

CATALOG – TUG & BARGE VIDEO SERIES

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TUG-OPERATIONS & SAFETY

MSTI-9101-Occupational Hazards and Safety Guidelines (19 mins)

Course Description

This course provides essential knowledge on occupational hazards and safety practices for deckhands working onboard ships, tugs, and barges. It covers safe access, slip/trip/fall prevention, working aloft and over the side, lifting operations, oil-spill prevention, and the safe use of cradles, stages, and bosun's chairs.

MSTI-9102-Safe Work Practices on Tugs (26 mins)

Course Description

This course provides essential knowledge on safe work practices aboard tugs with emphasis on reducing occupational risks in challenging maritime environments. It covers safe deck operations in heavy weather, engine room and machinery space precautions, galley safety, and human interaction to promote a safer and more effective workplace.

MSTI-9103-Safety in Tug and Barge Operations (22 mins)

Course Description

This course provides essential knowledge of safe tug and barge operations, focusing on common operational hazards and preventive measures. It covers barge operations, mooring and towing gear, crane safety, safe boarding procedures, and chemical handling.

MSTI-9105-Towing vessel safety in Tug Operations (26 mins)

Course Description

This course provides essential knowledge of towing vessel safety and operational responsibilities during tug operations. It covers safety responsibilities, navigational aids, vessel handling, and steering practices required for safe operations.

MSTI-9106-Deckhand Proficiency (14 mins)

Course Description

This course develops essential knowledge and skills required for safe and proficient deckhand operations aboard tugs. It covers manning regulations, occupational hazards, safe access and boarding arrangements, and proper rigging of pilot ladders.

MSTI-9107-Vessel characteristics, terminologies and hull markings (24 mins)

Course Description

This course introduces key tugboat terminology, vessel characteristics, design dimensions, and hull markings essential for safe operations. It also covers load lines, freeboard, propeller characteristics, and engine movements used during maneuvering.

MSTI-9108-Enclosed space precautions and entry (24 mins)

Course Description

This course provides essential knowledge of hazards associated with enclosed spaces and the precautions required for safe entry. It covers enclosed-space safety hazards, risk-control measures, and guidelines for conducting safe enclosed-space entry operations.

MSTI-9109-Safety and the SMS maintenance on Tugs (7 mins)

Course Description

This course emphasizes safe working practices and effective Safety Management System (SMS) maintenance aboard tugs. It covers emergency response, prevention measures, personal hygiene and health, and lessons learned from failures in SMS maintenance.

MSTI-9110-Bollard Pull and Towing Stability (21 mins)

Course Description

This course explains the principles of bollard pull, tug stability, and safe towing operations. It covers bollard pull testing, stability considerations, tug girting, preventive measures, and lessons learned from girting incidents.

MSTI-9111-Tug Operations and Challenges (24 mins)

Course Description

This course explores the key operational considerations and challenges involved in safe and effective tug operations. It covers tug selection, operational modes, positioning, hydrodynamic interaction, bollard pull, towline forces, and operational limitations.

MSTI-9112-Towlines and their Management (43 mins)

Course Description

This course provides comprehensive knowledge of towing equipment, towlines, and their safe management during tug operations. It covers towline types and selection, wires and synthetic ropes, heaving lines, handling practices, and towline inspection and maintenance.

MSTI-9113-Cargo Towing Operations by Tugs (22 mins)

Course Description

This course introduces the principles and practices involved in safe and effective cargo towing operations using tugs. It covers towing techniques, bollard pull, pivot-point considerations, and gob arrangements essential for maintaining control during towing.

MSTI-9114-Tug Stability and Girting (23 mins)

Course Description

This course provides essential knowledge of tug stability and the hazards associated with girting during towing operations. It covers girting mechanisms, prevention techniques, stability considerations, and lessons learned from tug-capsizing incidents.

MSTI-9115-ATB, ITB and Cargo Barges (23 mins)

Course Description

This course introduces the different types of cargo barges and tug-barge configurations used in marine operations. It covers Integrated Tug and Barge (ITB), Articulated Tug and Barge (ATB) systems, and the components of ATB connection systems.

MSTI-9116-Advanced Towing Operations (22 mins)

Course Description

This course provides advanced knowledge of tug selection, operational limitations, and towing techniques for challenging conditions. It covers cargo towing operations and the precautions and practices required when towing in rough and severe weather.

MSTI-9117-Introduction to Tugs and Barges (25 mins)

Course Description

This course provides an overview of the tug and barge industry, vessel types, and evolving tugboat technologies. It covers tug and harbor-tug types, tank barges, hybrid and electric tugboats, and alternative fuels used in modern tug operations.

MSTI-9118-Types of Tugs (28 mins)

Course Description

This course introduces the major types of tugboats and their distinctive designs, propulsion arrangements, and operational applications. It covers conventional, Azimuth Stern Drive (ASD), rotor, and tractor tugs and their roles in marine operations.

MSTI-9119-Classification of Tugs (26 mins)

Course Description

This course explains the classification of tugboats based on their design, propulsion systems, operational roles, and capabilities. It covers classification by hull form, propulsion arrangement, power, operational purpose, and specialized capabilities.

MSTI-9120-Conventional Propulsion System for Tugs (21 mins)

Course Description

This course provides an overview of conventional tug propulsion and steering systems and their role in vessel maneuvering. It covers propellers, transmission systems, Kort nozzles, rudders, bow thrusters, and controllable factors affecting tug handling.

MSTI-9121-Steerable Propeller Systems for Tugs (41 mins)

Course Description

This course explains the principles and applications of steerable propulsion systems used in modern tugboats. It covers ASD and azimuthing drives, Azipods, steering techniques, and Voith-Schneider propulsion systems and their operational advantages.

MSTI-9122-Safe Working in Machinery Space (15 mins)

Course Description

This course provides essential guidance on safe working practices within machinery spaces and workshops aboard vessels. It covers machinery-space hazards, engine-room lighting, workshop and bench machines, and the safe use of hand and power tools.

MSTI-9123-Electrical Safety (25 mins)

Course Description

This course provides essential knowledge of electrical hazards and safe working practices when handling electrical equipment aboard vessels. It covers battery and battery-room safety, electric-shock hazards, safe isolation procedures, and the proper use of work permits.

MSTI-9124-Tugboat Galley Safety (32 mins)

Course Description

Tugboat Galley Safety introduces safe galley operations, including the correct use of galley equipment, shipboard cooking, PPE and hygiene wear, sanitation, food storage and handling, stewarding, waste collection, and housekeeping. It also covers fire prevention, firefighting, and equipment safety in the galley.

MSTI-9125-Galley Safety Challenges and Learning from Accidents (23 mins)

Course Description

Galley Safety Challenges and Learning from Accidents examines the risks of working in a moving tugboat galley. It covers tugboat-specific safety concerns, safe working practices, knife-injury prevention, and lessons drawn from galley accidents, helping personnel recognize hazards and adopt safer practices during routine galley work.

MSTI-9126- Operational Modes of Tugs (39 mins)

Course Description

Operational Modes of Tugs introduces the principal ways tugs assist and control vessels. It examines push/pull operations and related case studies, direct and indirect towing, side-stepping, and rotational control. The course helps learners distinguish among these operating modes and understand how each is applied during tug operations.

MSTI-9127- Tugboat Handling and Maneuvering (33 mins)

Course Description

Tugboat Handling and Maneuvering examines how tugs support the berthing and unberthing of ships. It covers tug positioning, hydrodynamic interaction, the effects of wind and current, and other factors affecting maneuverability. The course also addresses emergency steering and braking assistance and provides practical guidance for safe tug handling.

TUG-HSSE and PERSONAL CARE

MSTI-9201-Awareness of Drug and Alcohol Abuse Onboard (13 mins)

Course Description

This course provides awareness of the risks and safety concerns associated with drug and alcohol abuse in the maritime workplace. It covers the effects of substance abuse, alcoholism, onboard cases, and the importance of complying with company drug and alcohol policies.

MSTI-9202-Drug and Alcohol policy implementation and prevention onboard (21 mins)

Course Description

This course provides guidance on developing, implementing, and maintaining effective drug and alcohol policies onboard vessels. It covers key policy components, workplace safety and compliance requirements, implementation guidelines, and strategies for preventing and addressing substance abuse.

MSTI-9203-Testing and Consequences of a Positive Drug or Alcohol Test (19 mins)

Course Description

This course explains drug and alcohol testing methods, sampling procedures, and their importance in maintaining a safe maritime workplace. It covers different types of testing and the consequences associated with positive test results and possession of prohibited drugs.

MSTI-9204-Communication at work onboard (19 mins)

Course Description

This course develops an understanding of effective workplace communication and its importance for safe and harmonious shipboard operations. It covers verbal and written communication, feedback, language barriers, and cultural, racial, and gender considerations within multicultural crews.

MSTI-9205-Communication for efficient vessel operation (11 mins)

Course Description

This course highlights the importance of clear and effective communication for safe and efficient vessel operations. It covers communication during wheelhouse and engine-room watchkeeping, routine ship operations, nighttime navigation, traffic situations, and adverse weather conditions.

MSTI-9206-Leadership strategies and Concepts (13 mins)

Course Description

This course introduces essential leadership concepts, strategies, models, and styles applicable to the maritime workplace. It also explores effective cross-cultural leadership practices for managing diverse crews and supporting safe and efficient vessel operations.

MSTI-9207-Assertive Leadership (14 mins)

Course Description

This course develops assertive leadership and communication skills required for effective teamwork and decision-making onboard. It covers mental habits, leadership roles, assertive communication techniques, and effective leadership during emergency situations.

MSTI-9208-Motivating the Crew (10 mins)

Course Description

This course explores motivation techniques that help improve crew engagement, teamwork, and workplace performance. It covers motivational principles, the hierarchy of needs, team motivation, and the role of team leaders in maintaining effective performance.

MSTI-9209-Teamwork for performance (21 mins)

Course Description

This course focuses on building effective teamwork and improving individual and team performance in the maritime workplace. It covers conflict management, personnel assignment, mentoring, prioritization, resource constraints, performance appraisal, and cultural and gender considerations.

MSTI-9210-Stress and Fatigue Awareness for Towing Crews (18 mins)

Course Description

This course provides awareness of stress and fatigue and their impact on the safety and performance of towing crews. It covers causes and effects of stress and fatigue, towing-industry risk factors, their influence on safe operations, and practical methods for coping with stress.

MSTI-9211-Fatigue Management and Mitigation in Towing Operations (30 mins)

Course Description

This course provides practical guidance on identifying, managing, and mitigating fatigue during towing operations. It covers fatigue prevention and onboard management, lessons from fatigue-related near-misses and accidents, and tools and policies for reducing stress and fatigue risks.

TUG-LIFESAVING and FIRE PROTECTION

MSTI-9301-Fire Prevention on Tugs and Barges (18 mins)

Course Description

This course provides essential knowledge of fire prevention and fire safety practices aboard tugs and barges. It covers fire chemistry and classes, common causes of fire, fire propagation, safety plans, means of escape, extinguishing methods, and good housekeeping practices.

MSTI-9302-Personal Protective Equipment (PPE) on Tugs and Barges (18 mins)

Course Description

This course provides essential knowledge of Personal Protective Equipment (PPE) and its role in protecting personnel during tug and barge operations. It covers the selection and use of appropriate PPE, including life jackets and immersion suits, for various onboard activities and emergencies.

MSTI-9303-Emergency preparedness and distress signals (25 mins)

Course Description

This course provides essential knowledge of emergency preparedness, alarm systems, and distress signaling procedures used at sea. It covers emergency alarms, distress signals, pyrotechnic devices, and Digital Selective Calling (DSC) for effective emergency communication.

MSTI-9304-Firefighting on Tugs and Barges (24 mins)

Course Description

This course provides practical knowledge of firefighting strategies, equipment, and emergency response procedures aboard tugs and barges. It covers fire detection, operational readiness, fixed and portable systems, CO₂ flooding, fire-control arrangements, and firefighting in accommodation and machinery spaces.

MSTI-9305-Liferafts for Crew Survival (21 mins)

Course Description

This course provides essential knowledge of liferaft operation and survival procedures during maritime emergencies. It covers manual and davit launching, safe entry into liferafts, survival techniques while afloat, and inspection and maintenance of liferaft equipment.

MSTI-9306-Life-Saving Appliances (LSA) on Towing vessels (14 mins)

Course Description

This course introduces the life-saving appliances used aboard towing vessels and their importance during emergency situations. It covers essential equipment including lifebuoys, liferings, and line-throwing appliances, along with their proper use for crew safety and rescue operations.

MSTI-9307-Global Maritime Distress and Safety System (GMDSS) (17 mins)

Course Description

This course provides an overview of the Global Maritime Distress and Safety System (GMDSS) and its role in maritime emergency communications. It covers GMDSS functional requirements, system capabilities, and the communication arrangements used to support distress alerting and safety at sea.

TUG-NAVIGATION

MSTI-9401-Position fixing and depth-measuring equipment (21 mins)

Course Description

This course provides an understanding of navigational equipment used for position fixing, depth measurement, and vessel movement monitoring. It covers echo sounders, coordinate systems, sextants, GPS, and Doppler logs and their applications in safe navigation.

MSTI-9402-Heading and Steering Systems (30 mins)

Course Description

This course provides an understanding of navigational equipment used for position fixing, depth measurement, and vessel movement monitoring. It covers echo sounders, coordinate systems, sextants, GPS, and Doppler logs and their applications in safe navigation.

MSTI-9403-Primary Navigational Aids (36 mins)

Course Description

This course provides comprehensive knowledge of primary electronic navigational aids used for safe and effective vessel navigation. It covers radar, ARPA, electronic and raster navigational charts, and the operation and application of ECDIS.

MSTI-9404-Integrated Bridge Equipment (20 mins)

Course Description

This course explains the integration of modern bridge navigational equipment to enhance situational awareness and navigation safety. It covers AIS and the integration of AIS and GPS information with ECDIS for effective monitoring and decision-making.

MSTI-9405-Navigation Recording, Monitoring, and Alerting Systems (9 mins)

Course Description

This course introduces systems used for recording, monitoring, tracking, and alerting during vessel navigation. It covers VDR, S-VDR, course recorders, LRIT, and BNWAS and their roles in navigational safety.

MSTI-9406-Introduction to Tug and Barge Hydrostatics (13 mins)

Course Description

This course introduces the fundamental principles of hydrostatics and flotation applicable to tugs and barges. It covers hydrostatic pressure, flotation, metacentric concepts, center of gravity, weight movement, and their effects on vessel heel and stability.

MSTI-9407-Principles of Ship Stability (23 mins)

Course Description

This course provides essential knowledge of ship stability principles and their importance in maintaining vessel safety. It covers stability terminology, stability curves, transverse statical stability, intact stability criteria, and the consequences of loss of stability.

MSTI-9408-Factors of Stability on Tugs and Barges (18 mins)

Course Description

This course examines the key factors affecting the stability and watertight integrity of tugs and barges. It covers draft, trim, list, free-surface effect, watertight integrity, and the proper management of watertight doors.

MSTI-9412-Tugboat Handling and Maneuvering (36 mins)

Course Description

This course develops an understanding of tugboat handling, maneuvering, and towing techniques under varying operating conditions. It covers the effects of wind and current, maneuverability factors, ship-handling best practices, towing operations, and emergency towing.

TUG-ENGINEERING

MSTI-9501-Building Blocks of Electricity (10 mins)

Course Description

This course introduces the fundamental principles and basic concepts of electricity relevant to marine electrical systems. It covers electricity generation, electromotive force, current, voltage, resistance, and the characteristics of conductors, insulators, and semiconductors.

MSTI-9502-Basic Laws of Current Electricity (22 mins)

Course Description

This course provides an understanding of fundamental electrical laws and their application to basic electrical circuits. It covers Ohm's Law, voltage-current-resistance relationships, series and parallel circuits, Kirchhoff's Law, resistance grouping, electrical energy, and power.

MSTI-9503-Marine Storage Batteries (15 mins)

Course Description

This course provides essential knowledge of marine storage batteries, their operating principles, applications, and maintenance requirements. It covers electrolysis, polarity, internal resistance, lead-acid and alkaline batteries, battery types, and safe maintenance practices.

MSTI-9504-Magnetic Induction for AC Generation (19 mins)

Course Description

This course explains the principles of magnetism and electromagnetic induction used in alternating-current generation. It covers magnetic properties, Faraday's Law, methods and magnitude of induced EMF, and the fundamental principles of AC generation.

MSTI-9505-AC Voltages, Currents and P.F. (11 mins)

Course Description

This course introduces the fundamental characteristics of alternating current, voltage, and power factor in electrical systems. It covers AC and DC concepts, waveforms, RMS values, power factor, and methods for mitigating power-factor-related problems.

MSTI-9506-AC Circuits (21 mins)

Course Description

This course provides an understanding of AC circuit behavior involving resistors, inductors, and capacitors in different configurations. It covers voltage-current phase relationships and the characteristics of RL, RC, and RLC series and parallel circuits.

MSTI-9507-Metering and Instruments (19 mins)

Course Description

This course introduces electrical measuring instruments and techniques used for monitoring and testing marine electrical systems. It covers Megger testing, insulation resistance measurement, moving-iron and moving-coil instruments, ammeter calibration, and measurements using PTs and CTs.

MSTI-9508-DC Generators (12 mins)

Course Description

This course explains the construction, operating principles, and characteristics of DC generators. It covers AC-to-DC conversion using split rings, armature windings and reactions, generator construction, and different types of DC generators.

MSTI-9509-DC Motors (19 mins)

Course Description

This course provides an understanding of DC motor principles, operation, and their applications aboard tugboats. It covers Fleming's Left-Hand Rule, motor types, starting, speed control, direction reversal, and identification of motor terminals.

MSTI-9510-Alternators (24 mins)

Course Description

This course provides comprehensive knowledge of alternator construction, operation, voltage regulation, and synchronization. It covers AC generation, frequency and waveform, three-phase alternators, automatic voltage regulation, synchronizing conditions, and synchroscope operation.

MSTI-9511-C Motors (18 mins)

Course Description

This course explains the principles, operation, and applications of single-phase and three-phase AC motors. It covers induction and synchronous motors, terminal identification, capacitor-start motors, direction reversal, and appropriate motor starting procedures.

MSTI-9512-Transformers (24 mins)

Course Description

This course provides an understanding of transformer principles, construction, operation, protection, and maintenance. It covers single and three-phase transformers, connections, efficiency and losses, protection systems, transformer oil testing, and prevention of electrical machinery faults.

MSTI-9513-Electrical Protection and Switch Gear (36 mins)

Course Description

This course provides essential knowledge of electrical protection systems and switchgear used to safeguard marine electrical equipment and personnel. It covers generator and motor faults, earth faults, overload and single-phasing protection, protective relays, breakers, fuses, tripping schemes, and electric-shock hazards.

MSTI-9514-Onboard Electrical and Control Systems (30 mins)

Course Description

This course provides an overview of shipboard electrical distribution, control, emergency power, and monitoring systems. It covers essential and non-essential loads, lighting, shore and emergency supplies, batteries, insulation testing, maintenance, alarm circuits, and remote shutdown systems.

MSTI-9517-Steering Gear (25 mins)

Course Description

This course provides comprehensive knowledge of marine steering gear systems, their operation, maintenance, and emergency arrangements. It covers ram-type and rotary-vane steering systems, hunting gear, troubleshooting, emergency steering, alarms, trips, safety tests, and all-electric steering systems.

TUG-MANAGEMENT

MSTI-9601-Introduction to Tugs and Barges (25 mins)

Course Description

Introduction to Tugs and Barges provides an overview of the tug and barge industry and the vessels used in its operations. It examines major tug types, including harbor tugs, and introduces tank barges. The course also explores emerging tugboat technologies, including hybrid and fully electric propulsion and the use of alternative fuels.

MSTI-9602-Subchapter M for the Towing Industry (29 mins)

Course Description

This course provides an overview of Subchapter M requirements and their application to towing vessels operating on U.S. waterways. It covers regulatory requirements for tugboats, the relationship between Subchapter M and the ISM Code, and their impact on towing-industry safety and compliance.

MSTI-9603-Towing Safety Management System (34 mins)

Course Description

This course provides an understanding of the Towing Safety Management System (TSMS) and its role in regulatory compliance and risk management. It covers the TSMS option, Responsible Carrier Program, Subchapter M risk management, and equipment requirements supporting safe towing operations.

MSTI-9607-Tugboat Hull Design and Towing Equipment (28 mins)

Course Description

This course introduces the fundamental principles of tugboat hull design and the towing equipment required for safe operations. It covers essential hull characteristics, design considerations, and towing equipment used to support effective tug and towing operations.

MSTI-9608-Workspace familiarization on Tugs (29 mins)

Course Description

This course provides familiarization with key working areas, equipment, and operational spaces aboard tugboats. It covers the wheelhouse, engine room and propulsion areas, confined spaces, and deck equipment used for mooring and anchoring operations.

MSTI-9609-Vessel Security Plan (30 mins)

Course Description

This course provides an understanding of vessel security planning and the measures required to maintain effective onboard security. It covers security assessments and responsibilities, access and gangway control, drills, incident scenarios, security awareness, and contingency planning.

MSTI-9610-SubM, Manning and Crew Competence (9 mins)

Course Description

This course explains Subchapter M requirements related to vessel compliance, manning, and crew competency aboard towing vessels. It covers Certificates of Inspection, roles and responsibilities, minimum safe manning, and crew training, competency, and certification requirements.

MSTI-9611- Rescue and Salvage Operations by Tugs (18 mins)

Course Description

Rescue and Salvage Operations by Tugs introduces the role of tugs in marine rescue and salvage. It explains the distinction between towage and salvage, reviews equipment used during salvage work, and examines risk assessment for salvage operations. The course also outlines the elements required for a valid salvage claim.

MSTI-9612-Salvage Rewards for Tugs under International Laws (28 mins)

Course Description

Salvage Rewards for Tugs under International Laws examines the legal framework governing compensation for successful salvage services. It traces the development of salvage law, explains the 1989 International Convention on Salvage, and reviews duties, cooperation, and reward criteria. It also introduces Lloyd's Open Form and the structure of an LOF agreement.

MSTI-9613-P&I Cover, Environmental Salvage and SCOPIC Incentives (30 mins)

Course Description

P&I Cover, Environmental Salvage and SCOPIC examines the insurance and compensation arrangements associated with salvage operations. It introduces Protection and Indemnity insurance, Article 14 compensation for environmental protection by salvors, and environmental salvage incentives. It also explains the SCOPIC clause and how it is activated.

MSTI-9614- AHTS vessel basic design and operation (25 mins)

Course Description

This course covers the basic design and operation of Anchor Handling Tug Supply (AHTS) vessels, including anchor handling and tug supply operations, vessel features, dynamic positioning, propulsion and power systems, and relevant regulatory requirements.

MSTI-9615- Anchor handling by AHTS (26 mins)

Course Description

This course covers anchor handling operations by AHTS vessels, including anchor types, offshore anchor-handling gear, chain handling, and mooring systems. It also addresses squat effects and stability requirements to support safe and efficient offshore operations.