



# RISK REMINDER

PARTNERING WITH TOWNSHIPS

## SAFETY ALERT: Powder Actuated Gun Fired When Dropped

On April 4, 2005 an ironworker accidentally dropped a Hilti Powder Actuated tool from a standing position onto the concrete surface, a drop of about 3 1/2 feet. In an attempt to catch the gun, the worker grabbed the muzzle of the gun at about the same time the butt end of the device contacted the concrete. The gun fired when it struck the pavement causing a 1/4" X 1 1/2" fastener screw to penetrate through the fleshy part of the worker's right hand. While the injury was classified as a First Aid, a thorough investigation was completed due to the potential that existed for a more serious event.

The powder-actuated tool was manufactured by Hilti and was a Model DX A40. It is designed and equipped with a safety device in the muzzle that requires force to be applied to the muzzle and simultaneous activation of the trigger to fire the device.

The tool operator had been trained in the operation of the device by the manufacturer and was an experienced user of the tool. He had been using the device for over a year on this project.

The contract employee was preparing to conduct a test fire into 1/4" steel plate in order to adjust the fastener penetration depth. The device was loaded with a strip of red rim fire cartridges and the operator had just inserted the 1/4" stainless steel screw. He was wearing leather gloves and holding the device by the muzzle in his right hand when the tool slipped from his grip falling to the concrete pavement below. As it fell, he attempted to catch it with his right hand causing his hand to cover the muzzle (and the loaded screw) at about the same time that the device struck the pavement. A combination of the downward momentum of the muzzle and the force of the operator's hand depressed the muzzle thereby defeating the safety device in the muzzle. The tool fired when it struck the pavement projecting the screw through the operator's hand. Interviews with the operator and one other witness indicate that the trigger was not pulled or otherwise activated at the time the device fired.

Disassembly, inspection, and subsequent drop tests were conducted by Hilti and witnessed by the project contractor. They were unable to determine how or why the device fired without the trigger being pulled. Additionally, they were unable to duplicate the accidental firing by the drop tests.

Recommendations developed by a joint contractor & Exxon Mobil Investigation Team follow:

### Recommendations:

Operators of powder-actuated tools should be trained by the tool manufacturer at regular intervals. Recommend refresher training annually with re-license every five years.

Tool manufacturer (Hilti) will revise operator training to include additional precautions for carefully handling powder-actuated tools. Specifically, training will indicate that tool operator's should not attempt to retrieve (catch) tools should they be dropped (while they are in motion).

Powder actuated tools should be inspected at regular intervals by the manufacturer. Recommend inspection by manufacturer every two years.

When a powder-actuated tool is dropped under any circumstances, it should be inspected by the manufacturer prior to reuse.

