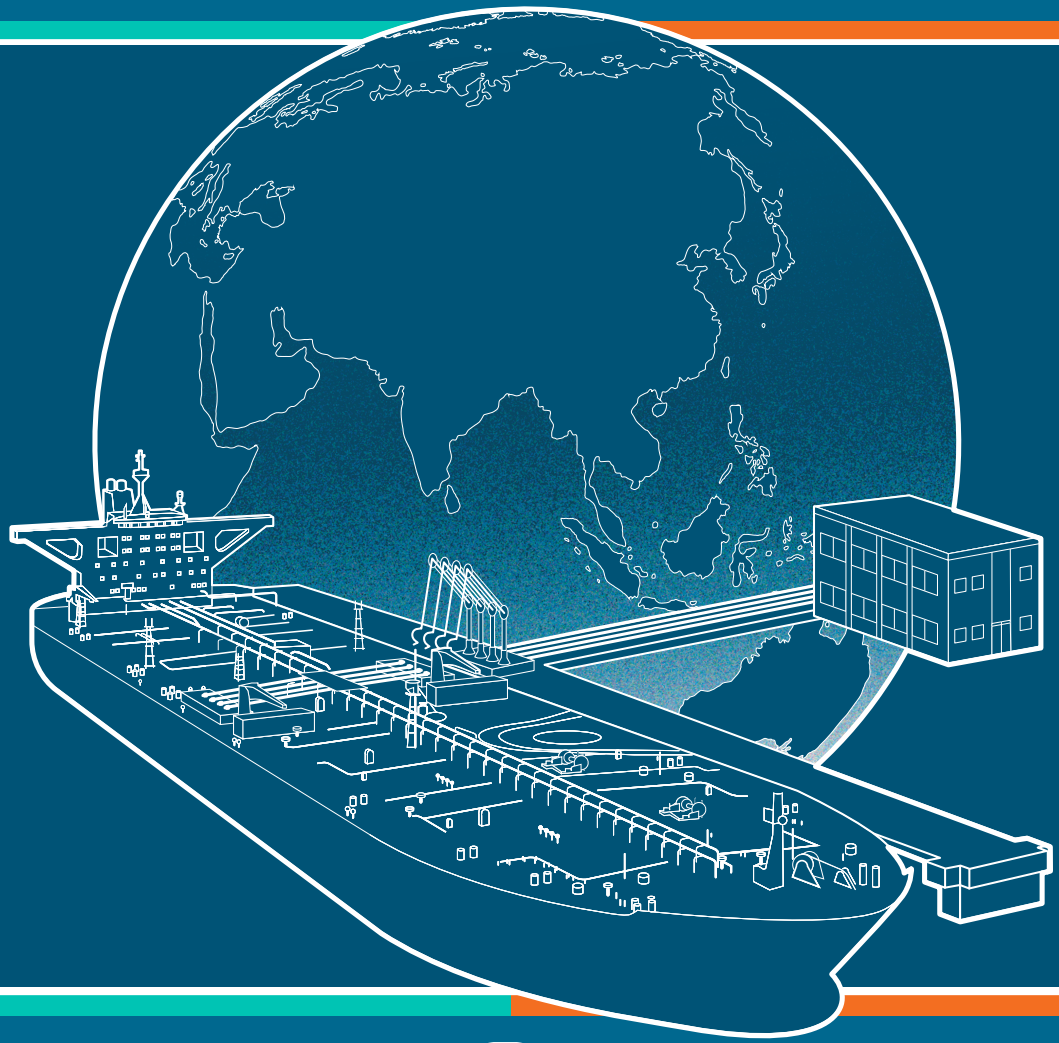
ISGOTT

International Safety Guide for Oil Tankers and Terminals

Sixth Edition



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KEY				
Italic/bold *(any colour)* indicates heading with no immediate text	***16.4***	***Ship/Shore Access***	***16.4***	***Tanker/terminal access***
Indicates a primary change		**Majority old Chapter 11 moved to Chapter 12**		
Indicates a primary change		**Old Chapter 21 merged with Chapter 20**		
Speaks for itself. Totally new content		New		
BLACK - Indicates prior I5 text.	21.1.1	Ship Evacuation		
BLUE - Indicates equivalent I6 text	20.5.4	Tanker evacuation		
Shows old I5 text alongside newly positioned I6 tex	***9.3***	***Permit to Work Systems***	***4.7***	***Permit to work systems***
	9.3.1	General	4.7.1	General
	9.3.2	Permit to Work Systems – Structure	4.7.2	Permit to work systems - structure
	9.3.3	Permit to Work Systems – Principles of Operation	4.7.3	Permit to work systems - principles of operation
	9.3.4	Permit to Work Forms	4.7.4	Permit to work forms
	9.3.5	Work Planning Meetings	9.3	Work planning and permit to work systems
Shows new I6 text alongside old I5 text that was separate sections in I5 but now merged in I6. ***Pink fill colour indicates text referenced in VIQ7.***	4.10.10	Funnel Emissions	4.2.4.1 / 4.2.4.2	Combustion equipment and Blowing boiler tubes (merged)

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3.3.3	Free Fall in Tanks	3.2.6	Free Fall in Tanks		3.2.5	Fixed Equipment in Tanks	3.3.2	Fixed Equipment in Cargo Tanks
3.3.4	Water Mists	3.2.7	Water Mists		3.2.6	Free Fall in Tanks	3.3.3	Free Fall in Tanks
3.3.5	Inert Gas	3.2.8	Inert Gas		3.2.7	Water Mists	3.3.4	Water Mists
3.3.6	Discharge of Carbon Dioxide	3.3.1	Discharge of Carbon Dioxide		3.2.8	Inert Gas	3.3.5	Inert Gas
3.3.7	Clothing and Footwear	3.3.2	Clothing and Footwear		***3.3***	***Other Possible Sources of Electrostatic Hazards***	***3.3***	***Other Sources of Electrostatic Hazards***
3.3.8	Synthetic Materials	3.3.3	Synthetic Materials		3.3.1	Discharge of Carbon Dioxide	3.3.6	Discharge of Carbon Dioxide
					3.3.2	Clothing and Footwear	3.3.7	Clothing and Footwear
					3.3.3	Synthetic Materials	3.3.8	Synthetic Materials

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CHAPTER 4	GENERAL HAZARDS FOR SHIP AND TERMINAL				CHAPTER 4	MANAGING HAZARDS AND RISKS FOR SHIP AND TERMINAL		
4.1	General Principles				***4.1***	***Management System***		New
4.2	***Control of Potential Ignition Sources***	***4.10***	***Control of Potential Ignition Sources***		***4.2***	***Risk Management***		
4.2.1	Naked Lights	4.10.1	Naked Lights		4.2.1	General		
4.2.2	Smoking	4.10.2	Smoking		4.2.2	Risk Assessment		
4.2.2.1	Smoking at sea	4.10.3	Smoking at Sea		4.2.3	Hierarchy of Controls		
4.2.2.2	Smoking in port and controlled smoking	4.10.4	Smoking in Port and Controlled Smoking		4.2.4	Marine Interface Risks		
4.2.2.3	Location of designated smoking places	4.10.5	Location of Designated Smoking Places		4.2.5	Management of Change		
4.2.2.4	Matches and cigarette lighter	4.10.6	Matches and Cigarette Lighters		4.3	Stop Work Authority		
4.2.2.5	Notices	4.10.8	Notices		4.4	Lock-out/Tag-out		
4.2.3	Galley Stoves and Cooking Appliances	4.10.9	Galley Stoves and Cooking Appliances		***4.5***	***Control of Hazardous Energy***		
4.2.4	***Engine and Boiler Rooms***				4.5.1	Hazardous Energy		RISK MANAGEMENT SECTION COMPLETELY UPDATED AND REWRITTEN
4.2.4.1	Combustion equipment	4.10.10	Funnel Emissions		4.5.2	Hazardous energy controls		
4.2.4.2	Blowing boiler tubes	4.10.10	Funnel Emissions		***4.6***	***Simultaneous Operations***		
4.3	***Portable Electrical Equipment***	***4.12***	***Portable Electrical and Electronic Equipment***		4.6.1	General		
4.3.1	General	4.12.1	General		***4.6.2***	***Managing Simultaneous Operations***		
4.3.2	Lamps and Other Electrical Equipment on Flexible Cables (Wandering Leads)	4.12.2	Electrical Equipment on Flexible Cables		4.6.2.1	Simultaneous Operations risk assessment		
4.3.3	Air Driven Lamps	4.12.3	Air Driven Lamps		4.6.2.2	Simultaneous Operations plan		
4.3.4	Torches (Flashlights), Lamps and Portable Battery Powered Equipment	4.12.4	Torches, lamps and portable battery powered equipment		4.6.2.3	Simultaneous Operations preparation		
4.3.5	Cameras	4.12.6	Cameras		4.6.3	Decision Matrix		
4.3.6	Other Portable Electrical Equipment	4.12.7	Other Portable Electrical Equipment		4.6.4	Matrix of Permitted Operations		
4.4	***Management of Electrical Equipment and Installations in Dangerous Areas***	***4.11***	***Electrical Equipment and Installations in Hazardous Areas***		***4.7***	***Permit to work systems***	9.3	Permit to Work Systems
4.4.1	General	4.11.1	General		4.7.1	General	9.3.1	General
4.4.2	***Dangerous and Hazardous Areas***				4.7.2	Permit to work systems - structure	9.3.2	Permit to Work Systems – Structure
4.4.2.1	Dangerous areas in a tanker	4.11.3	Hazardous Areas on a Tanker		4.7.3	Permit to work systems - principles of operation	9.3.3	Permit to Work Systems – Principles of Operation
4.4.2.2	Hazardous areas at a terminal	4.11.2	Hazardous Areas		4.7.4	Permit to work forms	9.3.4	Permit to Work Forms
4.4.2.3	Application of a hazardous area classification to a tanker at a berth	4.11.4	Hazardous Areas at a Terminal		4.7.5	Work planning meetings		New
4.4.3	***Electrical Equipment***	4.11.6	Standards of electrical equipment for use in hazardous areas		4.7.6	Toolbox talks		New
4.4.3.1	Fixed electrical equipment	*withdrawn*	**included in 4.11.6**		***4.8***	***Personal Safety***	26.2	Personnel Safety
4.4.3.2	Closed circuit television	*withdrawn*	**?**		4.8.1	Personal Protective Equipment (PPE)	26.2.1	Personal Protective Equipment (PPE)
4.4.3.3	Electrical equipment and installations on board shi	*withdrawn*	**included in 4.11.6**		4.8.2	Slip Trip and Fall Hazards	26.2.2	Slip and Fall Hazards
4.4.3.4	Electrical equipment and installations at terminals	*withdrawn*	**included in 4.11.6**		4.8.3	Asbestos	4.11	Asbestos
4.4.4	***Inspection and Maintenance of Electrical Equipment***				4.8.4	Personal Hygiene	26.2.3	Personal Hygiene
4.4.4.1	General	4.11.7	Inspection, maintenance and testing of Electrical Equipment		4.9	Preventing Fire and Explosion	4.1	General Principles
4.4.4.2	Inspections and checks	4.11.7.1	Inspection and Checks		***4.10***	***Control of Potential Ignition Sources***	***4.2***	***Control of Potential Ignition Sources***
4.4.4.3	Maintenance of electrical equipment	4.11.7.2	Maintenance		4.10.1	Naked Lights	4.2.1	Naked Lights
4.4.4.4	Insulation testing	4.11.7.3	Insulation Testing		4.10.2	Smoking	4.2.2	Smoking
4.4.4.5	Alterations to terminal equipment, systems and installations	4.11.8	Changes to Electrical Equipment and Systems		4.10.3	Smoking at Sea	4.2.2.1	Smoking at sea
4.4.4.6	Periodic mechanical inspections				4.10.4	Smoking in Port and Controlled Smoking	4.2.2.2	Smoking in port and controlled smoking

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4.4.5	***Electrical Repairs, Maintenance and Test Work at Terminals***	***4.11.9***	***Electrical repairs, maintenance and testing at terminals***		4.10.5	Location of Designated Smoking Places	4.2.2.3	Location of designated smoking places
4.4.5.1	General	4.11.9.1	General		4.10.6	Matches and Cigarette Lighters	4.2.2.4	Matches and cigarette lighter
4.4.5.2	Cold work	4.11.9.2	Cold Work		4.10.7	Electronic or E-Cigarettes		New
4.4.5.3	Hot work	4.11.9.3	Hot Work		4.10.8	Notices	4.2.2.5	Notices
4.5	***Use of Tools***				4.10.9	Galley Stoves and Cooking Appliances	4.2.3	Galley Stoves and Cooking Appliances
4.5.1	Grit Blasting and Mechanically Powered Tools	4.14.4	Mechanically Powered Tools and Grit Blasting		4.10.10	Funnel Emissions	4.2.4.1 / 4.2.4.2	Combustion equipment and Blowing boiler tubes merged
4.5.2	Hand Tools	4.14.2	Hand tools		4.10.11	Spontaneous Combustion	4.9	Spontaneous Combustion
4.6	Equipment Made of Aluminium	4.10.13	Equipment Made of Aluminium		4.10.12	Auto-Ignition	4.10	Auto-Ignition
4.7	Cathodic Protection Anodes in Cargo Tanks	4.10.14	Cathodic Protection Anodes in Cargo Tanks		4.10.13	Equipment Made of Aluminium	4.6	Equipment Made of Aluminium
4.8	***Communications Equipment***	***4.13***	***Communications Equipment***		4.10.14	Cathodic Protection Anodes in Cargo Tanks	4.7	Cathodic Protection Anodes in Cargo Tanks
4.8.1	General	4.13.1	General		***4.11***	***Electrical Equipment and Installations in Hazardous Areas***	***4.4***	***Management of Electrical Equipment and Installations in Dangerous Areas***
4.8.2	Ship's Radio Equipment	4.13.2	Ship's radio equipment		4.11.1	General	4.4.1	General
4.8.2.1	Medium and High frequency radio transmissions	4.13.2.1	Medium and High Frequency Radio Transmissions		4.11.2	Hazardous Areas	4.4.2.2	Hazardous areas at a terminal
4.8.2.2	VHF/UHF equipment	4.13.2.2	Very High Frequency/Ultra High Frequency equipment		4.11.3	Hazardous Areas on a Tanker	4.4.2.1	Dangerous areas in a tanker
4.8.2.3	Satellite communications equipment	4.13.2.3	Satellite Communications Equipment		4.11.4	Hazardous Areas at a Terminal	4.4.2.3	Application of a hazardous area classification to a tanker at a berth
4.8.3	Ship's Radar Equipment	4.13.3	Tanker Radar Equipment		4.11.5	Sources of Ignition from Electrical Equipment		New
4.8.4	Automatic Identification Systems (AIS)	4.13.4	Automatic Identification Systems		4.11.6	Standards of electrical equipment for use in hazardous areas	***4.4.3***	***Electrical Equipment***
4.8.5	Telephones	4.13.5	Landline Telephones		4.11.7	Inspection, maintenance and testing of Electrical Equipment	4.4.4	Inspection and Maintenance of Electrical Equipment
4.8.6	Mobile Telephones	4.12.5	Mobile Telephones & Pagers		4.11.7.1	Inspection and Checks	4.4.4.2	Inspections and checks
4.8.7	Pagers	4.12.5	Mobile Telephones & Pagers		4.11.7.2	Maintenance	4.4.4.3	Maintenance of electrical equipment
4.9	Spontaneous Combustion	4.10.11	Spontaneous Combustion		4.11.7.3	Insulation Testing	4.4.4.4	Insulation testing
4.10	Auto-Ignition	4.10.12	Auto-Ignition		4.11.8	Changes to Electrical Equipment and Systems	4.4.4.5	Alterations to terminal equipment, systems and installations
4.11	Asbestos	4.8.3	Asbestos		***4.11.9***	***Electrical repairs, maintenance and testing at terminals***	***4.4.5***	***Electrical Repairs, Maintenance and Test Work at Terminals***
					4.11.9.1	General	4.4.5.1	General
					4.11.9.2	Cold Work	4.4.5.2	Cold work
					4.11.9.3	Hot Work	4.4.5.3	Hot work
					4.12	***Portable Electrical and Electronic Equipment***	***4.3***	***Portable Electrical Equipment***
					4.12.1	General	4.3.1	General
					4.12.2	Electrical Equipment on Flexible Cables	4.3.2	Lamps and Other Electrical Equipment on Flexible Cables (Wandering Leads)
					4.12.3	Air-driven lamps	4.3.3	Air Driven Lamps
					4.12.4	Torches, lamps and portable battery powered equipment	4.3.4	Torches (Flashlights), Lamps and Portable Battery Powered Equipment
					4.12.5	Mobile Telephones & Pagers	4.8.6	Mobile Telephones
					4.12.6	Cameras	4.3.5	Cameras
					4.12.7	Other Portable Electrical Equipment	4.3.6	Other Portable Electrical Equipment
					4.12.8	Lithium batteries		New
					4.13	***Communications Equipment***	***4.8***	***Communications Equipment***
					4.13.1	General	4.8.1	General
					4.13.2	Ship's radio equipment	4.8.2	Ship's Radio Equipment
					4.13.2.1	Medium and High Frequency Radio Transmissions	4.8.2.1	Medium and High frequency radio transmissions
					4.13.2.2	Very High Frequency/Ultra High Frequency equipment	4.8.2.2	VHF/UHF equipment

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					4.13.2.3	Satellite Communications Equipment	4.8.2.3	Satellite communications equipment
					4.13.3	Tanker Radar Equipment	4.8.3	Ship's Radar Equipment
					4.13.4	Automatic Identification Systems	4.8.4	Automatic Identification Systems (AIS)
					4.13.5	Landline Telephones	4.8.5	Telephones
					4.14	***Tools***	***4.5***	***Use of Tools***
					4.14.1	General		New
					4.14.2	Hand tools	4.5.2	Hand Tools
					4.14.3	Electrical Tools		New
					4.14.4	Mechanically Powered Tools and Grit Blasting	4.5.1	Grit Blasting and Mechanically Powered Tools
					4.13.5	Hydroblasting (high pressure water washing)		New

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CHAPTER 5	**FIRE-FIGHTING**				**CHAPTER 5**	**FIRE PROTECTION**		
5.1	Theory of Fire-Fighting	5.1	Theory of Firefighting		5.1	Theory of Firefighting	5.1	Theory of Fire-Fighting
5.2	Types of Fire and Appropriate Extinguishing Agents	5.2	Types of Fire and Appropriate Extinguishing Agents		5.2	Types of Fire and Appropriate Extinguishing Agents	5.2	Types of Fire and Appropriate Extinguishing Agents
5.2.1	Class A – Ordinary (Solid) Combustible Material Fire	5.2	Types of Fire and Appropriate Extinguishing Agents		5.3	Extinguishing Agents	5.3	Extinguishing Agents
5.2.2	Class B – Fires Involving Flammable and Combustible Hydrocarbon Liquids	5.2	Types of Fire and Appropriate Extinguishing Agents		***5.3.1***	***Cooling Agents***	***5.3.1***	***Cooling Agents***
5.2.3	Class C – Electrical Equipment Fires	5.2	Types of Fire and Appropriate Extinguishing Agents		5.3.1.1	Water	5.3.1.1	Water
5.2.4	Class D – Combustible Metal Fires	5.2	Types of Fire and Appropriate Extinguishing Agents		5.3.1.2	Water mist	8.1.3.3	Water fog
5.3	Extinguishing Agents	5.3	Extinguishing Agents		5.3.1.3	Water curtain	8.1.3.4	Water curtain
5.3.1	***Cooling Agents***	***5.3.1***	***Cooling Agents***		5.3.1.4	Foam	5.3.1.2	Foam
5.3.1.1	Water	5.3.1.1	Water		5.3.2	Smothering Agents	***5.3.2***	***Smothering Agents***
5.3.1.2	Foam	5.3.1.4	Foam		5.3.2.1	Foam	5.3.2.1	Foam
5.3.2	***Smothering Agents***				5.3.2.1.1	Categories of foam		New
5.3.2.1	Foam	5.3.1.4	Foam		5.3.2.1.2	Expansion ratios		New
5.3.2.2	Carbon Dioxide	5.3.2.2	Carbon Dioxide		5.3.2.1.3	Compatibility and storage		New
5.3.2.3	Steam	5.3.2.3	Steam		5.3.2.2	Carbon Dioxide	5.3.2.2	Carbon Dioxide
5.3.2.4	Sand	5.3.2.4	Sand		5.3.2.3	Steam	5.3.2.3	Steam
5.3.3	Flame Inhibiting Agents	5.3.3	Flame Inhibiting Agents		5.3.2.4	Sand	5.3.2.4	Sand
5.3.3.1	Dry chemical	5.3.3.1	Dry Chemical Powder		5.3.3	Flame Inhibiting Agents	5.3.3	Flame Inhibiting Agents
5.3.3.2	Vaporising liquids (Halons)	5.3.4.1	Halon and clean agents		5.3.3.1	Dry Chemical Powder	5.3.3.1	Dry chemical
					5.3.4	Clean Agent Fire Suppression Systems		New
					5.3.4.1	Halon and clean agents	5.3.3.2	Vaporising liquids (Halons)
					5.3.5	Inert gas system	8.1.3.5	Inert gas
					5.4	Portable Fire Extinguishers	8.1.4	Portable Fire Extinguishers
					5.5	International Shore Fire Connection	26.5.3	International shore fire connection
					5.6	Water Borne Firefighting Equipment	19.6	Water-Borne Fire-Fighting Equipment
					5.7	Protective Clothing	19.7	Protective Clothing
					5.8	***Automatic Fire Detection Systems***		New
					5.8.1	General		New
					5.8.2	Types of Fire Detectors	19.2.4	Automatic Detection Systems
					5.8.2.1	Heat Sensing Fire Detectors		New
					5.8.2.2	Smoke Sensing Fire Detectors		New
					5.8.2.3	Gas Sensing Fire Detectors		New
					5.8.2.4	Flame Sensing Fire Detectors		New
					5.8.3	Selection of Fire Detectors	19.2.5	Selection of Fire Detectors
					5.8.4	Fire Detection and Alarm Systems in Terminals	19.2.3	Fire Detection and Alarm Systems

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CHAPTER 6	**SECURITY**				**CHAPTER 6**	**SECURITY**		
6.1	General	6.1	General		6.1	General	6.1	General
6.2	Security Assessments	6.3	Security Risk Assessments		6.2	Threat and Risk Assessment		New
6.3	Responsibilities Under the ISPS Code	6.6	Responsibilities Under the International Ship and Port Facility Security Code		6.3	Security Risk Assessments	6.2	Security Assessments
6.4	Security Plans	6.5	Security Plans		6.4	Cyber Safety and Security		New
					6.5	Security Plans	6.4	Security Plans
					6.6	Responsibilities Under the International Ship and Port Facility Security Code	6.3	Responsibilities Under the ISPS Code

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PART 2: TANKER INFORMATION					**CHAPTER 7**	**HUMAN FACTORS (NEW)**		
CHAPTER 7	**SHIPBOARD SYSTEMS**				7.1	General		New
7.1	Fixed Inert Gas Systems	11.1	Fixed inert gas systems		7.2	Identification and analysis of Safety Critical Tasks		New
7.1.1	General	11.1.1	General		7.3	Design		New
7.1.2	Sources of Inert Gas	11.1.2	Sources of inert gas		7.4	Risk assessment		New
7.1.3	Composition and Quality of Inert Gas	11.1.3	Composition and quality of inert gas		7.5	Procedures		New
7.1.4	Methods of Replacing Tank Atmospheres	11.1.4	Methods of replacing tank atmospheres		7.6	Leadership		New
7.1.5	***Cargo Tank Atmosphere Control***	***11.1.5***	***Cargo tank atmosphere control***		7.7	Confidence to stop work or speak up		New
7.1.5.1	Inert Gas Operations	11.1.5.1	Inert gas operations		7.8	Fatigue	13.3.2	Fatigue
7.1.5.2	Inert gas system maintenance	11.1.5.2	Inert gas system maintenance		7.9	Manning levels	13.1	Manning Levels
7.1.5.3	Degradation of inert gas quality	11.1.5.3	Degradation of inert gas quality		7.10	Individual training, experience and competence	13.2	Training and Experience
7.1.6	Application to Cargo Tank Operations	11.1.6	Use during cargo tank operations		7.11	Practicing team skills		New
7.1.6.1	Inerting of empty tanks	11.1.6.1	Inerting empty tanks		7.12	Human factors in investigation and learning		New
7.1.6.2	Loading cargo or ballast into tanks in an inert condition	11.1.6.2	Loading cargo or ballast into inert tanks					
7.1.6.3	Simultanoeus cargo or ballast operations	11.1.6.3	Simultaneous cargo operations			**Old Ch.13 rewritten**		
7.1.6.4	Vapour balancing during ship-to-ship transfers	11.1.6.4	Vapour balancing					
7.1.6.5	Loaded passage	11.1.6.5	Loaded passage					
7.1.6.6	Discharge of cargo or ballast from tanks in an inert condition	11.1.6.6	Discharge of cargo or ballast from inert tanks					
7.1.6.7	Ballast passage	11.1.6.7	Ballast passage					
7.1.6.8	Static electricity precautions	11.1.6.8	Static electricity precautions					
7.1.6.9	Tank washing, including crude oil washing	11.1.6.9	Tank washing, including Crude Oil Washing					
7.1.6.10	Purging	11.1.6.10	Purging					
7.1.6.11	Gas freeing	11.1.6.11	Gas freeing					
7.1.6.12	Preparation for tank entry	11.1.6.12	Preparation for tank entry					
7.1.7	***Precautions to be Taken to Avoid Health Hazards***	***11.1.7***	***Precautions to be taken to avoid health hazards***					
7.1.7.1	Inert gas on deck	11.1.7.1	Inert gas on deck					
7.1.7.2	Ullaging and inspection of tanks from cargo hatche	*withdrawn*	*?*					
7.1.7.3	Entry into cargo tanks	11.1.7.2	Entry into cargo tanks					
7.1.7.4	Scrubber and condensate water	11.1.7.3	Scrubber and condensate water					
7.1.8	Cargo Tank Protection Against Over/Under-Pressur	11.1.8	Cargo tank protection against over/under-pressure					
7.1.8.1	Pressure/vacuum breakers	11.1.8.1	Pressure/Vacuum breakers					
7.1.8.2	Pressure/vacuum valves	11.1.8.2	Pressure/Vacuum valves					
7.1.8.3	Full flow pressure/vacuum ventings arrangements	11.1.8.3	Full flow pressure/vacuum venting arrangements					
7.1..8.4	Individual tank pressure monitoring and alarm systems	11.1.8.4	Individual tank pressure monitoring and alarm systems					
7.1.9	Emergency Inert Gas Supply	11.1.12	Emergency inert gas supply					
7.1.10	***Product Carriers Fitted with an Inert Gas System***	***11.1.9***	***Product carriers fitted with an inert gas system***					
7.1.10.1	General	11.1.9.1	General					
7.1.10.2	Carriage of products having a flashpoint exceeding	11.1.9.2	Carrying products with a flashpoint above 60degC					
7.1.10.3	Additional purging and gas freeing	11.1.9.3	Additional purging and gas freeing					
7.1.11	Cold Weather Precautions for Inert Gas Systems	11.1.10	Cold weather precautions for inert gas systems					
7.1.11.1	Condensation in inert gas piping	11.1.10.1	Condensation in inert gas piping					
7.1.11.2	Control air	11.1.10.2	Control air					

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7.1.11.3	Safety devices	11.1.10.3	Safety devices						
7.1.11.4	Sea chests	11.1.10.4	Sea chests						
7.1.12	Inert Gas System Failure	11.1.11	Inert gas system failure						
7.1.12.1	Action to be taken on failure of the inert gas systen	11.1.11.1	Action to take should the inert gas system fail						
7.1.12.2	Follow-up action on crude oil tankers	11.1.11.2	Follow-up action on crude oil tankers						
7.1.12.3	Follow-up action on product tankers	11.1.11.3	Follow-up action on product tankers						
7.1.13	Inert Gas Plant Repairs	11.1.13	Inert gas plant repairs						
7.2	***Venting Systems***	***11.2***	***Venting systems***						
7.2.1	General	11.2.1	General						
7.2.2	***Tank Over-Pressurisation and Under-Pressurisatio***	***11.2.2***	***Tank over pressurisation or under pressurisation***						
7.2.2.1	General	11.2.2.1	General						
7.2.2.2	Tank over-pressurisation - causes	11.2.2.2	Causes of tank over pressurisation						
7.2.2.3	Tank over-pressurisation - precautions and corrective actions	11.2.2.3	Tank over pressurisation - precautions and corrective actions						
7.2.2.4	Tank under-pressurisation - causes	11.2.2.4	Tank under pressurisation - causes						
7.2.2.5	Tank under pressurisation - precautions and corrective actions	11.2.2.5	Tank under pressurisation - precautions and corrective actions						
7.3	Cargo and Ballast Systems	11.3	Cargo and ballast systems						
7.3.1	Operation Manual	11.3.1	Operation manual						
7.3.2	Cargo and Ballast System Integrity	11.3.2	Cargo and ballast system intergrity						
7.3.3	Loading Rates	11.3.3	Loading rates						
7.3.3.1	Venting arrangements	11.3.3.1	Venting arrangements						
7.3.3.2	Flow rates in loading lines	11.3.3.2	Flow rates in loading lines						
7.3.3..3	Rate of rise of liquid in the cargo tank	11.3.3.3	Rate of rise of liquid in the cargo tank						
7.3.3.4	Loading rates for ballast tanks	11.3.3.4	Loading rates for ballast tanks						
7.3.4	Monitoring of Void and Ballast Spaces	11.3.4	Monitoring of void and ballast spaces						
7.4	Power and Propulsion Systems	11.4	Power and propulsion systems						
7.5	Vapour Emission Control (VEC) Systems	11.5	Vapour recovery systems						
7.6	Stern Loading and Discharging Arrangements	11.7	Stern loading and discharging arrangements						
Chapter 7 moved to Chapter 11									

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CHAPTER 8	SHIP'S EQUIPMENT				CHAPTER 8	ALTERNATIVE AND EMERGING TECHNOLOGIES (NEW)		
8.1	***Shipboard Fire-Fighting Equipment***		These sections absorbed into revised Ch.5		8.1	Definition		NEW CHAPTER
8.1.1	General				8.2	Examples		
8.1.2	Tanker Fixed Fire-Fighting Installations – Cooling				***8.3***	***Due diligence process***		
8.1.3	Tanker Fixed Fire-Fighting Installations – Smothering				8.3.1	Evaluation		
8.1.3.1	Carbon dioxide flooding system				8.3.2	Impact		
8.1.3.2	Foam systems				8.3.3	Equivalency		
8.1.3.3	Water fog	5.3.1.2	Water mist		8.3.4	Formal safety risk assessments		
8.1.3.4	Water curtain	5.3.1.3	Water curtain		8.3.5	Stakeholder engagement		
8.1.3.5	Inert gas	5.3.5	Inert gas system					
8.1.4	Portable Fire Extinguishers	5.4	Portable Fire Extinguishers					
8.1.4.1	Types of portable fire extinguisher		see sub sections 5.2.1-5.2.4					
8.2	***Gas Testing Equipment***							
8.2.1	Introduction	2.4.2	Gas measurement instruments					
8.2.2	***Summary of Gas Testing Tasks***							
8.2.2.1	Atmosphere monitoring		These sections absorbed into revised Ch.5					
8.2.2.2	Enclosed space monitoring							
8.2.2.3	Inert gas atmosphere management							
8.2.3	The Provision of Gas Measuring Instruments	2.4.1	Provision of gas measurement instruments					
8.2.4	Alarm Functions on Gas Measuring Instruments	2.4.8	Gas measurement instrument alarms					
8.2.5	Sampling Lines	2.5.1	Gas sample lines					
8.2.6	Calibration	2.4.7.3	Calibrating gas measurement instruments					
8.2.7	Operational Testing and Inspection	2.4.7.1	Operational testing (self-testing) gas measurement instruments					
8.2.8	Disposable Personal Gas Monitors	2.4.7.4	Disposable personal gas monitors					
8.3	***Lifting Equipment***	12.12	Lifting equipment					
8.3.1	Inspection and Maintenance	12.12.1	Inspection and maintenance					
8.3.2	Training	12.12.2	Training					
	Majority old Chapter 8 merged into revised Chapters 2 and 5							

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CHAPTER 9	**MANAGEMENT OF SAFETY AND EMERGENCIES**				**CHAPTER 9**	**MANAGEMENT OF SAFETY AND EMERGENCIES**		
9.1	The International Safety Management (ISM) Code	9.1	The International Safety Management (ISM) Code		9.1	The International Safety Management (ISM) Code	9.1	The International Safety Management (ISM) Code
9.2	Safety Management Systems	9.2	Safety Management Systems		9.2	Safety Management Systems	9.2	Safety Management Systems
9.2.1	Risk Assessment	4.2.2	Risk Assessment (significantly rewritten section 4.2)		9.3	Work planning and permit to work systems	9.3.5	Work Planning Meetings
9.3	***Permit to Work Systems***	***4.7***	***Permit to work systems***		9.4	Hot work	9.4	Hot Work
9.3.1	General	4.7.1	General		9.4.1	Definition of hot work		New
9.3.2	Permit to Work Systems – Structure	4.7.2	Permit to work systems - structure		9.4.2	Control of hot work	9.4.1	Control of Hot Work
9.3.3	Permit to Work Systems – Principles of Operation	4.7.3	Permit to work systems - principles of operation		9.4.3	Hot work inside a designated space	9.4.2	Hot Work Inside a Designated Space
9.3.4	Permit to Work Forms	4.7.4	Permit to work forms		***9.4.4***	***Hot work outside a designated space***	***9.4.3***	***Hot Work Outside a Designated Space***
9.3.5	Work Planning Meetings	9.3	Work planning and permit to work systems		9.4.4.1	General	9.4.3.1	General
9.4	Hot Work	9.4	Hot work		9.4.4.2	Hot work in a gas safe area	9.4.3.2	Hot work in a gas safe area
9.4.1	Control of Hot Work	9.4.2	Control of hot work		9.4.4.3	Hot work inside the machinery space	9.4.3.3	Hot work inside a machinery space
9.4.2	Hot Work Inside a Designated Space	9.4.3	Hot work inside a designated space		9.4.4.4	Hot work over the side		New
9.4.3	***Hot Work Outside a Designated Space***	***9.4.4***	***Hot work outside a designated space***		***9.4.5***	***Hot work in dangerous or hazardous areas***	***9.4.4***	***Hot Work in Dangerous or Hazardous Areas***
9.4.3.1	General	9.4.4.1	General		9.4.5.1	General	9.4.4.1	General
9.4.3.2	Hot work in a gas safe area	9.4.4.2	Hot work in a gas safe area		9.4.5.2	Hot work in cargo tanks	9.4.4.2	Hot work in cargo tanks
9.4.3.3	Hot work inside a machinery space	9.4.4.3	Hot work inside the machinery space		9.4.5.3	Hot work in ballast tanks		New
9.4.4	***Hot Work in Dangerous or Hazardous Areas***	***9.4.5***	***Hot work in dangerous or hazardous areas***		9.4.5.4	Hot work in pumproom		New
9.4.4.1	General	9.4.5.1	General		9.4.5.5	Hot work within the cargo tank deck area	9.4.4.3	Hot work within the cargo tank deck area
9.4.4.2	Hot work in cargo tanks	9.4.5.2	Hot work in cargo tanks		9.4.5.6	Hot work in the vicinity of bunker tanks	9.4.4.4	Hot work in the vicinity of bunker tanks
9.4.4.3	Hot work within the cargo tank deck area	9.4.5.5	Hot work within the cargo tank deck area		9.4.5.7	Hot work on pipelines	9.4.4.5	Hot work on pipelines
9.4.4.4	Hot work in the vicinity of bunker tanks	9.4.5.6	Hot work in the vicinity of bunker tanks		9.4.5.8	Hot work diagrams		New
9.4.4.5	Hot work on pipelines	9.4.5.7	Hot work on pipelines		9.5	Electric welding equipment		New
9.5	Welding and burning equipment	*9.5*	*Electric welding equipment (partial)*		9.6	Other hazardous tasks	9.6	Other Hazardous Tasks
9.6	Other Hazardous Tasks	9.6	Other hazardous tasks		9.7	Management of contractors	9.7	Management of Contractors
9.7	Management of Contractors	9.7	Management of contractors		9.8	Managing simultaneous operations		New
9.8	***Repairs at a Facility Other Than a Shipyard***	***9.10***	***Repairs at a facility other than a shipyard***		***9.9***	***Hazards on ships with exposed transverse frames***		New
9.8.1	Introduction	9.10.1	Introduction		9.9.1	Manifold platform		New
9.8.2	General	9.10.2	General		9.9.2	Sampling and measurement points		New
9.8.3	Supervision and Control	9.10.3	Supervision and control		***9.10***	***Repairs at a facility other than a shipyard***	***9.8***	***Repairs at a Facility Other Than a Shipyard***
9.8.4	Pre-Arrival Planning	9.10.4	Pre-arrival planning		9.10.1	Introduction	9.8.1	Introduction
9.8.5	Mooring Arrangements	9.10.5	Mooring arrangements		9.10.2	General	9.8.2	General
9.8.6	Shore Facilities	9.10.6	Shore facilities		9.10.3	Supervision and control	9.8.3	Supervision and Control
9.8.7	Pre-Work Safety Meeting	9.10.7	Work planning meetings		9.10.4	Pre-arrival planning	9.8.4	Pre-Arrival Planning
9.8.8	Work Permits	9.10.8	Permits to work		9.10.5	Mooring arrangements	9.8.5	Mooring Arrangements
9.8.9	Tank Condition	9.10.9	Tank condition		9.10.6	Shore facilities	9.8.6	Shore Facilities
9.8.10	Cargo Lines	9.10.10	Cargo lines		9.10.7	Work planning meetings	9.8.7	Pre-Work Safety Meeting
9.8.11	***Fire-Fighting Precautions***	***9.10.11***	***Firefighting precautions***		9.10.8	Permits to work	9.8.8	Work Permits
9.8.11.1	Fire water	9.10.11.1	Fire water		9.10.9	Tank condition	9.8.9	Tank Condition
9.8.11.2	Fire patrols	9.10.11.2	Fire patrols		9.10.10	Cargo lines	9.8.10	Cargo Lines
9.8.12	Safety Officer	9.10.12	Safety officer		***9.10.11***	***Firefighting precautions***	***9.8.11***	***Fire-Fighting Precautions***
9.8.13	Hot Work	9.10.13	Hot work		9.10.11.1	Fire water	9.8.11.1	Fire water
9.9	***Shipboard Emergency Management***	***9.11***	***Shipboard emergency management***		9.10.11.2	Fire patrols	9.8.11.2	Fire patrols
9.9.1	General	9.11.1	General		9.10.12	Safety officer	9.8.12	Safety Officer
9.9.2	***Tanker Emergency Plan***	***9.11.2***	***Tanker emergency plan***		9.10.13	Hot work	9.8.13	Hot Work
9.9.2.1	Preparation	9.11.2.1	Preparation		***9.11***	***Shipboard emergency management***	***9.9***	***Shipboard Emergency Management***
9.9.2.2	Emergency organisation	9.11.2.2	Emergency organsiation		9.11.1	General	9.9.1	General
9.9.2.3	Preliminary action	9.11.2.3	Preliminary action		***9.11.2***	***Tanker emergency plan***	9.9.2	Tanker Emergency Plan
9.9.2.4	Ship's fire alarm signal	9.11.2.4	Ship's fire alarm signal		9.11.2.1	Preparation	9.9.2.1	Preparation
9.9.2.5	Fire control plans	9.11.2.5	Fire control plans		9.11.2.2	Emergency organsiation	9.9.2.2	Emergency organisation
9.9.2.6	Inspection and maintenance	9.11.2.6	Inspection and maintenance		9.11.2.3	Preliminary action	9.9.2.3	Preliminary action
9.9.2.7	Training and drills	9.11.2.7	Training and drills		9.11.2.4	Ship's fire alarm signal	9.9.2.4	Ship's fire alarm signal
9.9.3	***Actions in the Event of an Emergency***	***9.11.3***	***Action in an emergency***		9.11.2.5	Fire control plans	9.9.2.5	Fire control plans
9.9.3.1	Fire ona tanker at sea or at anchor	9.11.3.1	Fire on a tanker at sea or at anchor		9.11.2.6	Inspection and maintenance	9.9.2.6	Inspection and maintenance
9.9.3.2	Emergencies in port	9.11.3.2	Emergncies in port		9.11.2.7	Training and drills	9.9.2.7	Training and drills
9.9.3.3	Jettison of cargo	9.11.3.3	Jettison of cargo		***9.11.3***	***Action in an emergency***	***9.9.3***	***Actions in the Event of an Emergency***
9.9.3.4	Follow up	9.11.3.4	Follow-up		9.11.3.1	Fire on a tanker at sea or at anchor	9.9.3.1	Fire ona tanker at sea or at anchor
					9.11.3.2	Emergncies in port	9.9.3.2	Emergencies in port
					9.11.3.3	Jettison of cargo	9.9.3.3	Jettison of cargo
					9.11.3.4	Follow-up	9.9.3.4	Follow up

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CHAPTER 10	**ENCLOSED SPACES**				**CHAPTER 10**	**ENCLOSED SPACES**		
10.1	Definition and General Caution	10.2.1	General		10.1	Introduction to enclosed space entry safety		New
10.2	***Hazards of Enclosed Spaces***				***10.2***	***Safety management for entering enclosed spaces***		New
10.2.1	Assessment of Risk	10.3	Identifying enclosed spaces (updated section)		10.2.1	General	10.1	Definition and General Caution (parts absorbed)
10.2.2	Respiratory Hazards	10.4	The hazards of enclosed space atmospheres		10.2.2	Managing controlled entry into enclosed spaces		New
10.2.3	Hydrocarbon Vapours	10.4.2	Presence of toxic and/or flammable gases		10.2.3	Managing enclosed spaces not planned for entry		New
10.2.4	***Toxic Gases***	***1.4.5***	***Benzene and other aromatic hydrocarbons and*** *1.4.5.1 Aromatic hydrocarbons*		10.3	Identifying enclosed spaces	10.2.1	Assessment of Risk (absorbed into new section)
10.2.4.1	Benzene	1.4.5.2	Benzene and other aromatic hydrocarbons		10.4	The hazards of enclosed space atmospheres	10.2.2	Respiratory Hazards
10.2.4.2	Hydrogen sulphide	1.4.6	Hydrogen sulphide		10.4.1	Oxygen deficiency	10.2.5	Oxygen Deficiency
10.2.4.3	Mercaptans	1.4.7	Mercaptans		10.4.2	Presence of toxic and/or flammable gases	10.2.3	Hydrocarbon Vapours
10.2.5	Oxygen Deficiency	10.4.1	Oxygen deficiency		10.4.3	Risk from Inert Gas including nitrogen	10.2.6	Products of Inert Gas
10.2.6	Products of Inert Gas	10.4.3	Risk from Inert Gas including nitrogen		10.4.4	Oxygen enrichment		New
10.3	Atmosphere Tests Prior to Entry	10.7.2	Atmosphere tests before entry		10.5	General precautions		New
10.4	Control of Entry into Enclosed Spaces	10.7.1	Control of entry into enclosed spaces		10.6	Authorisation of entry		New
10.5	Safeguards for Enclosed Space Entry	10.8	Precautions during entry into enclosed spaces (new)		***10.7***	***Requirements for enclosed space entry***		New
10.6	***Emergency Procedures***	10.11	Rescue and evacuation from enclosed spaces		10.7.1	Control of entry into enclosed spaces	10.4	Control of Entry into Enclosed Spaces
10.6.1	Evacuation from Enclosed Spaces	10.11.1	Evacuation from enclosed spaces		10.7.2	Atmosphere tests before entry	10.3	Atmosphere Tests Prior to Entry
10.6.2	Rescue from Enclosed Spaces	10.11.2.3	The rescue operation		10.7.3	Enclosed space entry permit		New
10.6.3	Resuscitation	10.11.2.4	Resuscitation		10.8	Precautions during entry into enclosed spaces		New
10.7	Entry into Enclosed Spaces with Atmospheres Known or Suspected to be Unsafe for Entry	10.10	Entering enclosed spaces with atmospheres known or suspected to be unsafe		***10.9***	***Work in enclosed spaces***	***10.9***	***Work in Enclosed Spaces***
10.8	Respiratory Protective Equipment	10.13	Respiratory Protective Equipment		10.9.1	General requirements	10.9.1	General Requirements
10.8.1	Self-Contained Breathing Apparatus (SCBA)	10.13.1	Self-contained breathing apparatus		10.9.2	Opening equipment and fittings	10.9.2	Opening Equipment and Fittings
10.8.2	Air Line Breathing Apparatus	10.13.2	Air-line breathing apparatus		10.9.3	Use of tools	10.9.3	Use of Tools
10.8.3	Emergency Escape Breathing Device (EEBD)	10.13.3	Emergency Escape Breathing Device		10.9.4	Use of electric lights and electrical equipment	10.9.4	Use of Electric Lights and Electrical Equipment
10.8.4	Cartridge or Canister Face Masks	*withdrawn*			10.9.5	Removal of sludge, scale and sediment	10.9.5	Removal of Sludge, Scale and Sediment
10.8.5	Hose Mask (Fresh Air Breathing Apparatus)	*withdrawn*			10.9.6	Use of work boats	10.9.6	Work Boats
10.8.6	Equipment Maintenance	10.13.4	Equipment maintenance		10.10	Entering enclosed spaces with atmospheres known or suspected to be unsafe	10.7	Entry into Enclosed Spaces with Atmospheres Known or Suspected to be Unsafe for Entry
10.8.7	Stowage	10.13.5	Stowage		10.11	Rescue and evacuation from enclosed spaces	***10.6***	***Emergency Procedures***
10.8.8	Training	10.13.6	Breathing apparatus training		10.11.1	Evacuation from enclosed spaces	10.6.1	Evacuation from Enclosed Spaces
10.9	***Work in Enclosed Spaces***	***10.9***	***Work in enclosed spaces***		10.11.2	Organising rescue and recovery from enclosed spaces		New
10.9.1	General Requirements	10.9.1	General requirements		10.11.2.1	Composition of the rescue team		New
10.9.2	Opening Equipment and Fittings	10.9.2	Opening equipment and fittings		10.11.2.2	Team roles		New
10.9.3	Use of Tools	10.9.3	Use of tools		10.11.2.3	The rescue operation	10.6.2	Rescue from Enclosed Spaces
10.9.4	Use of Electric Lights and Electrical Equipment	10.9.4	Use of electric lights and electrical equipment		10.11.2.4	Resuscitation	10.6.3	Resuscitation
10.9.5	Removal of Sludge, Scale and Sediment	10.9.5	Removal of sludge, scale and sediment		10.12	Cargo pumproom entry precautions	10.10	Pumproom Entry Precautions
10.9.6	Work Boats	10.9.6	Use of work boats		10.12.1	Cargo pumproom entry procedures	10.10.2	Pumproom Entry Procedures
10.10	Pumproom Entry Precautions	10.12	Cargo pumproom entry precautions		10.12.2	Cargo pumproom ventilation	10.10.1	Ventilation
10.10.1	Ventilation	10.12.2	Cargo pumproom ventilation		10.13	Respiratory Protective Equipment	10.8	Respiratory Protective Equipment
10.10.2	Pumproom Entry Procedures	10.12.1	Cargo pumproom entry procedures		10.13.1	Self-contained breathing apparatus	10.8.1	Self-Contained Breathing Apparatus (SCBA)
10.11	Pumproom Operational Precautions	***12.1.15***	***Pumproom operational precautions***		10.13.2	Air-line breathing apparatus	10.8.2	Air Line Breathing Apparatus
10.11.1	General Precautions	12.1.15.1	General precautions		10.13.3	Emergency Escape Breathing Device	10.8.3	Emergency Escape Breathing Device (EEBD)
10.11.2	Cargo and Ballast Line Draining Procedures	12.1.15.2	Cargo and ballast line draining procedures		10.13.4	Equipment maintenance	10.8.6	Equipment Maintenance
10.11.3	Routine Maintenance and Housekeeping Issues	12.1.15.3	Routine maintenance and housekeeping issues		10.13.5	Stowage	10.8.7	Stowage
10.11.4	Maintenance of Electrical Equipment in the Pumproom	12.1.15.4	Maintaining electrical equipment in the pumproom		10.13.6	Breathing apparatus training	10.8.8	Training
10.11.5	Inspection and Maintenance of Pumproom Ventilation Fans	12.1.15.5	Inspecting and maintaining pumproom ventilation fans					
10.11.6	Testing of Alarms and Trips	12.1.15.6	Testing of alarms and trips			**Chapter 10 significantly updated by HFFG. Many sections revised and updated**		
10.11.7	Miscellaneous	12.1.15.7	Miscellaneous					

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CHAPTER 11	SHIPBOARD OPERATIONS				**CHAPTER 11**	**SHIPBOARD SYSTEMS**		
11.1	***Cargo Operations***	***12.1***	***Cargo operations***		11.1	Fixed inert gas systems	7.1	Fixed Inert Gas Systems
11.1.1	General	12.1.1	General		11.1.1	General	7.1.1	General
11.1.2	Setting of Lines and Valves	12.1.2	Setting of lines and valves		11.1.2	Sources of inert gas	7.1.2	Sources of Inert Gas
11.1.3	Valve Operation	12.1.3	Valve operation		11.1.3	Composition and quality of inert gas	7.1.3	Composition and Quality of Inert Gas
11.1.4	Pressure Surges	12.1.4	Pressure surges		11.1.4	Methods of replacing tank atmospheres	7.1.4	Methods of Replacing Tank Atmospheres
11.1.5	Butterfly and Non-Return (Check) Valves	12.1.5	Butterfly and non-return (check) valves		***11.1.5***	***Cargo tank atmosphere control***	***7.1.5***	***Cargo Tank Atmosphere Control***
11.1.6	***Loading Procedures***	***12.1.6***	***Loading procedures***		11.1.5.1	Inert gas operations	7.1.5.1	Inert Gas Operations
11.1.6.1	General	12.1.6.1	General		11.1.5.2	Inert gas system maintenance	7.1.5.2	Inert gas system maintenance
11.1.6.2	Joint agreement on readiness to load	12.1.6.2	Joint agreement on readiness to load		11.1.5.3	Degradation of inert gas quality	7.1.5.3	Degradation of inert gas quality
11.1.6.3	Emergency shutdown plan	12.1.6.3	Emergency Shutdown plan		11.1.6	Use during cargo tank operations	7.1.6	Application to Cargo Tank Operations
11.1.6.4	Supervision	12.1.6.4	Supervision		11.1.6.1	Inerting empty tanks	7.1.6.1	Inerting of empty tanks
11.1.6.5	Inert Gas procedures	12.1.6.5	Inert gas procedures		11.1.6.2	Loading cargo or ballast into inert tanks	7.1.6.2	Loading cargo or ballast into tanks in an inert condition
11.1.6.6	Closed loading	12.1.6.6	Closed loading		11.1.6.3	Simultaneous cargo operations	7.1.6.3	Simultanoeus cargo or ballast operations
11.1.6.7	Commencement of loading alongside a terminal	12.1.6.7	Starting to load alongside a terminal		11.1.6.4	Vapour balancing	7.1.6.4	Vapour balancing during ship-to-ship transfers
11.1.6.8	Commencement of loading at offshore buoy berths	12.1.6.8	Starting to load at offshore buoy berths		11.1.6.5	Loaded passage	7.1.6.5	Loaded passage
11.1.6.9	Commencement of loading through a stern line	12.1.6.9	Starting to load through a stern manifold		11.1.6.6	Discharge of cargo or ballast from inert tanks	7.1.6.6	Discharge of cargo or ballast from tanks in an inert condition
11..1.6.10	Commencement of loading through a bow line	12.1.6.10	Starting to load through a bow connection		11.1.6.7	Ballast passage	7.1.6.7	Ballast passage
11.1.6.11	Loading through pumproom lines	12.1.6.11	Loading through pumproom lines		11.1.6.8	Static electricity precautions	7.1.6.8	Static electricity precautions
11.1.6.12	Cargo sampling on commencement of loading	12.1.6.12	Cargo sampling at the start of loading		11.1.6.9	Tank washing, including Crude Oil Washing	7.1.6.9	Tank washing, including crude oil washing
11.1.6.13	Periodic checks during loading	12.1.6.13	Periodic checks during loading		11.1.6.10	Purging	7.1.6.10	Purging
11.1.6.14	Fluctuation of loading rate	12.1.6.6	Closed loading		11.1.6.11	Gas freeing	7.1.6.11	Gas freeing
11.1.6.15	Cessation of pumping by the terminal	12.1.6.4	Supervision		11.1.6.12	Preparation for tank entry	7.1.6.12	Preparation for tank entry
11.1.6.16	Topping-off on board the tanker	12.1.6.14	Topping-off on board the tanker		***11.1.7***	***Precautions to be taken to avoid health hazards***	***7.1.7***	***Precautions to be Taken to Avoid Health Hazards***
11.1.6.17	Checks after loading	12.1.6.17	Checks after loading		11.1.7.1	Inert gas on deck	7.1.7.1	Inert gas on deck
11.1.7	***Loading Static Accumulator Oils***	***12.1.7***	***Loading static accumulator oils***		11.1.7.2	Entry into cargo tanks	7.1.7.3	Entry into cargo tanks
11.1.7.1	General	12.1.7.1	General		11.1.7.3	Scrubber and condensate water	7.1.7.4	Scrubber and condensate water
11.1.7.2	Controlling electrostatic generation	12.1.7.2	Controlling electrostatic generation		11.1.8	Cargo tank protection against over/under-pressure	7.1.8	Cargo Tank Protection Against Over/Under-Pressur
11.1.7.3	During initial filling of a tank	12.1.7.3	During the initial filling of a tank		11.1.8.1	Pressure/Vacuum breakers	7.1.8.1	Pressure/vacuum breakers
11.1.7.4	Minimising hazards from water	12.1.7.4	Minimising hazards from water		11.1.8.2	Pressure/Vacuum valves	7.1.8.2	Pressure/vacuum valves
11.1.7.5	Examples	12.1.7.5	Examples		11.1.8.3	Full flow pressure/vacuum venting arrangements	7.1.8.3	Full flow pressure/vacuum ventings arrangements
11.1.7.6	Practical considerations	12.1.7.6	Practical considerations		11.1.8.4	Individual tank pressure monitoring and alarm systems	7.1..8.4	Individual tank pressure monitoring and alarm systems
11.1.7.7	Spread loading	12.1.7.7	Spread loading		***11.1.9***	***Product carriers fitted with an inert gas system***	***7.1.10***	***Product Carriers Fitted with an Inert Gas System***
11.1.7.8	Limitation of product velocity (loading rates) after the intial filling period (bulk loading)	12.1.7.8	Limitation of product velocity (loading rates) after the initial filling period (bulk loading)		11.1.9.1	General	7.1.10.1	General

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11.1.7.9	Antistatic additives	12.1.7.9	Anti-static additives		11.1.9.2	Carrying products with a flashpoint above 60degC	7.1.10.2	Carriage of products having a flashpoint exceeding 60degC
11.1.7.10	Loading of different grades of product into unclean tanks (switch loading)	12.1.7.10	Loading different grades of product into unclean tanks (switch loading)		11.1.9.3	Additional purging and gas freeing	7.1.10.3	Additional purging and gas freeing
11.1.8	Loading Very High Vapour Pressure Cargoes	12.1.8	Loading very high vapour pressure cargoes		11.1.10	Cold weather precautions for inert gas systems	7.1.11	Cold Weather Precautions for Inert Gas Systems
11.1.9	***Loading Cargoes Containing Hydrogen Sulphide (H2S)***	***12.1.9***	***Loading cargoes containing hydrogen sulphide***		11.1.10.1	Condensation in inert gas piping	7.1.11.1	Condensation in inert gas piping
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11.1.9.2	Precautions when loading cargoes containing H2S	12.1.9.2	Precautions when loading cargoes containing hydrogen sulphide		11.1.10.3	Safety devices	7.1.11.3	Safety devices
11.1.10	Loading Cargoes Containing Benzene	12.1.10.1	Cargoes containing benzene		11.1.10.4	Sea chests	7.1.11.4	Sea chests
11.1.11	Loading Heated Products	12.1.11.1	Loading heated products		11.1.11	Inert gas system failure	7.1.12	Inert Gas System Failure
11.1.12	Loading Over the Top (sometimes known as 'Loading Overall')	12.1.12	Loading over the top (or loading overall)		11.1.11.1	Action to take should the inert gas system fail	7.1.12.1	Action to be taken on failure of the inert gas system
11.1.13	***Loading at Terminals Having Vapour Emission Control (VEC) Systems***	***23.7.7***	***Loading at terminals with Vapour Emission Control Systems*** *(incl. sub-sections 23.7.7.1-23.7.7.10) see also 18.3*		11.1.11.2	Follow-up action on crude oil tankers	7.1.12.2	Follow-up action on crude oil tankers
11.1.13.1	General	23.7.7.1	General		11.1.11.3	Follow-up action on product tankers	7.1.12.3	Follow-up action on product tankers
11.1.13.2	Misconnection of liquid and vapour lines	23.7.7.2	Misconnection of liquid and vapour lines		11.1.12	Emergency inert gas supply	7.1.9	Emergency Inert Gas Supply
11.1.13.3	Vapour over/under-pressure	23.7.7.3	Vapour over/under pressure		11.1.13	Inert gas plant repairs	7.1.13	Inert Gas Plant Repairs
11.1.13.4	Cargo tank overfill	23.7.7.4	Cargo tank overfill		***11.2***	***Venting systems***	***7.2***	***Venting Systems***
11.1.13.5	Sampling and gauging	23.7.7.5	Sampling and gauging		11.2.1	General	7.2.1	General
11.1.13.6	Fire/explosion/detonation	23.7.7.6	Fire/explosion/detonation		***11.2.2***	***Tank over pressurisation or under pressurisation***	***7.2.2***	***Tank Over-Pressurisation and Under-Pressurisation***
11.1.13.7	Liquid condensate in the vapour line	23.7.7.7	Liquid condensate in the vapour line		11.2.2.1	General	7.2.2.1	General
11.1.13.8	Electrostatic discharge	23.7.7.8	Electrostatic discharge		11.2.2.2	Causes of tank over pressurisation	7.2.2.2	Tank over-pressurisation - causes
11.1.13.9	Training	23.7.7.9	Training		11.2.2.3	Tank over pressurisation - precautions and corrective actions	7.2.2.3	Tank over-pressurisation - precautions and corrective actions
11.1.13.10	Communications	23.7.7.10	Communications		11.2.2.4	Tank under pressurisation - causes	7.2.2.4	Tank under-pressurisation - causes
11.1.14	***Discharging Procedures***	***12.1.13***	***Discharging procedures***		11.2.2.5	Tank under pressurisation - precautions and corrective actions	7.2.2.5	Tank under pressurisation - precautions and corrective actions
11.1.14.1	Joing agreement on readiness to discharge	12.1.13.1	Joint agreement on readiness to discharge		11.3	Cargo and ballast systems	7.3	Cargo and Ballast Systems
11.1.14.2	Operation of pumps and valves	12.1.13.2	Operating pumps and valves		11.3.1	Operation manual	7.3.1	Operation Manual
11.1.14.3	Closed discharging	12.1.13.3	Closed discharging		11.3.2	Cargo and ballast system intergrity	7.3.2	Cargo and Ballast System Integrity
11.1.14.4	Inert gas procedures	12.1.13.4	Inert gas procedures		11.3.3	Loading rates	7.3.3	Loading Rates
11.1.14.5	Pressurising of cargo tanks	12.1.13.5	Failure of the inert gas system during cargo discharge		11.3.3.1	Venting arrangements	7.3.3.1	Venting arrangements
11.1.14.6	Crude oil washing	12.1.13.6	Crude oil washing		11.3.3.2	Flow rates in loading lines	7.3.3.2	Flow rates in loading lines
11.1.14.7	Commencement of discharge alongside a terminal	12.1.13.7	Starting discharge alongside a terminal		11.3.3.3	Rate of rise of liquid in the cargo tank	7.3.3.3	Rate of rise of liquid in the cargo tank
11.1.14.8	Commencement of discharge at an offshore terminal	12.1.13.8	Starting discharge at an offshore terminal		11.3.3.4	Loading rates for ballast tanks	7.3.3.4	Loading rates for ballast tanks
11.1.14.9	Commencement of discharge througha stern line	12.1.13.9	Starting discharge through a stern line		11.3.4	Monitoring of void and ballast spaces	7.3.4	Monitoring of Void and Ballast Spaces
11.1.14.10	Periodic checks during discharge	12.1.13.10	Periodic checks during discharge		11.4	Power and propulsion systems	7.4	Power and Propulsion Systems
11.1.14.11	Fluctuations in discharge rate	*withdrawn*	*Covered in SSSCL agreements*		11.5	Vapour recovery systems	7.5	Vapour Emission Control (VEC) Systems
11.1.14.12	Simultanoeus ballast and cargo handling	*withdrawn*	*Refers to ballasting of cargo tanks*		11.6	Volatile Organic Compound recovery systems		New
11.1.14.13	Failure of the inert gas system during cargo discharge	11.1.11	Inert gas system failure and 11.1.11.1 Action to take should the inert gas system fail		11.7	Stern loading and discharging arrangements	7.6	Stern Loading and Discharging Arrangements
11.1.14.14	Stripping and draining of cargo tanks	12.1.13.11	Stripping and draining cargo tanks					
11.1.15	***Pipeline and Hose Clearing Following Cargo Operations***	***12.1.14***	***Pipeline and hose clearing after cargo operations***					
11.1.15.1	General	12.1.14.1	General					
11.1.15.2	Line displacement with water	12.1.14.2	Line displacement with water					

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11.1.15.3	Line draining	12.1.14.3	Line draining					
11.1.15.4	Clearing hoses and loading arms to the terminal	12.1.14.4	Clearing hoses and Marine Loading Arms to the terminal					
11.1.15.5	Clearing hoses and loading arms to the ship	12.1.14.5	Clearing hoses and Marine Loading Arms to the ship					
11.1.15.6	Clearing ship's cargo pipelines	12.1.14.6	Clearing ship's cargo pipelines					
11.1.15.7	Gas release in the bottom of tanks	12.1.14.7	Gas release in the bottom of tanks					
11.1.15.8	Receiving nitrogen from shore	12.1.14.8	Receiving nitrogen from shore					
11.1.15.9	Pigging	16.10	Pigging					
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11.2.3	Heavy Weather Ballast	12.2.3	Heavy weather ballast					
11.2.4	Loading and Discharge Planning	12.2.4	Loading and discharge planning					
11.3	***Tank Cleaning***	***12.3***	***Tank cleaning***					
11.3.1	General	12.3.1	General					
11.3.2	Tank Washing Risk Management	12.3.2	Tank washing risk management					
11.3.3	***Supervision and Preparation***	12.3.3	Supervision and preparation					
11.3.3.1	Supervision	12.3.3	Supervision and preparation					
11.3.3.2	Preparation	12.3.3	Supervision and preparation					
11.3.4	***Tank Atmospheres***	***12.3.4***	***Tank atmospheres***					
11.3.4.1	Inert Gas procedures	12.3.4.1	Inert					
11.3.4.2	Non-inert	12.3.4.2	Non-inert					
11.3.5	***Tank Washing***	***12.3.5***	***Tank washing***					
11.3.5.1	Washing in an inert atmosphere	12.3.5.1	Washing in an inert atmosphere					
11.3.5.2	Washing in a non-inert atmosphere	12.3.5.2	Washing in a non-inert atmosphere					
11.3.6	***Precautions for Tank Washing***	***12.3.6***	***Precautions for tank washing***					
11.3.6.1	Portable tank washing machines and hoses	12.3.6.1	Portable tank washing machines and hoses					
11.3.6.2	Portable hoses for use with both fixed and portable tank washing machines	12.3.6.2	Portable hoses for fixed and portable tank washing machines					
11.3.6.3	Testing of tank cleaning hoses	12.3.6.3	Testing tank cleaning hoses					
11.3.6.4	Tank cleaning concurrently with cargo handling	12.3.6.4	Tank cleaning concurrently with cargo handling					
11.3.6.5	Free fall	12.3.6.5	Free fall					
11.3.6.6	Spraying of water	12.3.6.6	Spraying water					
11.3.6.7	Exclusion of cargo oil from the engine room	12.3.6.7	Excluding cargo oil from the engine room					
11.3.6.8	Special tank cleaning procedures	12.3.6.8	Special tank cleaning procedures					
11.3.6.9	Leaded gasoline	12.3.6.9	Leaded gasoline					
11.3.6.10	Removal of sludge, scale and sediment	12.3.6.10	Removing sludge, scale and sediment					
11.3.6.11	Cleaning of contaminated ballast spaces	12.3.6.11	Cleaning contaminated ballast spaces					
11.4	***Gas Freeing***	***12.4***	***Gas freeing***					
11.4.1	General	12.4.1	General					
11.4.2	Gas Free for Entry Without Breathing Apparatus	12.4.2	Gas free for entry					
11.4.3	Procedures and Precautions	12.4.3	Procedures and precautions					
11.4.4	Gas Testing and Measurement	12.4.4	Gas testing and measurement					
11.4.5	Fixed Gas Freeing Equipment	12.4.5	Fixed gas freeing equipment					
11.4.6	Portable Fans	12.4.6	Portable fans					
11.4.7	Ventilating Double Hull Ballast Tanks	12.4.7	Ventilating double hull ballast tanks					
11.4.8	Gas Freeing in Preparation for Hot Work	12.4.8	Gas freeing in preparation for hot work					
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11.5.2	Advance Notice	12.5.2	Advance notice					
11.5.3	Tank Washing Machines	12.5.3	Tank washing machines					
11.5.4	Control of Tank Atmosphere	12.5.4	Control of tank atmospheres					

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11.5.5	Precautions Against Leakage from the Washing System	12.5.5	Precautions against leaks from the washing system						
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11.5.8	Control of Vapour Emissions	*withdrawn*	*refers to routine cargo tank ballasting*						
11.5.9	Supervision	12.5.8	Supervision						
11.5.10	Cautionary Notice	*withdrawn*	*no longer necessary*						
11.6	***Ballast Operations***								
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11.6.3	Loading Cargo Tank Ballast	12.6.2	Loading cargo tank ballast						
11.6.3.1	Operation of cargo pumps	12.6.2.1	Operation of cargo pumps						
11.6.3.2	Sequence of valve operations	12.6.2.2	Sequence of valve operations						
11.6.4	Loading Segregated Ballast	12.6.3	Loading segregated ballast						
11.6.5	***Deballasting in Port***	*withdrawn*							
11.6.5.1	Oil content monitoring	*withdrawn*							
11.6.5.2	Deballasting of a ship fitted with an inert gas system	*withdrawn*							
11.6.6	Discharging Segregated Ballast	12.6.4	Discharging segreated ballast						
11.6.6.1	Air draught management	12.6.3	Loading segregated ballast and 12.6.4.1 discharging segregated ballast to shore (refer)						
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11.6.7	Ballast Water Exchange at Sea	12.6.5	Ballast water exchange at sea						
11.6.8	Discharging Cargo Tank Ballast at Sea	*withdrawn*							
11.7	***Cargo Leakage into Double Hull Tanks***	***12.7***	***Cargo leaks into double hull tanks***						
11.7.1	Action to be Taken	12.7.1	Action to be taken						
11.7.2	Inerting Double Hull Tanks	12.7.2	Inerting double hull tanks						
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11.8.1	General	12.8.1	General						
11.8.2	***Measuring and Sampling Non-Inerted Tanks***	***12.8.2***	***Measuring and sampling non-inerted tanks***						
11.8.2.1	General	12.8.2.1	General						
11.8.2.2	Introduction of equipment into a tank	12.8.2.2	Introducing equipment to a tank						
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11.8.2.5	Ullaging and dipping in the presence of water mists	12.8.2.5	Ullaging and dipping in water mists						
11.8.3	Measuring and Sampling Inerted Tanks	12.8.3	Measuring and sampling in inerted tanks						
11.8.3.1	Static accumulator cargoes in inerted cargo tanks	12.8.3.1	Static accumulator cargoes inerted tanks						
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11.8.5	Closed Gauging for Custody Transfer	12.8.5	Closed gauging for custody transfer						
11.9	***Transfers Between Vessels***	***12.9***	***Transfer between ships***						
11.9.1	Ship-to-Ship Transfers	12.9.1	Ship to ship transfers						
11.9.2	Ship-to-Barge and Barge-to-Ship Transfers	12.9.2	Ship to barge and barge to ship transfers						
11.9.3	Ship-to-Ship Transfers Using Vapour Balancing	12.9.3	Ship to ship transfers using vapour balancing						
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11.9.5	Ship-to-Ship Electric Currents	12.9.5	Ship to ship electric currents						
	Majority old Chapter 11 moved to Chapter 12								

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Ref	ISGOTT 5	Ref	Primary I6 to I5 Matching		Ref	ISGOTT 6	Ref	Primary I5 to I6 Matching
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12.1	Liquefied Gases	13.1	Liquified gases		***12.1***	***Cargo operations***	***11.1***	***Cargo Operations***
12.2	***Ship's Stores***	***13.2***	***Ship's stores***		12.1.1	General	11.1.1	General
12.2.1	General	13.2.1	General		12.1.2	Setting of lines and valves	11.1.2	Setting of Lines and Valves
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12.2.5	Spare Gear Storage	13.2.5	Spare gear storage		***12.1.6***	***Loading procedures***	***11.1.6***	***Loading Procedures***
12.3	Cargo and Bunker Samples	13.3	Cargo and bunker samples		12.1.6.1	General	11.1.6.1	General
12.4	***Other Materials***	***13.4***	***Other materials***		12.1.6.2	Joint agreement on readiness to load	11.1.6.2	Joint agreement on readiness to load
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12.5.1.1	Loading and discharging	13.5.1.1	Loading and discharging		12.1.6.6.1	Risk of overfilling		New (expanded from 11.1.6.6)
12.5.1.2	Precautions during handling	13.5.2	Precautions during handling		12.1.6.7	Starting to load alongside a terminal	11.1.6.7	Commencement of loading alongside a terminal
12.5.2	Dangerous Goods	13.5.2	Dangerous goods		12.1.6.8	Starting to load at offshore buoy berths	11.1.6.8	Commencement of loading at offshore buoy berths
12.5.2.1	Tetraethyl Lead (TEL) and Tetramethyl Lead (TML)	13.5.2.1	Tetraethyl lead and tetramethyl lead		12.1.6.9	Starting to load through a stern manifold	11.1.6.9	Commencement of loading through a stern line
12.5.2.2	Additives (Antistatic, Inhibitors, Dyes, H2S Knockdown)	13.5.2.2	Additives (anti-static, inhibitors, dyes, hydrogen sulphide knockdown)		12.1.6.10	Starting to load through a bow connection	11..1.6.10	Commencement of loading through a bow line
12.5.3	Entry into Holds	13.5.3	Entering holds and storage spaces		12.1.6.11	Loading through pumproom lines	11.1.6.11	Loading through pumproom lines
12.5.4	Portable Electrical Equipment	13.5.4	Portable electrical equipment		12.1.6.12	Cargo sampling at the start of loading	11.1.6.12	Cargo sampling on commencement of loading
12.5.5	Smothering Type Fire Extinguishing Systems	13.5.5	Smothering type fire-extinguishing systems		12.1.6.13	Periodic checks during loading	11.1.6.13	Periodic checks during loading
12.5.6	Fire-Fighting Precautions	13.5.6	Fire fighting precautions		12.1.6.14	Topping-off on board the tanker	11.1.6.16	Topping-off on board the tanker
12.5.7	Forecastle Spaces and Midship Stores	13.5.8	Deck cargo		12.1.6.15	Blending operations		New
12.5.8	Deck Cargo	13.5.9	Barges		12.1.6.16	Doping and additives: anti-static, inhibitors, dyes, hydrogen sulphide knockdown		New
12.5.9	Barges				12.1.6.17	Checks after loading	11.1.6.17	Checks after loading
					12.1.7	***Loading static accumulator oils***	***11.1.7***	***Loading Static Accumulator Oils***
	Old Ch.12 moved to Ch.13				12.1.7.1	General	11.1.7.1	General
					12.1.7.2	Controlling electrostatic generation	11.1.7.2	Controlling electrostatic generation
					12.1.7.3	During the initial filling of a tank	11.1.7.3	During initial filling of a tank
					12.1.7.4	Minimising hazards from water	11.1.7.4	Minimising hazards from water
					12.1.7.5	Examples	11.1.7.5	Examples
					12.1.7.6	Practical considerations	11.1.7.6	Practical considerations
					12.1.7.7	Spread loading	11.1.7.7	Spread loading
					12.1.7.8	Limitation of product velocity (loading rates) after the initial filling period (bulk loading)	11.1.7.8	Limitation of product velocity (loading rates) after the intial filling period (bulk loading)
					12.1.7.9	Anti-static additives	11.1.7.9	Antistatic additives
					12.1.7.10	Loading different grades of product into unclean tanks (switch loading)	11.1.7.10	Loading of different grades of product into unclean tanks (switch loading)
					12.1.8	Loading very high vapour pressure cargoes	11.1.8	Loading Very High Vapour Pressure Cargoes
					12.1.9	***Loading cargoes containing hydrogen sulphide***	***11.1.9***	***Loading Cargoes Containing Hydrogen Sulphide (H2S)***
					12.1.9.1	General	11.1.9.1	General
					12.1.9.2	Precautions when loading cargoes containing hydrogen sulphide	11.1.9.2	Precautions when loading cargoes containing H2S
					12.1.10	***Benzene and Mercury***		New

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					12.1.10.1	Cargoes containing benzene	11.1.10	Loading Cargoes Containing Benzene
					12.1.10.2	Cargoes containing mercury		New
					12.1.11	***Loading heated products/cold oil cargoes***		New
					12.1.11.1	Loading heated products	11.1.11	Loading Heated Products
					12.1.11.2	Loading cold oil cargoes		New
					12.1.12	Loading over the top (or loading overall)	11.1.12	Loading Over the Top (sometimes known as 'Loading Overall')
					12.1.13	***Discharging procedures***	***11.1.14***	***Discharging Procedures***
					12.1.13.1	Joint agreement on readiness to discharge	11.1.14.1	Joing agreement on readiness to discharge
					12.1.13.2	Operating pumps and valves	11.1.14.2	Operation of pumps and valves
					12.1.13.3	Closed discharging	11.1.14.3	Closed discharging
					12.1.13.4	Inert gas procedures	11.1.14.4	Inert gas procedures
					12.1.13.5	Failure of the inert gas system during cargo discharge	11.1.14.13	Failure of the inert gas system during cargo discharge
					12.1.13.6	Crude oil washing	11.1.14.6	Crude oil washing
					12.1.13.7	Starting discharge alongside a terminal	11.1.14.7	Commencement of discharge alongside a terminal
					12.1.13.8	Starting discharge at an offshore terminal	11.1.14.8	Commencement of discharge at an offshore terminal
					12.1.13.9	Starting discharge through a stern line	11.1.14.9	Commencement of discharge through a stern line
					12.1.13.10	Periodic checks during discharge	11.1.14.10	Periodic checks during discharge
					12.1.13.11	Stripping and draining cargo tanks	11.1.14.14	Stripping and draining of cargo tanks
					12.1.14	***Pipeline and hose clearing after cargo operations***	***11.1.15***	***Pipeline and Hose Clearing Following Cargo Operations***
					12.1.14.1	General	11.1.15.1	General
					12.1.14.2	Line displacement with water	11.1.15.2	Line displacement with water
					12.1.14.3	Line draining	11.1.15.3	Line draining
					12.1.14.4	Clearing hoses and Marine Loading Arms to the terminal	11.1.15.4	Clearing hoses and loading arms to the terminal
					12.1.14.5	Clearing hoses and Marine Loading Arms to the ship	11.1.15.5	Clearing hoses and loading arms to the ship
					12.1.14.6	Clearing ship's cargo pipelines	11.1.15.6	Clearing ship's cargo pipelines
					12.1.14.7	Gas release in the bottom of tanks	11.1.15.7	Gas release in the bottom of tanks
					12.1.14.8	Receiving nitrogen from shore	11.1.15.8	Receiving nitrogen from shore
					12.1.15	***Pumproom operational precautions***	10.11	Pumproom Operational Precautions
					12.1.15.1	General precautions	10.11.1	General Precautions
					12.1.15.2	Cargo and ballast line draining procedures	10.11.2	Cargo and Ballast Line Draining Procedures
					12.1.15.3	Routine maintenance and housekeeping issues	10.11.3	Routine Maintenance and Housekeeping Issues
					12.1.15.4	Maintaining electrical equipment in the pumproom	10.11.4	Maintenance of Electrical Equipment in the Pumproom
					12.1.15.5	Inspecting and maintaining pumproom ventilation fans	10.11.5	Inspection and Maintenance of Pumproom Ventilation Fans
					12.1.15.6	Testing of alarms and trips	10.11.6	Testing of Alarms and Trips
					12.1.15.7	Miscellaneous	10.11.7	Miscellaneous
					12.2	***Stability, stress, trim and sloshing considerations***	***11.2***	***Stability, Stress, Trim and Sloshing Considerations***
					12.2.1	General	11.2.1	General
					12.2.2	Free surface effects	11.2.2	Free Surface Effects
					12.2.3	Heavy weather ballast	11.2.3	Heavy Weather Ballast
					12.2.4	Loading and discharge planning	11.2.4	Loading and Discharge Planning
					12.2.5	Intact and damage stability		New
					12.3	***Tank cleaning***	***11.3***	***Tank Cleaning***
					12.3.1	General	11.3.1	General
					12.3.2	Tank washing risk management	11.3.2	Tank Washing Risk Management

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					12.3.3	Supervision and preparation	***11.3.3***	***Supervision and Preparation***
					12.3.4	***Tank atmospheres***	***11.3.4***	***Tank Atmospheres***
					12.3.4.1	Inert	11.3.4.1	Inert Gas procedures
					12.3.4.2	Non-inert	11.3.4.2	Non-inert
					12.3.5	***Tank washing***	***11.3.5***	***Tank Washing***
					12.3.5.1	Washing in an inert atmosphere	11.3.5.1	Washing in an inert atmosphere
					12.3.5.2	Washing in a non-inert atmosphere	11.3.5.2	Washing in a non-inert atmosphere
					12.3.6	***Precautions for tank washing***	***11.3.6***	***Precautions for Tank Washing***
					12.3.6.1	Portable tank washing machines and hoses	11.3.6.1	Portable tank washing machines and hoses
					12.3.6.2	Portable hoses for fixed and portable tank washing machines	11.3.6.2	Portable hoses for use with both fixed and portable tank washing machines
					12.3.6.3	Testing tank cleaning hoses	11.3.6.3	Testing of tank cleaning hoses
					12.3.6.4	Tank cleaning concurrently with cargo handling	11.3.6.4	Tank cleaning concurrently with cargo handling
					12.3.6.5	Free fall	11.3.6.5	Free fall
					12.3.6.6	Spraying water	11.3.6.6	Spraying of water
					12.3.6.7	Excluding cargo oil from the engine room	11.3.6.7	Exclusion of cargo oil from the engine room
					12.3.6.8	Special tank cleaning procedures	11.3.6.8	Special tank cleaning procedures
					12.3.6.9	Leaded gasoline	11.3.6.9	Leaded gasoline
					12.3.6.10	Removing sludge, scale and sediment	11.3.6.10	Removal of sludge, scale and sediment
					12.3.6.11	Cleaning contaminated ballast spaces	11.3.6.11	Cleaning of contaminated ballast spaces
					12.3.7	Wash water analysis		New
					12.4	***Gas freeing***	***11.4***	***Gas Freeing***
					12.4.1	General	11.4.1	General
					12.4.2	Gas free for entry	11.4.2	Gas Free for Entry Without Breathing Apparatus
					12.4.3	Procedures and precautions	11.4.3	Procedures and Precautions
					12.4.4	Gas testing and measurement	11.4.4	Gas Testing and Measurement
					12.4.5	Fixed gas freeing equipment	11.4.5	Fixed Gas Freeing Equipment
					12.4.6	Portable fans	11.4.6	Portable Fans
					12.4.7	Ventilating double hull ballast tanks	11.4.7	Ventilating Double Hull Ballast Tanks
					12.4.8	Gas freeing in preparation for hot work	11.4.8	Gas Freeing in Preparation for Hot Work
					12.5	***Crude oil washing***	***11.5***	***Crude Oil Washing***
					12.5.1	General	11.5.1	General
					12.5.2	Advance notice	11.5.2	Advance Notice
					12.5.3	Tank washing machines	11.5.3	Tank Washing Machines
					12.5.4	Control of tank atmospheres	11.5.4	Control of Tank Atmosphere
					12.5.5	Precautions against leaks from the washing	11.5.5	Precautions Against Leakage from the Washing
					12.5.6	Avoiding oil and water mixtures	11.5.6	Avoidance of Oil and Water Mixtures
					12.5.7	Isolating the tank cleaning heater	11.5.7	Isolation of the Tank Cleaning Heater
					12.5.8	Supervision	11.5.9	Supervision
					12.6	Ballast operations	***11.6***	***Ballast Operations***
					12.6.1	General	11.6.2	General
					12.6.2	Loading cargo tank ballast	11.6.3	Loading Cargo Tank Ballast
					12.6.2.1	Operation of cargo pumps	11.6.3.1	Operation of cargo pumps
					12.6.2.2	Sequence of valve operations	11.6.3.2	Sequence of valve operations
					12.6.3	Loading segregated ballast	11.6.4	Loading Segregated Ballast
					12.6.4	Discharging segreated ballast	11.6.6	Discharging Segregated Ballast
					12.6.4.1	Discharging segregated ballast to shore	11.6.6.2	Discharging segregated ballast to shore
					12.6.5	Ballast water exchange at sea	11.6.7	Ballast Water Exchange at Sea
					12.7	***Cargo leaks into double hull tanks***	***11.7***	***Cargo Leakage into Double Hull Tanks***
					12.7.1	Action to be taken	11.7.1	Action to be Taken
					12.7.2	Inerting double hull tanks	11.7.2	Inerting Double Hull Tanks
					12.8	***Cargo measurement, ullaging, dipping and***	***11.8***	***Cargo Measurement, Ullaging, Dipping and***
					12.8.1	General	11.8.1	General

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					12.8.2	***Measuring and sampling non-inerted tanks***	***11.8.2***	***Measuring and Sampling Non-Inerted Tanks***
					12.8.2.1	General	11.8.2.1	General
					12.8.2.2	Introducing equipment to a tank	11.8.2.2	Introduction of equipment into a tank
					12.8.2.3	Static accumulator oils	11.8.2.3	Static accumulator oils
					12.8.2.4	Static non-accumulator oils	11.8.2.4	Static non-accumulator oils
					12.8.2.5	Ullaging and dipping in water mists	11.8.2.5	Ullaging and dipping in the presence of water mists
					12.8.3	Measuring and sampling inerted tanks	11.8.3	Measuring and Sampling Inerted Tanks
					12.8.3.1	Static accumulator cargoes in inerted tanks	11.8.3.1	Static accumulator cargoes in inerted cargo tanks
					12.8.4	Measuring and sampling cargoes containing toxic substances	11.8.4	Measuring and Sampling Cargoes Containing Toxic Substances
					12.8.5	Closed gauging for custody transfer	11.8.5	Closed Gauging for Custody Transfer
					12.8.6	Cargo tank monitoring systems		New
					12.9	***Transfer between ships***	***11.9***	***Transfers Between Vessels***
					12.9.1	Ship to ship transfers	11.9.1	Ship-to-Ship Transfers
					12.9.1.1	Transfer guide		New
					12.9.2	Ship to barge and barge to ship transfers	11.9.2	Ship-to-Barge and Barge-to-Ship Transfers
					12.9.3	Ship to ship transfers using vapour balancing	11.9.3	Ship-to-Ship Transfers Using Vapour Balancing
					12.9.4	Ship to ship transfers using terminal facilities	11.9.4	Ship-to-Ship Transfers Using Terminal Facilities
					12.9.5	Ship to ship electric currents	11.9.5	Ship-to-Ship Electric Currents
					12.10	Personnel transfer		New
					12.11	Liquified Natural Gas fuelled ship alongside a		New
					12.12	Lifting equipment	8.3	Lifting Equipment
					12.12.1	Inspection and maintenance	8.3.1	Inspection and Maintenance
					12.12.2	Training	8.3.2	Training

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CHAPTER 13	HUMAN ELEMENT CONSIDERATIONS				CHAPTER 13	CARRYING AND STORING HAZARDOUS MATERIALS		
13.1	Manning Levels	7.9	Manning levels		13.1	Liquified gases	12.1	Liquefied Gases
13.2	Training and Experience	7.10	Individual training, experience and comptence		***13.2***	***Ship's stores***	***12.2***	***Ship's Stores***
13.3	Hours of Rest	*withdrawn*	*topic included in 7.8*		13.2.1	General	12.2.1	General
13.3.1	Statutory Requirements	*withdrawn*	*topic included in 7.8*		13.2.2	Paint	12.2.2	Paint
13.3.2	Fatigue	7.8	Fatigue		13.2.3	Chemicals	12.2.3	Chemicals
13.4	***Drug and Alcohol Policy***	*withdrawn*			13.2.4	Cleaning liquids	12.2.4	Cleaning Liquids
13.4.1	Industry Guidelines	*withdrawn*			13.2.5	Spare gear storage	12.2.5	Spare Gear Storage
13.4.2	Control of Alcohol	*withdrawn*			13.3	Cargo and bunker samples	12.3	Cargo and Bunker Samples
13.4.3	Drug and Alcohol Testing Programmes	*withdrawn*			13.3.1	Sample disposal		New
13.5	Drug Trafficking	*withdrawn*			13.3.2	Sample storage		New
13.6	Employment Practices	*withdrawn*			***13.4***	***Other materials***	***12.4***	***Other Materials***
					13.4.1	Sawdust, oil absorbent granules and pads	12.4.1	Sawdust, Oil Absorbent Granules and Pads
					13.4.2	Linseed and other oils		New
	Old Ch.13 now rewritten as new Ch.7				13.4.3	Garbage	12.4.2	Garbage
					13.5	***Packaged cargoes***	***12.5***	***Packaged Cargoes***
					13.5.1	Petroleum and other flammable liquids	12.5.1	Petroleum and Other Flammable Liquids
					13.5.1.1	Loading and discharging	12.5.1.1	Loading and discharging
					13.5.2	Precautions during handling	12.5.1.2	Precautions during handling
					13.5.2	Dangerous goods	12.5.2	Dangerous Goods
					13.5.2.1	Tetraethyl lead and tetramethyl lead	12.5.2.1	Tetraethyl Lead (TEL) and Tetramethyl Lead (TML)
					13.5.2.2	Additives (anti-static, inhibitors, dyes, hydrogen sulphide knockdown)	12.5.2.2	Additives (Antistatic, Inhibitors, Dyes, H2S Knockdown)
					13.5.3	Entering holds and storage spaces	12.5.3	Entry into Holds
					13.5.4	Portable electrical equipment	12.5.4	Portable Electrical Equipment
					13.5.5	Smothering type fire extinguishing systems	12.5.5	Smothering Type Fire Extinguishing Systems
					13.5.6	Fire fighting precautions	12.5.6	Fire-Fighting Precautions
					13.5.7	Forecastle spaces and midship stores		New
					13.5.8	Deck cargo	12.5.8	Deck Cargo
					13.5.9	Barges	12.5.9	Barges

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CHAPTER 14	SPECIAL SHIP TYPES				CHAPTER 14	SPECIAL SHIP TYPES		
14.1	***Combination Carriers***	14.1	Combination carriers		14.1	Combination carriers	***14.1***	***Combination Carriers***
14.1.1	General Guidance	14.1.1	General guidance		14.1.1	General guidance	14.1.1	General Guidance
14.1.2	***Types of Combination Carriers***	*withdrawn*	*generally covered in 14.1*		14.1.2	Slack holds in combination carriers	***14.1.3***	***Slack Holds in Combination Carriers***
14.1.2.1	Oil/Bulk/Ore (OBO)	*withdrawn*			14.1.2.1	Loss of stability	14.1.3.2	Loss of stability
14.1.2.2	Oil/Ore (O/O)	*withdrawn*			14.1.2.2	Sloshing	14.1.4	Sloshing
14.1.3	***Slack Holds in Combination Carriers***	14.1.2	Slack holds in combination carriers		14.1.3	Logitudinal stress	14.1.5	Longitudinal Stress
14.1.3.1	General Guidance	*withdrawn*			14.1.4	Venting of cargo holds	14.1.6	Venting of Cargo Holds
14.1.3.2	Loss of stability	14.1.2.1	Loss of stability		14.1.5	Inerting of holds	14.1.7	Inert Gas
14.1.4	Sloshing	14.1.2.2	Sloshing		14.1.6	Hatch covers	14.1.8	Hatch Covers
14.1.5	Longitudinal Stress	14.1.3	Logitudinal stress		14.1.7	Tank washing	14.1.9	Tank Washing
14.1.6	Venting of Cargo Holds	14.1.4	Venting of cargo holds		14.1.8	Carriage of slops when trading as a dry bulk carrier	14.1.10	Carriage of Slops when Trading as a Dry Bulk Carrier
14.1.7	Inert Gas	14.1.5	Inerting of holds		14.1.9	Cargo leakage into ballast tanks	14.1.11	Leakage into Ballast Tanks on Combination Carriers
14.1.8	Hatch Covers	14.1.6	Hatch covers		14.1.10	Testing of cargo tanks and enclosed spaces on dry bulk voyages	14.1.12	Testing of Cargo Tanks and Enclosed Spaces on Dry Bulk Voyages
14.1.9	Tank Washing	14.1.7	Tank washing		14.1.11	Cargo changeover checklists	14.1.13	Cargo Changeover Check-Lists (includes text covering sections 14.1.11.1/14.1.11.2)
14.1.10	Carriage of Slops when Trading as a Dry Bulk Carrie	14.1.8	Carriage of slops when trading as a dry bulk carrier		14.1.11.1	Oil to dry bulk cargo		New
14.1.11	Leakage into Ballast Tanks on Combination Carriers	14.1.9	Cargo leakage into ballast tanks		14.1.11.2	Dry bulk cargo to oil		New
14.1.12	Testing of Cargo Tanks and Enclosed Spaces on Dry Bulk Voyages	14.1.10	Testing of cargo tanks and enclosed spaces on dry bulk voyages					
14.1.13	Cargo Changeover Check-Lists	14.1.11	Cargo changeover checklists					
14.2	***LPG Carriers Carrying Petroleum Products***	*withdrawn*						
14.2.1	General	*withdrawn*						
14.2.2	Product Limitations	*withdrawn*						
14.2.3	Pre-Loading Preparations	*withdrawn*						
14.2.4	Loading of Pentane Plus or Naphtha	*withdrawn*						
14.2.5	Cargo Sampling	*withdrawn*						
14.2.6	Loading, Carriage and Discharge Procedures	*withdrawn*						
14.2.7	Tank Cleaning and Changeover Procedures	*withdrawn*						

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PART 3: TERMINAL INFORMATION								
CHAPTER 15	**TERMINAL MANAGEMENT AND ORGANISATION**				**CHAPTER 15**	**MARINE TERMINAL ADMINISTRATION**		
15.1	Compliance	*withdrawn*			15.1	Marine Terminal Information System		New
15.2	Hazard Identification and Risk Management	*withdrawn*	Covered through 15.1.2 Marine Terminal Management and Self Assessment		15.1.1	Marine Terminal Particulars Questionnaire		New
15.3	Operating Manual	15.2.1	Terminal operating manual		15.1.2	Marine Terminal Management and Self Assessment		New
15.4	Terminal Information and Port Regulations	15.2.2	Terminal Information Booklet		15.1.3	Marine Terminal Operator Competence and Training		New
15.5	***Supervision and Control***	15.2.1.2	Organisation roles and responsibilities		***15.2***	***Documentation***		New
15.5.1	Manning Levels	*withdrawn*	Manning Levels. See OCIMF Info Paper 'Manning at Conventional Marine Terminals - 2008'		15.2.1	Terminal operating manual	15.3	Operating Manual
15.5.2	De-Manning of Berths During Cargo Handling	*withdrawn*	De-manning. See OCIMF Info Paper 'Manning at Conventional Marine Terminals - 2008'		15.2.1.1	Operating procedures		New
15.5.3	Checks on Quantity During Cargo Handling	23.7.2	Checks on quantity during cargo handling		15.2.1.2	Organisation roles and responsibilities	15.5	Supervision and Control
15.5.4	Training	15.1.3	Marine Terminal Operator Competence and Training		15.2.2	Terminal Information Booklet	15.6.4	Other Criteria
15.6	Ship and Berth Compatibility	*withdrawn*			15.2.3	Documentation	15.7	Documentation
15.6.1	Maximum Draught	15.2.2	Terminal Information Booklet see also 15.1.1 MTPQ		15.2.3.1	Inspection, maintenance and repair documentation		New
15.6.2	Maximum Displacement	15.2.2	Terminal Information Booklet see also 15.1.1 MTPQ					
15.6.3	Length Overall (LOA)	15.2.2	Terminal Information Booklet see also 15.1.1 MTPQ					
15.6.4	Other Criteria	15.2.2	Terminal Information Booklet see also 15.1.1 MTPQ			**Old Ch.15 substantially rewritten to align to MTIS**		
15.7	Documentation	15.2.3	Documentation					

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CHAPTER 16	**TERMINAL OPERATIONS**				**CHAPTER 16**	**MARINE TERMINAL OPERATIONS**		
16.1	Pre-Arrival Communications	21.2	Pre-arrival exchange of information		16.1	Limiting conditions for operations	16.3	Limiting Conditions for Operations
16.2	Mooring	22.1	Mooring safety		16.1.1	Risk assessment		New
16.2.1	Mooring Equipment	22.3.2	Terminal mooring equipment		16.2	Electrical storms	26.1.3	Electrical Storms (Lightning)
16.3	Limiting Conditions for Operations	16.1	Limiting conditions for operations		16.3	Double banking	16.5	Double Banking
16.4	***Ship/Shore Access***	***16.4***	***Tanker/terminal access***		***16.4***	***Tanker/terminal access***	***16.4***	***Ship/Shore Access***
16.4.1	General	16.4.1	General		16.4.1	General	16.4.1	General
16.4.2	Provision of Ship/Shore Access	16.4.2	Provision of tanker/terminal access		16.4.2	Provision of tanker/terminal access	16.4.2	Provision of Ship/Shore Access
16.4.3	***Access Equipment***				16.4.3	Access equipment	16.4.4	Siting of Gangways
16.4.3.1	Shore gangway	16.4.3.1	Shore gangway		16.4.3.1	Shore gangway	16.4.3.1	Shore gangway
16.4.3.2	Ship's gangway	16.4.3.2	Portable gangways (tanker or terminal)		16.4.3.2	Portable gangways (tanker or terminal)	16.4.3.2	Ship's gangway
16.4.3.3	Ship's accomodation ladder	16.4.3.3	Accommodation ladder		16.4.3.3	Accommodation ladder	16.4.3.3	Ship's accomodation ladder
16.4.4	Siting of Gangways	16.4.3	Access equipment		16.4.3.4	Safety nets	16.4.5	Safety Nets
16.4.5	Safety Nets	16.4.3.4	Safety nets		16.4.4	Alternative means of tanker/terminal access		New
16.4.6	Routine Maintenance	16.4.5	Routine maintenance		16.4.4.1	Personnel transfer by basket		New
16.4.7	Unauthorised Persons	23.10.1	Notices on the tanker		16.4.5	Routine maintenance	16.4.6	Routine Maintenance
16.4.8	Persons Smoking or Intoxicated	23.10.2	Notices on the terminal		16.5	Over the tide cargo operations	16.6	Over the Tide Cargo Operations
16.5	Double Banking	16.3	Double banking		16.5.1	Discharging over the tide	16.6.1	Discharging Over the Tide
16.6	Over the Tide Cargo Operations	16.5	Over the tide cargo operations		16.5.2	Loading over the tide	16.6.2	Loading Over the Tide
16.6.1	Discharging Over the Tide	16.5.1	Discharging over the tide		16.6	Operations where the tanker is not always afloat	16.7	Operations Where the Ship is not Always Afloat
16.6.2	Loading Over the Tide	16.5.2	Loading over the tide		***16.7***	***Generation of pressure surges in pipelines***	***16.8***	***Generation of Pressure Surges in Pipelines***
16.7	Operations Where the Ship is not Always Afloat	16.6	Operations where the tanker is not always afloat		16.7.1	Introduction	16.8.1	Introduction
16.8	***Generation of Pressure Surges in Pipelines***	***16.7***	***Generation of pressure surges in pipelines***		16.7.2	Generation of a pressure surge	16.8.2	Generation of a Pressure Surge
16.8.1	Introduction	16.7.1	Introduction		***16.8***	***Reduction of pressure surge hazard***	***16.10***	***Reduction of Pressure Surge Hazard***
16.8.2	Generation of a Pressure Surge	16.7.2	Generation of a pressure surge		16.8.1	General precautions	16.10.1	General Precautions
16.9	***Assessment of Pressure Surges***	*withdrawn*	*Generally covered in 16.7 and 16.8*		16.8.2	Operational measures to reduce the risk of a pressure surge	16.10.2	Limitation of Flow Rate to Avoid the Risk of a Damaging Pressure Surge
16.9.1	Effective Valve Closure Time	*withdrawn*	*Generally covered in 16.7 and 16.8*		16.9	Hot work in hazardous areas in terminals		New
16.9.2	Derivation of Total Pressure in the System	*withdrawn*	*Generally covered in 16.7 and 16.8*		16.10	Pigging	11.1.15.9	Pigging
16.9.3	Overall System Design	*withdrawn*	*Generally covered in 16.7 and 16.8*					
16.10	***Reduction of Pressure Surge Hazard***	***16.8***	***Reduction of pressure surge hazard***					
16.10.1	General Precautions	16.8.1	General precautions					
16.10.2	Limitation of Flow Rate to Avoid the Risk of a Damaging Pressure Surge	16.8.2	Operational measures to reduce the risk of a pressure surge					
16.11	***Pipeline Flow Control as a Static Precaution***	*withdrawn*	See Ch.3 & 12.1.7					
16.11.1	General	*withdrawn*	See Ch.3 & 12.1.7					
16.11.2	Flow Control Requirements	*withdrawn*	See Ch.3 & 12.1.7					
16.11.3	Controlling Loading Rates	*withdrawn*	See Ch.3 & 12.1.7					
16.11.4	Discharge into Shore Installations	*withdrawn*						

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CHAPTER 17	**TERMINAL SYSTEMS AND EQUIPMENT**				**CHAPTER 17**	**MARINE TERMINAL SYSTEMS and EQUIPMENT**		
17.1	Electrical Equipment	17.1	Electrical equipment		17.1	Electrical equipment	17.1	Electrical Equipment
17.2	Fendering	22.4.1	Fendering		***17.2***	***Lifting equipment***	***17.3***	***Lifting Equipment***
17.3	***Lifting Equipment***	***17.2***	***Lifting equipment***		17.2.1	Inspection and maintenance	17.3.1	Inspection and Maintenance
17.3.1	Inspection and Maintenance	17.2.1	Inspection and maintenance		17.2.2	Training in the use of lifting equipment	17.3.2	Training in the Use of Lifting Equipment
17.3.2	Training in the Use of Lifting Equipment	17.2.2	Training in the use of lifting equipment		17.2.3	Use of tanker lifting equipment		New
17.4	Lighting	17.3	Lighting		17.3	Lighting	17.4	Lighting
17.5	***Ship/Shore Electrical Isolation***	***17.4***	***Tanker/terminal electrical isolation***		***17.4***	***Tanker/terminal electrical isolation***	***17.5***	***Ship/Shore Electrical Isolation***
17.5.1	General	17.4.1	General		17.4.1	General	17.5.1	General
17.5.2	Ship-to-Shore Electric Currents	17.4.2	Tanker to terminal electric currents		17.4.2	Tanker to terminal electric currents	17.5.2	Ship-to-Shore Electric Currents
17.5.3	Sea Islands	17.4.3	Sea islands		17.4.3	Sea islands	17.5.3	Sea Islands
17.5.4	Ship/Shore Bonding Cables	17.4.4	Tanker/terminal bonding cables		17.4.4	Tanker/terminal bonding cables	17.5.4	Ship/Shore Bonding Cables
17.5.5	***Insulating Flange***	17.4.5	Insulating flange		17.4.5	Insulating flange	***17.5.5***	***Insulating Flange***
17.5.5.1	Precautions	17.4.5.1	Precautions		17.4.5.1	Precautions	17.5.5.1	Precautions
17.5.5.2	Testing of Insultaing flanges	17.4.5.2	Testing of insulated flanges		17.4.5.2	Testing of insulated flanges	17.5.5.2	Testing of insulating flanges
17.5.5.3	Safety	17.4.5.3	Safety		17.4.5.3	Safety	17.5.5.3	Safety
17.6	Earthing and Bonding Practice in the Terminal	17.5	Earthing and bonding practice in the terminal		17.5	Earthing and bonding practice in the terminal	17.6	Earthing and Bonding Practice in the Terminal

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CHAPTER 18	CARGO TRANSFER EQUIPMENT				CHAPTER 18	CARGO TRANSFER EQUIPMENT		
18.1	***Metal Cargo Arms***	***18.1***	***Marine Loading Arms***		***18.1***	***Marine Loading Arms***	***18.1***	***Metal Cargo Arms***
18.1.1	Operating Envelope	18.1.1	Operating envelope		18.1.1	Operating envelope	18.1.1	Operating Envelope
18.1.2	Forces on Manifolds	18.1.2	Forces on manifolds		18.1.2	Forces on manifolds	18.1.2	Forces on Manifolds
18.1.3	Tanker Manifold Restrictions	18.1.3	Tanker manifold restrictions		18.1.3	Tanker manifold restrictions	18.1.3	Tanker Manifold Restrictions
18.1.4	Inadvertent Filling of Arms while Parked	18.1.4	Parking of arms		18.1.4	Parking of arms	18.1.4	Inadvertent Filling of Arms while Parked
18.1.5	Ice Formation	18.1.5	Ice formation		18.1.5	Ice formation	18.1.5	Ice Formation
18.1.6	Mechanical Couplers	18.1.6	Mechanical couplers		18.1.6	Mechanical couplers	18.1.6	Mechanical Couplers
18.1.7	Wind Forces	18.1.7	Wind forces		18.1.7	Wind forces	18.1.7	Wind Forces
18.1.8	Precautions when Connecting and Disconnecting Arms	18.1.8	Precautions when connecting and disconnecting Marine Loading Arms		18.1.8	Precautions when connecting and disconnecting Marine Loading Arms	18.1.8	Precautions when Connecting and Disconnecting Arms
18.1.9	Precautions while Arms are Connected	18.1.9	Precautions while Marine Loading Arms are connected		18.1.9	Precautions while Marine Loading Arms are connec	18.1.9	Precautions while Arms are Connected
18.1.10	Powered Emergency Release Couplings (PERCs)	18.1.10	Powered Emergency Release Couplings		18.1.10	Powered Emergency Release Couplings	18.1.10	Powered Emergency Release Couplings (PERCs)
18.2	***Cargo Hoses***	***18.2***	***Cargo hoses*** *(significant content in Section 18.2 updated to meet revised standards)*		18.1.11	Inspection, testing and maintenance		New
18.2.1	General	18.2.1	General		***18.2***	***Cargo hoses*** *(significant content in Section 18.2 updated to meet revised standards)*	***18.2***	***Cargo Hoses***
18.2.2	Types and Applications	18.2.2	Types and applications		18.2.1	General	18.2.1	General
18.2.3	Performance	18.2.3	Performance		18.2.2	Types and applications	18.2.2	Types and Applications
18.2.4	Marking	***18.2.4***	***Marking***		18.2.3	Performance	18.2.3	Performance
18.2.5	Flow Velocities	18.2.5	Flow velocities		***18.2.4***	***Marking***	18.2.4	Marking
18.2.6	***Inspection, Testing and Maintenance Requirements for Dock Cargo Hoses***	***18.2.6***	***Inspection, testing and maintenance requirements for cargo hoses***		18.2.4.1	Rubber hoses		New
18.2.6.1	General	18.2.6.1	General		18.2.4.2	Composite hoses		New
18.2.6.2	Visual examination	18.2.6.2	Visual examination		18.2.5	Flow velocities	18.2.5	Flow Velocities
18.2.6.3	Pressure test (Integrity check)	18.2.6.3	Hydrostatic pressure test		***18.2.6***	***Inspection, testing and maintenance requirements for cargo hoses***	***18.2.6***	***Inspection, Testing and Maintenance Requirements for Dock Cargo Hoses***
18.2.6.4	Electrical continuity and discontinuity test	18.2.6.4	Electrical continuity and discontinuity test		18.2.6.1	General	18.2.6.1	General
18.2.6.5	Withdrawal from service	18.2.6.5	Withdrawal from service		18.2.6.2	Visual examination	18.2.6.2	Visual examination
18.2.6.6	Explanation of pressure ratings for hoses	18.2.6.6	Explanation of pressure ratings for hoses		18.2.6.3	Hydrostatic pressure test	18.2.6.3	Pressure test (Integrity check)
18.2.7	Hose Flange Standards	18.2.7	Hose flange standards		18.2.6.4	Electrical continuity and discontinuity test	18.2.6.4	Electrical continuity and discontinuity test
18.2.8	Operating Conditions	18.2.8	Operating conditions		18.2.6.5	Withdrawal from service	18.2.6.5	Withdrawal from service
18.2.9	Extended Storage	18.2.9	Extended storage		18.2.6.6	Explanation of pressure ratings for hoses	18.2.6.6	Explanation of pressure ratings for hoses
18.2.10	Checks Before Hose Handling	18.2.6.2	Visual examination		18.2.7	Hose flange standards	18.2.7	Hose Flange Standards
18.2.11	Handling, Lifting and Suspending	18.2.10	Handling, lifting and suspending		18.2.8	Operating conditions	18.2.8	Operating Conditions
18.2.12	Adjustment During Cargo Handling Operations	18.2.11	Adjustment during cargo handling operations		18.2.9	Extended storage	18.2.9	Extended Storage
18.2.13	Submarine and Floating Hose Strings	18.2.12	Submarine and floating hose strings		18.2.10	Handling, lifting and suspending	18.2.11	Handling, Lifting and Suspending
18.2.13.1	Hose string weights	*withdrawn*			18.2.11	Adjustment during cargo handling operations	18.2.12	Adjustment During Cargo Handling Operations
18.3	Vapour Emission Control Systems	18.3	Vapour Emission Control Systems		18.2.12	Submarine and floating hose strings	18.2.13	Submarine and Floating Hose Strings
					18.2.13	Hoses used in ship to ship transfers		New
					18.2.14	Electrical isolation		New
					18.3	Vapour Emission Control Systems	18.3	Vapour Emission Control Systems
					18.4	Cargo transfer drainage and containment		New
					18.4.1	Marine Loading Arm/hose clearing		New
					18.4.2	Jetty deck containment		New
					18.4.3	Hydrocarbon sump tanks		New
					18.5	Emergency Shutdown systems		New

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CHAPTER 19	SAFETY AND FIRE PROTECTION				CHAPTER 19	MARINE TERMINAL FIRE PROTECTION		
19.1	***Safety***		*These sections withdrawn but content and philosophy absorbed into revised Ch.4 and Ch.15 and expectations for enhanced safety management.*		***19.1***	***Marine terminal fire protection***	***19.2***	***Marine Terminal Fire Protection***
19.1.1	Design Considerations	*withdrawn*			19.1.1	General	19.2.1	General
19.1.2	Safety Management	*withdrawn*			19.1.2	Fire proofing		New
19.1.3	Permit to Work Systems – General Considerations	*withdrawn*			19.1.3	Location and spacing of fire detectors	19.2.6	Location and Spacing of Fire Detectors
19.2	***Marine Terminal Fire Protection***	***19.1***	***Marine terminal fire protection***		19.1.4	Fire extinguishing system compatability	19.2.10	Fire Extinguishing System Compatibility
19.2.1	General	19.1.1	General		19.2	Alarm and signalling systems	19.3	Alarm and Signalling Systems
19.2.2	Fire Prevention and Isolation	19.1.1	General		19.2.1	Types of alarm systems	19.3.1	Types of Alarm Systems
19.2.3	Fire Detection and Alarm Systems	5.8.4	Fire Detection and Alarm Systems in Terminals		19.2.2	Alarm and signalling systems	19.3.3	Alarm and Signalling System Design
19.2.4	Automatic Detection Systems	5.8.2	Types of Fire Detectors		19.2.3	Electric power sources	19.3.6	Electric Power Sources
19.2.5	Selection of Fire Detectors	5.8.3	Selection of Fire Detectors		***19.3***	***Detection and alarm systems at terminals***	***19.4***	***Detection and Alarm Systems at Terminals Handling Crude Oil and Petroleum Products***
19.2.6	Location and Spacing of Fire Detectors	19.1.3	Location and spacing of fire detectors		19.3.1	General	19.4.1	General
19.2.7	Fixed Combustible and Toxic Gas Detectors	2.6.2.1	General		19.3.2	Control rooms/control buildings	19.4.2	Control Rooms/Control Buildings
19.2.8	Locating Fixed Combustible and Toxic Gas Detector	2.6.2.4	Positioning fixed combustible and toxic gas-detectors in terminals		19.4	Firefighting equipment	19.5	Fire-Fighting Equipment
19.2.9	Fixed Combustible and Toxic Gas Analysers	2.6.2.3	Design of system including 2.6.2.2 Sensors		19.4.1	Terminal firefighting equipment	19.5.1	Terminal Fire-Fighting Equipment
19.2.10	Fire Extinguishing System Compatibility	19.1.4	Fire extinguishing system compatability		19.4.2	Portable and wheeled fire extinguishers and monit	19.5.2	Portable and Wheeled Fire Extinguishers and Moni
19.3	Alarm and Signalling Systems	19.2	Alarm and signalling systems		***19.4.3***	***Terminal fixed firefighting equipment***	***19.5.3***	***Terminal Fixed Fire-Fighting Equipment***
19.3.1	Types of Alarm Systems	19.2.1	Types of alarm systems		19.4.3.1	Fire water supply	19.5.3.1	Fire water supply
19.3.2	Types of Signal	19.3.1	General (content merged)		19.4.3.2	Fire pumps	19.5.3.2	Fire pumps
19.3.3	Alarm and Signalling System Design	19.2.2	Alarm and signalling systems		19.4.3.3	Fire main piping	19.5.3.3	Fire-main piping
19.3.4	Alternative Alarm and Signalling System Design	*withdrawn*			19.4.3.4	Fire hydrants and hose reels	19.5.3.4	Fire hydrants
19.3.5	Interface Between Detection Systems and Alarm or Fire Extinguishing Systems – Circuit Design	*withdrawn*			19.4.3.5	Pump-in points for firefighting boats	19.5.3.6	Pump-in points for fire-fighting boats
19.3.6	Electric Power Sources	19.2.3	Electric power sources		19.4.3.6	Foam systems	19.5.3.7	Foam systems
19.4	***Detection and Alarm Systems at Terminals Handling Crude Oil and Petroleum Products***	***19.3***	***Detection and alarm systems at terminals***		19.4.3.7	Monitors (or cannons)	19.5.3.8	Monitors (or Canons)
19.4.1	General	19.3.1	General		19.4.3.8	Below deck fixed protection systems	19.5.3.9	Below deck fixed protection systems
19.4.2	Control Rooms/Control Buildings	19.3.2	Control rooms/control buildings		19.5	Access for firefighting services	19.8	Access for Fire-Fighting Services
19.5	Fire-Fighting Equipment	19.4	Firefighting equipment					
19.5.1	Terminal Fire-Fighting Equipment	19.4.1	Terminal firefighting equipment					
19.5.2	Portable and Wheeled Fire Extinguishers and Moni	19.4.2	Portable and wheeled fire extinguishers and monitors					
19.5.3	***Terminal Fixed Fire-Fighting Equipment***	***19.4.3***	***Terminal fixed firefighting equipment***					
19.5.3.1	Fire water supply	19.4.3.1	Fire water supply					
19.5.3.2	Fire pumps	19.4.3.2	Fire pumps					
19.5.3.3	Fire-main piping	19.4.3.3	Fire main piping					
19.5.3.4	Fire hydrants	19.4.3.4	Fire hydrants and hose reels					
19.5.3.5	International shore fire connection	5.5	International Shore Connection					
19.5.3.6	Pump-in points for fire-fighting boats	19.4.3.5	Pump-in points for firefighting boats					
19.5.3.7	Foam systems	19.4.3.6	Foam systems					
19.5.3.8	Monitors (or Canons)	19.4.3.7	Monitors (or cannons)					
19.5.3.9	Below deck fixed protection systems	19.4.3.8	Below deck fixed protection systems					
19.6	Water-Borne Fire-Fighting Equipment	5.6	Water Borne Firefighting Equipment					
19.7	Protective Clothing	5.7	Protective Clothing					
19.8	Access for Fire-Fighting Services	19.5	Access for firefighting services					

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CHAPTER 20	**EMERGENCY PREPAREDNESS**				**CHAPTER 20**	**EMERGENCY PREPAREDNESS aand EVACUATION**		
20.1	Overview	20.1	Overview		20.1	Overview	20.1	Overview
20.2	***Terminal Emergency Planning – Plan Components and Procedures***	***20.3***	***Terminal emergency planning - plan components and procedures***		***20.2***	***Hierarchy of emergency scenarios***	***20.3***	***Definition and Hierarchy of Emergencies***
20.2.1	Preparation	20.3.1	Preparation some merged with parts 20.3.2 Format		20.2.1	General	20.3.1	General
20.2.2	Control	20.3.3	Control		20.2.2	Hierarchy of emergencies	20.3.2	Hierarchy of Emergencies
20.2.3	***Communications and Alarms***				20.2.3	Local emergency	20.3.2.1	Local emergency
20.2.3.1	Alarms	20.3.4.1	Alarms		20.2.4	Terminal emergency	20.3.2.2	Terminal emergency
20.2.3.2	Contact lists	20.3.4.2	Contact lists		20.2.5	Major emergency	20.3.2.3	Major emergency
20.2.3.3	Communication System Requirements	20.3.4.3	Communication system requirements		20.2.6	Escalation	20.3.2.4	Escalation
20.2.3.4	Communications disciplines	20.3.4.4	Communications discipline		20.2.7	Assessing risks	20.3.3	Assessing Risks
20.2.4	Site Plans and Maps	20.3.5	Site plans and maps		20.2.8	Credible emergency scenarios	20.3.3.1	Incident checklists
20.2.5	Access to Equipment	20.3.6	Access to equipment		***20.3***	***Terminal emergency planning - plan components and procedures***	***20.2***	***Terminal Emergency Planning – Plan Components and Procedures***
20.2.6	Road Traffic Movement and Control	20.3.7	Road traffic movement and control		20.3.1	Preparation	20.4.2	Preparation
20.2.7	Outside Services	20.3.8	Outside services		20.3.2	Format	20.4.1	Format
20.2.7.1	Harbour authorities, vessel traffic control centres police and fire services	20.3.9	Harbour authorities, vessel traffic control centres, police and fire servcies		20.3.3	Control	20.2.2	Control
20.2.7.2	Pliots	20.3.10	Pilots		***20.3.4***	***Alarms and communications***	20.2.3	Communications and Alarms
20.2.7.3	Rescue launches	20.3.11	Rescue launches		20.3.4.1	Alarms	20.2.3.1	Alarms
20.2.7.4	Medical facilities	20.3.12	Medical facilities		20.3.4.2	Contact lists	20.2.3.2	Contact lists
20.2.8	Training for Emergencies	20.6	Training for emergencies and emergency excercises merged with 21.4 Training and Drills		20.3.4.3	Communication system requirements	20.2.3.3	Communication System Requirements
20.3	***Definition and Hierarchy of Emergencies***	***20.2***	***Hierarchy of emergency scenarios***		20.3.4.4	Communications discipline	20.2.3.4	Communications disciplines
20.3.1	General	20.2.1	General		20.3.5	Site plans and maps	20.2.4	Site Plans and Maps
20.3.2	Hierarchy of Emergencies	20.2.2	Hierarchy of emergencies		20.3.6	Access to equipment	20.2.5	Access to Equipment
20.3.2.1	Local emergency	20.2.3	Local emergency		20.3.7	Road traffic movement and control	20.2.6	Road Traffic Movement and Control
20.3.2.2	Terminal emergency	20.2.4	Terminal emergency		20.3.8	Outside services	20.2.7	Outside Services
20.3.2.3	Major emergency	20.2.5	Major emergency		20.3.9	Harbour authorities, vessel traffic control centres, police and fire servcies	20.2.7.1	Harbour authorities, vessel traffic control centres, police and fire services
20.3.2.4	Escalation	20.2.6	Escalation		20.3.10	Pilots	20.2.7.2	Pilots
20.3.3	Assessing Risks	20.2.7	Assessing risks		20.3.11	Rescue launches	20.2.7.3	Rescue launches
20.3.3.1	Incident checklists	20.2.8	Credible emergency scenarios		20.3.12	Medical facilities	20.2.7.4	Medical facilities
20.3.3.2	Special situations	*withdrawn*			20.4	Spill response plan		New
20.4	***Terminal Emergency Plan***				20.4.1	Tiered response		New
20.4.1	Format	20.3.2	Format		20.4.2	Resource availability	20.4.3	Resource Availability
20.4.2	Preparation	20.3.1	Preparation		20.5	Emergency evacuation and personnel escape routes	***21.2***	***Evacuation and Personnel Escape Routes***
20.4.3	Resource Availability	20.4.2	Resource availability		20.5.1	General	21.1	General
20.4.4	Miscellaneous Organisational Items	*withdrawn*	*covered generally under MTMSA*		20.5.2	T-head jetties and finger piers	21.2.3	Boat Access includes some 21.1 General
20.5	Emergency Removal of Tanker from Berth	20.7	Emergency removal of tanker from berth		20.5.3	Sea islands	21.1	General
					20.5.4	Tanker evacuation	21.1.1	Ship Evacuation
					20.5.5	Non-essential personnel	21.1.2	Non-Essential Personnel
					20.5.6	Primary and secondary escape routes	21.2.1	Primary and Secondary Escape Routes
					20.5.7	Availability of rescue craft	21.2.4	Availability of Rescue Craft
					20.5.8	Survival craft	21.3	Survival Craft
					20.5.9	Lifesaving appliances	21.2.5	Life Saving Appliances
					20.6	Training for emergencies and emergency excercises	20.2.8	Training for Emergencies
					20.7	Emergency removal of tanker from berth	20.5	Emergency Removal of Tanker from Berth

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CHAPTER 21	**EMERGENCY EVACUATION**				CHAPTER 21	COMMUNICATIONS		
21.1	General	20.5.1	General		***21.1***	***Procedures and precautions***	***22.1***	***Procedures and Precautions***
21.1.1	Ship Evacuation	20.5.4	Tanker evacuation		21.1.1	Communications equipment	22.1.1	Communications Equipment
21.1.2	Non-Essential Personnel	20.5.5	Non-essential personnel		21.1.2	Communications procedures	22.1.2	Communications Procedures
21.2	***Evacuation and Personnel Escape Routes***	20.5	Emergency evacuation and personnel escape routes		21.1.3	Compliance with terminal and local regulations	22.1.3	Compliance with Terminal and Local Regulations
21.2.1	Primary and Secondary Escape Routes	20.5.6	Primary and secondary escape routes		21.2	Pre-arrival exchange of information	22.2	Pre-Arrival Exchange of Information
21.2.2	Protection of Personnel	20.5.6	Primary and secondary escape routes		21.2.1	Security information	22.2.1	Exchange of Security Information
21.2.3	Boat Access	20.5.2	T-head jetties and finger piers		21.2.2	Terminal to tanker	22.2.4	Terminal to Tanker
21.2.4	Availability of Rescue Craft	20.5.7	Availability of rescue craft		21.2.3	Tanker to terminal	22.2.3	Tanker to Terminal
21.2.5	Life Saving Appliances	20.5.9	Lifesaving appliances		21.3	Pre-berthing exchange of information	***22.3***	***Pre-Berthing Exchange of Information***
21.3	Survival Craft	20.5.8	Survival craft		21.3.1	Tanker to terminal and/or pilot	22.3.1	Tanker to Terminal and/or Pilot
21.4	Training and Drills	20.6	Training for emergencies and emergency excercises		21.3.2	Terminal and/or pilot to tanker	22.3.2	Terminal and/or Pilot to Tanker
					21.4	Pre-transfer conference	22.4	Pre-Transfer Exchange of Information
	Old Chapter 21 merged with Chapter 20				21.4.1	Tanker to terminal	22.4.1	Tanker to Terminal
					21.4.2	Terminal to tanker	22.4.2	Terminal to Tanker
					21.5	Agreed loading plan	22.5	Agreed Loading Plan
					21.6	Agreed discharge plan	22.6	Agreed Discharge Plan
					21.7	***Agreement to carry out repairs***	***22.7***	***Agreement to Carry Out Repairs***
					21.7.1	Repairs on tanker	22.7.1	Repairs on the Tanker
					21.7.1.1	Immobilisation of the tanker	22.7.1.1	Immobilisation of the tanker
					21.7.1.2	Hot work on the tanker	22.7.1.2	Hotwork on the tanker
					21.7.2	Repairs on the terminal (communication)	22.7.2	Repairs on the Terminal
					21.7.3	Using tools while a tanker is alongside a terminal	22.7.3	Use of Tools whilst a Tanker is Alongside a Termina

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PART 4: MANAGEMENT OF THE TANKER AND TERMINAL INTERFACE								
CHAPTER 22	**COMMUNICATIONS**				**CHAPTER 22**	**MOORING and BERTHING**		
22.1	***Procedures and Precautions***	***21.1***	***Procedures and precautions***		22.1	Mooring safety	23.1	Personnel Safety
22.1.1	Communications Equipment	21.1.1	Communications equipment		22.1.1	Snap-back		New
22.1.2	Communications Procedures	21.1.2	Communications procedures		22.2	Security of moorings	23.2	Security of Moorings
22.1.3	Compliance with Terminal and Local Regulations	21.1.3	Compliance with terminal and local regulations		22.3	Preparations for arrival	***23.3***	***Preparations for Arrival***
22.2	Pre-Arrival Exchange of Information	21.2	Pre-arrival exchange of information		22.3.1	Tanker's mooring equipment	23.3.1	Tanker's Mooring Equipment
22.2.1	Exchange of Security Information	21.2.1	Security information		22.3.2	Terminal mooring equipment	16.2.1	Mooring Equipment
22.2.2	Tanker to Appropriate Competent Authority	21.2	Pre-arrival exchange of information		22.3.3	Use of tugs	23.3.2	Use of Tugs
22.2.3	Tanker to Terminal	21.2.3	Tanker to terminal		22.3.4	Emergency use of tugs	23.3.3	Emergency Use of Tugs
22.2.4	Terminal to Tanker	21.2.2	Terminal to tanker		22.4	Berthing at jetty berths	23.4	Mooring at Jetty Berths
22.3	***Pre-Berthing Exchange of Information***	21.3	Pre-berthing exchange of information		22.4.1	Fendering	17.2	Fendering
22.3.1	Tanker to Terminal and/or Pilot	21.3.1	Tanker to terminal and/or pilot		22.4.2	Type and quality of mooring lines	23.4.1	Type and Quality of Mooring Lines
22.3.2	Terminal and/or Pilot to Tanker	21.3.2	Terminal and/or pilot to tanker		***22.4.3***	***Management of moorings when alongside berth***	***23.4.2***	***Management of Moorings at Alongside Berths***
22.4	Pre-Transfer Exchange of Information	21.4	Pre-transfer conference		22.4.3.1	Tending of moorings	23.4.2.1	Tending of moorings
22.4.1	Tanker to Terminal	21.4.1	Tanker to terminal		22.4.3.2	Tension winches	23.4.2.2	Tension winches
22.4.1.1	Information in preparation for loading cargo and bunkers:	21.4.1	Tanker to terminal		22.4.3.3	Self-stowing mooring winches	23.4.2.3	Self-stowing mooring winches
22.4.1.2	Information in preparation for cargo discharge:	21.4.1	Tanker to terminal		22.4.3.3.1	The number of layers on the drum	23.4.2.3	Self-stowing mooring winches
22.4.2	Terminal to Tanker	21.4.2	Terminal to tanker		22.4.3.3.2	The direction of reeling on the winch drum	23.4.2.3	Self-stowing mooring winches
22.4.2.1	Information in preparation for loading cargo and bunkers	21.4.2	Terminal to tanker		22.4.3.3.3	The condition of the brake linings and drum	23.4.2.3	Self-stowing mooring winches
22.4.2.2	Information in preparation for cargo discharge:	21.4.2	Terminal to tanker		22.4.3.3.4	The application of the brake	23.4.2.3	Self-stowing mooring winches
22.5	Agreed Loading Plan	21.5	Agreed loading plan		22.4.3.4	Shore moorings	23.4.2.4	Shore moorings
22.6	Agreed Discharge Plan	21.6	Agreed discharge plan		22.4.3.5	Anchors	23.4.2.5	Anchors
22.7	***Agreement to Carry Out Repairs***	***21.7***	***Agreement to carry out repairs***		22.5	Berthing at buoy moorings	23.5	Berthing at Buoy Moorings
22.7.1	Repairs on the Tanker	21.7.1	Repairs on tanker		22.5.1	Mooring masters		New
22.7.1.1	Immobilisation of tanker	21.7.1.1	Immobilisation of the tanker		22.5.2	Mooring at Multi Buoy Moorings	23.5.1	Mooring at Conventional Multi-Buoy Moorings
22.7.1.2	Hot work on tanker	21.7.1.2	Hot work on the tanker		22.5.3	Mooring at Single Point Moorings	23.5.2	Mooring at Single Point Moorings (SPMs)
22.7.2	Repairs on the Terminal	21.7.2	Repairs on the terminal (communication)		22.5.4	Management of moorings at buoy berths	23.5.3	Management of Moorings at Buoy Berths
22.7.3	Use of Tools whilst a Tanker is Alongside a Termina	21.7.3	Using tools while a tanker is alongside a terminal		22.5.4.1	Pre-berthing planning		New
					22.5.4.2	Manning at buoy berths		New
	Old Chapter 22 moved to Chapter 21							

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CHAPTER 23	**MOORING**				**CHAPTER 23**	**TANKER and TERMINAL PRECAUTIONS FOR CARGO OPERATIONS**		
23.1	Personnel Safety	22.1	Mooring safety		23.1	External openings in superstructures	24.1	External Openings in Superstructures
23.2	Security of Moorings	22.2	Security of moorings		23.2	Central air conditioning and ventilation systems	24.2	Central Air Conditioning and Ventilation Systems
23.3	***Preparations for Arrival***	22.3	Preparations for arrival		***23.3***	***Openings in cargo tanks***	***24.3***	***Openings in Cargo Tanks***
23.3.1	Tanker's Mooring Equipment	22.3.1	Tanker's mooring equipment		23.3.1	Cargo tank lids	24.3.1	Cargo Tank Lids
23.3.2	Use of Tugs	22.3.3	Use of tugs		23.3.2	Sighting, ullage ports and segregated ballast tank l	24.3.2	Sighting and Ullage Ports
23.3.3	Emergency Use of Tugs	22.3.4	Emergency use of tugs		23.3.3	Cargo tank vent outlets	24.3.3	Cargo Tank Vent Outlets
23.4	Mooring at Jetty Berths	22.4	Berthing at jetty berths		23.3.4	Tank washing openings	24.3.4	Tank Washing Openings
23.4.1	Type and Quality of Mooring Lines	22.4.2	Type and quality of mooring lines		23.4	Inspecting a tanker's cargo tanks before loading	24.4	Inspection of Ship's Cargo Tanks Before Loading
23.4.2	***Management of Moorings at Alongside Berths***	***22.4.3***	***Management of moorings when alongside berth***		23.5	Marine cargo inspectors		New
23.4.2.1	Tending of moorings	22.4.3.1	Tending of moorings		23.5.1	Independent cargo inspection companies		New
23.4.2.2	Tension winches	22.4.3.2	Tension winches		23.5.2	Cargo inspection training and accreditation		New
23.4.2.3	Self-stowing mooring winches	22.4.3.3	Self-stowing mooring winches		***23.5.3***	***Safe working in terminals and on tankers***		New
23.4.2.4	Shore moorings	22.4.3.4	Shore moorings		23.5.3.1	Duty of care		New
23.4.2.5	Anchors	22.4.3.5	Anchors		23.5.3.2	Safe working on tankers		New
23.5	Berthing at Buoy Moorings	22.5	Berthing at buoy moorings		23.5.3.3	Stop Work Authority		New
23.5.1	Mooring at Conventional Multi-Buoy Moorings	22.5.2	Mooring at multi-buoy moorings		***23.6***	***Tanker and terminal cargo connections***	***24.6***	***Ship and Shore Cargo Connections***
23.5.2	Mooring at Single Point Moorings (SPMs)	22.5.3	Mooring at single point moorings		23.6.1	Flange connections	24.6.1	Flange Connections
23.5.3	Management of Moorings at Buoy Berths	22.5.4	Management of moorings at buoy berths		23.6.2	Removing blank flanges	24.6.2	Removal of Blank Flanges
					23.6.3	Reducers and spool pieces	24.6.3	Reducers and Spools
					23.7	***Spills and leaks***	***24.7***	***Accidental Oil Spillage and Leakage***
					23.7.1	General	24.7.1	General
					23.7.2	Checks on quantity during cargo handling	15.5.3	Checks on Quantity During Cargo Handling
	Old Chapter 23 moved to Chapter 22				23.7.3	Sea and overboard discharge valves	24.7.2	Sea and Overboard Discharge Valves
					23.7.4	Scupper plugs	24.7.3	Scupper Plugs
					23.7.5	Spill containment	24.7.4	Spill Containment
					23.7.6	Tanker and terminal cargo and bunker pipelines not in use	24.7.5	Ship and Shore Cargo and Bunker Pipelines not in l
					23.7.7	***Loading at terminals with Vapour Emission Control Systems***	***11.1.13***	***Loading at Terminals Having Vapour Emission Control (VEC) Systems***
					23.7.7.1	General	11.1.13.1	General
					23.7.7.2	Misconnection of liquid and vapour lines	11.1.13.2	Misconnection of liquid and vapour lines
					23.7.7.3	Vapour over/under pressure	11.1.13.3	Vapour over/under-pressure
					23.7.7.4	Cargo tank overfill	11.1.13.4	Cargo tank overfill
					23.7.7.5	Sampling and gauging	11.1.13.5	Sampling and gauging
					23.7.7.6	Fire/explosion/detonation	11.1.13.6	Fire/explosion/detonation
					23.7.7.7	Liquid condensate in the vapour line	11.1.13.7	Liquid condensate in the vapour line
					23.7.7.8	Electrostatic discharge	11.1.13.8	Electrostatic discharge
					23.7.7.9	Training	11.1.13.9	Training
					23.7.7.10	Communications	11.1.13.10	Communications
					23.8	Firefighting while the ship is alongside a terminal	24.8	Fire-fighting equipment
					23.9	***Firefighting while in proximity to other ships***	***24.9***	***Proximity to Other Vessels***
					23.9.1	Tankers at adjacent berths	24.9.1	Tankers at Adjacent Berths
					23.9.2	General cargo ships at adjacent berths	24.9.2	General Cargo Ships at Adjacent Berths
					23.9.3	Tanker operations at general cargo berths	24.9.3	Tanker Operations at General Cargo Berths
					23.9.4	Tugs and other craft alongside	24.9.4	Tugs and Other Craft Alongside
					23.10	***Notices***	***24.1***	***Notices***
					23.10.1	Notices on the tanker	24.10.1	Notices on the Tanker
					23.10.2	Notices on the terminal	24.10.2	Notices on the Terminal
					23.11	Manning requirements	24.11	Manning Requirements
					23.12	Control of vehicles and other equipment	24.13	Control of Vehicles and Other Equipment
					23.13	Helicopter operations	24.14	Helicopter Operations

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CHAPTER 24	**PRECAUTIONS ON SHIP AND TERMINAL DURING CARGO HANDLING**				**CHAPTER 24**	**BUNKERING OPERATIONS**		
24.1	External Openings in Superstructures	23.1	External openings in superstructures		24.1	General	25.1	General
24.2	Central Air Conditioning and Ventilation Systems	23.2	Central air conditioning and ventilation systems		24.1.1	Preparation by the bunker supplier, incluing the bunker vessel operator		New
24.3	***Openings in Cargo Tanks***	***23.3***	***Openings in cargo tanks***		24.1.2	Bunkering safety management		New
24.3.1	Cargo Tank Lids	23.3.1	Cargo tank lids		24.1.3	Bunker procedures	25.2	Bunkering Procedures
24.3.2	Sighting and Ullage Ports	23.3.2	Sighting, ullage ports and segregated ballast tank lids		***24.2***	***Bunkering residual fuel oil or distillates***		
24.3.3	Cargo Tank Vent Outlets	23.3.3	Cargo tank vent outlets		24.2.1	Precautions	25.3	The Bunkering Operation
24.3.4	Tank Washing Openings	23.3.4	Tank washing openings		24.3	Liquified Natural Gas fuelled ships and Liquified Natural Gas bunkering		New
24.4	Inspection of Ship's Cargo Tanks Before Loading	23.4	Inspecting a tanker's cargo tanks before loading		24.3.1	Liquified Natural Gas bunkering processes and procedures		New
24.5	Segregated Ballast Tank Lids	23.3.2	Sighting, ullage ports and segregated ballast tank lids		24.3.2	Transfer equipment requirements for Liquified Natural Gas bunkering		New
24.6	***Ship and Shore Cargo Connections***	***23.6***	***Tanker and terminal cargo connections***		24.3.2.1	Liquified Natural Gas bunkering risk assessments		New
24.6.1	Flange Connections	23.6.1	Flange connections		24.3.2.2	Control zones		New
24.6.2	Removal of Blank Flanges	23.6.2	Removing blank flanges		24.3.2.3	Liquified Natural Gas bunkering Simultaneous Operations		New
24.6.3	Reducers and Spools	23.6.3	Reducers and spool pieces		24.3.2.4	Boil-Off Gas and pressure control		New
24.6.4	Lighting	17.3	Lighting		24.3.3	Additional information for Liquified Natural Gas as a fuel and Liquified Natural Gas bunkering		New
24.6.5	Emergency Release	18.1.10	Powered Emergency Release Couplings		24.4	Ancillary substances		New
24.7	***Accidental Oil Spillage and Leakage***	***23.7***	***Spills and leaks***		24.5	Alternative fuels		New
24.7.1	General	23.7.1	General		24.6	Bunker checklists	25.4	The Bunkering Safety Check-List
24.7.2	Sea and Overboard Discharge Valves	23.7.3	Sea and overboard discharge valves		24.6.1	General	25.4.1	General
24.7.3	Scupper Plugs	23.7.4	Scupper plugs		24.6.2	Bunkering checklist for residual fuel oil and distillates	25.4.3	Bunkering Safety Check-List (refers to the actual checklist)
24.7.4	Spill Containment	23.7.5	Spill containment		24.6.3	The principles of the bunker checklist for residual fuel oil and distillates		New
24.7.5	Ship and Shore Cargo and Bunker Pipelines not in U	23.7.6	Tanker and terminal cargo and bunker pipelines not in use		24.6.4	The composition of the bunker checklist for residual fuel oil and distillates	25.4.2	Guidelines for Use (significant change)
24.8	Fire-Fighting Equipment	23.8	Firefighting while the ship is alongside a terminal		24.6.5	Instructions for completing the bunker checklist	25.4.2	Guidelines for Use (significant change)
24.9	***Proximity to Other Vessels***	***23.9***	***Firefighting while in proximity to other ships***		24.7	Liquified Natural Gas bunkering safety checklists		New
24.9.1	Tankers at Adjacent Berths	23.9.1	Tankers at adjacent berths					
24.9.2	General Cargo Ships at Adjacent Berths	23.9.2	General cargo ships at adjacent berths					
24.9.3	Tanker Operations at General Cargo Berths	23.9.3	Tanker operations at general cargo berths			**Chapter 24 significantly rewritten to capture**		
24.9.4	Tugs and Other Craft Alongside	23.9.4	Tugs and other craft alongside			**revised guidance around bunkering operations**		
24.10	***Notices***	***23.10***	***Notices***			**inc. gas as a marine fuel, as well as align with Ch.25**		
24.10.1	Notices on the Tanker	23.10.1	Notices on the tanker					
24.10.2	Notices on the Terminal	23.10.2	Notices on the terminal					
24.11	Manning Requirements	23.11	Manning requirements					
24.12	Control of Naked Flames and Other Potential Ignition Sources (see 4.10)	***4.10***	***Control of Potential Ignition Sources (multiple references in section)***					
24.13	Control of Vehicles and Other Equipment	23.12	Control of vehicles and other equipment					
24.14	Helicopter Operations	23.13	Helicopter operations					
	Old Chapter 24 moved to Chapter 23							

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CHAPTER 25	BUNKERING OPERATIONS				CHAPTER 25	THE SHIP/SHORE SAFETY CHECKLIST		
25.1	General	24.1	General		25.1	General	26.3.1	General
25.2	Bunkering Procedures	24.1.3	Bunker procedures		25.2	Composition of the Ship/Shore Safety Checklist	26.3.2.1	Composition of the checklist
25.3	The Bunkering Operation	24.2.1	Precautions		25.3	Example safety letter	26.3.4	Example Safety Letter
25.4	***The Bunkering Safety Check-List***	24.6	Bunker checklists		25.4	Instructions for completing the Ship/Shore Safety Checklist	26.3.2	Guidelines for Use
25.4.1	General	24.6.1	General		25.4.1	Pre-arrival		New
25.4.2	Guidelines for Use	24.6.5	Guidelines for completing the bunker checklist		25.4.2	Checks after mooring		New
25.4.3	Bunkering Safety Check-List	24.6.2	Bunkering checklist for residual fuel oil and distillates (significantly revised/amended)		25.4.3	Checks before transfer - the pre-transfer conference		New
					25.4.4	The declaration		New
					25.4.5	Summary of repetitive checks duing and after transfer		New
	Old Chapter 25 moved to Chapter 24							

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Ref	ISGOTT 5	Ref	Primary I6 to I5 Matching		Ref	ISGOTT 6	Ref	Primary I5 to I6 Matching
CHAPTER 26	SAFETY MANAGEMENT							
26.1	***Climatic Conditions***							
26.1.1	Terminal Advice of Adverse Weather Conditions	16.1	Limiting conditions for operations					
26.1.2	Wind Conditions	16.1	Limiting conditions for operations					
26.1.3	Electrical Storms (Lightning)	16.2	Electrical storms					
26.2	***Personnel Safety***							
26.2.1	Personal Protective Equipment (PPE)	4.8.1	Personal Protective Equipment (PPE)					
26.2.2	Slip and Fall Hazards	4.8.2	Slip Trip and Fall Hazards					
26.2.3	Personal Hygiene	4.8.4	Personal Hygiene					
26.2.4	Clothing Made of Synthetic Materials	3.3.2	Clothing and Footwear inc 3.3.3 Synthetic Materials					
26.3	***The Ship/Shore Safety Check-List***							
26.3.1	General	25.1	General					
26.3.2	Guidelines for Use	25.4	Guidelines for completing the ship/shore safety checklist					
26.3.2.1	Composition of the checklist	25.2	Composition of the ship/shore safety checklist					
26.3.2.2	Coding of items	*withdrawn*						
26.3.3	The Ship/Shore Safety Check-List	25.4	Guidelines for completing the ship/shore safety checklist					
26.3.4	Example Safety Letter	25.3	Example safety letter					
26.4	Guidelines for Completing the Ship/Shore Safety Check-List	*withdrawn*						
26.5	Emergency Actions	*withdrawn*	*see 20.3 Terminal Emergency Planning*					
26.5.1	Fire or Explosion on a Berth	*withdrawn*	*see 20.3 Terminal Emergency Planning*					
26.5.2	Fire on a Tanker at a Terminal	*withdrawn*	*see 20.3 Terminal Emergency Planning*					
26.5.3	International Shore Fire Connection	5.5	International Shore Fire Connection					
26.5.4	Emergency Release Procedures	*withdrawn*	*included in TIB and SSSCL Agreements*					
26.5.5	***Emergency Towing-Off Pennants***	22.3.1	Tanker's mooring equipment					
26.5.5.1	Rigging	*withdrawn*						
26.5.5.2	Handling	*withdrawn*						
26.5.5.3	Possible future developments	*withdrawn*						
	Old Chapter 26 SSSCL (only) moved to Chapter 25, rest moved to other Chapters							

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PART 1: GENERAL INFORMATION

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