

Scaffold Building Contractor Fatality

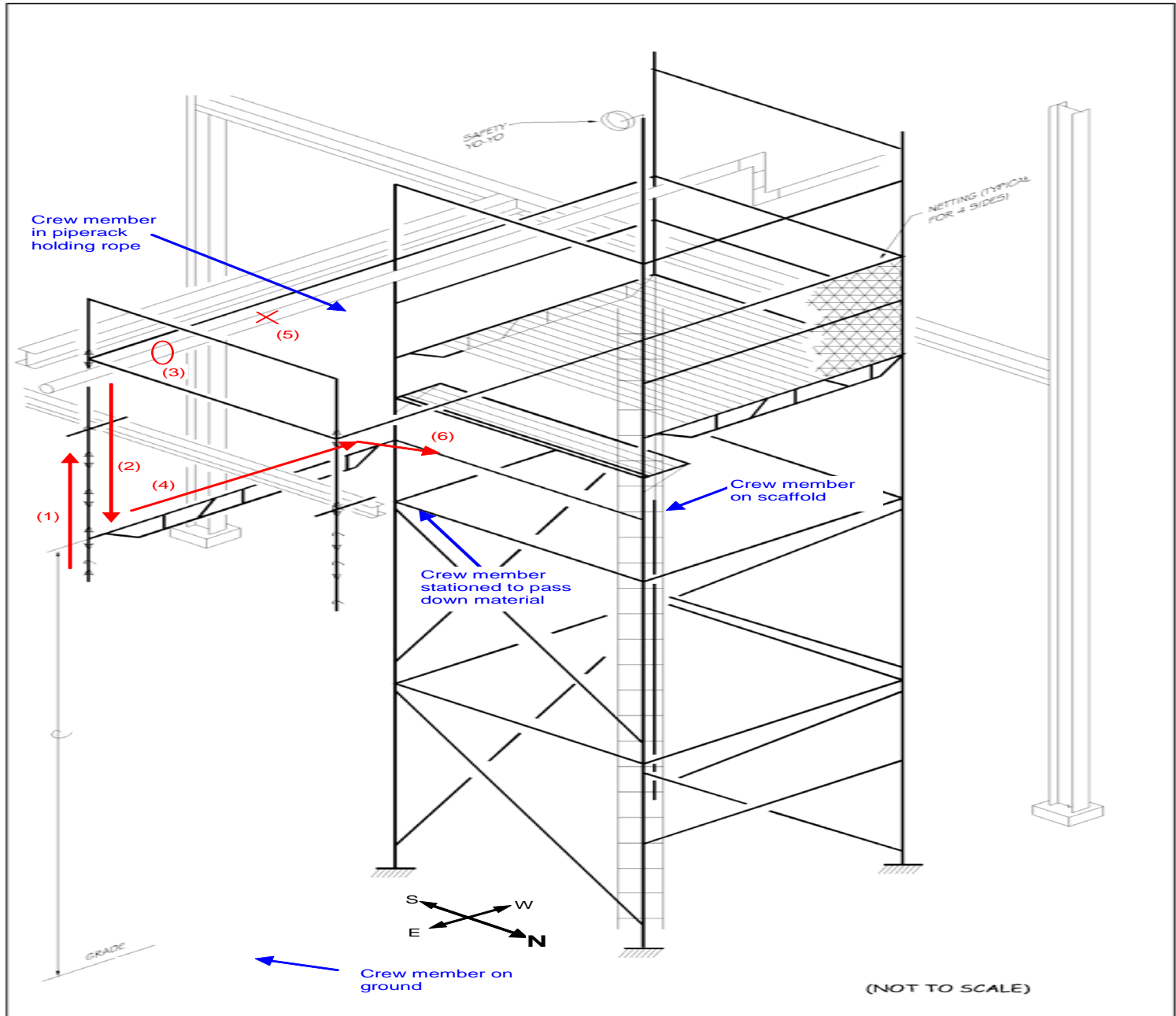
Incident Summary

- **On September 11, 2007 a scaffold builder was dismantling a scaffold and fell approximately sixteen feet to grade**
 - Wearing fall protection at time of incident, but not tied off
- **Transported by life flight to hospital with head injury, multiple broken bones and other injuries; Scaffold Builder died on September 13, 2007**
- **Individual was a certified scaffold builder; 30 years experience**

Incident Description

Scaffold Builder disassembling hanging portion of scaffold

1. Scaffold Builder stands on clamp below truss and opens cup holding truss
2. Tries to climb into piperack, but there are obstructions
3. Ties off hook-to-hook over the 6' pipe
4. Traverses truss toward main scaffold
5. At some point, removes lanyards from pipe
6. Steps onto horizontal pole running north/south and attempts to latch lanyard onto main scaffold; loses balance and falls



Key Observations

- For type of fall protection worn by the Scaffold Builder, hook-to-hook attachment (see photo) compromises effectiveness of the fall protection for two reasons
 - 100% tie off requirement violated when connecting or disconnecting hooks
 - Hooks used by scaffold builders not rated for this type of connection because latch portion of hook not rated for side impact
- Although interviewees offered various reasons for why hook-to-hook attachment is prohibited, all recognized it as improper practice
 - Practice not incorporated into field safety audit checklists
- Interviews with scaffold crews and other fall protection users confirmed that field knowledge of the 100% tie-off requirement is well known
 - 100% tie off identified as permit requirement for particular job
 - 100% tie off consistently identified as requirement on Scaffold Builder's prior jobs at incident location
 - Fall protection is a site cardinal safety rule; rigorously enforced; 6 incidents in past year in which workers terminated by their employers for violation
 - Alternative tie off methods were available
- Scaffold Builder's crew members did not intervene when they saw him tied off incorrectly; interviews of crew-members, other contractor company employees, and other craftsman led to conclusion that intervention practiced to lesser extent among scaffold crews
 - Informal hierarchy based on experience; some indication that more senior scaffolders may be less open to correction

Hook-to Hook



Key Finding: Failure to Maintain 100% Tie-Off

- Scaffold Builder had been tied off hook-to-hook, then disconnected the hooks and was attempting to tie off to the main scaffold when he fell
 - Construction and disassembly of scaffolds requires 100% tie off, which is a well known and enforced requirement at location
 - Scaffold Builder knew that 100% tie off for scaffold construction and disassembly was required both generally and for this specific job
- Scaffold Builder clearly not tied off at the time of the fall; four possible reasons:
 1. Did not appreciate that hook-to-hook attachment led to violation of the 100% tie-off requirement
 2. As an experienced scaffold builder, a momentary tie off violation when hooking and unhooking was not noticed by him
 3. He appreciated the tie off rule violation, but underestimated the risk
 4. He appreciated the tie off rule violation and associated risk, but choose to accept the risk
- Investigation team not able to interview the Scaffold Builder
 - Cannot determine for certain the reason he was not tied off
 - Based upon interviews, investigation team believes reason four is less likely
 - Recommendations will address all four possibilities

Key Finding: Intervention

- Scaffold Builder's co-workers were aware of general requirement for 100% tie off when working at height and proper use of fall protection equipment
- On day of incident, Scaffold Builder's co-workers recognized the 100% tie off requirement for the specific job; co-workers also knew that hook-to-hook attachment was improper. Co-workers did not intervene when they saw him tied off incorrectly
- Based on interviews, investigation team concluded that intervention is practiced to a lesser extent among scaffold crews
 - Informal hierarchy among scaffolders based on experience
 - Some indication that more senior scaffolders may be less open to correction resulting in a reluctance to correct

Key Messages

- It is **NEVER** acceptable to violate a 100% tie off rule, even for a moment
- “Hook-to-Hook – clipping two lanyards together – is an unacceptable practice for two reasons
 1. When 100% tie off is required, the only way to tie off or change tie off points while hooked is to be momentarily without fall protection, violation the 100% tie off requirement
 2. Hooks used by scaffold builders not rated for this type of connection because latch portion of hook not rated for side impact
- Tying off should **NEVER** become second nature to workers; **DELIBERATE ACTION** should be taken to ensure tie off in one place before untying from another
- **POSITIVE INTERVENTION** – stopping a co-worker who is taking a risk can save lives

Recommendations

- Consider updating training materials for all contractor companies to incorporate incident learnings, including
 - Reinforcement of risk of tie off violation
 - Appropriate use of fall protection equipment
 - Importance of intervention
- Consider updating safety observation programs
 - Fall protection cues for "hook-to-hook" attachment
 - Maintaining 100% tie off while unhooking and rehooking
- Consider developing strategy to increase positive intervention
- Consider other updates to site training materials and standards, including those applicable to nested contractors
- Communicate this incident broadly for learning and improvement