

IAN McAUSLIN, et al v. GRINNELL CORPORATION, et al: MORE TESTIMONY AND EVIDENCE

By Richard Schulte

The McFrugal's Warehouse in New Orleans had dimensions of roughly 1,000 feet by 1,000 feet. Since the egress provisions contained in the code utilized by the City of New Orleans and the Louisiana State Fire Marshal's Office, the Life Safety Code, limited the travel distance to a maximum of 400 feet, the travel distance in the warehouse exceeded the maximum travel distance limitations permitted. In order to address this issue, a code modification to allow a travel distance of 600 feet was proposed. This code modification was reviewed and approved by both the City of New Orleans and the Louisiana State Fire Marshal's Office.

On March 21, 1996, the 1 million square foot McFrugal's Warehouse was destroyed by fire.

The supporting documentation on which the code modification was based included a number of assumptions regarding the storage contained in the warehouse. Hence, these assumptions became limitations on the use of the warehouse. The stipulations governing the approval of the increase in travel distance included the following:

- The hazard of the contents would be limited to a Class IV commodity as defined in the NFPA sprinkler installation standards and
- No flammable/combustible liquids would be stored in the warehouse and
- No aerosol containers would be stored in the warehouse (irrespective of the flammability or non-flammability of the contents).

Although the supporting documentation used as a basis for the extended travel distance proposal assumed the failure of the sprinkler system (due to a closed water supply valve), a given in the approval of the code modification proposal was that the sprinkler protection provided for the warehouse would be maintained in compliance with the sprinkler protection requirements referenced by the building code and the Life Safety Code.

The building owner's representative was given copies of the code modification documentation and attended meetings with the code enforcement authorities, hence, there is little doubt that the building owner should have been aware of the legal limitations on the use of the warehouse.

Editor's Note: The code modifications proposed for the warehouse and the supporting documentation for these proposals was developed by Schulte & Associates in early 1989.

On March 21, 1996, the 1 million square foot McFrugal's Warehouse was destroyed by fire. The ignition point of fire was determined to be in 3 tier high multi-row racks located in the east portion of the high bay section of the building. The storage height in these racks was 21 feet. Sprinklers located at the ceiling of the warehouse, approximately 50 feet above the top of the storage, were the only protection provided for the multi-row racks.

With this background, a review of some of the testimony by Dr. Craig Beyler, an expert for the plaintiff in the litigation, as well as other evidence produced is of interest.

Deposition Testimony-Dr. Craig Beyler (1999):

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Q. Now, in your review and investigation, were you able to determine to what extent there were Group A plastics stored in these portable racks at the time of the fire?

A. No, I wasn't able to.

[Break in transcript]

Q. From your standpoint it didn't make any difference whether there were Group A plastics or not as you conducted your investigation?

A. My understanding is that the outcome would have been the same without regard to which commodity classification was actually in place, yes.

Q. And what's the basis for that?

A. Well, I modeled Class II commodity and the sprinkler system couldn't control the fire and so clearly anything above a Class II commodity would have shared that same problem. So if it had been III, IV or Group A plastic, the outcome would have been the same. This is, the fire would not have been controlled.

Q. Now, in your review and investigation, were you able to determine to what extent there were Group A plastics stored in these portable racks at the time of the fire?

A. No, I wasn't able to.

"My understanding is that the outcome would have been the same without regard to which commodity classification was actually in place, yes."

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Q. Now, is it your understanding that the fire protection systems for this facility were designed based upon a Class IV commodity?

A. In the high rack areas.

Q. Do you know of any other area where the building was designed to meet a different commodity classification?

A. I don't know of a different commodity classification.

Q. So it's your understanding it's Class IV commodity. So if we did have a circumstance where we exceed this 15 percent, you would agree with me that that would be a change in commodity classification which would require a review of the existing fire protection systems - -

A. Yes.

Q. - - in the facility? Okay. And based upon your knowledge of FM and 231C and all the other NFPA requirements, you would agree with me that there would have to be some change or modification to those systems as they were in place at the time of this fire if in fact we had at least 15 percent Group A plastics?

A. Yes.

Q. Now, with regard to storage of aerosols and flammable liquids, to the extent that those aerosols or flammable liquids, are those permitted to be stored under commodity class IV?

A. Don't recall.

Q. Are you aware of any FM requirements regarding storage of aerosols and flammable liquids?

A. I know there are some. I couldn't quote you any requirements from it.

Q. Do you know whether or not there are requirements that include isolating those aerosols and flammable liquids from other inventory by means of either a separate area specially protected for storing them outside the facility?

A. Or in some cases caging them, yeah.

Q. Yes. Do you recall that there are such recommendations or requirements of FM in that regard?

A. Yeah. That's their recommendation about how to protect them, yes.

Q. To the extent that the owner in this particular facility was storing flammable aerosols and flammable liquids with the warehouse under the existing protection, not any special protection, do you believe that that should have required an evaluation of the existing systems to determine whether those systems were adequate to protect that facility?

A. To the extent that it's known or not known that the aerosols in question can be protected by Class IV, you know, - - are protectable by systems designed for Class IV, yes. That is, if you don't already know better.

Q. Do you have any opinion, Mr. Beyler, whether the storage of plastics in the facility at the time of the fire had any effect on the extent of the loss of the merchandise as a result of the first fire?

A. I guess it would be my - - my opinion based on my calculations involving Class II commodities that the outcome isn't sensitive to commodity classification in the area.

Q. Well, I realize what you did by way of calculations and modeling, but my question relates specifically to what was out there versus what you modeled, which we have already established was not what was out there.

A. Right.

Q. Now, from the standpoint, do you have an opinion as to whether the storage of plastics of any type in the facility, and specifically in these portable racks, had any effect on the extent of the loss that's claimed here by Lloyd's in this litigation?

A. Well, we knew Group B and Group C would not affect it.

Q. To the extent that there were Group A plastics [in the multi-row racks], would the result have been different?

A. It wouldn't have been.

Q. Okay.

A. NFPA [231C] says Group [Class] IV protection is perfectly fine for those commodities. They are lumped into Group [Class] IV. So having those plastics there versus just having, you know, other, you know, Class IV commodities, we know from that is not material. Obviously Class IV commodities do have plastics in them, so it's not - - not an either/or proposition. It would be my opinion that if there were no Group A plastics in the portable racks at all, that all the sprinkler heads at the ceiling, throughout the facility would have fused just like they were in the incident as they occurred. That would be my way of saying that no, I don't think the damage would be different.

Q. To the extent that there were Group A plastics [in the multirow racks], would the result have been different?

A. It wouldn't have been.

Evidence:

Allendale Insurance Letter (March 6, 1992)

"Recommendations for plastics storage (91-6-4) and for aerosol storage (91-6-7) are really advisory at this time since our engineer found little of these kinds of storage rather widely spread through out the area of the building that is in use now."

Loss Prevention Report-Allendale Insurance (July, 9, 1993)

"However, plastic storage should be confined to specific racks and protected as recommended."

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Allendale Insurance, July, 9, 1993

Survey Report, AIG Consultants, Inc. (12/14-15/93)

“The items are Class 1 through 4 commodities and Group A plastic along with minor aerosol storage. Most plastic and aerosols are scattered as such that no significant hazard of the overall risk exist.”

“This is a fully sprinklered risk with adequate protection in all areas, except the candy room and the rack storage occupied with plastics in the northeast corner of the warehouse.”

“The normal loss expectancy due to inadequately protected plastic at this risk has been determined to be \$3,439,478 PD [property damage] and \$50,000 BI [business interruption]. The PML [probable maximum loss] for this risk has been determined to be \$47,967,827 PD [property damage] and \$2,500,000 BI [business interruption]. The overall rating of this risk is considered fair and could improve to good if plastic is adequately protected.”

“This is a fully sprinklered risk with adequate protection in all areas, except the candy room and the rack storage occupied with plastics in the northeast corner of the warehouse.”

AIG Consultants, December 14-15, 1993

“The overall rating of this risk is considered fair and could improve to good if plastic is adequately protected.”

AIG Consultants, December 14-15, 1993

Property Underwriting Survey-Fire & Extended Coverage, AIG Consultants Inc.

Flammable Liquids/Aerosols: Inadequate [Protection] Rating

Rack Storage: Inadequate [Protection] Rating

Existing Sprinkler Protection: Adequate Rating

Survey Report-AIG Consultants, Inc., Survey Date: 12/7/95

“Storage along the east side of the high bay continues to be three high portable rack storage.”

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AIG Consultants, Inc., 12/7/95

“Since the last visit, some three high portable rack storage over an area of 4000 square feet had been added along the west side of the rack storage high bay area. The storage is Class III and IV commodities located between the high bay rack and the PIN ticketing area. Protection is adequate.”

Discussion

FM Loss Prevention Data Sheet 8-1

(January, 1998)

“The heat release rate (Btu/min or kW) can be three to five times greater for plastic materials than for a similar arrangement of ordinary combustibles.”

“The heat of combustion of ordinary combustibles (i.e. wood or paper) generally ranges between 6,000 and 8,000 Btu/lb. The heat of combustion for plastics generally ranges between 12,000 and 20,000 Btu/lb. The burning rate of a commodity is dependent on many things, but plastic materials generally exhibit higher maximum burning rates than similarly arranged ordinary combustibles. This difference can be two to three times higher for many plastic products.”

“The heat release rate (Btu/min or kW) can be three to five times greater for plastic materials than for a similar arrangement of ordinary combustibles.”

“Fire tests in the early 1980's showed that replacing one tier of a four tier high rack array with a higher hazard commodity produced a hazard much higher than that of a rack filled 100% with the lower hazard commodity.”

“Considering all the above, protection should be based on the highest hazard commodity. An alternative is to segregate the high hazard commodities and protect them accordingly. However, keeping the high hazard commodities properly segregated can be very difficult in normal warehouse operations.”

“Plastics mixed with Class 3 or 4 commodity should be evaluated as plastics and Class 4 commodities mixed with Class 3 commodities should be evaluated as a Class 4 commodity.”

NFPA 13-1999 edition

“Protection requirements shall not be based on the overall commodity mix in a fire area. Mixed commodity storage shall be protected by the requirements for the highest classified commodity and storage arrangement.”

Does NFPA 13/231C permit the storage of Class IV commodities in multi-row racks to a height of 21 feet with only ceiling protection?

Prior to launching into a discussion on the issues raised above, it is necessary to answer at least one question that probably has occurred to many readers. Does NFPA 13/231C permit the storage of Class IV commodities in multi-row racks to a height of 21 feet with only ceiling protection? The answer to that question is no. Per the requirements contained in NFPA 13/231C, at least two levels of in-rack sprinklers would have been required to protect a Class IV commodity in this configuration. It is also of interest to note that the building owners were aware of that fact and that they requested a quote from Grinnell to install the required in-rack sprinkler protection. After receiving the quote from Grinnell, the building owner elected not to install the required in-rack sprinkler protection.

With that bit of pertinent information out of the way, there seems to be little question that the building contained a number of code violations, which include violations of the agreed upon conditions for the approval of the code modification which allowed a 50 percent increase in the travel distance. Obviously, one of these violations was that the sprinkler protection provided for the multi-row racks did not comply with the requirements contained in NFPA 13/231C; no in-rack sprinkler protection was provided in the multi-row racks.

After receiving the quote from Grinnell, the building owner elected not to install the required in-rack sprinkler protection.

Other code violations included the storage of goods with a hazard greater than that of a Class IV commodity and the storage of aerosol containers in the building. Given these three violations, the certificate of occupancy issued for the building was no longer valid and the building was being illegally occupied. Each of these violations should have been considered to be major violations of the code, particularly since these were violations of stipulations included in the approval of code modifications.

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Would the hazard of the contents in the multi-row racks have affected the outcome of the fire? Without in-rack sprinkler protection within the multi-row racks, the answer to that question becomes arguable, however, if in-rack sprinkler protection had been provided as required, there is little doubt in my mind that the hazard of the goods stored in the multi-row racks would have had a crucial impact on the fire and the New Orleans Fire Department's ability to quickly control the fire.

Obviously, multi-row racks containing a Class IV commodity stored 21 feet high protected only by ceiling sprinklers located 50 feet above the storage is inadequate. Increasing the hazard by including Group A plastics in the mix of goods stored in the racks certainly didn't improve the sprinkler protection, but fire fighters were still able to control the fire after about 5 hours and extinguished the fire in 6-1/2 hours. It would certainly seem that if the hazard of the goods stored in the multi-row racks had been limited to Class IV commodities, rather than including Group A plastics in the mix, fire fighters would have been able to control the fire more quickly simply because the sprinklers at the ceiling would have been at least a little more effective.

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Just in case you're wondering, the warehouse was destroyed later that day by a second fire. The second fire appears to have started about 3 hours after the first fire was extinguished. Whether the second fire was a rekindle, or was caused by damage to the building electrical system, was a matter of conjecture. To my knowledge, the cause of the second fire was never established with a 100 percent degree of certainty.

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Conclusion

The fire or fires which destroyed the McFrugal's Warehouse and testimony/evidence in the litigation which subsequently followed make for interesting reading. Perhaps, most interesting in this case are the opinions of the plaintiff's expert in the litigation, particularly since Dr. Beyler is a "renowned" fire protection expert.

Is Dr. Beyler's opinion correct that the hazard of the commodities stored in the multi-row racks where the first fire originated was immaterial to the end results of this fire. It is doubtful that many in the fire protection profession would agree with Dr. Beyler's opinion. In fact, many in the field of fire protection are likely to have a grin on their faces right about now.

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To make this assertion with 100 percent certainty as did Beyler in his testimony is, in my opinion, sheer nonsense. It appears to me that the only conclusion which can be drawn from this is that either Dr. Beyler is not the expert that he holds himself out to be or that Dr. Beyler lacks integrity. Based upon my knowledge of Dr. Beyler, it's my opinion that the latter is the more likely of the two alternatives.

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