

## PRELIMINARY OBSERVATIONS OF COLLECTION PIECES BY THE GUEST CURATOR TEAM

Damage overviews are from exterior observations by the guest curator team and with further examination additional damage may be uncovered.

---

### Object Information:

**Common Name:** Boxcar

**Specific Name:** B&O No. 17000 Iron Boxcar

**Builder/Location:** B&O Railroad, Mt. Clare Shops

**Date:** 1863

**Purpose:** Freight car

**Brief History:** B&O Master of Machinery, Thatcher Perkins, introduced the first iron boxcars in 1862, determined that the long term durability benefits would outweigh the costs. Although many survived through the havoc of the Civil War, they were too impractical for continued production. During the summer, iron boxcars became unbearably hot and could sweat, which caused rust damage. The B&O No. 17000 iron boxcar is one of only two remaining B&O iron boxcars.

---

### Comments and Observations

The car was struck across the roof, resulting in the general failure of the roof and significant buckling of the side walls. As a general observation, the metal structure of the car--which was cleverly designed to resist twisting forces and support floor loads--has been broken from the car's supplemental internal wood structure--which was intended to support roof loads and keep the walls in plane. All the pieces are still attached to one another but are deformed and, in the case of most of the wood structure, broken.

### **Car body/structure**

Although the car consists primarily of metal construction, and is known as an "iron boxcar," the wall and roof plates are fastened to wood roof rafters and wall posts. These reinforce the metal surfaces and provide resistance to roof loading. In this case, the roof has been depressed just ahead of and to the left of center by approximately 18 inches due to impact by debris. This flattening of the roof caused approximately eight of the ten wood roof rafters to break, and buckled the car sides and their posts. Of particular concern is a crease at the left edge of the roof approximately at the front edge of the door opening, and significant longitudinal buckling of both side walls approximately 8-12 inches below the eaves. In addition, door tracks and guides are damaged, the brake staff is bent, the brakewheel is broken, and the roof running board is broken in several places.

- The roof is dented inward and 8 or 10 roof ribs are cracked.
- The roof is depressed about 18 inches (diagonally) and centered towards the left side of the center.
- The roofwalk needs replacement.
- The eaves/moldings are largely knocked off.
- The metal drip edge on right side is bent over at the middle and rear.
- There is a small tear in the roof metal by the left front door.
- The sides are bowed out (beyond original design).
- There is a major roof/sidewall deflection and crease by the left front edge of the side door.
- Generally, the left side buckling is much worse than the right side.

- Rivets popped out of the roof on the left side by the door
- Most and possibly all of the interior wall posts are broken or cracked.

### **Frame/Running Gear**

The underframe, running gear and trucks do not appear to have been affected by the roof collapse, but will require additional inspection by qualified personnel in order to reach a final conclusion in this area.

- On the left rear body bolster above the truck there is a loosening of a wooden patch piece
- The brake wheel spokes are broken into many pieces, the staff is bent, and the platform is scuffed and knicked.

### **Notes**

Restoration of this car will be challenging. All principal elements of the car are intact and remain attached to one another, but need to be straightened or replaced, and refastened. The complex (convex) shape of the car sides and roof will have to be restored and new roof rafters and wall posts applied.