

Glossary of Terms

This material provides an abbreviated guide to terminology that will probably be used during a Ports and Waterways Safety Assessment (PAWSA). The listing is not comprehensive, nor does it identify all laws, rules, and other requirements governing vessel operation.

Notes: Reference material appears in *italics*. “CFR” is “Code of Federal Regulations”

AID TO NAVIGATION (ATON): A device, external to a vessel, designed to assist in determination of position of the vessel, or of a safe course, or to warn of danger. The most common types of aids to navigation are:

- Fixed aids, such as lighthouses, ranges, and beacons, which are permanently located in known geographic positions
- Floating aids, or buoys, anchored in known geographic positions
- Radionavigation aids, such as GPS, DGPS, Loran, radio beacons, etc., which transmit signals by which navigators may determine their positions

ALLISION: Contact between a vessel and a fixed object such as a pier or a bridge.

AUTOMATIC IDENTIFICATION SYSTEM (AIS): AIS uses radio transponders permanently installed or carried on board vessels to broadcast important data such as vessel identification, GPS/DGPS position, course, speed, navigational status, dimensions, or cargo. Combined with a shipboard display capability, AIS presents critical navigation and vessel traffic information to navigators without the requirement for voice communications.

BEST PRACTICES: A high-performance way of achieving business objectives, which solves problems, creates opportunities, and improves business results. An example of this is the American Waterways Operators Responsible Carrier Program. It is a voluntary program aimed at improving marine safety and environmental protection through the adoption of standards that exceed government regulations.

CAPTAIN OF THE PORT (COTP): (f) The Captain of the Port is in command of a Captain of the Port Zone and his office may be referred to as a Captain of the Port Office. (See Sec. 1.01-30 of this subchapter.) (g) Each Captain of the Port Zone and each Marine Inspection Zone described in this part also includes the United States territorial seas adjacent to the described area or zone for the purpose of enforcing or acting pursuant to a statute effective in the United States territorial seas. Each Captain of the Port Zone and each Marine Inspection Zone described in this part also includes the contiguous zone adjacent to the area or zone for the purpose of enforcing or acting pursuant to a statute effective in the contiguous zone. (See Sec. 2.28.) Each Captain of the Port Zone and each Marine Inspection Zone described in this part also includes the exclusive economic zone (EEZ) adjacent to the area for the purpose of enforcing or acting pursuant to a statute effective in the EEZ.

33 CFR 3.01-1

COLLISION REGULATIONS (COLREGS): 1972 International Regulations for Preventing Collisions at Sea, as amended. The COLREGS were adopted by the Congress as the International Rules Act of 1977. The COLREGS are applicable on waters outside of established navigational lines of demarcation (COLREGS Demarcation Lines).

COLREGS DEMARCATION LINE: The geographic boundary between those waters to which the COLREGS apply and those subject to the Inland Navigation Rules. The boundaries are set forth in the Code of Federal Regulations and appear in the Coast Pilot as well as on officially published nautical charts.

33 CFR 80

DIFFERENTIAL GPS (DGPS): The maritime DGPS system, operated by the Coast Guard, enhances the positional accuracy achievable using GPS by broadcasting pseudo-range corrections using radiobeacons. The system covers the coastal waters of the continental U.S., the Great Lakes, the Mississippi River Basin, and portions of Alaska and Hawaii. Use of DGPS provides navigational accuracy of better than 10 meters.

1996 Federal Radio navigation Plan

FAIRWAY ANCHORAGE: An anchorage area contiguous to and associated with a fairway, in which fixed structures may be permitted within certain spacing limitations.

33 CFR 166, Subpart A

GLOBAL POSITIONING SYSTEM (GPS): GPS is a space-based radio positioning, navigation and time-transfer system. It is composed of 24 satellites in orbit about the globe and, in combination with an onboard receiver, is capable of providing near-instantaneous position fixes to an accuracy of 100 meters anywhere in the world. The system is operated by the U.S. Department of Defense.

*IALA Aids to Navigation Guide
1996 Federal Radionavigation Plan*

INLAND NAVIGATION RULES: Rules enacted by the Inland Navigation Rules Act of 1980. Similar to the COLREGS, they are applicable only to those waters of the United States inside COLREGS Demarcation Lines.

MARINE CASUALTY OR ACCIDENT:

(a) Any casualty or accident involving any vessel other than a public vessel that -

(1) Occurs upon the navigable waters of the United States, its territories or possessions;

(2) Involves any United States vessel wherever such casualty or accident occurs; or

(3) With respect to a foreign [tank vessel](#) operating in waters subject to the jurisdiction of the United States, including the Exclusive Economic Zone (EEZ), involves [significant harm to the environment](#) or material damage affecting the seaworthiness or efficiency of the vessel.

(b) The term “marine casualty or accident” applies to events caused by or involving a vessel and includes, but is not limited to, the following:

(1) Any fall overboard, injury, or loss of life of any person.

(2) Any occurrence involving a vessel that results in -

(i) Grounding;

(ii) Stranding;

(iii) Foundering;

(iv) Flooding;

- (v) Collision;
 - (vi) Allision;
 - (vii) Explosion;
 - (viii) Fire;
 - (ix) Reduction or loss of a vessel's electrical power, propulsion, or steering capabilities;
 - (x) Failures or occurrences, regardless of cause, which impair any aspect of a vessel's operation, components, or cargo;
 - (xi) Any other circumstance that might affect or impair a vessel's seaworthiness, efficiency, or fitness for service or route; or
 - (xii) Any incident involving [significant harm to the environment](#).
- (3) Any occurrences of injury or loss of life to any person while diving from a vessel and using underwater breathing apparatus.

46 CFR 4.03-1

SERIOUS MARINE INCIDENT:

The term *serious marine incident* includes the following events involving a vessel in commercial service:

- (a) Any [marine casualty or accident](#) as defined in [§ 4.03-1](#) which is required by [§ 4.05-1](#) to be reported to the Coast Guard and which results in any of the following:
- (1) One or more deaths;
 - (2) An injury to a crewmember, passenger, or other person which requires professional medical treatment beyond first aid, and, in the case of a person employed on board a vessel in commercial service, which renders the individual unfit to perform routine vessel duties;
 - (3) Damage to property, as defined in [§ 4.05-1\(a\)\(7\)](#) of this part, in excess of \$200,000;
 - (4) Actual or constructive total loss of any vessel subject to inspection under [46 U.S.C. 3301](#); or
 - (5) Actual or constructive total loss of any self-propelled vessel, not subject to inspection under [46 U.S.C. 3301](#), of 100 gross tons or more.
- (b) A discharge of oil of 10,000 gallons or more into the navigable waters of the United States, as defined in [33 U.S.C. 1321](#), whether or not resulting from a marine casualty.
- (c) A discharge of a reportable quantity of a hazardous substance into the navigable waters of the United States, or a release of a reportable quantity of a hazardous substance into the environment of the United States, whether or not resulting from a marine casualty.

46 CFR 4.03-2

MARINE TRANSPORTATION SYSTEM (MTS): The U.S. Marine Transportation System (MTS) consists of waterways, ports, and their intermodal connections, vessels, vehicles, and system users. As the world's leading maritime and trading nation, the United States relies on an efficient and effective MTS to

maintain its role as a global power. The MTS provides American businesses with competitive access to suppliers and markets in an increasingly global economy.

NARROW CHANNELS / RULE 9: Rule 9 of the International and Inland Navigation Rules states, in regards to impeding traffic within a narrow channel or fairway,

- (b) A vessel of less than 20 meters in length or a sailing vessel shall not impede the passage of a vessel which can safely navigate only within a narrow channel or fairway.
- (c) A vessel engaged in fishing shall not impede the passage of any other vessel navigating within a narrow channel or fairway.
- (d) A vessel shall not cross a narrow passage or fairway if such crossing impedes the passage of a vessel which can safely navigate only within such channel or fairway. The latter vessel may use the sound signal prescribed in Rule 34(d) if in doubt as to the intention of the crossing vessel.

NAVIGATION REGULATIONS: A body of specific operating rules applicable to a designated body of water imposed by the federal authority exercising jurisdiction over that waterway. These are commonly issued by the U.S. Army Corps of Engineers for canals and similar waterways.

33 CFR 207

NAVIGATION SAFETY REGULATIONS: A body of operating rules contained in the Code of Federal Regulations which are applicable to all vessels of 1,600 or more gross tons operating in the navigable waters of the United States, except for the St. Lawrence Seaway. Certain exceptions are provided for foreign vessels.

33 CFR 164

NOTICE TO MARINERS, LOCAL (LNM) AND BROADCAST (BNM): The LNM is the primary means for disseminating information concerning aids to navigation, hazards to navigation, and other items of marine information of interest to mariners on the waters of the United States, its territories, and possessions. These notices are essential to all navigators for the purpose of keeping their charts. Light Lists, Coast Pilots, and other nautical publications up-to-date. These notices are published weekly. They may be obtained free of charge, by making application to the appropriate Coast Guard District or the LNM's are available on the World Wide Web.

BNMs are not intended to be the source of chart and light list corrections, but rather to inform the mariner of the latest navigational information. The information contained in Broadcast Notice to Mariners that remains current will be included in the next published Local Notice to Mariners. Broadcasting is confined to information concerning new establishment, discontinuance, changes, or deficiencies in Aids to Navigation which shipping interests should receive without delay. Important information, such as marine obstructions, temporary changes in bridge clearance or operation of drawbridges, dredging operations, shoaling, channel conditions, military exercises, and hazards to navigation on inland or coastal waters will be broadcast if considered necessary for the safety of navigation.

PORT ACCESS ROUTE STUDY (PARS): A process conducted by the Coast Guard with the participation of Federal, State, and local private / public stakeholders, undertaken to study the potential traffic density and the need for safe access routes for vessels in any area for which fairways or traffic separation schemes (TSS) are proposed or which may otherwise be considered.

33 U.S.C. 1223(c)

PHYSICAL OCEANOGRAPHIC REAL TIME SYSTEM (PORTS): A program of the U.S. National Ocean Service that supports safe and cost-efficient navigation by providing ship masters and pilots with accurate real-time information required to avoid groundings and collisions. PORTS includes centralized data acquisition and dissemination systems that provide real-time water levels, currents, and other oceanographic and meteorological data from bays and harbors to the maritime user community in a variety of user friendly formats, including telephone voice response and Internet.

PILOTAGE: As used in the risk assessment process, the assistance and advice provided to mariners by licensed pilots.

REGULATED NAVIGATION AREA (RNA): A water area within a defined boundary for which regulations for vessels navigating have been established.

The regulations may include, among others:

- Specifying times of entry, movement, or departure to, from, within, or through ports, harbors, or other waters
- Establishing vessel size, speed, draft limitations, and operating conditions
- Restricting vessel operations to vessels which have particular operating characteristics or capabilities which are considered necessary for safe operations under existing circumstances

33 CFR 165, Subpart B

SAFETY ZONE: A water area, shore area, or water and shore area to which, for safety or environmental purposes, access is limited to authorized persons, vehicles, or vessels. It may be stationary and described by fixed limits or it may be described as a zone around a vessel in motion.

33 CFR 165, Subpart C

SECURITY ZONE: An area of land, water, or land and water which is so designated by the Captain of the Port or USCG District Commander for such time as is necessary to prevent damage or injury to any vessel or waterfront facility, to safeguard ports, harbors, territories, or waters of the United States or to secure the observance of the rights and obligations of the United States.

33 CFR 165, Subpart D

SHIPPING SAFETY FAIRWAYS: A lane or corridor in which no artificial island or fixed structure, whether temporary or permanent, is permitted.

33 CFR 166, Subpart A

STWC - INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS: Establishes standards of competence for the performance of tasks and requires assessments as to whether an individual meets each competence level. In addition, the 1995 Amendments establish minimum rest periods for watchkeeping personnel, and require that all mariners receive vessel familiarity and basic safety training. The Convention is based in part on the principle that proper training, coupled with effective application of quality management principles and use of proper procedures, will promote shipboard practices which prevent human error.

TRAFFIC SEPARATION SCHEME (TSS) / RULE 10

A TSS is a routing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes. Establishment of a TSS requires approval of the International Maritime Organization and Rule 10 of the COLREGS and Inland and Inland Navigation Rules applies to vessels operating in or near a TSS.

33 CFR 167

VESSEL MOVEMENT REPORTING SYSTEM

Vessel Movement Reporting System (VMRS) is a system used to manage and track vessel movements within a VTS area. This is accomplished by a vessel providing information under established procedures as set forth in this part, or as directed by the VTS.

Rule 10 of the International and Inland Navigation Rules states, in regards to vessels under 20 meters and sailing vessels:

(j) A vessel of less than 20 meters in length or a sailing vessel shall not impede the safe passage of a power-driven vessel following a traffic lane.

VESSEL TRAFFIC INFORMATION SERVICE (VTIS)

A VTIS is a system operated by a non-federal public or private entity that gathers and provides information only to vessels operating within a designated area. A VTIS does not have authority to direct movement and operates without Captain of the Port authority.

VESSEL TRAFFIC MANAGEMENT (VTM)

VTM is that portion of waterways management dealing with the movement of vessels in a port or waterway.

VESSEL TRAFFIC SERVICE (VTS)

A VTS is a service implemented by a Competent Authority, designed to improve the safety and efficiency of vessel traffic and to protect the environment. The service should have the capability to interact with the traffic and to respond to traffic situations developing in the VTS area.

In the United States, the Coast Guard serves as Competent Authority and operates VTS in a number of ports and waterways. A VTS has the authority to issue directions to control and supervise vessel movement within its area of responsibility.

*International Maritime Organization, "Guidelines for Vessel Traffic Services", MSC\67\22A2
33 CFR 161*

WATERWAY ANALYSIS AND MANAGEMENT SYSTEM (WAMS)

The Coast Guard conducts a Waterways Analysis and Management System review of each district waterway on a five-year cycle. WAMS comprehensively analyzes the quality of each waterway's ATON system. During this process, the Coast Guard contacts waterway users for their input and feedback.

WATERWAYS MANAGEMENT (WM or WWM)

The collective efforts of public and private resources to ensure infrastructure, systems, and services of our ports and waterways meet the demand for a safe, secure, efficient, accessible, economically viable and environmentally sound component of the U.S. National Transportation System.

WATERWAY OPERATING RULES

The body of rules and accepted practices governing the movement of vessels in a port or waterway. In some cases accepted practices have not been published or approved by any authoritative body.

PAWSA Workshop Specific Terms

PAWSA RISK CATEGORIES

1. **Vessel Conditions** – the quality of vessels and their crews that operate on a waterway.
2. **Traffic Conditions** – the number of vessels that use a waterway and their interactions.
3. **Navigational Conditions** – the environmental conditions that vessels must deal with in a waterway relating to wind, currents, and weather.
4. **Waterway Conditions** – the physical properties of the waterway that affect how easy it is to maneuver a vessel.
5. **Immediate Consequences** – the immediate impacts of a waterway casualty: people can be injured or killed, petroleum and hazardous materials can be spilled and require response resources, and the marine transportation system can be disrupted.
6. **Subsequent Consequences** – the subsequent effects of waterway casualties that are felt hours, days, months, and even years afterwards, such as shore side facility shut-downs, loss of employment, destruction of fishing areas, decrease or extinction of species, degradation of subsistence living uses, and contamination of drinking or cooling water supplies.

QUANTITATIVE ASSESSMENTS

Book 2: Team Expertise Cross-Assessment is used to capture the expertise of each team relative to the other teams in the workshop. The results from Book 1 are used to weight each team's inputs for all other books.

Book 1: Baseline Risk Levels is used by the participants to determine where their waterway falls on the risk scales. What results is the risk level for each factor, not taking into account any actions already implemented to reduce risk in the waterway.

Book 3: Mitigation Effectiveness is used for two purposes. After the participants describe the risk mitigation strategies that already exist to help reduce the risk level for their waterway, Book 3 is used to evaluate the effectiveness of those strategies in reducing the risk level for each factor in the model. The results of that evaluation are the present risk levels, taking into account those existing mitigations. Second, they decide whether the risk mitigation strategies already in place adequately balance the

resulting risk level...or not. If, for any given risk factor, there is strong consensus among the participants that existing mitigations DO adequately deal with those risks, then that risk factor is dropped from further discussion.

Book 4: Additional Interventions provides the participants an opportunity to offer ideas about specific risk mitigation actions that should be taken and estimate how effective those actions would be in further reducing risk levels. Participants first discuss what else should be done ONLY for those risk factors where the Book 3 results show that risk levels are NOT adequately balanced with existing mitigations. Following the discussion, participants decide which ideas have the most promise for each risk factor that was discussed and what mitigation category the ideas relate to. They write a short description of the action needed, that is, the idea with the most promise, on the line next to the appropriate category, and then evaluate how much risk reduction would result if that idea was implemented.

RISK MITIGATION CATEGORIES

Coordination / Planning - Improve long-range and/or contingency planning and better coordinate activities / improve dialogue between waterway stakeholders

Voluntary Training - Establish / use voluntary programs (Coast Guard Auxiliary, Power Squadron, other state / local programs) to educate waterway users in topics related to waterway safety (Rules of the Road, ship / boat handling, etc.)

Rules & Procedures - Establish / refine rules, regulations, policies, or procedures (navigation rules, pilot rules, standard operating procedures, licensing, required training and education, Regulated Navigation Areas, etc.)

Enforcement - More actively enforce existing rules / policies (navigation rules, vessel inspection regulations, standards of care, etc.)

Nav / Hydro Info - Improve navigation and hydrographic information (the Physical Oceanographic Real-Time System (PORTS), Broadcast Notices To Mariners, charts, coast pilots, Automatic Identification System (AIS), tides and current tables, etc.)

Radio Communications - Improve the ability to communicate bridge-to-bridge or ship-to-shore (radio reception coverage, signal strength, reduce interference & congestion, etc.)

Active Traffic Management - Establish / improve a Vessel Traffic Service (information, advice and control) or Vessel Traffic Information Service (information and advice only)

Waterway Changes - Widen / deepen / straighten the channel and/or improve the aids to navigation (buoys, ranges, lights, LORAN C, Differential Global Positioning System (DGPS), etc.)

Other Actions Risk - Mitigation measures that do NOT fall under any of the above intervention strategy categories