

## 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:** Derrick Crane  
**Specific Name:** B&O No. D-2 Wood Four Wheel Derrick Crane  
**Builder/Location:** B&O Railroad, Mt. Clare Shops  
**Date:** 1878  
**Purpose:** Used in shops, track material depots, and for light wrecking work  
**Brief History:** Built by the B&O Railroad in 1878, this hand-operated derrick crane could lift ten tons. Most likely it was used in shops or track material depots, although it could also handle light wrecking work. For greater stability, it could be anchored to the rails with chains and clamps.

---

### Comments and Observations

- Derrick No. D-2 was struck across its boom, and survived what was clearly a considerable impact. This survival is attributable to the car's compact and fairly dense design, the general elasticity of its wood structure, the failure of several wood components that broke at their fastenings but stayed attached to the primary structure, and the deformation of several metal structural components that bent or stretched in a sequence and absorbed much of the impact force.

For the purposes of this report, the boom on the car points toward the "A," or front end. Geographically, and in its present orientation, this is the end towards the turntable.

The curators have used the following nomenclature to describe the principal parts of this object:

1. Pillar – the vertical wooden post that supports the boom.
2. Boom – collective term for the two horizontal wooden beams extending from the pillar from which the load is supported.
3. Brace rods – four round metal rods that extend from the pivot ring at the top of the boom to eyebolts at each of the four corners of the crane.
4. Tension straps – the two rectangular cross section metal straps that connect the pulley end of the boom with the top of the pillar, and are fastened just below the top pivot ring.
5. Braces – two wood diagonal pieces connecting the boom with the pillar, located below the boom.

### **Car body/structure**

- The boom has pulled away (toward the pulley end of the boom) from its original position where it joins the pillar: the rear bolts pulled through the tail ears of the boom, and the front bolts pulled through the front of the pillar.
- The pivot at the top of the pillar has become detached from its ring, allowing the pillar to tip forward on its bottom pivot. It was not possible to inspect the bottom pivot without disassembling the car.
- The ring is still attached to four brace rods that extend to eyebolts at each corner of the frame. These rods terminate in forged loops through the eyes of the eyebolts: the rear loops were pulled partially open by the impact, and the rear eyebolts appear to have been pulled toward the pillars and possibly stretched.

- The boom was supported by two metal tension straps. These have been pulled away from their attachment at the front of the boom and are bent.
  - One board on the lid of the toolbox has been pushed through and broken by falling debris.
1. Pillar
    - The pillar was displaced forward – reference top support ring that is now detached.
    - The pillar is made of two pieces of timber side by side.
    - The pillar timbers show cracking and splitting – especially on front edge.
  2. Boom
    - The boom is made of two timbers bolted to the pillar.
    - The boom timbers are fractured where the rear two bolts connect the boom to the pillar; and the bolts have pulled through the boom timbers.
    - The pillar timbers are fractured where the single front bolt connects the boom to the pillar; and the bolt has been pulled through the pillar timber wood.
  3. Tension straps
    - The tension straps are detached from front of boom.
    - The tension straps are severely bent, especially the right one which is also twisted.
  4. Brace rods
    - The forged eyes of the two (2) rear brace rods have opened up, turning the eyes into hooks.
    - The two (2) rear eyebolts have pulled part way through the car body, and perhaps also elongated.
    - The rear two eyebolts are also bent forward and appear longer than the similar eyebolts at the front of the car. The nuts fastening the rear eyebolts don't appear to have pulled through the end beams, so it is possible that the bolts themselves have stretched.
    - The front two brace rods are fairly slack, but appear otherwise intact and undamaged.
  5. Tool Box (on rear car deck)
    - Part of the tool box lid is broken through at the middle with one board broken.
    - The right rear wall is pulled from the right side.
    - There are other cracks/damage/separation around the lower edges of the toolbox.

## Notes

**The curators did not go under the car. As a result, they were unable to closely inspect the suspension or running gear, and there was no attempt to determine the condition of rotating components. These parts of the car do not appear on visual inspection to have been affected by the roof collapse except where noted, but further inspection by qualified personnel is required in order to reach a final conclusion in this area.**