

Lightships - Historical Background ¹

To provide a setting, significant historical events directly related to development and use of lightships in this country has been briefly summarized below.

During the period 1820-1983, one hundred sixteen lightship stations were established by the Federal government at one time or another. This figure includes those stations which were renamed and moved to a different position to better serve the same purpose, and also includes those later taken over by Canada. The number of stations existing at any one time reached maximum in 1909 when 56 were maintained. By 1927, 68 stations had been discontinued - replaced by lighthouses or buoys, taken over by Canada, or considered unnecessary. In 1939, when the Coast Guard assumed responsibility for aids to navigation, the number of stations had been reduced to 30, and although three additional stations were established during the 1954-1965 period, the total number of lightship stations continued to decline steadily until 1983 when replacement of the Nantucket Shoals lightship with a large navigational buoy marked the end of lightship usage in this country.

As a seamark, the lightship satisfied multiple requirements. It could be moored near shifting shoals where no fixed structure could be placed; stationed in deep water many miles from shore to serve as a landfall or point of departure for trans-oceanic traffic; and could be readily positioned to suit changing needs. In these roles, the lightship served as a day beacon, a light platform by night, a sound signal station in times of reduced visibility, and around the clock as a transmitter of electronic signals for bearings and distance finding. Outages or difficulties with any of its systems and equipment could be immediately detected and corrected on a spot by the crew. During their era, lightships evolved into highly sophisticated and efficient aids to navigation.

Although there is mention of "floating lights" being used in this country in the 1790s, lightships of the sort we remember today came into being with the 1819 Congressional authorization for construction of three light vessels. This was

¹ *Willard Flint was a maritime historian for the U.S. Coast Guard and is still considered the preeminent expert on U.S. lightships. Mr. Flint published **Lightships and Lightship Stations of the U.S. Government** in 1986 and published a revised addition two years later. Mainly this is a reference document in two separate sections: one with factual information about each lightship in a standard two page format, and the other with a similar format for each lightship station. In the front of the book is an excellent overview of lightships and their evolution in the United States. The Overfalls Foundation has a copy of this book that is available for ship guides wanting to look up various aspects on individual lightships or stations.*

far behind Britain where lightships had been put in service in 1731, with development there and in European countries being well along by the early 1800s.

Our first lightship, placed temporarily off Willoughby Spit in the lower Chesapeake Bay during the summer of 1820, was unable to withstand sea conditions at that location, and was soon moved to a more sheltered location in the Elizabeth River. This position, near Craney Island, was the first lightship station formally established, and marked the approaches to the ports of Norfolk and Portsmouth VA.

Progress and development in these early years was woefully inadequate, due primarily to organizational and management deficiencies which were allowed to persist for many years. Initially, little consideration was given to suitable design and construction characteristics for the lightships. Early light vessels were largely a product of opinion and arbitrary judgment on the part of builders who were often ignorant of the true purpose of the vessel or its harsh operating environment. For 30 to 40 years, therefore, the lightships were exceedingly poor light platforms; their full body, shoal draft, and light displacement combined to cause undue rolling and violent pitching, which in turn resulted in frequent loss of moorings and breakage or damage to the lanterns. By present day standards, crew accommodations would be judged uninhabitable. Ultimately, scientific advances in hull design; the use of bilge keels and adoption of improved ballasting techniques produced more stable vessels.

Supervisory responsibility for lightships, as well as all other navigational aids was assigned in 1820 to the Fifth Auditor of the Treasury Department, with control being exercised through what was known as the Lighthouse Establishment - a loosely structured organization administered at the local level by the Collectors of Customs. These individuals operated independently, deciding on their own what requirements were to be satisfied, acquiring material and equipment, and contracting for construction of lighthouses and lightships. They also hired and fired personnel, paid their wages, and either carried out or arranged for annual inspection of existing aids to navigation. Inspection reports, together with recommendations based largely on personal preference and opinion, were then forwarded to Fifth Auditor.

Stephen Pleasonton, the Fifth Auditor, had no familiarity with the nature of his maritime involvement, and little interest in requirements for assisting mariners; distancing himself entirely from the events in progress. Control was exercised in single-handed fashion by arbitrary findings based on review of the inspection reports, and by miserly control of the purse strings. This resulted in a host of misguided decisions, shoddy and unsafe construction, and a system of navigational aids which was inadequate to the need, behind the times, and technically inefficient.

In 1838 the situation was improved somewhat when Congress divided the Atlantic Coast into six Lighthouse Districts and the Great Lakes into two, with a Navy officer assigned to each District, and a revenue cutter or leased vessel made available for conducting inspections. The reports generated by this organization structure gave evidence of large scale mismanagement, low morale, incompetence among personnel, and irresponsible performance by contractors. The final summary report document for 1838 was extremely critical, pointing out that many of the lightships were extensively rotted and poorly maintained; that their lighting equipment was inadequate; and that entire crew complements were often absent for lengthy periods. Also criticized was the practice of hiring farmers and other landsmen as officers and crew members, who in some cases hired stand-ins to perform their duty. Much was made of the fact that the published range of visibility for all lights was erroneous; that there was no uniform system for coloring, numbering or otherwise identifying floating aids; that the positions of many lightships had been poorly selected; and that additional light vessels were required. Pleasonton, understandably, was displeased. Although making a few minor concessions, he continued to side-step any worthwhile remedies, and remained unduly concerned with the costs for improving the situation.

Due largely to the meager funds made available, lightship development continued to lag far behind progress being made in Europe. Although some standardization had been achieved, by 1842 the 30 lightships in service ranged from 40 to 230 tons burden, constructed entirely of wood, poorly rigged in many cases, and seldom with any means at all for propulsion. Illuminating apparatus was limited to multiple-wick sperm oil lamps of poor visibility, and mounted in lanterns which had to be raised and lowered to the deck for servicing. Ground tackle was inadequate, and hull design still had failed to consider the weather and sea conditions encountered by these small vessels. Neither tenders nor relief vessels were available at the time, and as a consequence, when the vessels were frequently blown adrift, stations remained unmarked for periods measured in weeks and months.

Congress eventually became aware of the serious disarray and, using competent and qualified inspectors, carried out an investigation in 1851. A voluminous but meaningful report resulted; highlighting many of the same discrepancies reported in 1838, and focusing attention on managerial, organizational, and procedural defects. Adoption of the report's comprehensive and specific recommendations led to formation of the Lighthouse Board in 1852 as a separate Branch of the Treasury Department. This was a nine member committee composed of officers of the Navy and Army Corps of Engineers, plus several civilian scientists.

The Board, guided by conclusions and recommendations of the 1851 investigation, acted at once to take advantage of available technology, to

upgrade equipment, and to revise contracting procedures. The District structure was drastically overhauled to provide seven on the Atlantic coast, two on the Gulf coast, and two on the Lakes and one on the Pacific coast - each with a Navy officer as District Inspector. Separate subcommittees were established to address all requirements for aids to navigation. These included finance and contract management, design and engineering, light vessels, lighting, and a subcommittee to test and evaluate new equipment, determined requirements, and develop maintenance procedures.

By 1855, this had led to construction of several lightships of new and more or less standard design; installation of new and more efficient illuminating apparatus on most existing vessels; and investigation of the merits of various types of sound signals, illuminants, and methods of marking or otherwise distinguishing one lightship from another.

At this time lightships were identified only by the name of the station which they occupied, and no specifications or directive existed for color or markings. Although station names were painted on the sides of lightships at about this time, neither numbers nor letters were used to identify individual vessels until 1867.

As progress in the technical area continued, so did efforts to upgrade the caliber and competence of lightship crews. Wages, benefits, accommodations and food remained rather spartan, however, with the 1852 ration allowance for lightship crew members being set at 20 cents per day.

At the District level, a professional engineer was assigned to assist the Inspector and, as time progressed, each District established a depot for supply and maintenance of its own equipment. Modern equipment continued to be introduced, and supervision and general effectiveness was improved.

There is little question that the Lighthouse Board caused noteworthy progress, however, the committee organization did not lend itself to prompt action on day to day operating matters, and translating plans and recommendations into accomplishment continued to be a cumbersome and diffuse process.

Congress again stepped in, considering that the Board structure was unwieldy, and hindered by undue military influence and bickering. Feeling the need for an improved command structure and an organization capable of functioning as an entity responsive to a single civilian authority, the lighthouse Board was disbanded in 1910 and a Bureau of Lighthouses was established in the Department of Commerce, having as its operating agency the United States Lighthouse Service. Heading up the Bureau, a commissioner of Lighthouses reported directly to the Secretary of Commerce, and also directly controlled the day to day operations of the Service. For the first time, lightships as well as all

other aspects of aids to navigational had found a place in a service-oriented agency with an adequate command structure.

Under the able and progressive leadership of Commissioner George Putman, the Bureau moved rapidly to the forefront worldwide among agencies engaged in developing and maintaining aids to navigation. Although technological advances were highlighted during Putman's tenure, his most valuable contribution was probably in the area of organization and personnel administration - emphasizing competence, demanding professional performance from all employees, and remedying many long standing problems with pay, benefits, living conditions, and a safe and efficient work environment.

This organization prospered for nearly 30 years, developing and perfecting the use of the radio beacon, modernizing illuminants and optical equipment, improving fog signaling methods, advancing the use of automated aids, and demonstrating the feasibility of unattended and radio controlled light vessels and lighthouses. The lightship itself, through innovative engineering and naval architecture, was developed into an effective vessel specifically built to handle its environmental requirements, and with propulsion and auxiliary systems adequate to its needs. Watertight integrity and a variety of other safety features were also highly developed in lightships of the late 1930s.

In 1939 the mission of the Coast Guard was expanded to include responsibility for aids to navigation, and resources of the former Lighthouse Service were transferred at that time. Lightship officers and crews as well as other civilian employees were offered two choices - integration into the Coast Guard with military rank commensurate with existing salary; or retention of civilian status under Coast Guard command. Exercise of these options resulted in about a 50-50 split. For lightships, many operated initially with either an all military or an all civilian complement. Later this gave way to a mix of military and civilian personnel. The mixed crews were in evidence well after World War II, and a few of the Lighthouse Service civilian employees were still active into the 1970s. In 1967, the Coast Guard became part of the Department of Transportation.

From 1939 until the end of the lightship era in 1983, the high standards of professionalism and technology introduced by the Lighthouse Service were carried forward and improved upon by the Coast Guard - well in keeping with its long history of dedication to the interest of mariners.

Life aboard the lightships, aside from being viewed as monotonous by many, was exposed to many hazards. The Diamond Shoals lightship was sunk by surface gunfire from German submarine in 1918. Dangers posed by weather and collision were ever-present. The records contain 237 instances of lightships being blown adrift or dragged off station in severe weather or moving ice. Five lightships were lost under such conditions, but the majority, despite heavy damage to hull and superstructure on many of these occasions, regained

station unassisted. This attests to a high order of seamanship, and commendations for bravery and outstanding ship handling often resulted.

Without regard to frequent minor bumps, sideswipes and near misses, 150 collisions with lightships are documented. Most of these involved sailing vessels, but long tows of multiple barges accounted for a sizeable number. Damage ranged from superficial to severe. In at least one case, the lightship came out unscathed, with the colliding vessel going down nearby. On another occasion when a lightship was struck by a "passing" vessel, the impact was sufficient to knock the on-watch lightship crew from their feet, and shattered all 16 lamp chimneys in the masthead lanterns. In 1909 a lightship was dismantled when rammed by a four-masted schooner. Unfortunately, five lightships were sunk as the result of being rammed, with injury and loss of life involved in some cases. Although fog was a factor in many of these collisions, most occurred under conditions of reasonably good visibility. Attempting to cross the bow of the lightship without making due allowance for current and leeway was frequently found to be the cause.

Although improved upon to some extent in later years, a variety of factors caused the lightships to be veritable targets for all traffic. Many were positioned in mid-channel. Early charts were overprinted with dotted lines running from lightship to lightship giving the course and distance, and sailing directions in early Coast Pilots openly encouraged passing lightships close aboard. Ship's officers handling coasters during the 1800s were by and large sadly deficient in both theory and practice of piloting and navigation. Charts were often either not carried at all, or were not used for plotting. Instead, reliance was placed on listings of courses, bearings, and distances found in a variety of government and commercial publications, or simply passed on by word of mouth. Little wonder that lightshipping carried with it a large measure of apprehension.

Most of our decommissioned lightships are long gone. Quite a few were sold and served in coastwise and harbor roles. Two provided bonfires at Fourth of July celebrations, and several were used as target ships by the Navy. A few were transferred to other countries for use as lightships, some were used as floating clubhouses by various organizations, but the majority ended up in a ship breaker's yard. However, 16 surviving lightships remain accessible to the public, the three oldest built in 1904. Fourteen of these veterans were restored for use as museums or exhibits, two served as floating restaurants, and one has been used as the charter trade.

This brief history cannot end with the traditional look to the future of lightships, for there is none. However, we can be assured that the vessels themselves and certainly all those who served in them constitute a unique and proud segment of our maritime heritage - sometimes overlooked perhaps, but never to be forgotten.

