The United States Coast Guard On The Great Lakes

A History

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Thomas P. Ostrom

Rochester, MN

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INTRODUCTION

IN 1961 I ACCOMPANIED two Wisconsin friends from Superior to the office of the Coast Guard recruiter in Duluth, Minnesota. From there we commenced an eight-year involvement with the U.S. Coast Guard Reserve.

That experience stimulated my desire to study and then chronicle the domestic and global missions of the multi-mission service in my first book, A History of the United States Coast Guard, 1790 to the Present. This book, A History of the Coast Guard on the Great Lakes, is a regional history of the Coast Guard on the Inland Seas.

The seasonal extremes of the humid continental climate on the Lakes are associated with pleasant summers, severe storms, high seas and winter ice. Dedicated Coast Guard Regular, Reserve, Auxiliary and civilian support personnel are stationed on Lakes Ontario, Erie, Huron, Michigan and Superior.

The USCG is responsible for port security, ship and boat safety inspections, law enforcement, aids to navigation, search and rescue, the enforcement of fisheries and pollution laws, ice breaking, immigration and narcotics interdiction, and national defense.

The Revenue Service and the U.S. Life Saving Service were combined into the U.S. Coast Guard in 1915. The USCG was transferred from the Treasury Department to the Department of Transportation in 1967. After the 9.11.01 terrorist attacks upon the United States, the Coast Guard increased its national defense role and historical articulation with the U.S. Navy. In 2003 the Coast Guard was merged into the Department of Homeland Security.

The personnel of the Ninth (Great Lakes) Coast Guard District continue to add glory to the Coast Guard motto, "Semper Paratus, Always Ready."

CHAPTER 1

A BRIEF HISTORY OF THE U.S. COAST GUARD

(1790 to the Present)

THE HISTORY OF THE United States Coast Guard is the story of a multi-mission military service with peacetime functions and civilian authority.

The maritime service has carried out its duties in times of peace and war at home and overseas. Coast Guard missions and responsibilities are domestic and global. The Coast Guard performs search and rescue (SAR), national security, port security, ship and boat inspection, aids to navigation (ATN), environmental protection, law enforcement, drug and immigration interdiction, fisheries enforcement, and oceanographic research missions.

The Coast Guard and its predecessors, the U.S. Revenue Cutter Service and U.S. Life-Saving Service, have saved tens of thousands of human lives at a cost of hundreds of its own personnel in honoring the Coast Guard motto, Semper Paratus (Always Ready).

The Coast Guard maritime domain has included international, coastal, and inland waters and rivers, including the Great Lakes (the Inland Seas): Huron, Ontario, Erie, Michigan and Superior.Before we begin our survey of the Coast Guard on the Great Lakes, a brief history of the service will provide context.

In 1789 the federal government established the U.S. Lighthouse Service. Aids to navigation, such as lighthouses and channel and harbor marking buoys, facilitated the safe passage of boats and ships in coastal and inland waters.

Navigation aids were used in British colonial America and the United States. Lightships (floating lighthouses) were introduced in the early nineteenth century.

The first lighthouse was built by British colonists in Boston Harbor (1716). The light beacons were illuminated by various kinds of wicks, oils, and complex glass lenses and prisms that magnified and concentrated light beams to be visible on clear nights to ships at sea.

Men and women who contributed to vessel and crew safety with their diligence, courage, and skills manned the lighthouses. They saved the lives of seafarers and passengers by venturing out in small boats to rescue victims in storms and shipwrecks, risking and sometimes losing their own lives in the process.

Women have served in the Coast Guard since the earliest lighthouse days. In recent decades women have commanded boats, cutters, aircraft, stations, districts and regional command areas.

The origin of the Coast Guard dates to 4 August, 1790. With the support of President George Washington and Treasury Secretary Alexander Hamilton, Congress authorized the creation of the U.S. Revenue Cutter Service. Ten revenue cutters were constructed to enforce tariff laws. Customs duties on imports were the only source of revenue for the new federal government.

The U.S. Lighthouse Service (USLHS), which became part of the Coast Guard in 1939, worked closely with the Coast Guard's predecessor, the U.S. Revenue Cutter Service (USRCS), sometimes referred to as the Revenue Marine.

The USRCS was the first federal navy. The U.S. Navy came into being in 1798, in time to join the USRCS in the undeclared naval war with France and the War of 1812-1814 against Britain.

The USRCS was ordered to enforce tariff laws in the port of Charleston, South Carolina (1833) when merchants, in actions that were precursors to the Civil War (1861-1865), refused to collect and pay import duties which they perceived to threaten states' rights and commercial prosperity.

The Steamboat Inspection Service was placed under the Justice Department in 1838, and later the Treasury Department and the Coast Guard.

The USRCS aided the Navy, Marines and Army in the protracted Seminole Wars of the 1830s and ’40s; the Mexican War of 1846-1848; and the Spanish-American War (1898).

The initially voluntary U.S. Life-Saving Service (1848) was created to rescue coastal seafarers in distress. Over the years USLSS and lifeboat boat stations were placed along the Ocean and Gulf coasts and Great Lakes shorelines.

The U.S. Revenue Cutter Harriet Lane fired the first naval gunfire of the Civil War on 12 April, 1861. In 1876 USRCS cadets began training at the School of Instruction, the forerunner of the Coast Guard Academy.

The U.S. Life Saving Service (USLSS) was placed in the Treasury Department in 1878 and under the newly created Coast Guard in 1915.

With the purchase of Alaska from Russia (1867), the RCS began patrolling North Pacific, Alaskan, Bering Sea, and Arctic waters. The USRC Bear and other cutters served with distinction in the dangerous, icy cold, waters.

The USRCS and Public Health Service served the Inuit (Eskimo), Indian, and Euro-American inhabitants of Alaska. Captain Michael A. Healy and Lt. Ellsworth Bertholf, later Captain-Commandant of the USRCS (1911-1915) and the USCG (1915-1919), served with distinction on Alaskan waters and the Bering Sea Patrol.

Orville and Wilbur Wright initiated powered aircraft flight in 1903. Personnel from the Kill Devil Hills (North Carolina) U.S. Lifeboat Station stabilized the aircraft before takeoff and took photographs of the famous flight.

After the sinking of the British passenger ship Titanic (1912), the revenue cutters Seneca and Miami tracked icebergs in the International Ice Patrol. Coast Guard aircraft now patrol the iceberg areas.

The USRCS merged with the USLSS to form the United States Coast Guard on 28 July 1915. Commandant Ellsworth Bertholf guided the Coast Guard through the service’s homeland and overseas missions in World War I. During that war and subsequent international conflicts, the USCG was transferred to the U.S. Navy. After World Wars I and II, Coast Guard commandants testified in Congress in opposition to attempts by Congress to place the USCG under permanent USN jurisdiction.

World War I (1914-18), initially called The Great War, disrupted the neutrality of the United States, which entered the conflict belatedly in 1917. The USCG assisted the USN in guarding Allied convoys, tracking and sinking German submarines, and saving thousands of lives on search and rescue missions, while losing almost 200 coast-guardsmen.

Coast Guard aviation missions commenced in 1916 when USCG personnel were admitted to the U.S. Navy flight training school at Pensacola, Florida. Lt. Elmer Stone (USCG) made the first airplane crossing of the Atlantic Ocean (1919) in a U.S. Navy NC-4 floatplane, pre-dating the 1919 Alcock/Brown and 1927 Lindbergh non-stop flights. The first operational USCG Air Station was established in 1920 at Morehead, North Carolina.

Seaplanes (flying boats) were used by the USCG in peace and war. In 1944 the first Coast Guard helicopter landing on a cutter occurred on the USCGC Cobb. A leader in helicopter flight since World War II, the USCG used boat-hulled helicopters for SAR from the 1960s until 1994, when the last HH3F amphibious rotor aircraft was retired. Lt. Frank Erickson (USCG) was a leading proponent of helicopter use in defense and search and rescue missions.

As an agency of the Treasury Department, the Coast Guard was called upon to enforce Prohibition laws (1920-33) on the Atlantic, Gulf and Pacific coasts and the Great Lakes. Using patrol boats, ocean-going cutters, and destroyers on loan from the U.S. Navy, the Coast Guard carried out the dangerous and unpopular mission, and suffered casualties and federal court adjudication in the process.

World War Two (1939-45) drew the USCG into domestic port security and overseas missions. The war was fought on land and sea in Europe, North Africa, Asia and the Pacific. The United States entered the war after the Japanese attack on U.S. military bases at Pearl Harbor, Hawaii (7 December 1941). The USCGC Taney fired upon Japanese aircraft and subsequently served in combat in the Pacific and later in the Vietnam War.

During World War II the USCG conducted prewar and wartime convoy and anti-submarine patrols in the North Atlantic. The USCGC Northland captured several German military personnel in Greenland and a German trawler three months before America officially entered the war.

Coast Guard personnel assisted the FBI in the discovery and apprehension of German agents who reached Long Island (New York) from a German submarine.

The U.S. Coast Guard Reserve was initially formed as a civilian organization in 1939. The USCGR was designated to carry out domestic Coast Guard duties so regular service personnel could assume wartime duties at home and overseas.

The USCGR became a military arm of the Coast Guard in 1941. The civilian Coast Guard Auxiliary was created to carry out support activities. Auxiliary units assisted the USCG in aids to navigation (ATN), port security, life saving, boater safety, and search and rescue missions.

After the terrorist attacks upon the United States on 11 September 2001, the Auxiliary performed its functions on inland and coastal waterways.

Ethnic minorities and women have served in the USCG in civilian and military capacities. During World War II members of the Women's Coast Guard Reserve, known as SPARS from the service motto Semper Paratus, served under the command of Capt. Dorothy Stratton. Since World War II women have served in most Coast Guard ranks and rates in regular and reserve capacities.

The USCG has contributed technological innovations to maritime history. Commander L.M. Harding, in cooperation with academic and civilian scientists and the other military services, developed the LORAN (long-range electronics aid to navigation) system. LORAN has guided ships and aircraft in peace and war from World War II to the present. LORAN has since been supplemented by more advanced navigation technology systems.

After World War II the Coast Guard returned from U.S. Navy jurisdiction to the Treasury Department, and resumed peacetime functions. During the Korean War (1950-53) the USCG performed military support duties in the Pacific, ran destroyer escorts, manned LORAN stations, and served port security functions at home and overseas.

In 1957 three Coast Guard cutters navigated across Arctic waters. The U.S. Navy transferred its icebreakers to the Coast Guard in 1965.

In that same year, Coast Guard cutters were ordered into the Vietnam War, where more than 8,000 Coast Guard personnel served on port security, ocean and river patrol, helicopter SAR, and LORAN station missions. Coast Guard personnel served with distinction and suffered casualties in military support operations in Vietnam between 1965 and 1973.

The year 1967 is significant in Coast Guard history. The distinctive USCG "racing stripe/slash" was added to aircraft, boats and cutters, vehicles, signage, and stationery. In 1967 the Coast Guard ended its 177-year affiliation with the Treasury Department and transferred to the new Department of Transportation (DOT).

After the 11 September, 2001 terrorist incidents, federal reorganization plans were developed. In 2003 the Coast Guard became part of the new Department of Homeland Security.

The Coast Guard created Strike Teams in 1973 to police and clean up maritime petroleum and chemical pollution spills. In 1989 the Coast Guard responded to the Exxon Valdez tanker oil spill in Alaskan waters.

In 1975 the 729-foot cargo carrier Edmund Fitzgerald sank in a November storm on Lake Superior. Capt. Jimmy Hobaugh (USCG) took the 180-foot USCGC Woodrush (WLB 407) out of the port of Duluth (Minnesota) into heavy seas, high winds and a snowstorm to search unsuccessfully for the missing vessel and crew. The World War II vintage buoy tender and icebreaker Woodrush was built by the Zenith Dredge Company in Duluth in 1944.

The 22-hour search, aided by the crews of merchant vessels, for the Fitzgerald yielded no survivors. A subsequent Coast Guard investigation attributed the sinking to multiple factors.

In the 1980s the Coast Guard and Navy conducted joint patrols in the newly established Maritime Defense Zone and teamed up on national security, narcotics and immigration interdiction missions.

Not all goes well on every Coast Guard mission. Search and rescue missions often occur in storms and hazardous waters. ATN duties take place in relatively inaccessible places that require the placement of warning markers and other guideposts. In such circumstances, cutter and boat crews can be endangered, and Coast Guard vessels damaged and even sunk.

At 2:10 a.m. on a cold December morning in 1989, Lake Superior claimed the USCGC Mesquite, a 180-foot buoy tender that had grounded off Keweenaw Point, Michigan. The Mesquite had been servicing a navigational aid in a heavy current in dark water.

Investigators blamed an overworked, understaffed crew, some of whom later received awards. Other crew members got reprimands and reassignments. A Coast Guard report cited errors in judgment and the misuse of the cutter's updated and sophisticated navigation technology.

Coast Guard active duty (regular) and reserve personnel were deployed with other U.S. and Allied military forces against Iraq in Operation Desert Storm (1990-91) and Operation Iraqi Freedom which commenced in 2003.

After "9/11" 2001 and in the Persian Gulf wars, Coast Guard men and women earned citations and medals. In April 2004 DC3 Nathan Bruckenthal (USCG) was killed on a patrol boat mission in the Persian Gulf. Patrol boat commander Lt. Holly Harrison (USCG) received a Bronze Star in a separate Persian Gulf mission.

On 11 September 2001 the Coast Guard responded to terrorist attacks by Islamic extremists upon New York City and the Pentagon in Washington, D.C. Port security and harbor patrols were coupled with armed helicopter missions over strategic ports, waterways, bridges, and power and petrochemical facilities.

Coast Guard Sea Marshals monitored and boarded commercial vessels coming into U.S. sea-lanes to protect and secure harbor areas, and deter and detect potential terrorist attacks.

The Coast Guard partners with port authorities, local, state and federal law enforcement, and the U.S. Customs Service to inspect ships, cargo containers, and port infrastructure. The task is overwhelming, considering the 25,000 miles of navigable coastal waters and 360 major ports that constitute the domestic maritime domain.

Regular and Reserve Coast Guard personnel confronted the war on terror with new techniques and cooperative training with U.S. Secret Service and U.S. Marine, Army, Navy and Air Force personnel.

In the late 1990s and into the 21st century, Coast Guard Commandants Adm. James M. Loy and Adm. Thomas H. Collins acquired increased federal funding, and more advanced technology and military platforms to meet new challenges and carry out operations in deep (blue) and littoral (coastal) water patrols.

This concludes our brief review of Coast Guard history from 1790 to the present. With that history in context, we can now explore the role of the U.S. Coast Guard on the Great Lakes in general, and Lake Superior in particular.

Note: Sources used for Chapter 1 (A Brief History of the Coast Guard) are cited in the Appendix A, Chronology and in the Bibliography. Chapter 1 is based largely upon the Chronology and a precis of the author's book, The United States Coast Guard, 1790 to the Present, Elderberry Press, 2004.

CHAPTER 2

COAST GUARD PREDECESSORS ON THE GREAT LAKES

(1790-1915)

THE WESTWARD MOVEMENT of Americans in the 19th century brought Euro-Americans to the North Central Plains and the Great Lakes two hundred years after Native Americans and French explorers had visited and settled the Inland Seas.

With the extraction of natural resources (forestry, mining, farming, fishing) and commerce and shipping on the shores of the Great Lakes, the Federal Government stationed the U.S. Revenue Cutter Service, Lighthouse Service, and U.S. Life Saving Service on the fresh-water lakes. These agencies, which evolved into the U.S. Coast Guard, established aids to navigation (buoys and lighthouses), steamship inspections, and life-saving stations.

The U.S. Coast Guard was formed from the amalgamation of the U.S. Revenue Cutter Service and the U.S. Lifesaving Service in 1915. The U.S. Lighthouse Service joined the Coast Guard in 1939.

The U.S. Revenue Cutter Service (USRCS) was formed in 1790 under Treasury Secretary Alexander Hamilton, as directed by Congress. The USRCS served as a maritime police, life-saving, and defense force empowered to collect federal revenue duties on imported goods.

The smuggling tradition that frustrated the British still flourished in North America after the Revolutionary War. The RCS eventually suppressed smuggling, the slave trade, and piracy.

The USRCS existed before the U.S. Navy was established in 1798. The first ten armed sailing cutters and their crews served under the Treasury Department, as did the future Coast Guard. In 1967 the U.S. Coast Guard was transferred to the new Transportation Department. In 2003 the USCG was assigned to the new Department of Homeland Security.

Maritime historians believe the presence of the Lighthouse Service and Revenue Cutter Service on the Great Lakes dates to the early19th century, between 1809 and 1820.

The first Great Lakes lighthouse was built in 1818. The War of 1812-1814, between Great Britain and the United States, resulted in a post-war agreement in which the British territory of Canada and the United States limited the number and armament of military vessels in their respective navies, with preference for revenue vessels. Those provisions of the Rush-Bagot Agreement (1817) suggest Revenue cutters may have been on the Inland Seas before the War of 1812.

Primary-source historical works, official documents, and travel journals reveal that a Captain Gilbert Knapp commanded the U.S. Revenue Cutter Alexander Dallas out of Detroit (Michigan) in 1819. The Revenue Cutter Fairplay operated out of Chicago (Illinois) before 1819. Captain Daniel Dobbins (1829) commanded a revenue cutter along Pennsylvania's Lake Erie shoreline from Presque Isle. Dobbins commanded the USRC Erie after 1832.

In the spoils-system politics of the Jacksonian era, Presque Isle District Collector of Customs Thomas Forster defended the professionalism of the crew of the USRC Erie and his son, a lighthouse keeper, in a letter to the Treasury Department (1833). In 1837-38, the Revenue Cutter Erie assisted the U.S. Army in suppressing a Canadian insurrection involving several hundred sympathetic armed Americans in the New York-Niagara-Canadian frontier zone.

Treasury Department records of vessel movements (1790 to 1933) refer to six revenue cutters on the Great Lakes between 1848 and the Civil War (1861-1865). Several cutters were transferred to the Atlantic Coast for wartime duty. The cutters were named after prominent historical, civilian, military and government figures. Government procurement agents leased sea-worthy vessels for Great Lakes cutter duty. The ships of the Civil War era were side-wheel steamers supplemented with masts and sails.

From the end of the Civil War until 1930, the missions of Revenue and Coast Guard cutters assigned to the Great Lakes included boat regatta patrols, life-saving, shipwreck rescues, the enforcement of U.S. Customs laws, and logistical support for U.S. Life Saving and U.S. Lighthouse stations and crews (O'Brien, 1976, pp. 3-9).

Sailing ships were vulnerable to the winds that powered them. With shifting winds ships sailing close to shore could be swept into rocks and broken apart on sand bars. When ships acquired machine power, steel hulls, and sophisticated direction finding technology, shore-based rescue services and lighthouses diminished in significance (Noble, 1994, p. 16).

Kit and Carolyn Bonner concisely described the dangers of sea faring: “Waves, wind, shifting currents, rain, sleet, fog and ice sink and damage countless vessels and will continue to do so as long as men and women sail.” But disasters stimulate maritime innovation and reform. The Bonners remind us that “the International Ice Patrol was established and administered by the USRCS and USCG after the RMS Titanic disaster (1912) to warn ships of icebergs and Atlantic ice floes” (Bonner, 2003, p. 13).

The first American lighthouse was built in British colonial America at the Boston Harbor entrance in 1716. Coastal lights guided merchant ships to navigable waters.

The first United States Congress created the Lighthouse Establishment (1789) under the Treasury Department to inspect and maintain lighthouses and other aids to navigation (ATN), such as piers and buoys in port, bay, inlet and harbor areas, for the purpose of “rendering navigation easy and safe” (O’Brien, 1976, p. 13).

Before the advent of electricity, natural, whale, and vegetable oils and lard and kerosene fueled lighthouse illumination systems, magnified and directed by huge, elaborate glass prisms and lenses. The most famous lens was the Fresnel Lens.

The U.S. Lighthouse Service functioned from 1789 to 1939, when the USLHS was placed under Coast Guard jurisdiction. U.S. Navy, Army Corps of Engineers, Treasury, Customs and Commerce department officials carried out lighthouse inspections. Civilian craftsmen and building contractors constructed and maintained the massive light structures that had to withstand the snow, cold, ice, waves and storms of the Great Lakes.

Federal documents indicate the first Great Lakes lighthouse was completed on Lake Erie (Presque Isle) in 1819, followed by the Buffalo (New York) lighthouse in 1820. The territory of Michigan received Congressional authorization (1819) for the construction of a lighthouse at the mouth of the Detroit River, and authorization (1823) for the placement of another lighthouse near the St. Claire River.

Given the perilous locations where light warning systems were usually placed, and the periodic storms and winter ice conditions of the Great Lakes, lighthouses required several years to construct. Building crews and lighthouse keepers experienced harrowing experiences and life-threatening incidents. Lighthouse and Lifeboat station keepers proudly wore their professional uniforms and medals. Keepers, their spouses and other family members performed life-saving missions in small row--boats at personal risk, and suffered occasional loss of life. Motor-powered boats were not widely available until the first decades of the 20th century.

Life-saving medals and commendations were awarded to keepers and their families by government agencies and private and commercial organizations. Medals were awarded to Revenue Cutter sailors and, after 1848, members of the U.S. Life Saving Service.

Frederick Stonehouse chronicled the history of the U.S. Lighthouse Service in his book, Lighthouse Keepers & Coast Guard Cutters (2000), and included the lives of several male and female keepers on the Great Lakes. Their heritage is preserved in the names of modern Keeper Class Coast Guard cutters like the USCGC Drew (WLM-557). Captain Frank Drew, a Green Bay (Wisconsin) and Lake Michigan keeper, won medals and commendations for heroic actions at shipwreck scenes, and for saving the lives of dozens of people between 1899-1929 (Stonehouse, 2000, pp. 219-231).

Within the years of Drew’s tenure, the Chequamegon Bay arm of Lake Superior was the scene of numerous ship groundings and sinking due to fog, fierce storms, and shipboard fires. In the late 19th and early 20th centuries, cargo vessels evolved from wooden sail and side-wheel steamers to wooden and steel-hulled steam ships. In the post-Civil War era, and most significantly after 1870, increased commerce on Chequamegon Bay stimulated the growth of the Wisconsin port towns of Bayfield, Ashland, and Washburn. Ships from Duluth and Superior, and other Minnesota North Shore ports, contributed to the increase in maritime traffic through the Apostle Islands and Cheqamegon Bay.

The crews of fishing vessels, tug boats, and large cargo vessels which carried passengers, fish, cattle, grain, coal, iron ore, timber and manufactured goods, faced the storms and cold turbulent waters of Lake Superior. Lighthouse keepers and life-saving crews met the challenge as best they could with the limited communications systems and technology of the day.

On 12 September 1885, the Canadian cargo vessel Prussia, headed for Duluth to pick up a load of grain, caught fire on Lake Superior. The crew of 10 men and 1 woman abandoned the 138-foot, 458-ton steamer 10 miles from the Apostle Islands.

Gale force winds and high waves drove one of their two lifeboats further out to sea. Sand Island Lighthouse Keeper Charles Lederlee witnessed the events and headed out into the storm in his small lifeboat. The survivors in the first boat sent Lederlee on to help their fellow mariners in the second boat. Miraculously, Keeper Lederlee rescued the crews from both lifeboats and rowed them to Sand Island. The keeper and his wife fed and sheltered the survivors, and took them to Bayfield (Wisconsin) the next day.

The captain and crew of the Prussia subsequently sent a letter of gratitude to Keeper Lederlee and his wife "for going to the rescue of the yawl boats and crew" who otherwise "would most likely have been lost" (Keller, 2004, pp. 35-37).

Steam ships and sailing schooners carried passengers and cargo along the south shore of Lake Superior in the late 19th and early 20th centuries. The R.G. Stewart was carrying a few passengers and cattle along the southern Lake Superior shoreline from Hancock (Michigan) to Duluth (Minnesota) in heavy fog and darkness on 3 June, 1899. At 11:00 PM the ship crashed into Michigan Island in the Apostle Islands.

The captain of the 100-foot long, 23-foot wide, Stewart ordered reverse engines to back out of the shallow, rocky waters. The overheated engines caused a fire below deck that quickly spread. The order was issued to abandon ship. Cattle were pushed overboard, and the passengers and crew crowded into a lifeboat, while neglecting to cast off the line that was tied to the burning vessel. Flames quickly severed the line, but not before a deck hand was lost overboard as the boat capsized. Some survivors swam to shore, while others clung to the lifeboat in the frigid waters of Chequamegon Bay.

The keeper of the Michigan Island lighthouse gave the 11 survivors food and shelter and took them to Bayfield. A steamer took the crew and passengers to Duluth. Meanwhile, the cattle swam safely to shore (Keller, pp. 59-62).

On the evening of 1 September, 1905 the 373-foot iron-ore carrier Sevona left the Allouez dock in the east end of Superior (Wisconsin) for Erie (Pennsylvania) with 6,000 tons of cargo. By 6:00 AM on 2 September, heavy seas and gale winds forced the steel-hulled steamer, equipped with a new electric searchlight, into the Sand Island shoals of the Apostle Islands. Pounding seas split the vessel along the line of the 1904 weld that had added 73 feet to her length.

Two lifeboats were blown and washed ashore in high waves and surf. A lumberjack on shore gave the surviving passengers and crew members food and shelter, and then took them by horse and wagon to Bayfield, Wisconsin. Seven crew members, including the captain of the Sevona, had stayed aboard the grounded vessel and fashioned a life raft from wood broken loose from the disintegrating cargo boat. Sand Island Lighthouse Keeper Emanuel Lueck watched helplessly in the storm as the rafters were tossed about in the swirling waves and thrown to their deaths into breakers, logs, rocks and driftwood.

Four ships were lost on Lake Superior in that terrible September storm, prompting a public outcry for better life-saving equipment on vessels; more life-saving stations, crews, and rescue boats near lighthouses; more shoal-marking buoys to guide vessels near shore; and strategically placed telephone and telegraph stations to facilitate better communication between lighthouses and lifesaving stations (Keller, pp. 95-105).

The storm that sank the Sevona also sent the wooden, 338-foot, 2,790-ton, 3-masted sailing vessel Pretoria to the bottom. The Pretoria left the Allouez docks in Superior (Wisconsin) on 1 September, 1905 loaded with iron ore. In the face of the escalating storm the schooner Pretoria teamed up with the 263-foot steamer Venezuela to maneuver past the potential shelter of the Apostle Islands. On the morning of 2 September, at the height of the storm, the steering gear of the Pretoria became inoperable and the towline that joined the two vessels snapped.

As the vessels separated in the raging waters, the Venezuela was forced to seek shelter in Chequamegon Bay. Captain Charles Smart of the Pretoria watched helplessly as giant waves loosened the ship's hatch covers and filled the cargo hold. Northeast winds sheared Pretoria's sails and blew the vessel toward Outer Island. The

crew waged a losing battle trying to pump water out of the boat. The schooner's anchors finally took hold as gigantic waves battered the hull and hatches and washed the wheelhouse overboard. Captain Smart and his nine-person crew abandoned ship into a lifeboat which immediately capsized with the loss of five men.

The surviving crew was reached and pulled ashore by the Herculean efforts of Outer Island Lighthouse Keeper John Irvine. The 61-year-old keeper swam into the surf and hauled the exhausted crew and capsized lifeboat to shore. Keeper Irvine and his wife provided food and shelter to the grateful survivors. The Pretoria crew were later picked up by the Venezuela and brought to Bayfield and Ashland, from where they departed to their homes in Michigan, Minnesota, Wisconsin, and Sweden. The bodies of the lost crew members eventually washed up on the Outer Island shores (Keller, pp. 107-112).

Author James M. Keller recorded an interesting bit of research on a Chequamegon Bay accident from the files of the Ashland Daily Press. Unfortunately, the account does not clearly identify the names, affiliations and fate of all the vessels referred to:

"1929: MARIGOLD: A freak accident took place on October 2 killing three men. The government boat MARIGOLD was moored at a light buoy off of Red Cliff point. A lighthouse tender was replacing the contents of an acetylene tank which furnished the light when it blew up with tremendous force. The tender was "blown to bits" while a second man was hurled against the vessel's mast and a third flew off the boat. All three were killed instantly (Keller, p. 141).

Floating lightships were added to the Great Lakes navigation aids arsenal. In 1820 the first lightship was stationed off the Eastern Seaboard. In 1838 the first Great Lakes lightship was stationed in the Michilimackinac Straits between Lakes Michigan and Huron.

More sophisticated federal lightships for the Great Lakes were built after 1890 by the Craig Shipbuilding Company of Toledo (Ohio). The wooden, 102-foot, steam-powered screw-propeller vessels were numbered 55, 56, and 57 and equipped with fog-bells. Twenty lightships served 18 different stations on the Great Lakes between 1891-1970. Lake storms periodically blew the anchored lightships off station. Maintaining a variety of illuminated red and white mast lights in stormy seas presented challenges, as did the danger of ship collisions in fog-bound waters (Bonner, 2003, pp. 34-35).

In 1875 South Manitou Light became the first Lake Michigan installation to receive a steam fog signal. In 1882 Congress mandated the placement of lights on bridges that extended over navigable waters. Two significant and still famous lighthouses were built on the north shore of Lake Superior: the Rock of Ages Light west of Isle Royale (1908), and Split Rock Light (1910). Split Rock Light is situated 180 feet above the level of the lake, although the tower itself is 60 feet high.

Lighthouse boats called tenders serviced aids to navigation and brought personnel, food, supplies, equipment, and mail to the lighthouse keepers. Lighthouse tenders carried builders, craftsmen, scientists, and officials from the USRCS, USLHS, the Treasury and Commerce Departments, Customs Service, U.S. Navy, and U.S. Army Corps of Engineers to the isolated stations.

Other Revenue cutters served tender functions. In the last half of the 19th century, lighthouse tenders ranged from the 88-foot sailing schooner Belle to the 124-foot, steam-powered, 292-horsepower Haze that saw service on all of the Great Lakes. The 152-foot, 400-horsepower steam vessel Warrington sailed until 1911.

In 1850 Congress mandated that navigation buoys meet standardized specifications. Buoys observed on the right side of a channel on return from the sea were to be painted red and contain even, sequential numbers. Those on the left side as a vessel sailed seaward (outward bound) were to be black and odd numbered.

Red and black horizontal stripes adorned buoys which marked shoal waters and bisected channels. Mid-channel buoys were indicated by perpendicular black and white stripes.

Around 1900, Great Lakes ships used steam-whistle fog signals powered by boilers. In later years the more reliable engine- or motor-driven compressed-air fog signals were utilized. By 1915 gas-lights illuminated the isolated Great Lakes lighthouses. By 1918, during World War I, radio beacons, telephones and electricity were available lighthouse power sources. Lighthouse keepers and lighthouse tender crews were finally awarded pension benefits by act of Congress.

An official Lighthouse Board report (1862) recorded detailed information about the number of lighthouses on the Great Lakes and the dates of some of the earliest stations: Lake Ontario: 7 (1820); Lake Erie: 12 (1820); Lake Huron: 10 (1825); Lake Michigan: 26 (1829); and Lake Superior: 15 (1847).

Some of the locations of the earliest Great Lakes lighthouses were: Lake Ontario: Oswego and Niagara Fort. Lake Erie: Buffalo, Presque Isle, and Cleveland. Lake Huron: Fort Gratiot, Saginaw Bay, and Cheboygan. Lake Michigan: Grand Traverse, South Manitou, Muskegon, Kalamazoo, Chicago, Kenosha, Racine, Milwaukee, Sheboygan, Manitowoc, and Green Island. Lake Superior: Whitefish Point, Marquette, Manitou, Copper Harbor, Eagle River, Ontonagon, the treacherous Apostle Island lights north of Ashland, including La Pointe (est. 1858), Raspberry Island (1862), and, in 1857, Minnesota Point (O'Brien, 1976, pp. 13-30).

The U.S. Life Saving Service (1848-1915) is the source of the life saving and search and rescue (SAR) heritage of the Coast Guard. The USLSS did not come to the Great Lakes until 1876. The origins of the life-saving service date to the volunteers of the Massachusetts Humane Society (1785) who operated the first Lifeboat Station in 1807 (O'Brien, p. 33).

The federal precedent for involvement in life saving occurred in 1837 when Congress ordered the U.S. Revenue Cutter Service to initiate "…cruises along the coast for the relief of distressed mariners…" (O'Brien, p. 33). In 1838 the U.S. Senate Commerce Committee ordered the stationing of lifeboats at significant lighthouse locations to assist endangered seafarers.

Representative Robert McClelland (Michigan) initiated legislation in 1847 to appropriate federal funds for shore-based life-saving facilities and equipment to be furnished at coastal and inland lighthouses to assist victims of shipwrecks.

This and other well-intentioned maritime legislation initially failed to spell out training procedures, equipment use, and provisions for paid crews. This oversight led to years of poorly trained volunteer crews and inadequate facilities.

In 1854 lifeboats were provided for Lake Superior, Lake Michigan, Lake Ontario and Lake Erie. Ship disasters that year prompted Congress to appropriate more funding positions for paid district supervisors and life-saving station keepers. Paid crews came later.

Winter storms in 1870-71 contributed to Great Lakes ship disasters that claimed 214 lives. Public outrage forced Congress to appropriate sufficient funds for training paid crews and equipping new stations with life-saving boats and gear.

Treasury Secretary George S. Boutwell appointed a civilian, Sumner I. Kimball, to head the Revenue Marine Bureau in 1871. Kimball was General Superintendent of the U.S. Life Saving Service until 1915, during which time he organized maintenance and patrol operations, report and log-book procedures, training and inspection guidelines, and mechanical, flag and light signal systems.

In 1876 the USLSS began its Great Lakes operations at stations on Lakes Erie, Ontario, and Huron. Stations were completed on Lakes Michigan and Superior in 1877. The first Lake Superior stations were established in the state of Michigan. Kimball placed the Great Lakes life-saving stations in 11 districts. Lakes Erie and

Ontario contained nine U.S. Life-Saving Stations. Lake Huron and Lake Superior hosted nine stations. Lake Michigan was supported by 12 stations (King, 1996, p.198).

Consulting federal Annual Reports records, Frederick Stonehouse found that the Duluth (Minnesota) Life-Saving Station was operational on "Minnesota Point in Upper Duluth" on 1 June, 1895. In 1908 the Duluth Station had a 34-foot motor launch powered by a 25-horsepower engine, and a 6-horsepower 22-foot surfboat. For life-saving and wrecks less than 400 yards from shore, the crew preferred using a row boat rather than going through the process of starting the power boat engines (Stonehouse, 1994, pp. 60 and 82).

In the 1870s more than 24 vessels sank on Lake Superior, taking 80 sailors to their maritime graves. Two November gales in 1872 destroyed the Duluth port that had been built on the windward side of Minnesota Point. Lake waves topped the breakwater and hit a grain elevator, stimulating Duluth construction experts to rebuild the Twin Ports of Duluth (Minnesota) and Superior (Wisconsin) behind the shield of Minnesota Point (Marshall, 1987, p. 10).

Uniforms and life-saving medals stimulated motivation and pride among USLSS personnel on the Ocean and Gulf coasts and the Great Lakes. Newspapers recorded the exploits of these "Surf Soldiers" and lives saved and lost.

Life-Saving station crews on the Great Lakes and coastal regions patrolled beaches in inclement weather, used lights to signal ships which ventured too close to shore, rescued shipwreck victims and brought them ashore, and amazed onlookers with their handling of self-righting and self-bailing surf boats. The "Surfmen," also called "Storm Warriors," powered their watercraft by oar, sail, and at the turn of the century, internal-combustion motors.

Lifeboat station crewmembers practiced when not cleaning and repairing station facilities and equipment. Life-saving boats were brought to the water on skid ramps, and by manpower and horsepower. Crews learned to fire warning flares, and fake (lay) line so it could be used without fouling. The line was fired from a miniature cannon called the Lyle gun, named after its inventor, David A. Lyle, a U.S. Army officer. The Lyle gun hurled heaving and life-support lines to wrecked, stranded, and sinking cargo and passenger ships.

Federal officials coordinated logistics and tactics with lighthouse keepers and inspected lifeboat Stations. The Great Lakes was divided into the Ninth, Tenth and Eleventh Districts: the district numbers and headquarters changed over time. The Duluth station was originally in the Eleventh District, and later the Ninth Coast Guard District. In 1914 the Eleventh District included Lake Huron and Lake Superior and contained 19 USLSS stations. The Twelfth District encompassed the 31 USLSS stations of Lake Michigan.

The isolation of Lake Superior stations and the storms, winds, sub-arctic winter weather, and biting insects challenged personnel. A Lake Superior surfman on patrol disappeared into an ice cave: he was saved when station colleagues were alerted by his dog (Shanks, York, and Shanks, 1996/2004, p. 163).

The Duluth Station at the southwest end of the largest fresh-water lake in the world contributed to architectural history. The Minnesota Life-Saving Station on the western end of Lake Superior was dubbed Duluth-type architecture. The style was emulated on the Great Lakes and East Coast. Of the 279 USLSS stations in 1914, about 10% were Duluth-type structures.

Architect George R. Tolman drew the plans in 1893. The Duluth Station was completed in 1894. The design was used in station construction projects into the first decade of the 1900s. The rectangular lookout tower and separated buildings for boats and dwelling space allowed planning flexibility for topography and beach conditions (Shanks, et. al., pp. 232-247).

Great Lakes surfmen had seasonal occupations. They needed to fend for themselves during the long, cold, Northern winters when Lake Superior shore lines were "clad with ice" and "pathless deserts" of "bewildering snowfalls, overwhelming winds and bitter cold" (Noble, 2005, pp. 31-32).

Isolated Life-Saving and Lighthouse stations imposed significant burdens on the surfmen. Crewmembers might be a two-day walk from their families. Only the keeper and his family were officially allowed to live in the station dwelling.

Married surfmen along isolated Lake Superior shores built simple homes for their families and lived in them through the inactive winter months. Life for women and children at remote stations was difficult. When the men set out on rescue missions into stormy Lake Superior, the women sometimes prayed by lighted beach fires for their safe return (Noble, 1994, pp. 140-142).

The extreme climate conditions at Great Lakes stations challenged the minds and emotions of keepers, surfmen, and their families. In his thriller, Haunted Lakes II (2000), Frederick Stonehouse told ghost stories and chronicled the testimony, superstitions, and experiences of isolated Great Lakes lighthouse keepers, surfmen and sailors.

By 1900, the Great Lakes USLSS stations numbered sixty. The Eleventh District Lake Michigan stations in Wisconsin included Kenosha, Kewaunee, Sturgeon Bay, Plum Island and Bailey Harbor. Illinois hosted the Jackson Park and Chicago stations. Lake Superior stations included Marquette, Portage, Grand Marais (Michigan) and Duluth. A Coast Guard station was later built in Grand Marais (Minnesota) on the western shore of Lake Superior.

Keepers had absolute authority to maintain discipline over surfmen. In October 1888, on a trip from Duluth to Portage Lake (Michigan), the schooner Reed Case ran into a Lake Superior storm with gale force winds and heavy seas. The vessel bounced off a pier, punctured a hole in her hull, took on water, and was blown away from the Keweenaw Peninsula harbor entry.

Portage Station keeper Albert Ocha launched a lifeboat into the raging seas, returned to shore for logistical and tactical reasons, and readied his crew to embark again into the storm. Fearing for his life, one surfman refused to go, and was immediately discharged from the USLSS by Keeper Ocha (Stonehouse, 1994, pp. 181-183).

Maritime historian, journalist and author Al Miller (Lake Superior Sentinel, Nor'Easter, 1992, 1993) discovered Captain Ocha, in the author's words, "while doing a biography of a Duluth tugboat man." Miller said, "The Lifesavers were amazing. You couldn't make up stories that adventuresome. Unfortunately Captain Ocha died a poor man. He left several orphaned children. His grave in Eagle Harbor is unmarked and lost" (Miller, "Captain Ocha," 2005).

A November storm on Lake Superior in 1913 claimed 20 ships and 248 lives. Among the devastated vessels was the Waldo, a 451-foot, 4500-ton, steel-hulled ore carrier. Blizzard conditions, giant waves and winds estimated up to 80 miles per hour destroyed the ship's pilothouse, navigational equipment, and engines. The vessel was picked up and deposited upon the rocks on Manitou Island, off Keweenaw Point in Michigan.

In a risky four-day operation, boats and crews from the Eagle Harbor and Portage Life-Saving Stations chopped through ice and rescued the survivors. The shipwreck victims were taken by tug-boat to a Houghton (Michigan) hospital.

In July 1914 the 14 courageous rescuers each received a Gold Life-Saving Medal from the United States Secretary of the Treasury (O'Brien, 1976, pp. 33-57).

Lighthouse tenders brought supplies to life-saving and lighthouse personnel, and served in other capacities. The 150-foot tender Marigold battled the winter gales of an April storm (1919) in a failed attempt to land a relief crew of keepers on Lake Huron Island in Lake Superior. Captain Cummins decided to shield the Marigold on the lee side of an island and battle his way into the harbor to tie up at the Marquette (Michigan) dock.

In the aft stateroom of the tender two Marquette doctors treated the dislocated shoulder of Keeper Frank Witte who had braved the 60-mile per hour winds and high seas that smashed into the Huron Island Lighthouse. Witte descended the slippery cliffs in a vain attempt to rescue the crew of a wooden cargo schooner that had been hurled into the rocks below. At the base of the cliff, Keeper Witte was disabled by a ship's timber hurled by the storm into the keeper's shoulder. Witte's assistant keeper got him to the safe quarters of the Marigold (Oleszewski, 1999, pp. 117-129).

The treachery of the Great Lakes was illustrated by a Lake Superior storm in November 1975 that churned up 35-foot seas and 95 mile per hour winds, and sank the 729-foot lake carrier Edmund Fitzgerald. The Coast Guard and the National Transportation Safety Board concluded the Edmund Fitzgerald filled with water and

sank because of "improperly secured or collapsing hatch covers." The Lake Carriers Association disputed the conclusion. The LCA contended "one piece hatch covers used on modern ships have never failed," and that the carrier sank due to damage sustained to the hull when it "bottomed out" on Six Fathom Shoal (Miller, 1999, pp. 228-229).

An 1880 Lake Michigan storm killed 100 people and wrecked 100 ships. Ten thousand vessels and 30,000 victims are estimated to have been lost in Great Lakes maritime history. Statistics explain the historical contributions of the USLSS on the Great Lakes. Crews of the 61 Great Lakes stations have saved 56,000 people with the loss of 40 surfmen (Stonehouse, "Notes from the Beach Patrol," 2003, pp. 3 and 21).

Life Lines, the Quarterly Newsletter of the U.S. Life-Saving Service Heritage Association (Winter 2004, pp. 2-6) surveyed Great Lakes history and historical preservation, and heralded American cities that made special efforts to support the men and women of the Coast Guard who live and work in their communities. Grand Haven (Michigan) was honored in 1998. Life Lines encouraged contributors to preserve historic USLSS stations threatened with destruction, including the Michigan stations at Tawas and Middle Island.

Wreck and Rescue, the journal of the United States Life-Saving Service Heritage Association (USLSSHA), featured an "Endangered Stations List" (November 2004, p. 31). The Harbor Beach Lifeboat Station in Michigan was listed as "lost." The Milwaukee, Wisconsin Lifeboat Station was "threatened."

In 2004 Representatives Thaddeus McCotter and Bart Stupak of Michigan and other colleagues paid tribute to the 130th anniversary of Great Lakes life-saving and lifeboat stations. Congress honored those who served in the USLSS and the United States Coast Guard. House Resolution 750 honored the USLSS for enabling the Great Lakes shipping industry and associated communities to prosper, for lives and property saved, and for the USLSS personnel who died in the line of duty. The Resolution commended the continued life-saving and search and rescue missions performed by the U.S. Coast Guard on the Great Lakes (Life Lines, Winter 2004, pp. 4-5).

At the annual meeting in Marquette (Michigan) in 2000, the USLSSHA honored Canadian Coast Guard rescue personnel Inga Thorsteinson and two crewmates. Thorsteinson and her Canadian Coast Guard colleagues manned a 44-foot motor lifeboat during a 1996 Lake Superior storm and rescued two crewmembers from a 110-foot cruise ship adrift off Thunder Bay, Ontario. The vessel had broken from its moorings at Grand Marais (Minnesota). Seaman Thorsteinson and her colleagues earned silver life-saving medals for heroism (Galluzzo, Wreck and Rescue, Fall 2000, pp. 4-6).

CHAPTER 3

THE COAST GUARD EMERGES (1915-1939)

THE PROGRESSIVE ERA in American political history transcended the period from 1870 to 1920. Progressivism evolved on the Populist prairies when farmers and ranchers organized to protect their self-interest against the railroads, insurance companies, banks and corporations that controlled their lives and incomes.

The Progressive Movement was the catalyst for political interest groups to coalesce and elect supportive politicians. Progressives influenced the formation of third parties (Progressives and Populists) and elected "progressive" Democrats and Republicans who passed political reform and regulatory legislation. The Progressive Movement affected the Coast Guard. Efficiency and accountability were watchwords of the period. In 1915 President Woodrow Wilson and a reform-minded Congress blended the Life Saving Service and Revenue Cutter Service to create the U.S. Coast Guard. The U.S. Lighthouse Service came on board in 1939. The USCG remained under the Treasury Department, but was to be part of the U.S. Navy in wartime and serve as an adjunct Naval Reserve.

World War I (the Great War) commenced in Europe in 1914. In 1915 the United States government declared its official neutrality, despite America's pro-British biases and trading policies. The United States belatedly entered the war in 1917 when German submarine warfare and American self-interest convinced President Wilson to declare war on the militaristic German monarchy.

Efficiency experts concluded the Coast Guard should be permanently merged with the USN. The new USCG Captain-Commandant Ellsworth Bertholf, the former chief of the USRCS, testified before Congress that a permanent Navy-Coast Guard merger would be counter-productive, inefficient, and costly. Bertholf's testimony convinced Congress to keep the naval services separate.

With the USLSS-USCG merger, Sumner Kimball, the Superintendent of the U.S. Life-Saving Service (1878-1915), was granted a retirement pension. The Coast Guard was a military organization. The former keepers of the USLSS became warrant officers. District superintendents became commissioned officers. Surfmen became petty officers and non-rated enlisted personnel. "Discipline, longevity pay, uniform allowances, and a retirement system were now applicable to everyone in the Service" (O'Brien, 1976, pp. 65-67).

The previous District reorganization plan had placed Lake Superior and Lake Michigan in the Eleventh District. The District contained 22 stations with headquarters at Green Bay (Wisconsin), Duluth (Minnesota) and other Lake Superior, Michigan, Huron and Erie locations. A reorganization plan subsequently placed the Great Lakes stations in the Ninth Coast Guard District with headquarters in Cleveland (Ohio).

Congress passed the Volstead Act on 17 January 1920. As part of the Treasury Department, the Coast Guard was called upon to enforce Prohibition laws, along with other federal law enforcement agencies and state and local police. Minnesota Republican Congressman Andrew J. Volstead, the chair of the House Judiciary Committee, wrote the enforcing legislation. The Eighteenth Amendment was ratified in 1919 and became law in 1920. The Prohibition Act outlawed the production, importation and consumption of alcoholic beverages in the United States. Prohibition enforcement was associated with controversy and corruption. Prohibition came to an end with the Congressional repeal of the 18th Amendment by the 21st Amendment in 1933.

During Prohibition the Coast Guard enforced the law on the Great Lakes and coastal waters. Prohibition enforcement required increased federal appropriations for Coast Guard expansion. Great Lakes smuggling required the doubling of Coast Guard station crews, more patrol boats, enhanced technical support systems, and updated radio communications technology (O'Brien, p. 67).

The frozen winter ice on the Detroit and St. Claire rivers allowed liquor- and beer-laden cars and trucks to drive between Canada and the United States. Observers opined that Coast Guard icebreakers carved channels in the ice to deter alcohol smuggling operations as much as to keep commercial shipping channels open (Beard, p. 71).

Frederick Stonehouse chronicled the Prohibition era in his book, Great Lakes Crime: Murder, Mayhem, Booze and Broads. Incidents of intrigue and danger occurred on dark Great Lakes nights. Small craft from Canada crossed the Detroit River. Rum-runners killed each other in turf wars, were gunned down by Treasury, Coast Guard, and Customs agents, and in turn shot federal law enforcers.

Rum-running boats had armor plating. Airplane engines achieved speeds in excess of 45 miles per hour. Coast Guard craft ranged from 35-foot to 75-foot picket and patrol boats, and 300-foot destroyers that were loaned to the USCG by the U.S. Navy. Aircraft landed on makeshift Minnesota fields. Boats visited ports and depots on Great Lakes shores and Isle Royale on Lake Superior. Shoot-outs occurred in harbors and on the normally passive Apostle Islands north of Ashland (Wisconsin).

Coast Guard officers and enlisted personnel persisted in their dangerous missions. Captured contraband carriers were sold at auctions or became the property of the Coast Guard, Border Patrol, and U.S. Customs.

Unfortunately, the U.S. Attorney General released evidence of corruption in the ranks of federal, state, and local judges and law enforcement officers, and a few members of the Customs Service, Border Patrol and Coast Guard.

Coast Guard and other federal law officers used revolvers, rifles and machine guns. Coast Guard boats and cutters carried a variety of weapons and ordnance. The larger vessels sported deck cannon (Stonehouse, 2004, pp. 37-88).

More than 1,550 criminals were killed in the alcohol wars, "and on the government side of the ledger 55 agents and 15 Customs inspectors and Coast Guardsmen were killed" in the line of duty (Stonehouse, 2004, p. 86).

From 1938 to 1943 the Coast Guard maintained a seasonal presence on the Great Lakes with a detachment at Air Station Traverse City, Michigan. In 1941 a J4F V204 Grumman aircraft joined the JRF V192 at the station. The Traverse City Air Station became the central hub from which Coast Guard aircraft patrolled the Great Lakes. In 1938 the station concentrated on assistance to mariners in distress. Subsequently, multi-mission responsibilities were performed on 24 hours watch under the command of the 9th Coast Guard District in Cleveland.

By 1978 USCG Air Station Traverse City had two Sikorsky HH-52A helicopters and three fixed-wing Grumman HU-16E aircraft. At the end of 1978 the Grummans were retired and replaced by HC-131 aircraft that in turn were retired in 1980. In 1983 two Guardian jets supported Great Lakes and Atlantic missions. In 1986 the Air Station hosted 3 HH-3F Pelican helicopters.

Gradually the Chicago and Detroit air stations aided the Traverse City Search and Rescue (SAR) aircraft. The Great Lakes SAR area is enormous, with a range of 90,000 square miles and 8,000 miles of shoreline. The sailing distance is 1300 statute miles from Duluth to the St. Lawrence River city of Messina, New York. Hundreds of Lake cargo vessels and thousands of small lake and aircraft, hunters and fishermen have challenged Coast Guard SAR capabilities every year. By 1990 Great Lakes missions were carried out by 60 small-boat Coast Guard stations and several large cutters that responded to more than 200 SAR incidents per year.

Environmental protection missions increased in significance as the Great Lakes became impregnated by pollutants from ships, boats and industry, interrupted only by the winter closing of the shipping season. The Great Lakes ice season necessitates the vigilance of Coast Guard icebreaker, helicopter and fixed-wing aircraft crews, which locate ice fissures and widen them to allow the passage of late-season cargo carriers.

ATN responsibilities have traditionally been assigned to buoy tenders and smaller water craft. Helicopters were used in extreme weather conditions at treacherous locations to service the hundreds of radio beacons, fog signals, lights and buoys that had to be inspected and maintained. Great Lakes Coast Guard stations assisted state and federal fishing, forest service, and fire-fighting agencies in the Northern maritime forest realms (Pearcy, 1989, pp. 114-16).

With the onset of World War I in Europe (1914), the threat of espionage in American ports increased. In 1916 the munitions terminal at Black Tom Island in New Jersey, across the Hudson River from the port of New York City, exploded. The accident illustrated the potential threat of foreign agents committing sabotage in U.S. ports from which ammunition was exported to Europe.

President Wilson signed into law the Espionage Act of 1917 which shifted the responsibility of port security from the Army Corps of Engineers to the Treasury Department and the Coast Guard. The new "Captain of the Port" position was initially assigned to Coast Guard officers at the strategic ports of New York City, Norfolk (Virginia), Philadelphia (Pennsylvania) and Sault Ste. Marie (Michigan). The strategic commercial waterway stretching from the Atlantic Ocean to the St. Lawrence River and through Great Lakes locks and waterways had to be regulated, monitored, and secured.

The USCGC Mackinac, under the command of Captain Edward Addison, patrolled the region of the St. Claire, St. Mary's, and Detroit Rivers. Captain de Otte on the USCGC Morrill assisted the Mackinac.

The COTP position in Detroit was assigned to Capt. Addison. The Sault Ste. Marie locks on the American side of the U.S.-Canadian border were administered by the U.S. Army Corps of Engineers and secured by U.S. Coast Guard and U.S. Army personnel throughout World War I (Larzelere, 2003, pp. 178-180).

The Coast Guard policed and inspected domestic and foreign ships that crowded U.S. ports. Coast Guard cutters escorted Allied convoys and patrolled the Atlantic Ocean searching for German submarines (U-boats). Several cutters were damaged or destroyed in collisions and by German torpedoes.

Within domestic territorial waters and on isolated beaches and shorelines between 1914-1915, members of the Life-Saving Service and Lighthouse Service searched for saboteurs and spies and rescued mariners whose ships

were torpedoed by enemy submarines off the Atlantic coast. After 1915 the USCG and the USLHS continued those duties.

At strategic ports and along busy waterways USCG regular and reserve personnel performed port security missions and supervised explosive loading from warehouses onto ships headed for Europe.

Coast Guard aviation commenced during the war with the acquisition of amphibious airplanes (flying boats or seaplanes) that were used for search and rescue, reconnaissance and anti-submarine warfare missions.

The Coast Guard contributed 5,000 enlisted personnel, 200 officers and 15 ocean-going (cruising) cutters to the U.S. Navy in World War I. Cutters and crews dropped depth charges on submarines, performed SAR missions in battle zones, and plucked sailors from damaged ships and flaming petroleum-soaked seas (Ostrom, 2004, pp. 44-46).

Before the 1930s, railroads moved cargo from most cities and towns. Ice-breaking Coast Guard cutters were not operational. It was generally assumed that the Great Lakes would be frozen all winter, and commercial shipping would be suspended. But when oil began to replace coal as winter heating fuel in the 1930s, oil barges were used to transport the bulk product. By necessity, navigational waterways in the northern regions of the United States had to be kept open longer.

A new Coast Guard cutter was designed to meet the icebreaking needs. The USCGC Escanaba was built in Bay City (Michigan) in 1932. The 165-foot cutter had a steel hull and a 1500-horsepower steam turbine. The Escanaba steamed into homeport at Grand Haven (Michigan) in December 1932. The icebreaker appropriately arrived during a blizzard. In the cutter's first month of duty the Escanaba rescued two downed pilots off Lake Michigan ice.

In 1932 the Coast Guard initiated Great Lakes communications technology meetings. Radio stations and shipping companies sent representatives to the conferences, as did the Canadian Ministry of Marine. Distress call methods and technology were conference topics. The Coast Guard assumed the responsibility of coordinating the proposed systems. Captain H. H. Wolfe, the Coast Guard Commander for the Northern Area, devised the Great Lakes Area Distress Coordination Plan.

Annual coordination conferences were subsequently held in the U.S. and Canada. Information was exchanged about new procedures and technologies. Regulations and technological requirements were coordinated with the Federal Communications Commission in Washington, D.C. In the 1920s and 1930s electronic innovations changed ATN technology. Electrical automation came to light signals and lighthouses. The Lake Huron Lightship introduced radio fog signals in 1925. Automated time clocks controlled lighthouse lights.

Buoys were constructed to withstand winter ice movements and not require the traditional removal from specific locations with the onset of winter. Gas-powered buoys allowed easier cylinder refueling and powered more effective lighting devices. Battery-powered fog bells were installed at the Peshtigo Lighthouse Station on Lake Michigan. In 1937 radio-telephone broadcasts from Sault Ste. Marie (Michigan) informed Great Lakes sailors about weather and ice conditions, wreck locations, and navigational obstructions. The system was gradually installed at other Great Lakes radio-telephone broadcast stations.

Electronic advances allowed the automation of selected ATN systems on the St. Clair (Michigan) Lightship and at Peshtigo Reef Lighthouse on Green Bay in Wisconsin. By the late 1930s the advanced electronic systems adopted by the Lighthouse Service required better-educated keepers and assistants.

For greater economic and strategic efficiency President Franklin D. Roosevelt ordered the union of the Coast Guard and the Lighthouse Service, effective 1 July 1939. Lighthouse personnel were allowed to continue their previous civilian status or assume military enlisted rates and officer ranks. The merger brought Great Lakes personnel and the following equipment and stations into the USCG: two thousand aids to navigation; ten lighthouse tenders; 51 radio beacon and weather broadcasting stations; and 58 Coast Guard small boat stations to supplement the cutters Tahoma and Escanaba; and 76 U.S. Weather Bureau observation stations.

The Lighthouse Service and Coast Guard were organized into 13 national Coast Guard Districts. Coast Guard commanders supervised the districts. Captain H. G. Fisher was the first Ninth Coast Guard District commander in charge of the entire Great Lakes region (O'Brien, 1976, pp. 67-71).

CHAPTER 4

THE COAST GUARD ON THE GREAT LAKES

FROM WORLD WAR II TO THE PRESENT

CONGRESS CREATED THE U.S. Coast Guard Reserve in 1939. Designed as the civilian adjunct of the Coast Guard, membership was composed of civilian watercraft owners qualified to do boating safety education and inspection missions.

The USCGR was initially intended to free regular Coast Guard personnel for wartime domestic port security and overseas rescue, convoy and combat duty should the United States become involved in a war that seemed to be inevitable.

Great Lakes Reservists under the command of Lt. Cmdr. R. E. Wood, director of the Ninth District U.S. Coast Guard Reserve, provided weather broadcasts, small craft warnings, and storm alerts out of 15 stations (O'Brien, 1976, pp. 71-72).

World War II commenced in Europe (1 September 1939) with the German invasion of Poland. The United States belatedly entered the war after the Japanese attack on the American military base at Pearl Harbor (Hawaii) on 7 December 1941.

In truth, the U.S. was involved in the war before 1941 through un-neutral European and U.S. Navy and Coast Guard security patrols and merchant ship convoy escorts in the Atlantic Ocean. German submarines sank U.S. civilian and military vessels in this supposedly neutral pre-war period.

President Franklin D. Roosevelt prudently prepared the nation and the Armed Forces for war. Roosevelt signed executive orders authorizing the Coast Guard to recruit thousands of additional personnel and upgrade maritime vessels, aircraft and facilities. Captains of the Port (COTP) tracked and inspected foreign merchant vessels in U.S. ports in search of enemy activities and contraband.

COTPs were designated for 29 strategic national ports, including the Great Lakes port cities of Detroit, Sault Ste. Marie, and Marquette (Michigan); Cleveland (Ohio); Chicago (Illinois); Duluth (Minnesota); and Oswego and Buffalo (New York). Captains of the Ports enforced anchorage regulations and supervised munitions loading on merchant and military vessels.

In February 1941 the civilian Coast Guard Reserve was renamed the Coast Guard Auxiliary. The Coast Guard Reserve became a military component of the USCG. Reservists were either paid full-time Regular sailors or unpaid part-time temporary personnel.

On 1 November 1941 the U.S. Navy absorbed the Coast Guard. On 8 December 1941 the United States government declared war on Japan, and on Italy and Germany three days later. The Ninth Coast Guard District was divided into three administrative areas with headquarters in Cleveland, Chicago and St. Louis.

The significance of Great Lakes shipbuilding and commerce made the region a prime target for wartime espionage and sabotage. Iron ore was shipped to steel plants. Grain, oil and coal and a multiplicity of strategic material and manufactured goods were shipped on the Lakes.

Coast Guard enlisted Regular and Reserve personnel manned lookout posts and guarded maritime facilities and infrastructure. Licensed merchant marine officers supplemented the port security mission as commissioned officers in the Coast Guard Temporary Reserve.

In 1941 aids to navigation (ATN) duties remained consistent with pre-war missions. Two remotely controlled lighthouses were completed in Michigan. One lighthouse replaced the lightship on Lake St. Claire. The other lighthouse was constructed on Saginaw Bay at Gravelly Shoal. In 1942 a new lifeboat station was completed on Belle Isle off Detroit (O'Brien, p. 72).

To keep Great Lakes shipping channels open and extend the transportation season, the construction of a new heavy-duty cutter commenced at the Toledo (Ohio) Shipbuilding Company with a Congressional appropriation of $8 million. The widest (75-foot beam) Great Lakes vessel, the 290-foot icebreaker Mackinaw, was begun in 1943 and launched in 1944. Home-ported in Cheboygan (Michigan) under the command of Commander C. H. Stober, the Mackinaw was at the time the Coast Guard's most powerful cutter with its 10,000-shaft-horsepower engine (O'Brien, pp. 72-73). The 19-foot draft, World War II era USCGC Mackinaw hull designation was WAGB-83 (Polmar, 2005, pp. 594-595).

In 1942 President Roosevelt signed a bill into law that established the Coast Guard Women's Reserve modeled after the U.S. Navy. Lt. Cmdr. Dorothy Stratton assumed command of the Women's Reserve and coined the term SPARs to refer to the female sailors. SPAR comes from the Coast Guard motto, "Semper Paratus (Always Ready)". SPARs could not initially serve overseas, but achieved prominence in the domestic enlisted rates and officer ranks. In 1944 the Ninth Naval District headquarters in Cleveland listed nearly 400 Spars serving in a variety of billets, some as traveling recruiters. In 1945 more than 600 Spars were stationed at Ninth District stations serving in headquarters, hospitals, and communications stations (O'Brien, p. 73).

The contribution of U.S. Coast Guard personnel in World War II is illustrated by the fate of the Great Lakes icebreaker USCGC Escanaba. Transferred to the Atlantic, the Escanaba suffered one of the highest losses of any World War II combat engagement. Four months after rescuing 133 survivors from a torpedoed transport ship, the 165-foot cutter was escorting a convoy from Greenland to Newfoundland when the vessel exploded. The Escanaba sank within five minutes (Ostrom, 2004, p. 76). Lt. Cmdr. Carl Peterson and 100 crewmembers drowned. Two surviving enlisted men were rescued by passing ships in the convoy (Johnson, 1987, p. 226).

Before the war, the CGC Escanaba was stationed at Grand Haven, Michigan. On its fateful journey the Escanaba was escorting a U.S. Army supply vessel. Dodging icebergs and cutting through North Atlantic fog in the early morning of 11 June 1943, the explosion left the two survivors: helmsman and Seaman First Class (SN1) Raymond O'Malley, and Boatswain Mate 2nd Class (BM2) Melvin Baldwin struggling in the cold North Atlantic Ocean.

Speculation about the cause of the sinking included the possibilities of a U-boat torpedo, an on-board depth charge explosion, or an accidental discharge in the ammunition hold on the cutter (O'Brien, 1976, p. 74). The sinking of the Escanaba "was subsequently attributed to a U-boat torpedo" (Johnson, 1987, p. 226).

In May 1944 Yeoman First Class (YN1) Ray Thomas (USCG) was stationed in Duluth (Minnesota) after serving two years in South Pacific combat zones. The Traverse City (Michigan) native joined the USCG in 1940 at the age of 18. In 1942 Yeoman Thomas shipped overseas on transport ships carrying Army and Marine personnel to the South Pacific.

After bringing supplies from New Zealand to various Pacific islands, Thomas trained for amphibious landings to land U.S. military forces and supplies in the Solomon Islands. From the deck of a transport Petty Officer Thomas witnessed the sinking of four U.S. Navy cruisers by Japanese warships. Picking up wounded and dead sailors from the sea was a morbid but rewarding task. Sometimes the passenger list included Japanese prisoners of war. After being stationed on Guadalcanal for one year, YN Thomas was transferred back to the United States (Ridder, "He Saw…, 1944).

During the war years the shipyards in Duluth build several 180-foot buoy tenders which would go on to serve the Coast Guard for decades in aids to navigation, search and rescue, and ice-breaking. In 1943-1944, the Marine Iron and Shipbuilding Corporation and the Zenith Dredge Company of Duluth laid the keels of 20 tenders. Two of the vessels, the USCGC Sundew (WLB 404 and later the WAGL 404), and the USCGC Woodrush (WLB 407, later WAGL 407), served on Lake Superior and were home-ported in Duluth (Scheina, 1982, pp. 141-142).

On 1 January, 1946 the Coast Guard returned from the jurisdiction of the U.S. Navy to peacetime duties under the Treasury Department. The Ninth Coast Guard District under the command of Commodore James A. Hirshfield covered the entire Great Lakes region. Commodore Hirshfield had won the Navy Cross for ramming a German submarine when he was commanding officer of the USCGC Campbell.

Commodore Hirshfield was stationed at the Ninth District headquarters in Cleveland until 1950 when he was appointed Assistant Commandant of Coast Guard and assigned to headquarters in Washington, D.C.

The Ninth District stretched from the Lake Erie shore of New York to Duluth (Minnesota) on the western terminus of Lake Superior. By the end of 1947 the Ninth District was manned by 51 Coast Guard stations; a number of harbor tug boats; the USCG cutters Woodrush, Mackinaw, Acacia, Sundew, Tahoma, Tupelo, and Woodbine; and aircraft from the Traverse City (Michigan) Coast Guard Air Station.

Ninth District Group Offices were located in New York (Buffalo); Ohio (Cleveland); Michigan (Detroit, Charlevoix, Sault Ste. Marie, Portage, Hancock, Ludington); Illinois (Chicago); Wisconsin (Two Rivers); and Minnesota (Duluth).

In 1965 the Ninth District operated 160 shore and floating units, 12 buoy tenders, eighty manned lighthouse stations, and the Huron Lightship. In 1966 Air Station Detroit became operational. The station was supported by three gas-turbine amphibious Sikorsky HH52A helicopters with a 190-mile radius and the capability to complete rescue missions by landing on water or utilizing an airborne hoisting device. In the next decade USCGAS Detroit personnel saved more than 300 lives.

Ostensibly for reasons of bureaucratic efficiency, the administration of President Lyndon Johnson transferred the Coast Guard to the newly created Department of Transportation (DOT) on 1 April, 1967.

By 1969 several old Coast Guard stations had been transferred to the Coast Guard Auxiliary; a new station was built at St. Ignace (Michigan); several lighthouses were automated; and a Coast Guard air detachment was established outside Chicago at the Glenview Naval Air Station (O'Brien, 1976, pp. 79-80).

By the 1970s buoy tenders and tugs served as icebreakers on the Lakes and in harbor and river areas. The largest Great Lakes icebreakers were the cutters Westwind and Mackinaw. The icebreaking cutters extended the season for shipping Michigan and Minnesota iron ore and taconite to the steel furnaces at Chicago and Gary (Indiana).

The 180-foot buoy tender Woodrush, out of Duluth, broke up ice on Lake Superior. The CGC Sundew operated out of Charlevoix (Michigan), the CGC Naugatuck from Sault Ste. Marie, and the USCG Arundel out of Chicago.

The USCGC Mesquite at one time operated on Lake Michigan out of Sturgeon Bay (Wisconsin) and assisted tanker ships on Green Bay. The CGC Raritan out of Grand Haven (Michigan) patrolled Grand Traverse Bay. The cutters Ojibwa and Kaw facilitated the opening of the shipping season on Lake Erie and the St. Lawrence Seaway (O'Brien, p. 82).

Ninth District commanders headquartered in Cleveland from 1942 to 1976, in chronological order of service, were Captain Ralph Dempwolf, Commodore J. Hirshfield, and Rear Admirals Raney, Leamy, Thiele, Kerrins, Miller, Bender, Smith, Rae, Jenkins, Heckman, and Gracey (O'Brien, p. 87).

In 1976, Group Commanders of the Ninth District operated out of offices in Buffalo, Detroit, Duluth, Sault Ste. Marie, Muskegon (Michigan), and Milwaukee. Lighthouse stations were located at Eagle Harbor and North Manitou Shoal (Michigan); Two Rivers and Sturgeon Bay (Wisconsin); Cape Vincent (New York); Devils Island, Bayfield (Wisconsin); Lansing Shoal, Hancock, Detroit, Minneapolis Shoal, Escanaba, St. Ignace, Frankfort, and Thunder Bay Island at Alpena (Michigan); Two Harbors (Minnesota); and Green Bay (Wisconsin).

Ninth District Marine Safety Offices (MSOs) of the Coast Guard in 1976 were headquartered in Buffalo, Toledo, Cleveland, Detroit, and Duluth. Floating Units in 1976 referred to 13 cutters and commanding officers of the vessels stationed on the Great Lakes. Shore Stations consisted of small and large units, small boat stations, cutters (65-foot vessels and larger), and Air Stations scattered throughout the states that shared Great Lakes shorelines. Nineteen light stations brought the total number of Great Lakes Coast Guard units in 1976 to fifty-one.

Coast Guard icebreaker tugs and cutters have battled winter ice since World War II. One of the most extensive winter freezes in recorded Great Lakes history occurred in 1978. Coast Guard tugs and cutters with reinforced bows for icebreaking responded to break up the ice to extend the Great Lakes shipping season (O'Brien, pp. 91-93).

Great Lakes maritime writer James R. Marshall chronicled the missions of World War II buoy tenders built in the Twin Ports of Duluth (Minnesota) and Superior (Wisconsin) in several Lake Superior Journal articles. In "On the Coast Guard Cutter Balsam," Marshall described a phone call from Vermont Johnson, a World War II chief boatswain's mate. BMC Johnson, a Bayfield, Wisconsin resident, sailed on the USCGC Balsam (WLB 62) in the South Pacific.

Chief Johnson described how the crew sunk a Japanese submarine with depth charges and rockets while convoying a U.S. Navy munitions ship. The CGC Balsam stood ready to ram the sub with its icebreaker-reinforced bow. Marshall weaves a marvelous story, but his article erroneously claimed the Balsam was the only cutter to sink a submarine in World War II (Marshall, 1999, pp. 151-155).

Marshall chronicled the story of another World War II era cutter built in Duluth: the USCGC Mesquite (WLB-305) and its disastrous December 1989 mission on Lake Superior, off Keweenaw Point (Michigan). At approximately 2:00 AM, the Mesquite ran aground on rocky shoals marked by the buoy the cutter crew had just skillfully hoisted aboard the 180-foot tender.

The Mesquite crew was rescued by commercial and Coast Guard air and sea craft. The Canadian Coast Guard rendered assistance. Attempts to salvage the cutter were thwarted by 10-foot seas, and the cold 1989-1990 winter during which the Mesquite remained on the shoals. In the spring the salvage operation was completed, and the Mesquite was sunk 1.5 miles from the accident site in 120 feet of water.

Captain Jimmy Hobaugh supervised the Mesquite salvage and sinking operations as commander of Coast Guard Group Sault Ste. Marie, Michigan. Capt. Hobaugh was the commander who led the USCGC Woodrush out of Duluth into stormy Lake Superior seas in search of the cargo carrier Edmund Fitzgerald that sank in Lake Superior in the November blizzard of 1975 (Marshall, 1999, pp. 144-150).

The Coast Guard was blamed for the USCGC Mesquite grounding, just as, to a lesser extent, the USCG was criticized for alleged policy and procedural errors in response to the sinking of the Fitzgerald. The Department of Transportation Coast Guard Marine Casualty Report, issued in 1977 after two years of hearings, investigations, and analysis, attributed the sinking of the Fitzgerald to the pounding the vessel took in 20-foot seas and winds in excess of 70 miles per hour. The USCG concluded faulty hatch covers contributed to cargo hold flooding which caused the ship, running without radar in hurricane-force winds, snow, and high seas, to dive into a huge trough and plunge straight to the bottom of Lake Superior.

U.S. Coast Guard recommendations for the prevention of future disasters and to facilitate rescues, included the following: increase the frequency of commercial ship inspections and safety drills; revise cargo loading and freeboard regulations; coordinate Coast Guard ship repair schedules to increase the availability of rescue craft capable of SAR missions in heavy sea and weather conditions; mandate the issuance of insulated clothing to protect mariners in frigid Great Lakes waters; and require the purchase and use of enclosed capsule life-boats and inflating life-rafts to protect crews in abandon-ship situations (Stonehouse, 1998, pp. 122-166).

In its 1977 report, the Lake Carriers Association (LCA) responded to the Department of Transportation Coast Guard Investigation Report on the SS Edmund Fitzgerald Sinking. The LCA concurred with the USCG on ship inspections, crew training and drills, and survival equipment. But the LCA favored the shoal theory that the Fitzgerald bottomed out in heavy seas and darkness on the shallow bottom and rocks extending from Caribou Island.

The LCA recommended the installation of electronic depth finders on all Great Lakes cargo carriers, and criticized the Coast Guard because the Whitefish Bay radio beacon was inoperative and Whitefish Bay light was reportedly not visible (Stonehouse, 1998, pp. 167-180).

The National Transportation Safety Board (NTSB) issued its findings in 1978. The NSTB agreed with several USCG and LCA conclusions, but concluded that some of the hatch covers on the Fitzgerald may have exploded off the deck, allowing water to flood the cargo holds. The NTSB and several maritime experts criticized the allegedly inadequate assets, logistical placement, and response time of Coast Guard air and sea rescue craft to the Fitzgerald disaster. Critics recommended the upgrading and training of Coast Guard personnel and assets in preparation for future storm-driven disasters (Stonehouse, 1998, pp. 181-198).

In the aforementioned 1989 USCGC Mesquite incident, Coast Guard investigators held several officers and crewmembers of the buoy tender directly responsible for the loss of the vessel. The Coast Guard report concluded that Mesquite officers had not used navigational equipment properly and had made errors in judgment. Ultimately, the officers and enlisted personnel of the Mesquite received both honors and disciplinary action for, or failure to prevent, the grounding of the cutter (Ostrom, 2004, p. 109).

Frederick Stonehouse traced the grounding of the Mesquite in his book, "Death of A Coast Guard Cutter." Stonehouse interviewed the former commander of the USCGC Woodrush, Capt. Jimmie Hobaugh. Captain Hobaugh said the most experienced Coast Guard personnel were not on the bridge of the Mesquite at the critical time. Capt. Hobaugh said responsible personnel must know how to complete the mission with traditional methods and calculations if advanced technology fails. The crew did not navigate properly, Hobaugh asserted, when the cutter backed away from the newly placed buoy in the strong current and dark and windy conditions. Navigation is critical in buoy maintenance, Capt. Hobaugh insisted, because buoys as a matter of function are placed in dangerous navigation locations (Stonehouse, 1991, pp. 83-93).

The Globe Shipbuilding Company of Superior (Wisconsin) built commercial vessels and ships for the U.S. Navy and Coast Guard. McDougal-Duluth Company launched cutters as early as 1941. Duluth's Marine Iron and Shipbuilding Corp. launched five cutters in 1942-43, including the ill-fated 180-foot buoy tender Mesquite (WAGL 305), which served with distinction on Lake Michigan and Lake Superior (Scheina, 1982, pp. 61, 96).

The strategic importance of Twin Ports shipyards during World War Two was indicated by the consistent presence of federal law enforcement officers, including FBI and Coast Guard officials, to monitor port security and investigate sabotage and espionage allegations (Beck and Labadie, 2004, p. 162).

The Twin Ports contributed to the war effort by hiring more than 14,000 workers to build 200 ships in seven yards: Zenith Dredge, Marine Iron and Shipbuilding, Globe Shipbuilding, Lake Superior Shipbuilding, Barnes Duluth Shipbuilding, and Walter Butler Shipbuilders. The shipbuilding tradition at the head of the Great Lakes dates back to the 1870s.

Zenith Dredge and Marine Iron built 38 buoy tenders and other Coast Guard cutters between 1942-44. Globe Shipbuilding launched 27 cargo carriers, tugs and U.S. Navy frigates in the same period. The Marine Iron and Zenith Dredge companies built 38 Coast Guard 180-foot buoy tenders and cutters during the war years.

Twin Ports residents contributed to the war effort by serving in the U.S. Merchant Marine fleet that plied the dangerous waters of the world to bring essential supplies to the nations that were fighting the Rome-Berlin-Tokyo Axis (Beck and Labadie, p. 163). Thousands of civilian merchant mariners suffered injuries in stormy Atlantic and Pacific seas. Hundreds were killed in air and torpedo attacks upon their vessels by enemy forces.

The shipbuilding companies hired buses to pick up and return workers to Duluth and Superior neighborhoods and to the outlying towns of Philips and Ashland (Wisconsin), and Hinkley and Aitkin (Minnesota). The Northern Pacific Railway transported shipyard workers, including hundreds of women employees, who made critical contributions the economy and national defense (Beck and Labadie, pp. 160-170).

Among the patriotic and entrepreneurial leaders whose administrative skills contributed to victory was Clarence Skamser. The former Superior Association of Commerce director, in his capacity as President of the Globe Shipbuilding Company, traveled to Washington, D.C. to acquire construction contracts. By the end of 1942 Skamser had contracts to build eight U.S. Navy frigates and ten tugboats (Beck and Labadie, p. 167).

The thirty-eight 180-foot Coast Guard buoy tenders built by the Zenith Dredge and Marine Iron shipyards (1942-1944) were exemplary vessels for the multi-mission Coast Guard. Modeled after the lighthouse tenders,

the cutters were designed for search and rescue and icebreaking missions at the considerable cost in the 1940s cost of about $900,000 each.

Among the 180s was the famed Duluth-Superior based cutter Woodrush (WLB-407, WAGL-407) that sailed Lake Superior in fair weather and foul between 1944-1978. After the Duluth tour of duty, the cutter finished its maritime years in Sitka, Alaska from 1980-2000.

The CGC Sundew (WLB-404, WAGL-404) serviced buoys, served as an icebreaker, and carried out SAR missions from the Twin Ports and Lake Superior until 2004, when it was anchored for permanent display at Canal Park in Duluth (Beck and Labadie, pp. 172-173). The USCGC Alder (WLB-216) succeeded the Sundew.

As the war came to a close, the loss of military contracts for Navy and Coast Guard ships dried up Twin Ports dry docks. American Ship Building Company in Superior sold its site to Knudsen Brothers Construction. The superintendent of the Knudsen shipyards, Duluth native Robert Fraser, had worked for decades in the industry: in 1955 Fraser and Byron Nelson purchased the Knudsen shipyard and formed the Fraser-Nelson Shipbuilding and Dry Dock Company.

Over the next decade Fraser-Nelson built huge, automated state-of-the-art bulk freighters. With Nelson's retirement (1964), Fraser Shipyards continued its operations and gained a reputation for building self-unloaders and converting Lake carriers from coal-fired to diesel-powered ships. Vessel repair and innovation provided consistent profits for Fraser and employment for Twin Ports residents.

Trevor White served as general manager of the Fraser Shipyards after 1990: prior to that, he was an engineer with the firm. Lake Superior maritime historians Beck and Labadie included a 1965 photograph in their book that features White conferring about ship safety and inspection issues with U.S. Coast Guard officers Lt. Cmdr. Edward J. Giesler and Captain Mark Hocking (Beck and Labadie, pp. 186-187).

The Great Lakes Carriers Association monitors the Soo Locks at Sault Ste. Marie (Michigan) and the cargo shipped through them. The Locks are generally closed to ship traffic from mid-January through late March. The reopening of the Locks opens the Great Lakes shipping season. Icebreaking cutters force passageways through ice up to five feet thick by the Soo Locks at the St. Mary's River and Sault St. Marie.

The Soo Locks are the navigation connection between Lake Huron and Lake Superior. Iron ore is shipped from Minnesota to the lower Great Lakes steel mills. Wheat, corn, coal and petroleum are significant cargoes. Industrial plants welcome the Coast Guard icebreakers because stocks of petroleum, limestone and iron ore get depleted throughout the winter and new supplies are needed.

The 1978 Great Lakes winter freeze constituted one of the worst ice conditions in recorded history. The ice was unusually extensive in thickness, solidity, and area. In 1994 the extent and thickness of the spring Lake ice reached 1978 levels. In the 1994 freeze the Coast Guard used nine icebreakers in the worst areas of the Mackinac Straits connection, between Lake Huron and Lake Michigan, and on White Fish Bay on Lake Superior. That spring the 50-year-old World War II era CGC Mackinaw was cutting pathways through the Sault Ste. Marie-St. Mary's River channel. The 290-foot Mackinaw received extra funding for its mission, and earned a reprieve from scheduled de-commissioning and retirement.

In 2002 the USCGC Dolphin sliced through arctic temperatures and wind chills on the St. Claire River and Lake Erie near Detroit (Michigan). A hovering Coast Guard helicopter mapped the ice and forwarded tactical information to the cutter to facilitate efficient maneuvering. The previous week the CGC Mackinaw and 140-foot cutter Neah Bay teamed up to guide several freighters through the frozen waters. The cutters were assisted by the CGC Bristol Bay and the Canadian Coast Guard in a joint mission to keep the ice and the economy moving.

While guiding the icebreakers, the helicopter watched over fisherman who had driven their vehicles over the ice half a mile from shore. As in the fall, spring weather on the Great Lakes can be extreme and unpredictable. Snow, sleet and rain can appear suddenly. Ice shifts and melts. Coast Guard personnel maintain their professional readiness to launch helicopters and traverse the ice on foot and in specialized craft to rescue imperiled fishermen (Ostrom, 2004, pp. 131-132).

After the 11 September, 2001 terrorist attacks upon the United States by Islamic extremists, Coast Guard Commandant Adm. James Loy and the men and women of the Regular, Reserve, and Auxiliary responded with dispatch, as did other military services, religious organizations and clergy, federal, state and local law enforcement, fire fighters, other public safety officials, and health care professionals. The Coast Guard conducted joint patrols with Canadian and U.S. law enforcement officials.

The Ninth Coast Guard District increased its Great Lakes security presence within hours of the attacks. Rear Adm. James Hull, the Ninth District Commander, ordered the formation of a maritime security force and called the U.S. Coast Guard Reserve to active duty. The civilian Coast Guard Auxiliary provided support at sea and air stations and at Maritime Safety Offices.

In 2003 the USCG became part of the new Department of Homeland Security. In 2004 Coast Guard units were sent to the Mediterranean and Persian Gulf during Operation Iraqi Freedom. U.S. Coast Guard Regular and Reserve units on the Great Lakes were sent to the Middle East on port security missions, to secure U.S. Navy assets, and to join inter-service combat patrols. The War on Terrorism influenced global and domestic Coast Guard missions. National security became a priority mission.

The strategic significance and complexity of the Ninth Coast Guard District is illustrated by a review of its infrastructural components: 12 nuclear power plants; the ports of Duluth, Superior, Milwaukee, and Chicago; three international bridges and several significant bridge spans within U.S. waters; and a 1500 mile maritime border (Ostrom, 2004, pp. 181 and 225; Dechant and Fawcett, "D9 Steps Up Great Lakes Security...," 2001-2002, p. 13).

Admiral James M. Loy, U.S. Coast Guard Commandant (1998-2002), initiated the building of the next generation of Great Lakes icebreakers. Adm. Loy's successor, Admiral Thomas Collins, continued the expansion and upgrading of Coast Guard air and sea platforms. Manitowoc Marine Group's Marinette Marine Corporation awarded a contract to ABB Marine to produce electric propulsion systems scheduled for delivery in 2005. A new cutter was scheduled to replace the World War Two era USCGC Mackinaw. The high technology icebreaker was to have a 360-degree steering capability and contain no mechanical gears ("The Industrial Base," 2002, p. 31).

The strategic and economic significance of the North Central states in the Great Lakes region is difficult to overstate. The importance of the region to national security and economic productivity explains the importance of Coast Guard presence.

Duluth has long maintained a Marine Inspection Office (MIO) that coordinates activities with local, state and federal law enforcement, and commercial and port authority agencies, including the U.S. Army Corps of Engineers. The Coast Guard posts a Captain of the Port in Duluth. The Duluth-Superior ports host hundreds of U.S. and foreign merchant ships each year, as do smaller ports on the southern and western Lake Superior shorelines. The Minnesota North Shore extends to Canada.

Huge domestic and international lake carriers transport cargo to and from the Twin Ports. Duluth and Superior are among the top twenty ports in total tonnage in the United States, despite the fact that winter ice closes the harbor for three months each year.

Coast Guard stations on the Upper Peninsula of Michigan, along the Lake Superior shoreline, serve the region with an assortment of specialized boats, cutters and helicopter aircraft. Lake Superior Coast Guard stations are located in Duluth and Grand Marais (Minnesota); Bayfield (Wisconsin) near the Apostle Islands; and Station Portage in Dollar Bay, Michigan.

Ninth Coast Guard District personnel are called the "Guardians of the Great Lakes." The Ninth District boundaries include the shores and major rivers of the states of New York, Pennsylvania, Illinois, Ohio, Indiana, Minnesota, Wisconsin and Michigan. In January 2001, Great Lakes Coast Guard units included 5,000 Auxiliary, 600 Reserves, and 70 civilian employees in 92 units and 48 stations who assisted 2000 Active Duty Coast Guard personnel. Coast Guard stations and units were responsible for the following assets: 200 small boats; 2 air stations and 2 air facilities; 2 LORAN stations; and 10 cutters. The events of 11 September 2001 led

to increased Coast Guard appropriations and increased assets, more active duty personnel, increased recruitment, and the calling up of Coast Guard Reservists (Ostrom, 2004, p. 182).

An estimated 7,000 SAR missions are launched annually in the Ninth District. Three 180-foot buoy tenders serve as icebreakers. As the 21st century commenced, the construction of the next generation of buoy tenders and icebreakers began at the shipyards in Marinette (Wisconsin).

The World-War-Two era 180-foot cutters served long and well. The "180s" and other icebreaking cutters were scheduled for replacement by 225-foot Juniper and 175-foot Ida Lewis Class cutters equipped with the latest nautical technology.

The Ninth Coast Guard District Coast Guard units maintain more than three thousand aids to navigation. Eight Marine Safety Offices under nine Captains of the Port administer Great Lakes activities ("Ninth Coast Guard District," 2002).

Rear Admiral Ronald F. Silva was the Commander of the Ninth Coast Guard District in 2002, having succeeded Vice Admiral James D. Hull. Prior to assuming the Great Lakes command, Admiral Silva had been Chief Engineer and Assistant Commandant for Systems, responsible for USCG engineering and logistics. The Connecticut native graduated from the U.S. Coast Guard Academy in 1971 and served on three cutters and at several shore commands before taking command of the Ninth District. Adm. Silva earned an advanced degree in engineering and several commendations, medals and other awards ("Ninth Coast Guard District: The Admiral's Corner," 2002).

The USCGC Alder (WLB 216) was launched on 7 February, 2004, delivered to the USCG on 2 September, and scheduled to sail to the homeport of Duluth on 17 October, 2004. The Alder replaced the USCGC Sundew in Duluth (Office of Coast Guard Historian, 26 February 2005, Washington, D.C.). The Sundew was decommissioned and stationed at the Canal Park Maritime Museum in Duluth.

Marinette Marine Corporation in Marinette, Wisconsin built the USCGC Adler, a 225-foot, 2,000-ton sea-going buoy tender. The Alder is equipped with advanced engineering and navigation systems that allow the cutter and its crew to handle all of the Coast Guard missions: law enforcement, ATN, SAR, icebreaking, marine environmental protection, and homeland security. Lieutenant Commander Steve Teschendorf accepted command of the Alder on 2 September, 2004. Lt. Cmdr. Teschendorf took the cutter and its crew through each of the five Great Lakes, testing every system and technology on the vessel ("Cutter Alder Homeward Bound," 2004).

The Duluth Coast Guard Station is the home of an ATN team and an electronic support detachment that maintains shore, boat and cutter electronics equipment in the Twin Ports and area units.

Area Coast Guard Reservists train at the Duluth Station. Coast Guard Auxiliary members have performed important duties at the station and conduct boating safety classes and inspections (Ostrom, 2004, pp. 181-182).

The Ninth Coast Guard District's Cleveland headquarters is included in the Atlantic Area on organizational charts and maps. The other Atlantic Area Districts are the First (Boston); Fifth (Portsmouth, Va.); Seventh (Miami); and Eighth (New Orleans).

New challenges confront the Coast Guard units on the Great Lakes. Coast Guard responsibilities have increased significantly under the Department of Homeland Security (Ostrom, 2004, pp. 183-184).

CHAPTER 5

STATION DULUTH: 1866 TO THE PRESENT

THE U.S. COAST GUARD was founded in 1790 and placed in the Treasury Department, under the supervision of Secretary Alexander Hamilton. The naval service was called the U.S. Revenue Marine and then the U.S. Revenue Cutter Service before becoming the Coast Guard in 1915.

When the 200th anniversary of the service was commemorated in 1990, the Coast Guard had been in Duluth (Minnesota) for about 100 years. The Steamboat Inspection Service was operating in the growing Duluth port in the 1870s. The U.S. Lighthouse Service (USLHS) and the Steamboat Inspection Service were eventually absorbed in the 1939 merger with the USCG.

Prior to the merger, the USLHS operated a light in southeastern Lake Superior on Whitefish Point in 1847, and in Duluth at Minnesota Point in 1857.

During the Civil War (1861-1865) naval ships and civilian commercial watercraft evolved from sailing to inherently hazardous steam vessels that were monitored by the Steamboat Inspection Service ("The Coast Guard: A Port Fixture…," 1990).

In 1873 the United States Life-Saving Service (USLSS) initiated the use of larger self-righting, pulling (rowing), and sailing lifeboats and surfboats. The boats were modeled after the life-saving craft of the British volunteer Royal National Lifeboat Institution (RNLI).

Before the advent of motorboats, the modified life-boats were helpful at Great Lakes stations where endangered mariners and ship's passengers might be several miles from stations, accessible beaches and roads, and surf men were challenged by winter snow and ice (Beard, 2004, p. 185).

A variety of revenue cutters sailed the nineteenth-century Great Lakes. The U.S. Revenue Cutter Fessenden was a sleek, white, two-masted, iron-hull, side-wheel paddle steamer (Beard, 2004, p. 37). The USRC Fessenden was launched in 1883 at the Union Drydock Company in Buffalo (New York). The new iron ship replaced the wooden cutter of the same name, and sailed the Great Lakes until 1903. The Fessenden was the last side-wheel steamer in the Revenue Cutter Service: it sailed Lakes Erie, Huron and Michigan. The 190-foot cutter had an 8-foot draft: transferred to the Gulf of Mexico, the revenue cutter was sold in 1908 (Canney, 1995, p. 46).

The location of the U.S. Life-Saving Service Station and Lifeboat Station at Duluth dates to 1866, one year after the end of Civil War. The land for the USLSS Station was donated by the City of Duluth on 19 June 1866. The land plot of Franklyn Square was located on Minnesota Point, which extends into Lake Superior. The warranty deed was provided by the City of Duluth on 29 July 1890, but not officially recorded until 1894. The 1890 date is stated in city records as the "Date of Conveyance." The station was completed in 1894 and categorized in architectural style as "Station Type: Duluth."

Donald McKenzie was appointed the first Duluth USLSS station keeper in March 1895. McKenzie died from cancer three years later. Murdoch A. McLennan was appointed keeper in 1898. Federal records indicate he was still at his post in 1915.

The Annual Report of the Life-Saving Service for Fiscal Year Ending 30 June 1894 listed the Establishment of Stations. The report noted that the Duluth Station was receiving its equipment, and was "manned and put into operation." The station was listed in the Tenth Life-Saving District. Today the Duluth Coast Guard Station is part of the Ninth District.

In fiscal year 1895 the report described the Duluth Life-Saving Station crew coming to the aid of the cargo schooner Sam Flint under the command of Captain Sevens. The sail-powered vessel was carrying copper ore from Duluth to New York when it was stranded one mile northeast of the Duluth port. The cargo was valued at $10,000 and the schooner at $12,000. Personnel from the Duluth Life-Saving Service and a tugboat saved the vessel and all persons on board.

One steam vessel collided with another boat and sank about one mile from the station in September 1895: one crewman was not recovered. In the same month another steamer was damaged in Duluth Harbor: the 20-man crew was saved.

The federal Annual Report of 1896 recorded 11 rescues that the Duluth Station made on sailboats, small boats, and steam vessels. In July 1896, a 77-ton steamer was towed into safe waters. Seven smaller boats were assisted in 1897. Eighteen rescues of sailboats, sloops and yachts occurred in 1898. The sinking of the steamer Record in Duluth Harbor in June 1898 cost three lives. In 1899 the Duluth Station responded to 13 rescues, including the rendering of assistance to a 2,476-ton steamer one mile from the station with no loss of life.

In 1900 fourteen vessels were assisted by Duluth Life-Saving crews, including a steamer with a coal cargo valued at $10,000 in a vessel worth ten times as much. From 1901 to 1915 ten rescues and assistance cases were recorded.

The Duluth Life-saving Station crews and their compatriots throughout the United States maintained visual watches and harbor patrols on adjoining shorelines. They stood ready to launch lifeboats and row to the aid of vessels and mariners in distress in fair and foul weather.

In 1915, under the jurisdiction of the U.S. Coast Guard, the Duluth Life-Saving Station became the Duluth Lifeboat Station. Radio voice communications were then installed along with an electronic repair shop, light station, and office facility ("Station Duluth, Minnesota," 2000).

One of the most extensive and perilous Lake Superior storms to challenge Station Duluth and the USLSS occurred on November 27-28, 1905. The traditional November storms which plague Lake Superior struck with particular violence, damaging or sinking 30 cargo vessels and taking more than 60 lives.

Maritime writer Konnie LeMay described "one fatal drama" in the 1905 storm "played out before an estimated 10,000 horrified witnesses in Duluth…and 24 men stranded on a vessel just beyond reach of help and hope…Nine of the crew had drowned or were frozen or battered to death in the storm branded forever with the name of their stout ship: the Mataafa Blow" (LeMay, "For Those in Peril on the Sea," 2005).

On the western edge of Lake Superior 11 cargo carriers were beached, split in pieces, or seriously damaged from Split Rock (the site of a future lighthouse built after the storm) to Duluth's Park Point. The Duluth crew of the USLSS ventured into the frigid, storm-tossed waves in their stout but vulnerable, open, oar-powered lifeboat to save the surviving mariners from two grounded vessels. The Mataafa was a 430-foot steel steam-powered ore carrier under the command of Captain Richard Humble. Capt. Humble survived to explain the 12 hours of sailing jeopardy along the North Shore and the failed attempt to get safely into port.

Winds estimated between 60-80 mph and blinding snow prevented successful navigation from the bridge. The Mataafa ran aground outside the Duluth Canal and was broken apart by the wind and waves 230 yards from shore. Several attempts by the USLSS crew to shoot a lifeline and breeches buoy to the survivors to sit on and be pulled to shore failed in the freezing, night-time temperatures. The next day, USLSS personnel saved 15 survivors in two rowing trips, and waited until the following day to recover nine frozen corpses (LeMay, 2005).

Modern navigation technology has not prevented subsequent November groundings. On 18th November, 1985 the Liberian cargo carrier Socrates was driven by 70 mph winds on to Minnesota Point in Duluth. Thousands of city residents watched as the ocean-going vessel, only 100 feet from shore, was dredged free and pushed into deeper water by tugboats. The Coast Guard rescued the crew before the six-day dredging project commenced (MacKay, "View Point," 2005).

The Duluth USLSS station was built in 1894 and commissioned in 1895. In 1897 Station Duluth included Keeper Don McKenzie and crew members John McLeod, Charles Foss, George Emerson, John Creighton, Angus Gillis, Billy McKay, Henry Casey, and John Woods. In 1947 Woods was the surviving member of the U.S. Life-Saving Service, Lighthouse Service, and Coast Guard in Duluth. Mr. Woods retired in 1940 after a 42-year career in lighthouses, lifeboats and on beach patrol in fog, snow, cold, and heat of the Minnesota seasons.

Rowboat crews achieved rescues off Lake Superior shores with 14-foot oars going out into waves and surf. Boat transportation to outlying sites was accomplished by putting lifeboats on horse-drawn wagons and railroad flat cars.

The 1947 Duluth Coast Guard Station crew included Chief Boatswain's Mates Lawrence E. Lane and Henry V. Devereaux; Chief Motor Machinist's Mate Wesley Sommers; Boatswain's Mate First Class William W. Muessel; and Seaman First Class James E. Michael (Gustafson, "Landlubber…," 1947).

Motorized lifeboats made the tasks of lifeboat crews easier, but no less dangerous. Built in 1929, the self-bailing, 10-ton, open, self-righting boats could reach speeds up to 10 miles per hour. The 36-foot boats took crews out onto the rough, sometimes ice-laden Great Lakes on rescue missions for 50 years in search of lost

fishermen, mariners in distress, and wrecked vessels. Crews had to dress warmly in Great Lakes weather because of the danger of exposure to cold and icy waters and chilling winds (Beard, 2004, pp. 186-187).

The role of the Captain of the Port (COTP) in Duluth and other U.S. ports is significant. The Duluth COTP coordinates Coast Guard responsibilities with the Duluth Seaway Port Authority.

The threat of World War I espionage and sabotage stimulated the U.S. Navy and the Treasury Department to place Coast Guard officers as Captains of the Port. The Espionage Act of 1917 vested authority in the COTPs. Congress passed the Act after a French ammunition ship sailed out of New York City, collided with another vessel, and exploded in the Canadian port of Halifax in Nova Scotia. Two thousand people were killed on land and water in the disaster.

The Coast Guard already had significant port supervision authority from the River and Harbor Act of 1915. The Espionage Act expanded USCG responsibilities in anchorage areas. COTP offices were initially established in New York City, Philadelphia, Norfolk (Virginia), and Sault Ste. Marie (Michigan). COTP offices were soon after established in Duluth and other port cities throughout the nation.

By 1990 the Coast Guard infrastructure in the Duluth harbor area included a Marine Safety Office (MSO), an active duty roster of more than 100 personnel, and the USCGC Sundew. The Coast Guard Reserve Unit listed an additional 50 members ("The Coast Guard…," 1990).

The Coast Guard Auxiliary is the uniformed civilian volunteer support system for the Coast Guard. The USCGAUX in Duluth carried out missions of public boating safety, boat education, boat inspections, Coast Guard recruitment, aids to navigation (ATN), and environmental patrols.

In 2000, the Western Region Auxiliary Division of the Ninth Coast Guard District had about 175 auxiliaries from the three-state area of Michigan, Wisconsin, and Minnesota operating in flotilla units located in Duluth; Superior and Bayfield (Wisconsin); and other Great Lakes harbor communities (Lewis, 2000).

Winter Coast Guard duties on western Lake Superior included icebreaker patrols and practice walking on shifting ice blocks to prepare for rescue missions ("Going With the Floe," 1999).

After a 10-year absence, the USCG reopened the Duluth recruiting office at Park Point in 1999. The two new recruiters exemplified the diverse duties and backgrounds of Coast Guard personnel. Yeoman First Class Tammy Shourds brought 15 years of training, office administration, air station and cutter duty to the assignment. Radarman Second Class Vince Grochowski came to Duluth after cutter duty off the California coast (Tammy Shourds, "Coast Guard Corner," 1999).

Cmdr. Bill Diehl, a U.S. Coast Guard Academy graduate and naval architect, served as Captain of the Port (COTP) in Duluth from 1999-2002 before being transferred to Hawaii. Davis Helberg, then executive Director of the Duluth Seaway Port Authority, commended Cmdr. Diehl for his outreach to the port authority and the shipping, security, law enforcement, commercial, and civilian communities (Passi, "Coast Guard Official…," 2002).

On Cmdr. Diehl's watch the Duluth Coast acquired a new 47-foot Motor Life Boat (MLB) and a 49-foot Utility Boat (UB). The MLB cost over a million dollars. The vessels would be used for SAR, ATN, environmental protection, and other patrol duties. Coast Guard enlisted personnel involved in maintaining and operating the vessels included Petty Officers Scott Harroun and Edward Waldrop; and Chief Petty Officers Scott McAloon and Gerald Backus (Jackson, "New Boats…," 2000).

After the 9.11.01 terrorist attacks, the COTP and Coast Guard Station Duluth upgraded the port security and national defense capacities. Chief Warrant Officer Bob Hildebrand and his Coast Guard team assessed security risks and developed plans to increase protection and response contingencies in the Twin Ports of Duluth and Superior. Twin Ports shipping and port infrastructures, railroads, grain elevators, and petroleum facilities were potential targets. Cmdr. Diehl requested and received suggestions from port officials and business representatives for improving security. The ideas including hiring trained private security personnel and establishing better communications with area public safety agencies and emergency medical personnel.

Coast Guard tactics included increased unannounced inspection visits to national and international vessels and crews docking at Duluth-Superior harbor facilities. USCG inspectors Cliff Morton and Ryan Moehn were among the Coast Guard personnel assigned to security duties

Security meetings were held with Cmdr. Diehl, Duluth-Seaway Port Authority Director Davis Helberg, and representatives from the business and shipping communities as Coast Guard Commandant Admiral James M. Loy announced the increased sharing of intelligence assets with U.S. Customs and the Immigration and Naturalization Service (Passi, "Teams Inspect Twin Ports…," 2001).

In July 2002, Cmdr. Hung M. Nguyen assumed command of Duluth operations from Cmdr. Bill Diehl. The change of command ceremony was held at the Coast Guard MSO. Ninth Coast Guard District Commander, Rear Admiral Ronald Silva, presented Cmdr. Diehl with the Meritorious Service Medal for his work in maritime safety, homeland security, and articulation with public safety agencies ("Change of the Guard," 2002).

The Coast Guard has historically accepted women into the ranks of its personnel and honored their achievements. Coast Guard Station Duluth continued that tradition. Petty Officer Third Class Genevieve Aragon was designated the Coast Guard MSO Duluth Sailor of the Year in 2003. PO3 Aragon was honored for her academic and professional achievements as a Marine Science Technician and establishing training and policy standards in marine science and port security operations. As Sailor of the Year Aragon was eligible for nomination as Enlisted Person of the Year in the Ninth Coast Guard District, selected from a cohort of 1800 Great Lakes region enlisted personnel ("In Review…," 2002).

Commander Beverly Havlick served three years in Duluth as the first female captain of the USCGC Sundew. Cmdr. Havlick was then transferred to an ATN command in Honolulu (Hawaii) in the summer of 2003. Cmdr. Steve Teschendorf, who later participated in the decommissioning ceremony of the World War II era Sundew, succeeded Cmdr. Havlik. Cmdr. Teschendorf then assumed command the new USCGC Alder that was built in Marinette, Wisconsin (Frederick, "Sundew Command…," 2003).

In 2005 Captain Jane Hartley was serving as the first female USCG COTP of the Port of Wilmington (North Carolina). Captain Hartley supervised hundreds of Coast Guard Regular, Reserve, and Auxiliary personnel. The Port of Wilmington served commercial, international, and military vessels that loaded and unloaded a variety of goods, including ammunition and other dangerous cargo. Port security requirements after 9.11.01 and, after 2003, the presence of military vessels headed to the Iraq War increased the strategic significance of the Port of Wilmington.

Capt. Hartley headed the Marine Safety Office in Wilmington when Hurricane Isabel caused millions of dollars in environmental and infrastructural damage. Oil and hazardous waste spills added to the dangers. Capt. Hartley credited her administrative ability to previous Coast Guard training and experience, including "responding to ice-jammed rivers as the Marine Safety Office Executive Officer in Duluth…" (Beard, 2004, pp. 238-239).

In 2001 Cmdr. William J. Diehl and Lt. Cmdr. Andrew C. Palmiotto administered MSO Duluth, assisted by civilian secretary Julie Envall, Yeoman 2nd Class Andrew D. DePoe, and Storekeeper lst Class R. Web Tuck. The Inspections Department consisted of five assistant marine inspectors, one marine inspector, one senior marine inspector, a senior investigating officer, and a department head.

Five inspection petty officers possessed port security, marine science, and machine technical rates. Lt. Mike C. Farrell and Lt. Cmdr. Greg V. Guenard headed the Inspections Department, assisted by two chief warrant officers. The Port Operations Department was headed by Lt. Randall G. Wagner, assisted by Chief Warrant Officer Robert N. Hildebrand, a staff of seven enlisted marine science and machinery technicians, and a chief marine science technician.

The geographic area of responsibility of MSO Duluth included the western half of Lake Superior and the ports of Duluth and Grand Marais (Minnesota); Superior (Wisconsin); and the ports of Houghton and Marquette on the Upper Peninsula of Michigan. The Maritime Security Mission of MSO Duluth has included the interdiction of illegal aliens, drugs, and contraband; and the enforcement of fishing regulations and federal maritime law. After 11 September 2001, MSO Duluth upgraded its port security and defense responsibilities and increased

patrols off the shores of Lake Superior's tri-state area (Minnesota, Wisconsin and Michigan), and the 450-mile border adjacent to Canadian sovereign waters.

MSO Duluth enhanced communication and contacts with regional local, state and federal law enforcement agencies, the Duluth Seaway Port Authority and maritime facility officials. Emergency personnel were trained to respond to potential hazards and security situations. Joint training and tactical teams from regional agencies and commercial entities coordinated anti-terrorist operations,

The USCG MSO Duluth detachment monitored more than 1500 annual port calls by foreign and U.S. vessels in Duluth-Superior Harbor and other western Lake Superior ports. The 2001 shipping season necessitated Coast Guard icebreaking operations. Spring-rain runoff caused shoaling problems along the Wisconsin-Minnesota shorelines, as did low lake levels that required the Coast Guard to coordinate dredging activities with civilian authorities. Oil-spill drills were conducted with area refineries, the Canadian Coast Guard, and the National Park Service. Oil-spill response equipment was deployed to Isle Royale National Park on Lake Superior. The USCG supervised the raising of a barge from the Duluth Harbor Channel and conducted more than 160 boardings on Lake Superior ("United States Coast Guard Marine Safety Office, Duluth, Mn.," 2001).

The 2001 maritime accident rate for commercial, private, fishing, charter and tribal vessel operators and owners dropped 30%, due in large measure to Coast Guard training, inspection and public education classes. Training and vessel inspection routines were performed with Coast Guard Auxiliary and National Park Service personnel. Customer assistance, education, and testing programs reduced drug-related accidents and increased the safe operations levels of charter and commercial fishing fleets.

Duluth partnered with the Portage (Michigan) and Bayfield (Wisconsin) Coast Guard stations to train boat safety examiners on the Keweenaw, Bad River, and Portage Indian Reservations. The Fond du Lac Tribe of the Chippewa Nation participated with Coast Guard personnel in safety and oil spill drills. The Duluth unit worked with the Canadian Coast Guard and U.S. Customs, and Immigration officials, and conducted oil-spill response drills and law enforcement operations ("MSO Duluth," 2001).

The Duluth Marine Safety Office had a smaller complement in 2004 than in 2001 because of budgetary restrictions and more efficient and effective ship and shore station technology. A photograph of the 2004 MSO Duluth complement featured 23 personnel, including two Commanders, one Lt. Cmdr., three Chief Warrant Officers, two Chief Petty Officers, two Lieutenants, an Ensign, a civilian female secretary, and 11 petty officers ("United States Coast Guard Marine Safety Office, Duluth, Mn.," 2004).

The Duluth Coast Guard has worked closely with civilian port authority officials. The Duluth-Superior Seaway Port Authority 2005 Directory listed the following entities in the Harbor area: agents and operators, compliance agencies, inspection offices, brokers, divers, dock operators, dredging contractors, foreign freight forwarders, fueling and lubrication services, grain elevators, harbor excursions, visitor centers, marine specialists, pilotage associations, rail and motor carriers, seafarer services, ship chandlers, supply services, shipyards, stevedores, tug services and waste disposal specialists.

The U.S. Army Corps of Engineers, U.S. Customs, U.S. Immigration and Naturalization Service, and state and federal departments of agriculture and their inspection units were described in the 2005 Directory. Among the Coast Guard departments listed in the directory were search and rescue, captain of the port, marine inspection, aids to navigation, icebreaking, and a national emergency response center ("Duluth-Superior Seaway Port Authority Directory," 2005).

U.S. Coast Guard Station Duluth expanded its fenced perimeters, security cameras, and computer screens after "9.11" in 2001 and again in 2003, when the Coast Guard was transferred from the Treasury Department to the new Department of Homeland Security. In 2004 the Duluth COTP was Cmdr. Hung M. Nguyen. The COTP Executive Officer was Lt. Cmdr. Mark Ledbetter. Lt. Cmdr. Steven C. Teschendorf commanded the USCGC Alder.

In April 2004 Boatswain's Mate First Class Robert Walters conducted a tour of the Duluth Station: BM1 Walters was a Quartermaster before the merging of the rates. Petty Officer Walters explained office computer technology, forms that needed to be filled out after missions and incidents, and the marine assistance request

and urgent information broadcast units and procedures. An Officer in Charge (OIC) headed the Duluth Station with Senior Chief Petty Officer rank.

BM1 Walters replicated the diverse assignment history of Coast Guard personnel. Walters had previously served at St. Ignace, Michigan; on the 210-foot medium endurance cutter WMEC Dauntless stationed in Florida; was a SAR controller and drug enforcement officer; and had ATN duty on a 49-foot buoy tender. Petty Officer Walters explained the missions of the Station motor life-boat and the small buoy tender; and described the cooperation between the Coast Guard and other law enforcement agencies by pointing out the adjoining berths of a Minnesota Department of Natural Resources boat and a U.S. Border Patrol craft (Ostrom, "Interview with BM1 Walters," 2004).

In July 2005 Cmdr. Gary Croot had been the Duluth COTP for one month, after succeeding Cmdr. Hung Nguyen. Cmdr. Croot enjoyed the cool weather of Duluth as a change from the sub-tropical heat of his previous post in Mobile (Alabama). Cmdr. Croot, a former mathematics instructor, attended Officer Candidate School (OCS) in Yorktown, Virginia. The young officer gained experience in pollution control, hurricane response, ship inspection, ATN, and policy planning. During the 9.11.01 attacks on the United States, Croot was stationed in New York and on the St. Lawrence River, where he coordinated operations with the Canadian Coast Guard. Cmdr. Croot's XO (Executive Officer) in Duluth was Lt. Cmdr. Mark Ledbetter. These officers served under Rear Admiral Robert J. Papp, the Ninth District Coast Guard Commander.

Chief Petty Officer Steve Wolfe was a marine science technician at MSO Duluth. CPO Wolfe, a 17-year veteran, was trained in chemical spills, pollution response, explosive loading, cargo inspection, fire-fighting, law enforcement, SAR and port security.

Lt. Scott A. Stoermer, Chief of Port Operations for COTP Duluth, was a nine-year Coast Guard veteran in 2005. The 1996 graduate of the U.S. Coast Guard Academy is the son of U.S. Army Adj. General Terry Stoermer. A graduate of U.S. Navy diving and salvage training, Lt. Stoermer studied marine and environmental science, oceanography, and port security. Lt. Stoermer served as deck officer on the 180-foot USCGC Sassafras (WLB-401) on law enforcement and SAR patrols out of Hawaii. Lt. Stoermer also flew on C-130 Hercules aircraft patrols as part of the International Ice Patrol in the North Atlantic Ocean.

Other personnel at the COTP/MSO offices in Duluth in 2005 were Chief Warrant Officer Mark G. Neibuhr and civilian administrative assistant Sandra Trianoski (Ostrom, "Interviews, COTP Office, Duluth," 2005). Lt. Cmdr. Steve Teschendorf (U.S. Coast Guard Academy 1991) commanded the USCGC Alder out of Duluth on which Ensign Tim Brown (USCGA 2005) served as an officer of the deck (Ostrom, "Interview with Ensign Brown," 2005).

The technology of historic Coast Guard navigation aids revisited the Duluth port. In September 2005 Coast Guard officials asked the Duluth City Council to remove the venerable harbor foghorn that had guided ships in previous decades. Coast Guard officials claimed the foghorn interfered with modern navigation equipment. Duluth officials sympathized with the Coast Guard dilemma, but insisted the foghorn be maintained to blast off for special ceremonies and summer tourists ("Coast Guard Wants to Silence Horn," 2005).

Duluth is the homeport of the USCGC Alder. The Alder was constructed in Manitowoc (Wisconsin) by Marinette Marine Corporation and launched on 7 February, 2004. The Juniper Class cutter replaced the USCGC Sundew that was decommissioned after 6 decades of service and ported in Canal Park in Duluth as a floating museum.

Six officers and 34 enlisted personnel served on the Alder. The cutter is an icebreaker with multi-mission capabilities in law enforcement, ATN, pollution response, and SAR. The 225-foot Alder has a 13-foot draft ("USCG Alder WLB-216," 2005). On 5 January, 2005 the new CGC Alder sailed two miles out of the homeport of Duluth to medevac an injured Canadian crewmember from a commercial vessel for medical treatment ("News Beat," 2005, p. 10).

The boats and craft operated by Station Duluth have included the 25-foot SAFE (Secure All-around Flotation Equipped) boat. The craft is encased in a rigid foam collar that serves as a protective fender that makes the vessel practically unsinkable (Beard, 2004, p. 133).

The Duluth Coast Guard Station had used the 47-foot MLB (Motor Life Boat) since 1997. The rescue vessel contained advanced navigational and communications technology. The four-person crew included a coxswain and boat engineer. The two diesel engines provide 900 horsepower and a speed of 25 knots. The aluminum MLB can withstand 35-foot seas. If capsized, the MLB can self-right within 10 seconds (Ermey, 2005, pp. 190-191).

The 47-foot MLB and the 25-foot SAFE boat were used as SAR boats in Lake Superior off the Wisconsin Point Lighthouse on 14 July, 2005. A 13-year old swimmer was presumed drowned in the cold waters which had been churned up by high winds. Divers and other personnel from the St. Louis County (Minnesota) and Douglas County and Superior (Wisconsin) police and fire departments, and the St. Louis County Volunteer Rescue Squad, assisted the Coast Guard in the unsuccessful search for the victim. Civil Air Patrol airplanes and a St. Luke's Hospital (Duluth) helicopter joined the search. A rescue official told news reporters that the cold Lake Superior water is never safe, and life vests should always be used by swimmers and boaters (Hamilton, "Boy Missing…," 2005).

Regional Great Lakes Coast Guard stations in Bayfield (Wisconsin) and northern Michigan will be considered in the overview of the Ninth Coast Guard District in Chapter 15.

The duties performed in the Twin Ports illustrate the important duties the Coast Guard performs in commerce, icebreaking, ATN, ship inspections, SAR, law enforcement, and port security in just one port region. The Coast Guard has significant strategic, public safety, and economic responsibilities on the "Inland Seas" and across the entire maritime domain of the United States.

CHAPTER 6

THE COAST GUARD RESERVE AND AUXILIARY

THE UNITED STATES COAST GUARD RESERVE constitutes the part-time enlisted and officer complement of the U.S. Coast Guard. Reservists serve periodically on active duty with Coast Guard units and attend military training schools.

Reservists have been called up for active duty in time of war and during natural disasters such as storms and floods. During the devastating Hurricane Katrina (August-September, 2005) Coast Guard regular and reserve helicopter and ground personnel rescued more than thirty thousand victims while working alongside military units, public safety and humanitarian agencies.

Coast Guard Reserves were called up after the 9.11.01 terrorist attacks. Reservists were called to active duty in 1990-1991 during Operation Desert Storm and Desert Shield in the Persian Gulf (1990-91), and Operation Iraqi Freedom that commenced in March 2003. During World War II, Coast Guard Reservists constituted most of the USCG personnel at home and overseas.

The United States Coast Guard Auxiliary is a civilian volunteer branch of the USCG. The Coast Guard Reserve Act of 1939 was initially was intended to train civilians to assist the Coast Guard in monitoring the growing number of pleasure boaters in ceremonial, marine safety, and inspection operations.

In 1941 Congress restructured the Coast Guard Reserve. The civilian component was named the Coast Guard Auxiliary. The Coast Guard Reserve was mandated to provide a pool of trained military reserve personnel similar to the other Armed Forces.

Coast Guard Temporary Reservists (TR) were unpaid and served for limited periods of time. Regular Reserves were called up to serve in paid active-duty assignments (Ostrom, 2004, pp. 61-62).

During World War II (1942) Congress created the Women's Reserve of the Coast Guard under the command of Lt. Dorothy Stratton (USN/USCG). Lt. Stratton named the women of the Coast Guard SPARS, based on the Coast Guard motto, "Semper Paratus, Always Ready" (Ostrom, p. 62). When Lt. Stratton, initially a U.S. Navy officer, volunteered to transfer to the Coast Guard to lead the SPARS, she brought administrative experience acquired in the USN, and as a psychology professor and dean of women at Purdue University. As Director of

the U.S. Coast Guard Women's Reserve (USCGWR) Stratton was promoted to Lieutenant Commander and then Captain (Beard, 2004, pp. 110-111).

The phrase "Team Coast Guard" includes all of the personnel components of the United States Coast Guard: active duty regulars, reserves, civilian auxiliary, and full- and part-time paid civilian employees (Ostrom, p. 148).

The author of this text enlisted in the U.S. Coast Guard Reserve in Duluth, Minnesota in 1961. After basic and advanced training at Governor's (now Coast Guard) Island, Alameda (California), and a training cruise on the USCGC Dexter, the author returned to the Duluth unit from 1961-1969 and attended monthly week-end meetings and two weeks of active reserve training each summer.

In February 2005, former Lt. Ross Fleischmann (USCGR) contacted me after the publication of my first book, The United States Coast Guard, 1790 to the Present. We reminisced about our respective service in the Duluth USCGR unit. The Duluth USCGR training unit was under the command of Cmdr. Jim Fisher (USCGR). Lt. Fleischmann was the executive officer. Other USCGR commissioned officers included Dick Swanstrom, Don Erickson, Willis (Tom) Fisher, Jim Lisle, Bud Erspamer and Patrick Tierney. Lt. Fleischmann had served on the USCGC Mackinaw out of Cheboygan, Michigan. Fleischmann's son Dana became an athletic coach at the U.S. Coast Guard Academy ("Fleischman," February 2005). The former Coast Guard officer traced the history of the construction of "USCG buoy tenders at 3 Duluth shipyards during the 1940s: the Woodrush, Woodbine, Acacia, Firebush, and others" ("Fleischmann," April 2005).

After World War II, as Coast Guard personnel remained on active duty overseas and the government reduced the number of war-time personnel, the Auxiliary performed USCG functions on the home front. When personnel shortages generated government plans to study the feasibility of closing selected Great Lakes Coast Guard stations, Auxiliarists volunteered to administer endangered station offices and carry out missions until regular Coast Guard personnel again assumed the responsibilities.

When floods devastated the Mississippi Valley (1947) Auxiliaries from the Eighth and Ninth Coast Guard Districts used their private watercraft to rescue flood victims and transport supplies. The Auxiliary provided free boat safety inspections and conducted public education and seamanship classes for civilians (Beard, 2004, pp. 123-125).

The Great Lakes offers inviting and dangerous beauty to winter enthusiasts who venture out on the ice. Anticipating the seasonal phenomenon, Coast Guard Regular and Auxiliary personnel practice ice rescue operations with ice rescue equipment. Auxiliaries partnered with Coast Guard regulars to enforce the Federal Safe Boating Act of 1971 on inland lakes and rivers.

When 1973 federal budget cuts closed seven Great Lakes Coast Guard stations, regional political pressure stimulated Congress to provide for the opening and operation of the stations and their missions by the Auxiliary. Seven Mississippi River and Ohio River Coast Guard stations were added to the list of Auxiliary operated facilities.

In 1967 Auxiliaries conducted hundreds of regatta patrols and thousands of missions to assist boaters and persons in distress, and saved 128 lives. By 1980 the 76,000 members of the U.S. Coast Guard Auxiliary exceeded the number of active duty Coast Guard personnel.

Through the 1990s and into the 21st century, the Coast Guard Auxiliary continued public safety and port security missions and rescued hundreds of people in storms and floods. Coast Guard Auxiliary units carried out search and rescue and national security missions after the September 2001 terrorist attacks. Among the Coast Guard vessels used by Auxiliary personnel were the sleek, metal-platform, enclosed 25-foot SAFE (Secure All-around Flotation Equipped) boats (Beard, 2004, pp. 126-133).

Jean and Robert Colby are among the decorated Auxiliary members who have saved lives in dangerous situations. Mr. and Mrs. Colby earned Gold Life Saving Medals and Plaques of Merit. In 1990 the couple rescued two men in Saginaw Bay (Michigan). Mrs. Colby, wearing a cold-water survival suit, was pulled under water by a frightened 300-pound boater, but got the victim safely back to the Auxiliary boat. In the same year a

tanker caught fire on the Saginaw River. Panicked merchant sailors were in the debris-laden waters. Ship explosions threatened the victims and rescuers. Auxiliaries Robert and Jean Colby again responded to the call, got crew members safely on board the Auxiliary boat, administered medical aid, got them to ambulances, and returned to the rescue scene (Larson, "Heroes...," 2004).

The Eighth Coast Guard District is south and west of the Ninth District. In 2003-2006, Commodore Diane Williams was Director of Auxiliary, Eighth Coast Guard District Western Rivers Region. In 2005 Vice Commodore De Furbee succeeded Williams as District Commodore. The Eighth District includes the Great Lakes states of Illinois, Michigan, and Wisconsin; and 13 interior states: Arkansas, Colorado, Iowa, Kansas, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota and Wyoming.

In 2004, the Eighth District Auxiliary consisted of 1,784 members in 15 divisions and 87 flotillas. Eighth District Auxiliary duties included vessel safety checks, public education, air and water safety patrols, port security, aids to navigation, search and rescue, and other missions as assigned by the U.S. Coast Guard Commandant ("Eighth Western Rivers District," 2004).

The western end of the 8WRD includes Flotilla 31-2 in Topeka, Kansas that elected Jackson J. Gumb to serve as District Vice Commodore (VCO) for 2006. Nancy Gumb teamed up with her spouse to patrol the Missouri River and area lakes on personal watercraft. Gumb planned to attend the Coast Guard Auxiliary conference in Rochester (Minnesota) in September 2006 and participate in the election for 8WR Commodore (Gumb, "Interview," 2006).

Hiawatha Division 2 of the Eighth District Western Rivers Region includes southern Minnesota, southwestern Wisconsin, and Northeastern Iowa. Division 2 encompasses the Minnesota cities of Rochester (Flotilla 21), Winona (Flotilla 22), and Wabasha (Flotilla 25). Division 2 Wisconsin cities include La Crosse, Chippewa Falls, and Menominee. Other Division 2 cities are New Ulm (Minnesota) and Waterloo and Lansing (Iowa).

The inland waterway area of responsibility for Division 2 includes the 182-mile stretch of the Upper Mississippi River from Red Wing (Minnesota) to Guttenberg (Iowa). Hiawatha Division 2 conducts safety patrols, public education, search and rescue, watch standing, aids to navigation (ATN), environmental protection, marine event patrol, and Coast Guard recruiting. In 2004-2005 Division 2 Douglas A. Cederholm was Division Captain (DCP) assisted by Gerald Daly, Division Vice Captain, and Thomas Romaine, then an appointed flotilla staff officer (FSO).

The author had the privilege of speaking at an Auxiliary "Change of Watch" dinner in Rochester, Minnesota in 2005. Officers were installed, awards presented, and Auxiliary Division Capt. Cederholm introduced Chief Warrant Officer Mark Helmers (USCG), Operations Training Officer from the St. Louis (Missouri) Marine Safety Office. CWO4 Helmers commended the Auxiliary members for their dedication and service and emphasized the need for continued mission training and recruitment. Auxiliary Capt. Cederholm and his colleagues accompanied the crew of the USCGC Wyaconda (WLR-75403) on ATN patrol in the Upper Mississippi River. The Wyaconda (WLR 75403) was stationed at Dubuque, Iowa ("Hiawatha Division 2," 2004).

In March 2006 Tom Romaine, FC 22 (Flotilla Commander, Flotilla 22, Winona, Minnesota) explained several of the Auxiliary abbreviations and acronyms for the elected and appointed officials of the Eighth Western Rivers Region Hiawatha Division 2 in 2005-2006. Deanne Romaine was Vice Flotilla Commander (VFC 22) The Rochester (Minnesota) area is Flotilla 21. LaCrosse (Wisconsin) is Flotilla 25. Terry S. Riessen was FC, and Lorraine S. Daly was VFC (Vice Flotilla Commander) in Flotilla 21. Gene M. Nolan (Rochester) was Hiawatha Division 2 Captain and Gerald Daly (Rochester) was Division Vice Captain (Romaine, "Communication," 2006).

In 2006 the regular officer who served as Director of the Auxiliary, Eighth Coast Guard District, was Cmdr. Gregory S. Omernik (USCG). Eighth Western Rivers District (8WRD) Commodore (DCO) Delores (De) Furbee was the Auxiliary commander of the District Eight Western Rivers Region. Commodore Furbee exemplified the Auxiliary motto, "Recruit, Retrain, Revitalize." Jack Gumb was Vice Commodore (VCO), then

elected Commodore, and Derwood Fessett was Rear Commodore (RCO) for the northern region. ("District Level Elections…," 2006).

In the immediate Lake Superior region, Auxiliary Flotilla 09C 28 09 meeting location is Marquette (Michigan). The 2004 Flotilla Officers were Commander Douglas Elliott, Vice Commander Mark Yankovich, and past commander Tom Buchkoe ("Flotilla 09C…," 2006). Other Great Lakes Auxiliary units are considered in previous and subsequent chapters.

There were 30,000 members of the national U.S. Coast Guard Auxiliary in 2005 when the "Volunteer Life-Savers" saved more than 300 lives (Soffer and Mahl, "Updated Numbers," 2005).

CHAPTER 7

AIDS TO NAVIGATION

Lighthouses have served throughout history as one category of "Aids to Navigation" (ATN, ATON, or A/N). The U.S. Coast Guard has traditionally maintained aids to navigation that serve as guideposts for sea and air travel, as did the U.S. Lighthouse Service (USLHS) and the U.S. Life-Saving Service (USLSS).

With the assistance of civilian, academic, and other military institutions, the Coast Guard developed the LORAN radio beacon system. RADAR and SONAR are electronic and sound navigation systems that facilitate the determination of location in relation to geographic sites and air and watercraft. Global satellites emit electronic transmissions from which locations can be determined: the Geographic Positioning System (GPS) is based on satellite technology.

Charts and maps are navigational aids. Computer technology is used for navigation on ships and aircraft, and for vessel tracking and traffic control systems.

The Revenue Cutter Service and Coast Guard placed and serviced ATN buoys. Buoys are floating channel and route markers at sea and in lakes, bays, rivers and ports. Buoys are secured to sea, river, and lake bottoms. Buoy shapes, positions, numbers, colors, and technological devices (lights, sound, electronic transmissions) indicate structures, depths and positions relative to water craft, and objects to sight on or avoid.

The Mississippi River originates in northern Minnesota, flows to New Orleans (Louisiana), and empties into the Gulf of Mexico. A review of Coast Guard activities on the Mississippi River provides insight into Coast Guard ATN missions.

U.S. Merchant Marine Captain Ron Larson (Ret.) described Coast Guard ATN activities in his book, Upper Mississippi River History. Capt. Larson explained river charts prepared by the U.S. Army Corps of Engineers, and the USCG Light List of buoys, blinking lights, dock lights, day markers, mileage boards, bridge clearances, and lock and dam systems.

Red buoys are on the right as a vessel ascends rivers and other bodies of water, and green buoys are on the left. Conversely, as a vessel descends a river or body of water the green buoys are on the right and red buoys are on the left. Buoys are secured in place by concrete anchors and chains. Captain Larson noted that in his experience the buoys extended out of the water about 10 feet in height. Two-thirds of the 500-pound structures were below the surface.

Flashing light day-boards were located on shore or on pilings that jutted into the river. The River Pilots Association established the beacon light system in 1860, using kerosene lamps as steering references. The U.S. Revenue Cutter Service persuaded Congress to authorize what became known as the Federal Dayboard and Beacon System on navigable rivers in 1875.

By 1960 battery-operated flashing lights had replaced the kerosene lanterns. Solar panels which absorbed sunlight to recharge the batteries were installed on beacon lights in the 1980s. Mileage indicators and beacon names were added to the system so river pilots could more accurately describe their relative positions by radio communication. Mile zero on the Upper Mississippi commenced at Cairo (Illinois), with Mile 857.6 at Minneapolis (Minnesota) in a system of more than 359 beacon day-boards.

The U.S. Coast Guard cutter (USCGC) Wyaconda, a buoy tender home-ported in Dubuque (Iowa), performed ATN maintenance and Upper Mississippi river patrol (Larson, 1998, pp. 131-133).

Retired Winona State University and St. Mary's University professor Calvin R. Fremling, the author of Immortal River: The Upper Mississippi in Ancient and Modern Times, learned river navigation on commercial tow boats and aboard a Coast Guard buoy tender.

The Minnesota ecologist credited his river education to sportsmen, city planners, scientists, academic experts and commercial fishermen. Fremling learned the science of rivers from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and departments of natural resources in Minnesota and adjacent Mississippi River states (Fremling, 2005, p. 9).

In his discussion of river buoy systems, Fremling claimed boaters and commercial vessel pilots could be reasonably certain of nine feet of river depth between the red and green buoy channel markers. Fremling discussed the responsibility of river boaters to understand navigation and boating safety regulations. The naturalist explained the enforcement of river boating rules by the Coast Guard and various federal, state and local law enforcement agencies (Fremling, pp. 20-22).

The Coast Guard is the federal responder to river traffic safety incidents, regulations, and hazardous chemical spills from shore facilities, boats, barges and ships. The USCG maintains river ATN, licenses boat operators, and responds to search and rescue (SAR) missions. Coast Guard personnel and civilian members of the Coast Guard Auxiliary conduct public boating safety classes and boat inspections.

After the 9.11.01 terrorist attacks, the Coast Guard was transferred from the Transportation Department to the Department of Homeland Security. National and port security concerns on rivers, bridges, vessels, waterfront facilities and economic infrastructure are monitored and regulated by the USCG. Towboat and barge river pilots are periodically examined by Coast Guard personnel and other specialists (Fremling, pp. 342-343).

The Coast Guard licenses and examines river, harbor and Great Lakes commercial vessel and passenger ferry pilots. Periodic medical examinations by licensed medical practitioners are required. Critics have accused the Coast Guard of allowing mariners to choose the physicians who administer their annual physicals, a system that has been alleged to encourage lenient examinations The USCG may require commercial mariners to be examined by Coast Guard approved and U.S. Public Health Service physicians (Chan, "Agency Scolds…Officials…," 2005).

Complex weather buoys anchored miles out to sea provide weather data via satellite systems. Oceanographic and meteorological data is transmitted to the National Oceanic and Atmospheric Administration and to Coast Guard buoy centers and stations.

Coast Guard buoy tenders place advanced technology at strategic sites. Technicians use software programs to monitor and modify buoy transmissions in lieu of making frequent boat trips to buoy locations. Advanced information on possible storm systems has saved lives on land and sea, and facilitated warnings that protected sea and shore infrastructure assets (Marsh, "Weather Buoy…," 2005).

Maritime navigation has been facilitated by such ATN as satellites, light beacons, light stations, ship signals, horns, radar, radio communications, buoys, and harbor, lock and dam technology. The lock, dam, and canal systems on major rivers are essential to the safe and efficient navigation of boats, ships and barges. Commercial vessels sail from the Atlantic Ocean into the Great Lakes through lock and dam systems that allow vessels to traverse topographical barriers and differences in elevation.

The Soo Locks at Sault Ste. Marie (Michigan) are an engineering marvel more than 150 years old. Before the age of locks, French voyageurs and Native American Indians traversed the inland waters of North America and portaged their canoes to bypass geographic barriers and travel from one body of water to another.

With the advent of commercial farming and mining, the Inland Seas became the water highway for Great Lakes cargo carriers. Wooden sailing schooners and iron-hulled ships brought passengers, settlers, and domestic and foreign goods from the Atlantic Ocean to Great Lakes ports and harbors. The largest, most westerly ports for

ships sailing and steaming up the St. Lawrence River into the Great Lakes are the Twin Ports of Duluth (Minnesota) and Superior (Wisconsin).

The lock at Sault Ste. Marie was opened to shipping on 18 June, 1855. The Sault (Soo) locks have been upgraded in several major reconstruction projects since 1855. The Soo Locks have stimulated economic growth in the Upper Midwest and entire Great Lakes region for nearly 200 years (Arbic and Steinhaus, "Safe Passage…," 2005, pp. 18-28).

The St. Mary's River is 63 nautical miles in length. The one-mile-wide river connects Lake Huron with Lake Superior, allowing domestic and foreign cargo vessels to ascend the Great Lakes as far west as Duluth, and return with iron ore, coal, grain and other commercial products.

The 21-mile drop in elevation between Lake Superior and Lake Huron allows the passage of huge Lake carriers though the system of locks, dams and canals built since 1855. More than 10,000 domestic (fresh water) and foreign (salt water) ships have passed through the locks in typical nine-month shipping seasons.

The enormous U.S. and foreign commercial vessels reach widths (beams) of 70 feet or more, lengths of 400 to 1,000 feet or more, and drafts (below waterline ship depths) of 20 to 30 feet. The U.S. Army Corps of Engineers is responsible for dredging the channels to maintain relatively consistent depths.

Ships coming up or down the Great Lakes are joined at crucial points by experienced domestic pilots who stand at the helm or direct the vessel through tight passages, strong winds, tricky currents, high waves, fog and winter ice. The pilots board the vessels at Sault Ste. Marie and guide them into Lake Superior and Lake Huron. Pilots sometimes accompany vessels to the intended ports of call all the way to Duluth and Superior, to harbors on the North Shore, and throughout the Great Lakes into ports in the United States and Canada (Phipps, "Piloting: St. Mary's River…," 2005).

The St. Louis River originates in the interior forests of northern Minnesota and drains into Duluth harbor and Lake Superior. The Native American Fond du Lac tribe settled by the mouth of the River. French explorers and trappers descended the St. Louis River to trade with the Indians. French voyageur Daniel Greysolon Du Luht, journeying from Montreal (Canada), arrived on the Western shore of Lake Superior by 1680.

With the construction of the canal and lock system in the mid-nineteenth century, cargo and passenger vessels used the St. Mary's River connection between Lake Huron and Lake Superior to access the port of Duluth and unload cargo, migrants, and European immigrants. On the return trip, from the Twin Ports down the Lakes, the cargo vessels carried a variety of goods, including grain and iron ore. The cargoes were shipped on domestic and foreign vessels to inland Great Lakes ports, and down the St. Lawrence River to the Atlantic for shipment overseas.

The Twin Ports grew in population and transportation infrastructure: highways, boats and ships, railroads and docks. In 2004 the estimated populations of Duluth and Superior were 86,000 and 27,000 respectively (Zager, 2004, pp. 7-11, 25).

The Duluth Ship Canal and the Aerial Lift Bridge that spans it are engineering marvels. Excavation for the Canal began in 1870 at Minnesota Point, a peninsula that juts out into Lake Superior from Duluth, and parallels the south shore of the Lake north of the city of Superior. In 1905 the Duluth Aerial Ferry Bridge was completed. In 1929 the bridge was modified and named the Duluth Aerial Lift Bridge. The structure rises to a height of 172 feet to facilitate the passage of the largest Lake cargo carriers.

An appreciation of Revenue Cutter and Coast Guard search and rescue, regulatory and inspection missions can be gained from a brief review of the history of Great Lakes passenger and cargo vessels. Wooden sailing schooners with two or more masts and 40- to 80-ton displacements (carrying capacities) built for fur companies appeared on the Great Lakes in the 1770s. In the early 1880s even larger fishing vessels were on the Lakes.

Between 1850 and 1900 steamboats served the isolated fishing, mining and lumberjack communities and transported their products. In the 1920s the completion of functional roads allowed land transportation to supplement water traffic in the northern wilderness. Iron- and steel-hulled ships steamed across the Great Lakes in the late 1800s. Six-hundred-foot Lake carriers navigated the Soo Locks in the early twentieth century, when

upgrading allowed even longer vessels to traverse the locks. By 1972, 1,000-foot ships sailed the Inland Seas into Lake Superior (Zager, pp. 37-41).

Extreme weather conditions (frigid temperatures, heavy seas, storms, fog, snow and ice) have plagued Lake Superior seafarers. Three hundred and fifty ships have been lost on the Lake since 1835. Ship collisions, sinkings and groundings have occurred in the Duluth-Superior Harbor and the Duluth Ship Canal. In 1975 the 729-foot Lake carrier Edmund Fitzgerald sank in a November gale off Michigan's White Fish Point in southeast Lake Superior (Zager, p. 47).

Duluth has preserved its Lake Superior waterfront heritage in Canal Park. The USCGC Sundew was decommissioned in 2004: the 180-foot buoy tender was built in the Twin Ports during World War II (1944). The Sundew, the Great Lakes iron ore carrier SS William Irvin, and the U.S. Army Corps of Engineers tugboat Lake Superior now serve as floating museums on the Duluth shoreline (Zager, pp. 94-97).

Superior is Duluth's sister port across the Bay. Barker's Island in Superior Bay has hosted an inn, two restaurants, and a whaleback ship museum. The Superior Port Entry is illuminated by the Wisconsin Point Lighthouse that was built at the St. Louis River outlet in 1913 (Zager, pp. 110-111).

The North Pier Light at the entry of the Duluth Ship Canal and the Minnesota Point Light have historically illuminated the Duluth Harbor. One of Duluth's oldest architectural remnants, Minnesota Point Light was commissioned by Congress in 1855 and operated from 1858 to 1878 (Zager, pp. 49-51).

To more fully appreciate the challenges of Lake Superior, or "Lac Superieur" to French explorers, the following description is helpful: Lake Superior is the largest freshwater body of water in the world, with a surface area of 31,700 square miles; an East to West axis of 382 miles; a North-South axis of 160 miles; an average depth of 489 feet; and a maximum depth of 1,279 feet. Lake Superior coincides with the state of Maine in total square miles: the other Great Lakes could fit within Lake Superior. An average temperature of 40 degrees Fahrenheit puts the lives of mariners at risk. The entire Lake was completely ice covered in the winters of 1962 and 1979; and more than 90% covered in 2003.

In terms of total tonnage in 2003, the Twin Ports of Duluth and Superior surpassed all of the other ports on the Great Lakes. The Twin Ports averaged 40 million tons of cargo annually. Chicago was second (27 million) and Detroit (18 million) third ("Lake Superior," 2003).

The extent of Lake Superior and the adjoining Great Lakes, and the busy ports and their strategic infrastructure, illustrate the significance of Coast Guard responsibilities on the Inland Seas.

CHAPTER 8

GREAT LAKES LIGHT STATIONS

Lighthouses, Lightships and Beacons

AIDS TO NAVIGATION (ATN) such as buoys and lighthouses, and related navigation supplements like flags, maps, charts, clocks, and compasses have contributed to North American maritime safety since the British Colonial period of the early 18th century.

Latitudinal (North/South) measurements were determined by the optical instruments which mariners used to calculate the angle of the sun in relation to the horizon. East-West bearings based on the mathematical concept of global meridians were determined by ship's clocks (chronometers).

Powerful light beams cast by lighthouses into fog, rain and darkness helped ship captains and navigators avoid shallow waters and rocks. Congress created the U.S. Lighthouse Service (USLHS), also called the Lighthouse Establishment, in 1789. The USLHS was mandated to continue the operation of the original twelve lighthouses and supervise the building of new ones. The U.S. Coast Guard absorbed the USLHS in 1939.

U.S. Life-Saving Service (USLSS) units were stationed near lighthouses locating treacherous waters at points where ships came close to shore to enter harbors. These locations increased the probability of grounding and vessel collisions.

Except for historic Boston Harbor Lighthouse on Little Brewster Island (1716), the Coast Guard no longer maintains permanent lighthouse crews. USCG personnel periodically inspect and maintain the remaining electrically-powered light stations. Modern lights have replaced the giant Fresnel lenses, wicks, whale oil, and kerosene fuels once maintained by lighthouse keepers. Since the expanded automation of lighthouses in the 1970s, smaller steel towers housing electronically controlled beacons have been built alongside the historic masonry towers.

Many lighthouse structures are maintained by individual owners and historical societies, and serve as tourist attractions. Modern navigational technology has made lighthouses increasingly unnecessary, although visual bearings on channel, river, and harbor lights facilitate safe navigation on restricted waterways. The state of Michigan, located between Lake Michigan and Lake Huron, built more U.S. lighthouses than any other state or territory (Beard, 2004, pp. 135-139).

Historically, lighthouse keepers were often retired or wounded male military veterans. Wives and daughters of keepers learned the trade and provided assistance at isolated stations. Women were promoted to keeper upon the death or injury of their husbands and fathers. Women keepers contributed to the annals of Lighthouse Service and Coast Guard history with dedicated service and life-saving exploits that paralleled the careers of their male counterparts. The last female civilian keeper retired in 1947, after which Coast Guard personnel manned the lights until automation ended the need for permanently stationed lighthouse personnel (Beard, 2004, pp. 153-155).

Sail and engine-powered lightships were stationed off coastal and Great Lakes shores after 1820. Anchored at strategic positions, the pitching, rolling vessels provided constant challenges to crewmembers. Storms, collisions and sinking challenged lightship crews. The lightships ranged from 97 to 125 feet in length. The Huron Lightship was stationed in 1893 to mark St. Claire River shoal waters. Between 1893 and 1970 three Lake Huron lightships served on station. Although lightship hulls were usually painted red, one Lake Huron cutter was painted black (1935) to mark the side of the channel as required by ATN color codes.

Gigantic, unmanned navigational buoy platforms replaced the historic lightships. Coast Guard maintenance technicians periodically visit the platforms to check and repair the buoy lights and electronic systems. In 1945 the Coast Guard managed 468 lighthouses. Between 1968 and 1990 the USCG standardized and automated all remaining lighthouses.

During World War II, U.S. Coast Guard experts worked with scientists to establish the LORAN (Long Range Navigation) radio-frequency triangulation system. By 2003 most of the manned global Coast Guard LORAN stations were decommissioned and replaced by GPS, the satellite Global Positioning System (Beard, 2004, pp. 157-163).

In her exquisite book, Lake Superior (1944), Grace Lee Nute traced the economic histories of the Lake Superior Wisconsin ports of Superior, Ashland, and Bayfield; and the Minnesota ports of Duluth, Grand Marais, and Two Harbors. Commercial lumbering, fishing, and the coal and iron ore docks symbolized the economic significance of these venerable Great Lakes ports. The Apostle Islands, east of Bayfield, hosted lighthouses on Raspberry and Devil's Islands, and at other insular and peninsular locations (Nute, pp. 261-266; 302-303),

The U.S. Revenue Cutter Service, Lighthouse Service, and Coast Guard carried out their missions in these port areas, and the adjacent waters of Chequamegon Bay and Lake Superior. Equally significant in Lake Superior history since the middle of the 19th century were the North Shore Split Rock and Two Harbors lighthouses, which furnished light and fog-horn signals to warn mariners of rocks and shore lines (Nute, p. 292).

The Manitou Island Light Station mirrored the historic evolution of lighthouses. Located three miles off Michigan's Keweenaw Point on Lake Superior, the MILS was transferred from the U.S. Interior Department to the Keweenaw Land Trust for natural and cultural resource preservation. The Coast Guard maintains the iron-skeleton tower light. Manitou Island is a popular destination for charter boat passengers ("A Green Light…," 2005).

The first lighthouses built on Lake Superior (1848) were located at Copper Harbor and Whitefish Point in Michigan. Seventy-four other lighthouses were built on the Great Lakes between 1848 and 1872. Whale oil

fueled the light and a gigantic Fresnel lens, a beehive-shaped composition of glass prisms, concentrated the light into a single powerful beam. By 1850 federal inspectors were regularly visiting the light stations.

In 1888, twenty thousand commercial ships visited Chicago and 23,000 docked in New York City. Almost 9,000 vessels traversed the Soo Locks between Lake Huron and Lake Superior. The growth of commerce and the proliferation of ATN were astonishing. By 1910, the Great Lakes registered 563 buoys, 334 lighted beacons, and 67 fog signals that were managed by the Revenue Cutter Service and the Lighthouse Service, and, after 1915, by the Coast Guard.

The oldest standing structure of the Duluth port is the remnant of the Minnesota Point Lighthouse. Lt. Henry Woolsey Bayfield of the Royal Navy identified MPL as "point zero" on his maritime charts (Zager, 2004, pp. 49 and 51). Lieutenant, later Captain, Bayfield chronicled his 19th-century Great Lakes-St. Lawrence River explorations in a multi-volume work (Bayfield, The St. Lawrence Survey…1829-1853 Journals, 1984, 1986). Lt. Bayfield was ordered by the British Admiralty to survey Lake Superior. His charts provided early mariners with a sophisticated navigation source. The Lake Superior city of Bayfield (Wisconsin) is named after him (Nute, 1947, pp. 77 and 262).

Minnesota's North Shore, along the Western terminus of Lake Superior, required warning lights to guide ships away from rocky shores made more dangerous by the regional iron ore deposits that distorted compass readings. Increasingly frequent shipwreck incidents led to the building of Split Rock Lighthouse (1910) on a 124-foot-high rock outcrop. The Minnesota Historical Society would later operate the popular tourist attraction.

The Two Harbors (Minnesota) Lighthouse, built in 1892, guided ships to the local iron ore docks. The Fresnel lens at Two Harbors Light was replaced by rotating electric lights in 1970., The bread-and-breakfast tourist haven, located 30 miles north of Duluth, preserved the original light, oil, and fog-signal structures (Zagar, 2004, p. 53).

Wind Point Lighthouse (Wisconsin) was built on Lake Michigan in 1880. A kerosene light originally powered Wind Point light. In 1924 WPL became the second lighthouse on the Great Lakes to use electric power. In 2005 the city of Wind Point put administrative offices in the lighthouse buildings ("Did You Know…," 2005).

Great Lakes lighthouse keepers at isolated island stations faced personal danger when frozen waters ended the shipping season. The lighthouse tender Marigold (1919) rescued Apostle Islands (Wisconsin) keepers in dangerous situations. Some keepers walked across Lake Superior ice to shore. Others attempted to climb into small boats and lighthouse tenders in ice-strewn, cold, choppy waters.

The Lake Superior lighthouse keeper era terminated with the electrification of Devil's Island Light (1978) in the Apostle Islands. Although many lighthouses still cast their beams over the water, permanent crews are gone. Coast Guard personnel maintain the lighthouses in periodic visits. Ship technology (radar, computers, radio and satellite communications) made lighthouses less essential navigation aids (Beers, 2000, p. 4).

To accommodate the increased number of lake carriers hauling iron ore cargoes, the Ashland (Wisconsin) Breakwater Light was built. The light became operational in 1915, the year the Revenue Cutter and Lighthouse Services merged to form the Coast Guard.

The Apostle Islands lights at Chequamegon Point and LaPointe (1897) replaced lights that had been in place since the 1850s. A radio beacon was built on LaPointe Light (1924). Both lights were operated electronically by 1964 (Beers, p. 5).

The Devil's Island Lighthouse continued to be an important navigational aid in the Apostles Island complex. Radio beacon signals helped mariners adjust courses in and out of the Twin Ports of Duluth and Superior. The light tower featured the cutting edge of technological modernity when a solar-powered transmitter was mounted outside the tower, fastened to an outer rail (Strzok and Trapp, 2001, p. 72).

Chequamegon Bay waters are less busy today than in the past, when Ashland once recorded the visitation of 2,000 ships, and "the port cities of Bayfield, Ashland, and Washburn were the busiest ports in the Great Lakes, ranking only behind Chicago" (Strzok and Trapp, p. 5).

On the southern end of Lake Michigan, the Civil-War-era Old Southport Lighthouse (1866) illuminated Kenosha (Wisconsin) Harbor. Lights built in the post-Civil-War period, like Kenosha North Pier Light (1906), were build on piers and breakwaters at less expense, and light keepers could then work and live on shore.

Most Great Lakes lighthouses were electrified and automated with remotely controlled lights and foghorns by the 1940s. The last lighthouse keeper on the Great Lakes vacated Sherwood Point Lighthouse on Lake Michigan in 1983. Today, hundreds of lights and beacons remain to guide ships away from dangerous waters (Beers, pp. 16-17).

Other historic and upgraded lights include the Racine (Wisconsin) Harbor North Breakwater Lighthouse (built in 1910) and South Breakwater Light and Wind Point Lighthouse (1880).

Other significant Lake Michigan lights in Wisconsin include Milwaukee Breakwater Light (1926), the Milwaukee Pierhead Lighthouse (1906), Milwaukee's first lighthouse at the end of Wisconsin Avenue (1838), and the North Point Lighthouse which was built in 1879 and modified in 1912.

The list of Wisconsin lights on Lake Michigan is extensive. Other light beacons and the years of initial construction and modification include Port Washington (1935), Sheboygan (1915), Manitowoc (1918), Two Rivers (1883), Kewaunee (1909, 1931), Algoma (1893, 1932), Sturgeon Bay Ship Canal North Pierhead (1882, 1903), Sturgeon Bay Ship Canal Lighthouse (1899, 1903), Bailey's Harbor Lighthouses (1852, 1869), and the Cana Island Lighthouse (1870) which was remodeled in 1901 (Beers, pp. 18-27).

The Sherwood Point Lighthouse (1883) was constructed on the cliffs over the junction of Green Bay and Sturgeon Bay. The Wisconsin lighthouse has not had a keeper since 1983, but the light was still operational in 2000. Personnel of the U.S. Coast Guard Station at Sturgeon Bay used it as a rest and recreation facility.

Two light stations were built in the harbor of Green Bay in the 1800s. The Green Bay Harbor Entrance Light was built in 1935. The wooden-structured Grassy Island Front and Rear Range Lights, built in 1872, were replaced by the Green Bay Harbor Entrance Light.

The Long Tail Point Lighthouse (1848) was built on a sandy shoal that extended out into Green Bay. Nature and vandals have now destroyed much of the structure.

The Peshtigo (Wisconsin) Light (1934) was built on a three-mile-long reef. The flashing beacon light atop the 72-steel and concrete base could be seen 10 miles off-shore. The light was later supplemented with a foghorn. The Menominee (Wisconsin) North Pier Light (1877, 1927) served Marinette-Menominee Harbor (Beers, pp. 30-32).

Congress provided for the placement of lighthouses on the Great Lakes in 1819. The coveted job of lighthouse keeper was difficult to acquire. Prior to 1896 political patronage was the determining employment factor: a keeper candidate had to know someone. The regional customs collector, a political appointee, passed on his preferences to the U.S. Treasury Secretary, who made the selection. After 1896, civil service exams leveled the playing field, and ensured that applicants possessed a certain level of literary and practical competence.

When the Coast Guard absorbed the U.S. Lighthouse Service (1939), lighthouse keepers and crews were initially able to decide if they preferred to retain civilian status or enlist in the Coast Guard. Once in the military service, a keeper could be assigned to any remote Coast Guard light station, making a Great Lakes job less likely (Berger, p. 48).

Stannard Rock Lighthouse was constructed 23 miles off the Michigan shore of Lake Superior. Loneliness, storms, and conflicts within families and between keepers and assistants made lighthouse life challenging. Sudden illnesses or the death of a keeper at an isolated station could be problematic. One Coast Guard enlisted man went crazy on the Rock and had to be removed in a strait-jacket. The Stannard Rock fuel tank exploded (1961) because of an electrical short: the explosion injured one keeper and killed the other (Berger, p. 81), but the third keeper escaped injury. In the same year the light was automated.

The Rock of Ages Light on Isle Royale was activated in 1908 to guide ships along Lake Superior's North Shore, in and out of the ports of Duluth and Superior. Split Rock Lighthouse on Lake Superior was activated in

1910 to guide ships along the Minnesota shore in a region where magnetic deviations from iron ore deposits made ship's compasses unreliable (Francis Ross Holland, Jr., 1988, pp. 187-189).

Isolation, accidents and extreme weather conditions complicated life for the keepers, assistants and families. When the lighthouse commissioner insisted the isolated Lake Superior Isle Royale station be run by a married couple, the assigned keeper allegedly went back to the mainland, got married, and returned to the island (Noble, 2004, p. 104).

Coast Guard historian and author Dennis Noble traced the role of the lighthouse tenders that maintained aids to navigation: supplied the lighthouses with mail, equipment, and supplies; removed and returned keepers to their stations; brought lighthouse inspectors on board; serviced buoys; and sometimes went aground in the process.

In 1939 the U.S. Coast Guard absorbed the USLHS and maintained the color scheme of "The Black Fleet." Hulls were painted black due to the hard, dangerous and dirty work the tenders and their crews performed. In 1947 the Coast Guard reclassified the lighthouse tenders and renamed the vessels "buoy tenders."

During World War Two, Duluth (Minnesota) shipyards (Zenith Dredge Co., and the Marine Iron and Shipbuilding Corp.) built a fleet of 180-foot buoy tenders. The "180s" served as icebreakers, maintained navigation aids, and performed search and rescue and law enforcement missions. During World War II, the 180s and their crews served with distinction in the Atlantic and Pacific theaters in traditional missions and combat (Noble, 2004, pp. 149-164).

By the 1960s solar-powered batteries were being installed in Great Lakes lighthouses (Berger, p. 108). By the mid-1990s, all of the Great Lakes lighthouses were automated; some isolated lights and beacons were powered by solar panels.

Mackinac Point Light was activated in 1892 to guide ships through the Mackinac Straits. The Mackinac Bridge that joined Michigan's Lower and Upper Peninsulas was completed in 1957: the budget-conscious Coast Guard later deactivated Point Light and placed guiding lights on the bridge (Berger, p. 114).

Photographer Daniel E. Dempster and author Todd R. Berger combined their talents in the magnificent book, Lighthouses of the Great Lakes (2002). Their history covers light stations, keepers, and post-1915 Coast Guard modernization and deactivation projects.

Berger does not neglect the U.S. Life-Saving Service on the Great Lakes. The USLSS ventured into stormy Great Lakes waters to rescue mariners and passengers in distress. USLSS "Surfmen" patrolled shorelines and teamed up with neighboring lighthouse crews to carry out their missions. The USLSS "Storm Warriors" rowed their heavy, reinforced self-bailing rowboats, equipped sometimes with sails, into harm's way throughout the 19th century. The early 20th century brought them gasoline-powered motorboats.

The surfmen got their boats into the water at ramps, docks and piers. Horse-drawn carriages helped the crews move their boats down sandy and rocky beaches if launching facilities were not convenient. The rope-launching Lyle Gun helped crews get line out to a grounded vessel if circumstances permitted.

Forty-seven life-saving (lifeboat) stations were present on the Great Lakes in 1893: sixty stations existed by 1900. Each station was under the supervision of a keeper and six to eight trained surfmen for whom "dramatic rescues were common place at Great Lakes lifesaving stations and heroism was part of the job" (Berger, 2002, pp. 94-95).

In 1935 the Sherwood Point Light near Sturgeon Bay (Wisconsin) on Lake Michigan was the first shore light station to acquire radio broadcasting capability. By 1942 (during World War II) 58 radio beacon stations were transmitting information across the Great Lakes. Shore-based radio stations and light stations were gradually equipped with radio transmitting devices which sent signals beyond the range of light illumination. Radio communication lessened reliance on noisy foghorns. Radio-telephones allowed oral communication between ships and shore stations.

Mobile lightships served the function of lighthouses on the Great Lakes and other U.S. waterways. Anchored in place, their mast lights guided vessels into shallow waters, channels, rivers and harbors.

Lightship No. 103 (Lightship Huron) served on Lake Michigan. In 1925 the Huron was equipped with a radio signal to alert ships to the location of the lightship. Decommissioned in 1970, the Huron lightship subsequently served as a floating museum in the harbor at Huron City, Michigan (Berger, pp. 107-110).

CHAPTER 9

GREAT LAKES ICEBREAKERS

U.S. COAST GUARD icebreakers carry out aids to navigation (ATN) missions and keep the sea lanes open in support of national security, defense, commercial, ship and maritime safety, law enforcement, search and rescue (SAR), scientific research, and environmental protection missions.

Icebreaking in U.S. waters began in the 1830s with the transition of ships from sail to steam power. Side-wheel steamers broke harbor ice in East Coast ports. Local tugs, cargo vessels, and passenger ferries broke up the ice to facilitate commercial shipping.

The pre-1915 Coast Guard was called the U.S. Revenue Cutter Service (USRCS). After the purchase of Alaska from Russia (1867), Revenue cutters, ranging from wooden sail-steamers to steel screw (propeller) vessels, confronted ice conditions on Bering Sea and Alaskan patrols.

Reinforced bows, strong wood (oak) frames, and iron plating prepared the early cutters for Alaskan patrol duty. Iron-hulled cutters replaced the wooden ships at the turn of the 20th century.

To keep fuel barges in operation during the cold winter months, President Franklin D. Roosevelt directed the Coast Guard to keep navigation lanes, harbors and channels open for commerce. Roosevelt's fortuitous directive became significant when cutters and other craft performed domestic, national defense, and overseas missions during World War II.

The 290-foot Great Lakes icebreaker Mackinaw (WAGB-83) was built during World War II. The cutter displaced 6,500 tons, was 63'6" abeam, and powered by six diesel engines that supplied 12,000 horsepower. Three propellers, one in the bow and two aft, were powered by electric motors. The Mackinaw, commissioned in 1944, extended the Great Lakes shipping season, a strategically significant function during the war.

Several 180-foot buoy tenders were constructed in the shipyards of Duluth and Superior, and were operational in 1942-43. The buoy tenders (180s) performed domestic security and overseas combat operations during the war.

Coast Guard cutters extended the Great Lakes and Mississippi River shipping seasons to facilitate the transportation of essential resources, supplies, food and equipment.

The buoy tender Balsam performed ATN missions in the Pacific and sank a Japanese submarine. Other cutters performed port security missions on the Great Lakes and around the nation, and convoy and combat missions overseas (Canney, "Icebreakers…," 2000).

The Great Lakes icebreaker tradition is well exemplified by the USCGC Mackinaw. "Big Mac" expanded the shipping season by shifting water ballast from one side of the ship to the other to rock and roll out of ice-jamming situations. The heavy icebreaker ran up on the ice sheet and crushed downward, using the bow propeller to remove water from beneath the ice mass and break it up.

Adm. Edward H. Thiele designed the Mackinaw and other Coast Guard icebreakers. At the Ninth District USCG Headquarters in Cleveland in the late 1950s, Adm. Thiele was assisted in planning icebreaking tactics by Captain Oliver A. Peterson, a veteran of the Greenland Patrol, and a commander of the USCG Eastwind.

In 1957 the Mackinaw, commanded by Capt. Evor S. Kerr, spent several weeks breaking unusually heavy ice in the Mackinaw Straits, Traverse Bay, Green Bay, and the port of Escanaba (Boyer, 1966, pp. 207-211).

U.S. Coast Guard ice operations in Western Lake Superior complemented the functions of ice operations in the middle and high latitudes of North America and the Polar Regions. The icebreaking cutters performed scientific research and other maritime activities.

In 1978 four new USCG 140-foot icebreaker tugboats were launched at Tacoma (Washington) Boatbuilding Company and delivered to specific Great Lakes ports. The cutters were built in response to a U.S. Army Corps of Engineers survey regarding the proposed extension of the shipping season in Duluth and Superior and other Great Lakes ports. The icebreaking tugs were designed for a 17-person crew complement. The cutters had a 4,000-mile range, 13-knot cruising speed, and increased icebreaking power ("Newest GL Icebreaker," 1978).

Lt. (jg) Jonathan Todd Gunvalson served on the USCGC Westwind from 1975-1977. The United States Coast Guard Academy graduate served as an engineering watch officer on the Westwind when it was home-ported at Milwaukee. The 269-foot Westwind kept aids to navigation operational, escorted oil tankers and coal carriers, and carried out icebreaking missions on Lake Michigan, Lake Erie, and Lake Superior.

Lt. Gunvalson sailed on the Westwind to the ports of Bristol (United Kingdom) and Thule (Greenland); and then in the fjords of Norway on the USCGC Chase. Advancing in rank, Commander Gunvalson retired in 1996 after serving at Coast Guard Headquarters in Washington, D.C., as a design engineer during the construction of the USCGC icebreaker Polar Star (WAGB-10). After retirement, Cmdr. Gunvalson joined the engineering division of Howden Buffalo, Inc., in Camden, South Carolina ("Gunvalson Interview," 11 November, 2005).

The Coast Guard cutters with which Cmdr. Gunvalson was associated in his 21-year career had illustrious histories. The Polar Star, built by Lockheed Shipbuilding Co. (Seattle, Washington), was launched on 17 November 1973 and commissioned in 1976. The 399-foot Polar Star participated in icebreaking and scientific missions in the Arctic and Antarctic, and missions between Seattle and the Polar regions (Scheina, 1990, pp. 96-97).

The USCGC Chase (WHEC-718), launched in 1967 at Avondale Shipyards, Inc., (New Orleans, La.) was commissioned in 1968. The 378-foot Hamilton Class cutter patrolled Atlantic, Gulf, and European waters and in Vietnam (Sheina, 1990, pp. 1-3).

The USCGC Westwind (WAGB-281) was launched by Western Pipe and Steel Co., (Los Angeles, CA.) in 1943; served in Atlantic, Arctic and Antarctic waters; and performed icebreaking missions on the Great Lakes in the 1970s out of the Wisconsin port of Milwaukee (Sheina, 1990, pp. 100 and 102).

The Coast Guard cut back on Great Lakes icebreaking in 1980 in the interest of fuel conservation. Coast Guard officials in Cleveland insisted commercial shipping would not be delayed by the policy. Commercial vessels were to be escorted in convoy movements by smaller, more fuel-efficient, cutters. Light ice cover was expected to facilitate the scheduled operations.

Lt. Cmdr. Michael Perkins, Captain of the Port in Duluth, reported that the buoy tender Mesquite would operate a normal schedule, given the cutter's smaller size and fuel-saving capacity ("Icebreaking Cutbacks…," 1980).

Well-trained personnel at Ninth District Coast Guard Headquarters in Cleveland monitored the ice formations on the Great Lakes. Marine science technicians coordinated their activities with the National Weather Service, and utilized weather radar, satellite imagery and meteorological records.

In the 1980s the Coast Guard sent out cutters to guide commercial vessels through Great Lakes ice as early into, or late in, the shipping season as possible. From late December to the first week or two of March the shipping season was terminated. When freighters got iced in, cutters cut paths through the ice until the deepest freeze and thickest ice prevented further navigation.

Coast Guard headquarters maps depicted the Great Lakes from Buffalo to Duluth. The greatest potential points for ice jams were noted on the maps. Strategically placed chains and logs broke up the ice. In that fashion, the USCG has kept wheat and taconite flowing east, and fuel oil and other products flowing west ("Icy Battle," 1981).

In March 1981 the USCGC Mackinaw left its Cheboygan, Michigan port to commence spring icebreaking operations. The large cutter headed into Lake Superior to be on station for the opening of the four Sault Ste. Marie locks. Captain Jim Honke readied his vessel and crew to attack 38-inch ice so wheat could be shipped down the Great Lakes. The Sault (Soo) locks were scheduled to open before the Welland locks on the St. Lawrence Seaway allowed international traffic to access the Great Lakes.

While the USCGC Mackinaw monitored Lake Superior, 140-foot ice-breaking tugboats assisted vessels in the St. Mary's River. The smaller cutters including the Biscayne Bay ported at St. Ignace, Bristol Bay (Detroit), and Katmai Bay out of Sault Ste. Marie ("Mackinaw Departs…," 1981).

A document stamped by the Department of the U.S. Army, Detroit District, Corps of Engineers, revealed several of the missions and issues faced by the Coast Guard in the 1980s. The St. Ignace (Michigan) News reported a story about Coast Guard operations in March 1982.

Stock-piled grain in Canadian ports resulted in pressure to open the Soo Locks earlier in the year (by 22 March), according to a U.S. Army Corps of Engineers official. This issue was related to a request for federally imposed user fees to supplement decreased Coast Guard funding at a time when USCG missions in the enforcement of fishing treaties and drug interdiction were expanding.

In January 1982 a member of Congress made an unsuccessful attempt to legislate the transfer the U.S. Coast Guard from the Treasury Department to the Department of Defense, with the assumption that more funding would come from DOD.

The Reagan-administration user-fee proposal envisioned a variety of tonnage and licensing fees on foreign and domestic vessels and crews. Opponents of the fee proposal successfully argued the difficulties of fee collection and the costs and complexities of administering the necessary bureaucracy (Dolton, "User Fees…," 1982).

An extension of the shipping season was predicted to stimulate the economies of Great Lakes states and the Canadian provinces. Robert Schmid, a Hibbing (Minnesota) businessman, journeyed to Finland in the 1980s to find a solution.

Schmid boarded the technologically advanced Finnish icebreaker Apu for a working cruise in the ice fields of the Gulf of Finland. The large icebreaking vessel kept the sea-lanes open for European vessels. The Apu featured on-board amenities for guests and crew. Spotlights illuminated ice fields in the dark of night. Four-feet ice ridges buckled under the ship's bubble-emitting, multiple-propeller, hull-rocking system. The deck supported a helicopter and aircrew to monitor ice conditions ahead of the ship.

Schmid returned to Minnesota to share his information with public, business, and Coast Guard officials. Some officials favored buying a Finnish icebreaker for the Great Lakes. Other analysts suggested building a similar kind of icebreaker in the United States (Novotne, "Hibbing Man Fights…," 1982). The Coast Guard has since adopted and expanded similar technology and tactics in its own icebreaker fleets.

An "Analysis of Great Lakes Icebreaking Requirements" was prepared by the U.S. Department of Transportation, Office of Navigation Safety and Waterway Services, and published on 17 October 1994. The draft document, titled a "Conceptual Framework," contained compelling facts and conclusions. The study was in response to a Congressional directive to study icebreaking requirements, demands and significance on the Great Lakes.

Data was accumulated, analyzed and graphed based on the annual Ninth District Domestic Icebreaking Reports for fiscal years 1980 through 1994. All of the Great Lakes, adjoining bays and major ports were studied. The Analysis concluded that the ice season generally began around 15 December and ended by 20 April. Wind conditions and ice thicknesses were tabulated. Whitefish Bay, at the southeastern end of Lake Superior, was invariably a congested area because the shallow bay allowed rapid ice formations that grew into ice jams which traveled unimpeded over the vast East-West-bearing lake at the head of the prevailing westerly winds. The ports of Duluth and Superior presented serious ice problems due to rivers and bays that force 27-inch-thick ice into the harbors.

Great Lakes icebreakers described in the Analysis included 140-foot Bay Class WTGBs; the WAGB Class Mackinaw; 180-foot WLBs; and the projected Juniper Class WLBs. Two Juniper Class icebreakers were scheduled for Ninth Coast Guard District use after 1994. The new WLBs were designed to have structural enhancements, a reinforced hull, 6,000 horsepower, and a wider (45-foot) beam.

The cutters increased their effectiveness by periodically operating in tandem. Bubble systems created by airflow from the hull, and "back and ram" techniques, allowed the cutters to break through pressure ridges at speeds of one to two knots. Five feet of refrozen ice was navigated at 8 to 12 knot speeds.

The draft report considered the replacement of the venerable cutter Mackinaw. The replacement was to have a crew of 18 during the full operations period of five months, and a five-person crew in the seven-month period of no icebreaking duties. The Analysis considered cooperative Great Lakes missions conducted by the U.S. Coast Guard and the Canadian Coast Guard. Three Canadian Coast Guard buoy tenders were assigned to do cooperative icebreaking missions. One of the Canadian cutters was 234 feet in length, with 4,000 horsepower and a 49-foot beam ("Analysis of Great Lakes Icebreaking…," 1994).

The USCGC Morro Bay confronted the challenges of Lake Superior ice in the Twin Ports. The icebreaker opened a channel in the Duluth Harbor entry on 17 April 2003 for the second time in the month. Three days of easterly winds up to 60 miles per hour earlier in the month drove ice up against the famous Aerial Lift Bridge. Higher temperatures opened the ice, followed by high winds that repacked the ice that the CGC Morro Bay had cut through and dispersed.

In April 2003 Ninth District Headquarters in Cleveland reported the worst ice season on the Great Lakes in twenty-five years. Lake Erie was completely covered. Lake Huron and Lake Superior were 98% covered, and southern Lake Michigan ice conditions required rare icebreaking missions in the Chicago port region.

Canadian officials reported the worst ice conditions in 30 years. Great Lakes ice conditions challenged the USCGC Mackinaw, the largest U.S. icebreaker on the Great Lakes, and a large Canadian icebreaker.

Keeping shipping lanes open as early and as possible keeps regional liquid fuel and coal heating costs down, and lessens the number of seasonal lay-offs in industries dependent on grain and natural resources shipped on the Great Lakes.

The extreme ice conditions affected international trade when the St. Lawrence Seaway opening was delayed by six days. Duluth Port Director Davis Helberg said the ice conditions in the Twin Ports of Duluth and Superior were the worst in 45 years. Commander Joe McGuiness, Ninth Coast Guard District Assistant Chief, said the 2003 Great Lakes ice conditions were the worst in thirty years.

Icebreaking missions are hard on the well-maintained Coast Guard cutter engines and stressful on crews, Cmdr. McGuiness explained, but added, "the satisfaction of moving huge ships through the ice and the contributions we make to the region" provided professional satisfaction. Coast Guard cutter operations are tactically managed, Cmdr. McGuiness said, "to conduct flood relief and restore all of the channel markers" (Wine, "Great Lakes Icebreakers…," 2003).

As of 23 January 1996, for the 1995-1996 shipping season, Coast Guard icebreakers assisted 440 icebound ships, compared to 382 vessels in 1993-1994, and 103 in 1994-1995. Lake ice which formed early in the 1995-1996 winter season forced the Coast Guard to use convoy escorts for commercial vessels. Lake Superior shipping closed on 15 January with the closing of the Soo Locks ("Guard Icebreakers See Heavy Action," 1996).

In the spring of 2005 an environmental interest group criticized Coast Guard icebreaking plans scheduled for 25 March on Lake Ontario and the St. Lawrence River. The group protested the icebreaking project before the spring thaw occurred. The environmentalists feared that if ships used the waterways during heavy ice, an environmental cleanup after a potential oil spill would be problematic. The Canadian Coast Guard icebreaker Simcoe was scheduled to commence icebreaking on the main seaway channels. Recreational fishing enthusiasts, boaters and snowmobile drivers were advised to avoid U.S. and Canadian icebreakers because of icebreaking hazards and the possibility of subsequent unstable ice ("Icebreaking Plan Draws Criticism," 2005).

The harsh conditions and deterioration processes which confront icebreakers require constant maintenance and the periodic replacement of vessels.

On 2 April 2005 a Coast Guard cutter was launched at the Marinette (Wisconsin) shipyard. The new Great Lakes Ice Breaker (GLIB) Mackinaw (WLBB-30), a 240-foot buoy tender/icebreaker, replaced the 60-year-old

290-foot cutter of the same name (Mosley, "The Newest Icebreaker…," 2005). The icebreaker is propelled by two protected rear screws, called apizods, designed in Finland. The two pivoting azipods absorbed 9,000 shaft horsepower and allowed the Mackinaw to break ice stern-first at speeds up to 10 knots through 14-inch thick ice, and 3 knots in three feet of ice. The stern-first icebreaking capacity relieves the strain on the vessel hull and engine structure involved in the traditional method of ramming ice bow-first, letting the weight of the cutter crush the ice, and then backing off full astern.

The Mackinaw is powered by three efficient diesel engines. The cutter is equipped with a heated buoy deck; a crane capable of lifting a 20-ton lighted buoy of 9 by 38 feet dimensions; and advanced navigation, positioning, sonar, radar, and communications technology. The advanced technology allowed a reduction in the complement of officers and enlisted personnel compared to the old Mackinaw. Crew dining and living accommodations on the new Mackinaw are larger and more comfortable (Snyder, "Coast Guard Mackinaw…," 2005-2006). The Cheboygan (Michigan) based icebreaker, commanded by Cmdr. Donald R. Triner, was also designed to carry out the other Coast Guard missions of buoy tending, search and rescue, national defense, homeland security, pollution control and law enforcement.

CHAPTER 10

BUOY TENDERS

THE USCGC SUNDEW (WLB-404) exemplified the versatility and dependability of the rugged, multi-mission buoy tenders on the Great Lakes.

In 1958 the Sundew was involved in a search and rescue (SAR) mission in the stormy November waters off the Wisconsin shore of Lake Michigan. The 648-foot bulk carrier Carl D. Bradley had been built in 1927 and had shown signs of structural deterioration before it went into the 50-65 mile per hour gale-force winds and 20-foot seas of northern Lake Michigan. With empty cargo holds, the Bradley was stabilized only by 9,000 tons of water ballast as it headed for port in Calcite, Michigan. The long merchant vessel's stern and bow were alternately lifted out of and sunk into the stormy waters until it "hogged" or fractured into two sections. Captain Roland Bryan sent out a distress call 12 miles from Gull Island.

The cutter Sundew searched for the merchant vessel (MV) Bradley for two days before finding the two survivors of the 34-person crew on a life-raft on 20 November, 14 hours after the sinking (Schumacher, pp. 49-53, 2005).

In January of 1983 the 180-foot Sundew was cutting through one-foot-thick ice, picking up the last two lighted buoys in the harbor of Duluth-Superior. The crew attempted to hook on to one of the three-ton ice-covered buoys to hoist it to the deck of the buoy tender. Chief Warrant Officer Jim Toms fired a shotgun to blast away the ice so the hook, chain, and boom system could be attached to the navigation aid. The removal of the harbor buoys ended the previous shipping season. The importance of Coast Guard aids to navigation work (ATN) is indicated by the functions served. One buoy marked the point where lake carriers turned into the Duluth entry and sailed under the historic Aerial Lift Bridge in the Twin Ports Harbor. The second buoy marked a dangerous shallow area adjacent to a grain storage elevator.

The lighted buoys were among the total of 358 ATN in the harbor and on Lake Superior. Lt. Cmdr. Sal Romo, Jr., the Sundew commanding officer, and his crew had to remove the ATN to keep them from being damaged by lake ice. Each buoy had an estimated $10,000 replacement cost in the 1980s. The buoys were scheduled for maintenance over the winter months, as was the Sundew after a season of aiding mariners and a downed pilot in distress, collecting ecological samples, stocking fish, and icebreaking. The 45 enlisted personnel and seven-officer complement on the Sundew was scheduled for winter leave, but some of the crew would stand available for SAR missions on the ice (Kucera, "Coast Guard Retrieves the Buoys…," 1983).

In 1990 Lake Superior Coast Guard stations included Minnesota units in Grand Marais and Duluth, and a radio signal station in Baudette; Coast Guard Station Bayfield in Wisconsin; and Portage, Sault. Ste. Marie, and Marquette in Michigan.

Coast Guard Station Duluth dates back to the late 19th century establishment of a U.S. Life Saving Service station and 10-person crew at Park Point. The 1990 Duluth Coast Guard complement included USCGC Sundew skipper Lt. Cmdr. Gary Greene; Lt. Cmdr. Tom Curelli of the Duluth Marine Safety Office; and Senior Chief Marvin Gebers.

Station Duluth recorded an annual average of 90 SAR as of 1990, and performed environmental monitoring, law enforcement duties, boat licensing and inspection, and ATN missions. The Marine Safety Office (MSO) was in the Army Corps of Engineers Building at Canal Park. The fifteen-person Coast Guard complement at the MSO inspected commercial vessels for licensing and safe equipment, and responded to oil spills and accidents. The USCGC Sundew carried out its missions from the Park Point station (Renner, "Coast Guard Duties…," 1990).

Duluth has been the historic site of a full range of Coast Guard domestic and national security missions. During World War II, a Coast Guard representative assured public safety officials that a minimum of five armed patrol boats would provide port security for the Duluth-Superior Harbor 24 hours per day ("In Days Gone By, 1982).

In June 1995 Marinette Marine Corporation (Marinette, Wisconsin) launched the USCGC Juniper sideways into the narrow Menominee River. The namesake of the new class of 16 seagoing buoy tenders was scheduled for duty on the East Coast.

Admiral Robert Kramek, the Commandant of the Coast Guard, was on hand to witness the launching, with several federal, state and local officials. The Juniper Class cutters were intended to replace the World War II 180-foot cutters, four of which were still serving on the Great Lakes at the time of the Juniper launching. The new technologically advanced cutters were designed to carry out all of the multi-mission responsibilities of the Coast Guard, including ATN, oil spills, SAR, port security and national defense ("Coast Guard Christening," 1995).

In addition to building the 225-foot Juniper Class buoy tenders, Marinette Marine received a federal contract to build the new Keeper Class shore and inland cutters. Keeper Class tenders are named for U.S. Lighthouse Service and Coast Guard lighthouse keepers. The first vessel of the class was the Ida Lewis that had a 1997 delivery date ("Shipyard Gets Go-Ahead…," 1995).

The USCGC Woodrush was built in Duluth in 1944. As of the 1970s, the venerable buoy tender had spent almost three decades in the homeport. The 180-foot cutter was well designed for the forbidding Lake Superior environment. With a draft of 12 feet and a 37-foot beam, the Woodrush was powered with a diesel-electric drive that contributed 900 horsepower to the single screw at speeds up to 15 miles per hour.

The Woodrush served isolated Lake Superior lighthouses and their Coast Guard crews with supplies and provisions, and rescued them from the stations when winter ice and snow closed in. The Woodrush used its icebreaking hull to open the Duluth-Superior Harbor. Then the cutter usually headed to the southeastern end of Lake Superior to assist other cutters in opening the waters around the Soo Locks to commence the shipping season.

The 350-mile long, 160-mile wide Lake Superior challenged the Woodrush and subsequent cutters with its cold and stormy waters. Maintaining and monitoring the large ATN buoys on the Lake is just one of the responsibilities of the cutter crews on the Inland Seas ("The USCGC Woodrush," ca. 1974).

The Woodrush performed a valiant mission when the MV Edmund Fitzgerald sank in eastern Lake Superior in gale-force winds, snow, and gigantic waves on the evening of 10 November, 1975. Captain Jimmy Hobaugh and the crew of the Woodrush left the port of Duluth in mountainous seas to endure a four-day search for the missing Fitzgerald and any unlikely survivors. The Coast Guard officer had considerable ocean and Great Lakes experience, but even Capt. Hobaugh was surprised by the fury of the storm as he steamed from Duluth to the southeastern terminus of Lake Superior, bucking 25-foot waves.

The Woodrush was later equipped with advanced technology to assist in the search for the doomed lake carrier and then to film the Fitzgerald at its final resting place on the lake bottom just off White Fish Bay (Schumacher, pp. 90-92, 102-103).

James R. Marshall tracked the USCGC Woodrush in its final mission after its 35 years assignment in Duluth. In 1980 the Woodrush was reassigned to Sitka, Alaska. In 1989 its old engines were removed and modern electro-motor diesels were installed, along with larger hoists to handle ocean buoys, bigger lifeboats, and state-of-the-art navigational technology. The Woodrush was de-commissioned in 2001 and scheduled to steam to an African maritime nation to be used as a patrol boat (Marshall, "From Icebreaking to Africa," 2001).

In August 1989 the city of Duluth hosted a U.S. Coast Guard Buoy Tender Conference. The social and professional gathering was a training session for more than 200 sailors in the operation and duties aboard C-Frame 180-foot vessels. Petty Officer First Class David Hileman, the head of the Duluth Recruiting Detachment, planned the conference with the help of city and Coast Guard officials. The conference honored the 45th Anniversary of the five Great Lakes 108-foot buoy tenders constructed in Duluth during World War II by the Marine Iron and Ship Building Company and Zenith Dredge Company.

The buoy tenders Acacia, Mariposa, and Mesquite from the Michigan ports of Grand Haven, Detroit, and Charlevoix, respectively, were led into the harbor by the Duluth-based USCGC Sundew. The USCGC Bramble (Port Huron, Michigan) was being repaired and could not sail to the conference ("Buoy Tender Meet…," 1989).

Several hundred people viewed the buoy tender parade from the crowded Duluth Ship Canal. Each ship sailed into the harbor with crews standing at attention on deck representing the buoy tender missions of channel buoy maintenance and keeping commercial shipping lanes clear of ice as late into the winter and early in the spring as possible ("USCG Buoytenders Return…," 1989).

A Coast Guard aircraft made its appearance at the 1989 buoy tender conference. A USCG HH3F twin-engine helicopter landed at Duluth's Bayfront Park. The chopper, with a six-person crew and room for 20 people, was part of a Coast Guard recruitment campaign. The rotary-wing aircraft was one of three SAR helicopters stationed at USCG Air Station Traverse City, Michigan ("Coast Guard Cutter of Another Sort," 1989).

At peak levels the Marine Iron and Zenith Dredge companies employed 3,000 workers. As of 1989, 31 of the 38 tenders built in the Twin Ports were still in operation. Lt. Cmdr. Thomas Curelli of the Duluth MSO said, "For most of the ships (including the Sundew) all but one built in Duluth, it is their 45th birthdays being celebrated here." (Jacobson, "Duluth to Host…," 1989).

The Sundew commanding officer, Cmdr. John Dejung, explained the significance of the 50-Year Buoy Tender Reunion that he attended in 1994: "It is of great value to mariners instrumental in maintaining the flow of commerce and keeping operations safe." The 50th Reunion included shipyard workers and their families, friends, and relatives, explained retired USCG officer Gil Porter. Porter was in the USCG from 1941-1965 and served as a commander of the CGC Woodrush.

Some of the 180-foot buoy tenders served in the World War II Pacific, and provided access to islands eventually liberated from Japanese troops (Stodghill, "Reunion Will Buoy Former Cutter Crews," 1994).

In August 1994, Lt. Cmdr. J. William Brubaker took command of USCGC Sundew (WLB-404) in Duluth. The previous skipper, Cmdr. John Dejung, commanded the Sundew for three years, and served in Duluth for two years prior to taking command of the ship. Cmdr. Dejung's new assignment was as Chief of ATN in the St. Louis district and command responsibility for 19 buoy tenders that patrolled the tributaries and main channels of the Ohio, Missouri, and Mississippi rivers.

After serving in Duluth as operating officer on the cutters Mesquite and Sundew, Lt. Cmdr. Brubaker was transferred as an instructor to the U.S. Coast Guard Academy in New London, Connecticut. Then Brubaker returned to the Twin Ports (Stodghill, "New Sundew Commander…," 1994).

Writing in the March-April 1995 edition of The Nor'Easter, the Lake Superior Marine Museum Association journal, Ray Wiemer and Tom Bourne described the 180s, the 38 buoy tenders built during World War II in Duluth. The journalists also chronicled the USCGC Ironwood (WLB-297) built at the Coast Guard Yard in Curtis Bay, Maryland.

Wiemer and Bourne wrote from their experience as buoy tender crewmembers on the Great Lakes in the 1950s. Wiemer served on the USCGC Acacia (WLB-406) out of Detroit. Bourne served out of Duluth on the

Woodrush (WLB-407). The authors listed the roster of the WLB Class Cutters, their categorization into Class A (Cactus), Class B (Mesquite), and Class C (Iris) vessels. Wiemer and Bourne described the multi-mission functions of the old 180s, the shipyards where they were built, and the status (active or decommissioned) and homeports of the vessels.

The "Black Hull Fleet," as the authors aptly described them, were the workhorses of the fleet. The buoy tender hulls have traditionally been painted black, in contrast to white-hulled cutters, because of the gritty, tough and dangerous work the tenders and crews do.

Buoy tenders perform SAR, law enforcement, environmental protection, and icebreaking duties as well as their primary ATN responsibilities (Wiemer and Bourne, "Workhorses of the Fleet…," 1995).

In May 2004 the 60-year-old 180-foot buoy tender Sundew was decommissioned. The cutter was docked adjacent to the Duluth Entertainment Convention Center and Canal Park. The USCGC Sundew was built in Duluth by the Marine Iron and Shipbuilding Company and launched in 1944. The cutter had served at Coast Guard stations in Charlevoix (Michigan); Sturgeon Bay, Milwaukee, and Manitowoc (Wisconsin); and finally in Duluth from 1980 to 2004.

The Sundew was prepared for its final duty as a maritime museum on display in proximity to a Great Lakes ore carrier, and a former tugboat that had served as a U.S. Army Corps of Engineer vessel (Frederick, "Tender Loving Care," 2004).

The 225-foot Juniper Class Buoy Tender Alder (WLD-216) replaced the Sundew in Duluth. The Alder was side-launched into the Menominee River in February 2004 by the Marinette Marine Corporation in Marinette, Wisconsin. In January 2005 the Alder, commanded by Lt. Cmdr. Steve Teschendorf, began breaking ice in the Twin Ports of Duluth and Superior. The 2,000-ton tender was powered by a 4,000 horsepower engine and cleared the port channels of ice in eight days, in what had been a three-week task for the Sundew ("New Cutter Breaks the Ice in Twin Ports," 2005).

The author received a post card invitation from the Western Lake Superior Council of the Navy League announcing the commissioning ceremonies of the Alder which took place on 21 April 2005 in Duluth.

In 2005 the Marinette Marine Corporation side-launched the new USCGC Mackinaw (WLBB-30) into the Menominee River. The technologically advanced buoy tender replaced the famous old 290-foot Mackinaw (WAGB-83) that was launched during World War II. The decommissioned Mackinaw was scheduled to be moored as a museum vessel in its homeport of Cheboygan, Michigan. The new 240-foot Mackinaw, with its 58-foot draft, 58-foot beam, and complement of nine officers and 47 crewmembers, was stationed in Cheboygan under the command of Cmdr. Donald Triner ("Delivering a Big Mac…," 2005).

CHAPTER 11

LIFE SAVING ON THE GREAT LAKES

A PRE-EMINENT MISSION of the U.S. Coast Guard is the saving of life and property at sea. The humanitarian naval service dates back to the U.S Revenue Cutter Service of 1790 and the 19th century U.S. Life-Saving Service (USLSS).

The USLSS merged with the U.S. Revenue Cutter Service to form the Coast Guard in 1915. The U.S. Lighthouse Service (USLHS), founded in 1789, coordinated activities with the USLSS. The USLHS was united with the USCG in 1939. The U.S. Life-Saving Service Heritage Association preserves the heritage of the USLSS, USLHS and the USCG. The mission of the non-profit educational and historical association is to "preserve the building, boats, equipment, and history of the U.S. Life-Saving Service and the U.S. Coast Guard." The USLSS Heritage Association proclaims its activities in its quarterly Wreck and Rescue Journal.

The U.S. Life-Saving Service was established by the federal government in 1848. The coastal rescue stations, initially manned by volunteers, were staffed with paid personnel by 1871. The life-saving stations established by Congress served commercial and humanitarian objectives, and made the ocean shores and Great Lakes safer for mariners and passengers. At its peak, the USLSS administered 279 stations. The annual USLSS Report

(1885) stated, “these poor, plain (USLSS personnel) took their lives in their hands…that others might live…” (U.S. Life-Saving Service Heritage Association brochure, undated).

The University of Wisconsin-Superior is the site of the Lake Superior Maritime History Collection in the Jim Dan Hill Library. The Lake Superior Maritime Collection Archives contain periodical sources, documents, and photographs commemorating the Coast Guard and commercial activities on the Great Lakes. The U.S. Army Corps of Engineers has contributed significantly to the collection.

Collection photographs include USLSS activities in the Twin Ports of Duluth and Superior. Four photographs (ca. 1915) from the “Coast Guard Stations and Vessels” (File III) illustrate the USLSS Station on Minnesota (Park) Point, Duluth; four uniformed crew members demonstrating resuscitation drills and life-saving equipment; eight crewmembers, and a horse-drawn cart; three types of the motor-life/surf boats used in life saving; and six uniformed crewmembers practicing with the line-throwing Lyle Gun.

The Lyle Gun, invented by U.S. Army officer Col. David A. Lyle, was a miniature cannon that shot line out to stranded or sinking ships. A strap or chair device attached to the secured line allowed passengers and crewmembers to vacate the vessel and slide to shore.

A fifth photograph of the Duluth USLSS Station (ca. 1915) illustrated eight smartly dressed uniformed personnel standing in front of the building that housed the crew. The rectangular tower on the roof allowed watch-standers to survey the harbor in search of mariners and ships in distress. An attached building housed a horse-drawn lifesaving wagon (beach cart) and equipment. A lifeboat lay adjacent to the driveway that led to the shoreline.

In an official U.S. Coast Guard document dated 5 March, 1975, the Commander of U.S. Coast Guard Station Duluth sent the Ninth District Coast Guard Commander a Captain of the Port (COTP) Unit History, as per official request.

Cmdr. J.H. Hobaugh (Coast Guard Station Duluth) reported that the first Duluth station was constructed by the USLSS in 1894. The first crew consisted of two enlisted lifeboat men and several volunteers. The station equipment included a trailer, beach cart, Lyle gun, and 14-foot surfboat.

In 1914 the Duluth Station received a 34-foot motor-powered surfboat. A 36-foot motor lifeboat was acquired in 1939, the year the USLHS merged with the Coast Guard, whose personnel operated the Duluth Lighthouse from that year on. During World War II civilian yachtsmen contributed their skills to the unit as members of the Coast Guard Auxiliary. A Port Security Unit was established in Duluth during the war, and the personnel complement was increased to fifteen.

Construction began on a new Coast Guard station in 1953. The station was commissioned in 1954 with a crew complement of twenty. The manned lookout tower constructed in 1955 was inoperative after 1963, when the radio equipment was moved to the main station.

Coast Guard Station Bayfield (Wisconsin) was designated a search and rescue (SAR) detachment in 1969 and affiliated with Station Duluth. By 1975 the combined crews of Station Duluth, Group Duluth, COTP Duluth, and Station Bayfield totaled 55. The Coast Guard units in Duluth and Bayfield averaged 90 rescue incidents per year.

In 1974 the Duluth Entry Lighthouse was automated and remotely controlled. In that year VHF-FM radio systems allowed reliable communications to all Western Lake Superior stations with transmission sites in Duluth, Bayfield, and Hancock (Michigan).

The Duluth Station missions were listed as aids to navigation (ATN), SAR, law enforcement, boat boarding, dangerous cargo inspection and handling, ship inspections, pollution control, and the monitoring of fuel transfers to and from facilities and vessels.

In his historical report to Ninth District Headquarter in Cleveland, Cmdr. J. H. Hobaugh listed the Duluth Station equipment inventory: two pickup trucks, one stake truck, one tractor, one Boston whaler, two ice skiffs,

a 30-foot utility boat, two 40-foot utility boats, one 36-foot motor lifeboat, one 44-foot motor lifeboat, a 17-foot utility boat, and two automobiles (Cmdr. Hobaugh, "Duluth Group Coast Guard Station History Report," 1975).

Great Lakes shipwreck expert and author Dr. Julius F. Wolff, Jr., chronicled a century of Coast Guard rescues on the Great Lakes since 1876. The University of Minnesota-Duluth political science professor, writing in the periodical Inland Seas (1975), cited as many as 60 major ship disasters and numerous minor accidents and rescues by the Revenue Cutter Service (or, as Wolff called it, the Revenue Marine), U.S. Life Saving Service, and Coast Guard. Wolff traced the establishment of U.S. Life Saving Service stations on Lake Superior, commencing at Michigan stations in 1874, extending to Duluth (1896), and then to Grand Marais (Minnesota), and Ashland and Bayfield (Wisconsin). The author explained the missions carried out by Life-Saving Service beach patrols and surfboat sailors in different seasons and circumstances.

A June 1981 windstorm battered the Twin Ports of Duluth-Superior. The SAR team from Coast Guard Group Station Duluth set out on choppy Lake Superior waters to respond to several small-craft distress calls. Chief Warrant Officer Jim Toms reported anemometer wind readings of 75 miles per hour. CWO Toms credited the USCG, Coast Guard Auxiliary, and the St. Louis County Sheriff's Department with rendering assistance to boaters in distress and overdue mariners.

Large cargo carriers weathered the storm, but an ore carrier broke from its scrap-yard moorings and floated across the bay. Cmdr. Stanley Spurgeon, COTP Duluth, met with shipping company officials to discuss the vessel retrieval plans (Pomeroy, "Coast Guard…Windstorm," 1981).

Petty Officer Third Class Mike Baugus returned to his billet as rescue-boat coxwain at Coast Guard Station Duluth on Park Point. The coxwain was responsible for operating the self-bailing, self-righting 44' motor lifeboat. PO3 Baugus completed training for his responsibilities at the Coast Guard surfboat-training center at Cape Disappointment in Washington. Cape D, as it is called, is the site of a rigorous training school adjacent to the turbulent waters at the mouth of the Columbia River in the Pacific Northwest.

Students and instructors practiced their skills in swells that ranged from five to 40 feet in height. PO3 Baugus knew he was unlikely to face that kind of surf in Duluth, but realized other difficult challenges faced Great Lakes Coast Guard crews (Dennis, "It's Tough Sailing…," 1988).

The Duluth Marine Safety Office (MSO) received media attention in the cold December 1988 winter, when a network television station requested Coast Guard assistance in the production of a show about hypothermia. Petty Officer Rick Darland volunteered to put on insulated survival gear and immerse himself in icy Lake Superior waters while cameras were rolling ("Hypothermia...," 1988).

Not all SAR missions are successful. In August 1990 the USCG suspended a search for a Cessna 150 aircraft with two passengers aboard which crashed into Lake Michigan. The pilot was a member of the Michigan Air National Guard. The Coast Guard found personal papers and the aircraft identification number ("Coast Guard Suspended Search," 1990).

Great Lakes winter SAR missions challenge the skills and courage of Coast Guard and state and local public safety personnel. Winter ice on the Great Lakes means ice fishermen venture out on the floes. Temperature and wind conditions can change, causing huge ice chunks to break off and float away. In 1993 Duluth Fire Department and Coast Guard rescue personnel removed 23 fishermen from a Lake Superior ice floe in two boat relays. In the time the rescue took, the ice floe had moved from 100 yards to a mile off shore ("Risky Business," 1993).

In December 1993 six anglers were rescued near Washburn (Wisconsin) on Lake Superior ice. Coast Guard, city, county, state, and federal public safety personnel converged on the scene with assorted vehicles and watercraft. The multi-agency communications and rescue skills that had been recently practiced in cooperative drills resulted in successful rescues ("Ice Fishermen…," 1993).

Three fishermen were rescued in April 1994 from a breakaway ice floe on Chequamegon Bay near Ashland, Wisconsin. John Johnson, a civilian rescuer from Bayfield, made two trips to the ice floe in a rowboat. The

Coast Guard and the Ashland Fire and Rescue Unit arrived at the scene as Johnson came to shore with the last angler (Sasman, "Fishermen Rescued…," 1994).

In August 1999 three kayakers ran into trouble in six-feet seas off the Apostle Islands in western Lake Superior. Chief Petty Officer Arnold Martin of the Duluth MSO said that a two-way radio May-Day ("m'aidez!") call from one of the kayakers reported one kayaker capsized, and another lost in the choppy, cold waters. A charter fishing boat responded to the call and rescued one kayaker. CPO Martin reported that the Coast Guard initiated a search in a 41-foot boat, and a National Park Service boat joined the mission. A sailboat captain located the missing female kayaker on an island, and the NPS boat picked up the third adventurer. All were taken to Coast Guard Station Bayfield (Olivo, "Kayakers Rescued…," 1999).

In May 1994 Coast Guard Station Duluth and law enforcement and rescue personnel from the Duluth-Superior region searched in vain for a fisherman who fell from his boat off Barker's Island in Superior. The fisherman's partner, a seven-year-old nephew, maneuvered the boat close to his uncle, threw a flotation device into the cold Lake Superior water, and called for help to a passing fishing boat ("Search Continues…," 1994). The fisherman's body was recovered several days later in Superior Bay ("Boater's Body Recovered…," 1994).

Coast Guard Station Bayfield personnel responded in their 22-feet boat to a sinking 18-feet pleasure boat. A USCG helicopter from the Air Station Traverse City (Michigan), which happened to be in Bayfield for a training exercise, hovered above the vessels as the adults and three children on board were towed to shore. The boat had taken on water because of a damaged boat plug ("Coast Guard Saves Boat," 1994).

The Bayfield Coast Guard Station reported a significant increase in rescue missions to disabled and stranded vessels in 1994. Chief Petty Officer Paul Shurte attributed the operations proliferation to increased boating activity and public awareness of Coast Guard presence. CPO Shurte said most of the rescues involved disabled vessels or boats that ran out of fuel. The seasonal average of 43 missions was more than doubled in 1994 ("Coast Guard Kept Busy," 1994).

Water accidents can differ greatly. In August 1994, U.S. Coast Guard officials, the Mackinac County (Michigan) Sheriff's Department, and Federal Aviation Administration investigators examined the circumstances of a boat-seaplane collision on Lake Michigan. Three of the boat occupants jumped into the water to safety, but a six-year-old child died at the scene ("Seaplane, Boat Collision…," 1994).

Coast Guard law enforcement, life-saving, boat safety and inspection duties are performed out of the smallest ports and stations. Coast Guard Station Bayfield launched its new 44-foot rescue craft in the 1992 boating season. The local press reminded boaters of decal, license, and radio regulations, the Rules of the Road, and the Coast Guard power of arrest in safety and boater intoxication incidents ("Coast Guard Rescue Craft," 1992).

In October 1995 two Wisconsin teenage rafters were rescued by the USCG from the Nemadji River in Superior. Stranded up-river, the boys were rescued when a sailboat crew notified the Superior Police Department, which then contacted the Coast Guard. Petty Officer Curtis Barthel of Station Duluth informed the media about the rescue ("Coast Guard Rescues Teens…," 1995).

In May 1998 crewmembers welcomed a new 44-foot Motor Life Boat to the Dollar Bay (Michigan) Portage Coast Guard Station. The MLB was piloted through stormy waters from Detroit. The sleek metal craft was capable of 27 knots, propelled with two 425-HP engines. The high-technology MLB was outfitted with electronic mapping, radio direction finding, a Global Positioning System, and an automatic pilot (Pintar, "Ahoy…," 1998).

The Coast Guard role as "Guardians of the Great Lakes" dates back to the first Great Lakes lighthouse (1819), and the earliest Revenue Cutter and U.S. Life-Saving Service missions.

In World War II Great Lakes Coast Guard units performed life saving and port security missions, and operated under U.S. Navy and Defense Department jurisdiction. On 12 June, 1943 the Great Lakes icebreaker Escanaba was sunk off Newfoundland (Canada) by a German submarine: only two of the 103 crewmembers survived. The citizens of Grand Haven (Michigan), the homeport of the USCGC Escanaba, raised one million dollars to build a new cutter of the same name. In addition, city officials commenced an annual tribute to the memory of

the USCGC Escanaba and its crew. Grand Haven was officially designated "Coast Guard City, U.S.A." by the United States Coast Guard (Mehney, "Continuing the Tradition," 1999).

Bayfield, Wisconsin, which had a resident population of less than 700 in 2004, hosts one of the smallest and busiest Coast Guard stations on the Great Lakes. Established in 1946, Station Bayfield was designated as part of Group Sault Ste. Marie (Michigan) in 2001. Coast Guard Station Bayfield was responsible for an Area of Responsibility (AOR) that included 300 miles of shoreline and 12 marinas. In 2000, Station Bayfield conducted 100 vessel boardings and responded to 55 SAR incidents.

Coast Guard Station Bayfield coordinates missions with USCG Station Duluth, its Lake Superior neighbor 70 miles to the west. Station Bayfield is located north of Ashland and west of the Apostle Islands. The Bayfield Station was rebuilt in 1980. In 2001 the station supported one 21-foot boat, a 41-foot Utility Boat, an active duty crew of eleven, four Reservists, and the members of Coast Guard Auxiliary Flotilla 095-08-01 ("Station Bayfield…," 2001).

An active Twin Ports (Duluth-Superior) Coast Guard earned local appreciation in 2004 when Superior officials offered a 36-foot motor lifeboat to the public. Coast Guard personnel repaired the venerable boat to facilitate the process ("Small Stuff," 2004).

The immense, frigid waters of the Great Lakes offer beauty and danger to mariners and aviators. In April 2005 a single-engine aircraft ran out of fuel and landed in Lake Michigan, 5 miles from the Wisconsin shoreline. The pilot called for assistance on a cell phone and reported the absence of a flotation device. Survival time in the 44-degree water is limited ("Downed Pilot Sought…," 2005). The search for Jonathan Leber, an aviation missionary student, was called off after an extensive search within a five-mile radius off the Milwaukee shore (Tobias, "Authorities Call off Search…," 2005).

The civilian Coast Guard Auxiliary performs essential boating safety and life-saving missions in its flotillas throughout the United States. Trained Auxiliary volunteers offer boating safety classes and free boat inspections in Great Lakes port cities and marinas.

One hundred and seventy boating accidents occurred in the state of Michigan in 2004, down from 226 the previous year. Twenty-six boating fatalities occurred in 2004. Most of Michigan's boating accidents happened on inland lakes, not Lake Michigan. The enormity and significance of Auxiliary activities is illustrated by the fact that 944,800 boats were registered in Michigan in 2004 (Brand, "Coast Guard Offers Free Vessel Checks," 2005).

A U.S. Coast Guard Auxiliary Division of the Eighth Western Rivers Region District under Auxiliary Captain Doug Cederholm operated on the Upper Mississippi River in 2005. Cederholm and his Auxiliary colleagues conducted weekend inspections of recreational vessels in the port areas of Wabasha and Lake City (Minnesota) and LaCrosse (Wisconsin). The Auxiliaries informed the public about the legislative approval of the Minnesota child life-jacket law that went into effect in 2005. The law was passed in memory of a child who drowned after falling out of a boat while not wearing a flotation device (Cederholm, "Conversation…," 2005). Coast Guard regulations required children under the age of 13 to wear personal flotation devices while in a moving boat on federal interstate waters such as the Mississippi River ("Boat Safety Bill," 2005).

Port Huron (Michigan) Police Chief William Corbett motivated community residents to commemorate active duty and retired area Coast Guard personnel on a special day in 2005. Port Huron had served as the homeport of the USCGC Hollyhock and its 28 officers and enlisted personnel, and 50 Coast Guard members of the small boat station (Galluzzo, "Port Huron Prepares…," 2005).

In the winter of 2005 the Harbor Beach (Michigan) Coast Guard Station complement planned a memorial to commemorate the lives of six U.S. Life Saving Service surfmen who died on 23 April 1880 while attempting to rescue the crew of a sailing schooner (Galluzzo, "Local Coast Guard Station…," 2005).

The United States Life Saving Service Heritage Association (USLSSHA) is dedicated to the task of preserving the maritime heritage of the Coast Guard and its agency predecessors through its periodicals, preservation

projects, fund-raising, and annual conventions. The USLSSHA, headquartered in Hull, Massachusetts, publishes the Life Lines newsletter, and Wreck and Rescue magazine.

FEMA and the Coast Guard joined the newly created federal Department of Homeland Security in 2003. Coast Guard expertise in life saving, law enforcement, and natural disaster situations was demonstrated in September 2005, when Hurricane Katrina caused historic devastation in the Gulf Coast states of Mississippi and Louisiana, and, in particular, the city of New Orleans.

After initial criticism of the belated response of state and local officials and the Federal Emergency Management Agency, the FEMA director was transferred out of New Orleans, and DHS Secretary Michael Chertoff appointed U.S. Coast Guard Vice Admiral Thad W. Allen as the chief coordinating military and federal officer to administer disaster response efforts in the New Orleans area.

In the days prior to the appointment of Adm. Allen, the Coast Guard had earned national acclaim for the more than 10,000 dangerous and skillful helicopter and boat in the wake of the hurricane. By the end of the mission, the U.S. Coast Guard had saved more than 33,000 lives. Adm. Allen had previously attracted attention for his administration of search and rescue, immigration and drug interdiction missions in the Caribbean region, and his administrative response to the 11 September, 2001 terrorist attacks on the United States in the Atlantic Area (Shanker, "Commander Accustomed to Scrutiny…," 2005).

Whether on land or sea, or in boats, cutters and aircraft, the life-saving heritage of the Coast Guard continues on the Great Lakes and throughout America's maritime domain.

CHAPTER 12

ENVIRONMENTAL PROTECTION

Environmental protection is one of the Coast Guard missions. The Coast Guard monitors and enforces pollution laws and fishing regulations, and is responsible for preventing and prosecuting oil spills.

Ships and boats are inspected for compliance with maintenance and oil spill regulations. When spills occur, the Coast Guard, in cooperation with other government agencies and private companies, is involved in clean-up operations, investigates the source of the pollution, holds hearings, and levies fines on violators.

Environmental and natural resource protection missions have placed the Coast Guard in interesting situations. On one occasion, St. Louis County (Minnesota) sheriff deputies and a small-boat Coast Guard crew tracked a wayward 800-pound moose along the Lake Superior shoreline on the outskirts of Duluth. Deputy Sheriff Michael Hart and Coast Guard Petty Officers Don Linder and Tim Davis roped the moose, nudged it on to shore, tagged it, and released the animal into adjacent woods (Feichtinger, "Wild Moose Chase…," ca. 1982).

In April 1980, Lt. Cmdr. Mike Perkins of Coast Guard Station Duluth led the investigation to identify the source vessel of a 1500-gallon oil spill which washed up onto the south shore of Lake Superior near Herbster, Wisconsin. Samples of the leaked heavy bunker fuel were sent to the Coast Guard laboratory in Groton, Connecticut. The samples were matched with foreign and domestic vessels in the area at the time of the spill.

Alleged pollution violators, ships officers, and associated corporations can be subjected to Coast Guard hearings, fines, and clean-up costs ("Search On…," 1980).

A ruptured pipeline spilled 94,500 gallons of fuel into St. Louis Bay on Lake Superior in November 1981. Lt. Cmdr. Mike Perkins, of the Duluth Marine Safety Office, and 20 well-trained colleagues cooperated with 12 local and state agencies to respond to the spill.

The USCG, the Superior (Wisconsin) Fire Department, and the Department of Natural Resources cleaned up the spill and determined the extent of ground water contamination. Some of the spill seeped into the local sewer system. Fortunately, the fuel was not ignited by sparks (Lundstrom, "Coast Guard Was Prepared," 1981).

In September 1989, Cmdr. Clay Fust of MSO Duluth requested the use of a Traverse City (Michigan) Station Coast Guard helicopter to scan Lake Superior for oil spills. Two commercial vessel spills were previously discovered five miles from the Duluth Ship Canal. To locate the maritime violator, the USCG boarded 12

vessels to collect oil and other lubricant samples to send to laboratories for testing, ship identification and determination of appropriate fines and clean-up costs ("Coast Guard to Scan…," 1989).

Cmdr. John Johnson ordered an icebreaker to Detroit to escort a 428-foot Finnish tanker that had run aground near Buffalo, New York. Assisted by a Canadian Coast Guard icebreaker, the hazardous chemical tanker was allowed to cross Lake Erie despite outer hull damage, because the inner hull was intact ("Damaged Chemical Tanker…," 1990).

Lt. Cmdr. Thomas Curelli of USCG MSO Duluth reported the successful clean-up of an oil spill that washed ashore on Minnesota Point in September 1989. A more serious oil slick ½-mile wide and 3 miles long, discovered earlier in the month, was investigated to determine what vessel caused it ("Beach Cleaned…," 1989).

Ironically, one of the largest Great Lakes oil spills occurred in the 1989 grounding and loss of the USCG buoy tender Mesquite on Lake Superior ("Great Lakes Fleets…," 1990).

The fuel oil spills from the groundings of the M/V Exxon Valdez tanker off the Alaskan coast (1990) and the USCGC Mesquite on Lake Superior (1989) prompted media inquiries about Coast Guard preparedness for Great Lakes spills.

Group Sault Ste. Marie (Michigan) commander, Captain Jimmy Hobaugh, provided his usual candid responses to media queries. Capt. Hobaugh said Coast Guard oil spill plans, vessels, and equipment were adequate.

The Coast Guard and several federal, state and local agencies responded to the Mesquite grounding, Capt. Hobaugh explained, and he concluded, "Oil spills from Great Lakes vessels can be contained, and can dissipate and evaporate quickly."

Captain Hobaugh outlined the deployment of pollution gear and vessels from regional Coast Guard stations, and the availability of aircraft to fly in additional equipment. Specially trained "Coast Guard Strike Force Teams," Hobaugh asserted, "can be on a spill site within hours of an incident." The most troublesome spill scenario, "and the one thing that scares me," Capt. Hobaugh conceded, "is the ice. We just don't know what would happen with an oil spill in the midst of Great Lakes winter ice" (Storey, "Coast Guard Prepared…," 1990).

The Lake Carriers Association expressed concern about the ecological repercussions of an oil spill in Great Lakes ice cover. At a February 1990 fleet conference, representatives from U.S. and Canadian Great Lakes commercial fleets discussed the industry's commitment to "a zero spill policy." Double-hull tank construction to reduce chances of oil spills during groundings and collisions was suggested, as was the need for better cooperation and communication between the industry, government agencies, the Canadian Coast Guard and U.S. Coast Guard.

The Great Lakes provides maritime commerce, recreation, tourism, commercial and sport fishing, and industrial and drinking water for millions of people. Oil spill cleanup and prevention are essential to the preservation of the beauty and natural resources of the Inland Seas.

A USCG study concluded that more than 5,000 toxic chemical and oil spills occurred in the 1980s on the Great Lakes. Eighty percent of the spills came from land-based pipelines and storage tanks. Twenty percent of the spills came from boats and ships (Flesher, "Great Lakes Had…," 1990).

As essential and popularly supported as Coast Guard missions are, the service has not escaped internal and federal investigation and criticism. In 1990 Rear Adm. Henry Bell (USCG, Ret.) directed a critical study of the Coast Guard. Adm. Bell's expertise as former chief of the United States Coast Guard Marine Safety Office was well established.

The study criticized Coast Guard ship inspection methods, ship classification systems, and the insufficient ship and worker safety concerns of profit-conscious corporations. Ship inspections were considered inadequate, because the small number of Coast Guard ship inspectors was overworked. The study concluded that time- and profit-conscious shipping-company owner-operators forced ship masters to sail dangerous routes in heavy weather and seas, causing crew fatigue and related safety problems.

Adm. Bell was critical of the training and skill levels of ship's officers, and their limited ability to use the evolving technology and equipment on the bridges of modern merchant ships. The study found that navigation errors, decision-making mistakes, and incompetent radar interpretations led to several ship groundings and collisions ("Study Critical…," 1990).

Minor Great Lakes oil and chemical spills continued. A 200-ft. by 40-ft. spill occupied Coast Guard crews in the Duluth-Superior Harbor in June 1990. Chief Petty Officer Jerry Graham, USCG MSO, Duluth, informed the media that the spill posed no significant danger, but Coast Guard personnel collected oil samples to determine the vessel of origin ("Minor Spill…," 1990).

In July 1990 U.S. Senator Carl Levin of Michigan announced a Congressional initiative to establish a toxic chemical response center in the Ninth (Great Lakes) Coast Guard District. The center would respond to and investigate toxic chemical and oil spill incidents. Senator Levin said the catalyst for the establishment of the proposed center was a 1990 USCG study which found that 5,000 oil and toxic chemical spills occurred on the Great Lakes between 1980 and 1989 ("Great Lakes…Oil Response Center," 1990).

Enthusiasm for the proposed Great Lakes spill response center was muted because of the prospect of inadequate federal funding. Captain Robert Mason (USCG, MSO Chief, Ninth District, Cleveland, Ohio) said available Coast Guard assets and personnel were limited, necessitating the purchase and utilization of the necessary technology by lake carrier companies.

In the event of adequate funding and equipment, Capt. Mason said the logistics would require the center to be located in Michigan at Coast Guard Air Stations Detroit or Traverse City. Chicago traffic congestion ruled out that city as a center, Capt. Mason explained, and he added that the location decision would be made by Admiral William Kime, Coast Guard Commandant, Washington, D.C. ("Great Lakes Oil Spill Center…," 1991).

Ironically, and with some inconsistency, the USCG opposed the demands of conservation groups and state and federal lawmakers who favored the construction of double hulls on Mississippi River barges. The conservation interest groups advocated restricting the single-hulled liquid chemical barges from transporting cargo on the Upper Mississippi. The Coast Guard had endorsed the single-hull barge ban in 1979, but subsequently disavowed the proposal when USCG officials and barge owners concluded the proposed fees, permits and construction costs would be problematic and unnecessary, because serious barge spills on the 1250 mile stretch of river under consideration were infrequent ("Group Urges Double Hulls…," 1993).

In 1995 the USCG MSO in Duluth began ticketing vessels that spilled less than 100 gallons of oil into navigable waters. The issuance of violation notices by Coast Guard boarding officers to vessel owners involved the levy of proportional fines, pending the option of boater-requested hearings ("Coast Guard…Ticketing…," 1995).

The Coast Guard conducted oil and chemical spill drills in the Duluth-Superior port region in coordination with area chemical facilities. In 1997 the USCG supervised a drill in Allouez Bay in which Lakehead Pipe Line Company operated a perimeter boom containment device in a mock spill exercise. Lt. Cmdr. Tom Marquette of Coast Guard Station Duluth informed the media how the operation was coordinated between the Coast Guard and city and pipeline officials ("Spill Drill," 1997).

Less then one month after the practice toxic chemical drill, seven boxes of herbicide fell into St. Louis Bay and the Duluth-Superior Harbor after a swerving pick-up truck trailer struck the Interstate Richard Bong Bridge. The Minnesota Highway Patrol and the Superior Police Department directed traffic around the site where the truck hit the bridge abutment. Two Coast Guard vessels were on the scene within 15 minutes, according to USCG spokesperson Lt. Randy Wagner. A local contractor cleaned up the spill ("Chemicals Spill…," 1997).

Lt. Cmdr. Marquette continued the practice drills the following week. University of Wisconsin-Superior staff and students, other government employees, and representatives of local business and civic organizations participated in the drills and carried out public safety, victim, and media scenarios. Lt. Cmdr. Nona Smith (USCG) emphasized the importance of communications and community preparedness in responding to oil spill accidents (Worth, "Volunteers…," 1997).

On 30 June, 1992 a train derailment that polluted the Nemadji River in Superior was a toxic wake-up call for Twin Ports authorities. A benzene gas cloud forced the evacuation of 40,000 area residents. After the disaster, Minnesota and Wisconsin officials established emergency response teams contracted by local governments to coordinate logistical and tactical responses. The Wisconsin cities of Superior and Ashland, and Duluth (Minnesota) subsequently trained and coordinated hazardous material response teams (Kuchera, "Twin Ports…," 1997).

Environmental protection responsibilities have involved the Coast Guard in organic pollution control as well as inorganic chemical spills. Ballast water pumped into ships to keep empty cargo vessels stable was regularly released into ocean and Great Lakes waters as cargo was taken on board. In July 2004 Minnesota, Wisconsin, and four other Great Lakes states, through their respective attorneys general, petitioned the USCG to close a federal legal loophole which allowed foreign ocean-going vessels to dump ballast water saturated with living marine organisms into the Great Lakes.

The ballast water contained invasive organic species. Invasive species of mussels, fish, and other marine life were alleged to have altered the eco-systems of the Lakes, and cost taxpayers, and the recreational and commercial fishing industries, billions of dollars. The states filed court briefs that supported the intent of conservation and environmental groups to force the Environmental Protection Agency (EPA) and the Coast Guard to enforce ballast discharge regulations in coastal and inland waters (Meersman, "Great Lakes States File Suit," 2004).

U.S. Coast Guard officials have been responsive to public requests for tightening ballast dumping requirements on foreign vessels entering the Great Lakes, and requiring the use of technologies to eradicate remnant organisms in the residual ballast tank water and mud. Applicable technologies available to block or eradicate the invasive plant and animal life included filtration systems, chemical treatment, and deoxygenation. But Coast Guard officials have also explained the necessity of awaiting the decisions of federal agencies and Congress regarding funding, regulation and enforcement ("Six Great Lakes States Petition…," 2004).

CHAPTER 13

LAW ENFORCEMENT ON THE GREAT LAKES

LAW ENFORCEMENT is a significant element of Coast Guard responsibilities. The USCG enforces federal maritime, customs, immigration, environmental, fishing, and drug laws. Port security and ship inspections have legal ramifications. Federal maritime regulations must be monitored and enforced.

Navigation regulations are enforced. Life-saving and search and rescue (SAR) missions have humanitarian and legal paradigms. Coast Guard stations and vessels on the Great Lakes carry out mission responsibilities and, uniquely among the several branches of the Armed Forces, have law enforcement authority over civilians.

Immigration, drug enforcement, national security and national defense missions have become more significant on the Great Lakes since 9.11.01, and involve an area of strategic responsibility along the maritime borders of several states and Canada. U.S. Coast Guard Great Lakes units co-operate with Canadian law enforcement agencies and the Canadian Coast Guard.

To carry out its Great Lakes responsibilities, the Coast Guard cooperates with local and state law enforcement and public safety departments. The USCG has traditionally coordinated its activities with other federal law enforcement agencies, including U.S. Customs and the Border Patrol, Immigration and Naturalization Service (INS), the Drug Enforcement Administration (DEA), state and federal pollution and natural resource agencies, and the departments of Defense, Transportation, Treasury, Interior, Agriculture, and the Bureau of Indian Affairs.

Since the merger of the Coast Guard and other federal agencies into the Department of Homeland Security in 2003, several federal law enforcement agencies have merged and acquired name changes. Two examples are Customs and Border Patrol (CBP) and Immigration and Customs Enforcement (ICE).

The Immigration and Naturalization Service (INS) inspects foreign vessels, crews, and manifests to enforce compliance with U.S. immigration laws.

In 1969 the visiting foreign ships, listed by flag and registry in order of frequency, came from Europe, Canada, India, Japan, Africa, Israel, Latin America and the Caribbean, and Southeast and East Asia. The 171 visiting vessels in 1969 carried more than 6,000 multi-national crew members, 106 of whom were denied permission to go ashore because of criminal, immigration, and national security concerns. In that year eight crewmembers deserted their ships in the Twin Ports: all were apprehended ("Immigration Service…," 1970).

In 1983 the U.S. Supreme Court strengthened the maritime law enforcement authority of the USCG and other federal agencies in a decision that stated that federal agents could randomly board boats, ships, and other watercraft on inland waters adjacent to open waters. The six-to-three Supreme Court ruling decided such boarding and registration checks did not violate the privacy rights of boat operators and crews. The decision overruled a federal appeals court ruling that the random boarding of a vessel by a Customs officer and a state trooper violated the Fourth Amendment protection against unreasonable searches and seizures. The Supreme Court reasoned that law enforcement spot-checks and roadblocks on land are not feasible on the nation's waterways. Therefore, maritime checks, boarding, and seizures by definition and procedure must be random ("High Court…," 1983).

In 1985 Cmdr. James Hanks, U.S. Coast Guard Group Duluth, informed the media that boarding officers and petty officers would now carry .45 caliber pistols. The new regulation put Great Lakes Coast Guard personnel in compliance with a nation-wide law enforcement policy which the service had traditionally resisted. Increased Great Lakes drug trafficking influenced the decision to arm Coast Guard boarding personnel ("Coast Guard Petty Officers…," 1985).

In the late 1980s Great Lakes Coast Guard units increased drug enforcement patrols and contraband interdiction on the maritime domain between the United States and Canada, although the drug trafficking problem was far less significant on the Great Lakes than in South Atlantic, Gulf and Caribbean waters.

Cmdr. Stanley Spurgeon, of the USCG Marine Safety Office (MSO) Duluth, said Twin Ports officials cooperated in drug searches. Drug runners avoided the Twin Ports of Duluth-Superior, Spurgeon concluded, because of the long distances from major urban centers, the relatively few cargo containers on Great Lakes carriers, and the three-month winters and Great Lakes ice that closed the isolated ports.

Nonetheless, the Coast Guard remained vigilant in boarding and searching private boats and foreign and domestic ships on Great Lakes. In 1986 Ninth District Commander Rear Adm. Arnold Danielson described more extensive cooperation between the USCG, Customs and DEA in response to increased drug trafficking from Canada ("Great Lakes Drug Search...," 1986).

In his investigation of Coast Guard boarding authority, without requiring probable cause, reporter Jack Storey contended that the U.S. Supreme Court's expansion of federal law enforcement boarding authority reduced Bill of Rights protections. Storey did credit the Coast Guard with generally using appropriate discretion in its appropriate missions. The reporter conceded the necessity of random boarding, given the lessons from the Prohibition era on the Great Lakes, and the kinds of watercraft used by drug smugglers (Storey, "A Drug Highway…," 1987).

After 1986 the USCG modified its random drug search policy when boaters registered complaints about alleged boardings without cause, and the perception that Great Lakes drug trafficking was negligible. Nonetheless, Senior Chief Petty Officer Marvin Gebers announced that law enforcement patrols would target illegal activities and unsafe boating practices after U.S. Border Patrol intelligence revealed increased illegal drug activity from Canada into Minnesota by Asian and Columbian smugglers.

The USCG and USBP continued to cooperate with the Canadian Royal Mounted Police and Canadian Customs and share Great Lakes aerial reconnaissance information (Meyers, "Duluth Vice," 1990).

Coast Guard missions vary considerably. In January 1991 the USCG patrolled Minnesota Point looking for a reported flammable object that fell from an early morning sky. Petty Officer Larry Cappell later informed the media that a satellite had been scheduled to re-enter the atmosphere and burn up at the time of the reported incident ("Coast Guard…UFO Search," 1991).

Senior Chief Petty Officer Marvin Gebers informed the local media that the Coast Guard would increase its recreational boating safety inspections and law enforcement boardings on Lake Superior and in the Duluth-Superior port region in the summer of 1991. Gebers said the boating-while-intoxicated law would be strictly enforced in coordination with Wisconsin and Minnesota law enforcement agencies.

Petty Officer Rod Roslak (USCG Group Duluth) said the Coast Guard planned to conduct boater sobriety tests and to monitor compliance with Federal Communication Commission licensing regulations on radar and radio technology. The USCG would also, Roslak explained, inspect Aids to Navigation (ATN) gear, licenses, registration, and personal flotation devices (Stodghill, "Coast Guard to Step Up…," 1991).

From the backdrop of Chicago looming over the Lake Michigan shoreline, Coast Guard Patrol Boat 255058 made its way under moonlit skies out of Station Wilmette harbor in search of intoxicated boaters. Chief Boatswain Mate Mark Stevens was officer-in-charge of the 32-foot patrol boat and five-person crew. BM1 Chris Evans commanded the mission motivated by grim statistics: of the 150 recreational boating fatalities on the Great Lakes in 2004; 37% were alcohol-related. Lights and sirens induced targeted boaters to stop and cooperate with armed USCG boarding teams from the Defender Class Homeland Security patrol boat, powered by two 225 HP engines. Boat safety checks were conducted throughout the night. Drivers who failed the sobriety tests were subjected to hearings and fines

Station Wilmette (Illinois) operated under Coast Guard Group Milwaukee (Wisconsin), and was supplemented by nine small boat stations along the Lake Michigan shoreline. Queried for the high rate of BUI (Boating Under the Influence) citations, Lt. Michael Hegedus, chief of the Group Milwaukee law enforcement division, said the rigid policy was necessary for the protection of all boaters in the heavy vessel traffic of Lake Michigan (Mosley, "Enforcing Boating Safety," 2005).

The Coast Guard has not enforced every maritime regulation with equal enthusiasm. A 1991 federal boating tax led Coast Guard spokespersons to downplay the enforcement issue. Lake Superior, Lake of the Woods, Rainy Lake, and the St. Louis River were included in the mandated region. Coast Guard Station Duluth officials said northern Minnesota border lakes and northwestern Wisconsin lakes and rivers would be ignored. A Ninth Coast Guard District spokesperson said inspection of the federal boating tax stickers would occur during on-the-water patrols, but not at boat ramps, and only in areas where the USCG had a regular and normal presence (Meyers, "Guard to Enforce Tax…," 1991).

The Coast Guard has sometimes run afoul of the laws it enforces. In the pre-environmental-movement days, the USCG dumped worn-out batteries from thousands of its ATN sites into adjacent waters. Hundreds of ecosystem-polluting mercury batteries were retrieved from Rainy Lake and Lake Superior harbors, including the Duluth-Superior entry. Other removal sites included the Apostle Islands north of Ashland, Wisconsin; Lake of the Woods in northern Minnesota; and ATN sites on the upper Mississippi River. Most of the battery dumping allegedly occurred between 1950 and 1973, when the hazards of mercury contamination were not so well known. Federal law subsequently prohibited battery dumping in U.S. waters (Meyers, "Coast Guard Removing Batteries…," 1998).

The Keweenaw Bay (Michigan) Indian Community (KBIC) and the U.S. Coast Guard signed a June 1999 agreement in which officials from both organizations would share commercial fishing and boat safety inspections and law enforcement duties on tribal waters. The initial statement out of the USCG MSO in Duluth stated that tribal and Coast Guard officials would reciprocally inspect non-tribal vessels in tribal waters.

Lt. Martin Walker (Duluth MSO) stated that only a limited number of non-tribal commercial fishing vessels fished in tribal waters. Ninth District Commander Rear Adm. John McGowan was scheduled to sign the 1999 federal agreement with KBIC tribal chairman Wayne Swartz (Wickstrom, "Coast Guard, KBIC Sign…," 1999). Captain Allen Moore, Commander USCG MSO Duluth, corrected the previous news release with his statement that tribal authorities would not be boarding non-tribal commercial fishing boats. Captain Moore, Adm. McGowan, and the KBIC tribal chairman signed the commercial fishing enforcement treaty. KBIC police commissioner Bruce Mahler reiterated to the media that tribal police would deal only with tribal commercial vessels. The USCG would have the sole authority to board both tribal and non-tribal vessels.

The agreement facilitated the exchange of safety and law enforcement information between the USCG and tribal police (Wickstrom, "Agreement Won't Allow…," 1999).

The USCG has been active for decades in immigration and narcotics interdiction in the Caribbean and Gulf of Mexico. The Ninth Great Lakes District has been traditionally less active in that kind of law enforcement, in part because the regional isolation, long winter months, and ice-covered Great Lakes seemed to discourage maritime criminality.

That state of affairs has changed since the terrorist attacks of September 2001 and the placement of the Coast Guard in the Department of Homeland Security in 2003. The potential of terrorist operations on the Great Lakes is significant. The maritime border between Canada and the United States is porous. Ties between some immigrant and indigenous groups and terrorist organizations have been revealed. Coast Guard data as of March 2006 revealed that more than 160 terrorist or alleged terrorist arrests occurred.

U.S. Coast Guard and Canadian law enforcement and military authorities have cooperated in intelligence surveillance and apprehensions. Significant urban areas of concern, terrorist sympathy, and connections were in Toronto and Windsor (Canada), Detroit (Michigan), and Buffalo (New York). One suspect was arrested in Dearborn (Michigan) and charged with aiding Hezbollah, a Middle East terrorist organization. A convicted smuggler was arrested in Buffalo and charged with financing the journey of six Americans to an Al Qaeda training camp in Afghanistan.

Rear Adm. Robert J. Papp, the Ninth Coast Guard District Commander, relayed these incidents to the media after his 2005 appointment to the Great Lakes. Adm. Papp stressed the importance of the Coast Guard seizure of contraband, profits from which could fund terrorist cells. The list of contraband seized by the Coast Guard included illegal drugs, alcohol, cigarettes, weapons and dynamite. Rear Adm. Papp revealed that the apprehensions and investigative operations yielded "hockey bags filled with cash and millions of dollars" on his watch.

Rear Adm. Papp said that between 2002 and 2004 Ninth District Coast Guard personnel arrested nearly 2,000 undocumented immigrants, many of whom came "across the northern border from the target countries we are concerned about." Abandoned rafts indicated significant traffic and creative criminal methods.

The assertion that winter ice deters illegal migrants and activities was questionable. Adm. Papp contended it was easier for illegal immigrants to come across the ice than to use the waterways where they could be pursued by Customs, Immigration, Coast Guard and Canadian patrol craft.

The Canadian Coast Guard and Navy, and the Royal Canadian Mounted Police increasingly cooperated with the U.S. Coast Guard in security and law enforcement missions, and "ship-rider" exchanges on patrol boats to mitigate law enforcement jurisdictional problems. Rear Adm. Papp fostered and encouraged the cooperative programs.

Port security and law enforcement is essential in many areas of the Great Lakes because of the presence of strategic infrastructure and the importance of commercial shipping through the Soo Locks and throughout the Great Lakes. USCG personnel regularly communicate with security officials, and conduct patrols out of the Fairport Harbor Coast Guard Station down the Lake Erie shore from the Perry Nuclear Power Station. A strict security zone on land and offshore from the Perry nuclear power plant has been enforced by the Coast Guard patrol boats, private security, and other law enforcement agencies since 200l. Boatswain Mate Second Class Jonah Pike described the patrols and his appreciation of the effectiveness of the fast RBS (Response Boat-Small) Homeland Security Boats, equipped with machine gun mounts, that the station received.

Coast Guard helicopter aircraft from Air Stations Traverse City and Detroit responded to surveillance requests, but were some distance away from critical sites. Rear Adm. Papp said Coast Guard helicopters are supplemented by occasional surveillance flights by C-130 Coast Guard aircraft armed with high technology sensors, and by Canadian military aircraft out of the Ontario air station, but he revealed there was inadequate air coverage "at the western edge of Lake Superior."

Historically, the presence of Canadian and U.S. military naval vessels on the Great Lakes has been limited since the signing of the bilateral Rush-Bagot Agreement of 1817, but on-going negotiations have modified that agreement in time of war and since the terrorist attacks of 9.11.01.

Rear Adm. Papp said the U.S. and Canada have negotiated periodic "memorandums of understanding" that have allowed Canadian-American cooperation in search and rescue, icebreaking, law enforcement, and national defense. But, Adm. Papp conceded, "sovereignty concerns and Canadian unease with weapons carriage" resurrected ongoing sensitivities that must be accommodated.

Regular Coast Guard personnel on the Great Lakes, excluding Coast Guard Reservists and Auxiliary personnel, numbered about 2,200 in 2006, an increase since 9.11.01 of 400 people.

The Coast Guard performs joint ship inspections with Canadian military and customs officials at, among other ports, Massena (New York) and Montreal (Canada). International vessels are monitored prior to their entry into Canadian and U.S. waters, and the strategic St. Lawrence River. The Canadian Navy administers the Maritime Security Operations Center in Halifax, Nova Scotia and cooperates at that station with the U.S. Coast Guard in surveillance and intelligence operations.

In 2006 Rear Adm. Papp was being considered for advancement to vice admiral rank and promotion to the position of Chief of Staff at the Washington, D.C. U.S. Coast Guard Headquarters (Hilburn, "Border Crossings," 2006).

CHAPTER 14

PORT SECURITY, NATIONAL DEFENSE,

AND COMMERCE

U.S. COAST GUARD missions have historically included port security and national defense. Since World War I the USCG has been responsible for domestic port security, a mission increasingly significant after the terrorist attacks upon the United States on 9.11.01.

In wartime the Coast Guard has teamed up with the U.S. Navy. In 1915 the port of Duluth was shipping out significant tonnages of iron ore, timber and grain. During World War II Coast Guard cutters were constructed at Great Lakes defense plants, including the Twin Ports of Duluth (Minnesota) and Superior (Wisconsin). Several of those vessels served in Pacific and Atlantic combat zones.

Coast Guard cutters built in the Twin Ports shipyards played significant roles in security and national defense at home and overseas in World War Two. Petty Officer Donald D. Morgan was a World War II correspondent aboard the USCGC Balsam, a buoy tender built in Duluth in 1942. With its reinforced icebreaker hull, the Balsam served in the South Pacific for almost two years. The lightly armed cutter survived several Japanese bombing raids as it laid channel markers and buoys for Allied warships and escorted cargo vessels and fuel tankers. The Balsam positioned and maintained mooring and channel markers for the warships that shelled Japanese positions prior to amphibious troop assaults. The Balsam crew rescued downed pilots and bomber crews in treacherous reefs and heavy surf and sea conditions (Morgan, "A Coast Guard Buoy Tender…," document undated).

Chief Boatswain's Mate Vermont Johnson, a Bayfield (Wisconsin) native, rushed to battle stations when a Japanese submarine was sighted. Lt. Cmdr. L. P. Toolin depth-charged the submerging vessel while escorting a fuel and ammunition tanker. The cutter crew then hit the enemy submarine with rocket fire. Oil and flotsam floated to the surface. The USCGC Balsam (the "Bee") was credited with a kill and earned the right to place the Japanese flag symbol on the starboard bridge.

In May 1985 Johnson wrote a letter to the public relations department of Zenith Dredge Company in Duluth in which he informed the company of his service as a chief petty officer aboard the USCGC Balsam, "built in 1942 by your company." Johnson enclosed media articles about the Balsam missions (Johnson, "Letter to Zenith Dredge Co.," 1985).

Manny Greenwald enlisted in the Coast Guard in 1942, served in port security in Philadelphia, and advanced to the rate of Chief Boatswain's Mate. Greenwald later joined the Coast Guard Auxiliary and spent most of that assignment at the Group Philadelphia Marine Safety Office. In March 2003 President George W. Bush honored the 92-year-old regular/reservist/auxiliarist after being informed of Greenwald's service by Ninth Coast Guard District Commander Vice Admiral James Hull (Chambers, "True Blue," 2005).

The Coast Guard Captain of the Port position was created in 1940. COTPs were stationed in major U.S. commercial and military ports to coordinate World War II port security and loading safety programs, and guard against espionage and sabotage.

By 1990 USCG Station Duluth had 100 active duty and 40 reserve personnel and included a Marine Safety Office and the USCGC Sundew. The COPT shared office facilities in a building with the U.S. Army Corps of Engineers. Cmdr. Clay Fust commanded the Duluth Station in 1990 and served as COTP. In 1990 the CGC Sundew home-ported in Duluth with a crew of 90 under the command of Lt. Cmdr. Gary Greene. In that year USCG Group Headquarters was transferred to Sault St. Marie (Michigan).

After 9.11.01, the USCG enhanced its mission and asset coordination with the Navy and Defense Department in littoral (coastal) and overseas waters. The Coast Guard on the Great Lakes has been part of the national security and defense structure. Critical infrastructure has been guarded and ships inspected.

Coast Guard law enforcement missions serve national security and defense interests in drug and immigration interdiction, aids to navigation (ATN), ship inspection, and environmental protection. The USCG has been in the forefront of domestic and national security since its transfer from the Transportation Department to the Department of Homeland Security in 2003.

The USCG Marine Safety Office in Duluth has carried out historic multi-mission duties on western Lake Superior.

The USCGC Alder was stationed in Duluth in October 2004 after its launching. The CGC Alder replaced the cutter Sundew that was decommissioned and stationed at its museum berth in Canal Park ("Duluth Seaway Port Authority," 2004). Adm. James D. Hull (Atlantic Area Commander, USCG) and his wife Judith led the Alder launching ceremony on 7 February 2004. Lt. Cmdr. Steve Teschendorf was assigned command of the Alder and its complement of six officers and 34 enlisted personnel ("Manitowoc Marine Group…," 2004). The 225-ft. Juniper Class buoy tender Alder was designed with the latest technology to perform its assigned homeland security, law enforcement, search and rescue, and ATN missions.

In 2005 the Duluth Station included Cmdr. Gary Croot, COTP (Captain of the Port), Lt. Scott Stoermer (chief of port operations), the continued service of MSTC Steve Wolfe, CWO Mark G. Neibuhr, Lt. Cmdr. M.A. Ledbetter, and civilian administrative assistant Mrs. Sandra C. Trianoski.

Western Lake Superior Coast Guard units were responsible for a LORAN (Long Range Navigation) station in Baudette (Minnesota), and an Omega Communications Station in Fargo (North Dakota). The Ninth (Great Lakes) Coast Guard District headquarters in Cleveland was commanded by Rear Adm. Gregory Pennington ("The Coast Guard: A Port Fixture…" 1990).

The Coast Guard has performed port security functions at home and overseas since World War I. The ability of the USCG to carry out port security and national defense functions was illustrated in the first 48 hours after the 9.11.01 terrorist attacks. Great Lakes Coast Guard units immediately coordinated their activities with other branches of the Armed Forces and civilian law enforcement and public safety organizations. Great Lakes Coast Guard District Nine activated a Crisis Action Center and placed all D9 units on full alert.

All Great Lakes vessels were ordered to anchor for Coast Guard inspections and verification of crew manifests. Joint U.S. and Canadian Coast Guard teams boarded and checked foreign flag vessels. Passenger vessels and fuel and toxic chemical tankers were placed under USCG escort. Coast Guard reservists were called to active duty. Strategic maritime infrastructure was monitored. Port security patrols were expanded and coordinated under the jurisdiction of Maritime Security Forces in Great Lakes security zones ("Coast Guard Actions…," 2004).

Great Lakes Coast Guard active duty and reserve members received orders in January 2003 to deploy for domestic and overseas duty in the Iraq War (Operation "Enduring Freedom"). Port Clinton (Ohio) Security Unit (PSU) 309 sent 117 personnel to join more than 500 deployed Coast Guard men and women assigned to land and sea security missions. Ninth Coast Guard District commander Vice Adm. James Hull explained the deployment and noted the USCG-Defense Department coordination in national defense: "These deployments," explained Adm. Hull, "demonstrate how Coast Guard expertise can play an important role in the operation to fight terrorism and prepare for future contingencies" (Bronson, "Local Coast Guardsmen…," 2003).

National security analyst Ben Brandt raised compelling post-9.11.01 security concerns about U.S.-Mexican-Canadian border security, and cited alleged Minnesota and Great Lakes security vulnerabilities. The analyst reviewed Minnesota's international airports at International Falls, Minneapolis, and Rochester; and Lake of the Woods, Lake Superior, and Mississippi River security weaknesses. Brandt identified the front lines of border security: the Immigration Service; Border Patrol; Customs; Department of Homeland Security, and the Coast Guard.

Since 9.11.01 the USCG has required 96 hours advance notice for foreign merchant vessels seeking to enter U.S. ports. The Coast Guard National Vessel Tracking Center has monitored international vessels and flags to determine inspection and port restriction priorities. After 9.11.01, the Coast Guard devoted more of its ships, boats, and personnel to port security, national defense, and immigration and narcotics interdiction. Critics said the security emphasis strained the Coast Guard budget and threatened traditional domestic missions (Brandt, "Securing…Borders," 2002-2003).

Coast Guard Station Erie (Pennsylvania) traditionally allowed pubic access and tours. After 9.11.01 the station gates were opened only for the delivery of supplies and equipment, and vehicles were closely inspected. The Port of Erie was guarded by the Coast Guard, U.S. Customs, and the Erie-Western Pennsylvania Port Authority.

The Coast Guard increased its Great Lakes patrols with the acquisition of 47-foot motor lifeboats (MLBs) and 21-foot rigid hull inflatable boats (RHIB). After 9.11.01, Coast Guard personnel carried 9 mm. handguns and utilized arrest powers ("Coast Guard Keeps Close Watch…," 2001).

Vessels, companies, and ports on the Great Lakes received only 2.6% of the federal money appropriated for security enhancement in 2004. Coastal ports received most of the federal funding. Great Lakes port directors claimed they had to spend money on port security that was needed for infrastructure and technology. The U.S. Customs Service predicted cargo shipments through American ports would significantly increase in the coming decades. Great Lakes port officials speculated how to manage the increased traffic and federally mandated port security requirements. The Coast Guard estimated post-9.11.01 port security plans would cost more than $8 billion dollars in the following decade ("Great Lakes Ports Shortchanged…," 2004).

In December 2004 the Coast Guard announced plans to utilize coastal and Great Lakes buoys to track large ships entering and leaving American ports. This extension of port security boundaries was achieved by innovative technology placed on large buoys of 10 to 40 feet in diameter that traditionally recorded wave action and weather information for the National Oceanographic and Atmospheric Administration (NOAA).

The Coast Guard planned to add transmitters to dozens of strategically placed buoys by 2007 to receive required signals from vessels entering and leaving U.S. waters. The information would include crew, cargo and other manifest data transmitted to Coast Guard vessel-tracking stations. The transmitters were designed to communicate information from hundreds of miles at sea, to the middle of Lake Superior, and between Maine to Alaska.

This Automated Identification System (AIS) network had been in the planning stages and was expanded after 9.11.01. Coast Guard responsibilities have increased since 2003 under the Department of Homeland Security. In November 2005 Homeland Security Secretary Michael Chertoff transferred airspace defense responsibilities from Customs and Border Protection (CBP) to the Coast Guard. The Coast Guard air role as part of the Defense Department chain of command was expanded to include the interception of hostile aircraft in the airspace around Washington, D.C. (Kime, "Coast Guard to Protect D.C. Airspace," 2005).

On July 22, 2004, U.S. Customs and Border Protection Commissioner Robert C. Bonner informed the House Select Committee on Homeland Security about operations conducted by the newly formed CBP as part of the Department of Homeland Security. The merger of the former Customs Service, Immigration and Naturalization Service, Border Patrol, and Agriculture Department border inspectors created what Homeland Security Department Secretary Tom Ridge called "one agency face at the border." Bonner described the significance of the articulation of CBP with "the Drug Enforcement Administration (DEA), Department of Defense, and U.S. Coast Guard…." in coordinating "maritime intelligence and drug interdiction operations" (Bonner, "Statement to House Committees…," 2004).

Coast Guard and Customs cooperated with port authorities on national security, law enforcement and commercial issues in the Twin Ports and across the nation. A 1981 report issued by the Department of Commerce and its Foreign Trade Zones Board illustrates the intra-agency coordination. Notice was given of the request by the Duluth Port Authority to the FTZB to expand its trade zone in Duluth.

As per regulations, the Board appointed an Examiners Committee to consider the application process. Members of the committee included Department of Commerce officials, the district engineer from the Detroit office of the U.S. Army Corps of Engineers, and Robert W. Nordness, District Director, U.S. Customs Service in Duluth ("Dept. of Commerce," 1981).

The Duluth-Superior Port of Entry is designated as "a place at which a CBP (Customs and Border Patrol) officer is authorized to accept entrees of merchandise, collect duties, and enforce the provisions of the customs and navigation laws" as stated in 19 CFR (Code of Federal Regulations) 101.1. The facilities of the Duluth-Superior Port of Entry include the Duluth International Airport ("Port of Entry-Duluth…," 2005).

The Coast Guard and Customs and Border Protection cooperate in the Twin Ports and in commercial ports across the nation and overseas to protect the United States against terrorism, illegal drugs, contaminated food supplies, and illegal immigrants. USCG-CBP coordination continued with the Container Security Initiative (CSI) that was designed to monitor and inspect cargo containers that enter the United States in domestic and foreign ships, and to prevent the entry and detonation of weapons of mass destruction ("Border Security Spotlight," 2005).

The Coast Guard cooperates with the Duluth Seaway Port Authority (DSPA) in port security, maritime law enforcement, national defense, and the facilitation of commerce. The enormity of Coast Guard responsibilities in the Twin Ports is illustrated by a review of the structure, activities, and geographic jurisdiction of the Duluth Port Authority.

Created in 1954, the DSPA serves the largest Great Lakes port and is 16th in the nation in total tonnage. In 2000 the Duluth-Superior Port exported 91% of its cargo overseas ("Duluth Seaway Port Authority," Minnesota Guidebook, 2001).

Ships traveling from the Atlantic Ocean to the Twin Ports can navigate the 2340 miles in one week or less. The Twin Ports waterfront is 50 miles long. The Coast Guard and the Port Authority monitor and serve more than 1,000 ships annually at the grain, coal, and iron ore docks, and bulk terminal, which annually had supported 2 billion dollars of trans-shipped cargo, had a $200 million regional economic impact, and sustained more than 2,000 jobs (Marciniak, "Duluth Port Authority…," 2004).

The articulation between the Coast Guard, Duluth Seaway Port Authority, business and labor interests, and the federal government was illustrated in the fall of 1999 when the Great Lakes Maritime Task Force (GLMTF) of Toledo, Ohio, hosted a congressional breakfast in Washington, D.C. The GLMTF was established to promote national and international commerce on the St. Lawrence Seaway and the Great Lakes. Participants in the session included Great Lakes business representatives, Minnesota Representative James L. Oberstar, and Duluth Port Director Davis Helberg.

In the same year, Captain Alan H. Moore, Sr., COTP, and commanding officer of the Coast Guard MSO in Duluth, was replaced in a change of command ceremony by Cmdr. William J. Diehl, the former executive officer of USCG MSO Detroit. Capt. Moore was transferred to the USCG Marine Safety and Environmental Protection Office in Washington, D.C. ("Around the Port," 1999).

The leadership quality and significance of port officials was illustrated by the appointment of the Duluth Seaway Port Authority commissioner in December 2004. Port Promotion Manager Lisa Marciniak informed the media that the Duluth City Council appointed Brigadier General Ray Klosowski (U.S. Air Force, Ret.) to the post of Seaway Port Authority Commissioner. Gen. Klosowski had previously commanded the 148th Fighter Wing in Duluth and the Minnesota Air National Guard.

General Klosowski's military background and leadership experience was expected to facilitate articulation between the Port Authority and the Coast Guard; federal, state, and local law enforcement and other public safety and emergency response agencies; and the myriad of commercial maritime and business interests in the Great Lakes region ("Port Authority Appointment," 2004).

CHAPTER 15

AN OVERVIEW:

THE NINTH COAST GUARD DISTRICT

THE NINTH COAST GUARD DISTRICT includes the Great Lakes shorelines and states of New York, Pennsylvania, Ohio, Indiana, Illinois, Michigan, Wisconsin and Minnesota.

In 2003 the Great Lakes District included 4,500 auxiliaries, 600 members of the Coast Guard Reserve, 1800 regular active-duty personnel, and 67 civilians. The Ninth District contained 92 units, 48 stations, and 188 small boats on shores stretching from Duluth, Minnesota to New York City. Two Loran communications stations, an air facility, two air stations, and 10 cutters (ships 65 feet or more in length) carried out the Coast Guard missions of port security, boating safety, search and rescue (SAR), aids to navigation (ATN), environmental protection, national defense, and icebreaking.

The Great Lakes units service more than 3,000 fixed aids and navigational lights and buoys. Nine captains of the port (COTPs), eight marine safety offices (MSOs), and three marine safety detachments stand by to carry out Coast Guard missions. A combat-trained port security unit has been deployed to conflicts in the Caribbean and Middle East ("Ninth District," 2003).

In 2004 District Nine Coast Guard personnel had increased to 2,200 active duty, 1,100 reserve members, and 190 civilians. The auxiliary component decreased to 4,200. Marinette (Wisconsin) Marine Corporation constructed two new classes of buoy tenders to replace the World War II era ships: the 225-foot Juniper Class and the 175-foot Ida Lewis Class cutters. Two of the 16 Juniper Class cutters, the Hollyhock and the Alder, were delivered to Great Lakes ports. Fourteen Ida Class cutters were sent to bases throughout the nation ("About the Ninth Coast Guard District," 2004).

The World War II era icebreaker Mackinaw spent its final season on light duty in the winter of 2006 with low temperatures, a mild winter, and no heavy Great Lakes ice to break. Cmdr. Joe McGuiness of the Mackinaw met with the commanders of the smaller 140-foot cutters, Biscayne Bay (WTGB 104) and Katmai Bay (WTGB 101), to plot strategy to respond to spring ice conditions at the Soo Locks and St. Mary's River ("Coast Guard Icebreaker…," 2006)

The Coast Guard cutters that have served Lakes Erie, Huron, Michigan and Superior and the St. Mary's River and Sault Ste. Marie have chronicled illustrious histories. In 2002 the cutters and their homeports were Katmai Bay and Buckthorn (Sault Ste. Marie, Michigan); Biscayne Bay (St. Ignace, Michigan); Bramble (Port Huron, Michigan); and the Sundew out of Duluth which was replaced by the USCGC Alder in 2005.

Commissioned in 1944, the original CGC Mackinaw was succeeded in 2006 at the port of Cheboygan (Michigan) by the new icebreaker Mackinaw. The Marinette Marine Company of Manitowoc (Wisconsin) launched the new CGC Mackinaw into the Menominee River on April 2, 2005. The 240-foot state of the art icebreaker/buoy tender was equipped with the latest navigation, deck, security, and communications technology, and the latest oil-spill recovery equipment (Taylor, "That Was Then…," 2005).

The old 290-foot CGC Mackinaw (WAGB-83) carried small arms and 75 crewmembers. The new 240-foot Mackinaw (WLBB-30), initially under the command of Capt. Donald Triner, had a crew complement of nine

officers, five chief petty officers, and 41 additional crewmembers. The law enforcement armament included small arms and .50 caliber machine guns ("New vs. Old…," 2006).

Ironically, after the launching of the high-technology Mackinaw some observers contended the federal government was considering transferring the icebreaking fleet from the USCG to the National Science Foundation. Critics of the proposition believed the scientific community was already well served, using Coast Guard ships for glacial, oceanographic and atmospheric studies. Icebreaking also supported commercial activities on the Great Lakes: it would be inefficient, costly, and counterproductive if other federal agencies acquired maritime vessels to fulfill traditional Coast Guard functions.

Including the numerous small boat stations on the Great Lakes in 2006, the major Ninth District Coast Guard units were District Headquarters, Cleveland; Air Stations Detroit and Traverse City; Groups Buffalo, Grand Haven, Milwaukee, and Sault Ste. Marie; and Marine Safety Offices Buffalo, Chicago, Cleveland, Detroit, Duluth, Milwaukee, Sault Ste. Marie, and Toledo. The other significant units are the Marine Safety Detachment in Sturgeon Bay; the USCGC Mackinaw (WLBB-30) at Cheboygan (Michigan); and the USCGC Alder (WLB-216) out of Duluth ("District Nine Units," 2006).

Coast Guard Air Station Traverse City is on the northwest shore of Michigan's Lower Peninsula. The location of Air Station Traverse City on Lake Michigan, and the USCGC Mackinaw out of Cheboygan on Lake Huron, positions the Coast Guard to carry out its duties on Lakes Huron, Michigan and Superior. Coast Guard Air Station Detroit has covered Lakes Huron, Erie, and Ontario.

In 2006 five HH-65A Dolphin rotary wing (helicopter) aircraft were stationed at Traverse City. Each aircraft carried a pilot, co-pilot, rescue swimmer, and hoist operator/flight mechanic: the crew trained as first responders. The aircraft were equipped with state-of-the-art technology, including radar, communications equipment, a powerful searchlight and other life-saving aids. They had a 135 mile per hour cruising speed and a 350-mile range.

Established in 1946, USCGAS Traverse City's 2006 complement included 28 officers and warrant officers, two U.S. Public Health Service medical officers, and 100 enlisted personnel. The Traverse City Air Station has primarily been a search and rescue (SAR) station, but its aircraft have assisted other Coast Guard stations and have cooperated with area law enforcement, conservation and environmental protection agencies.

Since 1995 Traverse City AS has assumed operational authority over Coast Air Station Chicago-Glenview, and stationed a helicopter and two aircrews at the Glenview Air Facility ("Air Station Traverse City," 2006).

The mission diversity of the Great Lakes Coast Guard units is illustrated by the Aids to Navigation (ATN) Team on the Saginaw River in Michigan. U.S. Coast Guard STANT Saginaw River is a multi-mission unit on the river in Essexville, Michigan, with a complement of 26 male and female personnel. The Officer in Charge is a Senior Chief Petty Officer. Station missions include SAR, ATN, law and treaty enforcement, and boat safety inspections.

USCG Station Saginaw averages 200 rescues and requests for assistance each year, including ice rescues. The station billets include positions for more than 100 U.S. Coast Guard Auxiliary personnel and nine Coast Guard Reserve positions.

U.S. Coast Guard STANT Saginaw River cooperates with public safety (police and fire department) agencies in the Saginaw Bay region. In 2004 the station watercraft included a 41-foot and a 49-foot boat, a 21-foot ATN boat, a 21-foot Rigid Hull Inflatable Boat (RHIB), and one 14-foot boat.

The USCG presence in the Saginaw region dates from the building of a lighthouse (1842) on land the federal government acquired by treaty rights from the Ojibwa Indians ("Welcome to U.S. Coast Guard Station…," 2004).

In June 2005 Coast Guard Group/Marine Safety Office/Base Sault Ste. Marie officially became Sector Sault Ste. Marie. Coast Guard Base Sault Ste. Marie has served the Great Lakes since 1952. The Coast Guard base administers two Marine Safety Offices, an ATN Team, two Electronic Support Detachments, nine small boat stations, and six cutters ("New Sector Online," 2005).

Effective 29 July, 2005 four Sector Coast Guard Commanders were scheduled to assume operational responsibility for Sectors Sault Ste. Marie, Buffalo, Detroit and Milwaukee ("Sector Sault Ste. Marie…," 2005).

The diverse missions of the Coast Guard are well illustrated by its varied assignments. In January 2006, the federal government announced that river and air traffic would be restricted on 5 February, the day the National Football League Super Bowl game was to be played in Detroit. The Coast Guard was ordered to monitor waterfront security along the Detroit River waterfront, up to 300 yards off-shore, for a linear distance of one mile. The Coast Guard was ready to observe and board vessels that encroached upon the security zone on the strategic waterway between Detroit and Windsor, Canada. Local, state and federal public safety agencies cooperated with Canadian maritime security officials to enforce area restrictions ("Super Bowl…," 2006).

Great Lakes Coast Guard stations, large and small, have earned commendations and awards. In 2005 the Coast Guard Station Kenosha (Wisconsin) crew won the Kimball Award for SAR proficiency and boat readiness for 41-foot rescue craft. Lt. Cmdr. Kevin Hanson of Group Milwaukee presented the award, which is named after Sumner I. Kimball, the 1878 founder of the U.S. Life-Saving Service. Chief Petty Officer Jim Ellison was the officer in charge of the Kenosha station ("Coast Guard Station Kenosha…," 2005).

Coast Guard Air Station Detroit has operated since 1966. The original ten officer and 29 enlisted personnel complement had grown in 2006 to 24 officers, 80 enlisted personnel, and four civilians. The original station was equipped with 3 Sikorsky HH-52A amphibious helicopters. By 2006 USCGAS Detroit maintained five HH-65A Dolphin helicopters which provided 24-hour SAR, law enforcement, icebreaking, and pollution response capabilities along 1,100 miles of shoreline and out into the Great Lakes maritime domain.

USCGAS Detroit's hangar facilities are named after Lt. Jack C. Rittichier, who was stationed at the Air Station in 1966-1968: Lt. Rittichier was killed by enemy fire on an SAR mission in Vietnam. The Coast Guard aviator won the Distinguished Flying Cross and the Silver Star for his courage and sacrifice ("Air Station Detroit," 2006).

The USCGC Bristol Bay (WTGB-102) was built by the Tacoma (Washington) Boatbuilding Company in 1978. The 140-foot icebreaking tug, home-ported in Detroit since 1979, was designed to cut up to 20 inches of ice to keep Great Lakes shipping lanes open. The Bristol Bay could break up to three feet of solid ice with its backing and ramming technique. The vessel technology was supplemented by a hull air-dispersal system that facilitated the icebreaking process and allowed the ship to escape from thick or moving ice ("USCGC Bristol Bay," 2006).

The Ninth District Coast Guard Headquarters and District Legal Affairs office are located in the busy port of Cleveland, Ohio. On 15 July 2004 Group Detroit public affairs officer Lt. Jessica Fant was scheduled, with Coast Guard Station Cleveland personnel, to host the display of the new 25-foot Defender Class Response boat.

The twin-engine Response Boat is equipped to mount a grenade launcher and light machine guns stern and aft. The vessel has an enclosed crew cabin, and is designed to support Coast Guard port security, SAR, and law enforcement missions. The boat was scheduled to replace 300 heterogeneous shore-based boats and provide a standardized platform ("Coast Guard Station Cleveland…," 2004).

The Coast Guard Marine Safety Office in Milwaukee (Wisconsin) is staffed with Regular, Reserve and Auxiliary personnel. Marine Safety Detachment Sturgeon Bay (Wisconsin), a former satellite station for MSO Milwaukee, assists on Lake Michigan with vessel inspections during repair and construction at the Bay Shipyard.

The waterways and port groups in Sturgeon Bay, Milwaukee, and Green Bay carry out supportive missions in law enforcement, SAR, marine environmental protection, oil spill response, and ship inspections. MSO Milwaukee was the recipient of the Coast Guard Commandant's Quality Award in 1997 and 1998 ("About MSO Milwaukee," 2003).

The 2006 Group Milwaukee complement consisted of 50 Coast Guard reservists and 75 active duty personnel. Group Milwaukee has operational command and support of western Lake Michigan from the Indiana coastline through Chicago, Milwaukee, Green Bay, Sturgeon Bay, and the Upper Peninsula of Michigan ("Group Milwaukee," 2006).

The U.S. Lighthouse Service, a contemporary of the U.S. Revenue Cutter Service that predated the Coast Guard, was present in the Milwaukee area as early as 1855 and operated North Point Lighthouse. The 28-foot tower rested on top of a bluff from which the lighthouse keeper could observe Lake Michigan. Erosion required the building of a 39-foot lighthouse further inland in 1888. In 1912 the lighthouse was raised to 74 feet. The following year the Fresnel lens was illuminated with coal gas, replacing mineral oil: in 1929 the volatile coal gas was replaced by electrical power.

The USCG decommissioned North Point Light in 1994. The expensive Fresnel lens structure was taken down and stored at Station Milwaukee. In 2003 Milwaukee County acquired North Point Light Station from the federal government ("Lighthouse History," 2006).

Coast Guard Marine Safety Detachment Sturgeon Bay is located north of Green Bay on a peninsula between the waters of Green Bay and Lake Michigan. USCGMSD Sturgeon Bay is responsible for port security, vessel safety, vessel inspection, environmental protection, and law enforcement. In 2006 MSD Sturgeon Bay had an area of responsibility (AOR) that included 5 fuel transfer facilities. The Detachment monitored foreign vessel arrivals, and administered an inspection and law enforcement operation that extended along 400 miles of coast and 35 miles out into Lake Michigan. Detachment Sturgeon Bay covered the maritime domain from Kenosha, Wisconsin into the Upper Peninsula of Michigan.

Sturgeon Bay had a complement of six personnel: a Lieutenant Commander, a Lieutenant, two Chief Warrant Officers, and three Petty Officer Marine Science Technicians whose duties involved armed (and unarmed) ship inspection, pollution response, and recording the arrival of foreign vessels. Two other area Coast Guard units (Station Sturgeon Bay and the USCGC Mobile Bay) boosted the area USCG complement to 75 active duty personnel in a city of less than 10,000 people.

MSD Sturgeon Bay and its adjoining entities cooperate with local and state police, Customs and Border Protection, the FBI, and local fire and paramedical units. MSDSB trained area law enforcement colleagues in boarding vessels. The Sturgeon Bay Coast Guard inspects vessels under construction and repair, and boats and ships laid up in dry docks for the winter, at Marinette Marine Corporation, Bay Shipbuilding Corporation, and Basic Marine Company in Michigan ("MSD Sturgeon Bay," 2006).

The Coast Guard Marine Safety Unit in Toledo (Ohio) is located on Western Lake Erie. The Port Operations Department is charged with waterways management, ATN, waterfront facilities inspection, vessel boarding, pollution prevention, hazardous material and explosives loading, and harbor patrols ("MSU, Toledo," 2006).

USCGC Mobile Bay (WTGB-103) operates out of Sturgeon Bay as an icebreaker in the Strait of Mackinac and the St. Mary's River that connect Lakes Huron and Superior. The 140-foot icebreaking tug Mobile Bay operated with a 120-foot ATN buoy barge (CGB-1202) to maintain 119 buoys on northern Lake Michigan. The Mobile Bay could disconnect from the buoy barge to carry out SAR, pollution control, and law enforcement missions ("USCG Mobile Bay," 2006).

Lt. Cmdr. David J. Rokes was the Operations Officer for Group Sault Ste. Marie from 2000-2003 and assumed command of the USCGC Mobile Bay in 2003. Rokes enlisted in the Coast Guard in 1976, was honorably discharged, earned a business management degree, and then re-enlisted in the USCG, to rise to Petty Officer Second Class. Rokes was admitted from the enlisted ranks to Officer Candidate School (1988), and then served on the USCG cutters Mackinaw and Sturgeon Bay before assuming command of the CGC Mobile Bay ("Commanding Officer," 2006).

In 2005, USCG Group Ste. Sault Marie included Coast Guard Stations Duluth (Minnesota); Bayfield (Wisconsin); and Sault Ste. Marie, Portage, Marquette, Ignace, Charlevoix, and Alpena (Michigan).

USCG Station Bayfield is located north of Ashland in Lake Superior. The port of Ashland once hosted huge iron ore boats at its now-abandoned iron ore docks. The Coast Guard maintained ATN and kept commercial routes navigable into Chequamegon Bay throughout the 20th century.

Peter A. Lamal, a retired University of North Carolina-Charlotte psychology professor, recalled the regional influence of the Coast Guard: "Growing up in Ashland, I marked the start of spring when the Coast Guard

icebreaker Woodrush cut the lane in the Chequamegon Bay ice for the first ore-boat to arrive. Before shipping out on the Great Lakes in the summer (1960) I worked on an ore-boat; I had to go to the Duluth Coast Guard office to get my seaman's card."

Professor Lamal sailed as a porter on the 620-foot merchant vessel Richard J. Riess. Lamal boarded the MV Riess in Toledo, where coal was picked up and then unloaded in Green Bay and the Twin Ports (Duluth-Superior). Iron ore or taconite, Lamal explained, was loaded in the Twin Ports and brought to Cleveland and Ashtabula (Ohio), or Lackawanna (New York) near Buffalo.

Lamal participated in Coast Guard mandated fire and lifeboat drills on cold Great Lakes waters, and was aware of the foul weather passageway "running along one side of the cargo hold, but I never used it because there was no bad weather during my time aboard." Lamal went back to college in the fall and thus avoided the gales and storms of November (Lamal, "Memories…," 2005).

In 1980, the USCGC Woodrush was assigned to the port of Sitka, Alaska, and decommissioned in 2001 (Marshall, "From Icebreaking to...," 2001). Since 1980, the Duluth port has hosted the USCGC Sundew and the USCGC Alder (WLB-216). The Alder was launched in Marinette, Wisconsin in 2004, sailed through the Great Lakes to its Duluth homeport, and was commissioned on 10 June, 2005. The 225-foot Juniper Class Great Lakes cutter Alder supported a complement of eight officers and 42 enlisted personnel. Two 3100-horsepower Caterpillar diesel engines with one bow and one stern thruster powered the 13-foot-draft vessel. The Alder carried a 22-foot rigid hull inflatable boat (RHIB), a 24-foot aluminum workboat, and the requisite deck gear and hoist to fulfill the ATN missions of a sea-going buoy tender ("USCGC Alder," 2006).

In June 2005 the USCGC Alder steamed from its Duluth port to dock at Washburn (Wisconsin) on Chequamegon Bay. The small port is the depository of several buoys stored for use on Lake Superior. Ensign Tim Brown, U.S. Coast Guard Academy Class of 2004, explained Alder missions, personnel, and technology to the author. Docked parallel to one dock, and perpendicular to the dock off the bow, the USCGC Alder needed its bow thrusters to cast off efficiently and continue its Great Lakes patrol under the command of Lt. Cmdr. Steve Teschendorf (USCG Academy 1991).

Ensign Brown was proud to be part of the crew of the new, multi-mission, high-technology cutter assigned to SAR, ATN, law enforcement, pollution control, icebreaking, and port security on Western Lake Superior. Security precautions made Ensign Brown reluctant to reveal shipboard armament, but a variety of small arms were assumed to be on board. The 50-crew complement of mixed-gender personnel included eight officers: one lt. cmdr., one lt., one lt. (jg), three ensigns and two chief warrant officers. The engineering officer was a CWO, and the second CWO headed the deck crew.

To avoid the fate of the 180-foot buoy tender Mesquite, which grounded off Keweenaw Point on the Upper Peninsula of Michigan in December 1989, the Alder crew, Brown explained, utilized bow and stern thruster propellers, electronic charting, and an advanced Global Positioning System (GPS).

Ensign Brown explained post-9.11.01 security issues, the post-2003 absorption of the USCG into the Department of Homeland Security, the coordination of Great Lakes Coast Guard units with local, state and federal public safety and law enforcement agencies and the Department of Defense, and the Canadian Coast Guard.

Shipboard colleagues of Ensign Brown exhibited pride in the Coast Guard and the USCGC Alder. The diverse crew included a female striking for Boatswain's Mate Third Class (BM3), a food services specialist (FS3), and a BM3 from Virginia who adjusted to Duluth and Great Lakes winters by utilizing "heavy weather gear." Petty Officer First Class (PO1) and machinery technician (MK) Danny Lash, a 15-year Coast Guard veteran, previously served on the 225-foot USCGC Kukui (WLB-203) home-ported in Hawaii (Brown, "Conversations…USCGC Alder Crew," 2005). The modern Kukui was built by the Marinette Corporation in Marinette, Wisconsin and launched in 1997 ("USCGC Kukui History," 2006),

USCG Station Bayfield, located ten miles north of Washburn (Wisconsin), responded to 174 SAR calls in 1995, doubling the previous year's tally, and surpassing the annual call totals of the larger Lake Superior Coast Guard stations of Marquette (18) and Duluth (89). The response tally was due to the large number of fishing and

recreational vessels which operate out of the ports of Bayfield and Ashland, and the severe weather conditions caused by the prevailing westerly winds coming unimpeded across the Lake ("USCG Station Bayfield," 1995).

Great Lakes winter ice floes have threatened and taken the lives of lighthouse keepers, sport and commercial fishing enthusiasts, and hikers. Coast Guard personnel respond to imperiled ice victims by going over and off the ice in specially designed craft, and in helicopters equipped with hoist systems and rescue baskets. Rescue personnel at the Duluth and Bayfield Coast Guard stations wear protective clothing and carry appropriate gear. The crews have trained on, and deliberately fallen through, Lake ice to experience cold weather conditions and practice rescue techniques.

Bayfield Station Petty Officer Darwin Kjer explained rescue techniques and the operation of a special motorized 14-foot boat that can be maneuvered or pushed or paddled across ice and open water. Coast Guard personnel cooperate with area police, fire, and natural resource departments in ice rescues and vehicle and watercraft navigation. The water craft inventory has included hovercraft (Merkel, "Rescues on Ice," 2001).

In the summer of 2005 Coast Guard Station Bayfield operated a 25-foot RBS (Response Boat Small), a safe boat with secure flotation support around the hull, and the capability of mounting machine guns in addition to the small arms the crew might carry. The station complement included BM3 Josh Christensen, BM3 Daniel Gallagher, BM3 Kyle Dupree, MK3 Les Swenson, Seaman (SN) Richard Chaney, SN Melissa Braun, and Chief Petty Officer (BMC) Michael Briner, Officer in Charge (OIC).

Coast Guard Station Bayfield coordinated its SAR, law enforcement, pollution control, and safety and security missions with Coast Guard Station Duluth and Sector Sault Ste. Marie ("Station Bayfield Interviews," 2005). Station Bayfield has invited area residents, boaters and non-boaters to the unit facilities to learn about USCG missions, obtain safe boating information, benefit from free boat inspections, and converse with Wisconsin game wardens and natural resource officers about rules and regulations. Area law enforcement, fire fighting, and emergency medical units have participated in the public relations and community education events ("Station Bayfield to Host Open House," June 2003).

In July 2005 Bayfield County District Attorney Craig Haukaas visited the new USCGC Alder at the Washburn pier. Haukaas, a member of the USCG Auxiliary, had participated in SAR assists, drowning recoveries, and boat safety and inspection activities. District Auxiliary Commodore Henry Arent headed the Apostle Islands Flotilla 095-08-01 in 2005. The Flotilla performed essential support missions for Coast Guard Station Bayfield and the Western Lake Superior region (Haukaas, "Interview…," 2005).

In 2006 Henry Arent was the Apostle Islands Coast Guard Auxiliary IPFC (Immediate Past Flotilla Commander). Arent continued his duties in the Bayfield area Coast Guard Auxiliary which, he explained, consisted "of 79 members, 21 boats, two aircraft and three radios, one of which is mobile." Auxiliary officer Arent described the responsibilities of Flotilla 095-08—01: "We assist the Coast Guard by providing services which free them up for other tasks. Auxiliary members teach boat safety and do boat inspections, go on rescue patrol, and stand radio watch." The Auxiliary members "pay for their uniforms, and most are retirees who are proud of what we do" (Arent, "Apostle Islands Flotilla…," 2006).

Frederick Stonehouse chronicled the contributions of women on the Inland Seas in his book, Women and the Lakes. Women have served as schooner captains, cooks and lighthouse keepers in the U.S. Lighthouse Service, Revenue Cutter Service, and Coast Guard. Women have risked and lost their lives on the Lakes. Female lighthouse keepers assisted their husbands at isolated lighthouses, or succeeded them as widows.

Rachel Wolcott was the first female Great Lakes lighthouse keeper. Wolcott was appointed to Marblehead (Ohio) Light after her husband's death in 1832. Of the 143 Great Lakes lighthouses in 1877, women commanded seven lights and females assisted male keepers at 18 lighthouses.

During the Civil War (1861-1865) the strategic Lake Superior port of Marquette (Michigan) shipped out iron ore. Marquette Harbor Light Keeper Elizabeth Truckey guided the ore carriers from 1862-1865. Keeper Anna Garraty began her job on Lake Huron in 1903 and maintained Presque Isle Range Light for 23 years. Elizabeth Whitney Williams (Beaver Island and Little Traverse Point, Michigan) ran two lighthouses over a 41-year

period: Williams died at age 71 in 1913. Harriet Colfax ran the Michigan City (Indiana) beacon from 1861 to 1904: when she reached 80 years of age, Colfax retired.

In the modern Coast Guard, Lt. Sandra L. Stosz was the first female Great Lakes cutter commander. Lt. Stosz commanded the 140-foot USCGC Katmai Bay (WTGB-101) out of Sault Ste. Marie from 1990-1992. In 2002 Lt. Cmdr. Beverly A. Havlik commanded the USCGC Sundew (WLB-404) out of Duluth (Stonehouse, Women…, pp. 73, 75-76, 79-80, 93-96, 107, 160).

Since the terrorist attacks of 9.11.01, the Coast Guard on the Great Lakes has had to reassess the issue of weapons and guns on its boats and cutters. The presence of armed warships on the Great Lakes has been a historically sensitive issue between the United States and Canada since the War of 1812-1814, when then-British Canada and the United States waged war against each other on land and water.

After the war, British and American diplomats signed the Rush-Bagot Agreement (1817). The Accord restricted the number of armed vessels and kinds of armament on Canadian and U.S. military vessels on the Great Lakes. Exceptions were made for revenue cutters, but the number and size of naval war vessels was limited, monitored and periodically re-negotiated, with exceptions made during the Civil War, World War I, and World War II.

Richard Klobuchar, the author of two books on U.S. Navy history in World War II, described joint U.S. Coast Guard-U.S. Navy missions before, during and after the Japanese attack on Pearl Harbor. In his history of the USS Ward, Klobuchar explained how Navy Reservists from St. Paul trained on USN gunboats on the Great Lakes. The four-stacker destroyer gunships were home-ported in Chicago, Detroit and Duluth. The Navy Reservists sailed on the 200-foot USS Paducah that was equipped with a 4-in. gun and carried messages to Great Lakes Coast Guard stations (Klobuchar, pp. 40-43, 2006).

Since 9.11.01, the United States and Canada diplomatically adjusted the Rush-Bagot agreement to allow armed military vessels on the Great Lakes for mutual security in the War on Terror. Klobuchar believes post-9.11 "Great Lakes Coast Guard cutters should be armed with surface-to-air shoulder-mounted and other missiles in addition to machine guns and 5-in. guns to deter potential radicals on both sides of the Lakes" (Klobuchar, "Conversations…," 2006).

Ninth Coast Guard District and Canadian officials share security and national defense concerns along 1500 miles of maritime border. The two nations have cooperated in commercial shipping, safety, and port security matters in a maritime domain that has handled an estimated 200 million tons of cargo per year.

Security and law enforcement considerations have resulted in the arming of Coast Guard cutters with powerful M-60 machine guns in addition to traditional stowed-away small arms. Cutters armed with M-60 machine guns included the 140-foot icebreaking tugs Katmai Bay, Mobile Bay, Bristol Bay, Neah Bay, and Biscayne Bay; and the newer icebreakers and buoy tenders Mackinaw, Alder and Hollyhock (Tasikas, "Rush-Bagot…," 2006).

Mrs. Beverly Ann Silva, wife of Rear Adm. Ronald F. Silva, Ninth Coast Guard District Commander, christened the USCGC Hollyhock (WLB-214) on its launch on 25 January, 2003 by Manitowoc Marine Group in Wisconsin. Lt. Michael McBrady was given command of the ship and crew complement of six officers and 34 enlisted personnel. The CGC Hollyhock was assigned to Port Huron, Michigan ("Manitowoc Launches…," 2003).

With the new weaponry on Coast Guard vessels, training aboard the cutters has expanded beyond traditional SAR, law enforcement, and buoy tending practice. Crews had to practice firing the 600 rounds per minute, M-240 machine guns.

The USCGC Acacia (WLB-406), home-ported in Charlevoix (Michigan), and other Great Lakes cutters have been armed with machine guns since the War on Terror and the U.S. invasions of Afghanistan and Iraq. Great Lakes cutters have subsequently been armed with small arms and bigger weapons to provide a deterrent and effective defense against migrant and drug smugglers and terrorists who might cross Canadian-U.S. maritime borders.

USCGC Acacia executive officer Lt. Cary Codwin said that cutter was armed with heavy weaponry in 2004, but crews were not permitted to train with the weapons on the Great Lakes until diplomatic negotiations with

Canada were completed. Petty Officer William Colclough, a Cleveland headquarters spokesperson, revealed the new icebreaker Mackinaw would receive the guns for the gun mounts, as "circumstances require." Cleveland office Senior Chief Petty Officer Jeff Hall said a necessary circumstance occurred during the 2006 Super Bowl in Detroit, when the Coast Guard was assigned waterfront security detail. CPO Hall said, "Coast Guard ships and boats have to meet a certain response standard and have the weapons on board for when you might need them" (McCool, "Coast Guard Adds Big Guns," 2006).

Each of the 11 Coast Guard Great Lakes cutters have been more heavily armed since 2004, as have boats smaller than the 65-foot minimum length which defines a cutter.

The USCGC Mobile Bay, home-ported in Sturgeon Bay (Wisconsin) on Lake Michigan, is the cutter stationed the closest to Racine, Wisconsin. Coast Guard Station Kenosha (Wisconsin) has a 25-foot response boat and a 41-foot utility boat, each capable of placing machine guns on gun mounts.

Coast Guard Station Milwaukee maintained seven 25 to 41-foot patrol boats. The new 240-foot USCGC Mackinaw (WLBB-30), home-ported in Cheboygan (Michigan), and the 140-foot USCGC Mobile Bay (WTGB-103) were the only two Lake Michigan cutters in 2006 ("Coast Guard Cutters on Great Lakes…," 2006).

CHAPTER 16

COMMAND LEADERSHIP ON THE GREAT LAKES

THE EXEMPLARY LEADERSHIP of Coast Guard petty officers, chief petty officers, warrant officers and commissioned officers has been illustrated in previous chapters. The present chapter will emphasize the commissioned officer command at shore stations, on cutters, and at the district, area, and national headquarters levels from the Great Lakes to Washington, D.C.

Captain Jimmy H. Hougbaugh, a former commander of the USCGC Woodrush out of Duluth, distinguished himself on that venerable cutter in the November 1975 storm that sank the MV Edmund Fitzgerald on Lake Superior.

In July 1988 Capt. Hobaugh succeeded Capt. Walter S. Viglienzone as Group/Base Commander and Captain of the Port (COTP) at Sault Ste. Marie (Michigan): Captain Viglienzone was assigned to U.S. Coast Guard Headquarters, Washington, D.C. Captain Hobaugh came to Sault Ste. Marie from Ninth District Headquarters in Cleveland (Ohio) where he headed the Readiness and Reserve Division. Hobaugh rose from enlisted cutter duty to Officer Candidate School (OCS) and subsequent service in Virginia, Texas, Alaska, and Duluth. The latter Station was where he was commander of the Woodrush, Group Commander, and Captain of the Port ("Hobaugh Takes Command…" 1988).

In 1989 Capt. Hobaugh presented a commendation medal to engineering Chief Petty Officer Harold McKerchie at Sault Ste. Marie for preventative maintenance achievements on the USCGC Buckthorn ("Commendation," 1989). In June 1991 Capt. Hobaugh retired.

Not all goes well on every Coast Guard mission. While placing a buoy in treacherous waters off Keweenaw Point on Lake Superior in December 1989, the USCGC Mesquite grounded on a shoal that smashed a hole in the hull. Heavy wave action damaged the cutter past the salvage stage, necessitating the eventual sinking of the buoy tender. Lt. Cmdr. John Lynch, the Mesquite captain, was scheduled to face military charges after an investigation by Coast Guard Vice Adm. Howard Thorsen.

Ninth Coast Guard District Commander Rear Adm. Richard Appelbaum scheduled disciplinary proceedings against USCGC Mesquite engineering officer Chief Warrant Officer James Thanasiu, and Ensign Susan Subocz, who was at the helm when the grounding occurred. CWO Thanasiu was charged with failure to carry out procedures to rock the cutter off the rocks. Lt. Cmdr. Lynch allegedly failed to assign adequate personnel to monitor the ship maneuvering; Ensign Subocz was charged with failure to check the course heading of the cutter in heavy current while in reverse ("Coast Guard Captain…," 1990).

The Coast Guard prepared to sink the Mesquite in the Keweenaw Peninsula Underwater Preserve for ecological purposes and to allow scuba divers to access the vessel. The 180-foot Mesquite remained fixed in its grounded position in winter ice and 12 feet of water while Coast Guard personnel salvaged equipment from the cutter. Lt. Mark Rizzo, USCG Station Sault Ste. Marie, described how the Coast Guard planned to use heavy cables, winches and a barge to move the Mesquite several hundred yards out into Lake Superior and sink it in 100 feet of water. The state of Michigan was scheduled to designate and extend the Preserve area that housed 25 other wrecked vessels (Tucker, "Coast Guard to Sink…." 1990).

On a July Sunday in 1990 USCG Petty Officer Frank Jennings informed the media, "they lowered the ship gently into the water." The 48-year old Mesquite settled to the bottom of Lake Superior, temporarily leaving the USCGC Acacia out of Charlevoix (Michigan) to carry out missions in the assigned area of responsibility ("Mesquite Settles…," 1990).

Lt. Cmdr. John Lynch was relieved of command of the USCGC Mesquite after the grounding, refused to resign his commission, and faced a military court in August 1990. Atlantic Region Commander, Adm. Howard Thorsen, ordered the court martial to be held in New York Harbor on Governor's Island. Lt. Cmdr. Lynch was charged with dereliction of duty and negligence. Conviction by a six-judge panel subjected Lt. Cmdr. Lynch to dismissal from the service and confinement for a period of two years or more ("Coast Guard Captain Refuses…," 1990).

The judicial panel found Lt. Cmdr. Lynch guilty of "hazarding his vessel," but absolved him of dereliction of duty. Lynch was punished with a letter of reprimand, loss of seniority and a related reduction in pay grade. Ensign Sobocz was fined $1,000 and given a letter of reprimand. CWO Thanasiu received a reprimand and later retired. Commendation and achievement medals were awarded respectively to Damage Controlman First Class Gene G. Gray, Jr., and Boatswain's Mate First Class Ronald W. Signs for leadership, professional competence and seamanship during the grounding incident (Stonehouse, 1991, pp. 81-82).

Meanwhile, Coast Guard commanders administered their districts and transferred commands. In June 1990 Rear Adm. Gregory Penington assumed command of the Ninth Coast Guard District. Penington, a graduate of the U.S. Naval War College Command and Staff School (1971), replaced Rear Adm. Richard Appelbaum who was appointed Chief of Navigation at Coast Guard Headquarters, Washington, D.C. Rear Adm. Penington, a 1960 Coast Guard Academy graduate, had been chief of staff at the Thirteenth District in Seattle (Washington) before being transferred to Cleveland. Adm. Penington visited the USCG Station Portage site in Hancock (Michigan), and then flew over the grounded USCGC Mesquite ("Coast Guard Gets New Commander," 1990).

Several distinguished commanders have administered the Ninth Coast Guard District. Admiral James S. Gracey (Coast Guard Academy 1949) commanded the Ninth District from 1974-1977. Before 1974, Adm. Gracey served at Port Chicago, as COTP in Boston, commander of the USCGC Mariposa (WAGL-387), and was in command of Coast Guard Station Yakutat (Alaska). After the Ninth District command, Adm. Gracey went to Washington D.C. Headquarters as Chief of Staff, commanded the Atlantic and Pacific regions, and was the Coast Guard Commandant from 1982-1986 ("Gracey…," 2001).

Rear Adm. James D. Hull was commander of the Ninth District when the 9.11.01 terrorist attacks occurred in New York City and Washington, D.C. Within hours of the attacks, Adm. Hull activated a Crisis Action Center, recalled Coast Guard Reserves to active duty, ordered full alert, and placed active duty units on increased patrol duty. Adm. Hull formed a regional security task force and upgraded the security command structure across the Great Lakes district at the cutter, small boat station, station, air station, and group levels.

Ninth District Coast Guard personnel worked closely with Canadian maritime and law enforcement agencies, U.S. Immigration, Customs, FBI, the Border Patrol; and state and local public safety and law enforcement units. Canadian and U.S. officials conducted joint high-risk vessel boarding. Civilian Coast Guard Auxiliary units supplemented Team Coast Guard at small boat stations, marine safety offices and air stations.

The necessity of the response was illustrated by an analysis of the strategic infrastructure of the Ninth Coast Guard District: 1500 miles of international maritime borders; three international bridges; several major ports and cities including Chicago, Milwaukee, Detroit, Duluth and Superior; commercial and defense shipping

through the Sault Ste. Marie Locks and other strategic choke points; and numerous energy facilities, including 12 nuclear power plants (Dechant and Fawcett, "D9 Steps Up Lake Security…," 2001-2002).

On 3 May, 2002 Rear Adm. Ronald F. Silva replaced Adm. James Hull as Commander of the Ninth Coast Guard District. Rear Admiral Hull was awarded Vice Admiral rank and assumed command of the Atlantic Area.

Rear Adm. Silva (U.S. Coast Guard Academy 1971) earned a Master of Science degree in Civil Engineering at the University of Illinois and a Master of Engineering Administration from George Washington University. The engineering specialist served on several cutters, including the USCGC Escanaba, and at various headquarters offices. Admiral Silva was active in the Society of American Military Engineers and earned several military awards, commendations and medals ("Adm. Ron Silva…," 2002).

On 30 May 2002 Admiral Thomas H. Collins became Commandant of the Coast Guard. Adm. Collins has been credited with enhancing the morale and cohesion of Team Coast Guard, and upgrading the technology, facilities, and air and water platforms of the service. The upgrading of Coast Guard air and sea assets (the Integrated Deepwater Systems Project) became a federal priority after 9.11.01.

Admiral Collins graduated from the Coast Guard Academy in 1968 and taught in the USCGA Humanities Department. Collins later served as Pacific Area Commander and Commander of Eleventh District in Alameda (California) and at Fourteenth District headquarters in Honolulu. Adm. Collins had previously served on several shore stations and cutters, and was the commanding officer of the Cape Morgan (WPB-95313), a patrol boat home-ported in Charleston, South Carolina ("Admiral Thomas H. Collins," 2006).

On Friday, 21 May, 2004 Rear Admiral Silva retired in a change-of-command ceremony in Cleveland after 33 years of service. Rear Adm. Robert J. Papp assumed command of the Ninth Coast Guard District, including 1500 miles of international border, 6,700 miles of shoreline, and encompassing the Great Lakes region from the St. Lawrence River to Minnesota.

Admiral Papp had most recently been Director of Coast Guard Training and Reserve at Washington D.C. Headquarters. Coast Guard Commandant Thomas H. Collins and Coast Guard Atlantic Area Commander, and former Ninth District Commander, Vice Adm. James D. Hull officiated at the retirement and change of command ceremonies ("Coast Guard Ninth District Commander…," 2004).

In 2004 Adm. Papp took command of approximately 8,000 auxiliary, reserve, regular and civilian personnel; five ATN teams; ten cutters, 46 small boat stations, four air stations and air facilities; and four Sectors and four Marine Safety units. Reflecting the training of so many Coast Guard officers, Adm. Papp brought a compelling record of experience to the Great Lakes district command. The 1975 Coast Guard Academy graduate served on six cutters and commanded four of them, including the Coast Guard Academy's famous training barque Eagle. Adm. Papp utilized administrative skills he had acquired in previous posts as Deputy Chief of Staff of the Coast Guard, and Chief of the Coast Guard Office of Congressional Affairs ("Rear Adm. Robert J. Papp, Jr." 2004).

In July 2005 Coast Guard Commandant Adm. Thomas H. Collins, presided over a retirement and change-of-command ceremony for the Atlantic Area commander at the National Maritime Center Norfolk, Virginia. Vice Adm. Vivien S. Crea took command of the Atlantic Area from Vice Adm. James D. Hull, a veteran of 39 years of service.

Admiral Hull, a 1969 Coast Guard Academy graduate, served on the USCGC Rush in combat in Vietnam, when the cutter defended a besieged U.S. Army unit and sank two enemy vessels. Following the war, Hull served as executive officer and commander on several cutters. Adm. Hull administered the Ninth Coast Guard District from 1999 to 2002 before assuming the Atlantic Area command ("Coast Guard Changing Atlantic Area Commander," 2004).

On 16 July, 2004 Vice Admiral Vivien S. Crea assumed command of the Atlantic Area, which covers the Eastern and Western United States from the Atlantic Coast to the Rocky Mountains, and across the Caribbean Sea and Atlantic Ocean. Prior to assuming the Atlantic Area command, Vice Adm. Crea, a Coast Guard aviator, flew the C130-Hercules turbo-propeller aircraft, the Gulfstream II jet plane, and the H-65 Dolphin helicopter. Adm. Crea previously served as President Ronald Reagan's Coast Guard Aide, executive assistant to the

Commandant, and Commanding Officer of Air Station Detroit. As Commander of the Coast Guard Atlantic Area, Vice Adm. Crea was also Commander of the Atlantic Maritime Defense Zone ("Vice Admiral Vivien S. Crea," 2006).

The Coast Guard was transferred from the Treasury Department to the new Department of Homeland Security in 2003. In 2005-2006 Homeland Security Secretary Michael Chertoff headed the DHS. Serving under Secretary Chertoff's authority were USCG Commandant Thomas H. Collins, Vice Commandant and Vice Admiral Terry M. Cross, and Chief of Staff Vice Admiral Thad W. Allen.

In July 2004 Vice Adm. Cross was appointed Vice Commandant of the Coast Guard. Prior to 2004, Adm. Cross was Commander of the Pacific Area when Coast Guard illegal drug seizures reached record levels; intelligence and national defense missions increased; and Coast Guard personnel were deployed to the Persian Gulf in Operation "Iraqi Freedom." The 1970 graduate of the Coast Guard Academy earned a Bachelor of Science degree in engineering and a Master's degree in industrial administration from Purdue University, and graduated from the National War College. While he was Vice Commandant, Adm. Cross's son, Lt. Cmdr. Sean Cross, was serving in the USCG ("Vice Commandant Terry M. Cross," 2006).

Vice Admiral Thad W. Allen (Coast Guard Academy, 1971) gained national notoriety as Coast Guard operations commander in New Orleans during and after the devastating destruction of Hurricane Katrina in 2005. President George W. Bush placed Vice Adm. Allen in charge, stating, "Adm. Allen speaks for the administration." Vice Adm. Allen's administrative and communication skills were exhibited in his relationship with civilians; local, state and federal officials; and U.S. Army, Navy, and Air Force leaders. After Katrina, President Bush appointed Vice Adm. Allen to succeed Adm. Thomas Collins as Coast Guard Commandant in 2006.

Lt. (jg) Dulbow (USCG), a U.S. Naval Institute editorial board member and legislative director for Congressman John N. Hostettler, asserted that it was time to make the Coast Guard Commandant a member of the Joint Chiefs of Staff, and Adm. Allen would be the ideal candidate (Dolbow, "Vice Adm. Thad Allen…," 2006).

Adm. Allen came from a Coast Guard family. His father, Clyde Allen, served in the Coast Guard in World War II and retired as a Damage Control Chief Petty Officer.

Prior to assuming his duties as U.S. Coast Guard Chief of Staff in 2002, Adm. Allen was Atlantic Area Commander and Commander of the Atlantic Maritime Defense Zone. As Atlantic Commander, Adm. Allen coordinated Coast Guard operations in the Atlantic and Great Lakes regions immediately after the 09-11-01 terrorist attacks ("Vice Adm. Thad W. Allen," 2006).

Ninth Coast Guard District units and rescue personnel contributed to the Hurricane Katrina relief efforts, as did Coast Guard Auxiliary members, and Coast Guard Air Station crews from several regions. Ground and helicopter personnel saved the lives of more than 33,000 Katrina victims.

Great Lakes Coast Guard units provided three SAR ice boats to the unlikely Subtropical Gulf Coast environment for use in the Katrina Hurricane disaster. Above-water fan blades, not traditional under-water propellers which could hang up on obstructions and debris, propelled the ice boats. U.S. Army Airborne officers and enlisted personnel accompanied Coast Guard members on SAR patrols (Scofield, "Ice Boats," 2005).

The Coast Guard was mobilized along with the Air Force, Navy, Marines, and Army to provide humanitarian assistance along the Gulf Coast in Joint Task Force Katrina ("Coast Guard," 2006).

Great Lakes Sector Detroit formed teams of coxswains and crews which joined up with personnel from Coast Guard stations Saginaw River, Port Huron, St. Claire, Belle Isle, Harbor Beach, Toledo, East Tawas, Marble Head, Manistee, Buffalo, Sturgeon Bay, Sault Ste. Marie, and the Detroit ATN Team.

The rescue teams made effective use of the new glass-enclosed ice boats that were purchased in 2005 for winter SAR on cold Great Lakes ice fields (Fawcett, "Ice Boat Summer," 2005).

The Great Lakes shipping season started several days early in March 2006. Lake Superior was almost ice-free due to one of the warmest winters in 30 years. Great Lakes power plants needed the shipments of coal that came to the Twin Ports of Duluth and Superior from Western states. Commander Gary Croot, COTP Duluth, informed the media that Lake cargo vessels were required to have Coast Guard ship inspections before leaving port in the spring. The inspection schedule required the attention of the three Coast Guard inspectors, the temporary assistance of USCG inspectors from other ports, and qualified Coast Guard Reservists.

The early opening of the shipping season out of the Twin Ports to other Lake Superior ports before the official March 25th opening of the Soo Locks necessitated early inspection scheduling. The Soo Locks allow passage between Lake Superior and Lake Michigan. Before embarking, the Lake carriers that laid up over the winter at Fraser Ship Yards in Superior required Coast Guard inspection ("Lake Superior Shipping Season…," 2006).

The winter of 2006 was as easy on the new USCGC icebreaker Mackinaw as it had been on the old Mackinaw in the early thaw of 1966. Captain George Lawrence, commander of the Cheboygan-based Mackinaw, said that when the cutter cut the South Channel ice in the Straits of Mackinac in early March 2006 the ice was only eight inches thick, compared to the five-mile-wide, 16-inch-thick ice field which formed by the Mackinac Bridge (Adams, "Cutter Mackinaw…," 2006).

The Coast Guard scheduled another responsibility for the 2006 shipping season: the first scientific study to determine if the practice of "cargo sweeping" by cargo vessels seriously contaminated the Great Lakes. Cargo sweeping is the process of washing the remains of iron ore, limestone, salt, and other cargo hold residue from commercial vessels into the Lakes, several miles from shore. Shipping industry representatives from the Lake Carriers Association in Cleveland insisted the practice was necessary to maintain shipping quality and a viable Great Lakes economy. Although the Coast Guard is responsible for environmental protection and the enforcement of pollution regulations, the service traditionally permitted "cargo sweepings." The objective of the Coast Guard scientific study was to ascertain whether "cargo sweeping" should continue, be modified, or discontinued ("Cargo Sweepings…," 2006).

In 2006 the commander of the Ninth (Great Lakes) Coast Guard District was Rear Adm. John E. Crowley, Jr., who reminded the USCG personnel to always be alert and stand by the Service motto. The multi-mission duties of the Coast Guard on the "Inland Seas" are ongoing. The Coast Guard on the Great Lakes has continued to honor and add to the legacy of the Service motto: "Semper Paratus: Always Ready"

APPENDIX A

HISTORICAL CHRONOLOGY

1789 (7 Aug.) U.S. Lighthouse Service established under Treasury Department.

1790 (4 Aug.) Congress authorized Treasury Secretary Alexander Hamilton to create the U.S. Revenue Cutter Service and construct ten cutters to enforce tariff laws.

1801 Treaty with France ended the Undeclared Naval War in which the USRCS and the U.S. Navy captured several enemy vessels.

1812 The cutter fleet was ordered into war along side the U.S. Navy in the War of 1812 against Britain.

1833 The USRCS enforced tariff laws in the Port of Charleston, South Carolina after merchants refused to pay tariff duties on imported goods.

1835 The USRCS joined other military services in the protracted Seminole Indian wars.

1838 Steamboat Inspection Service placed under Justice Department.

1845 U.S. Lighthouse Service placed under Revenue Marine Bureau.

1846 Revenue Marine Cutters supported U.S. Navy in the Mexican War (1846-48).

1848 The initially volunteer U.S. Life Saving Service created to rescue coastal seafarers.

1852 Steamboat Inspection Service placed under the Treasury Department.

1861 (12 April) USRC Harriet Lane fires first naval gunfire in the Civil War in Charleston Harbor, South Carolina.

1876 USRCS cadets begin training at the School of Instruction, the forerunner of the U.S. Coast Guard Academy.

1878 U.S. Life Saving Service placed under the Treasury Department.

1890 USRC Bear purchased reindeer from Russian officials in Siberia for transport to Alaska to enhance the diet of Inuit and Indian populations and induce herding practices.

1897-98 Lt. Ellsworth Bertholf and Public Health and Revenue Service colleagues rescue stranded whalers in a 1500-mile overland trek through the Alaskan wilderness. Bertholf served as Captain-Commandant of the USRCS (1911-1915) and the U.S. Coast Guard (1915-1919).

1898 In the Spanish-American War thirteen Revenue cutters supported U.S. Navy missions in the Cuban and Philippine theatres of war.

1903 Wright brothers initiate first airplane flight in North Carolina with the assistance of personnel from the Kill Devil Hills Lifeboat Station.

USRC Grant was the first cutter to use wireless telegraphy.

1905 Revenue Cutter Service Yard (later Coast Guard Yard) established at Baltimore, Maryland in Curtis Bay.

1913 Cutters Miami and Seneca began International Ice Patrol after the sinking of the British passenger ship Titanic (1912).

1915 (28 Jan.) The U.S. Coast Guard is officially created with the consolidation of the Life Saving Service and the Revenue Cutter Service under the Treasury Department.

1916 Coast Guard aviation begins with the acceptance of Coast Guard personnel at the U.S. Navy flight training school in Pensacola, Florida.

1917 With U.S. entry into World War I, the USCG was placed under the USN in wartime, and returned to the Treasury Department in 1919.

1918 Coast Guard cutters participated in convoy patrols, search and rescue (SAR), and anti-submarine warfare in the Atlantic Ocean for the duration of World War I.

1919 (27 May) Lt. Elmer Stone (USCG) made the first air Atlantic crossing in a U.S. Navy NC-4 float plane, predating the 1927 Lindbergh flight.

Coast Guard patrol boats prepared for Prohibition law enforcement duties.

1920 The first USCG Air Station was made operational at Morehead City, North Carolina.

The Coast Guard began using Curtiss HS-2L amphibious “flying boat” seaplanes. The first seaplanes were borrowed from the U.S. Navy.

1925 The United States Coast Guard Band was founded.

1939 The U.S. Coast Guard Reserve was formed as a non-military civilian unit to assist recreational boaters. It became the U.S. Coast Guard Auxiliary in 1941 when the USCGR evolved into the military adjunct of the regular USCG during World War II. Auxiliary units later performed port security duties. The USCGR has contributed personnel to domestic and overseas missions.

The U.S. Lighthouse Service was incorporated into the USCG.

1940 USCGC Duane initiated Coast Guard weather station patrols. By 1976 ocean station vessels began to be replaced by electronic buoys and satellite systems.

(27 June) President Franklin Roosevelt, giving the Coast Guard a new Port Security mission, invokes the Espionage Act of 1917.

1941 The USCG was transferred to the U.S. Navy during World War II, and returned to the Treasury Department in 1946.

(7 December) USCGC Taney fired upon Japanese aircraft during the attack on Pearl Harbor. The Taney served with distinction in the Pacific and later in Vietnam.

1942 (21 Feb.) USCGC Spencer sank a German submarine. The cutters Campbell, Ingham, and Cirrus later participated in successful attacks upon U-boats. SN2 John Cullen (USCG) discovered German saboteurs on Long Island, New York, and assisted the FBI with their apprehension.

PO1 Douglas Munro (USCG) used his landing craft to shield U.S. Marines during a Japanese assault on their positions on Guadalcanal. Munro received a posthumous Medal of Honor.

The Coast Guard Women's Reserve (SPARS) was organized during World War II under the command of Captain Dorothy Stratton (USCG).

1943 The LORAN A electronics aid to navigation system was initiated after collaborative efforts between Cmdr. L.M. Harding (USCG), other federal agencies, and civilian and academic scientists.

1944 (29 June) The first shipboard landing by a helicopter on the USCGC Cobb. The U.S. Navy assigned the Coast Guard to develop helicopter operations for search and rescue (SAR) and anti-submarine warfare (ASW).

1946 (1 Jan.) The USCG was returned to the Treasury Department after World War II.

1950 (25 June) The Korean War (1950-53) commenced. The Coast Guard performed support functions in the Pacific, ran destroyer escorts, and administered LORAN stations in the region, including a station in Pusan, South Korea.

1957 (July-Sept.) Cutters Spar, Storis, and Bramble navigated the historically sought Northwest Passage across the North American Arctic.

1960 The Coast Guard discontinued the use of seaplanes.

1965 (March) the USCG began its involvement in the Vietnam War (1965-73) in which the service committed several cutters, patrol boats, and 8700 Coast Guard personnel.

The U.S. Navy turned all of its icebreakers over to the Coast Guard.

1967 (1 April) The USCG ended 177 years under the Treasury Department and was transferred to the Department of Transportation.

(6 April) The famous racing stripe "slash" became official and was added to USCG stations, facilities, vehicles, signage, stationary, cutters, boats, and aircraft.

1969 (August) USCGC Northwind accompanied a supertanker on an historic voyage through Arctic waters across the North American coast.

1973 USCG Pollution Strike Teams were created to police maritime oil and chemical pollution.

1975 (10 Nov.) The cargo carrier Edmund Fitzgerald sank on Lake Superior. The USCG participated in rescue efforts and subsequent hearings and investigations.

1976 USCG fisheries enforcement was extended out to the 200-mile Economic Resource Zone.

The U.S. Coast Guard Academy became the first military academy to admit women.

U.S. Coast Guard uniforms officially changed to a distinctive shade of blue.

1979 Lt. (jg) Beverly Kelly (USCG) became the first female commander of a U.S. military vessel.

1980 The Coast Guard monitored the high seas flight of 200,000 Cuban refugees.

1983 Four cutters began surveillance patrols around Grenada in support of U.S. military intervention.

1986 The USCG activated the Maritime Defense Zone in coordination with the U.S. Navy.

1989 The oil tanker Exxon Valdez ran aground in Prince William Sound, Alaska. Coast Guard Strike Teams responded to the largest tanker oil spill in U.S. history.

1990 Coast Guard Active Duty and Reserve personnel deployed with other U.S. military forces to confront Iraqi aggression in the Persian Gulf region.

1991 A Law Enforcement Detachment Team from the CGC Rush stationed on the U.S. Navy warship Ingersoll made a high seas capture of 70 tons of illegal narcotics.

1993 The Coast Guard initiated the largest SAR mission in history to confront a massive Haitian refugee exodus.

1994 The last HH-3F amphibious helicopter retired from Clearwater Florida Air Station closing the era of amphibious Coast Guard aircraft.

USCG Commandant, Adm. Robert Kramer approved the creation of "Team Coast Guard" which integrated the Reserves into operational and administrative processes with the Active Duty Coast Guard.

USCGC Polar Sea became the first U.S. surface naval vessel to reach 90 degrees N. latitude. The previous record of 84 degrees N. was achieved by the Polar Star in 1991.

1996 TWA Flight 800 crashed off New York City. USCG SAR units found no survivors.

The Coast Guard commenced counter-narcotics Operation Frontier Shield.

1997 Operation Gulf (of Mexico) began. Coast Guard Beach Patrols, the first since World War II, monitored the Texas-Mexican Gulf shore to interdict narcotics smuggling.

USCG teams conducted 75 training missions to foreign nations.

The controversial Russian vessel Kapitan Man incident in Puget Sound off the Washington coast. The Kapitan Man allegedly fired laser beams at a tracking military helicopter. USCG and USN personnel later boarded the Kapitan Man. No laser device was discovered. A U.S. Navy intelligence officer and Royal Canadian Air Force aviator sustained eye injuries.

1998 The U.S. Coast Guard cutter (USCGC) Chase was ordered to the Persian Gulf to enforce the United Nations Iraqi oil embargo.

2000 USCG units conducted search and rescue (SAR) operations after the crash of Air Alaska Flight 261 off the California coast.

2001 (11 Sept., or "9/11") the Coast Guard responded with rescue and port security operations in New York and at strategic ports around the nation after Middle East terrorists used 4 hijacked commercial passenger airliners in attacks on the New York City Twin Towers, the Pentagon in Washington, D.C., and in the crash of an airplane in Pennsylvania.

The Coast Guard initiated the tactical deployment of Sea Marshals to monitor, police, and protect strategic U.S. ports and associated shipping lanes.

Commandant Admiral James M. Loy (USCG) issued "An Open Letter to Team Coast Guard" in which he praised the Service for its response to the 9/11 terrorist attacks upon the United States.

2002 Lt. Jack Rittichier (USCG) was killed in action in Vietnam in 1968. The MIA medal winning helicopter pilot's remains were recovered in 2002 and buried at Arlington National Cemetery in 2003.

Admiral Thomas H. Collins became Coast Guard Commandant. Adm. Collins updated training and Coast Guard facilities, shore stations, vessels, and aircraft to meet the multi-mission responsibilities of the post-9/11 Service.

2003 (Jan.) USCGC Boutwell left Alameda, California to join other CG vessels and personnel in the Persian Gulf and Mediterranean Sea in support of Operation Iraqi Freedom.

(March) The USCG was transferred from the Dept. of Transportation to the newly created Dept. of Homeland Security.

(August) DHS Secretary Tom Ridge honored USCG personnel and awarded citations and medals to service members for their contributions to domestic and overseas security in Operation Iraqi Freedom.

Lt. Holly Harrison (USCG) earned a Bronze Star for her actions in as a patrol boat commander in a combat zone in Operation Iraqi Freedom.

2004 (April) DC3 Nathan Bruckenthal (USCG) was killed in combat while on patrol boat duty in Operation Iraqi Freedom.

(July) Vice Adm. Vivien Crea (USCG) took command of the Atlantic Area and Maritime Defense Zone Atlantic. The former helicopter pilot served as a presidential military aide and at U.S. Coast Guard Headquarters in Washington, D.C.

2005 (March) Admiral James Loy, former U.S. Coast Guard Commandant (1998-2002), stepped down as deputy chief of the Dept. of Homeland Security after distinguished USCG and DHS careers.

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APPENDIX B

WELCOME ABOARD!!

U.S. COAST GUARD STATION ERIE

JAN 2004

1 Coast Guard RdPhone: (814) 838-2098

Erie PA 16505Fax: (814) 833-5651

Presque Isle State Park

Welcome to Station Erie. Our station is located on Presque Isle State Park. Presque Isle is a 3,200-acre peninsula jetting out in to Lake Erie. The city of Erie is the third largest city in the state of Pennsylvania. The population of the city is about 103,000. There are many activities to do in the summer and the winter months.

There is hiking, golfing, swimming, camping, the Erie Zoo, skiing, we also have many museums and historical sites to visit.

Our unit missions are Search and Rescue, Law Enforcement, and Homeland Security. Our neighboring stations are Station Buffalo, NY and Station Ashtabula, OH. We border Canada and our AOR is about 800 sq. miles. The 9th District Headquarters is located in Cleveland, Ohio and Group Buffalo is located in NY of which both places have an exchange to purchase additional uniform items. The current duty rotation is port & starboard with sliding weekends. An average day for a seaman or fireman is standing watch, homeland security, search and rescue, and training on all of the stations boats. The station currently has a 47' MLB, 27' Boston Whaler, 23' SAFE boat, and a 14' Ice rescue skiff. The command structure has a BMC as the Officer in Charge, with a BM1 as the Executive Petty Officer and an MK1 as the Engineering Petty Officer. You will be living onboard when you get here if you don't have any dependents. Your room will be approximately 15 X 16 ft. and this will be your personal living space. You may bring a radio, television, or other comforts of home. Ask your sponsor for more information on what you can have in your room. When you report aboard be here within normal working hours between 0800-1600. If reporting in late call the station to inform the OOD. Arrive in the appropriate dress uniform and be ready for a day of paperwork. Upon reporting in be sure to bring all necessary paperwork provided by Cape May. You must also bring all the items you were issued at bootcamp and we suggest these additional uniform items; extra work uniforms, belt & buckles, and boots. These additional items are the items that you are going to be using most often. On a normal workday the uniform will usually be working blue. If standing watch you would wear light blue shirt and work pants. The rates we have at the station are BM, MK, FS, and SK. Upon arrival if you need to speak to the units Mutual Assistance Representative you can ask to speak to the XPO. If you are looking to further your education there are plenty of colleges and universities to choose from. A few of them are Gannon University, Penn State, Edinboro University, and Mercyhurst College. These colleges hold many different majors and programs. If you would like to attend religious services the city has many different denominations such as Catholic, Episcopalian, Baptist, Jewish, Greek Orthodox, and others. While you are stationed here in Erie you may want a local bank. Here are a few suggestions; Citizen's Bank, First National Bank, National City Bank, Mellon Bank and many others. Millcreek Mall is the local shopping source in the city but there is an outlet mall in Grove City, PA as well. The average housing rate is about $525.00 for a two-bedroom apartment in Erie and surrounding areas. BAH for a person without dependents: $539.00, with dependents: $671.00. The station does not have government-leased housing nor do we have government housing. For medical you will choose a primary care physician once you report aboard. The dental office is Demarco, Casella, and Jaceman, 333 State Street, Erie PA 16507.

If you have any questions please feel free to call the station. Talk to your sponsor for any additional information you may need.

Once again, welcome aboard and we look forward to your arrival.

R 061351Z JAN 04 ZUI ASN-A09006000015

FM COGARD STA ERIE PA

TO COGARD TRACEN CAPE MAY NJ

INFO COMCOGARDGRU BUFFALO NY

BT

UNCLAS //N01326//

SUBJ: SR xxxxxxxxx. WELCOME ABOARD.

1. ON BEHALF OF THE CREW AT STATION ERIE, I WOULD LIKE TO TAKE THIS OPPURTUNITY TO WELCOME YOU. THE STATION IS LOCATED ON PRESQUE ISLE STATE PARK, A SEVEN MILE LONG PENINSULA IN THE NORTHWEST CORNER OF PENNSYLVANIA. WE ARE A MULTI-MISSION STATION, PERFORMING SEARCH AND RESCUE AND LAW ENFORCEMENT, AS WELL AS ICE RESCUE DURING THE WINTER MONTHS. BECAUSE THERE IS NO PUBLIC

TRANSPORTATION TO THE END OF THE PENINSULA, A PERSONAL VEHICLE IS STRONGLY ENCOURAGED. DUTY IS THE STANDARD PORT AND STARBOARD WITH SLIDING WEEKENDS. THE BILLET STRUCTURE OF THE UNIT CONSISTS OF A BMC AS THE OFFICER IN

CHARGE, BM1 AS EXECUTIVE PETTY OFFICER, AND MK1 AS ENGINEER PETTY OFFICER. WE HAVE TEN MEMBERS OF DECK FORCE, SEVEN ENGINEERS, AND ONE FS2. THE UNIT OPERATES A 47' MLB, 23' SAFE BOAT, 27' BOSTON WHALER AND A 14' ICE SKIFF.

2. ERIE IS AN INDUSTRIAL CITY WITH A POPULATION OF APPROXIMATELY 80,000. LOCATED ON LAKE ERIE, TOURISTS ARE COMMON IN THE SUMMER MONTHS, AND SWELL THE LOCAL POPULATION TO OVER 100,000. ERIE'S NATURAL RESOURCES MAKE IT A RECREATIONAL PARADISE FOR ANYONE WHO ENJOYS SPENDING TIME OUTDOORS. ON BOTH LAND AND WATER, OPPURTUNITIES ABOUND. PRESQUE ISLE PENINSULA HAS ELEVEN BEACHES, AS WELL AS WALDAMEER AMUSEMENT PARK. ERIE IS LOCATED TWO HOURS FROM PITTSBURGH, CLEVELAND AND BUFFALO/NIAGARA.

3. YOUR SPONSOR IS xxxxxxxxx AND CAN BE REACHED AT

(814) 838-2098, MON-FRI 0800-1600.

4. IF YOU NEED TO CONTACT SOMEONE OTHER THAN YOUR ASSIGNED SPONSOR FOR INFORMATION OR ASSISTANCE, REFER TO THE LIST OF TELEPHONE NUMBERS BELOW:

STATION OFFICER IN CHARGE (814) 838-2098

STATION EXECUTIVE PETTY OFFICER (814) 833-5651

STATION ENGINEERING PETTY OFFICER (814) 838-2098

STATION OFFICER OF THE DAY (814) 838-2097

STATION FAX (814) 833-5651

GROUP BUFFALO COMMUNICATIONS CENTER (716) 843-9527

ISC CLEVELAND, RELOCATION ASSISTANCE (216) 902-6355 / 800 872-4957

5. MORE INFORMATION WILL BE SENT TO YOU AS SOON AS YOU CONTACT YOUR SPONSOR TO PROVIDE HIM WITH YOUR PREFERRED ADDRESS.

6. AGAIN, WELCOME ABOARD. WE LOOK FORWARD TO YOUR ARRIVAL.

BT

North Pier Head Light

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AND

SUGGESTED READINGS

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The archival sources include file and photographic material from the University of Wisconsin-Superior Lake Superior Maritime Collections Archives in the Jim Dan Hill Library (UWS, JDHL).

The file sections consulted at the UWS-JDHL were: Zenith Dredge Company (Duluth, Minnesota); U.S. Coast Guard History, File I; Coast Guard History, File II; Coast Guard Operations, File I; Coast Guard Operations, File II; Coast Guard Operations File II (2); Coast Guard Operations, File III; Coast Guard Operations, File IV; Coast Guard Stations and Vessels, File I; Coast Guard Stations and Vessels, File II; Coast Guard Stations and Vessels, File III; and Coast Guard Stations and Vessels, File IV. The author is indebted to the professionalism, guidance and courtesy provided by UWS-JDHL Maritime Archives Director Laura Jacobs and the library staff.

Primary and secondary sources were also consulted from the files of the Duluth Public Library in Duluth, Minnesota (DPL). Microfilm sources dated back to the 1870s. Newspaper clippings and other sources were in files identified as Duluth Harbor, Coast Guard; Duluth Harbor, Ships, Icebreakers; Duluth, Lighthouses; U.S. Coast Guard; and Great Lakes. Clippings files included articles from local newspapers. Several books on Great Lakes Lighthouses were available. The DPL sources include a staff project entitled "Compilation of the Annual Reports of the Commissioner of Lighthouses for the 11th District, 1872-1902." The Duluth Public Library Staff created "Compilation" from photocopies of the Annual Reports and other reference sources. The author is indebted to the courtesy, guidance and professionalism provided by David Ouse, Reference Division, Duluth Public Library, and the library staff.

PHOTOGRAPHS are courtesy of the University of Wisconsin-Superior Martime Collections Archives in the Jim Dan Hill Library, and the U.S. Coast Guard. The author's wife, Mary Patricia Lamal Ostrom, took photographs of the U.S. Coast Guard Station at Bayfield, Wisconsin.

MAPS

Dr. James Brady Foust, Geography Department Chair, University of Wisconsin, Eau Claire, facilitated the creation of the maps in the book. Cartography students Drew Philip Flater and Philip Andrew Holleran created and designed the essential physical, political and regional maps of Lake Superior.

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The author had conversed with Russ at the Rochester World War II Roundtable, by e-mail, and then subsequently at the Gunvalson home. Mr. and Mrs. Gunvalson shared photographs of Todd Gunvalson at the U.S. Coast Guard Academy and later in his career. USCG documents, sources, post cards, documents, correspondence, and newspaper articles were provided to the author, as were ships photographs and a painting

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ABOUT THE AUTHOR

Thomas P. Ostrom served in the U.S. Coast Guard Reserve from 1961-1969. After basic and advanced training at the USCG Base on Government (now Coast Guard) Island, he served in the Port Security Reserve Unit in Duluth, Minnesota. Participating in monthly weekend and summer duty assignments, Ostrom earned petty officer rank.

Mr. Ostrom taught history, anthropology, and geography at Rochester Community College in Minnesota for 30 years, has written a regular column for the Rochester Post Bulletin, and has been a political commentator on KROC-AM radio.

Born in Superior, Wisconsin, Ostrom received his BA and MS degrees from the University of Wisconsin-Superior, and did graduate and post-graduate work at Ball State University, the University of North Dakota, Winona State University, and the University of Minnesota in Minneapolis.

Ostrom is a member of the Foundation for Coast Guard History, the Navy League of the United States, the United States Naval Institute, the National Maritime Historical Society, and the U.S. Life-Saving Service Heritage Association.

Thomas P. Ostrom is the author of The United States Coast Guard: 1790 to the Present, and has published in the maritime periodical, “Wreck and Rescue,” the journal of the U.S. Life-Saving Service Heritage Association.