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## THE LAW OF UNINTENDED CONSEQUENCES

By Richard C. Schulte

According to the National Fire Protection Association, an estimated 3,320 civilian fire fatalities occurred in the United States in 2008. Typically, a little more than 80 percent of the annual number of civilian fire fatalities in the US occur in our homes and 2008 was no exception—roughly 83 percent of the fatalities occurred in residential occupancies. The NFPA statistics further indicate that an estimated 120 civilians fire fatalities occurred in commercial (non-residential) occupancies in 2008. In other words, fires in non-residential occupancies accounted for less than 4 percent of the total number of fire fatalities which occurred in the United States.

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To put the NFPA fire fatality statistics in perspective, the following excerpt from an article written by J. R. Dunn dated April 13, 2010 includes the following statistics on highway fatalities which occur in the United States:

*“According to the Brookings Institution, a 500-lb weight reduction of the average car increased annual highway fatalities by 2,200-3,900 and serious injuries by 11,000 and 19,500 per year. . . . The National Academy of Sciences found that smaller, lighter vehicles “probably resulted in an additional 1,300 to 2,600 traffic fatalities in 1993.”*

While the estimates of the number of fatalities which can be attributed to lighter vehicles cited above differ, each of these estimates show that there appears to be a correlation between a decrease in vehicle weight and an increase in highway fatalities. To most engineers, this correlation would seem to be logical based upon the laws of physics.

One can debate whether or not increasing the fuel efficiency of our highway vehicles (by making vehicles lighter) is worth the lives of so many Americans, but what cannot be debated is that there is a difference in philosophy between government-mandated fuel efficiency standards and the fire safety provisions contained in building codes. Perhaps of even more interest is the difference in philosophy between government-mandated fuel efficiency standards and the recommendations for making buildings “safer” contained in the National Institute of Standards and Technology (NIST) World Trade Center towers collapse investigation report.

While the government-mandated fuel-efficiency standards accept the “trade-off” between fuel-efficiency and highway fatalities, the NIST recommendations for making buildings “safer” in essence imply that code provisions for high rise building included in the regional model building codes and the 2000 and 2003 editions of the International Building Code are inadequate despite the fact that the safety record of high rise buildings protected by a sprinkler system is excellent. (The fire safety statistics show that a major fire has never occurred in a high rise building in the

United States protected throughout by a sprinkler system, except as a result of the terrorist attacks on September 11th. The statistics further show that providing sprinkler protection in high rise office and high rise residential buildings has virtually eliminated fire fatalities in these types of buildings in the United States.)

If the death of perhaps as many as thirty-nine hundred Americans annually is acceptable for the sake of increased vehicle fuel economy, shouldn't the excellent fire safety record of sprinklered high rise buildings be considered to be acceptable?

Given the fact that the American public appears to accept the “trade-off” between better vehicle fuel economy and an increase in the number of highway fatalities, it seems reasonable to ask why an agency of the Federal government, the NIST Building and Fire Research Laboratory, would have recommended that additional fire safety features be mandated for tall buildings given the (magnificent) safety record of existing U.S. tall buildings protected by a sprinkler system. If the death of perhaps as many as thirty-nine hundred Americans annually is acceptable for the sake of increased vehicle fuel economy, shouldn't the excellent fire safety record of sprinklered high rise buildings be considered to be acceptable? It appears that the logic of the NIST recommendations is at odds with the Federal government's fuel efficiency standards.

Given the economic climate in 2009 and the first half of 2010 and future economic outlook, gloomy at best, particularly in the building construction industry, why would new fire safety regulations which significantly increase the cost of constructing tall buildings while doing relatively little to actually increase the safety of these buildings be included in building codes? Certainly one way to give a boost to the building construction industry in the United States would be to apply the same cost-benefit analysis utilized to develop the fuel efficiency standards to building code development and remove the new more restrictive high rise provisions recently included in the model codes.

Certainly one way to give a boost to the building construction industry in the US would be to apply the same cost-benefit analysis utilized to develop the fuel efficiency standards to building code development. . .

Buildings complying with the high rise building provisions contained in the regional model building codes or the 2000 and 2003 editions of the International Building Code are “safe” buildings. The need to make high rise buildings even “safer” by constructing these buildings to comply with the new code provisions based upon the NIST recommendations is simply unnecessary and is a waste of capital devoted to safety. A far better idea would be to devote this wasted capital on trying to improve the “safety” of our more fuel-efficient vehicle fleet.

A far better idea would be to devote this wasted capital on trying to improve the “safety” provided of our more fuel-efficient vehicle fleet.

Both the American public and the US construction industry would benefit from diverting capital from high rise building fire safety and redirecting this capital to making more fuel-efficient vehicles “safer”. This idea is obviously so logical, you know that NIST would argue against it. After all, what has logic, common sense and life safety have to do with provisions contained in building codes? Based upon the NIST recommendations for “safer” buildings, apparently not a whole lot.

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