



This document includes Section 2: Vessels of the Armed Forces from the "Phase I Final Rule and Technical Development Document of Uniform National Discharge Standards (UNDS)," published in April 1999. The reference number is EPA-842-R-99-001.

Phase I Final Rule and Technical Development Document of Uniform National Discharge Standards (UNDS)

Section 2: Vessels of the Armed Forces

April 1999

2. VESSELS OF THE ARMED FORCES

This chapter describes Armed Forces vessels, to which UNDS is applicable, and clarifies which vessels do not qualify as such. Section 2.1 gives a brief overview of the vessels subject to UNDS; section 2.2 provides a more detailed description of the different vessel types and lists the vessel classes covered by UNDS in each branch of the Armed Forces and those not covered by UNDS; section 2.3 discusses where these vessels operate; and references are listed in section 2.4.

2.1 Introduction

The UNDS legislation defines vessels of the Armed Forces as any vessel owned or operated by the DoD, other than a time or voyage chartered vessel, or any vessel owned or operated by the Department of Transportation (DOT) that is designated by the Secretary of the department in which the Coast Guard is operating as being equivalent to a vessel of the Armed Forces (CWA § 312(a)(14)). The branches of the Armed Forces that own or operate vessels that are subject to UNDS are listed in Table 2-1 along with the number of vessels as of August 1997.

Table 2-1. Armed Forces Vessels Subject to UNDS Regulations

Branch of Armed Forces	Branch Abbreviation	Number of Vessels
United States Navy	USN	4,760
United States Coast Guard	USCG	1,445
United States Marine Corps	USMC	538
United States Army	USA	334
Military Sealift Command	MSC	57
United States Air Force	USAF	36
TOTAL =		7,170

Categories of vessels that are not covered by UNDS include: commercial vessels; privately owned vessels; vessels owned or operated by State, local, or tribal governments; vessels under the jurisdiction of the Army Corps of Engineers; vessels, other than those of the Coast Guard, under the jurisdiction of the Department of Transportation; vessels owned or operated by other Federal agencies that are not part of the Armed Forces (i.e., Maritime Administration (MARAD) vessels); vessels preserved as memorials and museums; time- and voyage-chartered vessels; vessels under construction; vessels in drydock; and amphibious vehicles. Several categories of these vessels are described in section 2.2.7.

The five largest Navy ports are Norfolk, VA; San Diego, CA; Pearl Harbor, HI; Puget Sound (Bremerton), WA; and Mayport, FL. Numerous other naval ports are located around the country. The largest Coast Guard base is located in Portsmouth, VA; with other major bases in California, Florida, Hawaii, Massachusetts, South Carolina, Texas, and Washington. Fort Eustis,

VA, is the primary site for the Army vessels, but the Army also ports vessels in California, Florida, Hawaii, Maryland, North Carolina, and Washington. Military Sealift Command vessels make use of Navy ports, as available, and commercial ports at all other times. Neither the Marine Corps nor the Air Force has a major port. Marine Corps craft are typically stowed aboard larger Navy vessels and maintained and stationed ashore. Air Force vessels are located in Florida, North Carolina, Virginia, New Mexico, and Nevada. Operating locations for Armed Forces vessels are discussed in more detail in Section 2.3.

2.2 Description of Vessel Classes and Types

The number of specific vessel types within each branch of the Armed Forces constantly changes due to vessel commissionings, decommissionings, and transfers within branches of the Armed Forces. In order to maintain consistency, the Armed Forces vessel population as of August 1997 was used in analyses supporting this rule.

2.2.1 Vessels of the U.S. Navy¹⁻⁴

2.2.1.1 Navy Mission

The role of the U.S. Navy is to maintain an effective naval fighting force to defend the U.S. during war, and to use this force to prevent conflicts and control crises around the world. The Navy is responsible for organizing, training, and equipping its forces to conduct prompt and sustained combat operations at sea. For combat, as well as humanitarian missions, the Fleet must be capable of quick deployment, while being optimized for carrying personnel, weapons, and supplies whenever and wherever needed.

2.2.1.2 Navy Vessel Description

There are approximately 4,800 Navy vessels (active and inactive), the majority of which are small boats and service craft. Navy vessels can be categorized into eight groups according to mission: aircraft carriers, surface combatants, amphibious ships, submarines, auxiliaries, mine warfare ships, small boats and service craft, and inactive assets. Differences in vessel size, mission, and mode of operation are explained below. Table 2-2 summarizes Navy vessel characteristics including length, displacement, and mission for each vessel classification. A summary of vessel-related abbreviations may be found in the Glossary and Abbreviations section.

Aircraft Carriers. Aircraft carriers are the largest vessels in Navy service, averaging approximately 1,100 feet long. They provide combat air support to the fleet. To accomplish this, aircraft carriers have landing and launch platforms for fixed-wing aircraft and helicopters. Carriers are classified as having either conventional propulsion (CV) or non-conventional propulsion (CVN). The USS Nimitz (CVN 68) Class, is the largest class of carriers, composed of ships that are intended to provide fleet support well into the next century. Aircraft carriers are ocean-going vessels that typically operate within 12 n.m. only during transit in and out of port. However, testing and maintenance activities may be conducted in port and during transits.

Surface Combatants. Surface combatants provide air defense, ballistic missile defense, antisubmarine warfare support, antisurface warfare support, merchant and carrier group protection, independent patrol operations, and tactical support of land-based forces. They include cruisers (CG and CGN), destroyers (DD and DDG), frigates (FFG), and coastal patrol craft (PC). The Navy's surface combatants range from 171 feet long (for PCs) to 596 feet long (for CGNs), and may have either conventional or non-conventional propulsion. Surface combatants are ocean-going vessels that, for the most part, operate inside 12 n.m. only during transit in and out of port and for short periods of time to meet mission requirements, such as training. Testing and other systems maintenance activities may be done in port and during transits.

Amphibious Ships. Amphibious ships provide a platform for vertical landing and take-off of aircraft, primarily helicopters, and conduct launch and recovery operations of smaller landing craft. They include command ships (LCC and AGF), assault ships (LHD, LHA, and LPH), transport docks (LPD), and dock landing ships (LSD). Amphibious ships range from 522 to 844 feet long and use landing craft and helicopters to move Marine Corps equipment and vehicles ashore. Amphibious ships are ocean-going vessels that operate inside 12 n.m. not only during transit in and out of port, but also to train for and perform their designed mission as an interface between water- and land-based operations. Testing and maintenance activities may be performed in port and during transits.

Submarines. Submarines provide strategic missile, battlefield support, stealth strike, special forces, littoral warfare, and other miscellaneous capabilities. They are categorized as attack (SSN), ballistic missile (SSBN), and research and survey (AGSS) types. Navy submarines range from 165 feet long for the research submarine to 560 feet long for ballistic missile submarines. Nearly all submarines in active service have non-conventional propulsion, with the exception of search and rescue types. Submarines are ocean-going vessels that operate inside 12 n.m. for transit in and out of port and to meet mission requirements, such as training. Testing and maintenance activities may be performed in port and during transits.

Auxiliaries. Auxiliary ships provide logistical support, such as underway replenishment of ordnance, fuel, and consumable products (AO and AOE); and rescue and salvage operations (ARS). Submarine tenders (AS) provide maintenance facilities, weapon stores, hospital facilities, and additional berthing space for submarines. Auxiliary vessels range in length from 255 feet to 795 feet. Auxiliaries are ocean-going vessels that typically operate inside 12 n.m. for transit in and out of port or to meet mission requirements. Testing and maintenance activities may be performed in port and during transits.

Mine Warfare Ships. Mine warfare ships (mine countermeasures ships (MCM) and minehunter, coastal (MHC)) conduct minesweeping missions to find, classify, and destroy moored and bottom mines. These vessels range in length from 188 to 224 feet long. Mine warfare vessels primarily operate in coastal waters.

Small Boats and Service Craft. Due to their large numbers and diverse duties, small boats and service craft have been summarized collectively in Table 2-2. The Navy owns and operates approximately 4,200 small boats and service craft. Small boats are used as harbor patrol boats, transport boats, work boats (WB), and utility boats (UB). Many of the service craft are non-self-propelled “lighters,” or barges (YC, YFN, YON, and YRBM), used for berthing, office, messing, or repair functions or to carry fuel or equipment. Other small boats and service craft include: tugboats of various sizes (YTB, YTM, and YTL), training patrol craft (YP), landing craft (LCU, LCM, CM, and PL), torpedo retrievers (TWR, TRB, and TR), floating drydocks (AFDB, AFDL, AFDM, ARD, and ARDM), and rigid inflatable boats (designated RB or RIB). Small boats are often kept out of the water when not in use to increase the vessels’ longevity or for storage while transiting to operational areas. Small boats and service craft operate within the waters of the homeport area and other coastal locations within 12 n.m. from shore.

Inactive Assets. The Navy owns and maintains additional surface ships in various states of readiness. These inactive assets are comprised of numerous vessel types with varying missions and capabilities. The Navy also owns and maintains inactive submarines. The significant majority of these inactive assets are scheduled for scrapping or other permanent disposal. Some surface ships might be transferred to MARAD to be made part of the National Defense Reserve Fleet, or might be destined for sale to foreign nations. However, due to the Navy’s retained ownership of these assets, pending final disposal, these vessels are covered under UNDS. These inactive vessels are prepared for long-term storage with their systems and equipment secured or removed and are not operated. They are moored in designated port locations and typically not moved until final disposal.

Table 2-2. Navy Vessel Classification

Vessel Type	Ship Class	Number Active	Class Length (ft)	Displacement fully loaded (tons)	Mission
Aircraft Carriers	CV 59	1	1,056	82,360	Provide air combat support to the fleet with landing and launch platform for airplanes and helicopters
	CV 63	3	1,046	81,985	
	CVN 65	1	1,102	93,970	
	CVN 68	7	1,092	95,413	
Surface Combatants	CG 47	27	567	9,589	Provide air defense, missile defense, antisubmarine and antisurface warfare support, merchant and carrier group protection, independent patrol operations, and tactical support of land-based forces
	CGN 36	2	596	10,530	
	CGN 38	1	585	11,400	
	DD 963	31	563	8,280	
	DDG 993	4	563	9,574	
	DDG 51	18	504	8,373	
	FFG 7	43	445	3,658	
	PC 1	13	171	329	
Amphibious Ships	LCC 19	2	636	16,790	Provide a landing and take-off platform for aircraft, primarily helicopters, and a means for launching and recovering smaller landing craft
	AGF 3	1	522	13,900	
	AGF 11	1	569	16,912	
	LHD 1	4	844	40,530	
	LHA 1	5	834	39,967	

Table 2-2. Navy Vessel Classification (contd.)

Vessel Type	Ship Class	Number Active	Class Length (ft)	Displacement fully loaded (tons)	Mission
Amphibious Ships (contd.)	LPD 4	3	569	17,595	
	LPD 7	3	569	17,595	
	LPD 14	2	569	17,595	
	LPH 2	2	602	18,300	
	LSD 36	5	553	13,680	
	LSD 41	8	609	16,165	
	LSD 49	3	609	16,695	
Submarines	SSN 671	1	315	5,284	Provide strategic missile defense, search and rescue, and research and survey capability
	SSN 637	13	302	4,250	
	SSN 688	56	360	6,300	
	AGSS 555	1	165	860	
	SSBN 726	17	560	16,754	
Auxiliaries	AOE 1	4	795	53,600	Provide logistical support, such as underway replenishment, material support, and rescue and salvage operations
	AOE 6	3	755	48,800	
	AO 177	5	708	37,866	
	AS 33	1	644	19,934	
	AS 39	3	646	22,650	
	ARS 50	4	255	3,193	
Mine Warfare Ships	MCM 1	14	224	1,312	Conduct minesweeping missions to find and destroy mines
	MHC 51	12	188	918	
Small Boats and Service Craft	YTB 760	68	109	356	Provide a variety of services. Includes: patrol training craft (YP), tug boats (YTB), torpedo trials craft (YTT), landing craft, barges, transport boats, personnel boats, harbor patrol boats, work boats, utility boats, floating drydocks, and rigid inflatable boats
	YTB 756	3	109	409	
	YTB 752	1	101	375	
	YTT 9	3	187	1,200	
	YP 654	1	--	--	
	YP 676	27	--	--	
	Various others	4,089	12-192	--	
Inactive Assets	Various surface ships	228	--	--	Vessels in various states of readiness, the majority of which are scheduled for scrapping, transfer to MARAD, or sale to foreign nations.
	Various submarines	16	--	--	
TOTAL	Vessels =	4,760			

2.2.2 Vessels of the Military Sealift Command^{1,5,6}

2.2.2.1 Military Sealift Command Mission

The Military Sealift Command (MSC) transports DoD materials and supplies, provides towing and salvage services, and conducts specialized missions for Federal agencies. To

accomplish this mission, the MSC maintains and operates a fleet of vessels classified within four major maritime programs: the Special Mission Support Force (SMSF), the Naval Fleet Auxiliary Force (NFAF), Strategic Sealift, and the Afloat Prepositioning Force (APF, which is sometimes categorized under Strategic Sealift). Consistent with the definition of vessel of the Armed Forces in CWA § 312(a)(14), UNDS does not apply to chartered Strategic Sealift and APF vessels.

Table 2-3 summarizes MSC vessel characteristics including length, displacement, and mission for each vessel classification. MSC owned vessels are differentiated from Navy vessels by the prefix, “T-” (e.g., T-AGOS and T-AGS). Although MARAD’s Ready Reserve Force (RRF) ships come under the direction of the MSC and its Strategic Sealift program when activated, they are normally maintained and crewed by MARAD. RRF ships are discussed in section 2.2.7.2 in conjunction with other MARAD vessels.

2.2.2.2 Special Mission Support Force

The MSC’s Special Mission Support Force (SMSF) includes ships designed to support the Navy, Air Force, and the Army in specialized military missions. SMSF vessels often operate in remote areas to conduct undersea surveillance, missile range tracking, oceanographic and hydrographic surveys, acoustic research, and submarine escort. SMSF vessels range from 234 feet to 595 feet long. They include the following vessel types: ocean surveillance (AGOS), surveying (AGS), miscellaneous (AG) navigation test support and acoustic research; missile range instrumentation (AGM), and cable repairing (ARC) vessels. The vessels are operated by civil service mariners or mariners under contract to the MSC. SMSF vessels are ocean-going ships that operate inside 12 n.m. during transit in and out of port or to meet mission requirements. Additionally, cable repairing vessels may operate frequently inside 12 n.m. for mission purposes. Testing and maintenance activities may be conducted in port and during transits.

2.2.2.3 Naval Fleet Auxiliary Force

The MSC’s Naval Fleet Auxiliary Force (NFAF) is comprised of auxiliary ships that provide underway replenishment services to Navy surface combatants, in addition to ocean towing and salvage services. By transporting and delivering fuel, food, spare parts and equipment, and ammunition, NFAF ships enable surface combatants to remain at sea for extended periods. NFAF vessels are between 240 feet and 677 feet in length. The NFAF vessels are ocean-going, and typically operate inside 12 n.m. only to transit in and out of port or to meet certain mission requirements. Testing and maintenance activities may be conducted in port and during transits.

Table 2-3. Military Sealift Command Vessel Classification⁶

MSC Maritime Program Classification	Class/Ship	Number Active	Class Length (ft)	Displacement fully loaded (tons)	Mission
SMSF	T-AGOS	5	234	3,438	Support the Armed Forces in specialized missions such as undersea surveillance, missile range tracking, oceanographic and hydrographic surveys, acoustic research, and submarine escort
	T-AGOS	4	285	2,558	
	T-AGS	9	442	12,208	
	T-AG	2	455	11,860	
	T-AGM	1	595	21,478	
	T-ARC	1	502	14,225	
NFAF	T-AE	8	563	19,937	Provide underway replenishment services (i.e., deliver fuel, food, spare parts, equipment, and ammunition) to Navy surface combatants, as well as ocean towing and salvage services
	T-AFS	8	523	16,792	
	T-AO	12	677	40,700	
	T-ATF	7	240	2,260	
TOTAL	Vessels =	57			

2.2.3 Vessels of the U.S. Coast Guard^{1,7,8}

2.2.3.1 Coast Guard Mission

The Coast Guard is part of DOT and is responsible for enforcing laws on the waters of the U.S., including coastal waters, oceans, lakes, and rivers that are subject to the jurisdiction of the U.S. During war, the Coast Guard may become part of the Navy. The principal peacetime missions of the Coast Guard are enforcing recreational boating safety, conducting search and rescue operations, maintaining aids to navigation (e.g., lighthouses and navigational lights), ensuring merchant marine safety (e.g., via vessel inspection and operator certification), providing drug interdiction, and participating in environmental protection efforts. The Coast Guard also carries out port safety responsibilities (e.g., icebreaking), enforces laws and treaties (e.g., customs, immigration, and fisheries law enforcement), and, ultimately, defends U.S. harbors and coasts during war. Table 2-4 summarizes Coast Guard vessel characteristics including length, displacement, and mission for each vessel classification.

2.2.3.2 Coast Guard Vessel Description

Cutters. Coast Guard cutters are vessels 65 feet or longer that are capable of accommodating crew living on board. Cutters are used for patrol, air defense, search and rescue, and drug interdiction. High endurance cutters (WHEC), medium endurance cutters (WMEC),

Table 2-4. Coast Guard Vessel Classification

Vessel Classification	Ship Class	Number Active	Class Length (ft)	Displacement fully loaded (tons)	Mission
Cutters	Hamilton WHEC 715	12	378	3,050	Provide multi-mission capability, including patrol, air defense, search and rescue, and drug interdiction
	Bear WMEC 901	13	270	1,820	
	Reliance WMEC 615	16	210	1,007	
	Storis WMEC 38	1	230	1,925	
	Escape WMEC 6	1	213	1,745	
	Island WPB 1301	49	110	155	
	Point WPB 82301	36	82	69	
Tenders	Juniper WLB 201	2	225	2,000	Used to maintain inland, river, coastal, and offshore buoys and navigational aids, or to serve as a construction platform
	Balsam WLB 62	23	180	1,038	
	Ida Lewis WLM	2	175	916	
	Red WLM	5	157	525	
	White WLM	4	133	600	
	Buckthorn WLI	1	100	200	
	Cosmos WLI 293	1	100	178	
	Berry WLI	4	65	71	
	Pamlico WLIC	4	160	416	
	Cosmos WLIC	3	100	178	
	Anvil WLIC	7	75	145	
	Sumac WLR	1	115	478	
	Kankakee WLR	3	75	172	

Table 2-4. Coast Guard Vessel Classification (contd.)

Vessel Classification	Ship Class	Number Active	Class Length (ft)	Displacement fully loaded (tons)	Mission
Tenders (contd.)	Gasconade WLR	10	75	141	
	Ouachita WLR	6	65	143	
Icebreakers	Polar WAGB 10	2	399	13,190	Support the winter icebreaking efforts in order to maintain open waterways in the Arctic, Antarctic, and the northern regions of the U.S. including the Great Lakes, Northwest, and Northeast
	Mackinaw WAGB 83	1	290	5,320	
Tugboats	Bay WTGB	9	140	662	Provide towing and support services (icebreaking, search and rescue, and law enforcement) to other vessels
	Capstan WYTL	11	65	72	
Small Boats and Craft	Various	1,217	22-58	2-32	Used in harbors (drug interdiction, port security, cable repair, harbors and inland waters, navigation aids, illegal dumping, search and rescue, etc.), in rough surf for rescue, for inland river and lake patrol, as transports, and for firefighting
Other Vessels	Eagle WIX 327	1	295	1,784	A sailing cutter used for training
TOTAL		Vessels =	1,445		

and patrol boats (WPB) have multi-mission capabilities due to features such as anti-ship missiles, gun systems, and other weapon systems. Because of these capabilities, the cutters are strategically stationed along the Atlantic and Pacific coasts of the U.S. The Coast Guard no longer maintains anti-submarine warfare capability. WHECs perform patrol, air defense, and search-and rescue operations, and can remain at sea for 30-45 days without support. This compares to 10-30 days at sea for WMECs and 1-7 days for WPBs. The cutters range in length from 82 feet to 378 feet. Cutters are ocean-going vessels. However, they operate inside 12 n.m. during transit in and out of port, and during certain patrol or search and rescue missions. Testing and maintenance activities may be performed in port and during transits.

Tenders. Tenders are a specific type of cutter used to maintain inland, river, inshore, coastal, and offshore buoys and navigational aids, or to serve as a construction platform in inland waters. Coast Guard tenders range in size from 65 to 225 feet in length to accommodate numerous and diverse tasks. Tenders are operated frequently inside 12 n.m.

Icebreakers. Icebreakers have multi-mission capabilities and are often equipped with hangar decks, flight decks, gun systems, and arctic or oceanographic laboratories. They primarily support winter icebreaking efforts in order to maintain open waterways in the Arctic and Antarctic, and the northern regions of the U.S. including the Great Lakes, Northwest (e.g., Alaska and Washington), and Northeast (e.g., Maine and Massachusetts). The Coast Guard icebreakers range in length from 290 to 399 feet. Icebreakers are frequently operated inside 12 n.m.

Tugboats. Tugboats operate in various capacities, providing towing and support services to other vessels. Icebreaking tugs (WTGB) are 140 feet long and specially designed to break through thick ice. By joining this tug with a work barge, it can also be used to maintain aids to navigation. Small harbor tugs (WYTL) are 65 feet long and, in addition to towing, can perform law enforcement and search and rescue operations. They have also been used for small-scale icebreaking, firefighting, delivering humanitarian aid, and assisting in spill containment. Tugboats usually operate within 12 n.m. of shore; however, specific missions may require them to operate beyond 12 n.m.

Small Boats and Craft. Small boats and craft are used for various harbor duties, rough surf rescues, inland river and lake patrols, transporting equipment, and firefighting. Some of these vessels can be transported by trailer and used on any inland waterway in the U.S. Due to their numbers and diversity, small boats and craft of the Coast Guard have been summarized collectively in Table 2-4.

Other Vessels. Coast Guard Academy cadets use the Coast Guard's training cutter (WIX), a multi-masted sailing vessel, as a summer training vessel.

2.2.4 Vessels of the U.S. Army^{1,9,10}

2.2.4.1 Army Mission

The role of the Army is to preserve the peace and security, and provide for the defense of the U.S., territories, commonwealths, possessions, and any areas occupied by the U.S. The Army has land and aviation combat forces, augmented, in part, by waterborne transport vessels. Army vessels are used primarily for ship to shore transfer of equipment, cargo, and personnel.

2.2.4.2 Army Vessel Description

The Army's fleet is divided into three sections: the Transportation Corps, the Intelligence and Security (I&S) Command, and the Corps of Engineers (COE). The COE operates survey and construction craft, tugs, barges, and other utility craft. COE boats and craft are not covered by UNDS as described in section 2.2.7.1.

The Army Transportation Corps operates lighterage and floating utility vessels. Lighterage are craft used to transport equipment, cargo, and personnel between ships, from ship-to-shore, and for operational mission support, and include logistics support vessels, landing craft,

and modular powered causeway ferries. Floating utility craft are used to perform port terminal operations and include ocean and harbor tugs, floating cranes, barges, and floating causeways. Army Transportation Corps vessels operate primarily within 12 n.m., with the exception of the LSV, LCU-2000, and the LT-28, which are ocean-going.

Army I&S vessels are aerostat radar-equipped patrol ships operated in the Caribbean Sea to counter illegal drug flights. The patrol ships operate within 12 n.m. during transit in and out of port, but most often operate outside of 12 n.m. Table 2-5 summarizes Army vessel characteristics including length, displacement, and mission for each vessel classification.

Table 2-5. Army Vessel Classification^{4, 8}

Vessel Type	Vessel Classification	Number Active	Class Length (ft)	Displacement fully loaded (tons)	Mission
Lighterage	LSV	6	273	4,199	Transport equipment, cargo, and personnel between ships, from ship to shore, or for operational mission support
	LCU-2000	35	174	1,087	
	LCU-1600	13	135	390	
	LCM-8	104	74	111	
	CF	1	--	--	
Floating Utility	BC	37	120	760	Perform port terminal operations
	BD	10	140	1630	
	BG	8	120	763	
	BK	7	45	33	
	CHI	1	25	--	
	FB	2	75	64	
	HF	1	65	--	
	J-Boat	4	46	12	
	LT-128	6	128	1,057	
	LT-100	16	107	390	
	PB	10	25	--	
	Q-Boat	1	65	37	
	SLWT	4	--	--	
	ST-65	11	71	122	
	ST-45	2	45	29	
	T-Boat	1	65	--	
Workboats	47	--	--		
Patrol Ships	ABT	7	190-194	1500-1,900	Perform drug interdiction in the Caribbean Sea
TOTAL	Vessels =	334			

2.2.5 Vessels of the U.S. Marine Corps^{1,11}

2.2.5.1 Marine Corps Mission

As part of the Department of the Navy and in conjunction with the other Armed Forces, the Marine Corps develops the tactics, techniques, and equipment necessary to employ forces onto land from the sea.

2.2.5.2 Marine Corps Vessel Description

The Marine Corps operates a large number of watercraft and amphibious craft used during special operations. Assets that are primarily land-operated vehicles, such as the amphibious assault vehicles (AAVs), are not included under UNDS. The watercraft consist of inflatable combat rubber raiding craft (CRRC) and fiberglass rigid raiding craft (RRC). The CRRCs are used for in-port, river, lake, and coastal operations, and can be transported to the combat area by nearly all of the Navy's vessels. The RRCs are normally deployed aboard Navy transport dock ships (i.e., LPDs) for transport to the combat area. The CRRCs and RRCs operate exclusively in coastal waters. Table 2-6 summarizes Marine Corps vessel characteristics including length, weight, and mission for each vessel classification.

Table 2-6. Marine Corps Vessel Classification

Vessel Type	Description	Number Active	Class Length (ft)	Weight (lbs)	Mission
RRC	Rigid Raiding Craft	120	18	--	Perform offensive amphibious operations
CRRC	Zodiak (replacing RRCs)	418	15	265 (without the engine)	
TOTAL	Vessels =	538			

2.2.6 Vessels of the U.S. Air Force¹

2.2.6.1 Air Force Mission

The U.S. Air Force defends the U.S. through control and exploitation of air and space. The Air Force provides land and space-based air forces needed to establish air support for ground forces in combat and the primary airlift capability for use by all of the nation's military services. The Air Force operates vessels to support this mission.

2.2.6.2 Air Force Vessel Description

Missile retrievers (MRs) are aluminum vessels used for the location and recovery of practice missiles. MRs range in length from 65 to 120 feet. These vessels primarily operate within 12 n.m.

Floating utility vessels provide logistics support for Air Force operations and include utility boats (U), training and recovery boats (TR), and personnel boats (P) ranging in length from 17 to 40 feet. These vessels operate almost entirely within 12 n.m. Table 2-7 summarizes Air Force vessel characteristics including length, displacement, and mission for each vessel classification.

Table 2-7. Air Force Vessel Classification

Vessel Type	Vessel Classification	Number Active	Class Length (ft)	Displacement fully loaded (tons)	Mission
Missile Retrievers	MR	5	65-120	90-133	Locate and recover practice missiles
Floating Utility	U	27	17-33	--	Used for personnel and utility transport, training, and repair operations
	TR	2	21-25	--	
	P	2	22-40	--	
TOTAL	Vessels =	36			

2.2.7 Vessels Not Covered by UNDS

UNDS applies only to Armed Forces vessels. UNDS does not apply to commercial vessels; privately owned vessels; vessels owned or operated by State, local, or tribal governments; or vessels owned or operated by Federal agencies that are not part of the Armed Forces. In addition, several other categories of vessels are not covered by UNDS, including: 1) vessels under the jurisdiction of the Army COE; 2) vessels, other than those of the Coast Guard, under the jurisdiction of the DOT (e.g., MARAD vessels); 3) vessels preserved as memorials and museums; 4) time- and voyage- chartered vessels; 5) vessels under construction; 6) vessels in drydock; and 7) amphibious vehicles. These vessels are discussed below.

2.2.7.1 Army Corps of Engineers Vessels

Army Corps of Engineers vessels are typically used for civil works purposes. Congress has consistently addressed the Army Corps of Engineers separately from other parts of the DoD in both authorization and appropriations bills.¹² The DoD and EPA do not consider that Congress intended to apply UNDS to Army Corps of Engineers vessels. Therefore, vessels of the Army Corps of Engineers are not covered by UNDS.

2.2.7.2 Maritime Administration Vessels

A number of vessels are operated or maintained by the Maritime Administration (MARAD), which is a part of the DOT. As established in § 312(a)(14) of the CWA, the definition of “vessel of the Armed Forces” includes those DOT vessels that are designated by the Secretary of the department in which the U.S. Coast Guard is operating (currently the DOT) as operating as a vessel equivalent to a DoD vessel. The Secretary of Transportation has

determined that MARAD vessels, including the National Defense Reserve Fleet, do not operate equivalently to DoD vessels, and therefore, MARAD vessels are not covered by UNDS.¹³

2.2.7.3 Vessels Preserved as Memorials and Museums

Ships and submarines preserved as memorials and museums once served a military mission. However, with the exception of one submarine, these vessels are no longer owned or operated by the Armed Forces, and therefore, they are not vessels of the Armed Forces, and UNDS does not apply to them. The Navy owns and operates the submarine Nautilus as a museum; however, the vessel is stationary and its systems are not routinely operated. Therefore, the EPA and DoD have excluded this vessel from the scope of UNDS.

2.2.7.4 Time- and Voyage-Chartered Vessels

Section 312(a)(14) of the CWA specifically excludes time- and voyage-chartered vessels from the definition of “vessels of the Armed Forces.” Time- and voyage-chartered vessels are vessels operating under a contract between the vessel owner and a charterer (in this case, the Armed Forces) whereby the charterer hires the vessel for a specified time period or voyage, respectively. Such vessels at all times remain manned and navigated by the owner, and they are not owned and operated by the Armed Forces. Examples of chartered vessels are those operated by the MSC in the APF and the Strategic Sealift Program.

2.2.7.5 Vessels Under Construction

EPA and DoD do not consider a vessel under construction for the DoD or Coast Guard, and for which the Federal government has not taken custody, to be a “vessel of the Armed Forces.” Therefore, UNDS does not apply to these vessels until the Federal government gains custody.

2.2.7.6 Vessels in Drydock

The statutory definition of “discharge incidental to the normal operation of a vessel” includes incidental discharges whenever the vessel is waterborne. See CWA § 312(a)(12). UNDS does not apply to discharges from vessels while they are in drydock (either land-based or floating) because they are not waterborne, even if the discharges would otherwise meet the definition of a “discharge incidental to the normal operation of a vessel.”

2.2.7.7 Amphibious Vehicles

EPA and DoD do not consider amphibious vehicles as vessels for the purposes of UNDS because they are operated primarily as vehicles on land. Water use of these vehicles is of short duration for near-shore transit to and from vessels.

2.3 Locations of Armed Forces Vessels

2.3.1 Homeports

Homeports are the bases from which vessels perform the majority of their operations that occur within 12 n.m. of shore, and thus give an indication of the zones where most vessel discharges occur. The sizes and locations of Armed Forces homeports vary with the mission of the vessels they service. Homeports provide pierside services (e.g., potable water, sewage and trash disposal, and electrical power), supplies (e.g., repair parts, cleaning materials, and food); and maintenance and repair functions (e.g., drydock, afloat, and shoreside services).

2.3.1.1 Navy Ports

Norfolk, VA; San Diego, CA; Mayport, FL; Puget Sound, WA; and Pearl Harbor, HI are the five largest Navy ports based on the number of ships serviced. In addition to these five ports, the Navy has many comparably sized and smaller ports throughout the U.S. UNDS evaluations pertain to all U.S. ports, and are not limited to those mentioned above. Figure 2-1 shows the location of homeports for Navy surface ships and submarines only, and the approximate vessel distribution. Inactive vessels and vessels ported outside of the U.S. (e.g., in Japan or Bahrain) are not shown, nor is the distribution of small boats and craft. Small boats and craft are widely distributed with heavy concentrations near San Diego and Norfolk.

2.3.1.2 Coast Guard Ports

Coast Guard duty stations are found on coastal waters, as well as on rivers, lakes, and other inland waterways throughout the U.S. Figure 2-2 shows the Coast Guard homeport locations having three or more vessels that are 65 feet or greater in length. Using the number of large vessels as an indication of base size, the largest Coast Guard bases are located in Portsmouth, VA; Honolulu, HI; Boston, MA; Charleston, SC; Alameda, CA; Galveston, TX; Seattle, WA; and St. Petersburg, FL. Some of the mid-sized bases are located in Corpus Christi, TX; Key West, FL; Roosevelt Roads, PR; and Miami Beach, FL. There is a ship repair and overhaul facility in Baltimore, MD. Ship repair and overhaul is usually done at a commercial facility near the homeport of the vessel.

2.3.1.3 Army Ports

The Army has one major active-component port facility at Fort Eustis near Newport News, VA. In addition, smaller active and reserve-component port facilities are located in Accotink, VA; Baltimore, MD; Cieba, PR; Edgewood, MD; Ford Island, HI; Morehead City, NC; Oakland, CA; Palakta, FL; St. Petersburg, FL; Stockton, CA; Tacoma, WA; and Virginia Beach, VA. Repair, overhaul, and planned maintenance is performed at commercial shipyards located near the homeport of the vessel.

2.3.1.4 Military Sealift Command, Marine Corps, and Air Force Port Usage

The Military Sealift Command makes use of Navy ports, as available, and commercial ports at all other times. The Marine Corps and Air Force make use of local port facilities, since they operate no major port facilities of their own. Air Force floating utility vessel locations include Alamogordo, NM; Cape Canaveral, FL; Fayetteville, NC; Goldsboro, NC; Langley, VA; Las Vegas, NV; Melbourne, FL; and Pensacola, FL. Air Force missile retrievers are located at Panama City, FL; Key West, FL; and Carrabelle, FL.

2.3.2 Operation within Navigable Waters of the U.S. and the Contiguous Zone

UNDS applies to discharges from Armed Forces vessels in the navigable waters of the U.S. and the contiguous zone. As defined in the CWA (§ 502(7)), the term “navigable waters” means waters of the U.S., including the Great Lakes, and includes waters seaward from the coastline to a distance of 3 nautical miles from the shore of the States, District of Columbia, Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Canal Zone, and the Trust Territories of the Pacific Islands. The contiguous zone extends from 3 nautical miles to 12 nautical miles from the coastline. Discharges that occur within this zone that extends 12 n.m. from shore are addressed in following chapters. UNDS is not enforceable beyond the contiguous zone.

The amount of time each vessel spends in its homeport varies based on factors such as vessel class, command, assignment/demand, and budget. For the purposes of UNDS, the DoD estimated the amount of time spent each year in waters subject to UNDS requirements for each vessel type, as discussed below.

Ocean-going vessels operate inside 12 n.m. while transiting in and out of port. Periodically, they may also be used for mission or training exercises within this zone. Service craft and small boats operate far more frequently near the homeport and within 12 n.m. These vessels may be stowed aboard ships while in transit to operational areas. When in port, small boats and craft are often removed from the water until the next required use.

The DoD and EPA used five years of Navy, Coast Guard, and MSC vessel movement data to support the estimation of time spent within 12 n.m..¹⁴ From this operational data, the average number of port entries, port exits, and days spent in port was determined for most vessel classes.

The DoD data on ship movement was originally organized as a series of trips from one point to another for each ship. Each record contained a succeeding trip leg. For example, if a ship went from Norfolk to Mayport, it may have been reported as a single trip with the date and time of departure from Norfolk recorded as the departure, and the date and time it arrived in Mayport as the arrival. It may also have been reported as a series of trips from Norfolk to some latitude/longitude pair in the Atlantic, from that latitude/longitude to another, from the second latitude/longitude to a third, etc., with the last entry being a trip from the last latitude/longitude to



Figure 2-1. Largest Navy Surface Ship and Submarine Homeports

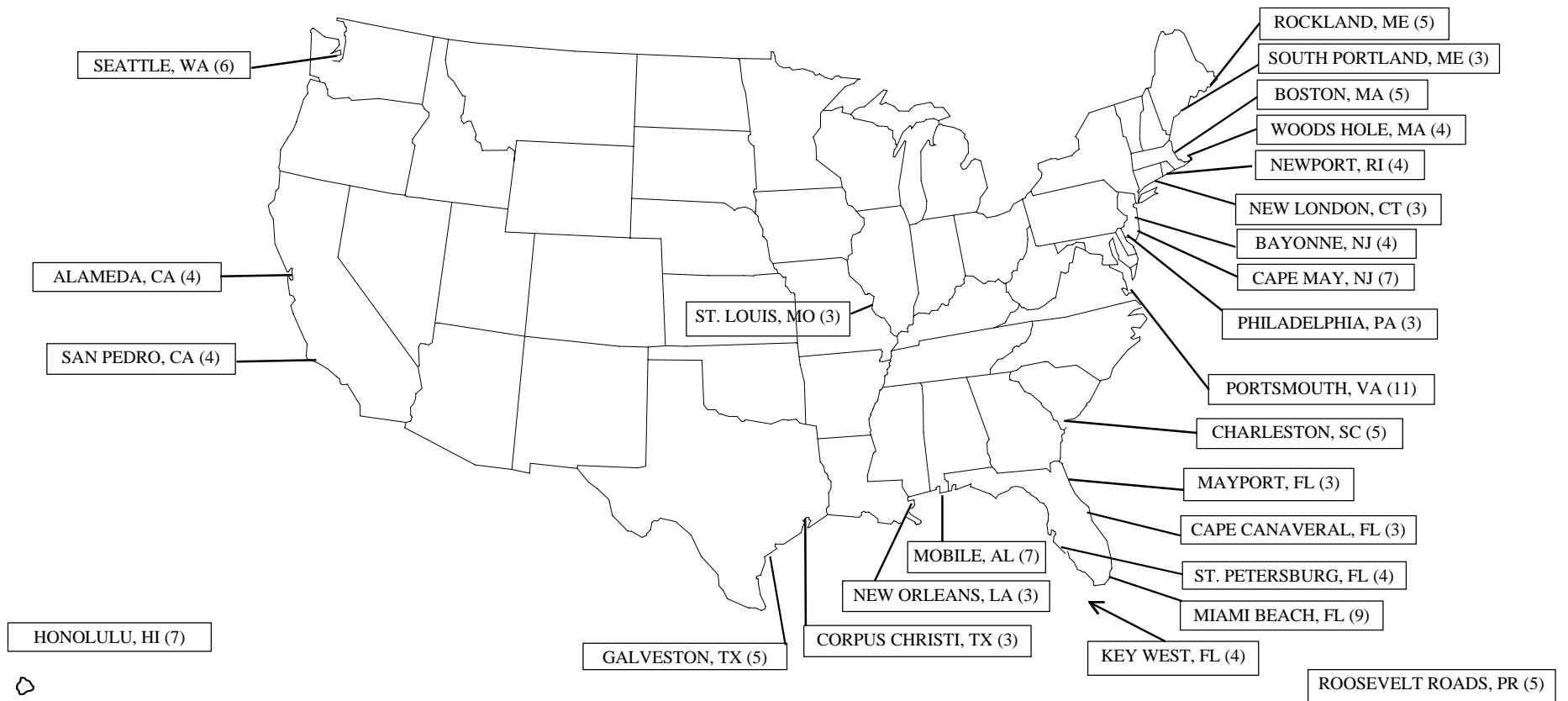


Figure 2-2. Coast Guard Ports with Three or More Vessels Equal to or Longer than 65 Feet

Mayport. Each of the legs of the journey was recorded as a separate record. All of one ship's trips for the given year (1991, 1992, 1993, 1994, or 1995) were recorded in succession, before going on to the next ship. Since the records were in order, it was obvious if there were missing entries in the data. A missing entry consisted of a ship arriving at a location in one record, and then departing from a different location in the next record.

The first step was to translate the data from the format received into a format that was usable for the purposes of UNDS. For the purposes of UNDS, it was more useful to know when the ship arrived at and departed from a specific location (i.e., a U.S. port), as opposed to looking at individual trip legs. Therefore, the DoD created a simplified database that was obtained by taking the arrival location and time from one record, and the departure time and location from the next. At this point, the data was filtered to exclude data where the location began with a latitude/longitude pair, and where the arrival location and departure location were not the same (i.e., a missing entry).

The UNDS program only used the ship/year data from ships where complete data was available for the entire year. If there was a complete record of where that ship was for the entire year, the number of days that that ship spent in U.S. ports that year, and the number of times it transited into and out of any U.S. port that year were recorded. The number of transits and days in port were totaled for every ship in the class, and that total was divided by the number of ship-years compiled in order to derive averages for that ship class. These final numbers can be interpreted as the number of transits into and out of U.S. ports and the number of days spent in U.S. ports for a typical ship of that class.

These numbers vary widely between ship classes due to differing missions, operational schedules, maintenance, etc.. For instance, a typical DDG 51 Class destroyer averages 101 days per year in port with 11 transits in and out, compared to a typical ARS 50 Class salvage ship which may spend an average of 208 days per year in port with 22 transits. The number of days spent in port and the number of transits per year can vary significantly for the same vessel in different years due to varying operational and maintenance schedules. For example, the aircraft carrier CVN 68 spent 10 days in port with two transits in 1995, compared to 237 days in port and nine transits in 1992. For non-self-propelled vessels (e.g., barges, cranes, and dry dock companion craft) or harbor-oriented vessels (e.g., harbor utility craft, dredges, and harbor tugs), it was assumed that the vessels operate within 12 n.m. from shore for the entire year.

By multiplying these typical numbers of days in port and number of transits by the number of ships in that ship class in service in any given year, a reasonable approximation of the total number of days spent in U.S. ports and the total number of transits into and out of U.S. ports for all ships in that class during the year in question was calculated. These values were then used in combination with pollutant concentration data to calculate mass loadings for vessel discharges.

Based on Navy and Coast Guard operational experience, four hours are typically required for each one-way transit between port and 12 n.m. (The estimated vessel transit time from shore to 3 n.m. is approximately 2-3 hours for most locations. A vessel typically requires one additional hour in order to traverse to 12 n.m. from 3 n.m.) Significantly longer transits, such as

11 hours to travel 12 n.m. offshore from Puget Sound can occur, but are atypical. Ten hours may be required in Puget Sound to travel 3 n.m. from the overall shoreline because the port is located in an inlet at the southern end of the Sound, requiring travel through both the Sound and the Straits of Juan de Fuca. This creates a transit distance that is actually greater than 3 n.m. when measured from the port itself.

2.4 References

1. UNDS Vessel Database. August 1997.
2. Polmar, Norman. The Naval Institute Guide to the Ships and Aircraft of the U.S. Fleet, 16th ed. Annapolis: Naval Institute Press. 1997.
3. Prezelin, Bernard (Ed.). The Naval Institute Guide to Combat Fleets of the World. Compiled by A.D. Baker III. U.S. Annapolis: Naval Institute Press. 1995.
4. Naval Sea Systems Command. Data Book for Boats and Craft of the United States Navy, NAVSEA 0900-LP-084-3010, Revision A. 15 May 1988.
5. Commander, Military Sealift Command. "Force Inventory." Report # 3110-4. Publication 4. 1 June 1996.
6. Military Sealift Command. "Mission Service to Customers, MSC's Five Programs." 1997.
7. Saunders, N. T. (U.S. Coast Guard, Assistant Commandant for Operations). "Register of Cutters of the U.S. Coast Guard." COMDTINST M5441.5L. 18 November 1996.
8. Scheina, Robert L. U.S. Coast Guard Cutters & Craft 1946-1990. Annapolis: Naval Institute Press. 1990.
9. Brown, Daniel G. (U.S. Army, Chief of Transportation). Army Watercraft Master Plan. November 1996.
10. United States Army, Office of the Chief of Transportation (OCOT). "Marine Qualification Division." 10 June 1996.
11. Halberstadt, Hans. U.S. Navy Seals in Action. Motorbooks International. 1995.
12. Fatz, Raymond J. (Department of the Army, Deputy Assistant Secretary; Environment, Safety and Occupational Health). Memorandum through Deputy Assistant Secretary of the Navy (Environment & Safety). "Status of Army Actions on the Uniform National Discharge Standards." 19 May 1997.
13. Delpercio, M. Jr. (Department of Transportation, MARAD, Office of Ship Operations). Letter to Capt. J. W. Taylor (U.S. Navy, CNO N45) regarding applicability of UNDS to the Maritime Administration's National Defense Reserve Fleet. 27 March 1997.
14. Pentagon. "USN, USCG, and MSC Vessel Movement Data from 1991-1995.