjin's *Contents, characteristics and experiences of EMSA's assessment on China's seafarers' training and certification system* (Rao, 2013), Liu Shengyou's *STCW convention on implementation scheme and some proposal on the implementation in China* (Liu & Liu, 2014), Wang, Xingqi's *China's shortcomings in STCW implementation and our implementation scheme construction* (Wang, 2013) and so on. These papers mostly focus on administrative management and there is little statistical analysis on historical audit results. Ms. Qu Yanan's doctor dissertation *Study on legislative transformation about international maritime conventions under IMO audit scheme in China* (Qu, 2013), and Ms. Song Sha's master dissertation *Study on legal challenge and countermeasures about maritime compliance of China under IMO compulsory audit scheme* (Song, 2016) also analyze IMO instruments domestication process and give some suggestions. However, they do not focus on STCW specifically. In summary, the paper will analyze STCW implementation and audit comprehensively, especially sharing of historical experiences, to suggest specifically solutions for China.

1.2.2 Historical Research

In accordance with Voluntary IMO Member State Audit (VIMSA) scheme, IMO completed audit for China in November of 2009. The audit team presented three Non-conformity (NC) items, four Observation (OB) items and eight areas for further development. Through the volunteer audit report, China can learn lessons from these FDs and follow up actions. Furthermore, European Maritime Safety Agency (EMSA) also carried out inspection of China regarding STCW implementation, and there is some useful information worth considering too.

1.2.3 NCs and OBs Statistics and Analysis

From the very beginning till now, IMO has carried out 143 audits for its member states (IMO, 2018). The author collected parts of audit reports and summarized their common points and characteristics, especially FDs related to STCW implementation. There are plenty of FDs from these audit reports and these experiences are valuable for China. Compared with other states convention implementation situation, there will be more approaches to avoid similar problem and enhance China's preponderance.

1.3 Research Significance

Firstly, lessons learnt from historical experiences are valuable. Both of EMSA inspection report and China's 2009 audit report illustrate some deficiencies, these experiences are valuable for every member state, especially for China's mandatory audit preparation. China can learn international advanced management experiences to establish shipping policy mechanism complying with international shipping development.

Secondly, the differences of STCW 1995 amendment Quality Standards System (QSS) and Resolution A.1067 (28) audit scheme were analyzed. STCW1995 amendment introduced QSS to control member states' seafarer management. After that, IMO created VIMSA scheme and mandatory audit scheme. The differences between QSS, VIMSA and mandatory audit are the direction of China's preparation.

Thirdly, it is of great value to provide solutions for filling up China's gap for better implementation performance. Since most IMO instruments are created by shipping development countries and China is always trying to keep pace with international

regulations (Wang, 2015). The paper gives some solutions to prepare for audit in order to get better assessment results and enhance China's international shipping image.

Last but not least, as Category (A) state in IMO council, China has the responsibility and obligation to promote IMO Resolutions and strengthen IMO instrument implementation globally (Wang, 2015). China should actively response and attend audit to strive better position in global competition. In addition, China needs to fully fulfill its obligations conferred by the international maritime conventions, to safeguard China maritime management authority, to improve China's voice in international affairs and to protect its shipping interests.

1.4 Main Contents

Three main contents will be introduced as follows: audit scheme and audit standard, STCW implementation progress, China's challenges and solutions. Firstly, it is the introduction of IMO audit scheme and III code. IMO member state audit scheme is designed to harmonize and monitor implementation (Qiu, 2016). IMO will carry out audit to every member state through a cycle of 7 years. Audit team will focus on flag state, coastal state and port state affairs in accordance with III code. Following audit plan, national legislation, implementation and enforcement of the contract government will be audited. If there is some NC items, follow up action should be carried out, which is used to enhance member states' performance.

Secondly, it is STCW implementation of China and IMO member state audit. STCW manila amendment has passed the transition period and came into force from the beginning of 2017. Furthermore, III code came into force on 1st January 2016 and

STCW convention has included mandatory audit requirement accordingly. The contract government should create national regulations according to STCW and guarantee all of the mandatory requirement will be implemented, which is the first step of audit (Qiu, 2016). These regulations should cover seafarers training, certification, seafarers serving companies or training institute qualification and monitoring. Furthermore, deficiencies from former audit report will be analyzed.

Thirdly, focusing on China's current situation and progress on STCW audit, some suggestions are given. As it is, China attended audit voluntarily and there are some deficiencies to be corrected. From voluntary audit report in 2009 and EMSA inspection report in 2012, it can be found that there are some shortages in China's seafarer management. Much more attention should be paid to its STCW convention implementation. Four challenges were summarized on implementation framework, professional teams, information supporting system and competent administrators and six solutions were listed accordingly on legislation, RO monitoring, talent team, implementation management and so on.

CHAPTER 2

BRIEFING OF MEMBER STATE AUDIT

2.1 Audit Scheme

Audit scheme means the IMO Member State Audit Scheme, which is established according to the guidelines developed by IMO (IMO, 2005). Voluntary IMO member state audit (VIMSA) scheme and mandatory audit scheme will be introduced as below.

2.1.1 Voluntary IMO Member State Audit

2.1.1.1 History

IMO's aim is to facilitate member's cooperation, promote shipping safety and reduce marine pollution. After Nauru became a member state, IMO currently has 174 member states and 3 Associate Members (IMO, 2018). Since IMCO was founded in 1959, it had adopted more than 40 conventions and protocols, more than 800 regulations and guidelines on shipping safety and marine environment protection (Ling, 2016). In order to enhance implementation, IMO made several approaches such as Port State Control (PSC), International Safety Management (ISM) and Stochastic Frontier Analysis (SFA) and found Flag States Implementation (FSI) sub-committee. However, member states implementation performance is not so good and maritime disasters happened sometimes. Therefore, under the proposal of United Kingdom, IMO drew lessons from the International Civil Aviation Organization's (ICAO) 'Global aviation safety supervision and audit plan (Wang, 2015).

On 1 December 2005, Resolution A.974 (24) was adopted to define framework and

procedures for VIMSA scheme. VIMSA was executed from 2006, which is a milestone for IMO. Before that, implementation situation depended on every member state solely and there was no external audit to evaluate its performance. VIMSA fills the gap more or less, and it gives IMO a tool to assess member states' performance and push them to implement better. Voluntarily application is the base of VIMSA, and it is a good way to assess member state implementation performance.

2.1.1.2 Purpose

The purpose of VIMSA could be divided into three aspects. Firstly, it is aiming to ensure the consistent and effective implementation of IMO instruments globally. Through audit, IMO could find out every member states' shortcomings comprehensively and objectively, propose scientific suggestions and recommendation, and help members improve their performance (Barchue, 2009).

Secondly, it establishes a platform for communicating and sharing experiences on success points among member states (Qiu, 2016). It will ultimately enhance global shipping safety and marine pollution prevention, and improve maritime administration management level.

Thirdly, the audit results of member states will be sent systematically to IMO to further regulations making process. It will improve effectiveness and pertinence of international maritime law largely, which is the most important point for the whole industry and human beings.

2.1.1.3 Procedure

The procedures for the voluntary IMO member state audit is to describe the

requirement on preparation, actual audit and reporting. Regarding audit procedure, domestic legislation, implementation and enforcement are the key items to evaluate member state performance. The audit scope covers six mandatory instruments. They are SOLAS, MARPOL, STCW, Load Line, Tonnage Measurement, COLREG, their associate protocols and all those instruments, which have been made mandatory thereunder. The audit report indicates the member state global performance and will affect their shipping industry deeply. The audit procedure give member states clear direction and scope for audit preparation.

2.1.2 Member State Mandatory Audit

IMO member states audit scheme mandating is an inexorable trend. Since VIMSA commenced in 2006, the volunteers has gained experience and benefit and the audit reports has confirmed the positive influence of the scheme in enhancing effective implementation of the mandatory IMO instruments provisions. These benefits can only be fully achieved when all the parties carry out their obligations as required under the instruments concerned. VIMSA relied on member states' application, and based on voluntary principle. IMO assembly decided to further develop VIMSA and approved the time frame and schedule Resolution A. 1018 (26) (IMO, 2009).

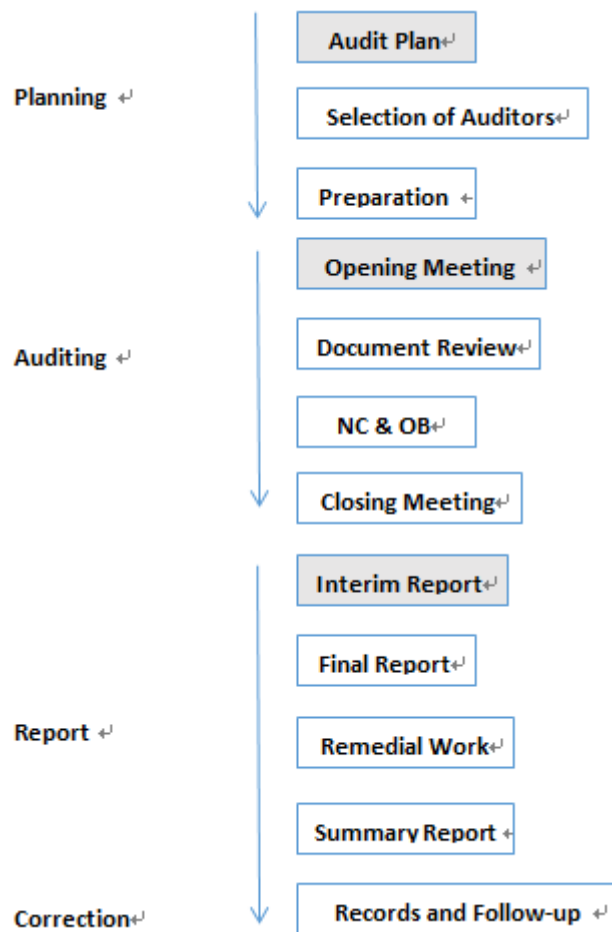


Figure 1: IMO Audit process
 Source: IMO, 2005. A.974 (24)

Four years later, Resolution A.1067 (28) adopted to define *framework and procedures for the IMO member state audit scheme* and the Resolution is finally entry into force from 1 January 2016. Audit process indicated in figure 1 as above. There are 174 member states and 3 associated members within IMO family, according to 7 years audit cycle, IMO shall audit at least 25 states per year (Qiu, 2016). Compared with VIMSA, the results of mandatory audit enforce member state to make proper follow-up action. The enforcement will encourage those member states with low performance to improve their effectiveness of implementation with great effort.

2.1.3 Comparison between Mandatory Audit and VIMSA

2.1.3.1 Auditors Qualification Clarification

Compared with VIMSA, mandatory audit scheme expanded auditor qualification scope. When nominating an auditor, who shall be suitably qualified, in accordance with ISO 19011 or any subsequent ISO standard (Qiu, 2016). The following personal qualities and qualification should be taken into account: initiative, judgment, tact, sensitivity, managerial skill, writing concisely, official languages, familiar with administration and IMO regulatory framework, and computer literacy.

Mandatory audit scheme required that auditor should be nominated by member state. The auditor should complete one of the three courses: management system auditor training course, ISM Code auditor training course or IMO Member State auditor training course. The seven aspects of abilities are the same with the above. The big difference is accepting ISM auditor as IMO member state auditor, which expands IMO auditor team largely.

2.1.3.2 Determining Audit Cycle

There is no fixed audit cycle in VIMSA, and it depends on member states' voluntary application. Regarding mandatory audit, member states shall be audited at periodic intervals not exceeding 7 years. Audit schedule should be determined from a random drawing of the names of member states that have not completed an audit under the voluntary scheme. The Secretary-General will notify each member state of projected date of its audit as soon as possible but not less than 18 months in advance. If there is postponement, member state should submit written application at least six months prior to the audit due date and determined by the council (IMO, 2013).

2.1.3.3 Member State Audit Mandated in Conventions

Mandatory audit has been introduced to SOLAS, MARPOL, Load Line, STCW, COLREG, ITC conventions. From 2006 to 2016, there are many amendments to be included in audit scope. Furthermore, IMSBC code, IS code part A, 2011 ESP code have been added to audit scope too. Taking STCW for example, there are three aspects of amendment: new definition on audit, III code and requiring that audit should comply with Resolution A.1067 (28). In addition, mandatory instruments related to IMO conventions have been added to obligation list in Resolution A.1105 (29). During VIMSA, MARPOL annex VI was excluded from the audit scope, while in mandatory audit scheme it has been included.

2.2 Audit Standard

Besides framework and procedures, IMO audit needs standard too. Audit standard means the Code for Implementation, in other words III code, adopted by the Organization by Resolution A.1070 (28). IMO adopted III code in 2007, 2011 and 2013. They provide detailed standards for the implementation and enforcement of the IMO instruments, which forms the basis of audit scheme and identification of the auditable areas. It entered into force on 1 January 2016 and defines audit scope and details. III code seeks to address all related aspects to SOLAS, MARPOL, STCW, Load Line, Tonnage and COLREG. In order to define individual obligation clearly, three roles are categorized by: flag state, port state and costal state.

The common areas include objective, strategy, general, scope, initial actions, information communication, records and improvement. (i). Its objective is to enhance global maritime safety and marine environment pollution prevention and assist states in the implementation of IMO instruments. Different states can use the

code to their own circumstances. (ii). State is recommended to develop strategy and methodology to ensure its international obligations and responsibilities. (iii). Under general provisions, states should be responsible for promulgating laws and regulations and take all necessary steps to give those instruments full and complete effect. (iv). Audit scope includes all aspects necessary for a contracting government or party pertaining to: SOLAS, MARPOL, STCW, Load Line, Tonnage and COLREG. Nine areas should be considered during policies, legislation, related rules and administrative procedures' development for the implementation and enforcement of those obligations and responsibilities. (v). Initial actions require that member state should have the ability to promulgate laws, a legal basis for the enforcement and the availability of sufficient expertise personals. They can guarantee that a new or amended instrument can be implemented in time. (vi). Information communication approaches should be established to share information among all member states, IMO and other related organizations. (vii). Records should be established and maintained for every state implementation practices as evidence. The records should remain legible, readily identifiable and retrievable. At the beginning, a documented procedure should be developed regarding identification, storage, protection, retrieval, retention time and disposition of records. (viii). Every state should take appropriate measures to improve its implementation performance. These measures include stimulate culture, identify and eliminate cause of NC and potential NC (IMO, 2013).

2.3 Summary

Both of audit scheme and audit standard are important for audit preparation. Audit scheme illustrates mechanism and procedure, and III code defines technical standards. STCW convention is one of six IMO instruments from III code and audit schedule

for China has been fixed. Though there is difference between VIMSA and mandatory audit, both of them are created to improve IMO instrument implementation performance, and China should review the difference and make preparation respectively.

CHAPTER 3

MEMBER STATE AUDIT UNDER STCW

3.1 STCW 1995 Amendment

3.1.1 Communication of Information

Before audit scheme was introduced to STCW, there was no systematic and effective method to assess member state STCW implementation performance. In accordance with STCW 1995 Article IV and Regulation I /7, member states shall communicate as soon as practicable to the Secretary-General about: (i). The text of laws, decrees, orders, regulations and instruments within the convention. (ii). Full details of contents and duration of study courses and national examination and other requirement on certification. (iii). Sufficient number of specimen certificates in compliance with the convention. Once the Secretary-General received the related documentations and confirmed its adequate and efficient implementation, he shall report to Maritime Safety Committee (IMO, 2014). Member states have the responsibility to inform Secretary-General as soon as possible once there is some amendment during implementation nationally.

3.1.2 Control and Control Procedures

Article 10 of STCW 1995 is an approach to assess and improve member state implementation. Ships calling foreign ports of a STCW member state will be inspected and controlled by its Port State Control (PSC) officers to verify seafarers' certificate and dispensation. Once there is any deficiency regarding seafarer's qualification, competency and certification standard, the captain or flag state should be informed. PSC shall take steps to ensure that the ship cannot sail unless the danger

has been removed. Table 1 listed deficiencies of seafarers' certificates in Tokyo-MoU from 2012 to 2017.

Table 1: Seafarers certificates related deficiencies in Tokyo - MoU

Year	Crew certificates deficiencies	Total number of deficiencies	Percentage %
2012	1,275	100,330	1.3
2013	1,074	95,263	1.1
2014	1,534	89,560	1.7
2015	1,593	83,606	1.9
2016	1,559	81,271	1.9
2017	1,462	76,108	1.9

Source: Annual report 2014, 2017. Tokyo - MoU.

PSC officers are initially limited to verify seafarers' certificates and manning standard. STCW related certificates are listed in table 2. STCW Regulation I /4 also permit assessment of seafarer competence to maintain watchkeeping standards where clear grounds have indicated that such competencies may be in doubt. Seafarers' various certificates are the outcome of member state's implementation of STCW convention. Although there was no audit scheme, PSC gives heavy pressure to individual administration on certificates issuing. Seafarers' certificates deficiencies category and severity is the performance indicator of flag state implementation.

Table 2: STCW related certificates

Code	Deficiencies description	References
01201	Certificates for master and officers	STCW/C II ,III STCW/ Art.VI.2, CI, 2
01202	Certificate for rating for watchkeeping	STCW/C II /4, III/4
01203	Certificates for radio personnel	STCW/C II /1 STCW/ Art.VI.2, C I , 2
01204	Certificate for personnel on tankers	STCW/CV/1 STCW/ CI/1.24, CV/1
01205	Certificate for personnel on fast rescue	STCW/CVI/2.2

	boats	
01206	Certificate for advanced fire-fighting	STCW/CVI/3
01210	Certificate for medical first aid	STCW/CVI/4.1
01211	Certificate for personnel on survival craft & rescue boat	STCW/CVI/R2.1
01212	Certificate for medical care	STCW/CVI/R4.2
01213	Evidence of Basic Training	STCW//CVI/R1
01214	Endorsement by flag State	STCW/C I /R2.5
01215	Application for Endorsement by flag State	STCW/C I /R10.5
01217	Ship Security Officer Certificate	STCW/CVI/R5
01222	Doc evidence for personnel on passenger ships	STCW/C I / R4.2.1, 2, 4 STCW/CV/R2.7

Source: PSC Manual 2017, Tokyo-MoU.

3.1.3 Quality Standards

In accordance with Article 8 and Regulation I /8 of STCW, every member state shall ensure that all seafarer training, competence assessment, certification, endorsement and revalidation activities should be continuously monitored by a Quality Standards System (QSS) to guarantee achievement of related objectives (Liu & Liu, 2014). If these activities are carried out by non-governmental agencies or bodies, they should get the authorization from administration; otherwise, these works should be carried out by governmental entities. Member states must ensure that periodical evaluation should be undertaken by qualified persons who are not involved in above activities. The evaluation information shall be submitted to the Secretary-General. The periodical assessment should comply with STCW code section A- I /8.

STCW code A- I /8 listed some detailed requirements regarding QSS. Firstly, every member state shall ensure that the QSS should clearly define education and training objectives and related competence standards. The levels of knowledge, understanding and skills to examination and assessments in accordance with STCW

convention should be identified. Secondly, the contents shall ensure achievement of defined objectives, which shall include certification system administration, training courses and programs, examinations and assessment, control and internal quality assurance. Thirdly, the independent evaluation of knowledge, understanding, skills should be conducted at intervals no more than 5 years. The evaluation should verify that all internal management control and monitoring measures and follow-up actions comply with procedures, assessment result should be recorded and corrective action has been taken. The evaluation report shall include the terms of reference for evaluation, qualifications and experience of the evaluators.

3.2 Audit Areas under VIMSA

Areas under STCW that should be covered in VIMSA are shown in Appendix A¹(IMO, 2005). It is just a part of STCW convention, forming a supplement to STCW QSS and evaluation requirement. There are six areas, including dispensations, equivalents, control, communication of information, quality standards – independent evaluation, and watchkeeping. The evaluation is undertaken in accordance with STCW code section I /8. Information relating to the evaluation shall be communicated to the Secretary-General.

3.3 Audit Areas under Mandatory Audit Scheme

STCW implementation is one of six IMO instruments to be audited. Its implementation and audit process is showed in figure 2. Areas subject to mandatory audit are listed in Appendix B² (IMO, 2014). There are nine areas that should be considered and addressed in the development of policies, legislation, associated rules, regulations and administrative procedures for the implementation and enforcement of

¹ Areas under the STCW convention to be covered by the VIMSA. Resolution A.974 (24).

² Areas subject to mandatory audit. Resolution MSC.374 (93).

those obligations by member states. (i). Jurisdiction. (ii). Organization and authority. (iii). Legislation, rules and regulations. (iv). Promulgation of the applicable international mandatory instruments, rules and regulations. (v) Enforcement arrangements. (vi) Control, survey, inspection, audit, verification, approval and certification functions. (vii). Selection, recognition, authorization, empowerment and monitoring of recognized organizations, as appropriate, and of nominated surveyors. (viii) Investigations required to be reported to the Organization. (ix) Reporting to the Organization and other Administrations. (IMO, 2013).

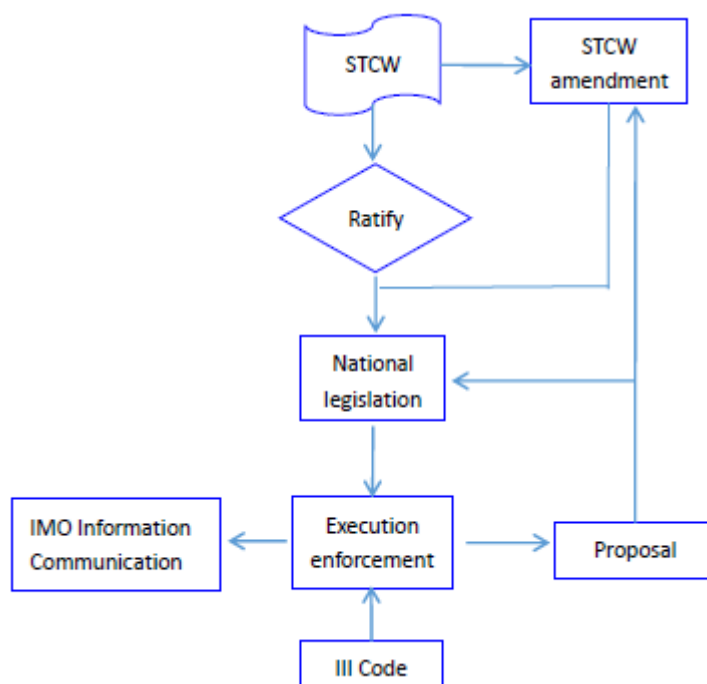


Figure 2: STCW implementation and audit process
Source: Liu, S.Y & Liu, B. 2014.

After III code was adopted, Maritime Safety Committee (MSC) adopted STCW amendment regarding mandatory audit obligation by Resolution MSC.373 (93) at 93rd session. A new Regulation I /16 were added and it entered into force on 1 January 2016. The main contents of amendment are listed below.

Firstly, four new terms defined in Regulation I. Audit is a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled. Audit scheme means Resolution A.1067 (28): *framework and procedures for the IMO Member State Audit Scheme*. Code for Implementation is Resolution A.1070 (28): *IMO Instruments Implementation Code (III code)*. Audit Standard is III code.

Secondly, new Regulation I /16 was added to control verification of compliance. Every state shall be periodically audited by IMO in accordance with III code, and they can use the provisions in execution of their obligations and responsibilities. The Secretary-General of IMO is responsible for administering the audit program. Every party is responsible for facilitating the conduct of audit and addressing the FDs. Audit on all member states shall be based on an overall schedule developed by Secretary-General and conducted at periodic intervals. (IMO, 2014).

3.4 Comparison of STCW1995, VIMSA and Mandatory Audit

The differences of areas under STCW1995, VIMSA and mandatory audit have been listed in table 3. There are only six audit areas that should be considered under VIMSA scheme. Those areas are mostly coming from STCW 1995 amendment, especially communication of information and QSS requirement. It makes use of quality management concept and encourages member states to establish QSS. However, it is a voluntary requirement. Regarding member state mandatory audit, III code is the technical standard. The first difference is that the standard is mandatory for every member state. The second one is that audit scope and areas are expanded. All of the eight areas listed in common area and six conventions plus related code

should be audited. III code gives stricter provisions on STCW compared with voluntary audit.

Table 3: Comparison of STCW1995, VIMSA and Mandatory audit

Areas	STCW1995	VIMSA	Mandatory audit
Communication of information	√	√	√
Equivalents	√	√	√
Recognition of certificates	√		√
Alternative certification			√
Communication of information concerning the periodic independent evaluation			√
Communication of information concerning STCW amendments			√
Conduct of trials	√		√
Dispensations	√	√	√
Port State control	√	√	√
Fatigue prevention		√	√
Quality standards- independent evaluation	√	√	

Source: Compiled by the author

3.5 Audit Schedule of STCW

On the basis of overall audit schedule, audits under the mandatory scheme will be conducted at periodic intervals not exceeding 7 years. However, STCW 1995 amendment required that each party shall ensure that an independent evaluation of the knowledge, understanding, skills and competence acquisition and assessment activities are conducted at intervals of no more than 5 years. In accordance with

series of principles contained in paragraph 4.1.1 of the procedures for the IMO member states audit (IMO, 2013) the Secretary-General has determined the audit schedule for implementation of audits under the mandatory scheme. China is listed the 147th position and will be audited in 2021 (IMO, 2014). The schedule is based on random drawing of the names of member states and an Associate Member who have not completed an audit under VIMSA scheme, followed by those Member States and Associate Members that have completed a voluntary audit in the order in which they were audited. The audit schedule presents the order of audits chronologically.

3.6 Historical Experiences

In order to share audit experience and help member states improve their IMO instruments implementation performance, IMO published audit summary report for every member state regarding its problems. In addition, the Council published consolidated audit summary reports (CASR) periodically. In accordance with III code, the FDs listed in audit summary report can be divided into four categories: General, flag state affairs, port state affairs and coastal state affairs. General parts include problems related to strategy, organization structure and legislation system. FDs are a situation where objective evidence indicates the non-compliance with a mandatory requirement contained in an IMO instrument or in the audit standard (IMO, 2013). OB is a fact substantiated by objective evidence relating to a non-mandatory provision of the audit standard (IMO, 2013). Audit summary report list NC items, OB items and the inadequacy or difficulty during member state implement IMO instruments. They are very valuable information for all member states.

The research paper tried to analyzes these FDs, to find the common problems, to

learn lessons and to improve maritime conventions and regulations implementation performance. The sample includes 13 audit summary reports downloaded from IMO website and the author organized the NCs and OBs in table 4.

Table 4: STCW audit NCs and OBs before 2016

Audit summary report No.	Audited member state	NC STCW / Total	OB STCW / Total
53012	Canada	0 / 2	0 / 4
73346	Croatia	0 / 1	0 / 4
60004	Denmark	0 / 0	1 / 8
41713	Finland	1 / 3	0 / 6
76660	France	0 / 6	1 / 6
42818	Germany	0 / 2	0 / 1
39642	Hong Kong	0 / 1	0 / 1
35170	Netherlands	1 / 1	0 / 5
49995	Norway	0 / 0	0 / 10
42196	Poland	0 / 0	0 / 4
32257	Korea	0 / 0	0 / 3
6172	Sweden	0 / 0	0 / 0
50112	Tunisia	0 / 10	1 / 12

Source: gisis.imo.org.

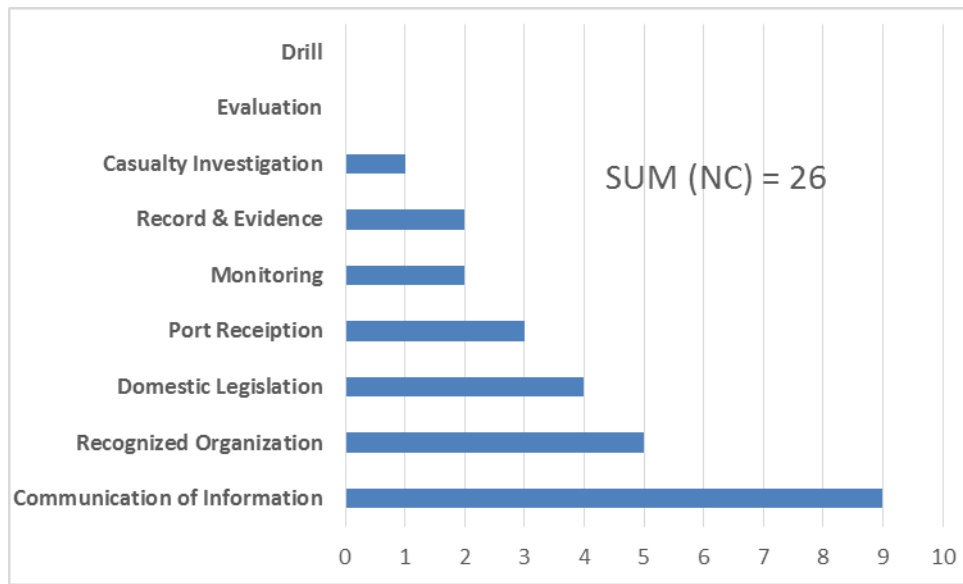


Figure 3: NCs distribution
Source: Compiled by the author.

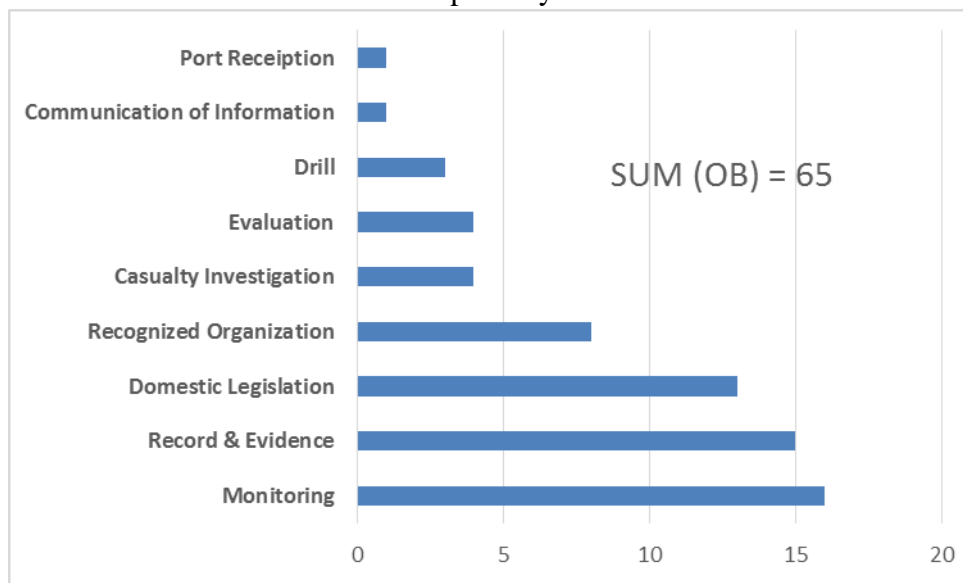


Figure 4: OBs distribution
Source: Compiled by the author.

There are a total of 26 NCs and the top three are FDs related to communication of information, Recognized Organization (RO) and domestic legislation as showed in figure 3. There are a total of 65 OBs and top three are items related to monitoring, records & documentation and domestic legislation as showed in figure 4. All of the

problems and analysis are listed below.

NC1: The State did not communicate all information, as required under the mandatory IMO instruments, to IMO and reporting to IMO was not systemically organized (STCW 1978, Article IV) (IMO, 2011a). The Root cause is that Finland did not have a comprehensive system in place concerning the reporting requirements of the mandatory IMO instruments. Finland has formulated a method of action to ensure that communication requirements are met. (i). The state's transport safety agency was assigned to coordinate of communication and reporting. It will benefit the whole maritime community and web-based solution can be used. (ii). Detailed process will be worked together by all governmental entities related to IMO affairs. Furthermore, a deadline was indicated to correct the NC. (iii). In order to avoid recurrence in the future, periodical evaluation process should be developed and established to monitor the action's performance (IMO, 2011a).

NC2: There was no evidence that the Administration sends annual report to IMO of dispensation issued under the STCW Convention (STCW 78, Article VIII (3)) (IMO, 2007d). In circumstances of exceptional necessity, administrations may issue a dispensation permitting specified seafarers to serve in a specified ship for a specified period less than six months for which he does not hold the appropriate certificate, if in their opinion this does not cause danger to persons, property or the environment. If there are cases like above, parties has the obligation to send a report to Secretary-General giving information of the total number of dispensations. The report should be in respect of different capacity for which a certificate is required to sea-going ships and the information of numbers of those ships above or below 1,600 gross register tons. Netherland Maritime Administration should send dispensation reports, in accordance with STCW, Article VIII (3) to IMO. Procedures, including the

monitoring of IMO reporting requirements, have been revisited and brought to the attention of the relevant divisions and staff members (IMO, 2007d).

OB1: There is no central policy within the (Denmark) Administration formally authorizing the issue of legislation and flag State certification (STCW Code, Part 2, paragraph 15). (i). There is no written documentation to division heads responsible for maritime regulation, authorizing them to sign and issue secondary legislation. (ii). There is no written authorization empowering surveyors to issue relevant statutory certificates. (iii). There is no written authorization empowering the issue and verification of certificates under STCW convention (IMO, 2006). In order to correct the problem, Denmark central policy should be developed for authorizing employees to sign certificates.

OB2: It was noted that a ship entitled to fly the flag of the state was permitted by regional authorities to leave without the first mate specified in the crew list. (STCW code, part 2, paragraph 17) (IMO, 2006). The missing of criteria and conditions for issuing exemptions to crew lists in Denmark is the main cause, especially for Ro-Ro passenger ships engaged in international voyages lasting less than 24 hours. Denmark Maritime Authority need to revise the criteria and conditions for issuing exemptions to crew lists to take into account the requirements of Ro-Ro passenger ships engaged in international voyages lasting less than 24 hours, and should establish a documented procedure on this matter. The nature of and conditions for granting these exemptions will be mentioned in the regulations adopted to transpose the 2010 Manila amendments. (IMO, 2006)

OB 3: The ship safety centers are not provided with any administrative guidelines for enforcing compliance with Regulations VIII/1 and VIII/2 of 1978 STCW Convention,

as amended, relating to rest periods and watchkeeping arrangements for watchkeeping personnel (STCW code, part 2, paragraph 16.1) (IMO, 2009a). Application Divergence of the 1978 STCW Convention in France is the root cause. Instructions to these rules and the importance of abiding by them during inspections should be issued to all services and officials concerned as a flag State responsibility (IMO, 2009a).

OB4: During the audit, it was established that the State (Norway) had not submitted to the Secretary-General of IMO the report required by Article VIII of the STCW Convention relating to dispensations issued to seagoing ships during 2006 (IMO, 2007e). As required, member state should send report to Secretary-General about total number of dispensations issued during the year to sea-going ships as soon as possible after 1 January of each year. Norway should develop program to guarantee communicate of information.

Table 4 shows all 26 NCs and 65 OBs items distribution, and STCW related deficiencies indicated respectively. There are some experiences the author summarized as below.

3.6.1 Communication of Information

There are nine NCs about communication of information, taking 36% of the total 26 NCs. It is also listed in OBs and further development items. According to Article 9 of III code, communication of information, member states should communicate their strategy, as referred to in paragraph 3, including information on its national legislation to all concerned. There is the same requirement in SOLAS, MARPOL, Load Line and STCW. For example, Load Line Article III required communication

of information. Parties to Load Line convention undertake to communicate to and deposit with the Secretary-General of IMO the text of laws, decrees, orders and regulations within the scope of the present protocol. Although China has started communication work, the reporting procedure and scheme need to be promoted.

3.6.2 National Legislation

There were 4 NCs and 13 OBs regarding national legislation from above audit reports. The main problem is that member states did not develop national laws to implement its ratified conventions. China is unitary legislative system country. According to *law of the People's Republic of China on the Procedure for Concluding Treaties*, it can directly implement international conventions. Generally speaking, after international convention entering into force, the Chinese government will publish notice and the convention will enter into force in China. The advantage for this method is that it is a low cost and efficient way to comply with international convention domestication. Its disadvantage is inadequate implementation legislative authority and misunderstanding of official language (Yu, 2011).

3.6.3 Evaluation and Improvement

Member states should periodically evaluate its implementation process, procedure and resources, which are complying with system management idea. Improvement should be made through rigorous and effective application and enforcement of national legislation, as appropriate and monitoring of compliance (Yu, 2011). IMO encourages and advocates member states to make use of Quality Management System (QMS) in maritime administration. By the closed-loop management concept, it is aiming to continuously improve the implementation. Some of MSA branches have established QMS. Compared with III code, those old QMS need to be updated

to cover all elements in III code. Hence, it is urgent to establish a unified QMS for the whole China MSA and carry out periodical audit accordingly.

3.6.4 Recognized Organization

Quantity of ROrelated NC is five and OB is eight, taking 19% and 12% percentage respectively. RO deficiencies are main part and universal problems, such as RO authorization, irregular authorization agreement and RO monitoring. China is facing the similar problems more or less. For example, regarding high speed passenger ship safety operation certificate, both of CCS and China MSA issue the same certificates. It is obvious that one ship hold two certificates for the same function, which is strange and illogical. It is necessary to review China's procedure on RO delegation and monitoring (Yu, 2011).

3.6.5 Recording

There were 2 NCs and 15 OBs regarding records, taking 8% and 23% percentage respectively. Records should be established and maintained as evidence of conformity. Records should remain legible, readily identifiable and retrievable. A documented procedure should be established to control records' identification, storage, protection, retrieval, retention time and disposition. Member state audit is paper auditing. All of the audit items must be proved by evidence, such as records. The experiences must be absorbed and national requirement need to be reviewed to make record accordingly.

3.7 Summary

Since STCW 1995 amendment, member state STCW implementation performance based on Quality Standards/Independent Evaluation, and they can help push member

state implement better. Furthermore, MSC adopted Circ.1134 to publish member states list who have communicate information to demonstrate that full and complete effect is given to STCW (White List)³ in 2004. The White List is efficient and useful tool for Port State Control inspection. After VIMSA created, IMO has tool to monitor member states implementation performance. Though audit areas under VIMSA are limited, it is milestone of IMO member state audit. In the end, mandatory audit scheme expanded the area and items. Through the powerful tool of mandatory audit, IMO will push member state implement better. Learning from historical audit reports, there are common and similar FDs within the audit scope. These experiences are valuable for China's preparation.

³ Parties to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, confirmed by the Maritime Safety Committee to have communicated information which demonstrates that full and complete effect is given to the relevant provisions of the Convention. MSC/Circ.1134.

CHAPTER 4

STCW IMPLEMENTATION CHALLENGES OF CHINA

4.1 Current Situation

China ratified STCW convention on 8th June 1980, and has implemented it about 37 years. Since the ratification, it has developed series of national laws and regulations, such as *Regulation of the People's Republic of China on Seamen, Crew Training Management Rules of the People's Republic of China* and *Seafarers Competency Examination and Certification Rules of the People's Republic of China* (Song, 2016). STCW implementation legislation system has been founded. With the development of shipping economy and STCW convention continuous amendment, China's national seafarer management procedure, training and monitoring rules and standards need further updating.

There were many changes and challenges in the past decade. China signed memorandum of understanding on IMO voluntary audit in 2009 and completed audit in November 2009. STCW 2010 Manila amendment was adopted in June 2010, which was totally revised. It has passed the transitional period and entered into force from 1 January 2017. EMSA carried out audit in October 2012 focusing on seafarer's education, training, examination, evaluation and certification. Manila amendment gives new challenge to China's seafarer's management too.

4.1.1 China's Voluntary Audit Result

Once VIMSAs were adopted, China realized that it is important for its implementation performance and international image. China MSA founded IMO VIMSAs working

group in November 2006 to deeply research VIMSA and undertake all preparation affairs. And then Ministry of Transport submitted application to IMO applying VIMSA on behalf of China in June 2008. One year later, the cooperation memorandum of understanding with IMO was signed in September 2009. IMO dispatched audit team to China to evaluate its implementation strategy, scheme, procedure, resources and performance in November 2009. There were 3 NCs, 4 OBs and 8 areas for further development (Qu, 2014). The NCs and OBs are listed below in table 5.

Table 5: China audit result 2009

	Description	Reference
NC1	There is no objective evidence show that China has transformed and developed domestic laws. During audit China cannot provide related laws and evidence regarding ‘special requirements for fixed or floating platforms’.	MARPOL 73/78 Annex I Regulation 39.
NC2	The agreement signed between China and RO is not in accordance with IMO template, The appendix does not include all statutory document regarding RO certification and approval.	Resolution A.739 (18), A.789 (19), and circular MSC710, MEPC 370.
NC3	China cannot provide evidence of reporting and did not report to IMO on mandatory instruments according to Load Line, MARPOL and SOLAS.	Load Line 1966, Article 6.5, MARPOL 73/78 Article 11.1.a/b, SOLAS 74 Article 3.a
	China does not develop clear procedure on sending	

OB1	officers abroad to carry out additional inspection for its fleet when necessary to guarantee its fleet meets IMO instruments and effective monitoring RO. According to III code China cannot provide relative procedure and records.	III code, paragraph 20.1
OB2	Regarding safety inspector and port state control officer training, the government did not provide adequate training when the inspector chooses equivalent qualification, in accordance with Resolution A.787 (19) and III code.	III code, Resolution A.787 (19) paragraph 34.
OB3	China's existing database cannot provide expiry date of Document of compliance (DOC) and other statutory certificates issued by RO in accordance with III code.	III code, paragraph 10
OB4	There is no objective evidence to prove that China can obtain RO's inspection report on Chinese flag fleet in accordance with III code.	III code, paragraph 44.7

Source: Compiled by the author, 2018

Most NCs and OBs are focusing on legislation, reporting to IMO, RO management, record and evidence, personal qualification. Areas for further development include internal communication, regional and national law harmonization, informing procedure of national law, definition of 'to administration satisfactory', tracing program of maritime waste disposals and so on (Qu, 2014). All of NCs and OBs have been corrected within 2 years after audit. The voluntary audit gives us valuable experience on implementation, administration and management. Some of the FDs are common problem for other countries, such as legislation. These FDs are experience and benefit for all member states to prepare for mandatory audit. In addition, both of

domestic legislation and RO problems are indicated in NC, OB and further development list. Compared with other state audit result, there are always more or less FDs in domestic legislation. That is after one IMO instrument adopted, but member state did not develop related domestic laws to put into practice.

4.1.2 EMSA Inspection Result

EMSA carried out STCW inspection on Non-EU member states worldwide on behalf of EU members. According to the Bilateral Inspection and Evaluation Consultation Plan between China's Ministry of Transport and EMSA, EMSA inspected its STCW affairs on seafarer education, training, examination, assessment and certification from 15 to 24 in October 2012. The auditee entities include China MSA, Liaoning MSA, Dalian Maritime University (DMU), and Shanghai Maritime University (SMU). After inspection and evaluation, EMSA inspection team found seven aspects of shortcomings in seafarer's education, training, examination, evaluation and certification listed in Appendix C⁴ (Rao, 2013a).

The EMSA inspection and evaluation is not only an external diagnosis, but also a good opportunity for crew's self-inspection, self-assessment and self-reflection. The deficiencies are mostly about seafarer legislation, quality management system in-continuity, training and assessment inadequate, and so on. From the inspection result, the following problems can be concluded. (i). The quality management levels for education and training is uneven. There are big difference between various levels education and training bodies. (ii). Seafarer management regulations are inadequate and there is lack of unified standard and guidance for seafarer evaluator and training centers. (iii). There is inadequate seafarer management administrators.

⁴ EMSA inspection summary of findings.

(iv). There is inadequate management for training and evaluation process. (v). Quality system is exercised in-continuity.

4.1.3 STCW 2010 Amendment New Requirement

Manila amendment is a totally revised edition after STCW 1995 version. Several new requirements were added to convention and code, including Electro-Technical Officer (ETO), seafarer's database searching function, Bridge Resources Management (BRM), Engine room Resources Management (ERM), ECDIS operator qualification (Fu, 2014). Requirement of security training, tanker cargo operation requirement, seafarer working and rest, fatigue avoidance, alcohol and drug abuse were strengthened. Manila amendment entered into force on 1 January 2012, and five years' transitional period passed. It will influence China's seafarers' education, training, certification and watchkeeping largely. There are four main new requirements that should be considered.

4.1.3.1 Able Seafarer Engine Certification

The STCW Manila amendment added certification requirement of able seafarer deck and able seafarer engine, ETO and electro-technical ratings (ETR). For example, when rating served as able seafarer engine, the approved seagoing service in engine department must be less than 12 months or 6 months with completed approved training (STCW 2010, Regulation III/5) (IWG, 2011). However, the former requirement is at least 6 months seagoing service period. In order to unify officers and ordinary crew training, and take place of International Labor Organization (ILO) to issue certificate to ratings, ordinary crew was divided into two levels by Manila amendment. After they complete different levels of training and offshore service, they can be engaged in different duties.

4.1.3.2 Revalidation of Certificates

Manila amendment provided two conditions for certificates revalidation of maritime service qualifications. One way is 12 months in total during the preceding five years; the other way is 3 months in total during the preceding six months immediately prior to revalidating (STCW Code, A- I /11). The second one is new requirement. Considering new technology development, it is easier to learn the latest navigation technology six months before the certificate expiry. Another change is evidence of competency required every five years regarding basic security, survival craft, rescue boat, fast boat and senior firefighting trainings. Based on the requirement, crew who hold certificate shall attend relevant trainings to get new certificates.

4.1.3.3 Recognition of Certificate

Recognition of certificate is an act of administration to endorse seafarer certificates issued by other member state providing that administration has carried out assessment of the other member state and accept the result (STCW A- I /10). The endorsement shall only be issued by administration. Prior to the evaluation, it is the responsibility of the member state to provide information to the administration and such information should be made available electronically (IWG, 2011). In addition, the certificate issued by non-member state of STCW cannot be accepted. However, this should not interfere in administration's right to issue certificates to seafarers who have not get approval of non-member states on marine service, education and training.

4.1.3.4 Transitional Provisions

STCW Manila amendment Regulation I/15 provide transitional provisions on three periods, divided by 1 January 2012, 1 January 2013 as showed in table 6. They are

transitional provision for whole implementation process, able seafarer deck and engine certification and new security requirement (Gong, 2011). All of the changes bring impact and challenge to China's implementation. Considering China's STCW implementation comprehensively, there are several problems that need to be solved.

Table 6: Transitional provision for implementation of Manila Amendment

Implementation tasks	Starting point	Deadline	Remarks
Certification in line with STCW 2010	2012.1.1	2017.1.1	
Training in accordance with STCW 2010	2013.7.1		Training in accordance with STCW 1995 amendment before 1 July 2013.
Convention concerning the certification of Able Seafarer , ILO C74	2012.1.1		Only for able seafarer engine's certificate update and re-validity
Security training (Wang, Lin & Bao, 2014)	2014.1.1		Accept marine service listed in Manila amendment A-VI/6

Source: Gong, Z.Q.2011.

4.1.4 Preparation Progressing

China started maritime implementation system construction since 2010, one year after China's voluntary audit. China MSA has developed several regulations and rules, such as *China Maritime Implementation Management Mechanism Promotion Program*, *China Maritime Implementation Rules*, and *Management Standard of Maritime Implementation System* (Zheng, 2010). These documentations standardize and make requirements on flag state, coastal state and port state aspects from implementation purpose, strategy, general, scope, legislation, information communication to records. China continuously improves maritime administration system and implementation ability. China is continuously elected as IMO Category (A) state and ratified more than 40 IMO instruments on shipping safety and security

and marine pollution prevention (Hu, 2015). The Chinese government always attaches great importance on shipping safety, security and marine pollution prevention. On one hand, it continuously strengthens monitoring ability, promotes and applies new technology, and improves emergency response ability internally. On the other hand, it positively takes participation in IMO instruments development externally to safeguard Chinese shipping interest world widely. China promoted cooperation project of Malacca Strait, and has dispatched 27 times Somali escort mission to actively guarantee regional shipping rules and protect peace.

China MSA held maritime implementation management scheme training in Nanjing in March 2011 and invited IMO audit experts to give lecture. In June 2012, China Transport Ministry launched IMO VIMSA compulsory countermeasures research project. In November 2012, China MSA held IMO mandatory audit scheme and implementation mechanism seminar in Shanghai, and made overall arrangement for implementation system construction. In 2013, in accordance with project plan, China MSA carried out audit on MSA branches on individual implementation system. All of these have laid a good basis for IMO mandatory audit.

4.2 Challenges

4.2.1 Ambiguity STCW Implementation Framework

China's administrative regulations, departmental rules, normative documents and technical standards on seafarer's management are not in compliance with STCW convention structure clearly. Firstly, it is not clear at what level, which regulation, or which standards the national law transformation of convention's articles, regulations and code should take place (Song, 2016). Hence, it needs to assess the whole legislation system once there is some amendment, which will result in low

implementation efficiency. Secondly, repetition and conflict exist in different national laws and regulations on the same topic. For instance, *Regulations of the People's Republic of China on seafarers' training Management* require little on seafarer training, while more requirements indicated in *Rules of the People's Republic of China on Ocean Going Seafarers' Examination and Certification*. Last but not least, some national laws scope and boundary is not scientific. For example, STCW regulation I /14, responsibilities of companies include seafarers' training, certification, manning, and watchkeeping. But the requirement transformed to Chapter 6 of *Rules of the People's Republic of China on Ocean Going Seafarers' Examination and Certification*, which is not beneficial for companies to undertake their duty adequately.

4.2.2 Lack of Professionals of Implementation

For a long time, China's national legislation system relied on a few MSA professionals and university professors' research. Most MSA officers focus on STCW practice and ignore comprehensive or deep study of its development. In the end, during national transformation the professors who are good at convention are not familiar with specific seafarer management work. However, the officers who are good at seafarers' administrative practice have little idea about whole system (Wang, 2013). It is a main cause for implementation delay even conflicting with STCW convention and code. Due to the above shortcomings, there is impact for China to attend IMO mandatory audit in the future. Coming back to the topic of Manila amendment, China started implementation preparation from August 2010, and completed legislation preparation work till the first half of 2012 and then started training, examination and certification. The implementation preparation period last more than two years, which results in delay of seafarers' medical certificate issuing

and security officers' certificate renewal (Gong, 2011). The long time preparation brings heavy pressure to both administrator and seafarers.

4.2.3 Insufficient National Implementation Information Supporting System

The integrity Information Supporting System (ISS) should be founded and combined by implementation actuator and legislation system. It should be able to mark instrument reference and content clearly, and quickly inform actuator of the execution boundary and handle method. For basic administrator, it is better for them to use the ISS to search reference, study latest amendments, find out and download the right data for inspection. Regarding ISS, China MSA falls behind its RO CCS. CCS has created convention transformation system, inspection technology supporting system, Frequently Asked Questions (FAQ) system, and other information system. Some regional MSA has founded individual system, such as Tianjin MSA Regulatory Inquiry System, Hebei MSA Electronic Regulatory Database and Inquiry System (Qu, 2014). Both of the two systems can provide basic references for administrators, flag state control (FSC) officers and port state control (PSC) officer, but the function is simplex and database is lack of updating. Back to CCS information system, its foundation is aim for ship inspection and survey. Its content is technical standards, which includes little information on maritime administration and government obligation (Qu, 2016). Above all, a comprehensive integrity implementation database and inquiry system should be founded.

4.2.4 Inadequate MET Monitoring Professionals

From EMSA assessment on Liaoning MSA, DMU and SMU, it can be concluded that there is big difference between national maritime seafarer management systemization and navigation college seafarer education and training level (Rao,

2013a). During preparation for the inspection, MSA and the two universities spent amount of energy in finding problems and organizing documentation. If EMSA choose more MSA branches and expand college's levels, such as different colleges, higher vocational colleges, secondary vocational technical schools, crew training centers, there will be more impact and challenges (Rao, 2013a). In addition, China's navigation education and seafarers training concept have not kept pace with the time and there are still some gaps. For example, the books in library collections are out of date and the research and transformation of IMO model courses is inadequate (Wang, Lin & Bao, 2014). STCW convention and administration relevant documents stipulate the qualification and competency of persons engaged in seafarers training, examination, assessment and certification. However, due to historical causes and China's maritime current situation, some administrators and personnel have not met that requirement in terms of their professional background, qualification or competency.

4.3 Summary

The gap between STCW provisions and national laws should be indicated and made up. China has created several laws, regulations and rules to comply with STCW convention and code. It needs to review and assess these documents and find out the shortcomings and blanks. Furthermore, the corresponding relation of STCW content and national requirement should be established, which is better for further amendment implementation.

CHAPTER 5

SOLUTIONS TO IMPROVE STCW MEMBER STATE AUDIT PERFORMANCE OF CHINA

5.1 Improving National Legislation System

National legislation is the most critical step to make international convention domestication and is the fundamental step to bring the convention into force (Zhou, 2011). At present, China's constitution has not made clear requirements on international instrument domestication. *Treaty Procedural Law of the People's Republic of China* is the sole regulation that requires approval, ratification and recognition of international conventions (Qu, 2014). The main maritime conventions listed in III code are put into force in accordance with treaty procedural law directly. However, it did not clarify legislative and executive requirement after convention ratification, and it is lack of legal logic. It will result in inadequate implementation, especially the absence of compulsory measures against violations of the convention will make it difficult to achieve satisfactory results. Therefore, In order to avoid legislation delay or legislative main body absence or unclear procedure and to provide institutional guarantee for convention implementation, China should make clearer requirement on international convention domestication, add legislation procedure for convention, and clarify legislative main body.

5.2 Enhancing RO Monitoring

China MSA should develop an intact series of official procedure and program for RO complying. RO plays a positive role in STCW implementation, and it promotes IMO instruments implementation largely. China Classification Society (CCS) is the sole

RO delegated by China government to carry out Chinese flag fleet inspection and certification. Since CCS was founded, its main job is classification inspection in accordance with rules on the basis of its professional experience and technique. Furthermore, CCS undertakes statutory inspection and certification on behalf of China in accordance with conventions and codes, such as STCW convention and STCW code. CCS has developed many standards and rules, but it is not a government entity. National law has not given CCS right for domestic legislation (Song, 2016). Generally speaking, China MSA authorizes CCS to develop standard on some topics. After the standard is drafted, amended and finalized, China MSA will take responsibility to approve and publish it. Otherwise, rules developed without authorization cannot be accepted as mandatory law, like *material and welding rules*, and *steel ship classification rules*. China MSA should enhance RO control by legislation, monitoring and evaluation.

5.3 Promoting Professionals of Implementation

STCW implementation and audit rely on not only MSA, Seafarers Committee, few professors from universities but also maritime related entities, seafarers training center, shipping companies, and seafarers service agent. It will influence 672,961 Chinese seafarers life and play a decisive role in determining whether China can become seafarer powerful country or not (Ministry of Transport, 2016). Table 7 and figure 5 showed Chinese seafarers distribution of different categories. The professional team needs university professors, administrators and seafarers (Wang, 2013). University professors have strong theoretical knowledge and research ability, so they can guarantee the comprehensive and systematic implementation. Administrators are the most important actuators of STCW, including seafarers' education, training, examination and certification. Seafarers are the main party to use

STCW convention, and they will be managed and qualified on the basis of it. All of the players' contribution should be considered.

Table 7: Seafarers registered of different categories in China

Categories	Number	Percentage
Unlimited Navigation Area Seafarers	491,797	36%
Coastal Navigation Area Seafarers	175,764	12%
Inland Navigation Area Seafarers	719,790	52%

Source: 2016 Chinese seafarers development report.

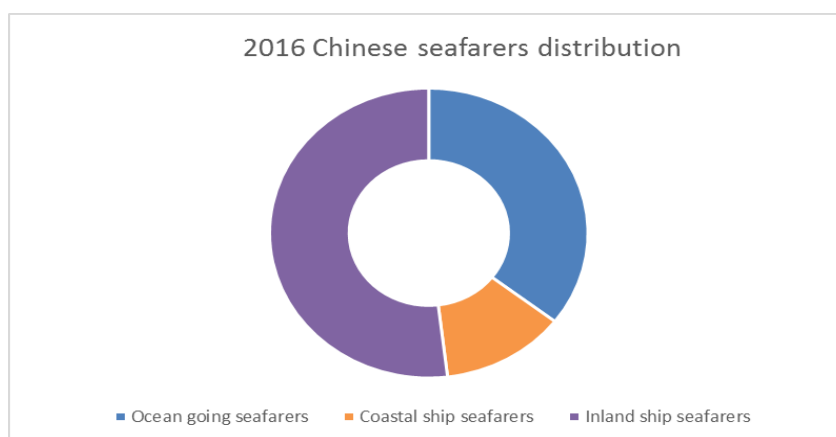


Figure 5: 2016 Chinese seafarers distribution

Source: 2016 Chinese seafarers development report.

STCW implementation experts and talent pool should be founded step by step. The expert's pool should be based on seafarers' committee and universities professors. China government should take the responsibility to found implementation talent pool to provide chance to administrators on legislation, execution, inspection and seafarers themselves for communication.

5.4 Accelerating Implementation Management System

The establishment of maritime implementation management system is effective measure and inevitable choice to counter audit (Meng, 2012). It is true that audit mechanism dose not force member state to establish Quality Management System (QMS), but it was founded on the basis of QMS concept. IMO auditors also seem to be more willing to carry out audit following QMS (Meng, 2012). China MSA published '*China maritime implementation management mechanism promotion plan*' in 2010 and decided to establish maritime implementation management system covering relative administrative affairs (Wang, 2013). It also formulates and implements relevant maritime standards and procedures through systematic management mechanism to put all instruments related to member state obligation into all level administrative practice comprehensively, accurately and efficiently. However, the executive condition of implementation system is still inadequate. How to deal with implementation system and existing quality system relation and how to harmonize implementation system and practical work are urgent problems to be solved. In order to achieve maritime systematization and standardization of implementation, it is better to add implementation system founding and maintaining to every MSA branch's yearly evaluation indicator list, and to establish target responsibility institution and chief responsibility institution.

5.5 Integrating All Implementation Resources

Tracking IMO audit scheme development trend and fostering international maritime professionals is important. In dealing with audit scheme, China should take action to integrate all kinds of resources to improve implementation performance. On one hand, IMO instruments research center and working program should be established. Administration should open mind largely by creating information exchanging

platform to attract more researchers and industry representatives. With the help of research institute and social resources, administration should effectively organize and make full use of wisdom. In addition, China MSA should strengthen its relationship with shipping industry entities, to improve implementation together. On the other hand, China government should encourage maritime universities and civil organizations to set up maritime implementation think-tank. Although some main maritime universities have set up research institutions for hotspot issues and some maritime consultancies was founded in recent years, their research direction and topics trends are homogeneity and are lack of differentiation (Wang, 2015). Hence, the government's support and guide are important. Especially for maritime universities, they are professional and talent centers, so they should be given preferential supporting.

5.6 Enhancing IMO Member State Audit Research

Because most of the IMO instruments were adopted by development countries, China falls behind them in implementation study, technology research and equipment innovation during participation in international instrument practice. It is always a passive style in transforming and implementing development country's standards, which not only increases China's shipping enterprises operating cost but also increases administrative burden. The passive method is not fit for China's large shipping country position. The embarrassing situation is mainly due to insufficient discourse power, lack of professionals and inadequate participation at early stage of convention developing (Gong, 2011). Facing a new topic in IMO, overemphasizing on national situation and missing right intervention opportunities is another cause. In accordance with IMO schedule, the next fully revised edition of STCW amendment will be in 2020 (Xu & Rao, 2017). It is designed to reduce the in-conformity and

keep the pace of technology innovation. As it will be, e-navigation will be the direction of shipping technology. It is better to make strategy and prepare to amend China's existing regulation and procedures. The earlier prepare the better performance it will have.

In addition, China should make scientific professional development plan in accordance with existing situation, optimize administrator model classification, and enhance practice training (Yu, 2011). In order to form a better age structure and professional administrator's teams, it is better to select a number of youth professionals who have both basic management experience and rich convention knowledge and send them abroad to learn the administrative idea, management style and technology of the advanced maritime countries. Last but not least, China should continue to make efforts to improve its maritime leading talent pool construction, innovating management methods, and exercising task evaluation and motivation mechanism so as to give leading talent opportunity on implementation and strive to cultivate its international maritime authority.

5.7 Summary

Facing the fast development of the shipping industry and the continuous development of IMO instruments, China should be more active in audit scheme research, organize all kinds of resources, foster professionals, strengthen national legislation system and management system and enhance RO monitoring. On one hand, China should participate in the international maritime affairs widely, such as strengthen international convention tracking and researching, paying attention to development trend, earlier intervention, enhance external information collection and analysis, and accurately grasp rules and procedure in convention making. On the

other hand, it is necessary to assess national legislation situation, find the shortcomings and establish specific mechanism and system as above. In summary, the integrity of professionals, resources and system will promote China's STCW audit preparation.

CHAPTER 6

CONCLUSION

All in all, the final purpose of IMO mandatory audit scheme is to promote and improve member state implementation level and shipping development quality (Wang, 2015). IMO will carry out member state audit on China in 2021, and STCW is one of the six IMO instruments. It brings challenges to China's preparation, and also gives China opportunity to show international image. The author tries to identify China's gaps and suggest specific solutions.

Firstly, the author introduced audit scheme and audit standard. Both of VIMSA and mandatory audit were described and difference was analyzed. III code is the audit standard, which includes all details for member state to prepare audit.

Secondly, the paper focused on member state audit of STCW convention and STCW code. STCW 1995 amendment added quality standards to control member state implementation. Since 2016, mandatory audit scheme entered into force. The audit schedule and audit areas for STCW were fixed. Mandatory audit has expanded audit areas. Reviewing IMO former audit reports, there are some common FDs, which are valuable for future audit preparation.

Thirdly, the author described STCW implementation challenges of China. By analyzing China's voluntary audit report and follow-up action and EMSA inspection report, it showed clear situation of China, and then summarized challenges need to face.

Finally, the paper listed six solutions for preparing audit on STCW of China. In accordance with challenges, the solutions aspects include legislation, maritime management, RO monitoring, professional teams and so on.

Through writing the paper, the author hopes to give proper and practical solutions for better implementation performance by analyzing IMO member state audit scheme and standard, historical audit reports and China's current situation. The highlight of the paper is statistics analyzing. The author analyzed IMO historical audit reports and EMSA inspection report, which will give China clearer direction for preparation.

However, due to limited academic vision and learning ability, as well as China's complex maritime implementation mechanism, the paper inevitably has some shortcomings. Furthermore, the author deeply knows that the China implementation mechanism analyzing is not thorough and some solutions proposed are not perfect. In the future, the author will continue to pay attention to China MSA measures for mandatory audit and academic study on China's implementation scheme establishment in order to propose better reasonable solutions.

REFERENCES

Bao, J.Z.; Wang, Y.H & Liu, Z.J (2011). STCW manila amendment transition period issues and relevant nations implementation preparation. *Maritime Education Research*, 2011, Vol.28(04), pp.14-18.

Barchue, L. (2009). The voluntary IMO Member State Audit Scheme: An accountability regime for states on maritime affairs. *WMU Journal of Maritime Affairs*, 2009, Vol.8(1), pp.61-70.

China MSA, (2017). Interpret 'China Seafarer's development report, 2016'. *Maritime Safety*, 2017, Issue 07, pp.10-11.

China Transport Ministry, (2017). 2016 Chinese seafarers development report. China Communication Press Co., Ltd.

EMSA, (2013). EMSA inspection Technical Report of China, 2012.

Fu, Z.B & Dong, H.L (2014). Analysis on the problems and countermeasures of BRM training. *Pearl River Water Transport*, 2014, Issue 24, pp.56-57.

Gong, Z.Q (2011). Study on STCW Manila amendment implementation scheme and China's challenges. 2011 Nautical Society Seminar.

Hu, K (2015). How does China maritime respond to IMO mandatory audit. *Pearl River Water Transport*, 2015, Issue 05, pp.12-13.

IMO, (2004). MSC/Circ.1134: Parties to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, confirmed by the Maritime Safety Committee to have communicated information which demonstrates that full and complete effect is given to the relevant provisions of the Convention. IMO, London.

IMO, (2005). Resolution A.974 (24): Framework and procedures for the voluntary IMO member state audit scheme. IMO, London.

IMO, (2006). Audit Summary Report of Denmark. Gisis website: gisis.imo.org.

IMO, (2007a). Audit Summary Report of Canada. Gisis website: gisis.imo.org.

IMO, (2007b). Audit Summary Report of Germany. Gisis website: gisis.imo.org.

IMO, (2007c). Audit Summary Report of Korea. Gisis website: gisis.imo.org.

IMO, (2007d). Audit Summary Report of Netherlands. Gisis website: gisis.imo.org.

IMO, (2007e). Audit Summary Report of Norway. Gisis website: gisis.imo.org.

IMO, (2007f). Audit Summary Report of Sweden. Gisis website: gisis.imo.org.

IMO, (2009a). Audit Summary Report of France. Gisis website: gisis.imo.org.

IMO, (2009b). Resolution A.1018 (26): Further development of the voluntary IMO member state audit scheme. IMO. London.

IMO, (2010a). Audit Summary Report of HongKong. Gisis website: gisis.imo.org.

IMO, (2010b). Audit Summary Report of Poland. Gisis website: gisis.imo.org.

IMO, (2011a). Audit Summary Report of Finland. Gisis website: gisis.imo.org.

IMO, (2013a). Resolution A.1067 (28): Framework and procedures for the IMO member state audit scheme. IMO, London.

IMO, (2013b). Resolution A.1070 (28): IMO Instruments Implementation Code (III code). IMO. London.

IMO, (2013c). Audit Summary Report of Tunisia. Gisis website: gisis.imo.org.

IMO, (2013d). Resolution A.1068 (28): Transition from the voluntary IMO member state audit scheme to the IMO member state audit scheme. IMO, London.

IMO, (2014a). Resolution MEPC.246 (66): Amendments to the annex of the protocol of 1978 relating to the international convention for the prevention of pollution from ships 1973. IMO. London.

IMO, (2014b). Resolution MSC.374 (93): Amendments to the seafarers' training, certification and watchkeeping (STCW) code. IMO. London.

IMO, (2014c). Resolution MSC.373 (93): Amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978. IMO. London.

IMO, (2014d). C 112/INF.3: Audit schedule for the mandatory scheme. IMO. London.

IMO, (2014e). Audit Summary Report of Croatia. Gisis website: gisis.imo.org.

IMO, (2015). Resolution A.1105 (29): 2015 Non-exhaustive list of obligations under instruments relevant to the IMO instruments implementation code. IMO, London.

IMO, (2016). C 116-6-1: Consolidated audit summary report (Secretary-General). IMO, London.

IMO, (2018). Gisis website: gisis.imo.org.

Interpretation working group, (2011). Interpretation of the Manila Amendments to STCW convention. *World Shipping, 2011, Vol.34(1)*, pp.20-24.

Karim, Md. S, (2010). Implementation of the MARPOL Convention in developing Countries. *Nordic Journal of International Law, 2010, Vol.79 (2)*, pp.303-337.

Ling, L.H (2016). New countermeasures on the mandatory transformation of IMO audit scheme. *Maritime Safety, 2016, Issue 02*, pp.32-34.

Liu, S.Y. & Liu, B (2014). STCW Convention implementation scheme and some proposal on the implementation in China. *China Maritime Safety, 2014, Issue 4*, pp.30-32.

Meng, X.W (2012). A timely measure to promote the development of maritime education – comments by professor Meng Xiangwu on the influence of the Manila Amendments to the STCW Convention and Code on maritime education. *Maritime Safety, 2012, Issue 05*, pp.18-21.

Qiu, J.W (2016). The new characteristics of IMO mandatory audit scheme. *Maritime Safety, 2016, Issue 07*, pp.57-58.

Qu, Y.N (2013). Study on Legislative Transformation about International Maritime

Conventions under IMO Audit Scheme in China. Dalian Maritime University, 2013.

Rao, G.J (2013a). Contents, characteristics and experiences of EMSA's assessment on China's seafarers' training and certification system. *World Shipping*, 2013, Vol.36(02), pp.44-47.

Rao, G.J (2013b). Study on China's seafarer's education and certification shortcomings according to EMSA assessment result. *Maritime Education Research*, 2013, Vol.30 (02), pp.17-19.

Rao, G.J (2014). Discussion on some issues concerning certificates in STCW convention. *Maritime Education Research*, 2014, Vol.31(04), pp.6-8.

Shen, Z.Q (2017). Before and after on Introduction of STCW convention. *China Ship Survey*, 2017, Issue 09, pp.104-108.

Song, S (2016). Study on Legal Challenge and Countermeasures about Maritime Compliance of China under IMO Compulsory Audit Scheme. (Master's Dissertation). Shanghai University.

T-MoU, (2017). Annual report on Port State Control in the Asia-Pacific Region 2017.

Wang, L (2016). Suggestions on preparing for the transformation of IMO VMSAS into a Mandatory Scheme. *Maritime Safety*, 2015, Issue 08, pp.32-34.

Wang, X.Q (2013). China's shortcomings in STCW implementation and our implementation scheme construction. *World Shipping*, 2013, Vol.36 (09), pp.23-26.

Wang, X.Z., Lin, Y.H. & Bao, J.Z (2014). Latest development of international standards for crew training and certification. *Maritime Education Research*, 2014, Vol.31(02), pp.24-27.

Xu, H.R & Rao, G.J (2017). Amendment of seafarers' training, examination and certification since 2016 and response from seafarers' college and universities. *Maritime Education Research*, 2017, Vol.34(02), pp.12-18.

Yu, H.B (2011). The analysis on reference of performance in China according to audit findings of IMO's member states. *China Maritime Safety*. 2011, Issue 5, pp.64-66.

Zheng, L (2014). Analysis and suggestions on the implementation of STCW convention in China. China nautical institute maritime management academic annual conference 2014. September 2014.

Zhou, Y. & Sha, Z.R (2011). Reflection on IMO audit and maritime implementation system construction. *China Water Transport*. 2011, Issue 7, pp.14-15.

APPENDICES

APPENDIX A: Areas under the STCW convention to be covered by the VIMSA

<p>Dispensations (Article VIII)</p>	<p>Are reports related to dispensations issued during the year to seagoing ships sent to the Secretary-General?</p>
<p>Equivalentents (Article IX)</p>	<p>Has the Party retained/adopted any equivalent educational and training arrangements since communicating information pursuant to Regulation I /7? If yes, have the details of such arrangements been reported to the Secretary-General for circulation to all STCW Parties?</p>
<p>Control (Article X)</p>	<p>Has the Party enacted legislation permitting port State control on foreign ships visiting their ports?</p>
<p>Communication of information (Article IV and Regulation I/7)</p>	<p>Has the Party communicated information pursuant to Article IV and Regulation I /7?</p> <p>If yes, is the Party confirmed by the Maritime Safety Committee as found to be giving 'full and complete effect' to the provisions of the STCW Convention?</p> <p>Has the Party made any changes to the legal and administrative measures after communicating information pursuant to Article IV and Regulation I /7 to ensure compliance with the requirements of the Convention, in particular Regulations I /6, I /9 and I /10?</p> <p>If yes, has this information been communicated to the</p>

	Secretary-General?
Quality standards - Independent evaluation (Regulation I /8)	Has the Party communicated its report of independent evaluation pursuant to Regulation I /8? If yes and the Maritime Safety Committee have confirmed that the Party continues to give 'full and complete effect' to the provisions of the STCW Convention, the objective evidence would be the report itself.
Watchkeeping (Regulations VIII /1 and VIII/2)	Has the Party enacted legislation to establish and enforce rest periods for watchkeeping personnel and to direct the attention of companies, masters, chief engineer officers and all watchkeeping personnel to the requirements, principles and guidance set out in the STCW Code to ensure that safe continuous watches appropriate to prevailing circumstances and conditions are maintained in all seagoing ships at all times?

Source: Resolution A.974 (24). IMO, 2005.

APPENDIX B: Areas subject to mandatory audit

Area		Reference	Remarks
Initial communication of information	Initial communication of information	Article IV, Regulation I /7, and section A-I /7, paragraph 2	Has the Party communicated information pursuant to Article IV and Regulation I /7?

Subsequent reports	Equivalents	Article IX and section A-I /7, paragraph 3.1	Has the Administration retained / adopted any equivalent educational and training arrangements since communicating information pursuant to Regulation I /7?
	Recognition of certificates	Regulation I /10 and section A I /7, paragraph 3.2	Does the Administration recognize certificates issued by other Party in accordance with Regulation I /10?
	Alternative certification	Regulation VII/1, section A I /7, paragraph 3.3	Does the Party authorize employment of seafarers holding alternative certificates issued under regulation VII /1 on ships entitled to fly its flag?
	Communication of information concerning the periodic independent evaluation	Regulation I /8.3 and section A I /7, paragraph 4	Has the Party communicated its report of independent evaluation pursuant to Regulation I /8?
	Communication of information concerning STCW amendments	Regulation I /7.4, and section A I /7 paragraphs 5 and 6	Has the Party communicated a report concerning implementation of subsequent mandatory amendments to the STCW Convention and Code?
	Conduct of trials	Regulation I /13, paragraphs 4 and 5	Has the Administration authorized ships entitle to fly its flag to participate in trials?
	Dispensations	Article VIII	Has the Administration issued any dispensation?

Control	Port state control	Article X and Regulation I /4	Has the Party exercised port State control?
Fitness for duty and watchkeeping arrangements	Fatigue prevention	Regulation VIII/1, paragraph 1 and section A VIII/1	Has the Administration established measures to enforce the STCW Convention and Code requirements in respect of fatigue prevention?
	Prevention of drug and alcohol abuse	Regulation VIII/1, paragraph 2 and section A VIII/1, paragraph 10	Has the Administration established measures to enforce STCW Convention and Code requirements for the purpose of preventing drug and alcohol abuse?
	Watchkeeping arrangements and principles to be observed	Regulation VIII/2	Has the Administration directed the attention of companies, masters, chief engineer officers and all watchkeeping personnel to the requirements, principles and guidance set out in the STCW Code to ensure that safe continuous watches appropriate to prevailing circumstances and conditions are maintained in all seagoing ships at all times?

Source: MSC.374 (93), IMO, 2014.

APPENDIX C: EMSA inspection summary of FDs

Article / Regulation	Description of Shortcoming	Section in report
	National provisions <i>Regulations on Certification</i> Article	

1	Art I /2	58 required that the certificates, dispensations and endorsements shall be printed in a unified format by the national maritime administration. However, the China MSA could not demonstrate that the format of the certificates issued to seafarers had been approved.	4.1
2	Reg. I /1,2	<i>Regulations on Certification</i> required that the masters and officers entitled to serve on board ships of less than 3,000 GT, or powered by a main engine less than 3,000 KW propulsion power, may apply for removal of such limitations. Note 2 requires candidates to complete additional training after acquiring at least twelve months of seagoing service in the capacity for which their CoCs were valid. However, China MSA could not provide evidence that it established criteria to ensure that the seagoing service of candidates without experience on board ships of 3,000 GT or more, or powered by a main engine of 3,000 KW propulsion power or more, was relevant for unlimited CoCs.	4.2
3	Reg. I /2	The China MSA decided to issue CoPs to all seafarers qualified to serve on board tankers, and in the case of masters and officers also to endorse their CoCs as being valid for tankers. However, during the visit to the Liaoning MSA, a CoC was found that include an endorsement for tankers, which was valid beyond the expiry date of the associated CoP for tankers. (CoC expiry date is December 2016, but CoP indicate 2015).	5.7

4	Reg. I /6	The Liaoning MSA staff could not demonstrate that their auditors used the national standards established for the educational programs for officers as criteria when approving the programs presented by the MET institutions, other than the DMU, to guarantee the minimum teaching time for each subject and to ensure the achievement of the prescribed competences.	5.2
5	Reg. I /6	The Liaoning MSA staff could not demonstrate that before being assigned to conduct an assessment, the assessors had gained practical experience by assisting experienced assessors, as required by the national provisions and Section A-I/6.6.4 of the STCW code.	5.4
6	Reg. I /6	The DMU had no high-expansion foam generator to inject foam into a compartment. Therefore, the students were not trained on how to ‘enter and pass through, with lifeline but without breathing apparatus, a compartment into which high-expansion foam has been injected’, preventing the full achievement of the competence ‘fight and extinguish fires’ as established in table A-VI/1-2 of the STCW code.	6.1.4
7	Reg. I /12	The DMU staff could not demonstrate that the exercises used on simulators had been ‘tested so as to ensure their suitability for the specific training objectives’ as provided by section A-I/12.7.7 of the STCW code.	6.1.6
8	Reg. I /12	The SMU staff could not demonstrate that the exercises used on simulators had been ‘tested so as to ensure their	6.2.6

		suitability for the specific training objectives' as provided by section A- I /12.7.7 of the STCW code.	
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Source: EMSA inspection Technical Report of China, 2012.