Dry Tortugas

National Park Service
U.S. Department of the Interior

Dry Tortugas National Park

Preserving Fort Jefferson

Preserving Fort Jefferson provides a unique challenge to National Park Service employees and contractors. The remote marine environment, the logistical difficulties, and the size of the fort conspire to make restoring the fort seem daunting. However, highly skilled contractors are now hard at work to insure that Fort Jefferson will be preserved for future generations.

Protection - and Problems

Fort Jefferson was intended to hold 450 cannons and 1,500 men. The latest technologies were incorporated into its design to protect the soldiers here. Specialized iron shutters used to protect the cannon openings were one of the many technological advances used here. These hinged, wrought-iron shutters were placed between the mortar core of the fort and the brick façade. A great achievement for their day, they were first introduced into American forts in 1857. These shutters were known as “Totten shutters,” after the coastal fort designer, General Joseph Totten.

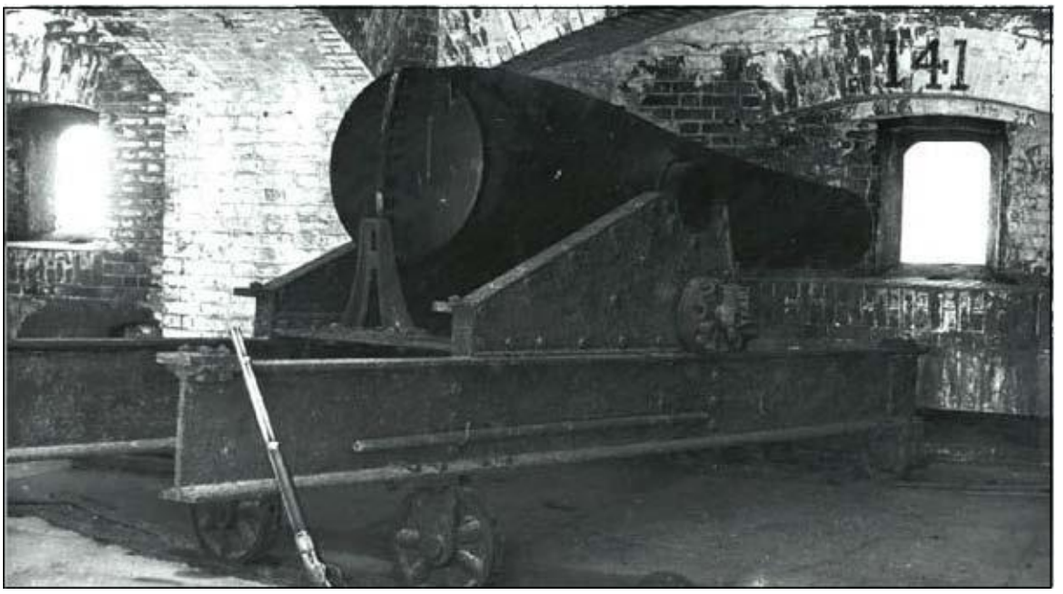
During use, the shutters were unlocked from the bronze strike plate below. Upon firing the cannon, gases escaping from the muzzle the moment before the egress of the shot would momentarily throw the shutters open. The shutters were carefully balanced so that they would swing freely and ‘rebound’ into the closed position.

Called by some a genius, General Joseph Totten (right) served as the army's Chief of Engineers from 1838 until his death in 1864. From his office in Washington, he scrutinized virtually every detail of every permanent fort built in America for thirty years.

Here at Fort Jefferson, the superintending engineers, despite years of experience, generally had to submit a request for every minor change in plans to their chief. Imagine how many weeks it took to get a response by mail from Washington! Consequently, the engineers had to plan their questions weeks in advance so there would be no crucial delays.

Unfortunately, the very metal that provided valuable protection to soldiers under fire proved devastating to the fort itself. In a salt-water environment, the wrought-iron quickly began to rust and expand. As the iron rusted, it pushed the brick apart, causing serious structural damage to Fort Jefferson's walls. A walk around the moat shows where large sections of the fort walls have collapsed into the moat. This is largely caused by the rusting shutter system.

The founding legislation of Dry Tortugas National Park mandates the National Park Service to "protect, stabilize, restore, and interpret Fort Jefferson, an outstanding example of nineteenth century masonry fortification" for future generations. Without undertaking serious action to stop further degradation, it became obvious to National Park Service personnel that the walls of Fort Jefferson were in serious trouble.



10-inch Rodman gun on its original carriage at Fort Jefferson, 1899. The shutters are open and cannot be seen in this image.

Preservation Solutions

Dry Tortugas National Park has initiated a multi-phased, multi-year preservation project to stabilize Fort Jefferson. The scope of this project is to carefully remove the existing brick surrounding the embrasure (cannon) openings on the lower level in order to gain access to the original iron elements. Bricks will be documented, cleaned, and set aside for reuse.

Next, crews will remove all of the rusted iron elements from the original Totten shutters and stabilize the exterior walls of Fort Jefferson by rebuilding the scarp (fort) wall. Concrete made of local sand and coral - just as used in the original construction - and historic bricks salvaged during demolition are being used to preserve the historic appearance of the walls. In addition, the upper tier embrasure openings will be stabilized by repointing the mortar joints.

The last step is to restore the Totten shutters "in kind" per the Secretary of the Interior's Standards for the Treatment of Historic Properties. A good example of the "finished product" can be seen on a walk about halfway around the moat, where the wall has been restored and the replica Totten shutters have been installed.

The stabilization work going on today is Phase II of the multi-year preservation project. This phase of the project is concentrated on restoring two sides of the fort and has a target completion date of July, 2010.
In 2007, a contract for this work was awarded to Enola Contracting Inc., of Chipley, Florida. The demolition and stabilization work you are witnessing is being carried out by skilled masons hired from around the country by Enola Contracting.

Replica Totten shutter installed on restored north wall of Fort Jefferson, 2007.

Working and Living at Fort Jefferson

Housed within the walls of Fort Jefferson, the Enola crew of fifteen masons per shift more than doubles the current population of full-time employee residents. The crews are working two to three week shifts. Masons are on site for two to three weeks straight and then they take a break for up to a week. While not on the island, contractors will most likely return to their families and friends at home.

Masons are working full days from early in the morning until the evening. One added amenity Enola Contracting has budgeted into their time here is a chef.

The chef lives with the crew members and prepares three meals a day as well as snacks and refreshments. Additionally, the chef maintains the quarters in a clean and orderly way, so the masons can focus on their jobs and not have to spend their down time doing other work.

As you can imagine, the Dry Tortugas can be a challenging place to work, so just like everyone else the preservationists like to relax when the day is over by snorkeling, fishing, kayaking, reading, or even watching TV.

For More Information

For further information about this project or other ongoing preservation work at Fort Jefferson and the rest of Dry Tortugas National Park, please contact:

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