



HAZARD ALERT

November 1995

Danger of Regulator Burnout

A worker returning from lunch was preparing to use an oxygen acetylene fueled torch to burn apart a truck u-joint. The worker turned on the acetylene valve, and approximately 30 seconds later opened the valve on the oxygen bottle. An immediate explosion occurred, causing a large fire ball to engulf the worker's upper torso. The fire which was accelerated by its saturation of oxygen, ignited his clothing, resulting in the worker receiving second- and third-degree burns on more than 50 percent of his body.



The cause of this accident was found to be regulator burnout (RBO). Several people are killed or seriously injured each year as a result of an RBO explosion. Improper care and maintenance of equipment, in combination with inadequate

employee training, are basic factors leading to RBO-related explosions. The primary cause is the poor work practice of not releasing the pressure of the regulator, known as “backing out” the adjusting screw.

To prevent RBO-related accidents and to meet safe operating requirements, the following are critical:

1) When welding or cutting is stopped for an extended period of time, during the lunch break, overnight, or longer:

- Close the cylinder or manifold valves.
- Open the torch valves momentarily to bleed the lines of gas pressure.
- Release the regulator pressure adjusting screws.
- When the operation has stopped for a few minutes, you may close the torch valves alone.

2) Before turning the cylinder or manifold valves to the open position to resume work, double-check the regulator to ensure that the pressure is still released from the regulator. If not, release the pressure before opening the cylinder or manifold valves.

3) Maintain equipment according to the manufacturer's recommendations. Examine regulators before each use to ensure that they are in good working order and that all parts are in place. A missing inlet nipple filter can allow dirt to enter the regulator and accumulate combustible impurities. These can ignite from the extreme temperature created by the pressurized oxygen entering the narrow passages in the regulator.

4) Make the equipment manufacturer's operating instructions available, and make sure employees operating the equipment are familiar with the manufacturer's specific operating requirements and trained in the safe use and care of oxygen-acetylene equipment.

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