

Uninspected Towing Vessel Examiner Training Aid



*Produced by TRACEN YORKTOWN
Uninspected Towing Vessel Safety Program*

PURPOSE

This Uninspected Towing Vessel (UTV) Safety Examiner Training Aid is intended to facilitate the training process, at TRACEN Yorktown, by providing a quick reference to key points made by instructors during lectures and presentations. This training aid is not intended to replace the United States Coast Guard Requirements For Uninspected Towing Vessels (UTV Guide Book) or the Uninspected Towing Vessel Exam Form which are used to perform UTV Exams in the field.

The requirements in this booklet are based on and follow UTV Form 001 (6/11).

Information You Need Before You Start the Exam:

- 1) What type of exam are you conducting (initial, re-exam, deficiency follow up, etc..)?
- 2) Is the UTV Documented or State Registered?
- 3) What is the Length of the Vessel?
- 4) What is the UTV's Service? (i.e. Line Haul, Fleeting, Tug, Assistance, etc.)
- 5) Understand the operational route of the vessel. Remember, when you see the below colors in the training aid they correspond to the operational route on the exam form.

All (unless specified otherwise)	Western Rivers (only)	Near Coastal / Ocean	Great Lakes	Near Coastal / Ocean & Great Lakes
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Color Coded Route Legend from UTV Form 001 (6/11)

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Safety Decal

UTV SAFETY EXAM DECAL

UTVs displaying a valid decal have undergone a complete dockside examination by a qualified UTV examiner and have met all the federal regulations for the vessel *at the time of the examination*. Note that the decals are marked with an “expiration” date vs. an “issue” date. Also note that the vessel would have been examined for requirements based on its registration/ documentation status and operating area relative to type of waters according to the master’s statements.

UNINSPECTED TOWING VESSEL	
SAFETY EXAMINATION	
UTV	
ROUTE	EXPIRES
<input type="checkbox"/> Inland	2012 <input type="checkbox"/>
<input type="checkbox"/> Coastal	2013 <input type="checkbox"/>
<input type="checkbox"/> Oceans	2014 <input type="checkbox"/>
<input type="checkbox"/> Great Lakes	2015 <input type="checkbox"/>
<input type="checkbox"/> MTSA Regulations Apply	

U.S. Department of Homeland Security

THIS VESSEL MEETS ALL USCG UNINSPECTED TOWING VESSEL REGULATIONS

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
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Figure 1. Decal Valid for 3 Years.

General Information

GENERAL INFORMATION

46 CFR 24.05

Applicability: This document applies to U.S. Uninspected Towing Vessels (UTVs) that do not carry passengers or freight for hire(*) operating on the Navigable Waters of the United States.

** UTVs < 15GT can carry freight for hire IAW 46CFR24.05(1)(a)*

This **does not apply** to towing vessels used **solely** for any of the following services or any combination of these services:

1. Within a limited geographic area, such as a fleeting area for barges or a commercial facility, and used for restricted service, such as making up or breaking up larger tows;
2. Harbor Assist;
3. Assistance towing as defined by 46 CFR 10.103;
4. Response to emergency or pollution;
5. Public Vessels;
6. Foreign vessels engaged in innocent passage;
7. Vessels exempted by the COTP.

Excess Equipment:

CG-543 Policy Letter 10-06 provides temporary exemptions from the requirements in 46 CFR Subpart 25.25, 46 CFR 25.30-15 (as pertains to towing vessels), and 46 CFR Part 27 Subpart C and establishing guidance with regards to the carriage of “excess” lifesaving and firefighting equipment on uninspected towing vessels (UTV’s).

CG-543 Policy Letter 10-06 and other Towing Vessel Bridging Program documents are posted on CG Homeport.

Useful Links

USEFUL LINKS

American Waterways Operators (AWO): <http://www.americanwaterways.com/>

CGMIX (Equipment): <https://cgmix.uscg.mil/equipment/>

Navigation Center: <http://navcen.uscg.gov/?pageName=AISCarriageReqmts>

National Fire Protection Association (NFPA):
<http://codesonline.nfpa.org/index.php?task=checksession>

National Pollution Funds Center: <https://npfc.uscg.mil/cofr/default.aspx>

National Vessel Documentation Center: <http://www.uscg.mil/hq/cg5/nvdc/>

Navigation & Vessel Inspection Circulars (NVIC):
<http://www.uscg.mil/hq/cg5/nvic/>

Tracen Yorktown Marine Safety School “Intranet-link”:
<http://cgweb.tcyorktown.uscg.mil/MII/index.asp>

TVNCOE: <http://www.uscg.mil/hq/cg5/TVNCOE/Courses.asp>

USCG Home Port: <https://homeport.uscg.mil/mycg/portal/ep/home.do>

Underwriter Laboratory (UL) Portable Fire Extinguishers:
<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.html>

Definitions

DEFINITIONS

46 CFR 24.10

33CFR 164.72

Uninspected Towing Vessel (UTV) Guidebook

Accommodations – include messrooms, lounges, sitting areas, recreation rooms, quarters, toilet spaces, shower rooms, galleys, berthing facilities or clothing changing rooms.

Apprentice Mate (Steersman) of Towing Vessels – means a mariner qualified to perform watch keeping on the bridge, aboard a towing vessel, while in training under the direct supervision of a credentialed master or mate (pilot) of towing vessels.

Assistance Towing – means towing a disabled vessel for consideration.

Carrying Freight for Hire – means the carriage of any goods, wares, or merchandise, or any other freight for consideration, whether directly or indirectly flowing to the owner, charterer, operator, agent, or any other person interested in the vessel.

Coastwise Trade – includes the transportation of passengers or merchandise between points embraced within the coastwise laws of the United States.

Commercial Service – includes any type of trade or business involving the transportation of goods or individuals, except service performed by a combatant vessel.

Disabled Vessel – means a vessel that needs assistance, whether docked, moored, anchored, aground, adrift, or under way; but does not mean a barge or any other vessel not regularly operated under its own power.

Fleeting Area – a separate location where individual barges are moored or assembled to make a tow. The barges are not in transport, but are temporarily marshaled, waiting for pickup by different vessels that will transport them to various destinations. A fleeting area is a limited geographic area.

Great Lakes – means the Great Lakes and their connecting and tributary waters including the Calumet River as far as the Thomas J. O'Brien Lock and Controlling Works (between mile 326 and 327), the Chicago River as far as the east side of the Ashland Avenue Bridge (between mile 321 and 322), and the Saint Lawrence River as far east as the lower exit of Saint Lambert Lock.

Harbor Assist – means docking and undocking ships.

Hazardous Condition – means any condition that may adversely affect the safety of any vessel, bridge, structure, or shore area or the environmental quality of any port, harbor or Navigable Water of the United States. It may, but need not, involve collision, allision, fire, explosion, grounding, leaking, damage, injury or illness of a person on board, or manning shortage.

Inland Waters – the Navigable Waters of the US shoreward of the Boundary lines, in 46 CFR 7, excluding the Great Lakes and, for towing vessels, excluding the Western Rivers.

Definitions

DEFINITIONS (cont'd)

46 CFR 24.10

33 CFR 164.72

Uninspected Towing Vessel (UTV) Guidebook

Limited Geographic Area – a local area of operation, usually within a single harbor or port. The local Captain of the Port (COTP) determines the definition of local geographic area for each zone.

Mate (Pilot) of Towing Vessels– means a qualified officer of Towing Vessels operating only on inland routes (ref. NVIC 04-01).

Navigable Waters of the United States –navigable waters and territorial waters mean, except where Congress has designated them not to be navigable waters of the United States

- (1) Territorial seas of the United States
- (2) Internal waters of the United States that are subjected to tidal influences; and
- (3) Internal waters of the United States not subject to tidal influences that:
- (4) (i) Are or have been used, or are or have been susceptible for use, buy themselves or in connection with other waters, as highways for substantial interstate or foreign commerce, notwithstanding natural or man-made obstructions that require portage, or
- (5) (ii) A governmental or non-governmental body, having expertise in waterway improvement, determines to be capable of improvement at a reasonable cost (a favorable balance between cost and need) to provide, by themselves or in connection with other waterways, as highways for substantial interstate or foreign commerce.

Near Coastal Domestic Voyage – is one that begins and ends in a US port, does not touch a foreign port or enter foreign waters, and is not more than 200 miles from shore.

Oceans – means a route that goes beyond 20 nautical miles offshore on any of the following waters; 46 CFR 24.10-1

- (1) Any ocean
- (2) The Gulf of Mexico
- (3) The Caribbean Sea
- (4) The Bering Sea
- (5) The Gulf of Alaska
- (6) Such other similar waters as may be designated by a Coast Guard District Commander

Pilotage Waters – the Navigable Waters of the US, including all inland waters and offshore waters to a distance of three nautical miles from the baseline from which the Territorial Sea is measured.

Rivers – means any river, canal, or other similar body of water designated by the OCMI.

Definitions

Route – the general geographic body or bodies of water endorsed on the face of a license. These routes are Oceans, Near-coastal, Great Lakes-inland, or Western Rivers.

Swing Meter – means an electronic or electric device that indicates the rate of turn of the vessel on board which it is installed.

Towing Officers' Assessment Record (TOAR) – is a record used to document the training and assessment of a mariner in the towing industry (Note: NVIC 4-01, available online at <http://www.uscg.mil/hq/cg5/nvic/nvic.asp>, contains additional information on the content and format of a TOAR).

Towing Vessel – a commercial vessel engaged in or intending to engage in pulling, pushing or hauling alongside, or any combination of pulling, pushing, or hauling alongside.

Tow Boat type(s) – the industry unofficially classes tow boats within two categories, “wire” boats and “hawser” boats. Wire boat retrieve the tow wire with a tow winch and hawser boats retrieve the tow hawser with a large capstan.

UTV in Inland service – a UTV not in ocean or coastal service.

UTV in Ocean or Coastal service – a UTV that operates beyond the baseline of the US territorial sea.

Western Rivers – the Mississippi River, its tributaries, South Pass, and Southwest Pass, to the navigational demarcation lines dividing the high seas from harbors, rivers, and other inland waters of the US, and the Port Allen-Morgan City Alternate Route, and that part of the Atchafalaya River above its junction with the Port Allen-Morgan City Alternate Route including the Old River and the Red River, and those waters specified in 33 CFR 89.25.

**This list is not inclusive of all definitions in regulations*

Credentials, Documents & Records

LOAD LINE CERTIFICATE

46 USC 5102-5112
46 CFR 42 (Subchapter “E” Load Lines)
USCG Load Line Policy Notes

Applicability:

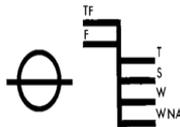
U.S. flagged (new) vessels 79 feet and more and (existing) vessels 150 gross tons or over, engaged in foreign or international voyages (other than solely Great Lakes voyages) shall be subject to the provisions of Subchapter “E” Load Lines (verify 42.03 applicability).

U.S. flagged vessels 150 gross tons or over which engage in domestic voyages by sea (coastwise and inter-coastal voyages) shall be subject to the provisions of Subchapter “E” Load Lines (verify 42.03 applicability).

U.S. flagged vessels engaged exclusively in voyages on waters within the United States or its possessions and which are determined not to be “coastwise” or “Great Lakes” voyages are exempt from Load Line regulations.

U.S. flagged vessels 79 feet and more and 150 gross tons or over, that engage solely on Great Lakes voyages are subject to the provisions of Subchapter “E” Load Lines (verify 42.03 applicability).

Note: As reflected in 46 CFR 42.05; with few exceptions, an “Existing” vessel is one which the keel was laid or which was at a similar stage of construction prior to 21 July 1968; a “New” vessel means a vessel, the keel of which was laid, or which is at a similar stage of construction on or after 21 July 1968.



Load Line Certificates:

- Are issued by either ABS or such other recognized classification society which the Commandant may approve.
- Are good for **5 years**.
- **Must be endorsed annually** by the issuing class society otherwise the certificate is invalid.

Load Line marks shall:

- Be permanently affixed to the hull amidships on both port & starboard sides.

DOCUMENTATION

- 46 CFR 67.7
- 46 CFR 67.15-67.23
- 46 CFR 67.123
- 46 CFR 67.313

Applicability: All UTVs over 5 net tons.

Requirements	
Vessel Name	<ul style="list-style-type: none"> • Marked in clearly legible letters. • Not less than 4 inches in height. • On port & starboard bow and the vessel stern.
Hailing port	<ul style="list-style-type: none"> • Marked in clearly legible letters. • Not less than 4 inches in height. • On stern of the vessel.
Official number	<ul style="list-style-type: none"> • Affixed in clearly legible numbers. • Not less than 3 inches in height. • Permanently affixed to some clearly visible structural part of the hull, such as an internal deck beam. • Preceded by abbreviation "No."
Certificate of Documentation	<ul style="list-style-type: none"> • Must be Original. • Must be on board vessel. • Must be Current. • Proper/Valid endorsement (I.E. Registry, Coastwise, Fishery or Recreational)

Credentials, Documents & Records

REGISTRATION

33 CFR 173.21

33 CFR 173.27

Applicability: UTVs under 5 net tons.

Requirements	
Certificate	<ul style="list-style-type: none">• Valid Certificate of Number must be on vessel, or• Temporary Certificate of Number must be on vessel.
Numbering	<ul style="list-style-type: none">• State numbers must be on both sides of the forward half of the vessel with current decal.• Characters 3 inches in height or greater.• Plain vertical block characters.• Contrasting, visible and legible characters.• Painted or permanently affixed.• Read from left to right.• Have a hyphen or a space between prefix, number, and suffix.

MERCHANT MARINER CREDENTIAL (MMC)

Master: (46 CFR 15.610 & 15.805)

Every UTV 26 feet or greater must be under the command of:

- Master of Towing Vessels or;
- Mariner licensed as master of inspected self-propelled vessels greater than 200 GRT holding either a completed Towing Officer's Assessment Record (TOAR) or a license endorsed for towing vessels or;
- Master of Towing Vessels or (Limited) for vessels operating within the restrictions on the credential.

Mate (Pilot): (46 CFR 15.810(d))

Each person in charge of the navigation or maneuvering of a UTV 26 feet or greater must hold a license as either:

- Mate (Pilot) of Towing Vessels or;
- Mate of inspected self-propelled vessels greater than 200GRT with either an endorsement for towing vessels or accompanied by a completed TOAR or;
- Mate of Towing Vessels or (Limited) for vessels operating within the restrictions on the credential.

Towing Vessel Route Endorsements:

Per NVIC 04-01, the following route endorsements and authorities apply for service on towing vessels:

- Oceans – authorizes service on Oceans and on the subordinate routes of Near-Coastal and Great Lakes-Inland Waters (except Western Rivers) without further endorsement.
- Near-Coastal – authorizes service on Near-Coastal routes and Great Lakes-Inland Waters (except Western Rivers) without further endorsement.
- Great Lakes-Inland Waters – authorizes service on Great Lakes-Inland routes only.
- Western Rivers – authorizes service on Western Rivers routes only.
- Limited – authorizes special use or a route limited to a local geographic area.

MERCHANT MARINER CREDENTIAL (cont'd)

First Class Pilot:

IAW **46 CFR 15.812**, certain UTVs must be under the control of a licensed First Class Pilot or an individual “acting as” a Pilot. Individuals “acting as” a Pilot self-certify their qualifications for a route. They are not issued a Pilot’s license or an endorsement that describes the specific waters where they are authorized to serve as a Pilot.

The requirements for “acting as” a Pilot should parallel the route requirements for licensed First Class Pilots. A description of the route requirements for a licensed First Class Pilot and “acting as” a Pilot may be obtained from the OCMI(s) for the affected route(s). It is the “acting as” Pilot’s responsibility to determine in advance whether they meet the local pilotage requirements.

Chief Engineer: (46 CFR 15.820(b))

- Required on seagoing documented UTVs 200 GT or more.
- License must be *appropriate* for route, size and horsepower of vessel.

Radar Observer: (46 CFR 15.815(c)(d))

On a UTV 26 feet or greater that is equipped with a radar, each person required to be licensed as a Master, Mate, or operator shall:

- Hold an endorsement as radar observer or;
- Have on board, or readily available a valid certificate of training from a Coast Guard Approved Course dated within the last 5 years.

Transportation Worker Identification Credential (TWIC):

(33 CFR 101.514) (Policy Ltr 11-15)

- All persons requiring unescorted access to secure areas of a UTV greater than eight meters in length that is engaged in towing a barge or barges subject to 33 CFR part 104 shall hold a valid TWIC. See exceptions in Policy Ltr. 11-15.

Towing Officer’s Assessment Record (TOAR): (46 CFR 15.610) NVIC 04-01

Each applicant for an endorsement as master or mate(pilot) of towing vessels, and each master or mate of self-propelled vessels of greater than 200 GRT seeking an endorsement for towing vessels, shall complete a towing officers’ assessment record (TOAR) for the specific geographic area for which certification is sought that contains information found in 46 CFR 15.610 & NVIC 04-01.

Credentials, Documents & Records

MANNING & WATCHSTANDING

<p>Licensed Officers: (46 USC 8104(h), 46 USC 8304 & 46 USC 8104(d))</p> <p>UTVs operating for more than 12 hours in any 24 hour period require a second licensed officer and UTVs on voyages of more than 600 NM \geq 200 GRT require a third licensed officer. The additional officers require one of the following credentials, endorsed for the appropriate route or a completed TOAR as either:</p> <ul style="list-style-type: none"> • Master; • Mate (Pilot) of Towing Vessels or; • Mate (Pilot) of Towing Vessels, Limited.

Watch Systems (46 CFR 15.705)	
<i>TWO WATCH SYSTEM (voyage less than 600 miles)</i>	<i>THREE WATCH SYSTEM (voyage greater than 600 miles \geq 200 GRT)</i>
<ul style="list-style-type: none"> • 50% of deck crew must be AB's. 	<ul style="list-style-type: none"> • 65% of deck crew must be AB's.
<ul style="list-style-type: none"> • Does not include licensed officers. 	<ul style="list-style-type: none"> • Does not include licensed officers.

<p>Standards of Training, Certification and Watch keeping (STCW): (46 CFR 15.1109)</p> <p>All officers and crew on seagoing vessels outside of the boundary line must satisfy STCW. The United States exempts mariners from STCW requirements if serving on vessels of less than 200 gross tons sailing on near-coastal domestic voyages. A near coastal domestic voyage is one that begins and ends in a US port, does not touch at a foreign port or enter foreign waters, and is not more than 200 miles from shore.</p> <p>A Master of a vessel subject to STCW must:</p> <ul style="list-style-type: none"> • Ensure crewmembers have obtained STCW certification; • Ensure observance of the principles concerning watch keeping set out in STCW regulation Section A – Chapters II, III and VIII of the STCW Code; • Ensure observance of appropriate rest periods and work hours, and post watch schedules where they are easily accessible and; • Ensure watch schedules take into account rest requirements as well as port rotations and changes in the vessel's itinerary. <p>Additionally, all crewmembers must have a familiarization and basic safety training.</p>
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Credentials, Documents & Records

MANNING & WATCHSTANDING (cont'd)

46 CFR 15.103(f)(2)	46 CFR 15.1105
46 CFR 15.640	46 CFR 15.1109
46 CFR 15.705	46 CFR 15.1111
46 CFR 15.1103	

Towing Vessel Work Hour Table for Credentialed Mariners

GT	ROUTE	VOYAGE	LIMITS	NOTE
Any	Inland	Any Length	12 hours	1,2,6
Less than 100	Oceans	< 600nm	12 hours	1,2,6
Less than 100	Oceans	>600nm	12 hours	1,2,6
Less than 100	Great Lakes	Any length	8/12/15 hours	3
More than 100	Great Lakes	Any length	8/12/15 hours	3,4
100-200	Oceans	<600nm	12 hours	1,4,5,6
100-200	Oceans	>600nm	12 hours	1,4,6
More than 200	Oceans	<600nm	12 hours	4,5,6
More than 200	Oceans	>600nm	8 hours	4,6

Notes:

1. 46 CFR 15.705(d) permits a 2 watch system on all towing vessels less than 200 GT regardless of voyage length.
2. 46 USC 8104(b) states that licensed crewmembers on vessels less than 100 GT on coastwise or oceans voyages are not required to work more than 12 hours in one day, at sea.
3. 46 USC 8104(c) allows crew members on Great Lakes towing vessels to work up to 15 hours in one 24 hour period.
4. 46 USC 8104(d) states that a licensed individual or seaman in the deck or engine department may not be required (but can consent) to work more than 8 hours in one day (on a vessel of more than 100 GT when at sea).
5. 46 USC 8104(g) states that a voyage of less than 600nm, the licensed individuals and crewmembers may be divided when at sea, into at least 2 watches
6. 46 USC 8104(h) limits all licensed operators on towing vessels 26ft or over to working no more than 12 hours a day except in an emergency.

The establishment of adequate watches is the responsibility of the vessel's master, not the USCG.

Credentials, Documents & Records

FCC

Bridge-to-Bridge Act: (47 CFR 80.163)

- Applies to UTVs 26 feet or greater.
- Must have radio operator on board who holds a restricted radiotelephone operator permit or higher class license.

Marine Operator Permit: (47 CFR 80.161)

- Each ship subject to the Great Lakes Radio Agreement (GLRA) must have on board an officer or member of the crew who holds a marine radio operator permit or higher class license.

Inspection & Certification of Communications Equipment: (47 CFR 80.953)

- Each Ship subject to the GLRA must have an inspection of the required radio telephone installation at least once every 13 months performed by a qualified technician.

FCC Ships Station License (SSL): (47 CFR 80.13)

- Radio stations in the maritime service must be licensed by FCC individually or by fleet. Licenses will normally be issued for a term of ten years from the date of original issuance or renewal.

Note: If the vessel is not *required* to carry radio equipment, then do not cite for lack of the FCC-SSL.

FCC (cont'd)

FCC Station Log: (47 CFR 80.409)

UTVs greater than 26 feet are required to keep a FCC radio station log. Entries must include the following:

- A summary of all distress and urgency communications affecting the station's own ship, all distress alerts relayed by the station's own ship, and all distress call acknowledgements and other communications received from search and rescue authorities.
- A weekly entry that:
 - 1) The proper functioning of Digital Selective Calling (DSC) equipment has been verified by actual communications or a test call;
 - 2) The portable survival craft radio gear and radar transponders have been tested; and
 - 3) The EPIRBs have been inspected.
- An entry at least once every thirty days that the batteries or other reserve power sources have been checked and are functioning properly.
- The time of any inadvertent transmissions of distress, urgency and safety signals including the time and method of cancellation.
- Results of inspections and tests of compulsorily fitted lifeboat radio equipment;
- A daily statement about the condition of the required radiotelephone equipment, as determined by either normal communication or test communication.

UTVs subject to the GLRA must make two additional entries:

- 1) At the beginning of each watch, an appropriate log entry shall be made indicating that the navigation receiver is functioning properly and is interconnected to all GMDSS alerting devices which do not have integral navigation receivers. On a UTV without integral or directly connected navigation receiver input to GMDSS equipment, the log entry shall indicate that the embedded position in each piece of equipment was updated.
- 2) A GMDSS radio log entry shall be made whenever GMDSS equipment is exchanged or replaced (ensuring that ship MMSI identifiers are properly updated in the replacement equipment), when major repairs to GMDSS equipment are accomplished, and when annual GMDSS inspections are conducted.

DRUG & ALCOHOL TESTING

Applicability: Any individual who is on board a UTV acting under the authority of a license or merchant mariner's document, whether or not the individual is a member of the vessel's crew; or is engaged or employed on board a UTV owned in the United States that is required by law or regulation to engage, employ, or be operated by an individual holding a license or merchant mariner's document.

Drug Testing Program: (46 CFR 16.230)

- Marine employers shall establish a program for the random drug testing of crewmembers that are required to hold a license, that perform duties as a patrolmen or watchmen, or are specifically assigned the duties of warning, mustering, assembling, assisting, or controlling the movement of individuals during emergencies. A consortium or third part administrator may be employed to provide or coordinate a variety of the drug and alcohol testing requirements.

Requirements for Alcohol & Drug Testing following a Serious Marine Incident (SMI) (46 CFR 4.06-3)

- *Alcohol testing:* Alcohol testing must be conducted on each individual directly involved in a SMI within 2 hours, but no more than 8 hours, after addressing safety concerns.
- *Drug testing:* Drug testing must be conducted on each individual directly involved in a SMI within 32 hours, unless precluded by safety concerns.

Employee Assistance Program (EAP): (46 CFR 16.401)

- The marine employer shall provide an EAP for all crewmembers. Each EAP must include education and training on drug use for crewmembers and the employer's management personnel. At a minimum, a community service hot-line telephone number for crewmember assistance and the employer's policy regarding drug and alcohol use in the workplace should be posted on board the vessel.

Drug & Alcohol Testing (46 CFR 4.06-15)

- Alcohol test kits shall be provided by the marine employer, to determine the presence of alcohol in the system, of each individual who was directly involved in a serious marine incident (SMI).
- The alcohol testing devices need not be carried if the required alcohol tests can be accomplished within 2 hours (at shore side testing facility) from the time of occurrence of the SMI.
- The Alcohol testing can be self administered with DOT approved Breath-Alcohol Sensors or Saliva Test Strips.
- Drug testing must conform to the standards of 49 CFR 40.

MARINE CASUALTY REPORTING

46 CFR 4.05-1

UTVs less than Five Net Tons:

Vessels subject to 46 CFR 173.51 are excluded from the requirements of 46 CFR 4.05.

Basically, for state registered UTVs, a casualty or accident report must be submitted to the reporting authority (Boating Law Administration) of the state (not the USCG) who issued the state number, or to the state where the casualty or accident occurred.

UTVs of Five Net Tons or more:

Immediately after the addressing of resultant safety concerns, the owner, agent, master, operator, or person in charge, shall notify the nearest Sector Office whenever a vessel is involved in a marine casualty consisting of:

- 1) An unintended grounding, or an unintended strike of (allision with) a bridge;
- 2) An intended grounding, or an intended strike of a bridge, that creates a hazard to navigation, the environment, or the safety of a vessel, or that meets any criterion of paragraphs 3) through 8);
- 3) A loss of main propulsion, primary steering, or any associated component or control system that reduces the maneuverability of the vessel;
- 4) An occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route, including but not limited to fire, flooding, or failure of or damage to fixed fire-extinguishing systems, lifesaving equipment, auxiliary power-generating equipment, or bilge-pumping systems;
- 5) A loss of life;
- 6) An injury that requires professional medical treatment (treatment beyond first aid) and, if the person is engaged or employed on board a vessel in commercial service, that renders the individual unfit to perform his or her routine duties; or
- 7) An occurrence causing property-damage in excess of \$25,000, this damage including the cost of labor and material to restore the property to its condition before the occurrence, but not including the cost of salvage, cleaning, gas-freeing, dry docking, or demurrage.
- 8) An occurrence involving significant harm to the environment as defined in 46 CFR 4.03-65.

HAZARDOUS CONDITION REPORTING

33 CFR 160.204

33 CFR 160.215

33 CFR 164.82

Whenever there is a hazardous condition either aboard a vessel or caused by a vessel or its operation, the owner, agent, master, operator, or person in charge shall immediately notify the nearest Coast Guard Sector Office. This initial notification does not relieve responsibility for the written report required by 46 CFR 4.05-10.

Hazardous Condition means any condition that may adversely affect the safety of any vessel, bridge, structure, or shore area or the environmental quality of any port, harbor or Navigable Water of the United States. It may, but need not, involve collision, allision, fire, explosion, grounding, leaking, damage, injury or illness of a person on board, or manning shortage.

Additionally, IAW 33 CFR 164.82(c) the owner, master, or operator of each towing vessel whose equipment is inoperative or otherwise impaired while the vessel is operating within a Vessel Traffic Service (VTS) shall report the fact to the local VTS as soon as practicable any:

1. Absence or malfunction of equipment used for navigational safety
2. Any condition that impairs navigation
3. Any characteristics of the vessel that affect or restrict the maneuverability of the vessel

MTSA

33 CFR 104.120

33 CFR 104.265

Applicability: UTVs 26 feet in registered length and greater that are engaged in towing a barge or barges subject to 46 CFR chapter I, subchapters D or O; barges carrying certain dangerous cargo in bulk or barges that are subject to 46 CFR Chapter I, subchapter I, that are on an international voyage.

This **does not apply** to UTVs that:

- 1) Temporarily assists another vessel engaged in towing a barge or barges subject to this part
- 2) Shifts a barge or barges subject to this part at a facility or within a fleeting facility
- 3) Assists sections of a tow through a lock; or
- 4) Provides emergency assistance.

Requirements:

- Vessels that are subject to MTSAs must have an approved Vessel Security Plan (VSP) or an Alternative Security Program (ASP).
- VSPs and ASPs are submitted to and approved in writing by the Marine Safety Center.
- Approval is valid for five years.
- VSPs and ASPs shall have an initial verification upon plan approval, and verification once in five years by the Coast Guard.
- UTVs are expected to operate in compliance with the VSP or ASP at all times. The VSP or ASP may include variable security measures to cover towing operations that don't involve barges subject to MTSAs, but the VSP or ASP must apply at all times; it cannot be turned on and off.
- For foreign vessels, subject to SOLAS (Ch XI-1 or XI-2) a valid International Ship Security Certificate (ISSC) that attests to the vessel's compliance with the ISPS Code.

Note: If verification is due, use NVIC 04-03 Ch. 3 as a compliance guide, reference and/or check sheet.

TESTS & INSPECTIONS (Verification)

33 CFR 164.78 (b)

33 CFR 164.80

Applicability: The Owner, Master, or Operator of each towing vessel shall ensure tests and inspections of systems / gear occurs before the vessel embarks on a voyage of more than 24 hours or when each new master or operator assumes command.

Requirements:

The following tests and inspections required by 33 CFR 164.80 shall be logged:

- 1) Steering Gear
- 2) Navigational Equipment
- 3) Communications
- 4) Lights
- 5) Terminal Gear
- 6) Propulsion System

OIL POLLUTION PREVENTION RECORDS / DOCUMENTS

33 USC 1321(j)(5)
33 CFR 138.15 & .30
33 CFR 155.1045
NVIC 01-05

Vessel Response Plan (VRP):

The following UTVs shall have an approved VRP:

- 1) UTVs carrying oil as a secondary cargo;
- 2) UTVs over 400 GT ITC (or GRT if no ITC tonnage assigned);
- 3) UTVs with fuel capacity of over 250 barrels.

The VRP must be divided into sections below and have a geographic-specific appendix for each COTP zone the vessel operates in.

- 1) General information and introduction
- 2) Notification procedures
- 3) Shipboard spill mitigation procedures
- 4) Shore-based response activities
- 5) List of contacts
- 6) Training procedures
- 7) Exercise procedures
- 8) Plan review and update procedures
- 9) On board notification checklist and emergency procedures (unmanned tank barges only).

Certificate of Financial Responsibility (COFR):

- UTVs over 300 gross tons are required to have COFR.
- The Coast Guard no longer issues COFRs. Operators can apply for and obtain verification of coverage online at the web site below. Verification of coverage is also available to Coast Guard enforcement personnel in the MISLE document records. <https://npfc.uscg.mil/cofr/default.aspx>

MARPOL ANNEX V

Policy Letter 13-01

33 CFR 151.57

33 CFR 151.59

Garbage Placard: (33 CFR 151.59)

Each UTV 26 feet or greater must have one or more garbage placards posted in prominent locations. Each placard must:

- Be at least 4” x 9” in size;
- Have lettering at least 1/8 inch high; and
- Be made of durable material.

**Discharge of all garbage into the sea is prohibited
except when specifically allowed**

The MARPOL Convention and U.S. law prohibit the discharge of most garbage from ships. Only the following garbage types are allowed to be discharged and under the specified conditions.

Outside Special Areas designated under MARPOL Annex V:

- Comminuted or ground food wastes (capable of passing through a screen with openings no larger than 25 millimeters (1 inch)) may be discharged not less than 3 nautical miles from the nearest land.
- Other food wastes may be discharged not less than 12 nautical miles from the nearest land.
- Cargo residues classified as not harmful to the marine environment may be discharged not less than 12 nautical miles from the nearest land.
- Cleaning agents or additives in cargo hold, deck and external surfaces washing water may be discharged only if they are not harmful to the marine environment.
- With the exception of discharging cleaning agents in washing water, the ship must be en route and as far as practicable from the nearest land.

Inside Special Areas designated under MARPOL Annex V:

- More stringent discharge requirements apply for the discharges of food wastes and cargo residues; and
- Consult Annex V and the shipboard garbage management plan for details.

For all areas of the sea, ships carrying specialized cargos such as live animals or solid bulk cargoes should consult Annex V and the associated Guidelines for the implementation of Annex V.

Discharge of any type of garbage must be entered in the Garbage Record Book.

Violation of these requirements may result in penalties

Figure 2. Sample Garbage Placard.

MARPOL ANNEX V (cont'd)

33 CFR 151.57

33 CFR 151.59

Waste Management Plan: (33 CFR 151.57)

Oceangoing UTVs of 40 feet or more in length, or equipped with a galley and berthing, must have a written Waste Management Plan. The master or person in charge must ensure that the vessel is not operated unless a written waste management plan is on the ship. The plan must designate the person who is in charge of carrying out the plan and describe procedures for:

- Collecting;
- Processing;
- Storing and;
- Discharging garbage IAW Annex V or MAPOL 73/78.

BALLAST WATER MANAGEMENT

33 CFR 151.1510

33 CFR 151.2041

33 CFR 151.2045

Applicability: UTVs equipped with ballast tanks (refer to ballast water 840 book).

Ballast Water:

UTVs equipped with ballast tanks may elect to retain ballast on board or use an alternative environmentally sound method of ballast water management that has been submitted to and approved by the Coast Guard prior to the voyage.

If the alternative environmentally sound method of ballast water management is inoperative, the vessel may discharge only the amount of ballast water operationally necessary to ensure the safety of the vessel.

UTVs must avoid the discharge or uptake of ballast water in areas within or that may directly affect marine sanctuaries, marine preserves, marine parks or coral reefs.

Ballast tanks must be cleaned regularly to remove sediments. Allowable methods are:

- 1) Cleaning in mid-ocean;
- 2) Under controlled conditions in port or;
- 3) At a dry dock.

Note: Many UTVs on the Western Rivers use treated city water supplies for ballast uptake. Under most circumstances, the discharge of treated city water should be considered an alternative environmentally sound method.

Reporting & Recordkeeping:

- There are mandatory ballast water reporting and recordkeeping requirements. See 33 CFR 151.2041 through 151.2045 for more details. Also see Ballast Water NVIC 07-04 for more guidance on the TVNCOE's website at <http://www.uscg.mil/hq/cg5/TVNCOE/NVICs.asp>

RECORDS FOR TOWLINE

33 CFR 164.01(b)

33 CFR 164.74 (a)(3)

Applicability: UTVs 39.4 feet or more when towing astern on the Navigable Waters of the US other than the Saint Lawrence Seaway.

Breaking Strength Test Records:

The condition of each towline must be monitored and a record of the towline's initial minimum breaking strength as determined by the manufacturer, an authorized classification society, or by a tensile test that meets API Specification 9A, ASTM D 4268, or Cordage Institute CIA-3 Standard Test Method shall be kept on board the vessel or in company files.

If the towline is purchased from another owner, master, or operator of a vessel with the intent to use it as a towline or if it is retested for any reason, a record of each retest of the towline's minimum breaking strength shall be kept on board the vessel or in company files. The testing criterion is the same as listed above.

If this record lapses for three months or more, except when a vessel is laid up or out of service or has not deployed its towline, the towline shall be retested or removed from service. See NVIC 5-92 for additional guidance.

Visual Inspections:

Visual inspections shall be conducted in accordance with the manufacturer's recommendations, or at least monthly, and whenever the serviceability of the towline is in doubt.

If the towline is purchased from another owner, master, or operator of a vessel with the intent to use it as a towline or if it is retested for any reason, a record of each retest of the towline's minimum breaking strength shall be kept on board the vessel or in company files. The testing criterion is the same as listed above.

FIRE FIGHTING TRAINING & SAFETY ORIENTATION

46 CFR 27.100

46 CFR 27.209

Applicability: All UTVs on the US Navigable Waters, unless the vessel is:

- 1) Used solely for any of the following services:
 - a) Fleeting area;
 - b) Harbor assist;
 - c) Assistance towing; or
 - d) Pollution or emergency response.
- 2) A Public Vessel.
- 3) A foreign vessel engaged in innocent passage.
- 4) Exempt by the COTP.

Requirements:

A. Drills and Instruction –

The master or individual in charge of each vessel must ensure that drills are conducted and instructions given to each crewmember on board at least **once each month** so as to ensure that each crewmember is familiar with their duties and responses to at least the following contingencies:

- 1) Fighting a fire in engine room as well as different locations on board the vessel.
- 2) Operating all of the fire extinguishing equipment
- 3) Stop any mechanical ventilation for engine room & seal natural openings to prevent leakage of extinguishing agents.
- 4) Operate fuel shut-offs to engine room.
- 5) Activating the general alarm.
- 6) Reporting inoperative alarm systems and fire detections systems.
- 7) Donning a fireman's outfit and SCBA (if vessel so equipped).

**Alternate Form of Instruction: The master or individual in charge of a vessel may substitute the viewing of video training materials that cover the above listed contingencies. The video must be followed with a discussion led by someone familiar with the required drills.*

Drills must be conducted on board the UTV as if there were an actual emergency and must include participation by all persons on board, breaking out and using emergency equipment, testing of all alarm and detection systems, and donning protective equipment and immersion suits, if so equipped.

B. Safety Orientation –

The master or individual in charge of a UTV must ensure that a safety orientation is given to each crewmember on board, and ensure that each new crewmember that has never participated in the required drills receives a safety instruction orientation within 24 hours of reporting for duty. The safety orientation must cover the particular drills noted above in section A.

Credentials, Documents & Records

NAVIGATION PUBLICATIONS

33 CFR 164.72(b) (1)

33 CFR 164.72(b) (2)

Applicability: UTVs of 12 meters (39.4') or more in length operating on the Western Rivers except for:

- 1) Used solely within a limited geographic area, such as a fleeting area for barges or a commercial facility, and used solely for restricted service, such as making up or breaking up larger tows;
- 2) Used solely for assistance towing;
- 3) Used solely for pollution response;
- 4) Any other vessel exempted by the COTP

Navigational Publications Required on UTVs Operating on <i>Western Rivers</i>	
River Charts or Maps	Large enough scale.
	Current edition or currently corrected edition.
General Publications	USCG Light List.
	Notices to Navigation (Army Corp of Engineers (ACOE)) or,
	Local Notices to Mariners.
	River – current tables (ACOE or river authority).

Per Policy letter 10-05, UTV's may maintain the navigation publications listed above in an electronic format that is readily accessible, and a backup copy shall be provide in the event the primary electronic format becomes inaccessible. The back-up may be a second computer, CD, portable storage device or paper copies. This does NOT include charts.

NAVIGATION PUBLICATIONS (Non Western Rivers)

33 CFR 164.72(b) (1)

33 CFR 164.72(b) (2)

Applicability: UTVs of 12 meters (39.4 feet) or more in length operating in the Navigable Waters of the United States, other than the St. Lawrence Seaway; except for:

- 1) Used solely within a limited geographic area, such as a fleeting area for barges or a commercial facility, and used solely for restricted service, such as making up or breaking up larger tows;
- 2) Used solely for assistance towing;
- 3) Used solely for pollution response;
- 4) Any other vessel exempted by the COTP.

Navigational Publications Required on UTVs Operating on US Navigable Waters	
Charts or Maps	Large enough scale.
	Current edition or currently corrected edition.
General Publications	USCG Light List.
	Tidal Current Tables.
	Tide Tables.
	Local Notices to Mariners.
	US Coast Pilot.

Per Policy letter 10-05, UTV's may maintain the navigation publications listed above in an electronic format that is readily accessible, and a backup copy shall be provide in the event the primary electronic format becomes inaccessible. The back-up may be a second computer, CD, portable storage device or paper copies. This does NOT include charts.

VESSEL TRAFFIC SERVICES (VTS) RULES

33 CFR 161.16

33 CFR 161.4

Applicability: Every towing vessel of 8 meters (approximately 26 feet) or more in length, while navigating within a VTS area.

Each VTS user shall carry on board and maintain for ready reference a copy of the VTS Rules.

These Rules are contained in the applicable US Coast Pilot, the VTS User's Manual which may be obtained by contacting the appropriate VTS, and periodically published in the Local Notice to Mariners. The VTS User's Manual and the World VTS Guide, an International Maritime Organization (IMO) recognized publication, contain additional information which may assist the prudent mariner while in the appropriate VTS area.

INLAND NAVIGATION RULES

33 CFR 88.05

Applicability: All UTVs greater than 12 meters (39.4 ft) operating on the inland waters of the US.

Note: Inland waters are those waters inside the COLREGS Demarcation Lines.

Requirement:

Have on board for ready reference a current copy of the Inland Navigation Rules.

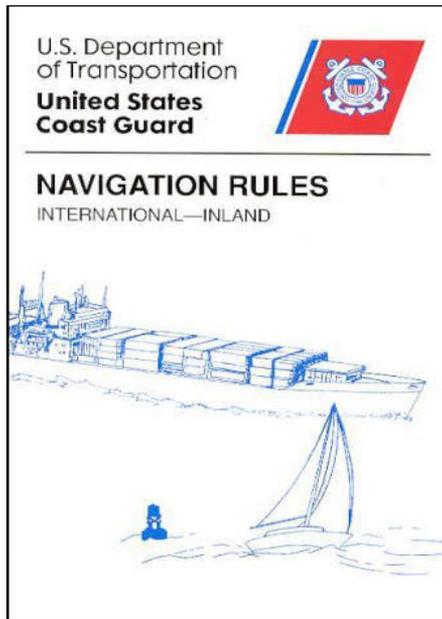


Figure 3. Navigation Rules.

Navigation Safety Equipment

MARINE RADAR

33 CFR 164.72

RTCM Paper71-95/SC112-STD

RTCM Paper191-93/SC112-X

Applicability: UTVs of 12 meters (39.4 feet) or more in length operating in the Navigable Waters of the United States, other than the St. Lawrence Seaway; except for:

- 1) Used solely within a limited geographic area, such as a fleeting area for barges or a commercial facility, and used solely for restricted service, such as making up or breaking up larger tows;
- 2) Used solely for assistance towing;
- 3) Used solely for pollution response;
- 4) Any other vessel exempted by the COTP.

On 8/2/1997, 33 CFR 164.72(a)(1) required all new marine radars installed on UTVs to meet the Radio Technical Commission for Maritime Services (RTCM) standards. Verifying compliance with RTCM standards can be difficult and what follows is a summary of features found on marine radars in compliance with RTCM recommended standards.

Range Scales: <ul style="list-style-type: none">• For UTVs less than 300 gross tons, range scales of 0.25, 0.5, 0.75/0.8, 1.5, 3.0, 6.0, 12.0, and 24.0 NM.• For UTVs 300 gross tons or more but less than 1600 gross tons, range scales of .05 - .08 (minimum), 1.5, 3.0, 6.0, 12.0, and 24.0 NM. <p>Note: Most UTVs on Western Rivers routes use range scales in statute miles instead of nautical miles.</p>
Display: <ul style="list-style-type: none">• A minimum display size of 10" diagonal/diameter for LCD and minimum 9" diagonal/diameter for CRT displays, with a means of plotting target track history (echo trails, etc.), fixed electronic range rings, and a variable range marker (VRM) with numeric readout. <p>Note: There is no minimum display size for inland vessels.</p>
Heading Indicator: <ul style="list-style-type: none">• Electronic Bearing Line able to quickly obtain the bearing of any object whose echo appears on the display.
Bearing Measurement: <ul style="list-style-type: none">• Indicated electronically from own ship to edge of display.
Discrimination: <ul style="list-style-type: none">• Requires a rotating array (antenna) to meet this requirement. Most dome type arrays do not comply with this minimum size requirement.
Tuning: <ul style="list-style-type: none">• A means must be provided to correct adjustment of the equipment.
Anti Clutter: <ul style="list-style-type: none">• A suitable means to suppress unwanted echoes.

SEARCHLIGHT

33 CFR 164.72(a)(2)

Applicability: UTVs of 12 meters (39.4 feet) or more in length operating in the Navigable Waters of the United States, other than the St. Lawrence Seaway; except for:

- 1) Used solely within a limited geographic area, such as a fleeting area for barges or a commercial facility, and used solely for restricted service, such as making up or breaking up larger tows;
- 2) Used solely for assistance towing;
- 3) Used solely for pollution response;
- 4) Any other vessel exempted by the COTP.

Searchlight:
<ul style="list-style-type: none">• Able to be directed from the UTVs main steering station and capable of illuminating objects at a distance of at least two times the length of the tow.

Navigation Safety Equipment

MAGNETIC COMPASS

33 CFR 164.72(a)(4)

Applicability: UTVs of 12 meters (39.4 feet) or more in length operating in the Navigable Waters of the United States, other than the St. Lawrence Seaway; except for:

- 1) Used solely within a limited geographic area, such as a fleeting area for barges or a commercial facility, and used solely for restricted service, such as making up or breaking up larger tows;
- 2) Used solely for assistance towing;
- 3) Used solely for pollution response;
- 4) Any other vessel exempted by the COTP.

Compass/ Swing Meter:

- UTVs operating on routes other than Western Rivers must have an illuminated card-type magnetic steering compass readable from the main steering station.
- UTVs engaging in towing exclusively on the Western Rivers may have either an illuminated swing-meter or an illuminated card-type magnetic steering compass readable from the main steering station.



Figure 4. Magnetic Compass.



Figure 5. Swing Meter.

Navigation Safety Equipment

ELECTRONIC POSITION-FIXING DEVICE

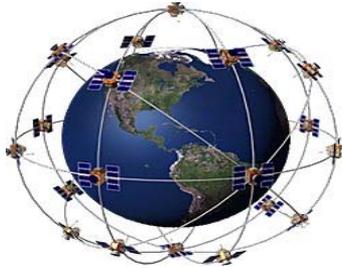
33 CFR 164.72(a)(6)

33 CFR 164.41

Applicability: UTVs of 12 meters (39.4 feet) or more in length operating seaward of the navigable waters of the United States, or more than three nautical miles from shore on the Great Lakes.

Satellite navigation receiver (GPS)

- Automatic acquisition of satellite signals after initial operator settings have been entered; and
- Position updates derived from satellite information during each usable satellite pass.



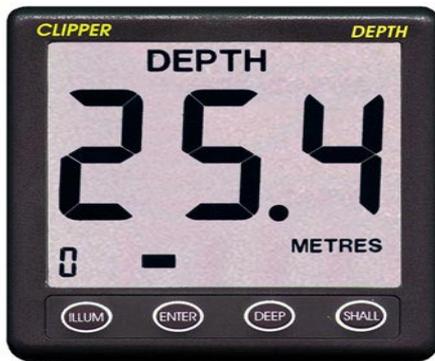
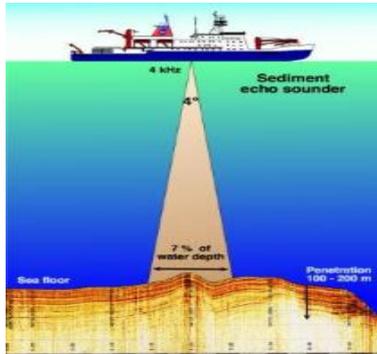
ECHO DEPTH – SOUNDING DEVICE

33 CFR 164.72(a)(5)

Applicability: UTVs of 12 meters (39.4 feet) or more in length operating in the navigable waters of the United States, other than the St. Lawrence Seaway. Not required on UTVs towing exclusively on Western Rivers and Inland Waters in CG D8.

Echo Depth Sounding Device (Depth Sounder)

- Must be readable from the vessel's main steering station.



Navigation Safety Equipment

AUTOMATIC IDENTIFICATION SYSTEM (AIS)

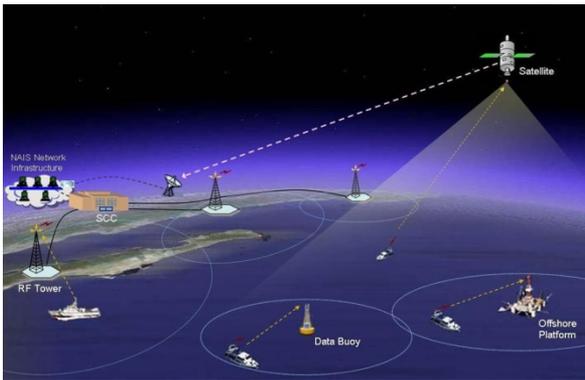
33 CFR 164.46(a)(1)

33 CFR 164.46(a)(3)

Applicability: The following UTVs must have a properly installed, operational, type approved AIS:

- 1) UTVs of 65 feet or more in length on an **international voyage**.
- 2) UTVs of 26 ft or more in length and more than 600 horsepower when operating **within the monitoring area** of a Vessel Traffic Service (**VTS**) or Vessel Movement Reporting System (VMRS) listed in table 33 CFR 161.12(c).

Note: The Coast Guard's Navigation Center posts current AIS requirements online at <http://navcen.uscg.gov/?pageName=AISCarriageReqmts>



Navigation Safety Equipment

RADIOTELEPHONES

33 CFR 26.03

Applicability: UTVs of 26 ft or more in length, while underway on the Navigable Waters of the United States, and not subject to the Great Lakes Radio Agreement.

Radiotelephone capable of operation from the navigational bridge:

- Must transmit and receive on VHF-FM Channel 13 (156.65 MHz)
- Must maintain continuous listening watch on VHF-FM Channel 16 (156.800 MHz)

Note: A single VHF-FM radio with two receivers meets requirement, without dual receivers 2 radios required.

Additional Radiotelephone required if operating in these special areas:

UTVs must have a radiotelephone capable of transmitting and receiving on VHF-FM Channel 67 (156.375 MHz) while transiting in the following areas:

- The Lower Mississippi River from the territorial sea boundary, and within either the Southwest Pass safety fairway or the South Pass safety fairway specified in 33 CFR 166.200, to mile 242.4 AHP (Above Head of Passes) near Baton Rouge;
- The Mississippi River-Gulf Outlet from the territorial sea boundary, and within the Mississippi River-Gulf outlet Safety Fairway specified in 33 CFR 166.200, to that channel's junction with the Inner Harbor Navigation Canal;
- The full length of the Inner Harbor Navigation Canal from its junction with the Mississippi River to that canal's entry to Lake Pontchartrain at the New Seabrook vehicular bridge.

Additionally, UTVs transiting any waters within a **Vessel Traffic Service (VTS)** area must have a radiotelephone capable of transmitting and receiving on the VTS frequency in listed in Table 33 CFR 161.12(c). UTVs may use the radiotelephone normally used to maintain the listening watch on VHF-FM Channel 16; a third radiotelephone is not required.

***In the areas that require 2 radios, the dual transceiver radio does not meet the requirement.*

Navigation Safety Equipment

RADIOTELEPHONES

47 CFR 80.308

47 CFR 80.955

Applicability: UTVs subject to the Great Lakes Radio Agreement (GLRA).

Radiotelephones:

UTVs \geq 26 ft to 123ft, subject to the GLRA must have a VHF-FM radiotelephone meeting the provisions of Title 47 subpart T.

UTVs \geq 124ft, subject to the GLRA must have 2 VHF FM radiotelephones meeting the provisions of Title 47 subpart T.

If a second VHF radio is required, the installation must be electrically separate from the first VHF installation. However, both may be connected to the main power supply provided one installation can be operated from a separate power supply located as high as practicable on the vessel. The radiotelephone installations shall be capable of:

- Maintaining a continuous listening watch on the designated calling channel, VHF-FM Channel 13 (except on portions of the Lower Mississippi River, where VHF-FM Channel 67 is the designated calling channel); and
- Separately monitor VHF-FM Channel 16, except when transmitting or receiving traffic on other VHF-FM channels or when participating in a Vessel Traffic Service (VTS) or monitoring a channel of a VTS.

Additionally, each U.S. flag vessel subject to the GLRA must have an inspection of the required radiotelephone installations at least once every 13 months. This inspection must be made while the vessel is in active service or within not more than one month before the date on which it is placed in service.

An inspection and certification of a ship subject to the GLRA must be made by a technician holding one of the following who is not the vessel's owner, operator, master, or an employee of any of them:

- General Radiotelephone Operator License;
- GMDSS Radio Maintainer's License;
- Second Class Radiotelegraph Operator's Certificate; or
- First Class Radiotelegraph Operator's Certificate.

NAVIGATION LIGHTS & SHAPES

Rule 22	33 CFR 84.09
Rule 23	33 CFR 83.23
Rule 24	33 CFR 83.24

Applicability: All UTVs at anchor or underway from sunset to sunrise, or in or near areas of restricted visibility.

General Information: 46 CFR 25.10 establishes specific standards for navigation light fixtures and light bulbs for UTVs built on or after November 7, 2002. These standards include a requirement for the navigation light to be certified by a laboratory listed by the Coast Guard to the standards of ABYC A-16, or an equivalent.

Lights must be tested and certified by a Coast Guard accepted independent laboratory to ABYC A-16 or UL 1104 standards, to thus indicate the lights meet NAV Rule 22 (visibility requirements) and Annex I (positioning and technical details of lights). **Modification of navigation light fixture bases to accept household incandescent or fluorescent bulbs will void the certification and will not be accepted by Coast Guard.**

Navigation lights on UTVs built prior to November 7, 2002 are not required to meet the ABYC A-16 standard. However, unless exempted under NAV Rule 38, they should meet the requirements of Rule 22 and the technical details of Annex I of the NAV Rules. When non-certified light fixtures or light bulbs need to be replaced they do not have to be replaced with certified light fixtures or light bulbs. Original equipment may be replaced in kind – see Federal Register Volume 66 page 55087.

NAV Rule 38 exempts inland UTVs less than 20 meters (65.5 ft) in length built prior to December 24, 1980 from complying with Rule 22 and Annex I of the NAV Rules. CG-543 Policy letter 11-02 provides guidance for navigation lights on UTVs less than 20 meters in length while operating on inland waters.

NAV Rule 21 provides definitions describing the different types of navigation lights. Masthead lights shall be white and visible ahead across an unbroken arc of 225° across the horizon. The red and green sidelights shall be visible from right ahead across an unbroken arc of 112.5° across the horizon. The white stern light shall be placed at or near the stern showing light astern across an unbroken arc of 135° across the horizon. The yellow towing light will have the same characteristics as the stern light. The positioning and spacing of navigation lights are specified in Annex I of the Rules.

Navigation Safety Equipment

NAVIGATION LIGHTS & SHAPES (cont'd)

Rule 22	33 CFR 84.09
Rule 23	33 CFR 83.23
Rule 24	33 CFR 83.24

Underway but Not Engaged in Towing:

- INLD and INTL Rule 23
- For application of NAV Rules, a UTV underway but not engaged in towing is considered to *simply be a power driven vessel* and should display lights in accordance with Rule 23. The UTV shall exhibit a masthead light forward; a second masthead light abaft and higher than the forward one (a vessel less than 50 meters (164 ft) in length shall not be obliged to exhibit such light but may do so); red and green sidelights; and a stern light. Visibility of lights must comply with Rule 22.

Pushing Ahead or Towing Alongside:

- **INLD Rule 24 (c):** UTVs pushing ahead or towing alongside, except in the case of a composite unit, shall exhibit two masthead lights in a vertical line, port and starboard sidelights, and two towing lights in a vertical line.
- **INTL Rule 24 (c):** UTVs pushing ahead or towing alongside, except in the case of a composite unit, shall exhibit two masthead lights in a vertical line, port and starboard sidelights, and a stern light.

Towing Astern:

- INLD and INTL Rule 24 (a).
- In addition to the navigation lights required by Rule 23, UTVs towing astern shall exhibit a second white masthead light above the first. If the overall length of the tow exceeds 200 meters (656 ft), a third white masthead light shall be exhibited above the other masthead lights.
- UTVs towing astern shall exhibit a yellow towing light, having the same characteristics as the stern light, placed vertically above the stern light.
- When the length of the tow exceeds 200 meters, UTVs must display a diamond shape where it can best be seen.

Western Rivers (WR) Exception:

- **INLD Rule 24 (c):** UTVs pushing ahead or towing alongside, except in the case of a composite unit, shall exhibit two masthead lights in a vertical line, port and starboard sidelights, and two towing lights in a vertical line.
- **INTL Rule 24 (c):** UTVs pushing ahead or towing alongside, except in the case of a composite unit, shall exhibit two masthead lights in a vertical line, port and starboard sidelights, and a stern light.

SOUND PRODUCING DEVICES

Rule 33
 33 CFR 83.33
 33 CFR 86.05
 33 CFR 86.23

Applicability: As specified below.

Sound Signals:

- **INLD** Rule 33 and Annex III.
- UTVs of less than 12 meters (<39.4') in length must have *some means* of making an efficient sound signal.
- UTVs of 12 meters (>39.4') or more in length shall be provided with a *whistle and a bell*.
- A UTV of 100 meters (>328') or more shall also be provided with a *gong*.
*** The bell or gong or both may be replaced by other equipment (for example: electronic sources) having the same respective sound characteristics, provided that manual sounding of the prescribed signals shall always be possible. ***

Note 1: For UTVs 12 to less than 20 meters in length, the diameter of the bell must be at least 7.9 inches. For UTVs of 20 meters or more in length, the diameter of the bell must be at least 11.8 inches.

Note 2: Whistle range:

<u>Length of Vessel m (ft)</u>	<u>Audibility Range (nm)</u>
200m (656.2') or more	2.0
75m (246') but less than 200	1.5
20m (65.6') but less than 75	1.0
12m (39.4') but less than 20m	0.5

Life Saving Equipment

EPIRB

- 46 CFR 25.26-20(a)(b)
- 46 CFR 25.26-50(b)(c)
- 47 CFR 80.1061(e)(f)

Applicability: All UTVs operating on the high seas or beyond 3 miles from the coastline of the Great Lakes.

Type Required:

36 feet or more in length:

- A float-free, automatically activated **Category 1 406 MHz EPIRB**
- If the vessel has a builder's certificate stating the vessel was built with sufficient buoyant material to keep the flooded vessel afloat, the vessel may substitute the **Category 1 406 MHz EPIRB** with a manually activated **Category 2 406 MHz EPIRB**.

Less than 36 feet in length:

- A float-free, automatically activated **Category 1 406 MHz EPIRB**, or a manually activated **Category 2 406 MHz EPIRB**.



Figure 6. Float free & non-float free EPIRBs.

NOAA Registration

- EPIRBs must be registered with NOAA and have a valid up to date decal.
- A personal Locator Beacon (PLB) does not satisfy the requirement to carry an EPIRB on board.

EPIRB CHECKLIST:

- Category I EPIRB mounted in a float free location & armed
- EPIRB battery not expired
- Hydrostatic release not expired
- NOAA registration decal not expired
- EPIRB is tested monthly

Life Saving Equipment

RING LIFE BUOYS

46 CFR 25.25-5(d)

46 CFR 25.25-9(b)

46 CFR 25.25-11

Applicability: All UTVs 26 feet and greater.

Requirements:

- Must have at least one approved ring life buoy approved under 46 CFR 160.050.
- Stowed in a manner that is readily available for throwing in the event of an emergency.
- Must be in good and serviceable condition

Note: Retro-reflective material & vessel name recommended **but not required**.



Figure 7. Ring Life Buoys.

Life Saving Equipment

PERSONAL FLOTATION DEVICES

46 CFR 25.25-5

Applicability: All UTVs.

Vessel Length (ft)	# Per Person	PFD Type
UTVs < 40	1	I, II, III
UTVs \geq 40	1	I

Requirements:

- Each PFD must be of a **suitable size** for each person on board.
- Each PFD must have Type I **retro-reflective** material on front and back side (200 sq.cm front & back).
- UTVs may substitute a CG approved **immersion suit** for a required life preserver. If immersion suits are carried, they should be inspected IAW NVIC 01-08.
- **Kapok** and fibrous glass life preservers that do not have plastic-covered pad inserts are not acceptable.
- **Type V commercial hybrid PFD** may be substituted for a life preserver, buoyant vest, or marine buoyant device.*
- Must be **readily accessible** and in serviceable condition.

** At this time, there are no approved Type V commercial hybrid vests on the market. If/when encountered, verify approval status on CGMIX website.*

Work Vests:

- Shall be of an approved type under 46 CFR 160.053
- Shall **not be accepted** in lieu of any portion of the required number of PFD's.
- The approved buoyant work vest shall be stowed separately from the regular stowage of required PFD's.

Life Saving Equipment

SURVIVAL CRAFT

Applicability: Currently, UTVs are **NOT REQUIRED** to have survival craft on board, **however; if on board, the survival craft(s) must be serviced/maintained.**

Some UTVs that engage in Ocean, Coastwise or Great Lakes voyages have life rafts, buoyant apparatus or life floats on board.

If equipped, examine the following:

- ✓ Launching instructions posted
- ✓ Stowage
- ✓ Annual servicing dates
- ✓ Hydro release expiration dates
- ✓ Proper weak link configuration and size
- ✓ Float free condition
- ✓ Markings
- ✓ Sufficient capacities



Figure 8. Survival craft types.

TOWLINE & TERMINAL GEAR

33 CFR 164.74(a)

33 CFR 164.74(b)

33 CFR 164.76

Applicability: UTVs 12 meters (39.4 ft) or over in length operating in the Navigable Waters of the United States other than the Saint Lawrence Seaway.

Visual Inspections: The following tests and inspections of gear must occur before the vessel embarks on a voyage of more than 24 hours or when each new master or operator assumes command:

- 1) Visual inspection of tackle;
- 2) Visual inspection of connections of bridle and towing pendant and;
- 3) If applicable, of chafing gear and of the winch brake, if installed.

Towline & Terminal Gear for Towing Alongside and Pushing Ahead:

- The owner, master, or operator of each UTV towing alongside or pushing ahead shall ensure that the face wires, spring lines, and push gear used are appropriate for the vessel's horsepower and the arrangement of the tow; are frequently inspected; and remain serviceable.

Towline for Towing Astern

- The owner, master, or operator shall ensure that the strength of each towline is adequate for its intended service, considering the size and material of each towline relative to the:
 - 1) Horsepower or bollard pull of the vessel;
 - 2) Expected static loads and dynamic loads;
 - 3) Expected sea conditions;
 - 4) Exposure to the marine environment and any chemicals used or carried on board the vessel;
 - 5) Temperatures of normal stowage and service on board the vessel;
 - 6) Likelihood of mechanical damage; and
 - 7) Compatibility with the associated navigational-safety equipment.
- Each towline as rigged must be free of knots; spliced with a thimble, or have a poured socket at its end; and be free of wire clips except for a temporary repair.
- A temporary repair must have a thimble and either five wire clips or as many wire clips as the manufacturer specifies for the nominal diameter and construction of the towline, whichever is more.
- See NVIC 5-92 for additional guidance.

TOWLINE & TERMINAL GEAR (cont'd)

33 CFR 164.74(b)

Terminal Gear for Towing Astern:

- The owner, master, or operator of each vessel towing astern shall ensure that the gear used to control, protect, and connect each towline meets the following:
 - 1) Material and size of the terminal gear are appropriate for the strength and anticipated loading of the towline and for the environment;
 - 2) Each connection is secured by at least one nut with at least one cotter pin or other means of preventing its failure;
 - 3) The lead of the towline is appropriate to prevent sharp bends in the towline from fairlead blocks, chocks, or tackle;
 - 4) There is a mechanical or non-mechanical method that does not endanger operating personnel but easily releases the towline; and
 - 5) The towline is protected from abrasion or chafing by chafing gear, lagging, or other means.
- Except on board a UTV towing in ice on Western Rivers or one using a towline of synthetic or natural fiber, there is a winch fitted that evenly spools and tightly winds the towline; and if a winch is fitted, there is attached to the main drum a brake that has holding power appropriate for the horsepower or bollard pull of the vessel and can be operated without power to the winch.

Pollution Prevention Equipment

OIL POLLUTION PREVENTION

- 33 CFR 155.450
- 33 CFR 155.800/ 154.500
- 33 CFR 155.820
- 33 CFR 155.770
- 33 CFR 156.150

Applicability: All UTVs operating on the Navigable Waters of the United States.

Oil Pollution Prevention:

- No person **may intentionally drain oil or hazardous materials** from any source into the bilge of a UTV.
- **Records** maintained for each PIC and transfer hose & test data.
- **Declaration of Inspections (DOI)** for last 30 days (if required).
- **Oil pollution placard:** UTVs 26 ft or longer must have a placard posted in each machinery space, or at the bilge and ballast pump control station. The placard must include the statement shown below:

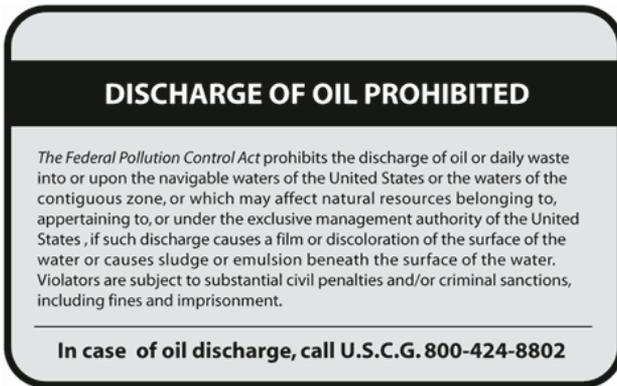


Figure 9. Oil Placard.

- **Hoses in oil service:** Each hose assembly used for transferring oil must be labeled with the name of each product for which the hose may be used or for oil products, the words "OIL SERVICE". Each hose also must be marked with the maximum allowable working pressure (MAWP), the date of manufacture, and the date of the latest static liquid pressure test.

Note: The date of the last pressure test and date of manufacture need not be marked on the hose if it is recorded in the hose records of the vessel or facility.

Pollution Prevention Equipment

OIL POLLUTION PREVENTION (cont'd)

- 33 CFR 155.330
- 33 CFR 155.350
- 33 CFR 155.410
- 33 CFR 155.420

Oil Pollution Prevention:

- **Pumping/piping/discharge system for oily mixtures – Non-oceangoing:**

Non-oceangoing UTVs may not operate in the Navigable Waters of the United States unless they have the capacity to retain on board all oily mixtures and are equipped to discharge those oily mixtures to a reception facility. Non-oceangoing UTVs may retain oily mixtures onboard in the ship's bilges; an oil residue (sludge) tank is not required.

Non-oceangoing UTVs of **100 GT and above** with main or auxiliary machinery spaces may not operate in the Navigable Waters of the United States unless it has at least one pump installed to discharge oily mixtures through a fixed piping system to a reception facility; the piping system has at least one outlet that is accessible from the weather deck; each outlet has a shore connection that is compatible with reception facilities in the ship's area of operation; and the ship has a stop valve for each outlet.

The above requirements do not apply to a UTV that has approved oily-water separating equipment for the processing of oily mixtures from bilges.

- **Pumping/piping/discharge system for oily mixtures – Oceangoing:**

Oceangoing UTVs of **less than 400 GT** may not operate unless it has the capacity to retain on board all oily mixtures and is equipped to discharge these oily mixtures to a reception facility; or has approved oily-water separating equipment for processing oily mixtures from bilges and discharges into the sea. UTVs of **less than 400 GT** may retain all oily mixtures on board in the ship's bilges; an oil residue (sludge) tank is not required.

Oceangoing UTVs of **100 GT and above but less than 400 GT** with main or auxiliary machinery spaces may not operate unless the UTV has at least one pump installed to discharge oily mixtures through a fixed piping system to a reception facility and the piping system has at least one outlet accessible from the weather deck. The ship must have a means to stop each pump that is used to discharge oily mixtures near the discharge outlet on the weather deck; and the ship must have a stop valve installed for each outlet required by this section.

Pollution Prevention Equipment

OIL POLLUTION PREVENTION (cont'd)

33 CFR 155.320

33 CFR 155.720 / 740

33 CFR 155.420

33 CFR 155.750

33 CFR 155.430

Oil Pollution Prevention :

- **Pumping/piping/discharge system for oily mixtures – Oeangoing (cont'd):** For a ship on an international voyage, the outlet required by this section must have a shore connection or adapter that meets the specifications in 33 CFR 155.430 and fits the required outlets. For a ship not on an international voyage, the outlet required by this section has a shore connection that is compatible with reception facilities in the ship's area of operation.

The above requirements do not apply to a ship that has approved oily-water separating equipment for the processing of oily mixtures from bilges or fuel oil tank ballast.
- **Spill containment system at hose connections, vents and fills:** A UTV of 300 gross tons or more constructed after June 30, 1974 must have a fixed container or enclosed deck area under or around each fuel oil or bulk lubricating oil tank vent, overflow, and fill pipe. The containment for a UTV of 300 or more but less than 1600 gross tons must have a capacity of at least one-half barrel and a UTV of 1600 or more gross tons must have a capacity of one barrel. A UTV of 100 gross tons or more constructed before July 1, 1974 and a UTV of 100 or more but less than 300 gross tons constructed after June 30, 1974 must meet the above requirements or, during oil transfer operations, equip each fuel oil or bulk lubricating oil tank vent, overflow, and fill pipe with a portable container of at least a 5 US gallon capacity. If the UTV has a fill fitting for which containment is impractical, an automatic back pressure shut-off nozzle may be used.
- **Oil transfer procedures posted/available:** UTVs with a capacity of 250 barrels* (10,500 gallons) of oil or more shall provide transfer procedures. The procedures must be permanently posted or available at a place where the procedures can be easily seen and used by members of the crew when engaged in transfer operations and must be followed during transfer operations.
- **Oil transfer procedures contents complete:** The oil transfer procedures must meet the content requirements of 33 CFR 155.750.

* One barrel (bbl) of oil equates to 42 U.S. gallons.

Pollution Prevention Equipment

MARINE SANITATION DEVICE (MSD)

33 CFR 159.7

33 CFR 159.59

33 CFR 159.65

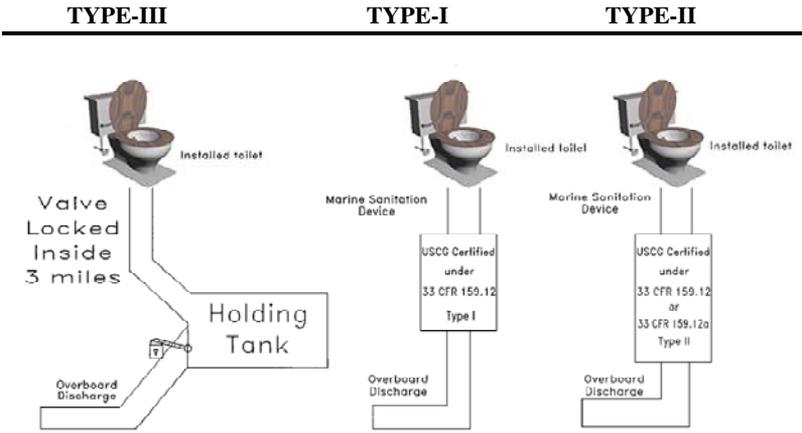
Applicability: UTVs with installed toilet facilities operating on the Navigable Waters of the United States.

Marine Sanitation Devices (MSD):

- UTVs with installed toilet facilities must have an operable MSD installed that is appropriate for the length of the vessel and operating area. “Porta-potties” are not considered as installed toilet facilities.
- In accordance with the manufacturer’s instructions, an adequate supply of chemicals for Types I & II must be on board. If the vessel does not have an adequate stock of chemicals on board, these MSDs are not considered operable.
- Type I and Type II MSDs must have a label on it under 33 CFR 159.16 or be type certified IAW 33 CFR 159.12. Additionally, each Type I or Type II MSD must have a placard with the operating instructions, safety precautions, and warnings pertinent to the device. The size of the letters printed on the placard must be one-eighth of an inch or larger.
- Some Type III MSDs use incineration to prevent the discharge of untreated sewage; however, most are configured with a “Y” valve to retain untreated sewage in a holding tank. If the vessel’s route does not routinely take it into coastal waters beyond the Navigable Waters of the United States where untreated sewage can be legally discharged, the installation of a “Y” valve-equipped Type III MSD is inappropriate; these UTVs must be equipped with an alternate means of discharging untreated sewage from the holding tank to a shore-based sewage treatment facility.

When operating in an area where the discharge of untreated sewage is prohibited, each Type III device must be properly secured. Acceptable methods of securing the device include closing each valve leading to an overboard discharge and removing the handle; padlocking each valve leading to an overboard discharge in the closed position; or using a non-releasable wire-tie to hold each valve leading to an overboard discharge in the closed position.

MARINE SANITATION DEVICE (cont'd)



****These diagrams do not depict "all" of the referenced systems. I.e. overboard bypass****
Figure 9. MSD Types.

Pollution Prevention Equipment

MARPOL ANNEX VI

40 CFR Part 94

MARPOL Annex VI

Applicability: UTVs equipped with marine diesel engines rated over 130 kilowatts (175 horsepower) on an international voyage.

MARPOL Annex VI:

- The International Maritime Organization (IMO) adopted MARPOL Annex VI to limit air pollution from ships. Annex VI establishes limits on Nitrogen Oxides (NOx) for new engines installed on a vessel constructed on or after January 1, 2000, and for existing engines that undergo a major conversion after that date. Annex VI requires UTVs over 400 GT ITC (or gross registered tons if no GT ITC tonnage assigned) on a foreign voyage to have an International Air Pollution Prevention (IAPP) Certificate.
- Use the checklist in Appendix A of Enclosure 1 to CG-543 Policy Letter 09-01 dated February 4, 2009 to determine compliance. The Environmental Protection Agency (EPA) has published regulations in 40 CFR Part 94 to limit emissions from marine diesel engines manufactured on or after January 1, 2004 or vessels equipped with marine diesel engines constructed on or after that date, rated over 37 kilowatts (50 horsepower).

Fire Fighting Equipment

UTVs – INLAND SERVICE

46 CFR 27.303

Table 25.30-20(a)(1) & (b)(1)

Applicability: All UTVs in inland service.

Requirements:

In *addition* to the minimum number of hand portable fire extinguishers required by 25.30 (table), a UTV on Inland waters must also have on board the following:

- An approved B-V semi-portable fire-extinguishing system to protect the engine room.



OR

- A fixed fire-extinguishing system installed to protect the engine room of the vessel.



Fire Fighting Equipment

UTVS – OCEAN OR COASTAL SERVICE

46 CFR 27.303

Table 25.30-20(a)(1) & (b)(1)

Applicability: All UTVs on ocean or coastal service with *construction contracted before 8/27/2003*.

Requirements:

In *addition* to the minimum number of hand portable fire extinguishers required by 25.30 (table), a UTV on Inland waters must also have on board the following:

- An approved B-V semi-portable fire-extinguishing system to protect the engine room.



OR

- A fixed fire-extinguishing system installed to protect the engine room of the vessel.



Fire Fighting Equipment

UTVs – OCEAN OR COASTAL SERVICE

46 CFR 27.305

Table 25.30-20(a)(1) & (b)(1)

Applicability: All UTVs on ocean or coastal service with *construction contracted on or after 8/27/2003*. However, this does not apply to any towing vessel pushing a barge ahead, or hauling a barge alongside, when the barge’s coastwise or Great Lakes route is restricted (as indicated on its certificate of inspection), so that the barge may operate “in fair weather only, within 12 miles of shore,” or with words to that effect.

Requirements:

In *addition* to the minimum number of hand portable fire extinguishers required by 25.30 (table), a UTV on Inland waters must also have on board the following:

- An approved B-V semi-portable fire-extinguishing system to protect the engine room.



AND

- A fixed fire-extinguishing system installed to protect the engine room of the vessel.



Fire Fighting Equipment

FIRE EXTINGUISHERS – GENERAL

46 CFR 25.30-5

NFPA 10

NVIC 13-86

Underwriter Laboratory (UL) Portable Fire Extinguishers

Applicability: As specified below. All required fire extinguishers shall be USCG or UL approved and be maintained in serviceable condition.

All UTVs 65 feet in length or less shall carry at least the minimum number of hand portable fire extinguishers set forth in the table below.

Length in Feet	Minimum number of B-I hand portable fire extinguishers required*	
	No Fixed System in Machinery Space	Fixed System in Machinery Space
Under 16	1	0
16 and over, but under 26	1	0
26 and over, but less than 40	2	1
40 and over, but not over 65	3	2

Table 25.30-20(a)(1)

*One B-II replaces two B-I fire extinguishers.

All UTVs greater than 65 feet in length shall carry at least the minimum number of hand portable fire extinguishers set forth in the table below.

Gross Tonnage		Minimum number of B-II hand portable fire extinguishers
Over	Not over	
-----	50	1
50	100	2
100	500	3
500	1000	6
1000	-----	8

Table 25.30-20(b)(1)

In addition to the hand portable fire extinguishers required by Table 25.30-20(b)(1), the following fire-extinguishing equipment shall be fitted in the machinery space:

- 1) One B-II hand portable fire extinguisher for each 1,000 brake horsepower of the main engines or fraction thereof. However, not more than 6 such extinguishers need be carried.
- 2) If an approved semi portable fire extinguisher has wheels and is not required by this section, it must be securely stowed when not in use to prevent it from rolling out of control under heavy sea conditions.

Fire Fighting Equipment

FIRE EXTINGUISHERS – GENERAL (cont'd)

46 CFR 25.30-10

NFPA 10

As illustrated in the below table, hand portable fire extinguishers and semi-portable fire extinguishing systems are classified by a combination letter and number symbol. The letter indicates the type of fire and the number indicates the relative size of unit.

For UTVs, all required hand portable fire extinguishers and semi-portable fire extinguishing systems are of the “B” type.

Table 25.30-10(c)

Classification	Foam (gallons)	CO2 (lbs)	Dry Chem. (lbs)
B-I	1 $\frac{3}{4}$	4	2
B-II	2 $\frac{1}{2}$	15	10
B-III	12	35	20
B-IV	20	50	30
B-V	40	100	50

FIXED FIRE-EXTINGUISHING SYSTEM

46 CFR 25.30-15

46 CFR 76.15

NFPA 12

Applicability: All UTVs with installed fixed fire-extinguishing systems.

When a fixed fire-extinguishing system is installed, it must be type approved or accepted by the Lifesaving and Fire Safety Division (CG-ENG-4) or the Marine Safety Center. If the system is a carbon-dioxide (CO₂) type, then it *must be designed and installed in accordance with 46 CFR 76.15.*

Fixed fire-extinguishing systems have the following requirements:

- ❖ Systems must be **installed** and **maintained** as per the manufactures approved design/technical manual.
- ❖ The space containing the cylinders shall be properly **ventilated** and designed to preclude an anticipated ambient temperature in excess of 130 degrees F
- ❖ **Cylinders** shall be securely fastened and supported, and, where necessary, protected against injury. Cylinders shall be so mounted as to be readily accessible and capable of easy removal for recharging and inspection. Provisions shall be available for weighing the cylinders. Where subject to moisture, cylinders shall be so installed as to provide a space of at least 2 inches between the flooring and the bottom of the cylinders.
- ❖ **Controls** must be located outside of the protected space.
- ❖ Complete, but **simple instructions**, for the operation of the systems must be located in a conspicuous place at or near all pull boxes, stop valve controls and in the CO₂ cylinder storage room. On systems in which the CO₂ cylinders are not within the protected space, these instructions must also include a schematic diagram of the system and instructions detailing alternate methods of discharging the system should the manual release or stop valve controls fail to operate. Each control valve to branch lines must be marked to indicate the related space served.
- ❖ If the space or enclosure containing the CO₂ supply or controls is to be **locked**, a key to the space or enclosure shall be in a break-glass-type box conspicuously located adjacent to the opening
- ❖ A system protecting more than one space must have a **manifold** with a normally closed stop valve for each space protected.

FIXED FIRE-EXTINGUISHING SYSTEM (cont'd)

46 CFR 25.30-15
46 CFR 76.15
46 CFR 147.60, 147.65
NFPA 12

- ❖ A system, that has more than one storage cylinder for the extinguishing agent and the primary storage cylinders, must have at least **two pilot cylinders**.
- ❖ If equipped with **pilot activation** cylinders manual controls must be provided to operate the pilot cylinders as per the manufacturer's manual.
- ❖ Spaces which are protected by a CO2 extinguishing system and are normally accessible to persons on board while the vessel is being navigated, other than paint lockers and similar small spaces shall be fitted with an approved **audible alarm** that will automatically sound when CO2 is admitted to the space. The alarm shall be conspicuously and centrally located and shall be properly marked.
- ❖ For systems installed on or after July 1, 1957, alarms will be mandatory only for systems required to be fitted with a delayed discharge. Such alarms shall be so arranged as to sound during the **time delay period*** prior to the discharge of CO2 into the space. The alarm shall depend on no source of power other than CO2.

*Common time delay durations are from 30-60 seconds. The actual time will be marked on time delay cylinder.

- ❖ Where mechanical ventilation is provided for spaces other than cargo, and similar spaces which are protected by a carbon dioxide extinguishing system, provisions shall be made so that the **ventilation** system is automatically **shut down**. Where natural ventilation is provided for spaces protected by a CO2 extinguishing system, provisions shall be made for easily and effectively closing off the ventilation.
- ❖ Upon system activation, the **discharge** of at least 85% of the required amount of CO2 shall be complete **within 2 minutes**.
- ❖ All cylinders used for storing carbon dioxide must be fabricated, tested, and marked in accordance with 46 CFR 147.60 and 147.65.
- ❖ 47 CFR 147.65 states **carbon dioxide and halon** cylinders forming part of a fixed fire-extinguishing system must be **retested** at least every 12 years. If a cylinder is discharged and more than five years have elapsed since the last test, the cylinder must be retested before recharging.

Fire Fighting Equipment

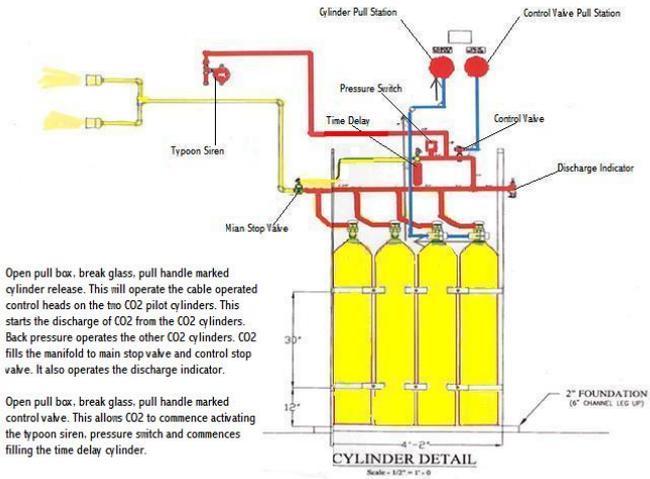


Figure 10. Example of a High Pressure CO2 System.

TYPES OF FIXED FIRE-EXTINGUISHING SYSTEMS

Examples of USCG approved fire-extinguishing systems:

- 1) **Total flooding carbon dioxide**, approval category: 162.038 (NFPA 12 and 46 CFR 76.15)...
- 2) **Clean agent** pre-engineered systems; such as FM-200, approval category: 162.161 (NFPA 2001)...
- 3) **Water mist** systems; approval category: 162.135 (NFPA 750)...

A list of USCG approved Fire Extinguishing Systems can be found at:

<http://www.uscg.mil/hq/cg5/cg5214/fesys.asp>

The following website can be used to verify a fixed fire-extinguishing system approval: <http://cgmix.uscg.mil/equipment/equipmentsearch.aspx>

Existing fixed fire extinguishing systems may be used to satisfy the requirement for a fixed suppression system [if] the operator can demonstrate that the system has been designed and maintained in accordance with USCG approval criteria.

System installation [certification] by a Registered Professional Engineer or by an Authorized Classification Society is an acceptable method of demonstrating compliance.

Prior to adopting a specific type of fire extinguishing system for a particular vessel, thorough research should be done to ensure that the fire extinguishing medium (and its system) is appropriate and type approved.

FIRE DETECTION SYSTEMS

46 CFR 27.203

Applicability: All UTVs must have a fire-detection system installed to detect engine-room fires.

A UTV whose construction was contracted for before January 18, 2000, may use an existing engine-room-monitoring system (with fire-detection capability) instead of a fire-detection system, if the monitoring system is operable and complies with this section.

Each detector, each control panel and each fire alarm must be approved under 46 CFR 161.002 or listed by an independent testing laboratory.

CONTROL PANEL CHECKLIST:

- Power available light
- Audible alarm at operating station to notify crew of fire
- Visible alarm at the operating station to identify the zone or zones of fire
- Means to silence the audible alarm while maintaining indication by the visible alarm
- Circuit-fault detector test-switch
- Labels for all switches and indicator lights identifying function
- System must draw power from two sources, manual or automatic switchover from the primary source to the secondary source
- Verify proof of certification from professional engineer or class society



Figure 11. Fire Alarm Control Panel.

INTERNAL COMMUNICATIONS

46 CFR 27.205

Applicability: All UTVs must be fitted with a communication system between the engine room and the operating station.

Requirements:

Internal communication equipment must consist of either fixed or portable equipment such as:

- Sound-powered telephone,
- Portable radios, or
- Other reliable method of voice communication.

The communication system must have a main or reserve power supply that is independent of the electrical system.

The communication system must also provide two-way voice communication and calling between the operating station and:

- The engine room, or
- A location immediately adjacent to an exit from the engine room.

If the operating station engine controls and the access to the engine room are within 3 meters (10 ft) of each other and allow for unobstructed visual contact between them, direct voice communication is acceptable instead of a communication system.

Twin-screw vessels with operating station controls for both engines **are not** required to have internal communication systems.



Figure 12. Common Internal Communications Equipment.

Fire Fighting Equipment

GENERAL ALARM

46 CFR 27.201

Applicability: All UTVs must be fitted with a general alarm that has a contact-maker at the operating station.

Requirements:

- An audible general alarm system with contact maker at the operating station.
- The system is capable of notifying persons in any accommodation, work space and the engine room.
- Must be tested once a week.
- A flashing red light must also be installed in spaces where noise makes the alarm system difficult to hear, the flashing red light must be identified with a sign that reads:

**Attention General Alarm – When Alarm Sounds or Flashes
Go to Your Station**

- UTVs may use a **public-address** (PA) system or other means of alerting all persons on the vessel instead of a general alarm, *if*:
 - 1) The system is capable of notifying persons in any accommodation, work space and the engine room,
 - 2) It is tested once a week,
 - 3) It can be activated from the operating station; and
 - 4) It includes the supplemental flashing red light and sign described above.

Fire Fighting Equipment

BACKFIRE FLAME CONTROL

46 CFR 25.35-1

Applicability: All UTVs with **installed gasoline engines.**

Requirements:

- Every gasoline engine installed in a motorboat or motor vessel after April 25, 1940, **except outboard motors**, shall be equipped with an acceptable means of backfire flame control.
- Installations made before November 19, 1952, need not meet the detailed requirements of this subpart and may be continued in use as long as they are serviceable and in good condition. Replacements shall meet the applicable conditions in this section.
- Installations consisting of backfire flame arresters bearing basic Approval Nos. 162.015 or 162.041 or engine air and fuel induction systems bearing basic Approval Nos. 162.015 or 162.042 may be continued in use as long as they are serviceable and in good condition. New installations or replacements must meet applicable requirements of subpart 58.10 of this chapter.

Fire Fighting Equipment

VENTILATION

46 CFR 25.40

Applicability: All UTVs with closed compartments, which use **gasoline** for electric generation, mechanical power, or propulsion.

Requirement:

- Vessels manufactured after April 25, 1940 must have at least two (2) ventilator ducts, fitted with cowls or their equivalent, for the efficient removal of explosive or flammable gases from the bilges of every engine and fuel tank compartment.

Acceptability:

- Natural Ventilation:
 - 1) Intake duct below level of carburetor, or at least midway to the bilge.
 - 2) Exhaust duct extended to lower portion of the bilge, below starter level, to open atmosphere.
 - 3) Cowls trimmed so as not to re-circulate fumes.

Fire Fighting Equipment

FUEL SHUT-OFF VALVES

46 CFR 27.207

Applicability: All UTVs must have a positive, remote fuel-shut-off valve fitted on any fuel line that supplies fuel directly to an engine or generator.

Requirements:

- The valve must be near the source of supply (for instance, at the day tank, storage tank, or fuel-distribution manifold). Note: equivalency of schedule 80 piping with all welded connections have been granted for extending the location of the fuel shut-off valve the operator must have an “equivalency letter” aboard to meet the standard.
- It must be operable from a safe place outside the space where the valve is installed.
- Each remote valve control should be marked in clearly legible letters, at least 25 millimeters (1 inch) high, indicating the purpose of the valve and the way to operate it.



Figure 13. Fuel Shut-Off Placards.

Fire Fighting Equipment

FUEL SYSTEMS

46 CFR 27.211

Applicability: All UTVs contracted for on or after 1/18/2000.

Requirements:

- Must not use or carry portable fuel systems, including portable tanks and related fuel lines/ accessories, except when used for outboard engines or when permanently attached to portable equipment.
- The design, construction, and stowage of outboard engine portable tanks and related fuel lines and accessories must comply with ABYC H-25.
- Must not use fuel other than bunker C or diesel, except for outboard engines, or where otherwise accepted by Commandant.
- Each integral fuel tank must have a vent that connects to the highest point of the tank, discharges on a weather deck through a bend of 180°, and is fitted with a 30x30 mesh corrosion-resistant flame screen.
- Each fuel line must be seamless and made of steel, annealed copper, nickel-copper, or copper-nickel with a wall thickness of not less than 0.035 inch:

- 1) **Exception:** Aluminum piping of at least Schedule 80 is acceptable on aluminum-hulled vessels if it is installed outside the engine room.
- 2) **Exception:** Nonmetallic flexible hose is acceptable when used in lengths of 30 inches or less; is visible and easily accessible; does not penetrate a watertight bulkhead; and is fabricated with an inner tube and a cover of synthetic rubber or other suitable material reinforced with wire braid such as those complying with SAE J1942.

Hoses designed for use with compression fittings must be fitted with suitable, corrosion-resistant, compression fittings or fittings that comply with SAE J1475.

Hoses designed for use with clamps must have two clamps installed at each end of the hose. Clamps must not rely on spring tension and must be installed beyond the bead or flare of the mating spud, pipe or hose fitting.

FUEL SYSTEMS (cont'd)

46 CFR 27.211

Additionally, UTVs of less than 24 meters (79 feet) in length may comply with any of the following standards for fuel systems rather than those on the previous page:

- 1) ABYC H-33 (incorporated by reference in 46 CFR 27.102)
- 2) Chapter 5 of NFPA 302 (incorporated by reference in 46 CFR 102)
- 3) 33 CFR chapter I, subchapter S (boating safety)



Figure 14. Sample Nonmetallic Fuel Hose.

Fire Fighting Equipment

PORTABLE FIRE PUMPS

46 CFR 27.301

Applicability: All UTVs must have either a self-priming, power driven, fixed fire-pump, a fire main, hoses and nozzles; **OR** a self-priming portable fire-pump, and hoses and nozzles.

Requirements:

- Portable Fire Pumps must be:
 - 1) Power-driven;
 - 2) Self Priming,
 - 3) Have a capacity of at least 80 gpm at a discharge gauge pressure of at least 60 psi, measured at the pump discharge;
 - 4) There shall be a sufficient number fire hoses, at least 1.5" in diameter and at least 50' in length, immediately available to attach to it so that a stream of water will reach any part of the vessel The pump, hoses and nozzles must be stowed outside of machinery spaces and,
 - 5) Nozzle made of corrosion resistant material capable of providing a solid stream and a spray pattern.
 - 6) The pump, hoses and nozzles must be stowed outside of machinery spaces.



Figure 15. Portable Fire Pump

Fire Fighting Equipment

FIXED FIRE PUMP

46 CFR 27.301

Applicability: All UTVs must have either a self-priming, power driven, fixed fire-pump, a fire main, hoses and nozzles; **OR** a self-priming portable fire-pump, hoses and nozzles.

Requirements:

- Fixed Fire Pumps must be:
 - 1) Be capable of delivering water simultaneously from the two highest hydrants;
 - 2) Deliver water from both branches of the fitting if the highest hydrant has a Siamese fitting, at a pitot-tube pressure of at least 50 psi and a flow rate of at least 80 gpm;
 - 3) Be capable of being energized remotely from a safe place outside the engine room and from the pump;
 - 4) All valves necessary for the operation of the fire main must be kept in the open position or must be capable of operation from the same place where the remote fire pump control is located.
- The **fire main must have a sufficient number of fire hydrants with attached hose** to reach any part of the machinery space using a single length of fire hose.



Figure 16. Fixed Fire Pump

Fire Fighting Equipment

FIRE HOSE

46 CFR 27.301

Applicability: All UTVs must have either a self-priming, power driven, fixed fire-pump, a fire main, hoses and nozzles; **OR** a self-priming portable fire-pump, and hoses and nozzles.

Requirements:

- Fire Hoses must be:
 - 1) Lined, commercial fire-hose, of at least 1 ½ inch diameter and 50 feet in length; and
 - 2) Fitted with a nozzle made of corrosion-resistant material capable of providing a solid stream and a spray pattern.



Figure 17. Hose Reel.



Figure 18. Types of Fire Hose Nozzles (capable of spray pattern)

HAZARDOUS CONDITIONS

33 CFR 160.204

A Hazardous Condition means any condition that may adversely affect the safety of any vessel, bridge, structure, or shore area or the environmental quality of any port, harbor or Navigable Water of the United States. It may, but need not, involve collision, allision, fire, explosion, grounding, leaking, damage, injury or illness of a person on board, or manning shortage.

As situations may warrant, Hazardous Conditions may require strong corrective measures (such as a Captain of the Port Order (COTP) Order). Examples of Hazardous Conditions that may warrant a COTP Order include, but are not limited to:

- ❖ Insufficient or unserviceable lifesaving equipment
- ❖ Insufficient or inoperative communications equipment
- ❖ Improper manning – unlicensed Master, insufficient route, second/ third licensed Master/ Mate absent; insufficient number of Able Seamen or Ordinary Seamen required for route and length of voyage
- ❖ Expired/ invalid Certificate of Documentation
- ❖ Insufficient or unserviceable fire protection equipment
- ❖ Inadequate/ improper navigation lights
- ❖ Negligent operations – excessive speed, restricted visibility, restricted maneuverability
- ❖ Intoxicated or impaired operation
- ❖ Load line certificate expired/ invalid/ submerged
- ❖ Improper material condition – bare, jury-rigged or dead-end electrical wires, open switch or breaker box covers, missing guards on rotating equipment, excessive wastage on structural frames/ plating, missing hatch/ door closures or gaskets, loss of watertight integrity or leaking
- ❖ Fuel system deterioration – leaking pipes/ valves, high pressure fuel spray, fuel suction from open containers
- ❖ Steering system deterioration – hydraulic leakage, excessive play in bushings, or control failure
- ❖ Mandatory navigational safety equipment – not reporting failures or malfunctions of propulsion machinery, steering gear, radar, gyrocompass, echo depth sounding device, automatic identification system or navigation lights
- ❖ Failure to properly maintain pressure vessels – gross deterioration of metal, missing or illegible data plate, missing or inoperable safety relief valve, and improper welding repairs.

