CLOSE ENCOUNTERS OF THE LAB KIND

THE SANTAYANA REPORT

COLUMBIA UNIVERSITY
Environmental Health and Safety

George Santayana was a Spanish-American philosopher, essayist, poet, and novelist. In 1905, he penned the famous aphorism ***"those who cannot remember the past are condemned to repeat it."*** *More than a century later, the saying reverberates with professionals the world over. The following is a summary of a recent incident at Columbia University. The information presented is intended to provide awareness and help readers plan against the occurrence of a similar situation in their laboratory or work area.*

Under Pressure

Recently there were two serious near miss incidents involving compressed gas cylinders. In one case, the flange nut connecting a regulator to a cylinder catastrophically failed, snapping off the regulator and releasing the contents of the tank. Contributing factors include potential repeated over-tightening of the nut, unnecessary taping of the joint, and keeping a critical piece of equipment (the regulator) in use for many years. This cylinder was safely strapped in place and therefore did not move when it discharged. No one was injured by the regulator when it became detached from the cylinder.

In the other case, a researcher was rushed by a vendor who was "helping" to move in a new piece of large equipment. The entryway was not wide enough, and instead of trying an alternate entry point, the vendor proposed moving a compressed gas cylinder out of the way. When the cylinder was moved it was not re-strapped. The equipment bumped the cylinder and the cylinder crashed to the floor, snapping off the regulator. This cylinder did not discharge because thankfully the main valve was closed. Had the valve been open, the cylinder would have moved violently and with great force, in unpredictable directions by the angle of the remaining piece of the regulator. This could have caused: death, serious injury, chemicals spilling and mixing together, and/or damage to laboratory and public spaces. Watch the video to see this in a controlled setting.

Severe harm was narrowly avoided in both of these events.

Lessons Learned

- Any time a cylinder falls it must go through hydrostatic testing to ensure it is still capable of safely containing high pressure gases. Damage to the cylinder is often invisible to the naked eye. Never continue to use a cylinder that has fallen. Always call the vendor to report the fall and have it replaced immediately.

- Resist the pressure others put on you. Urgency eclipses safety and clear thinking. Complete what you begin and always re-strap a compressed gas cylinder you choose to move. Find out if your building manager has a cylinder dolly to lend for short-term use or keep an extra bracket. Temporary cylinder storage should be the same as permanent cylinder storage: upright and secured.

- Check your equipment routinely and refresh your knowledge of compressed gas cylinder safety: http://www.ehs.columbia.edu/LabSafetyTips.html#cgc. EH&S has also written about compressed gas cylinder safety in our *FDN(wh)YMe?* Series (Sept. '15, March '14, May '11, Jan. '11) and our *SafetyMatters* Newsletter (Summer '15, Winter '13).

For further information, or to view previous Santayana Reports, please visit our lessons learned website. For any other safety related matter, please contact the EH&S office.