West Jefferson Bascule Bridge
REHABILITATION AFTER A SHIP COLLISION

Ohio transportation engineering conference 2015, october 27, 2015
West Jefferson Bascule Bridge

- History and Background
- Objectives of Project
- Field Findings
- Design Issues and Challenges
- Bidding and Construction
- Questions
West Jefferson Bridge Location
West Jefferson Bascule circa 1882
West Jefferson Bascule Bridge circa 2013
West Jefferson Bascule Bridge
West Jefferson Bascule Bridge

- History and Background
  - Field Investigation
    - Arms Reach Structural Visual Inspection
    - Underwater Inspection of Counterweight Pit Walls
    - Visual Inspection Machinery and Electrical
    - UT and MT of Trunnion and Pinion Shafts and Anchors
    - LIDAR Survey of Entire Bridge
    - Trunnion Machinery Laser Scan Survey
    - Anchor Column Structural Section Loss Inspection
West Jefferson Bascule Bridge

- Objectives of Project
  - Rehabilitation to Achieve Bridge Operation
  - Preserve Historical Significance of the Bridge
West Jefferson Bascule Bridge

- Construction of Bascule Bridges
West Jefferson Bascule Bridge

Field Findings

- Structural damage of the superstructure
- Leaf racked out of alignment
- Trunnion bolts sheared off
- Northeast longitudinal and machinery girder move
- Cracking of the river wall
West Jefferson Bascule Bridge

- Structural damage of the superstructure
West Jefferson Bascule Bridge

- Leaf racked out of alignment
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- Trunnion bolts sheared off
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- Northeast longitudinal and machinery girder moved forward
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- Cracking of river wall
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- **Design Issues and Challenges**
  - Replacement in kind of damaged members
  - Shoring of Leaf
  - Realignment of Leaf
  - Realignment of Longitudinal and Machinery Girders
West Jefferson Bascule Bridge

- Bidding and Construction
  - Engineering’s Cost Estimate -
  - Low Bidder -
  - Construction Started –
  - Demolition is currently in progress
QUESTIONS?