

National Aids to Navigation School

The U.S. Coast Guard became responsible for all Aids to Navigation in 1939 due to the merger with the U.S. Lighthouse Service. In December 1944, the NATON School was established in Groton, CT and consisted of 21 weeks of training in navigation, small engines, electricity, light systems, lighthouse maintenance, radio beacons, fog signals and buoys. The school moved to Governor's Island, New York before ultimately arriving at USCG Training Center Yorktown in 1986.



Today the NATON School continues the proud tradition of training Coast Guard men and women to properly service all major and minor aids to navigation maintained by the USCG around the world. Students learn aid positioning, buoy deck evolutions, troubleshooting lighting systems, tower climbing, building ATON structures, and correctly documenting ATON work.



National Aids to Navigation Museum



U.S. Coast Guard Training Center
Yorktown, Virginia



Centuries of History...

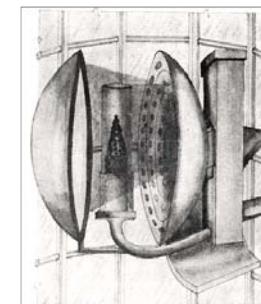


For almost 300 years, men and women have worked both ashore and afloat, at home and abroad to maintain Aids to Navigation (ATON) for the United States. This heritage began in 1716 with lighthouse keepers in the American colonies. It continued in 1789, under the U.S. Lighthouse Service at lighthouses and aboard lighthouse tenders and lightships. After 1939, the USCG assumed ATON responsibilities, still manning lighthouses and lightships, but lighthouse tenders were referred to as buoy tenders.

Aids to Navigation are placed at strategic points along the coasts and navigable waterways as markers and guides to enable mariners to determine at all times their exact position with relation to land and hidden dangers.



ATON includes buoys, day beacons, lighthouses, minor lights, lightships, fog signals, radio beacons, marks and other devices used to guide mariners.



The first lit navigation aids were fires burning on raised platforms or on shore. In 1716, Boston Light was first illuminated by simple tallow candles. By the early 19th century, lighthouses were using lamps and reflectors.

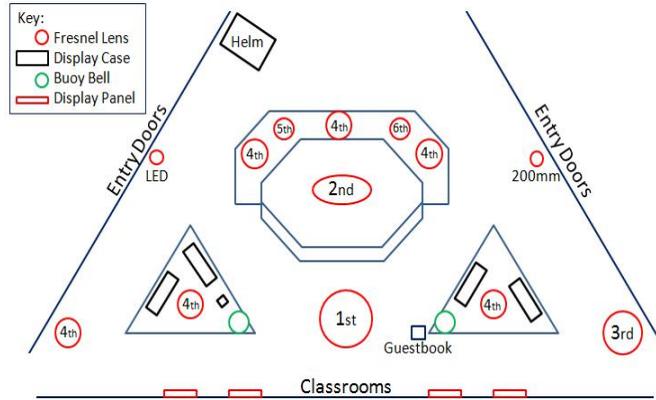
In 1822, Frenchman Augustin Jean Fresnel (pronounced *freh-nell*) designed a superior lighthouse lens system that used glass prisms to bend and focus light. By surrounding the light source, a Fresnel Lens was able to capture and focus at least 80% of the light and project it more than 20 miles. Lenses were classed based upon the distance of the light source to the lens. The sizes ranged from the largest first order to the smallest sixth order.



Although France and Great Britain adopted the Fresnel Lens quickly, it took the United States over thirty years to completely convert to the new technology. By the onset of the Civil War in 1861, almost all of the nation's lights were fitted with Fresnel Lenses.

The Fresnel Lens was one of the most significant developments in the field of aids to navigation and the prism technology is still in use today.

THE MUSEUM



The Fresnel Lenses

The atrium is home to eleven 1st through 6th Order Fresnel Lenses, and is the most complete collection of such lenses on display in the United States. The 1st Order Lens is the largest standard lens ever used. Lenses can appear greenish or clear due to the different ingredients used to manufacture the glass.



1st Order Fresnel Lens, Drum

Built in 1876 by Henry-Lepaute of Paris and used in Fowey Rocks Light, Florida until 1982. It is 10' 7" tall and 6' 1" wide and displayed a fixed light.

2nd Order Fresnel Lens, Bivalve

Built in 1909 by Henry-Lepaute of Paris and used in Dry Tortugas Light, Florida until the mid 1980s. It is 7' 4" tall and 8' 3" wide and displayed a flashing light. In 1934 it was reportedly seen a record 53.6 miles away.



3rd Order Fresnel Lens, Drum

Built by Henry-Lepaute of Paris. It is 7' 6" tall and 3' 3" wide and displayed a fixed light. Unknown date and location.



4th Order Fresnel Lenses, Drum & Bivalve

There are six 4th Order lenses on display, two bivalve and four drum. The six panel lens pictured was built in 1911 and produced a flashing light at Thimble Shoals Light, VA.



5th & 6th Order Fresnel Lens, Drum

The two smallest lenses were made in Paris by the Louis Sautter Co. circa 1852-1890. They displayed a fixed light and would have been used in smaller lights in harbors or rivers.



200mm & LED Lanterns

These lanterns show the changing technology from classic Fresnel Lenses to modern self-contained solar powered LED optics that still use Fresnel prism technology.

Additional Exhibits

Display Panels



Wall panels highlight information on ATON, history, personnel, technology, and other missions like wartime service.

Display Cases



Wood cases display ATON artifacts with facts about their history and use. Items include electric lamps, Aladdin lamp, bow lighthouse emblem, and a sextant.

Ship Models



Throughout the space are ship models for various ATON vessels including: 180' WLB, 225' WLB, 75' WLIC, 157' WLM, and a 55' Buoy Boat.

Also on exhibit are other artifacts including the helm from the 180' USCGC SAGEBRUSH, the original model of the mechanical chain stopper designed by Captain Niels P. Thomsen, two buoy bells, a buoy whistle and Coast Guard patches.



SAGEBRUSH Helm



Chain Stopper Model

The National Aids to Navigation Museum is located in the atrium of Canfield Hall on the USCG Training Center in Yorktown, Virginia. The facility is open to all who have authorized access to the base. Limited tours may also be available for other groups with prior notice.

The museum includes eleven Fresnel Lenses, four artifact cases, ship models, four display panels and many other interesting artifacts. These exhibits will introduce you to the almost 300 years of Aids to Navigation technology, history, and service in the United States.

The Commanding Officer, Training Center Yorktown, and the Chief of the NATON School welcome you to this museum. As many of these artifacts are fragile, we ask that you not touch any of the displayed pieces so they may be preserved and enjoyed by others. Please alert NATON staff if you see others acting inappropriately or think an item needs attention.

We invite you to sign our guestbook, and hope you enjoy your visit.

