Appendix D: Fall Protection Case Studies

Case Study 1 - Laborer Killed in Fall Through Roof

A 40-year old laborer/helper died when he fell through an opening in a warehouse roof. He fell approximately 27 feet to the floor below.

The employer was demolishing the roof of the warehouse portion of a commercial building. Work was done at night because the coal tar on the roof would release hazardous gases if disturbed in the heat of the day. The site had adequate halogen lighting. None of the workers on the job were using fall protection.

After the roofing material was removed, 4x8 foot sheets of plywood were exposed. Any damaged sheet needed to be replaced. The helper's job was to follow the workers who were replacing the plywood, and to pick up damaged sheets of plywood they had removed. He disposed of them in a chute.

On this evening, one worker had removed a sheet of damaged plywood, but had run out of nails to attach the replacement plywood. He walked away to get more nails. The opening where the damaged plywood had been was left unguarded. The crew was not informed that it was temporarily unguarded. The opening was covered by silver-colored insulation inside the roof.

The helper came along, picked up the sheet of damaged plywood, and headed for the chute. He stepped into the opening, ripped through the insulation, and fell.

Discussion notes: What should have been done to prevent this accident?

Case Study 2 - Ironworker Dies After Falling Off Beam

A 42-year-old structural ironworker foreman died when he fell off a steel beam in an incomplete warehouse roof. He fell about 38 feet to the floor below.

The employer was installing the final structural beam (bar hoist) in the roof of a new cold storage warehouse under construction. After a crane lifted the beam into place, it was not quite straight and the ironworker foreman wanted to use a hammer to straighten it.

The area where the foreman needed to work had been barricaded with wire rope safety lines on all four sides, but he removed these lines to gain access. He was not using fall protection equipment.

The foreman was standing on a portion of roof decking that had already been completed. To get to the beam, he reached his left foot out over an open, undecked area of the roof. He rested his left foot on the nearest joist girder. As he was preparing to strike a blow with the hammer, his foot slipped off the girder. His hands caught the bar joist, but he couldn't hold on and fell.

Discussion notes: What should have been done to prevent this accident?

Case Study 3 – Sheet Metal Worker Dies After Fall from Ladder

A 46-year old sheet metal worker died when he fell off an 8-foot stepladder and struck his head on the edge of a metal floor plate.

The worker was doing sheet metal work on a hospital addition. He and two co-workers were adding a fire damper (a fire safety device) to previously installed metal duct.

The job was difficult, and the sheet metal worker had his right foot on the 5th step of the ladder, at a height of 4 feet, 9 inches. His left foot was on the step above. According to a co-worker, the ladder spun around and tangled his legs in the steps. He fell head first to the concrete floor, striking his head on a metal floor plate.

One co-worker said the sheet metal worker might have extended himself out too far from the ladder, or lost his balance.

Discussion notes: What should have been done to prevent this accident?

Case Study 4 – One Killed, Three Injured in Scaffold Accident

A 29-year-old hod carrier died and three co-workers were injured when they fell from the fourth story of a pump house building that was under construction at a reservoir.

The hod carrier and other had been spraying fireproof insulation onto the structural frame of the building. They used a rolling tower scaffold to gain access to the structural steel overhead.

Putlogs (types of trusses) had been added to the sides of the rolling tower scaffold, and an extension platform had been built there. This platform was used to reach the outer side of the structural steel.

On this day, a supervisor said a guardrail was needed on the scaffold. The hod carrier joined three co-workers on the scaffold. The hod carrier joined three co-workers on the extension platform to help install the guardrail. Their combined weight caused the scaffold to tip. They were all thrown to the concrete deck 44 feet below.

The scaffold had not been engineered for the extension platform. No counterweights, anchorage, or bracing were used. Neither the hod carrier nor his co-workers were wearing personal fall protection. The scaffold and platform had been constructed using parts from different manufacturers.

Discussion notes: What should have been done to prevent this accident?