Preserving Movable Bridges

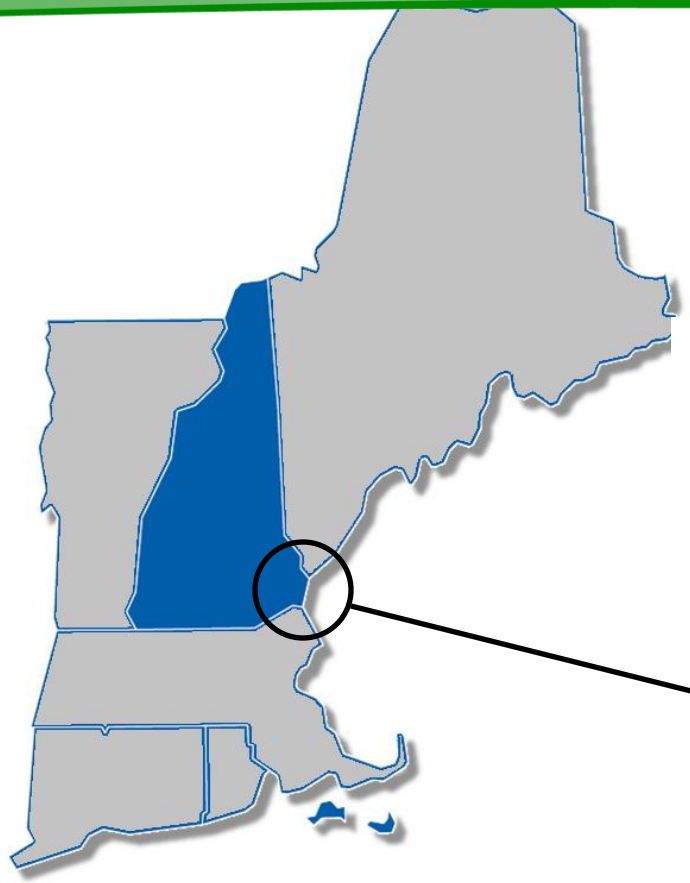
Northeast Bridge Preservation Partnership

September 24, 2013

Steve Johnson
Assistant Administrator, Bureau of Bridge Maintenance
New Hampshire DOT

New Hampshire DOT
Department of Transportation

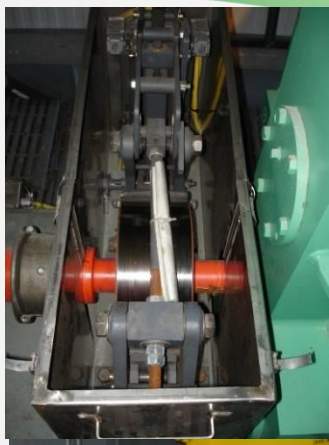
New Hampshire's Movable Bridges



Lift Bridge Elements

Standard Bridge Components

- Structural Steel
- Bridge Decks
- Bridge Rail
- Bearings
- Expansion Joints
- Abutments/Piers



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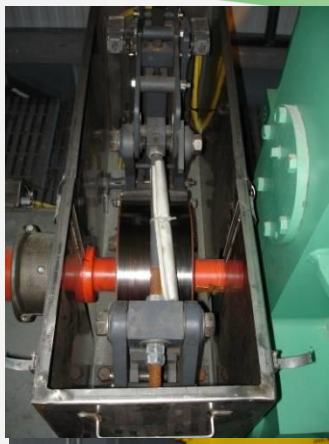
Lift Bridge Elements

Building Components

- Roofing
- Siding
- Windows
- Doors
- Stairs
- Utilities
- HVAC



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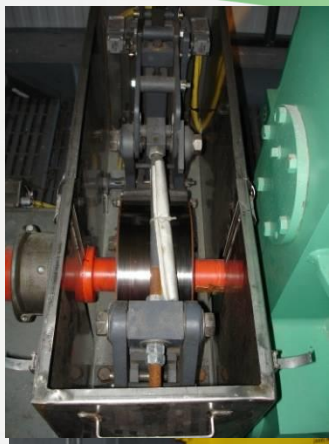
Lift Bridge Elements

Mechanical Components

- Gears
- Motors
- Wire Ropes
- Sheaves
- Drums
- Emergency Generators
- Brakes
- Jib/Bridge Cranes
- Barrier Gates
- Shafts
- Span Locks



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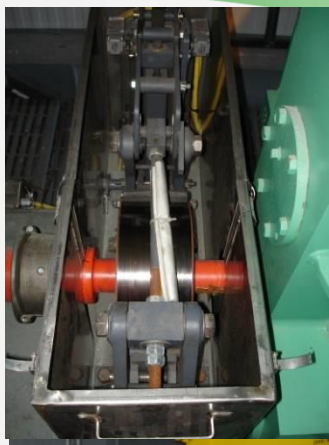
Lift Bridge Elements

Electrical Components

- Computers
- Limit Switches
- Relays
- Transformers
- Traffic Lights
- Fans
- Unit Heaters
- Navigation Lights
- Cameras



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Little Harbor Bridge

Single Leaf Bascule – Built 1942

Span 38’ (32’ clear)

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OPERATING INSTRUCTIONS

1. Park truck clear of lift span at counterweight end.
2. Close bridge to traffic.
3. One man to act as flagman at Wentworth end of bridge.
4. Remove wooden walk way covers at breaking point of lift section- (if installed).
5. Release hand locking lever on the North end of the lift.
6. Turn on master switch.
7. Turn on the two magnetic controllers.
8. Check hand brake for full OFF position.
9. To raise bridge, press UP button.

   Bridge will stop automatically in the full UP position.
   Stop at any time with the STOP button.
10. To lower bridge, press the DOWN button.
    (Bridge will automatically stop before fully seating.)
11. To fully seat, hold in electric brake release while truck is driven on to lift span. (Weight will seat it so that locking lever may be engaged.)
12. Turn off master switch and secure the bridge.
13. See operators manual for:

    A. Operation on one motor.

    B. Maintenance
14. Hand brake is to be used if electric brake fails.
15. Lift will automatically lock with a power failure.

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Hampton Harbor Bridge

Single Leaf Bascule – Built 1949

Span – 65.5’ (51’ Clear)

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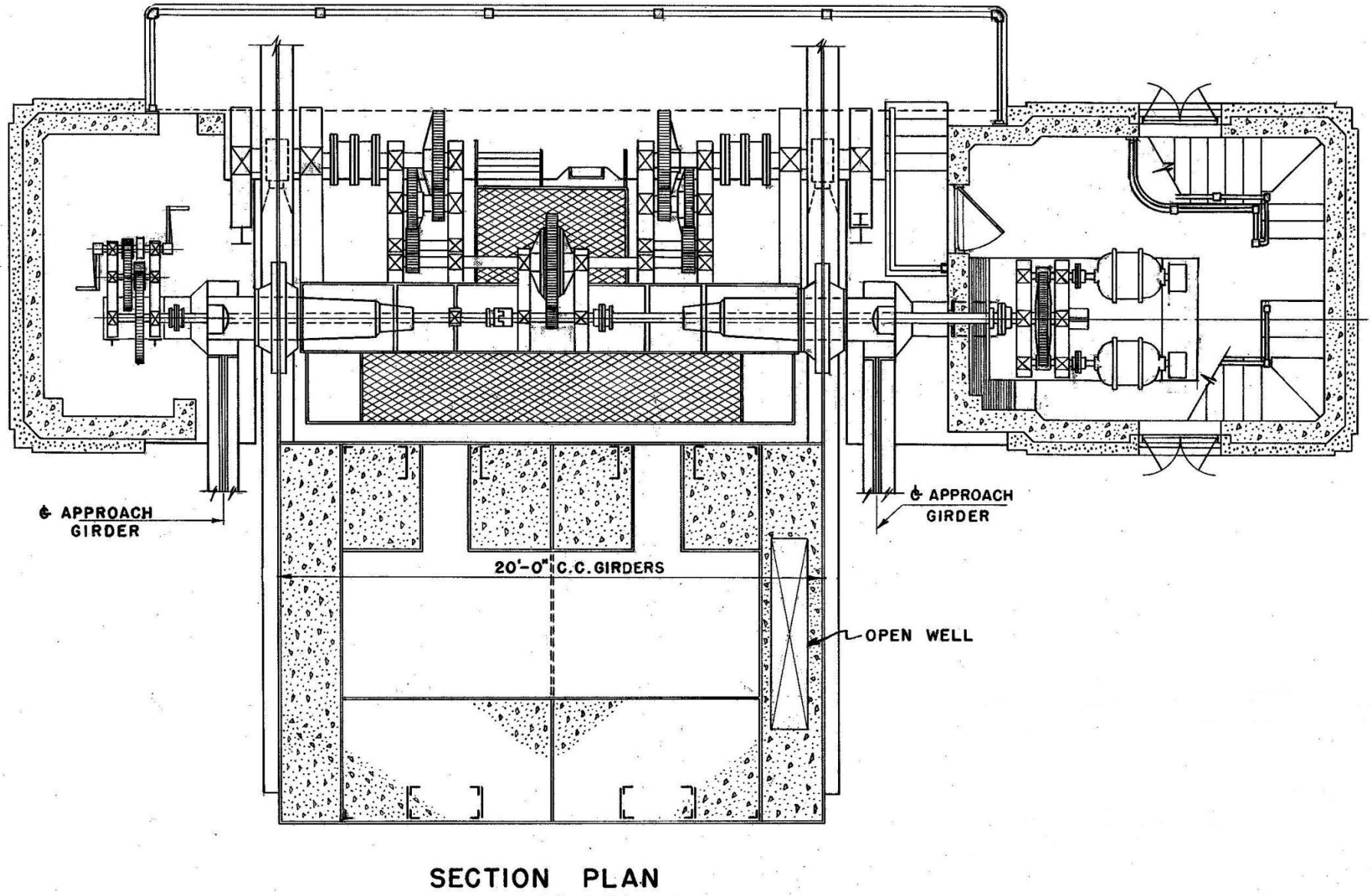
Equipment Plan



Mechanical Works

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Gear Wear

Sarah Mildred Long Bridge

Tower Drive Vertical Lift – Built 1940

Span 224’ (200’ clear) Vertical Clearance 135’

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Machinery in Tower

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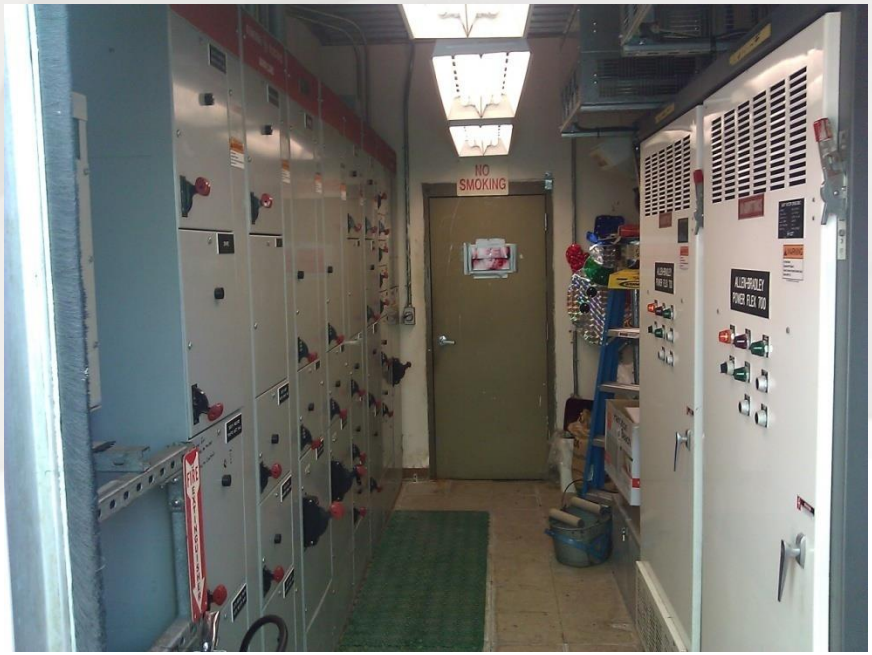
Electrical components



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Limit Switches -- Inexpensive, but can be a big problem

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Concord ….. We have a problem!

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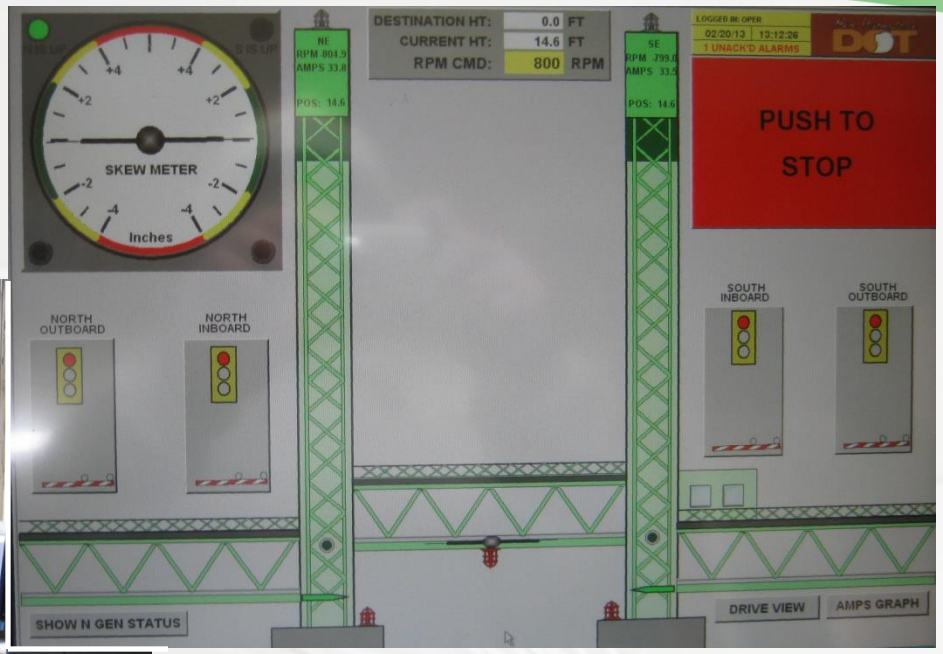
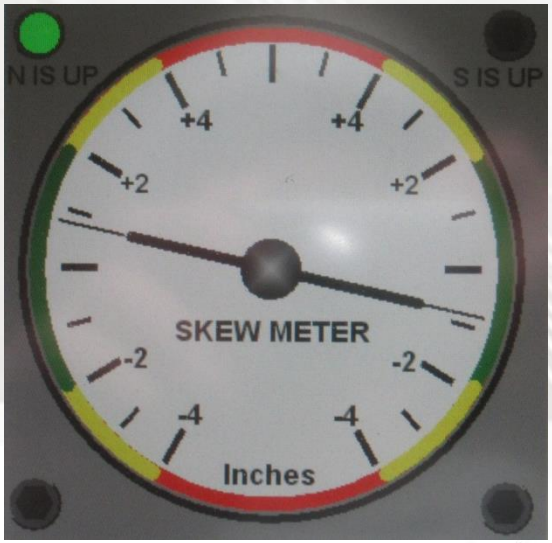
Operator's Dilemma





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You Never want to be the Headline!!

Sarah Long bridge stuck in up position

By Jim Haddadin

jhaddadin@fosters.com
Thursday, January 24, 2013

PORTSMOUTH — The Sarah Mildred Long Bridge could remain clos
crews from the N.H. Department of Transportation attempt to maneu
down into place.

The drawbridge's center span became dislodged Wednesday during a
p.m., according to NHDOT spokesman Bill Boynton. The bridge's trac
damaged in the process, leaving the span stuck about a foot above the r

Traffic was
bridge main
evening, and

Repairs wer
using torche

"This is a ch
fix it," Boyn

Crews race to fix Sarah Long Bridge

Bridge gets stuck during test

UPDATED 8:10 AM EST Jan 25, 2013

Tugboat captain: Sarah Long Bridge closure hurts business

Photo 1 of 1 | Zoom Photo +

BUY PHOTO

Tankers can't pass through the Sarah Mildred Long Bridge while it is under repairs, and it's causing tension for commerce on the Piscataqua River.

Deb Cram file photo

PREMIUM CONTENT

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Police: [
2/26/2013

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salaries

Coast G
was nun

Principa
- 2/26/201

working in

Sarah Long Bridge reopening for traffic

7:05 PM Jan 27, 2013 |
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comments

Bridge repair work Saturday courtesy New Hampshire DOT

Tweet - A A A +

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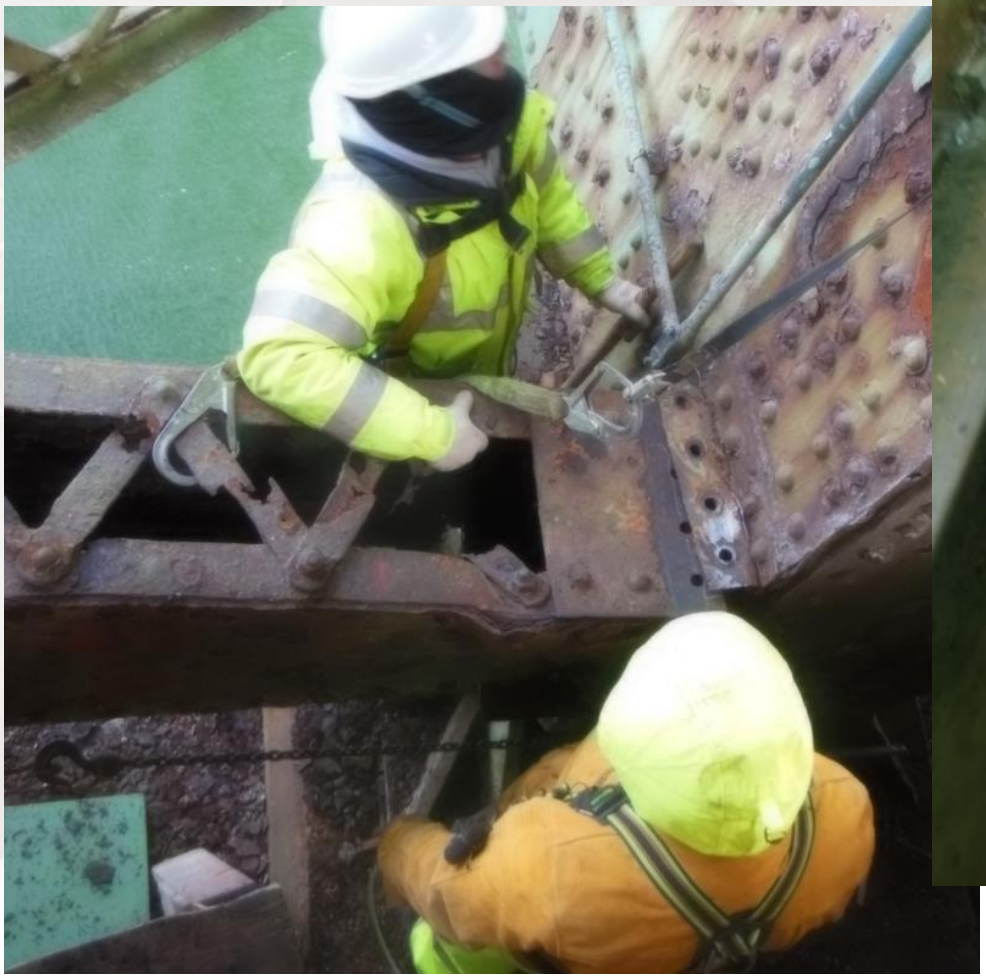
Realigning the Arms & Drilling the New Members



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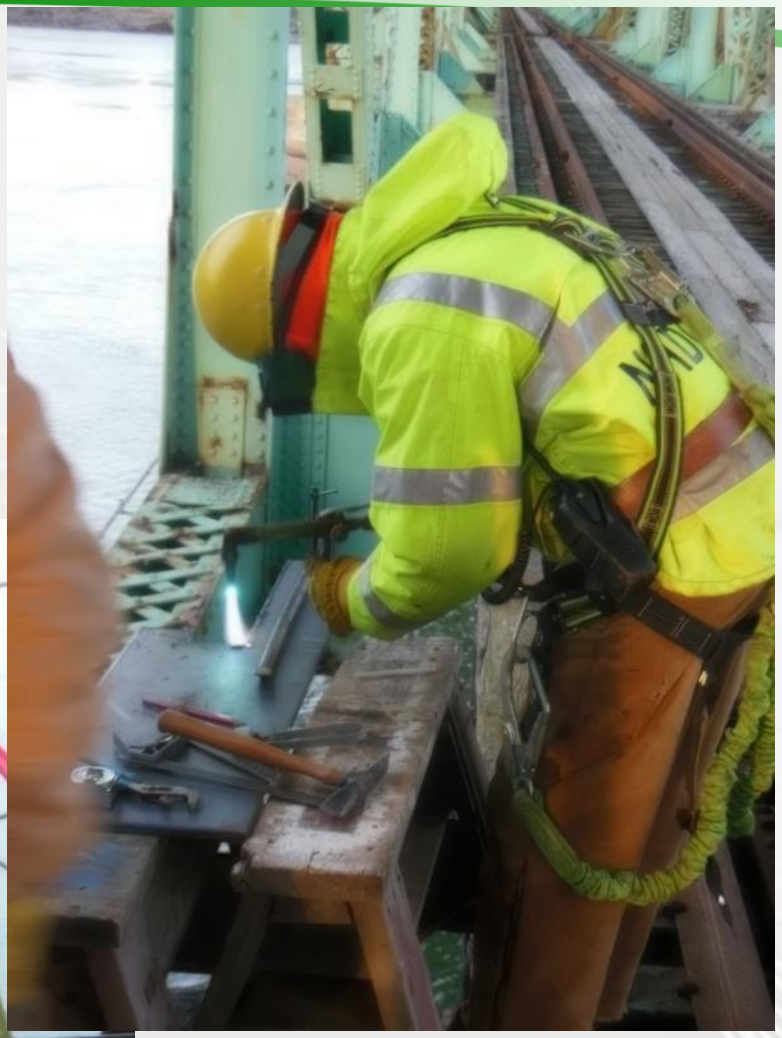
Field Fabrication of Shims and Connection Plates



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I think these guys like the cold

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April Fools?

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Old Memorial Bridge

Vertical Lift Bridge – Span Drive Built 1922

Span 297’ (275’ clear) Vertical Clearance 150’

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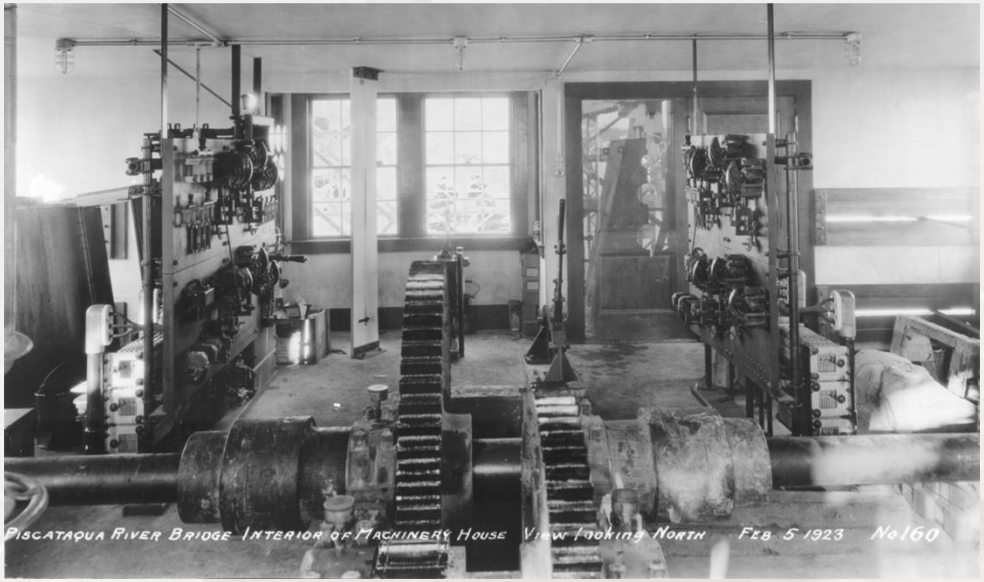

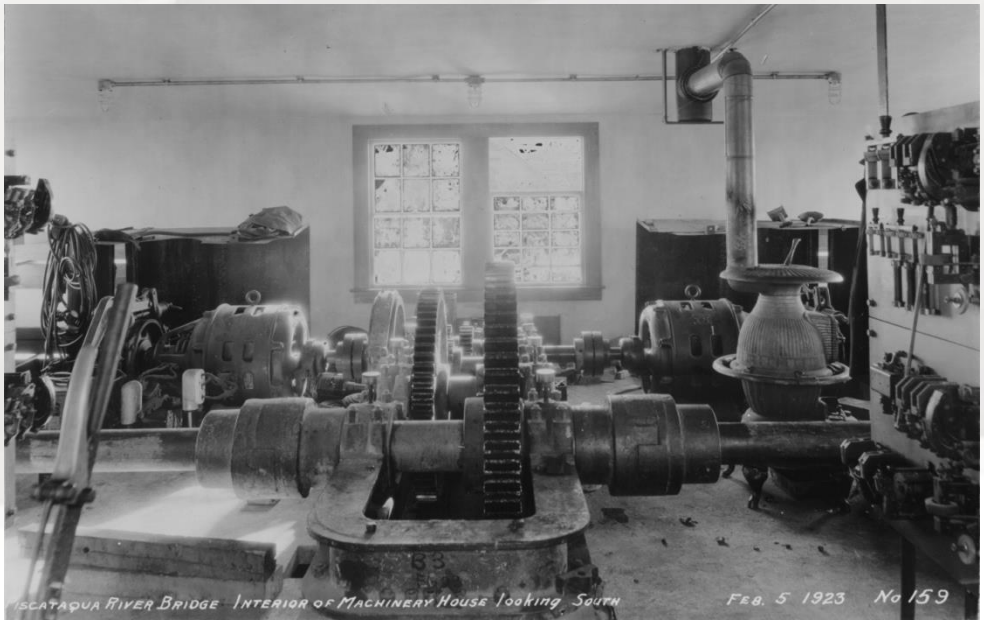

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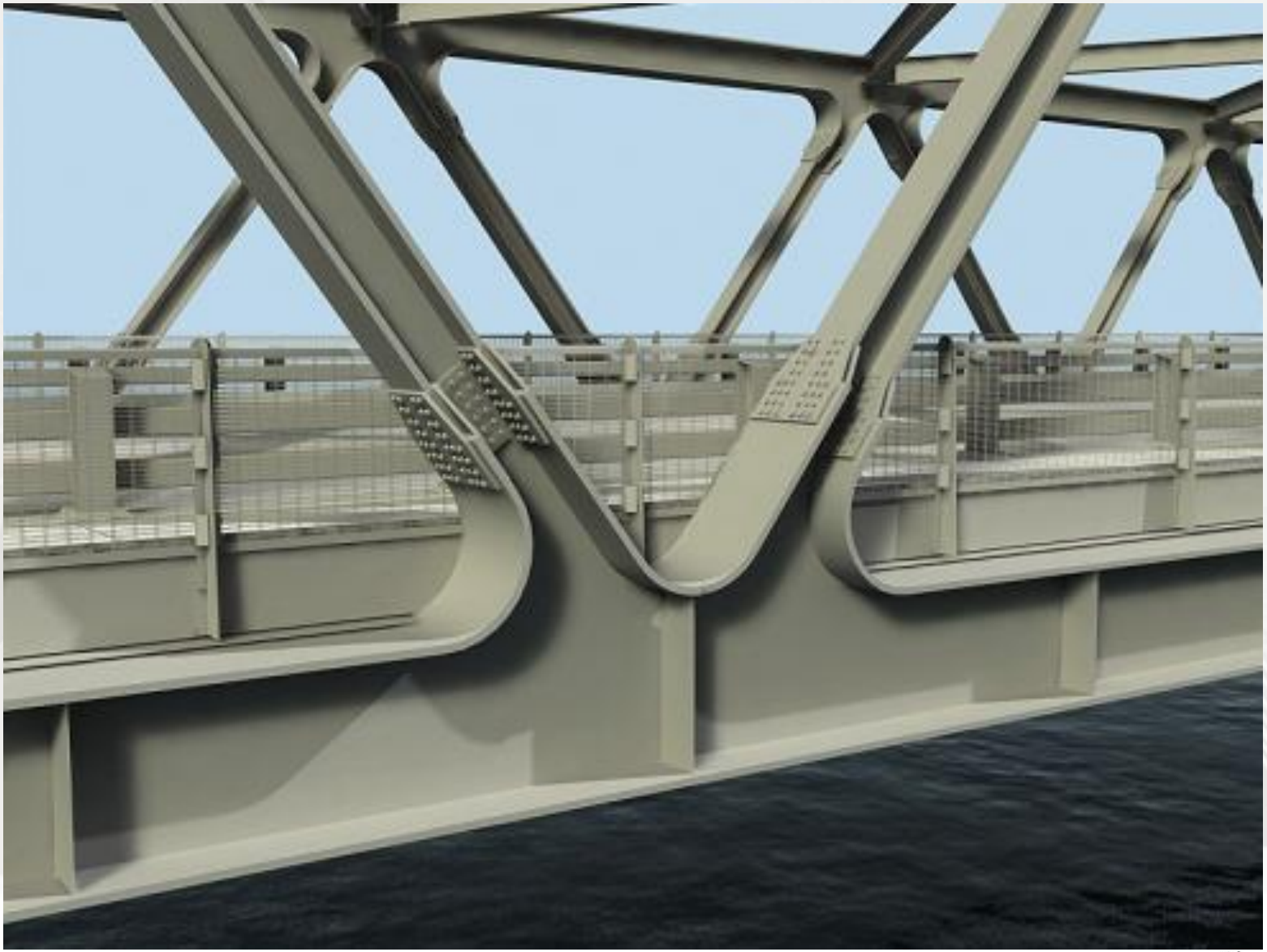

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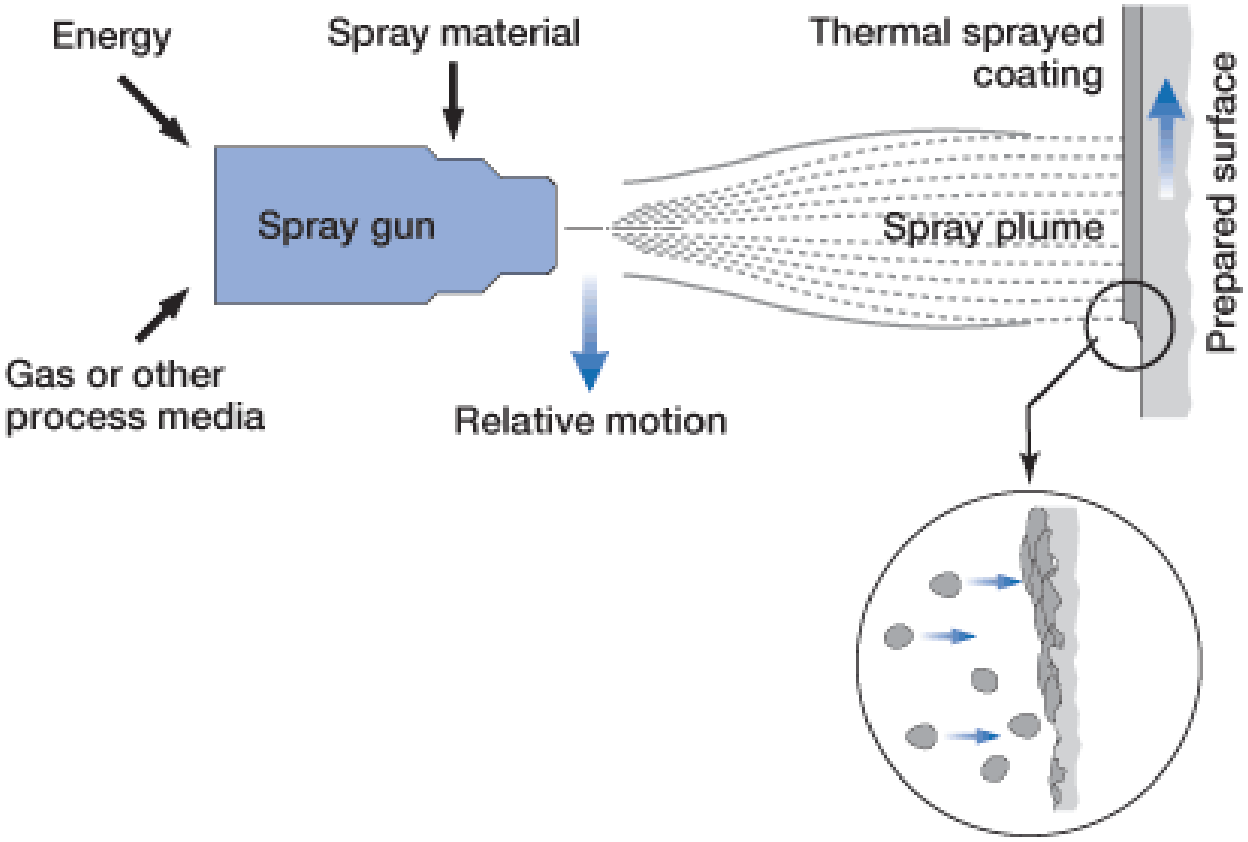
Metallizing Process



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Maintenance Access

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Questions ?

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