*A “Recipe” for Disaster*

It is part of human nature to build, make better, and push the boundaries of our reality. With this natural curiosity that is inherent in us, we often fail. While this failure can be used as a learning experience to become better, it can also result in the loss of human life. At this point in our history, this is no longer acceptable. This paper aims to discuss some similarities in some of the deadliest disasters in human history in an attempt to recognize the components of a potential tragedy before it happens. Some disasters included are the Challenger, Bhopal, and the Dalkon Shield.

**Dangerous Components:**

Of course in any disaster there must be an active ingredient which creates a hazard to human life. In the Bhopal chemical disaster, this was the deadly gas (methyl isocyanate) which was released to hundreds of thousands of nearby inhabitants. In the event of the challenger disaster, the dangerous component was the rocket fuel that exploded violently, thus destroying the shuttle that carried its human passengers, killing all of them. With the Dalkon Shield, the dangerous component was the bacteria which was allowed to travel along the string of the device, which caused hundreds of thousands of infections, leading to abortions and sometimes death for the user.

It is important to note that just the presence of dangerous components does not preclude a potential disaster. For example, it is common in most homes to have a propane tank, which could explode but is safely contained within the tank. Also in our homes are high voltage devices which have the potential to kill, but are safe to use if well encased and kept away from water. If safely contained, dangerous components do not necessarily preclude a potential disaster.

**Monetary Pressures:**

Many times in disasters such as these, there are monetary issues facing the organizations in question. In the event of the Bhopal disaster, Union Carbide was facing severe losses in sales of a popular pesticide in India due to a countrywide drought. This led the company to fire many employees, severely depleting its workforce, and limiting its ability to control the deadly gasses in the plant. In the case of the challenger, NASA was widely criticized for delays in launches, and therefore faced potential funding cuts from congress. This led the organization to force launches more frequently than was safe. For the A.H. Robins Company, the Dalkon Shield was initially such a successful product (in terms of sales), that when there were reports of a potential safety problem with the product, it was difficult to recall the product due to the potential losses in sales.

**Negligence toward Human Life:**

In each of these disasters, it is clear to see that the monetary pressures caused each organization in question to make choices which were negligent to human life. In the example of the Bhopal disaster, several acts of negligence were documented: two of three safety systems were out of order at the time of the incident, instruments at the plant were described as, “unreliable”, and a supervisor the night of the incident, after discovering the initial leak decided to deal with it, “after the next tea break”. In the case of the challenger disaster, it was well documented that the o-ring was unsafe, and the failsafe was consistently damaged during flight but the ill fated shuttle launched despite protests from NASA and Morton Thiokol employees. In the case of the Dalkon Shield, there were numerous reports from doctors and gynecologists regarding the dangers of the product, including Dr. C. Donald Christian’s warnings that the product could cause widespread bacterial infection, and septic miscarriage. Despite these warnings, the A.H. Robins Company continued to sell the product in 80 countries, including an estimated 2.5 million women in the United States.

With the level that technology has risen to recently, it is no longer acceptable to have widespread disasters effecting masses of human life in the fashion that these disasters did. Human life must be paramount in design around dangerous components. One way to reduce disasters such as these is to recognize the signs of potential disaster, in an effort to recognize a dangerous situation before it becomes a deadly one.