FACE Washington Fatality Assessment & Control Evaluation

FATALITY NARRATIVE

Carpenter Falls 60 Feet from Bridge Platform

Industry: Highway, Street, and Bridge Construction

Task: Dismantling bridge concrete form

Occupation: Journeyman carpenter

Type of Incident: Fall

SHARP Safety & Health Assessment & Research for Prevention

SHARP Report No.: 71-158-2017s

Washington State Department of Labor & Industries

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In March 2015, a 34-year-old journeyman carpenter died when he fell 60 feet from a concrete form suspended below a bridge.

The victim was employed by a joint venture company that was contracted by the state department of transportation to build a bridge across a lake. He was an experienced journeyman carpenter and a crew foreman on this project.

On the day of the incident, a supervisor held a morning job safety analysis meeting of crew members to discuss the day's task and hazards associated with it. This task involved the dismantling and removal of concrete forms suspended underneath the bridge. The victim and another employee assigned this task had previously performed this task many times during this project. During the course of the morning, the two employees working from the concrete forms suspended under the bridge removed the north wing wall portion without incident.

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After lunch, the two employees began preparing to remove the south wing wall. It was supported by rods extending down from the bridge that were attached to the form by bolts. The plan was to lower the wing wall by using a machine on top of the bridge to lower the rods. Then a crane located on top of the bridge would hoist the wing wall up onto the bridge deck.

One of the rods was lowered three feet. An attempt to lower another rod was made, but it would not lower. He and his coworker then decided to try and lift the wing wall with rigging attached to a chain hoist in hopes of lifting some of the weight off the rod. When this did not relieve the pressure, they decided to cut the rod with a torch.

Keeping the chain hoist in place, the victim wearing a full body harness with a retractable steel cable lanyard went to the top of the wing wall and cut the rod. Cutting the rod caused the wing wall to shift. The victim lost his balance and slid down the wing wall and fell into an opening between the wing wall and the main concrete form. His lanyard cable severed when it went over the steel edge of the main form and he fell 60 feet to a concrete pier below.

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The investigation identified that the victim's fatal fall was due to improper use of the retractable lanyard. The victim was working more than 6 feet above his anchor point and during the fall the cable went over a steel edge of the form, both of which the lanyard manufacturer warns against. Also, there were retractable lanyards located above the victim that could have been used as an anchor point.

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Incident scene showing the concrete form suspended beneath the bridge. The arrow indicates where the victim fell from, landing on the concrete pier below.

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Incident scene showing the concrete forms suspended below the bridge. The red arrow indicates where the victim was kneeling on the wing wall form; the yellow arrow indicates the anchor point of his retractable lifeline.

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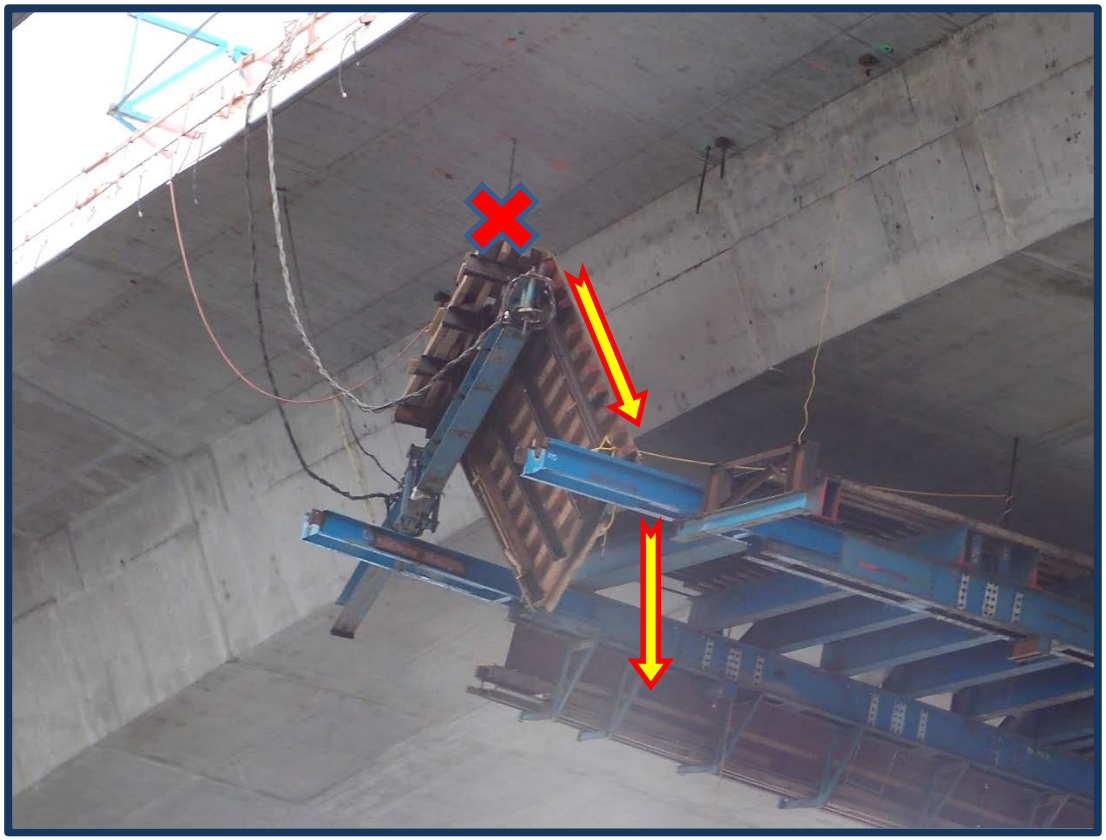

Incident scene showing the location of the victim (indicated by “X”) when the wing wall form shifted and he slid down the form and fell between the gap between the wing wall form and the main concrete form.

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Requirements

Forms intended for use where there is a free fall of over 10 feet must be equipped with adequate scaffolding and guardrails or employees working on forms must be protected from falls in accordance with chapter 296-155 WAC, Part C-1 during forming and stripping operations.
See WAC 296-155-689(4)

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Recommendation

When an unplanned situation arises that exposes workers to fall hazards, stop, regroup and discuss what should be done to address the issues. If changes to the fall protection work plan are needed, make those changes and retrain all those involved.

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The victim's retractable lanyard at the incident scene.

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Photo 1

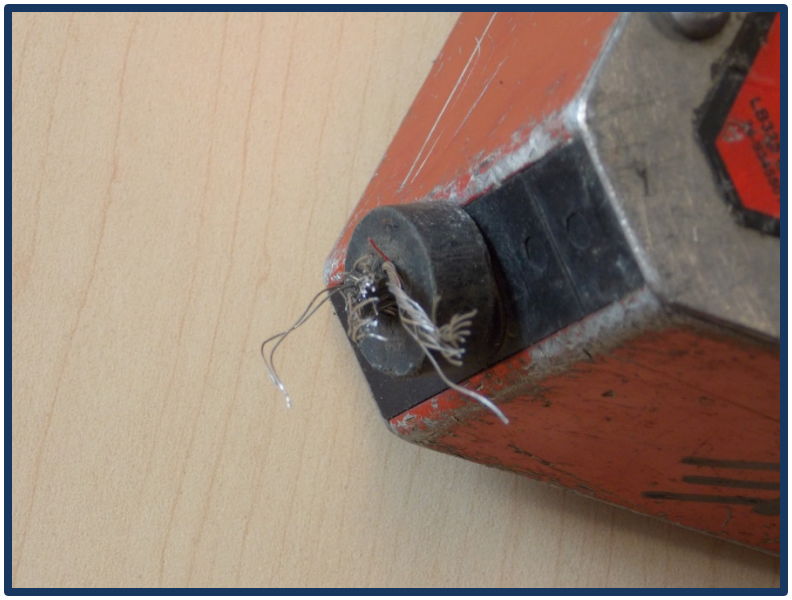

Photo 2

Photo 1 shows the steel platform edge which the victim's retractable steel cable lanyard contacted when he fell, causing it to sever. A red fiber from the cable is shown (red circle).

Photo 2 shows the victim's retractable lanyard with strands of the severed steel cable.

Resources

Fall Protection in Bridge Construction, Inspection, and Maintenance: Fall Prevention Fact Sheets. American Road and Transportation Builders Assoc. www.workzonesafety.org/training-resources/fall-prevention-fact-sheets

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This bulletin was developed to alert employers and employees of a tragic loss of life of a worker in Washington State and is based on preliminary data ONLY and does not represent final determinations regarding the nature of the incident or conclusions regarding the cause of the fatality.

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