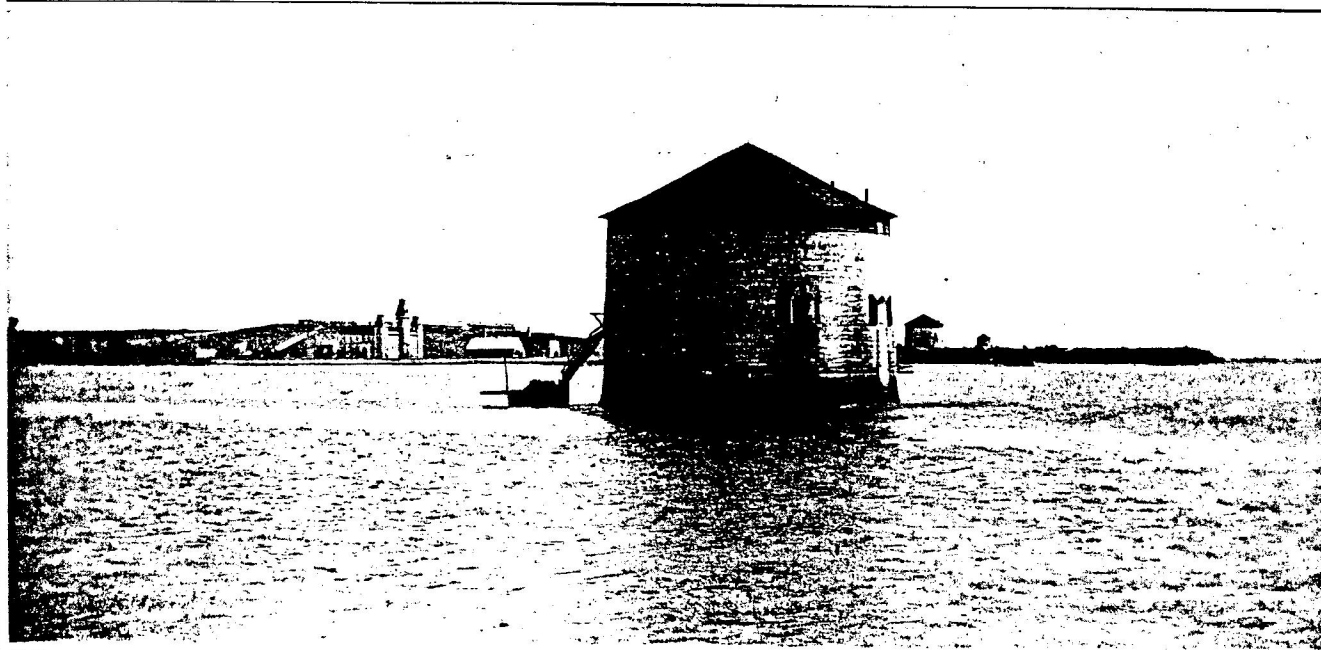


UNITED STATES MARTELLO TOWERS

DALE E FLOYD DESCRIBES THE INFLUENCE OF THE SO-CALLED MARTELLO TOWER ON AMERICAN MILITARY ENGINEERING



In early February 1794, two British ships, the *Fortitude* with 74 guns and the *Juno* mounting 32 guns, attacked a circular tower on Mortella Point, Gulf of San Fiorenzo, Corsica. In the ensuing 2 ½-hour engagement, the tower, with an armament of three guns, remained undamaged and not one of the thirty-man garrison suffered injury. The British ships received considerable damage and recorded about sixty casualties, including some deaths. After disengaging, the ships disembarked an army of approximately 1400 men that laid siege to the tower and incessantly bombarded it with artillery for two days. Finally, the garrison surrendered but only after smoke permeated the tower, forcing the men to choose breath over death.¹

This tower was similar to many others that dotted the European coast and various islands in the Mediterranean Sea. Mainly constructed during the Middle Ages, these towers varied in size, composition and construction but their purpose was usually the same. Lookouts atop the towers could ring a bell or light a fire to warn the local inhabitants of an impending attack or raid. Sometimes, the citizenry gathered inside the tower to hold off invaders, and in some later instances, mounted gunpowder artillery on top

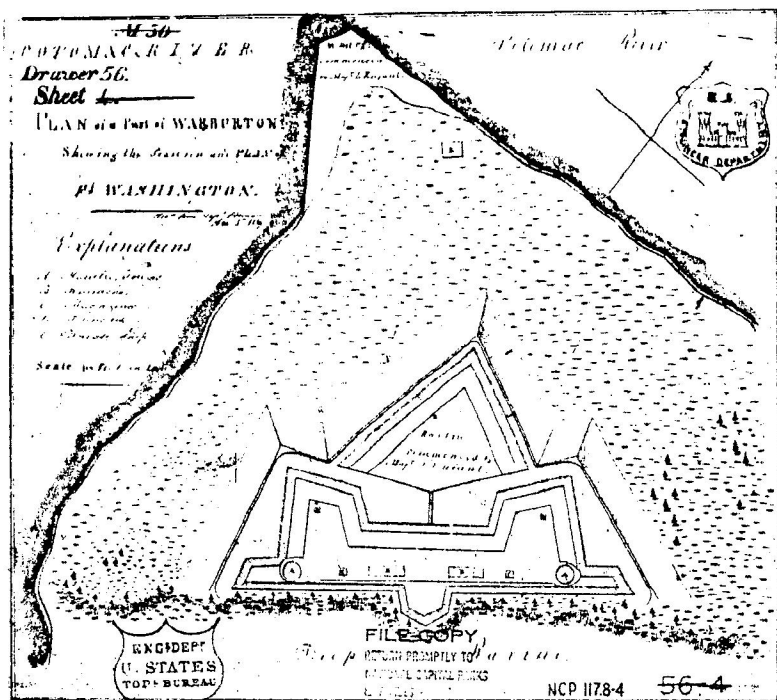
Martello tower, Kingston, Ontario, Canada. (77-F-113-36-4, Record Group 77, The Records of the Office of the Chief of Engineers, US National Archives)

for defence.²

The Mortella Point tower was about 40ft (12m) high, 45ft (13.7m) in diameter at the base, and had 15ft (4.6m) thick walls. Its flat roof was constructed of stone. The entrance was several feet above the ground.³

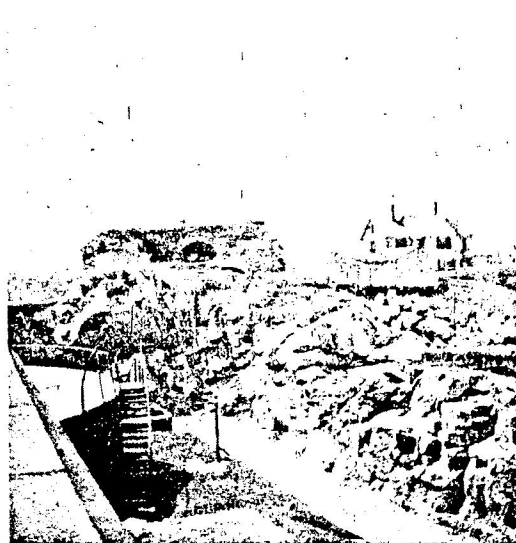
To say the least, the British were impressed by the Mortella Point tower. Soon after the engagement, Great Britain adopted a tower, similar to the one on Mortella Point, as part of its fortification system. The British called this fortification a 'Martello tower', probably a corruption of the name of the point on which its model stood.⁴ Actually, even before the 1794 engagement, the British had constructed some similar towers at such places as the Channel Islands of Jersey and Guernsey. However, the engagement was the impetus for standardization of tower construction and partially caused the multiplication of the numbers built.⁵

In 1796, Great Britain erected two towers in South Africa, one at Cape Town and another at Simon's Town.⁶ New ones also appeared in Minorca, Bermuda, Jamaica, the Channel Islands, Ireland and what is now Sri Lanka.⁷ The biggest Martello tower construction occurred in England, however, where the British erected 103 of them on the



Fort Washington, MD plan, shows Martello towers in bastions. (117.8-4, Records of the National Park Service, Record Group 79, US National Archives)

Walbach Tower, photo taken in 1903 while constructing new battery at Fort Constitution. (#483452, Document File, 1890-1917, Records of the Adjutant General's Office, Record Group 94, US National Archives)



eastern and south-eastern coasts in response to a threatened French invasion. Built between 1805 and 1812, these towers were either stone or brick. They were either circular or elliptical, had walls 6 to 12ft (1.8 to 3.7m) thick, and their entrances were 10ft (3m) or more above the ground.⁸ One author, Sheila Sutcliffe, wrote that these towers resembled an 'upturned flower-pot'.⁹

INTRODUCTION OF MARTELLO TOWERS TO NORTH AMERICA

The British also built Martello towers in Canada, the first one at Halifax. They also constructed others at Quebec and Kingston.¹⁰ Canada's southern neighbour, the United States, observed the Martello tower phenomenon in the British Empire, and began constructing a number of similar structures. The United States towers generally

served the same purpose as their British counterparts – a defensive structure, manned by a small force, to resist attack and, in some instances, serve as a flank defence and warning post for larger fortifications. The towers' defensive role was similar to that of the blockhouse on the frontier or the redoubt at Fort Adams, Rhode Island.¹¹

Apparently, Louis Tousard erected the first United States tower at Dumlplings Rocks, Conanicut Island, Narragansett Bay, Rhode Island, across the channel from what is now Fort Adams. Some sources suggest that Tousard erected Dumlplings Tower between 1798 and 1800 but Chief Engineer Jonathan Williams, in an 1802 fortification report, stated that its construction occurred in the previous two years, meaning 1800-1802. Dumlplings Tower was an elliptical stone tower intended to mount eight guns – four in casemates and four *en barbette*. Standing about 20ft (6m) above the water, this tower included one magazine and three bombproof rooms. No one ever completed the construction of this tower and it never received a garrison. One author reported that John Bankhead Magruder, one time commander at Fort Adams, partially destroyed the tower by using it for artillery practice. Weather and disuse continued the tower's deterioration. The army eventually tore the tower down to make way for Fort Wetherhill.¹²

Fort Warburton, Maryland, on the present site of Fort Washington, was the location of another tower. Evidently, construction of this octagonal stone tower began in 1809 and was, probably, completed late that year or early in 1810. Intended for defence against a land attack, the tower stood on an eminence in the rear of the fort. Most likely, US forces destroyed the tower, along with the fort, in 1814 when British troops were in the vicinity. Unfortunately, no drawings, plans, or pictures of the tower are extant.¹³

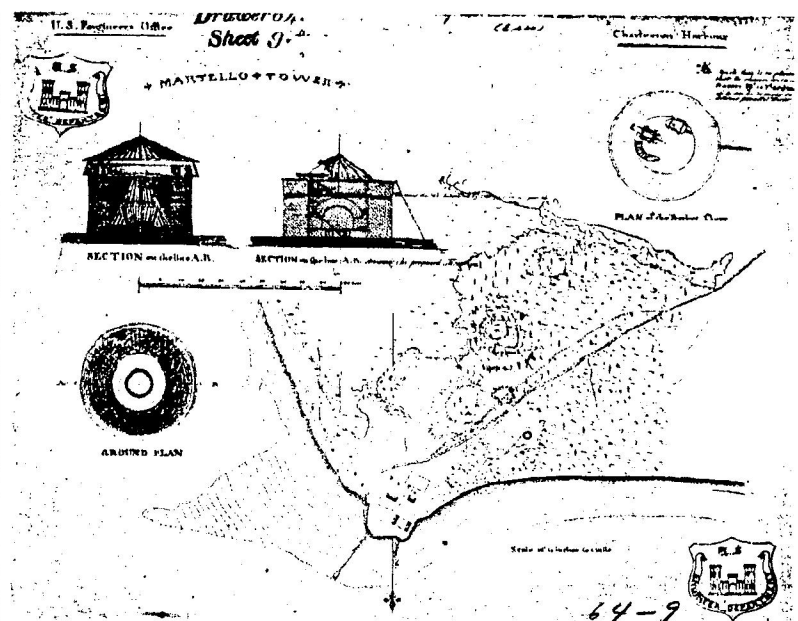
THE WAR OF 1812

The War of 1812, the cause of the destruction of Fort Warburton's tower, was also the impetus for the erection of many new towers. After the sighting of a British cruiser off the coast of Portsmouth, New Hampshire, in 1812, the nearby citizens and soldiers erected a tower on Fort Constitution's south side to thwart enemy troops landing. A brick tower about 20ft (6m) high, it mounted one 32-pounder *en barbette* and a 4-pounder at each of its three embrasures. The small entrance door was on the north side. This tower never saw any combat and later served as a powder

magazine. Commonly referred to as the 'Walbach Tower' in honour of the man who oversaw its construction, John De Barth Walbach, the structure's official name may have been 'Castle Walbach'. Neglected for many years and threatened with removal, the tower crumbled and fell into ruin and rubble. Today, one will find a mass of weeds and other plants growing over and around its meagre remains.¹⁴

James Island in the harbour of Charleston, South Carolina, was also the site of a tower. Erected about 400yds (366m) from Fort Johnson, this small symmetrical brick structure had massive walls and loopholes and the interior was wood. The tower never received a garrison, and in 1850 an Engineer officer, Alexander H Bowman, recommended its destruction and the use of its 400 to 500 pounds of good bricks in the construction of Fort Sumter. Joseph G Totten, Chief Engineer, replied that in spite of its disuse, the tower might be of some utility in the future. On 20 May 1859, before the future use became apparent, the wooden interior caught fire, partially destroying the tower and rendering it useless.¹⁵

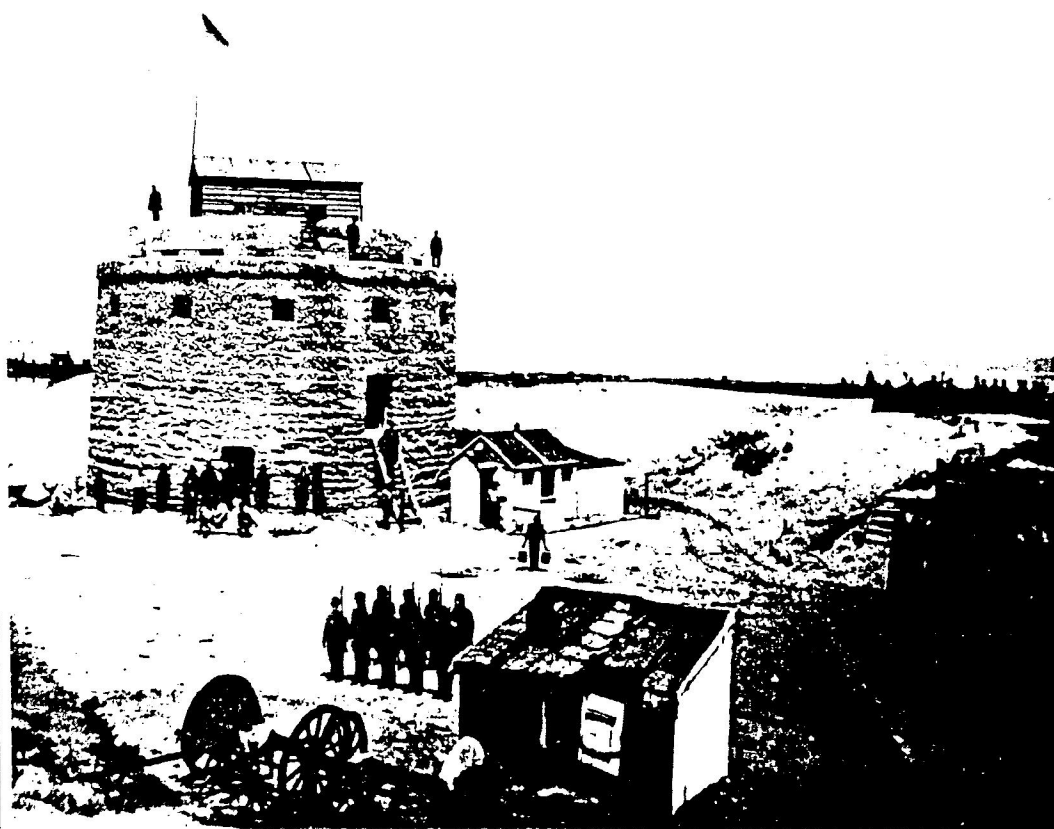
Later in the war, the United States began the construction of a tower on Tybee Island near Savannah, Georgia. The contractor con-

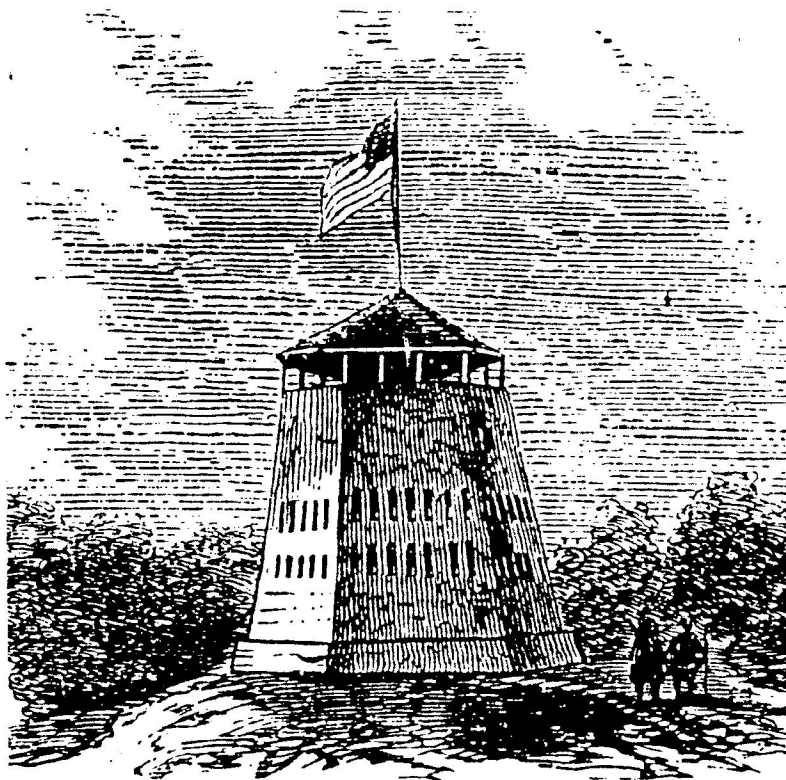


structed it of tabby, composed of shell and lime. A four-storey structure, the tower rose about 50ft (15m) high and its diameter was the same. With walls about 10ft (3m) thick, the tower had loopholes on the first and second floors. The builders intended the tower to mount one gun *en barbette* on the top and provided two entrances, one in the basement and one on the first floor.¹⁶ Officially, the tower was to defend the anchorage ground

Tower at Charleston.
(Drawer 64, Sheet 9,
Fortifications Map File,
Record Group 77, The
Records of the Office of
the Chief of Engineers, US
National Archives)

Tybee Island Tower during
Civil War. (Massachusetts
Commandery, The Military
Order of the Loyal Legion
of the United States, US
Army Military History
Institute, vsl 21, p 1043,
Carlisle Barracks,
Pennsylvania)





Tower at Hallet's Point, New York. (From *The Pictorial Field-Book of the War of 1812*)

on the island and serve as a permanent alarm post but in 1823, Totten wrote that this fortification was useless. He was sure, however, that the tower could be valuable if a battery, mounting several guns, surrounded it. Supposedly, the Army never garrisoned the Tybee Island Tower before the Civil War. From June to November 1823, however, the Army stationed men of Company H, 4th United States Artillery Regiment, on Tybee Island, who possibly may have spent some time at the tower.¹⁷

When the Civil War began, Confederate forces seized Tybee Island but Union troops captured it in November 1861. When the Yankees examined the tower, they found that the tabby was disintegrating and the wood interior was rotting. To make it defensible, these troops shored up the wooden floors and constructed platforms for sharpshooters. The only entrance to the tower was via a rickety ladder to the first floor because the men rolled boulders in front of the basement door.¹⁸ After the Civil War, the War Department abandoned the Tybee Island Tower and eventually rented it to a telephone company that built a little house on top. Later, the Corps of Engineers constructed Fort Screven on the island and tore down the tower because it blocked the field of vision and fire from various batteries.¹⁹

New York greatly feared a British invasion during the War of 1812 and, therefore, erected numerous fortifications for its pro-

tection. Joseph G Swift erected a solid masonry tower near Fort Stevens, at Hallets Point, Hells Gate, to mount two guns. Numerous other suggestions for towers elsewhere in the city's defences abounded. Many of them were under construction during the war and some were completed. Varying accounts of their number, locations, and physical characteristics confound the historian. Archaeological evidence is lacking due to the rapid expansion and development of the city in the nineteenth and twentieth centuries. Thus, the present lack of reliable information precludes further description of towers in New York City.²⁰

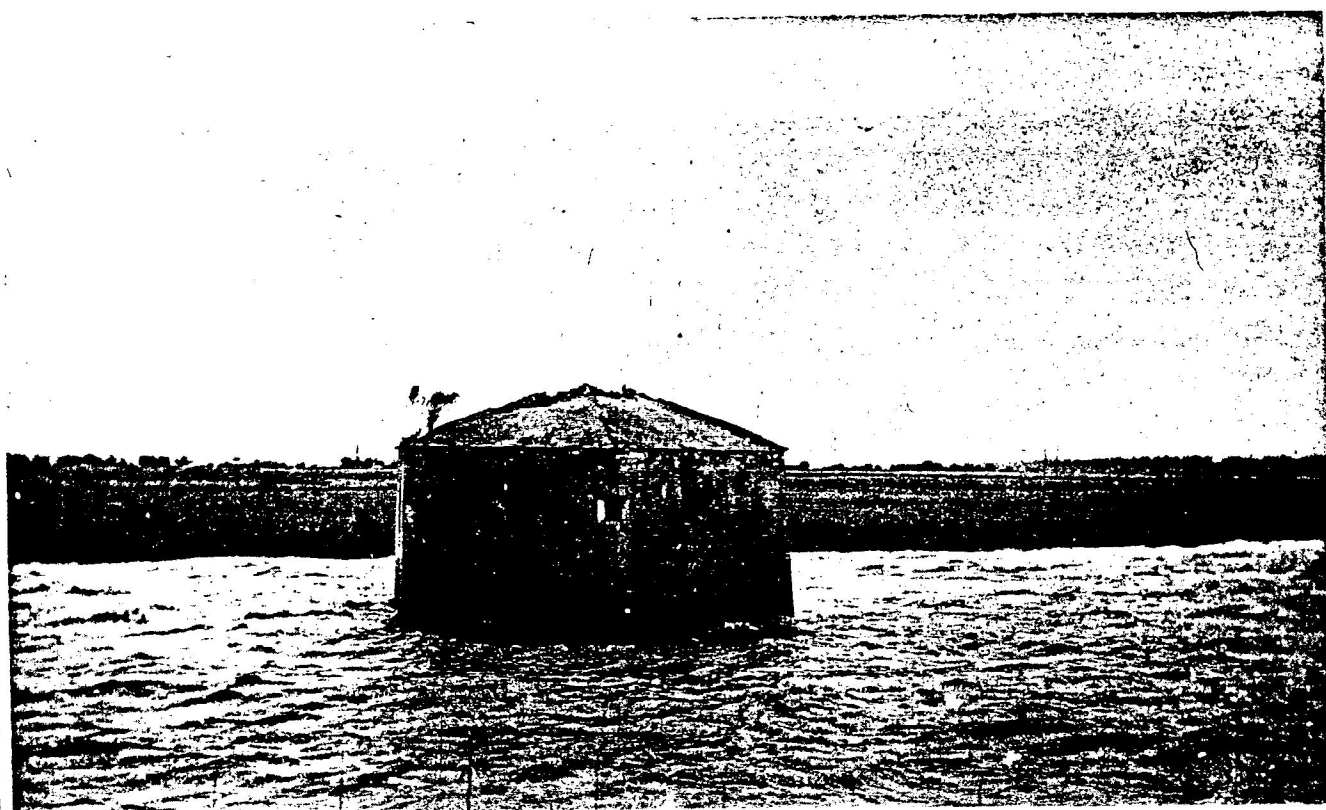
Joseph G Swift and other Engineer officers recommended the construction of many other towers during and immediately after the War of 1812. Some of the proposed sites for these towers were: Castine, Maine, near Fort George; Newburyport and Salem harbours, Massachusetts; Portsmouth, New Hampshire; around Fort McHenry, Maryland; Old Point Comfort, Virginia; and Oracoke, Oak Island and New Inlet, North Carolina.²¹ On 1 March 1814, Swift proposed:

... a general plan for advanced or remote small posts, the propriety of tower defence, they being small structures of strong masonry, of small area, and mounting one traverse gun of large calibre, one mortar and a furnace, it would in addition, be desirable to deposit in the tower a traversing 12- or 18-pounder completely appertained to be moved in the vicinity of the post as occasion might require. These towers would serve as a citadel or cover to any future work, of greater dimension, that might be placed at the site.²²

On 29 March, Swift offered a possible modification to his plan:

I have preferred fir timber to masonry because the work may be required for service soon and if built of masonry time would be necessary for the masonry to cement. The objection to timber is the certainty of its decay in a few years and fire, otherwise guarded as I propose it will have in the tower most of the advantages of masonry.²³

Engineers began construction of some towers but activity ceased long before completion. Then in June of 1815, James Gadsden proposed a new, stronger tower that would not only be secure against assault but, also, battery and bombardment. Later, in October, Walker K Armistead suggested still another use for a tower. He wished to erect towers in the gorge of each half bastion in the rear of the new Fort Washington, Maryland. Swift countered by suggesting that towers simply substitute for each half or demi-bastion and Armistead agreed.²⁴



TOWER DUPRE

All of these proposals and suggestions were for naught because a new Engineer officer, Simon Bernard, who had served under Napoleon, received an appointment in the US Army to plan new fortifications. He dismissed most of the plans for towers in favour of larger structures. His plans did, however, include two towers, one at Bayou Dupre, Louisiana, and one at Pass aux Herons, Grant Pass, Alabama. Although Engineers drew up plans and submitted estimates for the construction of the latter tower, they never built it.²⁵

The Corps of Engineers did, however, begin constructing an hexagonal tower on the right bank of Bayou Dupre at the west end of Lake Borgne in 1829 and completed the work the next year. This tower, commonly called Tower Dupre, was a masonry structure supported by wooden grillage. Originally a three-storey tower, its walls were 30ft (9.2m) high and 6ft (1.8m) thick at the base. The ground level had loopholes and the upper two floors had embrasures for six caronades. For further protection, a battery, to include heavy guns behind earthen ramparts, surrounded the tower.²⁶

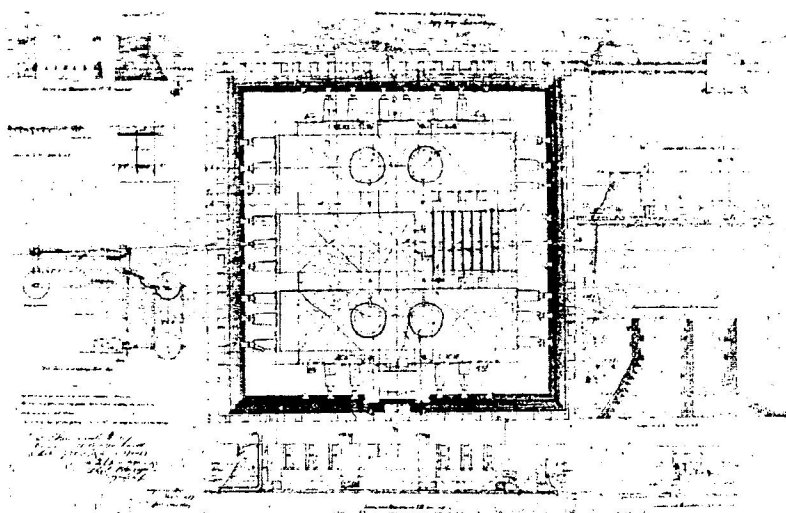
Between 1829, when construction began, and the beginning of the Civil War in 1861, the weather caused a number of catastrophes at Tower Dupre. Hurricanes in August 1831 and March 1854 and a flood in August 1860

were especially severe. This damage, general neglect and rot necessitated periodic repairs. Engineers replaced sections of the wooden floors, altered the tower from three to two-storeys in 1843, and added a new slate roof in 1847.²⁷

Tower Dupre was to defend Bayou Dupre, which met the Mississippi River 14 miles (22kmn) above New Orleans and in an emergency, would warn Forts Pike and Wood and Battery Bienvenue of impending danger. Fresh troops could also reach the tower in just a few hours.²⁸ The War Department planned a 10-man peacetime garrison at Tower Dupre which would escalate to 36 in wartime. In 1830, the Adjutant General of the US Army did, however, order Forts Pike and Wood to each furnish one-half of a guard, composed of one non-commissioned officer and five enlisted men, for Tower Dupre. On 30 November 1830, the Chief Engineer, Alexander Macomb, reported that detachments from Forts Pike and Wood were at the tower. Although some accounts report that the tower did not have a garrison before the Civil War, troops were there.²⁹

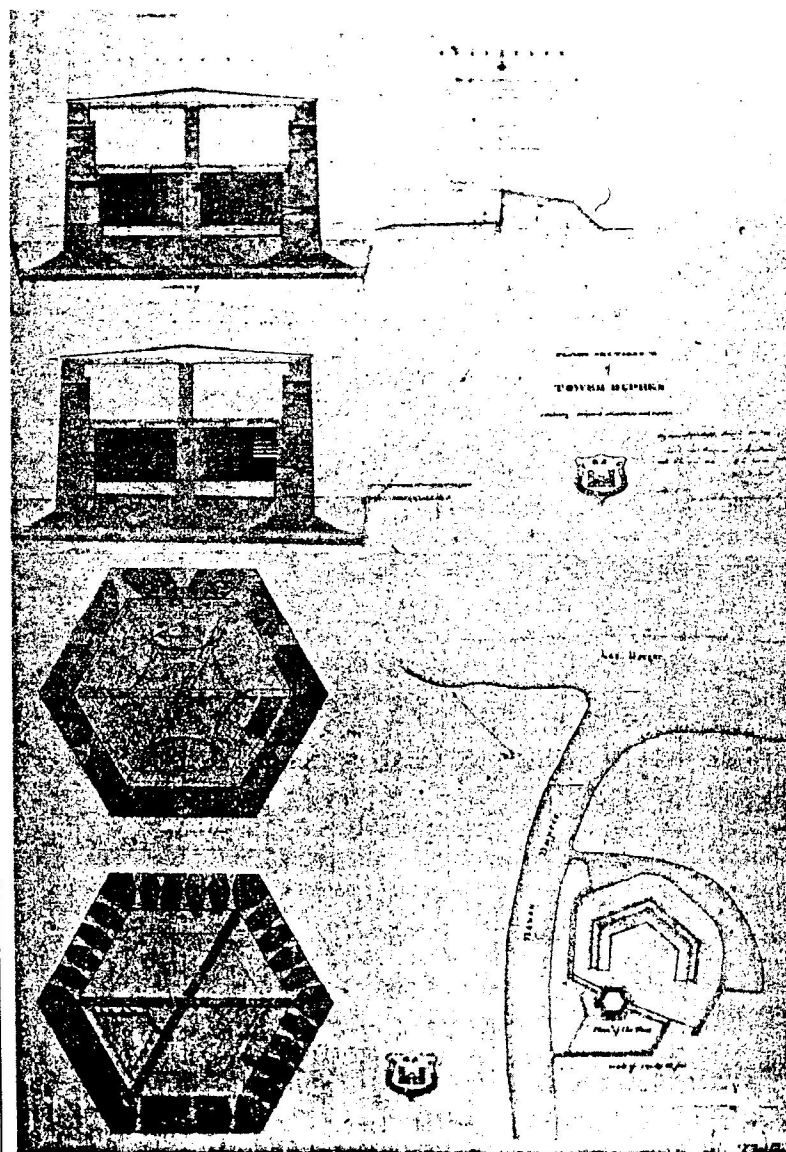
Garrisoned or not prior to 1861, the tower was manned during the Civil War. Seized by Louisiana state forces at the outbreak of the war, Captain J T Plattsmier and his men of the Washington Light Infantry garrisoned the fort. In November 1861, the armament of the tower and its battery was five barbette guns and six defensive howitzers. Soon after

Tower Dupre tower.
(1915. Sheet 15-17,
Drawer 86, Fortifications
Map File, Record Group
77, The Records of the
Office of the Chief of
Engineers, US National
Archives)



Above: Plan of Proctors Tower. (1859, Louisiana, General Records, Records of the Quartermaster General, Record Group 92, US National Archives)

Plan of Tower Dupre. (Drawer 87, Sheet 16, Fortifications Map File, Record Group 77, The Records of the Office of the Chief of Engineers, US National Archives)



the fall of New Orleans, the Confederates abandoned Tower Dupre and only small Yankee details guarded it during the rest of the war.³⁰

After the war, the War Department generally neglected the tower. When Engineers converted Bayou Dupre into a canal in 1873-74, they recommended abandoning the tower. A March 1914 Corps of Engineers' report stated that only the walls and a portion of the roof of Castle Martello (another name for Tower Dupre) remained and it stood in water about 100ft (30m) from the shore of Lake Borgne. Today, Tower Dupre is privately owned and continues to deteriorate but it is the only free-standing US Martello-like tower still in existence.³¹

PROCTORS TOWER

Tower Dupre was the last structure Army Engineers completed that somewhat resembled the British Martello towers. The Corps of Engineers did, however, construct some additional towers after 1830 that many people, both military and civilian, have called Martello towers. Willard B Robinson, an architectural historian, suggested that the post-1830 towers were actually descendants of the *tours-modèles*, fortifications that Napoleon approved for the French coasts. Robinson is partially correct but these new American structures were also modifications of earlier towers based on specific needs.³²

The Engineers erected the first of these new towers west of Proctor's Landing or Proctorsville, Louisiana, on the south side of Lake Borgne. Known locally as Fort Beauregard – so-called in honour of the man who oversaw most of its construction, P G T Beauregard – it was officially referred to by the Army as the 'tower at Proctor's Landing'. Although never completed, Proctors Tower, another of its names, was a square, brick structure on a platform supported by about 400 piles.

Designed as a three-storey structure, the first and second floors were intended to have loopholes and very thick walls. The second floor would also have embrasures and the third floor, a platform, would mount four guns *en barbette*. The tower's only entrance was on the first floor through a door that the drawbridge closed. Quarters were on the first and second floors. Iron beams, a fairly new innovation in fortifications, supported the first two storeys.³³

Erection of the tower began in March 1856 and progressed well until a gale struck in August of 1860, causing considerable damage and killing at least three people, children of

the fort-keeper. Construction ceased after this catastrophe.³⁴

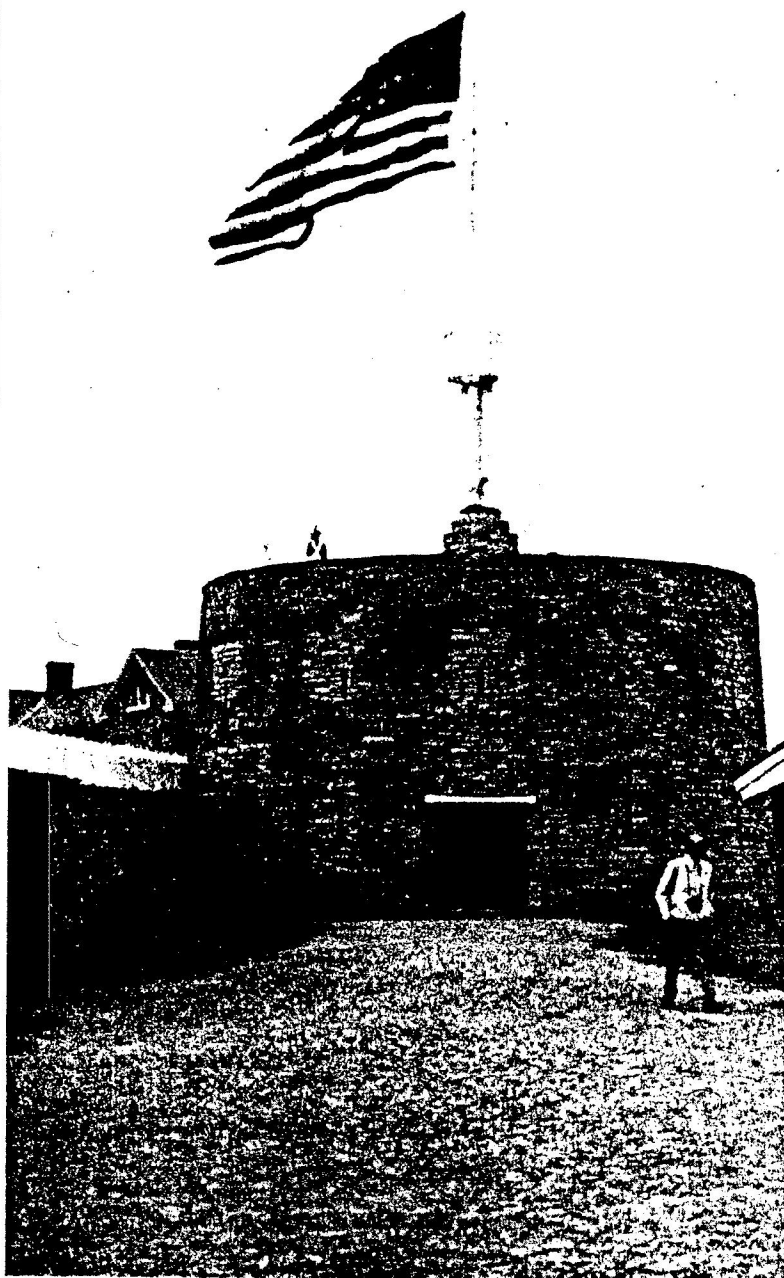
Originally intended to defend the terminus of the Mexican Gulf Railroad that ran from New Orleans to a wharf nearby, Proctors Tower became Louisiana property soon after the Civil War began. State troops seized it and the battery, on the land between the inner and outer moats, and placed them under the command of Captain Samuel Risk of Company A, Screwmen Guards, later Company F of the 22nd Louisiana Infantry. In November 1861, the commander reported that he had a 79-man garrison and the armament included 25 barbette guns in the battery and 8 howitzers and 4 barbette guns in the tower. However, on 5 December 1861, Confederate Brigadier-General Mansfield Lovell stated that two 32-pounders and four 24-pounders were at Proctor's Landing. Like Tower Dupre, Proctors Tower lost its significance after the fall of New Orleans.³⁵ Neglected after the war, Proctors Tower suffered a calamity in October 1871. A hurricane caused a flood that demolished the quarters there. In spite of weather, neglect, and rot, Proctors Tower still stands today.³⁶

KEY WEST, FLORIDA

The United States began construction of two more of these new towers at Key West, Florida, to prevent the landing of enemy troops and the construction of batteries to attack Fort Taylor. Some historians have reported that construction of these towers began in 1861, but E B Hunt, who oversaw the work, informed the Chief Engineer, Joseph G Totten, that it commenced in January 1862.³⁷

The design called for elaborate square, brick structures, 56ft (17m) square by 36ft (11m) high, and 8ft 4in (2.4m) thick on the seaward side and 5ft 4in (1.6m) thick on the land side. The towers would include counterscarp galleries, flanking casemates, casemated batteries, caponiers, and circular staircases. Loopholes for musketry were on the first and second floors and the latter of these would include a barracks and three rooms for officers. The tower's *terreplein* would have four centre pintle platforms for 8- or 10-inch (203mm or 254mm) guns. The towers' moats were 20ft (6.1m) wide.³⁸

Tower No 1 is 1½ miles (2.4km) from Fort Taylor on the southern beach and Tower No 2 is 3 miles (4.8km) from the fort, on the south-eastern extremity of the island. The Engineers did not complete either tower and the United States never acquired the land on which they stand. Sometime after the Civil



War, Tower No 1 served as a mule corral. Tower No 2 is presently the East Martello Gallery and Museum, operated by the Key West Art and Historical Society.³⁹

Martello Tower bastion,
Fort Snelling, Minnesota.
(Author)

CONCLUSION

Like masonry forts in general, the Civil War doomed the Martello tower. Modern ordnance could conceivably blow them to bits in a short period of time. Like most United States masonry fortifications, the towers had seen little use but they did serve as deterrents. Determination of their value is, therefore, difficult. They are, however, one aspect of the United States' fortification system intended to defend the coasts and borders from attack and invasion and for that reason, they were significant. They also influenced other

types of American fortifications: for example, Fort Snelling, Minnesota, and Jackson Barracks, Louisiana, sport Martello-like tower bastions.⁴⁰

Notes

1. SHEILA SUTCLIFFE, *Martello Towers* (Cranbury, NJ 1973), pp19–21; AUGUSTE F LENDY, *Treatise on Fortification*; or, *Lectures Delivered to Officers Reading for the Staff* (London 1862), pp375–76; JOHN FOX BURGOYNE, *The Military Opinions of General Sir John Fox Burgoyne*, compiled by GEORGE WROTTESELEY (London 1859), pp344–45; EMANUEL RAYMOND LEWIS, *Seacoast Fortifications of the United States: An Introductory History* (Washington, DC 1970), p42; L W COWIE, 'The Martello Towers', *History Today* 29 (September 1979), p604; HENRY WAGER HALLECK, *The Elements of Military Art and Science*; or, *Course of Instruction in Strategy, Fortification, Tactics of Battles, &c Embracing the Duties of Staff, Infantry, Cavalry, Artillery, and Engineers. Adapted to the Use of Volunteers and Militia* (New York 1846), pp164–65; K R GIBBS, 'Martellos! and Their Armaments', *The Journal of the Historical Firearms Society of South Africa* 8 (June 1978), pp3–4; and *Martello Tower Simon's Town* (Simon's Town nd), unnumbered, first page of text.
2. LENDY *Treatise on Fortification*, p376; SUTCLIFFE, *Martello Towers*, pp19, 33; BURGOYNE, *Military Opinions*, p344, and COWIE, 'The Martello Towers', p603.
3. SUTCLIFFE, *Martello Towers*, pp18, 33, 35; LEWIS, *Seacoast Fortifications*, p42; and WILLARD B ROBINSON, 'North American Martello Towers', *Journal of the Society of Architectural Historians* 33 (May 1974), p158.
4. SUTCLIFFE, *Martello Towers*, pp19, 20–23, 33; ROBINSON, 'North American', pp158–59; and S P G WARD, 'Defence Works in Britain', *Journal of the Society for Army Historical Research* 27 (Spring 1949), pp27–37. More than one explanation for the derivation of the term 'Martello' exists, see: WARD, 'Defence Works', pp34–35; and GEORGE SYDENHAM CLARKE *Fortification: Its Past Achievements, Recent Development, and Future Progress* (London 1890), p218, footnote 1.
5. SUTCLIFFE *Martello Towers*, pp33–34; WARD, 'Defence Works', p35; and E J GRIMSLEY, *The Historical Development of the Martello Tower in the Channel Islands* (Castel, Guernsey 1988), pp17–27.
6. SUTCLIFFE, *Martello Towers*, pp22–23, 40–41; B J T LEVERTON, 'The Simon's Town Martello Tower', *Lantern* (January 1984), pp3–7; and *Martello Tower Simon's Town*.
7. PAUL M KERRIGAN, 'Minorca and Ireland – An Architectural Connection'; the Martello Towers of Dublin Bay', *The Irish Sword: The Journal of the Military History Society of Ireland* 15 (Summer 1983), pp192–96; EDWARD C HARRIS, 'The Martello Tower at Ferry Point, St George's Island, Bermuda', *The Mariner's Mirror* 74 (May 1988), pp131–39; , *THE FORTIFICATIONS OF KINGSTON, 1655–1914* (Kingston, Jamaica 1971), pp45–50; GRIMSLEY, *Historical Development*; H R S POCOCC, 'Jersey's Martello Towers', *Société Jersaise, Annual Bulletin*, 20 (1969–72), pp389–98; VICTOR J ENOCH, *The Martello Towers of Ireland* (Dublin nd); PAUL M KERRIGAN, 'The Defences of Ireland 1793–1815, Part 2: The Martello Towers', *An Cosantoir: The Irish Defence Journal* 34 (May 1974), pp148–49; and W A NELSON, *The Dutch Forts of Sir Lanka: The Military Monuments of Ceylon* (Edinburgh 1984), pp69–71. The Royal Engineers proposed Martello towers in other locations like Australia, see: C WINTER, 'Develop-

ment of the Coastal Defences of Australia, 1840–50', *Australian Army Journal* 297 (February 1974), p35.

8. SUTCLIFFE, *Martello Towers*, pp33–113; WARD, 'Defence Works', p27–33; COWIE, 'The Martello Towers', p606; H GLENDINNING, *The Hammers of Invicta, Being a History of the Martello Towers Round Romney Marsh* (Hythe 1981); A D SAUNDERS, 'The Coastal Defences of the South-east', *The Archaeological Journal* 126 (1969), p204; EDWARD C HARRIS, 'Archaeological Investigations at Sandgate Castle, Kent 1976–9', *Post-Medieval Archaeology* 14 (1980), pp81, 83; and HILARY P MEAD, 'The Martello Towers of England', *The Mariner's Mirror* 34 (July 1948), pp205–17 and 35 (October 1948), pp294–303.
9. SUTCLIFFE, *Martello Towers*, p62.
10. IVAN J SAUNDERS, 'A History of Martello Towers in the Defence of British North America, 1796–1871', *Canadian Historic Sites: Occasional Papers in Archaeology and History* No 15 (Ottawa 1976), pp5–169; CHARLES BRUCE FERGUSON, 'The Martello Tower at Halifax', *The Dalhousie Review* 43 (Summer 1967), pp212–19; A M GOING, 'Fort Frederick', *The Canadian Magazine* 62 (November 1923), pp65–68; W SILWART LAVELL, *A Story in Stone. A Few Interesting Facts About Murney Redoubt*, revised by R A PRESTON (Kingston Ont 1963); and ROBINSON, 'North America', pp159–63.
11. SUTCLIFFE, *Martello Towers*, pp152–53; WILLARD B ROBINSON, *American Forts: Architectural Form and Function* (Urbana, IL 1977), p123; and SAMUEL R BRIGHT, Jr, 'Coast Defense and the Southern Coasts Before Fort Sumter', MA thesis (Duke University 1958), pp65–66.
The United States towers were not exact replicas of the British Martellos; many did not have above-ground entrances and thicker walls on the threatened side. Some historians and architects, therefore, do not consider the American towers to be true Martellos. Many British towers, however, did not conform to the standard design either. Also, the British Martellos were not exact replicas of the tower on Mortella Point. Likewise, the Mediterranean towers themselves were dissimilar. Human nature caused planners and builders to adapt. For the sake of the purists, however, United States towers will not be referred to as Martellos in this article.
12. BENSON J LOSSING, *The Pictorial Field-Book of the War of 1812* (New York 1868), p236; AUBREY PARKMAN, *Army Engineers in New England: The Military and Civil Work of the Corps of Engineers in New England 1775–1975* (Waltham, MA 1978), pp9–10; US Works Progress Administration, Federal Writers Project, *Rhode Island: A Guide to the Smallest State*, in the *American Guide Series* (Boston, MA 1937), p432; GEORGE W CULLUM, *Historical Sketch of the Fortification Defences of Narragansett Bay Since the Founding in 1638, of the Colony of Rhode Island* (Washington, DC 1884), pp19–20; JOHN MARTIN HAMMOND, *Quaint and Historic Forts of North America* (Philadelphia 1915), p231; JOSEPH GARDNER SWIFT, *The Memoirs of Gen Joseph Gardner Swift, LLD, USA, First Graduate of the United States Military Academy, West Point*, edited by HARRISON ELLERY (Worcester, MA 1890), p23; US Congress, *American State Papers: Documents, Legislative and Executive, 1789–1838* (Washington, DC 1832–61) [hereafter referred to as *ASPI*], *Military Affairs* [hereafter referred to as *MAI*], Vol I, pp193, 223, 309; JONATHAN WILLIAMS, *General Return of Fortifications from Mass to Pa for 1802*, Sheet 6, Drawer 245, Fortifications Map File, Record Group 77, The Records of the Office of the Chief of Engineers [hereafter referred to as *RG77*],

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