



Standard Guide for Vessel-Related Technical Information for Use in Developing an Electronic Database and Ship Safety Record¹

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1. Scope

1.1 This guide provides a uniform format and definition of general vessel-related technical information, including ship safety data, to be used by ship owners and operators, at their option and to the extent that they consider beneficial to their operation. It is recognized that all of the data is already contained in various documents on the vessel, but normally not electronically and normally not in one location. The Ship Safety Record is designed to provide an industry-accepted common method of identifying, maintaining, and subsequently communicating the safety-related information needed for maritime operations. It is recognized that many of the data fields are not applicable for every vessel. Appendix X1 and Appendix X2 provide examples of how data elements in this guide may be used for a specific purpose, that is, the USCG's Automated Identification System (AIS) and the Advance Notice of Arrival.

2. Referenced Documents

2.1 ASTM Standards:²

F1756 Guide for Implementation of a Fleet Management System Network

F1757 Guide for Digital Communication Protocols for Computerized Systems

2.2 IMO Documents:³

The International Management Code for the Safe Operation of Ships and for Pollution Prevention— (The ISM Code) 1994

International Convention on Standards of Training, Certification and Watchkeeping for Seafarers— (STCW Convention) 1995

¹ This guide is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.05 on Computer Applications.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from International Maritime Organization, 4 Albert Embankment, London, U.K. SE1 7SR, www.imo.org.

Convention on Facilitation of International Maritime Traffic, 1965, As Amended

2.3 US Coast Guard Documents:⁴

33 CFR 160.207 Notice of Arrival: Vessels Bound for Ports or Places in the United States

33 CFR 160.211 Notice of Arrival: Vessels Carrying Certain Dangerous Cargo⁴

2.4 Other Documents:

Paris Memorandum of Understanding (MOU) on Port State Control⁵

Tokyo Memorandum of Understanding (MOU) on Port State Control⁶

Acuerdo de Vina del Mar (MOU) Latin American Agreement⁷

Memorandum of Understanding on Port State Control in the Caribbean Region (Caribbean MOU)⁸

Memorandum of Understanding on Port State Control in the Mediterranean Region (Mediterranean MOU)⁹

Indian Ocean Memorandum of Understanding on Port State Control (Indian Ocean MOU)¹⁰

Memorandum of Understanding for the West and Central African Region (Abuja MOU)¹¹

Black Sea Memorandum of Understanding on Port State Control (Black Sea MOU)¹²

3. Terminology

3.1 Abbreviations:

3.1.1 CAP—Condition Assessment Program

⁴ Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

⁵ Available from Secretariat, Nieuwe Uitleg 1, PO Box 20904, 2500 EX Den Haag, The Netherlands.

⁶ Available from Secretary, Tomoecho Annex Bldg. 6F, 3-8-26, Toranomon Minato-ku, Tokyo 105-0001 Japan.

⁷ Available from Secretariat, Prefecture Av. E. Madero 235 Baja, Buenos Aires, Argentina.

⁸ Available from Secretariat, Ministry of Tourism and International Transport, Adriene's Complex, Warrens, St Michael, Barbados.

⁹ Available from Secretariat, 27 Admiral Hamza Pasha St., Roushdy, Alexandria, Egypt.

¹⁰ Available from Secretariat, Head Land, Sada, Goa 403804 India.

¹¹ Available from Secretariat, c/o National Maritime Authority, 4 Burma Rd., Apapa, Lagos, Nigeria 58-72214.

¹² Available from Secretariat, Meclisi Mebusa Cad. No. 18, Salipazri, 80040 Istanbul, Turkey.

- 3.1.2 CFR—Code of Federal Regulations
- 3.1.3 ETA—estimated time of arrival
- 3.1.4 ETD—estimated time of departure
- 3.1.5 ILO—International Labor Organization
- 3.1.6 IMO—International Maritime Organization
- 3.1.7 IOPP—International Oil Pollution Prevention
- 3.1.8 ISM—International Management Code for the Safe Operation of Ships and for Pollution Prevention
- 3.1.9 ISM DOC—ISM Document of Compliance
- 3.1.10 ISM SMC—ISM Safety Management Certificate
- 3.1.11 MARPOL—International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 relating thereto
- 3.1.12 NLS—noxious liquid substance
- 3.1.13 NUC—not under command
- 3.1.14 OPA 90—U.S. Oil Pollution Act of 1990
- 3.1.15 RO RO—roll-on/roll-off vessel
- 3.1.16 SOLAS—Safety of Life at Sea Convention
- 3.1.17 STCW—International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1995
- 3.1.18 UTC—universal time coordinated

4. Significance and Use

4.1 The Ship Safety Record is an electronic database of information pertaining to a specific vessel including information related to the safe operation of the vessel and the safety of it's crew and the environment. The data is grouped and organized under the following key categories: vessel particulars, vessel status, crew requirements, crew status, voyage specific data, record of inspection, record of incidents, and corrective actions.

4.2 The Ship Safety Record is created and maintained in each instance for the primary benefit of the owner, technical manager, or operator who is required through the implementation of the ISM Code to be cognizant of such information. The information in the database is at all times the property of the owner who will maintain and control the dissemination of any and all of the information. It is expected that operators will elect to make portions of their Ship Safety Record database available to other interested parties such as flag states, class societies, and port states.¹³ The Ship Safety Record should provide for the implementation of several levels of electronic database security as may be required by the vessel owner or operator. The data that becomes part of the Ship Safety Record can be thought of in a number of subsets:

- 4.2.1 Data that is not subject to change, including particulars of the vessel, and so forth.
- 4.2.2 Data that is subject to change but not normally by the ship's crew.

4.2.3 Data that will be updated periodically either manually or as a result of updates to other computer systems or applications. This would include, as an example, cargo information, ballast conditions, the names/identification of crew members, and passenger details. This would also include information relative to internal inspections, maintenance records, internal audits, safety audits, and so forth.

4.3 Guides **F1756** and **F1757** may be used as the basis for implementation of a shipboard electronic database and ship safety record.

5. Vessel Particulars

5.1 *Vessel Identification:*

- 5.1.1 IMO number.
- 5.1.2 Vessel name.
- 5.1.3 Previous names.
- 5.1.4 Vessel type.
- 5.1.5 Vessel call sign.
- 5.1.6 Flag state.
- 5.1.7 Ship owner.
- 5.1.8 Ship operator (who is responsible for ISM compliance).
- 5.1.9 Company as defined in ISM Code.
- 5.1.10 Company contact information.
- 5.1.11 Current classification society.
- 5.1.12 Builder's name.
- 5.1.13 Construction contract date.
- 5.1.14 Keel laying date.
- 5.1.15 Delivery date.

5.2 *Vessel Certificates:*

5.2.1 The actual list of certificates required for a vessel is a function of the vessel's intended trade route, flag state, and international requirements.

- 5.2.1.1 Certificate of registry.
- 5.2.1.2 Safety equipment certificate.
- 5.2.1.3 Safety construction certificate(s).
- 5.2.1.4 Cargo ship safety certificate.
- 5.2.1.5 Passenger ship safety certificate.
- 5.2.1.6 Radio safety certificate.
- 5.2.1.7 Cargo ship radio telegraphy certificate.
- 5.2.1.8 Cargo ship radio telephony certificate.
- 5.2.1.9 SOLAS exemption certificate.
- 5.2.1.10 International load line certificate.
- 5.2.1.11 International load line exemption certificate.
- 5.2.1.12 Certificate of fitness (liquefied gases in bulk).
- 5.2.1.13 Certificate of fitness (chemicals in bulk).
- 5.2.1.14 Oil pollution certificate.
 - (1) IOPP Certificate/NLS Certificate and Form A Supplement (MARPOL) and Form B.
 - (2) Annex to Civil Liability for Oil Pollution Damage 1992.
 - (3) Annex to Compensation for Oil Pollution Damage 1992.
- 5.2.1.15 Hazardous & Noxious Substances Certificate.
- 5.2.1.16 Minimum Safe Manning Document.
- 5.2.1.17 ISM Safety Management Certificate.
- 5.2.1.18 ISM Document of Compliance.
- 5.2.1.19 Classification Certificates:
 - (1) Hull.
 - (2) Machinery.

¹³ Technical information pertaining to Port State Control is included in a Memorandum of Understanding (MOU) for various regions worldwide as listed in 2.4.

- (3) Automation.
- (4) Navigation.
- 5.2.1.20 International Tonnage Certificate 1969.
- 5.2.1.21 National Certificates:
 - (1) Panama Tonnage Certificate.
 - (2) Suez Tonnage Certificate.
 - (3) USCG Certificate of Inspection.
 - (4) U.S. Certificate of Financial Responsibility.
 - (5) Stability Approval Letter.
- 5.2.1.22 Ship's radio station license.
- 5.2.1.23 Supplementary to Safety Steering Gear Certificate.
- 5.2.1.24 Certificate of Sanitary Construction.
- 5.2.1.25 Register of Cargo Gear.
- 5.2.1.26 Certificate of Documentation, unless 5.2.1.1.
- 5.2.1.27 Life Raft Certificates.
- 5.2.1.28 Certificates of Financial Responsibility (COFR).
- 5.2.1.29 ITOPI Membership Certificate.
- 5.2.1.30 Certificate of Deadweight.
- 5.2.1.31 U.S. Tonnage Certificate.
- 5.2.1.32 Certificate of Official Number.
- 5.3 *Particulars of the Vessel's Physical Characteristics:*
 - 5.3.1 (LOA) length overall (metres/feet).
 - 5.3.2 (LBP) Length between perpendiculars (metres/feet).
 - 5.3.3 Design draft (metres/feet).
 - 5.3.4 Beam (metres/feet).
 - 5.3.5 Keel to top of mast height (metres/feet).
 - 5.3.6 (DWT) summer deadweight (metric tons).
 - 5.3.7 (GRT) gross register tons (metric tons) (for Tankers may be reduced GRT in accordance with IMO Res. A388(x)).
 - 5.3.8 GRT gross register tons U.S.
 - 5.3.9 Displacement (metric tons).
 - 5.3.10 Lightship weight (metric tons).
 - 5.3.11 Molded depth at sea (metres/feet).
 - 5.3.12 Description of steering gear.
 - 5.3.13 Type of rudder.
- 5.4 *Particulars of the Vessel Subdivision and Stability Data:*
 - 5.4.1 (VCG) light ship vertical center of gravity (metres/feet).
 - 5.4.2 (LCG) light ship longitudinal center of gravity (metres/feet).
 - 5.4.3 Cargo subdivision (number of holds or tanks).
 - 5.4.4 Intact stability limitations (cargo conditions limiting vessel operation).
 - 5.4.5 Damage stability criteria.
 - 5.4.6 Minimum metacentric height; G.M.
 - 5.4.7 Identification of shipboard trim and stability electronic program.
- 5.5 *Particulars of the Vessels Machinery:*
 - 5.5.1 Main engine type.
 - 5.5.2 Main engine manufacturer.
 - 5.5.3 Main engine model.
 - 5.5.4 Main engine rating.
 - 5.5.5 Main engine fuel.
 - 5.5.6 List of critical auxiliary machinery.
- 5.6 *Particulars of the Vessel Safety System:*
 - 5.6.1 Number and size of fire pumps.
 - 5.6.2 Number and type of fire extinguishers.
 - 5.6.3 CO₂ system/ fixed fire fighting systems.
 - 5.6.4 Number and size of life boats.
 - 5.6.5 Number and size of life rafts.
 - 5.6.6 Automatic fire control system.
- 5.7 *Particulars of the Vessel Navigation Systems:*
 - 5.7.1 Description of marine radar system.
 - 5.7.2 Description of magnetic steering compass.
 - 5.7.3 Description of gyro compass/repeater.
 - 5.7.4 Description of rudder angle indicator.
- 5.8 *Particulars of the Vessel Deck Machinery:*
 - 5.8.1 Number and capacity of anchors and anchor windlass.
 - 5.8.2 Number and capacity of mooring winch.
 - 5.8.3 Number and capacity of cargo and other lifting gear.
 - 5.8.4 Cargo gear registry.
 - 5.8.5 Number and capacity of hose handling crane.
- 5.9 *Particulars of Cargo System :*
 - 5.9.1 Type of Cargo.
 - 5.9.2 *Vessels Cargo Handling Systems* —Number and size of cargo pumps, description of piping system, cargo control system, manifolds, vessels dry cargo loading and unloading systems, cargo cranes, and so forth.
- 5.10 *Vessel Communications Systems :*
 - 5.10.1 Radio equipment.
 - 5.10.2 Shipboard Information Technology Platform (SITP); operating system.
 - 5.10.3 Interior communications.
 - 5.10.4 Satcom.
 - 5.10.5 Cellular.
 - 5.10.6 PC network.
- 5.11 *Vessel Response Plan(s) (Can Include International and Locally Required Plans)*—Notification contact names and numbers for the following:
 - 5.11.1 Qualified individual.
 - 5.11.2 Oil spill response organization.
 - 5.11.3 Spill management team.
 - 5.11.4 Salvage/fire fighting/lightering organization.
 - 5.11.5 Electronic hull file location/custodian.
- 5.12 *Incident/Accident Record (Dates of Each):*
 - 5.12.1 Pollution incident.
 - 5.12.2 Grounding.
 - 5.12.3 Collision.

6. Vessel Status

6.1 *Status of Certificates*—List the current status of each certificate as stated in 5.2. The actual list of certificates required for a vessel is a function of the vessel's trade and will be determined by flag state and international requirements.

- 6.1.1 Certificate of Registry.
- 6.1.2 Safety Equipment Certificate.
- 6.1.3 Safety Construction Certificate(s).
- 6.1.4 Cargo Ship Safety Certificate.
- 6.1.5 Passenger Ship Safety Certificate.
- 6.1.6 Safety Radio Certificate.
- 6.1.7 Cargo Ship Radio Telegraphy Certificate.
- 6.1.8 Cargo Ship Radio Telephony Certificate.
- 6.1.9 SOLAS Exemption Certificate.

- 6.1.10 International Load Line Certificate.
- 6.1.11 International Load Line Exemption Certificate.
- 6.1.12 Certificate of Fitness (liquefied gases in bulk).
- 6.1.13 Certificate of Fitness (chemicals in bulk).
- 6.1.14 Oil Pollution Certificate.
- 6.1.14.1 IOPP Certificate/NLS Certificate and Form A Supplement (MARPOL) and Form B.
- 6.1.14.2 Annex to Civil Liability For Oil Pollution Damage 1992.
- 6.1.14.3 Annex to Compensation For Oil Pollution Damage 1992.
- 6.1.15 Hazardous & Noxious Substances Certificate.
- 6.1.16 Minimum Safe Manning Document.
- 6.1.17 ISM Safety Management Certificate.
- 6.1.18 ISM Document of Compliance.
- 6.1.19 Classification Certificates:
- 6.1.19.1 Hull.
- 6.1.19.2 Machinery.
- 6.1.19.3 Automation.
- 6.1.19.4 Navigation.
- 6.1.20 International Tonnage Certificate 1969.
- 6.1.21 National certificates:
- 6.1.21.1 Panama Tonnage Certificate.
- 6.1.21.2 Suez Tonnage Certificate.
- 6.1.21.3 USCG Certificate of Inspection.
- 6.1.21.4 U.S. Certificate of Financial Responsibility.
- 6.1.21.5 Stability Approval Letter.
- 6.1.22 Ship's Radio Station License.
- 6.1.23 Supplementary to Safety Steering Gear Certificate.
- 6.1.24 Certificate of Sanitary Construction.
- 6.1.25 Register of Cargo Gear.
- 6.1.26 Certificate of Documentation, unless 6.1.1.
- 6.1.27 Life Raft Certificates.
- 6.1.28 Certificate of Financial Responsibility (Alaska Pipe-line).
- 6.1.29 ITOPF Membership Certificate.
- 6.1.30 Certificate of Deadweight.
- 6.1.31 U.S. Tonnage Certificate.
- 6.1.32 Certificate of Official Number.

6.2 *Status of Hull Structure:*

- 6.2.1 Local structural damage reported by crew as a result of routine on-board inspection.
- 6.2.2 Temporary repairs to be completed.
- 6.2.3 Outstanding items from last class survey report.
- 6.2.4 Status of coatings.
- 6.2.5 Status of cathodic protection system.

6.3 *Status of Machinery: Inoperable Equipment, Repair Work Schedules, and So Forth:*

- 6.3.1 Main engine.
- 6.3.2 Main and auxiliary boilers.
- 6.3.3 Other auxiliaries.
- 6.3.4 Outstanding items from last Class Survey Report.

6.4 *Status of Vessel Safety Systems :*

- 6.4.1 Inoperable equipment.
- 6.4.2 Last operation of emergency generator.
- 6.4.3 Last operation of emergency fire pump.
- 6.4.4 Outstanding items from last Class Survey Report.

6.5 *Status of Vessel Navigation Systems:*

- 6.5.1 Steering gear engines.
- 6.5.2 Steering control system.
- 6.5.3 Marine radar system.
- 6.5.4 Magnetic steering compass.
- 6.5.5 Gyro compass/Repeater.
- 6.5.6 Rudder angle indicator.
- 6.5.7 Outstanding items from last Class Survey Report.
- 6.5.8 Status of Global Positioning System (GPS) receiver(s)

6.6 *Report of Fuel Quality*—Report the following for each fuel on board:

- 6.6.1 Density.
- 6.6.2 Viscosity.
- 6.6.3 Pour point.
- 6.6.4 Water content.
- 6.6.5 Fuel stability.
- 6.6.6 Abrasive particles.
- 6.6.7 Salt water.
- 6.6.8 Strong acidity.
- 6.6.9 Sulfur content.

6.7 *Report on Lube Oil Quality :*

- 6.7.1 Change in viscosity.
- 6.7.2 Presence of water.
- 6.7.3 Strong acidity.
- 6.7.4 Comparative viscosity.

7. Crew Requirements

7.1 *Identification of Crew Positions Consistent with Safe Manning Requirements and Muster List:*

- 7.1.1 Master.
- 7.1.2 Officers in charge of a navigational watch.
- 7.1.3 Chief mate.
- 7.1.4 Officer in charge of a navigational watch; near—coastal voyage.
- 7.1.5 Master—near—coastal voyage.
- 7.1.6 Ratings forming part of a navigational watch.
- 7.1.7 Officer in charge of engineering watch propulsion power (>750 kw).
- 7.1.8 Chief engineer propulsion power (>3000 kw).
- 7.1.9 Chief engineer propulsion power (750 to 3000 kw).
- 7.1.10 Second engineer propulsion power (>3000 kw).
- 7.1.11 Second engineer propulsion power (750 to 3000 kw).
- 7.1.12 Ratings forming part of an engineering watch.
- 7.1.13 Radio operator.
- 7.1.14 GMDSS qualified officers.
- 7.1.15 Officers qualified to carry out cargo transfer operations.

7.2 *Training Requirements*—For each position and who qualified:

- 7.2.1 Requirements for familiarity with company procedures.
- 7.2.2 STCW training (in accordance with Section A-VI/1 and A-VZ as applicable):
 - 7.2.2.1 Tanker familiarization course—chemical tanker—liquified gas tanker.
 - 7.2.2.2 Personal survival techniques.
 - 7.2.2.3 Advanced fire fighting.