SCHULTE & ASSOCIATES
Building Code Consultants
3701 Franklin Park Circle
Lawrence, KS 66046
fpeschulte@aol.com
847/312-7617

FIRE PROTECTION HISTORY-PART 190: 1920 (INDUSTRIAL FIRE PROTECTION)

By Richard Schulte

The Twenty-fourth Annual Meeting of the National Fire Protection Association included a report by the Committee on Manufacturing Risks and Special Hazards. The following is the text of the report:

"*The President: The next item is the report of the Committee on Manufacturing Risks and Special Hazards, Mr. Benjamin Richards of Chicago, Chairman.*

Report of Committee on Manufacturing Risks and Special Hazards.

Benjamin Richards, Chairman.
C. P. Beistle, P. A. Colwell, F. J. Hoxie, Milton F. Jones, W. D. Milne, A. H. Nuckolls, Robert Palm, C. H. Panon, W. G. Sanderson, G. E. Stecher, F. G. Tupper, R. O. Walker, H. P. Weaver.

The peculiar industrial conditions reported by this committee last year, seem to be continuing. The factories are still unusually busy and production in most lines is being pushed to the utmost. It is pleasant, however, to note that there are marked signs of more general stability, so far as construction is concerned, the practice of building poor, temporary buildings which prevailed for the last few years having given real accomplishments along the lines of superior, permanent construction. In fact, there is a well marked tendency among our best industries to build new buildings of fire-resistive construction. The advance in the costs of labor and materials has favored such construction, as the difference between the cost of fire-resistive buildings and that of the superior mill construction type, is not so great as formerly. However, the new work has not resulted in the elimination of any considerable number of the so-called temporary buildings which were erected during the period of the war. To a large extent this is due to the expansion of business, which is requiring all available space and utilizing old structures as well as new ones.

The year has been marked by much social unrest, strikes having been so general as to further contribute to the shortage and high cost of materials. Delays in freight and shortage of coal, largely a result of labor troubles, acted directly to the detriment of some large plants so far as safety from fire was concerned, these influences being evidenced by the necessity for discontinuing fire protective apparatus on account of the lack of coal to maintain adequate heating, and by delays caused to shipments where new fire protection devices or parts to replace renewals, were involved.

There is a marked shortage in the production of fire protection apparatus, resulting in many important buildings being without protection for long intervals. In the major number of these cases the manufacturers must use the rooms for production at once, before the fire protection can be installed, whereas formerly it was usually assumed, to maintain ordinary safety, that manufacturing in new buildings must await the completion of the fire protection apparatus. This shortage of materials has not only affected sprinkler systems, but has been in evidence when fire pumps and tanks were involved. It may be noted that in many cases the industrial establishment, even in the strained conditions of the times, lacked only the fire protection apparatus for its completion, all difficulties having been overcome in erecting the building, providing the machinery and procuring the stock for production. The companies supplying modern fire apparatus have been unable to meet the demand. There have been prominent instances where large fire losses have resulted from this cause. There seem to be no measures at hand whereby those responsible for the maintenance of the safety of a plant can adequately cope with this problem other than to make special efforts along the line of fire prevention by careful guarding and the taking of other like precautions to prevent the start of a fire. As a rule the owners have promptly closed contracts for the needed protection and so far as lies in their power they co-operate with others interested with a view to preventing disaster. In some localities there is evidence that nearly double the amount of men and apparatus available for perfecting fire prevention installations could be utilized, were they [are] *available.*

An observance of strictly local affects of the present high scale of wages in certain industries has indicated that some concerns of long standing can not compete for labor with some of their neighbors who have an unfilled demand for skilled workmen. This has resulted in the withdrawal of some of these industries from their cities, further establishing a tendency to centralize large industries of a like nature, examples of this being best shown by competition in labor from the automobile, rubber tire and such allied lines of manufacture. The future of plants so abandoned is more or less doubtful, but at present there is so great a demand for manufacturing buildings, that the problem of vacant factories is not seriously before us.

High values, instead of decreasing, seem still to be on the increase, with the result that $300, 500 or $1000 fires are usually incidents of history. Fire fighting facilities to a large extent remain on about the same basis as they were years ago, no marked improvements having been made to offset the advance in values and increase in hazards whereby the losses may be kept to figures formerly experienced. This committee has made efforts to collect information which may later aid in some measure to meet this condition. The inadequacy of our present fire fighting facilities to meet some problems involved, may be illustrated by the introduction of very large dip tanks containing paints, enameling or other highly inflammable materials in combination with ovens and endless conveyors arranged to treat

the stock automatically. The presence of the conveyor eliminates the possibility of using an automatically closing cover as formerly, and the committee has recommended protecting such hazards by an automatic sprinkler system, using foam instead of water. A few such systems have been installed in rather a crude way in some of our large manufacturing plants to protect such hazards, and the experience from actual fires indicates that they are an entire success. Under the conditions described, it has been found essential that the large amount of highly inflammable liquids be immediately withdrawn to a safe place in case they ignite. This is effected by utilizing the approved sensitive heat releasing devices to cause the liquid to pass into a closed tank safely located, thereby materially reducing the amount of inflammables exposed to the fire and at the same time saving the valuable liquids for future use. By operating the foam sprinklers with these heat releasing devices, the surface of the liquid may be covered with foam while it is being drained away, and simultaneously fire on the drain board and other surfaces covered with the highly inflammable liquid is extinguished. These devices are more sensitive than sprinklers so that when the latter open they have to only extinguish any further fire and prevent loss by their general cooling effect. Sprinklers can cause no trouble by spreading the inflammable liquids as the other apparatus has disposed of these liquids before the water is ejected upon them. Indeed, if noninflammable and very rugged construction is used in building the tanks, conveying machinery and their enclosures, it may be safe to omit the sprinklers entirely from inside the enclosures, at least in the vicinity of the tanks. Fire protection companies are now at work perfecting such a device and very likely, in the near future, will produce reliable apparatus which can successfully stop fires in these hazardous liquids where water can not well be used in the early stages of the fire.

The use of fuel oil is rapidly increasing and it may safely be assumed that it will be much more common than at present. Another committee will report in detail upon this subject, recommending rules for safeguarding the hazard.

A member of our committee, Mr. F. J. Hoxie of Boston, has produced a very interesting, scientific paper relating to the fire hazard of pulp wood piles at paper mills with the results of study given to the different fungus growths affecting wood. This article was published in the paper trade journals and is recommended for careful study by those interested in this important fire protection problem. Mr. Hoxie has also made a careful study of the fire hazard of spreader and churn rooms in rubber mills, and is offering for the consideration of our committee, a paper covering this subject. This is now in the hands of the committee and it is hoped that it will be issued in pamphlet form for general use soon. Our member, Mr. Milne, has kept conversant with the large development in cloth coating industries which usually represent hazardous occupancies, the work being mostly the production of imitation leather goods for automobile tops and upholstering. The processes involve coating cloth with rubber or pyroxylin compounds dissolved in highly inflammable solvents which resemble those of the churning and spreading departments of rubber mills. Mr. Milne has also followed the increase in the dye industry which was mentioned in one of our former reports. The compilation of fires in connection with this and other chemical industries is essential if we are to guide the construction and arrangement of better chemical plants along the lines of safety. Every effort should be made to get into the fire record all fires of whatever nature, which occur in connection with chemical plants.

During the year we have re-edited our pamphlet on "Lumber and Lumber Drying," and this is now being reprinted for further distribution. We have conducted the usual correspondence with manufacturers and trade journals in an effort to present the value of fire protection and prevention wherever the opportunity offers.

The President: You have heard this fine report of the committee. Is there any discussion?

Mr. Ralph E. Richman: (Cincinnati: Editor of Fire Protection): This report contains as valuable data as that of any other committee of the Association. Those who have followed the work of the committee from year to year know that the review and survey which Mr. Richards brings in here constitutes the most comprehensive review of the conditions in the factories of the country which make for fire safety that is presented anywhere or prepared anywhere. I feel that particularly myself, because out of the mass of good material always presented at this convention, it is sometimes difficult for me to select what shall go into my own papers. I always have to find room for what Mr. Richards presents because it is put in such a practical way that subscribers in factories who are looking for just such suggestions as these, can use them to good advantage. It is also of extremely great value to the underwriters who are constantly following the changing conditions in factories and workshops to know how to determine the desirability of a risk. That the work of Mr. Richards has attracted attention outside of our Association is evidenced by the fact that not long ago he was asked to give an address on factory fire protection before one of the Westinghouse associations and did so much to his credit. I move the acceptance of the report.

The motion was adopted."

Of interest in this excerpt is the reference to the economic conditions which were developing in 1920. The 1920's were known as the “roaring Twenties”. The “roaring Twenties” came to a sudden end in the stock market crash in October 1929.

* * * * *

Source: “*Proceedings of the Twenty-fourth Annual* [NFPA] *Meeting*”, Chicago, Illinois, 1920.