

# **REPORT OF HAROLD WHITEHOUSE**

December 5, YR-5

## **Comments about Scientific Examination and Evaluation of Arthur Steele**

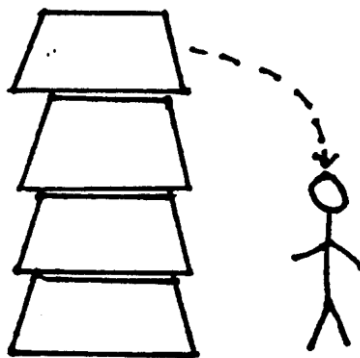
### **Introduction**

The report of Mr. Arthur Steele, dated November 6, YR-5 and entitled "Scientific Examination and Evaluation of Chemical Accident in Franklin, Roosevelt, August 4, YR-5" has been reviewed. Mr. Steele is of the opinion that the use of a flexible spout rendered the 5-gallon liquid chemical container unreasonably dangerous to reasonably foreseeable slippage of the container during pouring of the chemical. He recommends three alternatives: (1) use a different container shape to alleviate tipping hazards; (2) use a spigot; or (3) use a siphon bulb. Each of these alternatives creates hazards and other problems as discussed below.

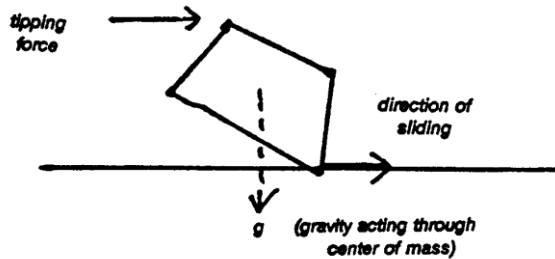
#### **1. Alternative shape of the container.**

To alleviate a tipping problem, the container must be configured so that the center of gravity (center of mass) does not extend past the base of the container during pouring of the chemical. If this is to be accomplished by increasing the area of the base, then falling hazards and sliding hazards may be created as follows:

##### A. Falling Hazard:



## B. Sliding Hazard:



A falling hazard would be present whenever the containers are stacked. A sliding hazard is created by the tendency of the container to try to right itself. On a low friction surface, the edge of the container can slip or slide along the surface, thereby exacerbating the risk of splashing the chemical.

There is also the problem created by changing the design and therefore the performance characteristics of a container that consumers have become accustomed to using. Consumer expectations and behavior are difficult to change even with specific instructions and warnings.

Finally, the cost of designing and manufacturing a new container would probably outweigh the risks associated with accidental splashing or spilling.

## 2. Use of a Spigot


The use of a spigot (or stop-cock) increases the risk of leakage because spigots protrude from a container and can be damaged by impacts. In particular, a spigot located near the bottom of a container makes leakage a virtual certainty if the spigot is damaged. A spigot located near the top of a container would still require that the container be tipped or tilted to dispense the chemical.

## 3. Use of a Siphon Bulb

The use of a siphon bulb would require a detached, additional component. This component can be lost. Its absence would require that the container be tipped or tilted. Without a flexible spout, loss of the siphon bulb increases the risk of splashing or spilling.

Use of a siphon would require additional instructions that illiterate users could not understand.

Finally, users who are instructed to use a siphon to dispense the chemical may prime the siphon hose by mouth if the siphon bulb is lost or damaged. This could lead to ingestion of the chemical.

  
HAROLD WHITEHOUS