Towing Vessel Safety
Subchapter M Compliance

Ian McVicker

Location
Day Month Year
ABS & ABS Group Organizational Overview

ABS Group is a wholly-owned subsidiary of ABS, the world’s leading marine and offshore classification society, founded in 1862.
# Services & Product Lines

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<tbody>
<tr>
<td>Initial Quality:</td>
<td>HSE Services</td>
<td>Systems &amp; Technology Services (e.g., Maximo Implementation)</td>
<td>Structural Engineering:</td>
<td>Third-party Audit &amp; Certification</td>
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<td>• PQM/TPI</td>
<td>Major Accident Risk:</td>
<td>Reliability Services:</td>
<td>• Buildings &amp; Infrastructure</td>
<td>• ISO-9000</td>
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<td>• ASME/PED/etc.</td>
<td>PSM/SIL/LOPA</td>
<td>• Field reliability consulting</td>
<td>• Marine &amp; Offshore Structures</td>
<td>• AS-9000</td>
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<td>• Engineering Verification &amp;</td>
<td>Safety Case</td>
<td>• Engineering reliability studies</td>
<td>Offshore, Subsea, &amp; Process Engineering Support</td>
<td>• ISO-14000</td>
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<td>Certification</td>
<td>QRA</td>
<td>• RAM modeling &amp; simulation</td>
<td>Materials Engineering</td>
<td>• ISO-28000</td>
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<td>In-service Integrity Management:</td>
<td>Nuclear PRA</td>
<td>Strategy &amp; Business Process Solutions</td>
<td>Systems Engineering &amp; Technical Support</td>
<td>• ISO-27000</td>
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<td>• Mechanical Integrity/AIM</td>
<td>Natural Hazard Risk</td>
<td>Condition Monitoring Solutions</td>
<td>IV&amp;V</td>
<td>• ISO-50000</td>
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<td>• In-service Inspection &amp; RBI</td>
<td>Security Risk</td>
<td>Operational Excellence</td>
<td>Engineering Failure Analysis</td>
<td>• Etc.</td>
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<td>• Marine Survey &amp; Condition</td>
<td>Environmental Risk &amp; Compliance</td>
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<td>COS SEMS Audit &amp; Certification</td>
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<td>Assessment</td>
<td>Enterprise Risk Management</td>
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<td>Second-party Audits (e.g., vendor audits)</td>
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<td>Project Support:</td>
<td>Emergency Management</td>
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<td>First-party Audits</td>
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<td>• Project Supervision</td>
<td>Incident Investigation/Root Cause Analysis</td>
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<td>Training</td>
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<td>• Owner’s Representation</td>
<td>Software Tools</td>
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<tr>
<td>• Local Content Certification</td>
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<tr>
<td>• Software &amp; Control System Integrity</td>
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Subchapter M – Intent & Impact

- Reduce casualties on towing vessels
- Promote safer work practices

Over 5,500 Vessels
Subchapter M – Proposed Requirements

- **Certificate of Inspection (COI):**
  - Valid for 5 years
  - Numerous compliance requirements

- **Compliance Choices**
  - U. S. Coast Guard Inspections
  - Towing Safety Management System (TSMS)
Objective Evidence:

- Dry dock exam
- Internal structure exam
- TSMS Certification/audits
- Annual inspections/surveys
  - Vessel Outfit/Equipment
  - Documentation/Data
  - Towing gear
  - Machinery/Electrical
Subchapter M – Key Elements

- Establishing Standards:
  - Company Compliance
  - Vessel Compliance
  - Vessel Standards
    - Operations & Training
    - Life Saving
    - Fire Protection
    - Machinery & Electrical
    - Construction & Arrangement
46 CFR Subchapter M

- Part 136 – Certification
- Part 137 – Vessel Compliance
- Part 138 – Towing Safety Management System (TSMS)
- Part 139 – Third-Party Organizations
- Part 140 – Operations
- Part 141 – Lifesaving
- Part 142 – Fire Protection
- Part 143 – Machinery/Electrical Systems & Equipment
- Part 144 – Construction & Arrangement
Subchapter M – Key Elements

● Applicability:
  ■ Towing vessels ≥ 26 feet (exceptions)
  ■ Any size moving dangerous or hazardous materials

● Third-party auditors and surveyors:
  ■ Allows for flexibility – service when/where needed
  ■ Allows CG to focus on areas of greatest risk
Subchapter M - Exempt Vessels

- Exempt vessels are:
  - Vessels less than 26 feet in length *(unless moving a barge carrying dangerous or hazardous materials)*;
  - Vessel used for assistance towing *(for recreational vessels – Sea Tow, Boat US, etc.)*;
  - Vessel towing recreational vessels for salvage;
  - Vessel transporting or assisting recreational vessels within and between marinas;
  - Work boats operating exclusively within a worksite *(such as work and assist vessels used during marine construction, dredging, river bank stabilization, that are towed to their prospective worksite)*;
  - Subchapter I vessels *(seagoing over 300 GT)*; and
  - Vessels inspected under other Subchapters that perform occasional towing
Subchapter M – Excepted Vessels

● Excepted vessels are defined as:
  ■ Used within a limited geographic area (fleeting or facility), used for restricted service (*making or breaking large tows*);
  ■ Harbor assist vessels;
    – Maneuvers to dock, undock, moor, or unmoor a vessel
    – Escort a vessel with limited maneuverability
  ■ Vessels used for response to emergency or pollution; or
  ■ Vessel deemed to be excepted vessel by the cognizant OCMI

● Excepted vessels have reduced compliance requirements

● If a vessel will, or is expected to operate outside the definition of Excepted vessel, than it will not be considered as such and must comply with all applicable rules.
Subchapter M – Excepted Vessel

<table>
<thead>
<tr>
<th>Part 142</th>
<th>Exempt from following rules:</th>
</tr>
</thead>
<tbody>
<tr>
<td>142.315 – Additional fire-extinguishing requirements</td>
<td></td>
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<tr>
<td>142.325 – Fire pumps, fire mains, and fire hoses</td>
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</tr>
<tr>
<td>142.330 – Fire detection in engine room</td>
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<tr>
<td>142.335 – Smoke alarms in berthing spaces</td>
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<td>142.340 – Heat detector in galley</td>
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<tr>
<th>Part 143</th>
<th>Exempt from following rules or modified rules:</th>
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<tr>
<td>Modified: 143.245 – Alarms and monitoring</td>
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<tr>
<td>Exempt: 143.250 – General Alarms</td>
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<tr>
<td>Exempt: 143.255 – Communications requirements</td>
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<tr>
<td>Exempt: 143.280 – Fuel shutoff requirements</td>
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<tr>
<td>Exempt: 143.285 – Additional fuel system requirements</td>
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<th>Part 143</th>
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<td>Subpart C – Deferred requirements for existing towing vessels</td>
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<tr>
<td>Subpart D – Requirements for towing vessels that tow oil or hazardous materials in bulk</td>
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TSMS Option – Options within the Option

- Periodic Survey
- Audited Program
- Recognized Classification Society (RCS)
# TSMS – Periodic Survey

<table>
<thead>
<tr>
<th></th>
<th>Company</th>
<th>TPO</th>
<th>Coast Guard</th>
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<tbody>
<tr>
<td>1</td>
<td>Develop/submit TSMS</td>
<td>Approve TSMS</td>
<td></td>
<td>138.220</td>
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<tr>
<td>2</td>
<td>Implement TSMS…company and vessel</td>
<td>Conduct external management &amp; vessel TSMS audits &amp; issue TSMS certificate</td>
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<td>138.305, 138.315</td>
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<td>3</td>
<td></td>
<td>Conduct dry dock &amp; ISE (load line cert acceptable evidence)</td>
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<td>137.300</td>
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<td>4</td>
<td>Submit application for inspection &amp; objective evidence</td>
<td>Conduct an inspection for certification and issue COI</td>
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<td>136.140, 136.145</td>
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<td>5</td>
<td></td>
<td>Conduct annual periodic vessel surveys &amp; endorse COI</td>
<td></td>
<td>137.205</td>
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<td>6</td>
<td>Complete annual internal management TSMS audits</td>
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<td>138.405</td>
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<td>7</td>
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<td>Conduct external management TSMS Mid-period audit</td>
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<td>Conduct external vessel TSMS audit once every 5 years</td>
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## TSMS – Audited Program

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<td>Complete annual internal management TSMS audits</td>
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## TSMS – Recognized Classification Society (RCS)

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<tbody>
<tr>
<td>1</td>
<td>Implement/demonstrate compliance with SMS</td>
<td>Approve ISM implementation and issue DOC/SMC</td>
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<td>Conduct dry dock &amp; ISE (load line cert acceptable evidence)</td>
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Subchapter M – Alternate/Advance Compliance

- **Class Vessel:**
  - Meets Subchapter M vessel standard requirements

- **ISM/SMS, or other approved system:**
  - Meets TSMS requirements

- **Load Line Certification:**
  - Meets Drydock requirement

- **All vessels must meet an annual vessel inspection/survey, and Drydock/ISE requirement regardless of compliance option chosen.**

- **Companies choosing the TSMS option must meet management system requirements.**
Subchapter M – Vessel Standards

- American Bureau of Shipping (ABS) Rules are the default standards for new towing vessels

“ABS rules provide the towing industry with a comprehensive set of standards appropriate to towing vessels that are widely accepted and already in use by many towing companies”
Subchapter M – Vessel Structural Standards

ABS Standards

- **Rivers or Intracoastal waterways routes:**
  - ABS Rules for Building and Classing Steel Vessels on Rivers and Intracoastal Waterways

- **Lakes, Bays, Sounds, Limited Coastwise, Coastwise and Ocean Routes:**
  - ABS Rules for Building and Classing Steel Vessels Under 90 Meters
Construction & Arrangement - Verification

- Watertight Integrity
- Visibility from Pilothouse
- Emergency Escape
- Handrails and Bulwarks
- Guards in Dangerous Places
- Exhausts
- Crew Spaces
- Ventilation for Accommodations
- Storm Rails (Ocean and Coastwise)
Verification of compliance required for:

- **Major conversion or alteration to the hull, machinery, or equipment that effect safety of vessel**
  - NVIC 11-93: Applicability of Tonnage Measurement
  - Substantially changes dimensions or carrying capacity
  - Changes type of vessel
  - Substantially prolongs life of vessel
  - Changes such that is essentially a new vessel

- **New installations not “replacements in kind”**
  - New install or replacement that requires any modifications
Construction & Arrangement - Verification

“Verification of compliance by ABS or registered/licensed Professional Engineer (P.E.)”

“Plans reviewed and approved by ABS need not be forwarded to the USCG unless requested”
Subchapter M – Compliance Timelines

- **Multi-layered timeline for requirements:**
  - Dry dock/Internal Structure evaluation
  - TSMS audits, approval & certificate
  - Vessel survey/Vessel compliance
  - COI issuance
  - Machinery, electrical & equipment
  - Health and Safety plan
  - Deferred machinery and electrical
## Compliance Phase-In

<table>
<thead>
<tr>
<th>YR 0</th>
<th>YR 2</th>
<th>YR 3</th>
<th>YR 4</th>
<th>YR 5</th>
<th>YR 6</th>
<th>YR 8</th>
<th>YR 9</th>
<th>YR 10</th>
<th>YR 11</th>
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<tr>
<td>Effective Date of Final Rule</td>
<td>Implement TSMS</td>
<td>Prepare vessel etc.</td>
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<td>Deferred Machinery &amp; Electrical 5yrs fm COI</td>
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Deferred Machinery & Electrical 5yrs from COI
What Can I Be Doing Now??

- Revisit the proposed rule
- Current Drydocks – Document all you can
- Talk with your partners
- Discuss compliance options
- Discuss process & criteria for third-party selection
- Training
- Assess Vessels
- Planning
Compréhensive SubChapter M Compliance Services

- Combining classification with certification to International Safety Management Code (ISM) to raise vessels to an enhanced level of safety
- Providing all engineering and surveying services for new build and existing vessels, including design plan review and approval, dry dock inspection, internal structure examination and vessel survey
- Conducting third-party annual vessel inspections in combination with ISM Certification
- Representing customer interests during USCG inspections**
- Training to help towing companies meet internal requirements for TSMS audits, root cause analysis and other activities related to compliance**
- Software solutions to assist in implementing the required safety management system and demonstrate compliance***
The ABS Advantage for Subchapter M Compliance

- 150 years of experience serving the marine industry
- 300+ surveyors and auditors, qualified and authorized by the USCG
- 200+ engineers and naval architects
- 30 offices across the US, including 18 offices along the U.S. Gulf of Mexico and inland waterways
- Multiple options for Subchapter M compliance services that can be tailored to your needs
- Fleet Management Tools to aide in demonstrating Subchapter M Compliance
- New towing services center in Paducah, Kentucky, specializing in Subchapter M compliance
Your Subchapter M Solutions Provider

Backed by more than 150 years of experience and the largest service network of any class society in the United States, ABS is prepared to help the inland and intercoastal operators identify tailored solutions for Subchapter M compliance. No other organization has the breadth of knowledge, practical experience or resources available to ABS to help you proactively address your compliance challenges.

Contact your local Port office today or e-mail ABS at SubchapterM@Eagle.org to begin exploring your solutions.
Newest ABS & ABS Group Office

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