Correspondence

A Report on a Possible Hazard of Gas Cylinder Tanks

To the Editor—This letter is written to report an occurrence demonstrating a possible hazard inherent in the valve assembly design of gas cylinder tanks which could have serious consequences to personnel.

A call was received from the Radiology Department for assistance in securing an airway in a patient who had experienced an adverse reaction to a radiographic dye substance. Two anesthetists answered the call, but when they reached the x-ray department the patient had recovered spontaneously and assistance was no longer needed. As they were leaving, however, they were asked for advice concerning an oxygen E-cylinder which could not be turned on. The radiologist said he had been turning a valve on top, but gas would not flow. The anesthetist placed the tank wrench on the valve seat and turned it approximately one half turn, counterclockwise. At this point, the entire valve stem and its retaining collar shot out of the top of the tank and hit the ceiling with a loud crash. Fortunately, the anesthetist was holding the tank in front of her; had she been bending over it she would have received the full impact.

In reconstructing the incident, we determined that the radiologist had used the a hexagonal wrench instead of the regular tank wrench on the valve-stem retaining ring, under the mistaken impression that this was the valve; he had unscrewed the valve almost out of the collar. The last half-turn on an already-loosened valve catapulted the whole valve-stem and ring under full tank pressure.

We present this incident for two reasons: first, to point out that this type of accident is possible and to call it to the attention of anesthesia personnel. The second reason is to suggest that cylinder manufacturers should consider changing the thread direction of the valve collar to a reverse thread so that attempts to loosen it by turning in the customary counterclockwise direction will result only in further tightening of the thread. It would be safer if the thread direction of the valve stem were different from that of the valve collar.

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The Improperly Calibrated Flowmeter—Another Hazard

To the Editor—This letter describes an error in the repair of an anesthesia machine which could have led to a serious anesthetic accident.

Recently the 20-250 cc/min flowmeter to the Verni-trol of one of our Ohio anesthesia machines was broken. The repairman installed a replacement which included a new scale, tube and bobbin. He did not check the flow calibration. Several hours later a resident used the anesthesia machine to anesthetize a patient for emergency resection of a leaking aneurism of the thoracic aorta. Halothane/nitrous oxide/oxygen anesthesia was planned. It was noted after initial setting of the flowmeters for induction that the odor of halothane coming from the system was unexpectedly strong. For this reason a portable halothane vaporizer was substituted.

Later, by measuring water displacement from