

Safety Investigation Report for Incident #12050889

2828 Folsom Street, June 2, 2012



2828 Folsom St.

Incident Summary

On June 2, 2012, a Probationary Firefighter suffered multiple injuries due to a fall from a third story deck during the overhaul phase of a small residential fire.

At 05:01 hours, Box 5526 was dispatched for a report of a fire in the building to 2828 Folsom Street.

Units dispatched were E7, E11, E9, T7, T11, B6, B10, D3, RS2 and M89 (see CAD printout).

Upon arriving on scene, first units reported a small extinguished fire on the rear deck at the third story landing.



View of rear deck

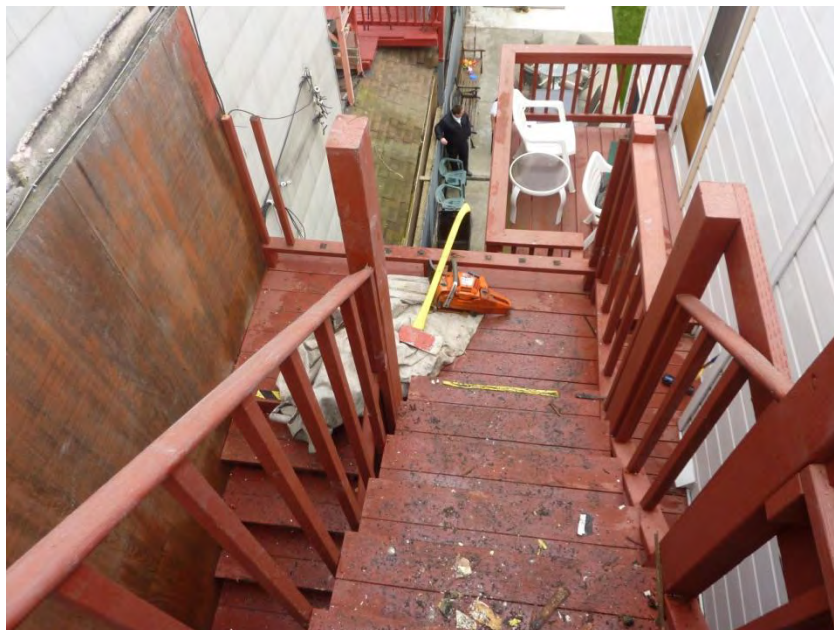
Chiefs on scene confirmed that the fire was extinguished and a limited number of resources would be needed to check for extension and overhaul. Battalion 6 remained on the scene with Engine 7 (E7) and Truck 7 (T7). Division 3 (D3) released all other units back in service.

There was a planter box directly outside the exterior door where the occupant reported to have discarded smoking materials. Crews on the scene proceeded to open up the siding and the flooring inside the unit on the third floor to check for extension.



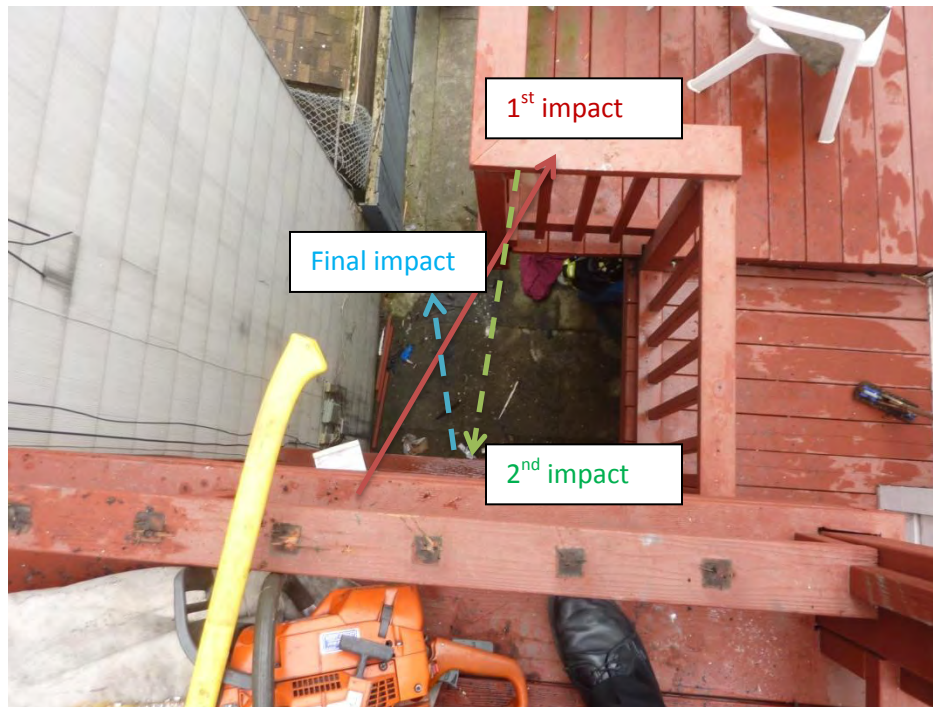
Third floor landing after overhaul

The Engine crew was conducting overhaul inside the unit and the Truck crew was removing the debris down the rear stairs and out to the street. E7's crew was bringing the last pile of debris in a carry-all down the stairs. They had also placed the tools they were using in the carry all (2 axes and a chain saw).



View from top landing with carry-all and contents

PX (Probationary Firefighter) and FF/PM (Firefighter/Paramedic) of E7 were descending the top flight of stairs. After FF/PM made the turn to proceed to the next level of stairs, PX slipped, tripped, and fell against the guardrail. This guardrail gave way and PX fell approximately 26 ft. (25'9") to the pavement below.



View from fall point. Notice water on deck.



Guardrail connecting point

PX first broke his fall by hitting the top of the second floor railing with his shoulder area. PX continued to fall where his feet struck the base of the landing between the first and second floor. These impacts shifted his landing position from head first to shoulder first. PX landed on the concrete patio and was immediately assisted by crew members.

The Officer on E7 called on the radio for medical resources, a Medic Unit and a Rescue Captain (6:09 am). D3 was made aware of the situation by the watch person at Station 7 and immediately returned to the scene. Medical aid was given right away and PX was transported and admitted to San Francisco General Hospital. PX suffered a fractured scapula and 6 broken ribs from the fall. PX remains off duty at the time of this report. PX was wearing all his PPE and this contributed to the lessening of the injuries. His helmet was properly strapped and did not fall off on impact. PX was no longer wearing his SCBA at the time of the fall.



2nd point of impact

Investigation

D3, following the safety investigation policy, secured the scene and ordered the crews present not to move any objects from the scene. D3 also called for the Department of Building Inspection's on duty personnel to respond. Safety 1 was notified via pager of the injury and responded from home. Safety 1 requested assistance from DOT staff to assist in the investigation. Upon arrival the investigative team started to take measurements, photographs and statements from the members who witnessed the incident as per policy. D3 Chief, B6 Battalion Chief, T7 Captain, E7 Lieutenant, FF/PM E7, FF PX Engine 7 (at SFGH) were interviewed. The team also spoke to Department of Building Inspection (DBI) inspector Ed Sweeney. Statements were collected from all these members.

Findings

Weather:

54 degrees, mostly cloudy, westerly wind 9 MPH.

Sunrise was at 5:49.

Construction

3 Story Type 5 (wood frame) dwelling. 3 story wood stairs and landings in the rear of the structure .

Deck railing:

Width 73 ½ inches

2 X 4

2 X 2

6 inch
spacing

2 X 4

Height
41 ¼
inches



2nd floor deck guardrail, same construction as failed guardrail.
Connections were made with 8p nails.



Handrail found at ground level. Note size of nails

DBI inspector issued a notice of violation for the following items (see attached):

- Unsafe building (after fire)
 - o Building required to be weatherproofed (damaged during fire and overhaul)
 - o 1 hour fire wall & stairs missing cap on top of wall which has caused dry rot/deterioration of fire assembly.

On his Emergency Response Form (see attached), Inspector Sweeney's findings are:

- "It appears that the guardrail gave way due to possible force of impact.

Contributing factors are:

- Short nails (one 8p nail) on each side.
- Wood shrinkage and some wood deterioration around nails."

Plans provided (see figure 1) were stamped approved May 12, 1999. The plans reflect that the guardrail that failed was existing at the time of the remodel of the deck and stairs (May 12, 1999). The scope of the permit issued in 1999 did not encompass the stair landing guardrails, therefore it is unknown as to the date of construction of such guardrail and whether it met the codes existing at that time.

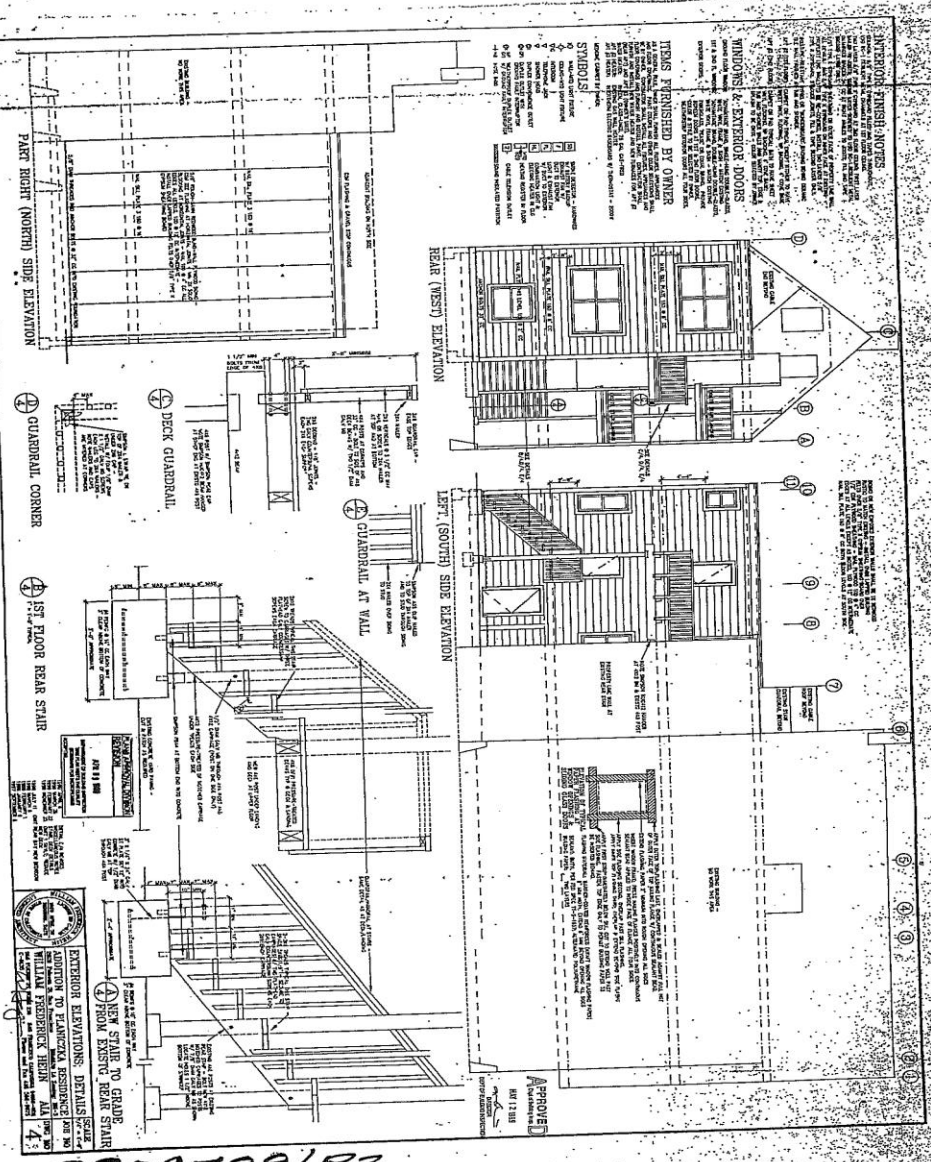


Figure 1 Plans as submitted to SFFD by D.B.I.

Contributing factors

- Lighting was limited due to time of the day.
- Painted deck was wet and slippery from fire suppression activities.
- The use of two hands to carry a heavy load without use of handrails.
- Failure of the guardrail connections.

Recommendations

When members operating at an emergency scene identify a possible hazard, this situation must be shared with all persons operating at the scene. This information can be given face to face or via radio and must be acknowledged.

At this incident the Truck Officer identified a possible structural deficiency on the lower level guardrails. This information was shared with his crew because they were removing the debris down the stairs to the street. However, this message was not conveyed to the Engine crew, since they were working inside.

When members are carrying debris down stairs, members should:

- **Make sure carryall loads are of manageable shape and weight to keep control of the load at all times.**
- **Keep one hand on handrail at all times when descending stairs with a load.**

At this incident, the carry-all was loaded with debris and tools. The PX used both hands to carry the load down the stairs, instead of using the handrail for support and balance.

Members need to be aware that the overhaul and salvage phase of the fire is potentially as dangerous as the initial stages of fire suppression. A large number of injuries happen on the fireground after the fire has been extinguished. Extreme caution and vigilance must be observed by everybody at the scene. Control measures must be established to mitigate any hazard. Communication of hazards, caution tape, monitoring personnel, etc., should be present to reduce the possibility of injury or death.



Rear deck view with arrow pointing to area of guardrail failure