

Accident Prevention as a Technical System

The predominant source of news for the past few weeks has been a new topic in technology and technological systems. Two recent nightclub accidents have resulted in a total of over 120 deaths in Rhode Island and Chicago. Many legal questions have arisen concerning the liability of club owners and managers in such accidents. The fire in Rhode Island last week has illuminated a problem of technology regulations. The pyrotechnics used by the band Great White directly led to the fire and subsequent deaths of the club patrons; however, the negligence of the owners of “The Station” also contributed to the problem. Where were the fire suppression devices, the emergency exits, and the approval for the band’s signature pyrotechnics? Reports have recently shown that the pyrotechnics were a regular part of the band’s act and were planned beforehand. The question currently being asked by media and victims’ families is whether these regulatory and preventative measures could have prevented this accident from occurring. For the answer to this question, we must look closely at the technical system that is involved in accident prevention in several general cases.

When people are introduced into complex systems as inputs, there is always a potential for the instability of one person or input element to blow up and lead the system towards chaos. One of the purest forms of preventative method for any complex system is to simply minimize the effect of any changes to the system. In other words, this would involve taking the element that will be introduced into the system and changes it to be more like the system. One practical application to this in the context of the nightclub fire would be to have the band perform their routine for the owners prior to show time. This

could easily allow any characteristics of the group that won't mesh with the nightclub to be worked out prior to the critical performance. In the case of the pyrotechnics, the club owners could have simply told the band to not have them for fear of fire.

The method of assimilating the new element into the system through bending the element to the system is also reversible. In this method of prevention, the system is often designed to adapt to the input of an element and make the necessary adjustments prior to the resultant event. In the case of the nightclub, gathered knowledge of the band would tell the owners that it would be necessary to have fire suppression systems present at the concert. If there had been such a system in place, the fire would not have been prevented, but the likelihood of fatal disaster would decrease significantly.

One final method of prevention would simply be to have a system that was so restricted in terms of the acceptable type of input that unstable elements are filtered out. The analogy to the nightclub accident prevention system is that increased scrutiny and conservative business practices on the part of the club owners would result in a successful selection of a stable band and would consequently yield a stable concert. Interestingly enough, the overall stability of the band is not related to its music, but rather the history it has of dangerous performances.

In the end, these three types of accident systems are only general methods of preventing accidents. Many successful systems use a combination of these three methods for maximum protection. The critical piece of data that is being investigated in the Rhode Island case is what method the club employed. The results are not conclusive yet, however indications are that little if any preventative actions were taken. Perhaps the unstable element wasn't the band at all; perhaps it was the club owners.

