Interesting reading following, especially for those of you who use steel cylinders (or fill them). This is why it is important to handle, fill, and care for your cylinders properly.

1) Leave a reserve pressure of 400 - 500 psi at dive's end
2) Fill your cylinders DRY, at rates no more than 400 psi/min
3) Stand AWAY from the cylinders while filling them. A secure physical barrier is strongly preferred
4) Ensure cylinders are within required hydrostatic retest and visual inspection intervals before filling

Cylinders with external vinyl coating and/or internal epoxy coating must be evaluated VERY carefully. ALL of the external vinyl coating should be removed, difficult as this is to do.

Aloha,

Dave

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Date: Tue, 20 Nov 2001 09:27:06 -1000

Subject: Explosion follow-up

Explosive rupture of a steel 70cuft 2250 psig cylinder. This information was received from an investigative witness who arrived on the scene within an hour of the event, an interview with the investigating detective and a review of police phototgraphs taken at the scene.

On Tuesday, November 13, 2001, at about 4:45 pm the co-owner of a Sebastian, Florida dive center was killed when an older steel scuba cylinder exploded during fill. The co-owner, age 72, died from massive chest and head trauma. Two other persons, the decedent's wife and a customer, were in the store but were not injured.

The cylinder appears to be an exterior vinyl-coated Voit brand cylinder that may have an undercoat of zinc. The interior may have an epoxy coat. This type of cylinder was sold in the late 1960's through the early 1970's. The cylinder's most recent observed hydro date was 1988 and latest visual inspection was 1999. Extensive pitting is observed in the photographs on the

cylinder interior. The cylinder split open its full length but did not break into pieces.

The cylinder was being filled in a water-filled concrete tub having a thickness of about 8 inches with some evidence of rebar present. The explosion caused the tub to shatter, propelling large pieces into the victim and through the store concrete block wall into nearby Highway One. Portions of the building were heavily damaged as was the fill station area. Large air storage and oxgen cylinders were dislodged but did not rupture. Two other cylinders in the tub were damaged but did not rupture. Considerable damage occurred to various sir system piping and components.

The obvious question to ask is why was a cylinder 13 years out of hydro and 2 years out of a visual inspection being filled?

Bill High, President, PSI, Inc.