



**US Army Corps  
of Engineers®**  
Engineering and Support Center,  
Huntsville

# Safety Office

## Mishap Lessons Learned



**Subject:** Lacerated Fingers

**Event:** An HVAC technician was performing scheduled preventative maintenance changing the belt on an Air Handling Unit (AHU). While changing the belt, his hand slipped and was caught between the belt and the pulley causing lacerations to his middle finger, ring finger and pinky finger on his left hand. It was confirmed that the AHU was de-energized and locked and tagged out. The employee immediately went to the E.R. and was treated. He was then transported by ambulance to another hospital where a hand specialist was able to treat the employee and he was released that day.



\*Photo for demonstration purposes only

**Direct Cause(s):** The technician was pulling the belt with his hands to get it to “roll” onto the sheave and when it did his fingers were caught between the belt and the sheave causing the lacerations.

**Indirect Cause(s):** The technician did not review the AHA or the manufacturer’s directions on changing the belt on this AHU. He explained that pulling the belt was “an



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industry standard practice". The technician was also in a hurry because he was informed that the AHU supplied a critical area in the building and they needed to get it operational.

**Lessons Learned:** The AHA and the manufacturer's directions should be reviewed and followed when maintaining equipment. The motor bolts should be loosened to ease the tension on the belt to allow it to be changed safely. A common practice in the industry may not always be the safest way to accomplish a task.

The contractor updated the AHA's and provided the manufacturer's directions on how to change the belt. The correct way to change the belt requires the motor mounts to be loosened and the motor moved forward. This will require the motor pulley and the fan pulley to be re-aligned. The contractor purchased a laser alignment tool to help speed the alignment of the motor and the sheave after the new belt was installed. The technicians are now required to review the updated AHA and manufacturer's instructions and must be trained on the use of the alignment tool.

The schedule of the preventative maintenance should be reviewed prior to the start of the shift to accommodate the specific needs of the facility. This work could have been completed later in the shift or on another day to accommodate the air supply to the critical area in the building and the technician would not have been rushed.