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## FIRE PROTECTION HISTORY-PART 163: 1921 (NATIONAL LUMBER MANUFACTURERS' ASSOCIATION)

By Richard Schulte

Throughout the early days of the National Fire Protection Association, one of the "guiding philosophies" of the Association was the promotion of "fire-proof" building construction-building construction built with noncombustible building materials and with structural elements protected by materials which would limit the damage to these elements in the event of a fire.

Obviously, the NFPA's basic philosophy with regards to the promotion of "fire-proof" building construction was at odds with the use of wood and timber as a structural building material. Hence, the body of research regarding the fire protection of wood used as a structural building material sponsored by the National Lumber Manufacturer's Association was ground-breaking research for the time.

The following is the transcript of the presentation made by the National Lumber Manufacturers' Association regarding research on the fire protection of wood and timber made at the twenty-fifth Annual Meeting of the NFPA held in 1921:

"***Report of National Lumber Manufacturers' Association.***

*The National Lumber Manufacturers' Association has been very active during the past year in scientific, experimental work leading to the perfection of timber construction as used in frame buildings and in the interiors of ordinary construction. Cooperative tests performed by this Association and the Associated Metal Lath Manufacturers at the Underwriters' Laboratories, Chicago, have succeeded in establishing a type of protection for joisted floors which should convince fire underwriters and designers that it is possible to use wood floors, properly protected, in places where they have originally been discredited. These tests will be continued on other interior parts of structures where wood may be used, with the object of thoroughly establishing a protective time rating for joisted and studded construction as now used. It is expected that the outcome will be the development of an entirely new type of construction.*

*The tests on timber posts or columns which have been in progress for some time have been completed and a report will be issued to the public at an early date. These tests have shown conclusively that many of the failures during fire in buildings of the mill construction type have been due to the connections between the members rather than to the failure of the wood itself. A new type of post cap which develops the true life of the wood when exposed to fire has been divised.*

*These series of tests have done much to correct the erroneous opinions in regard to the behavior of wood when exposed to fire and have created a lively interest in the possibilities of well designed timber construction among fire underwriters.*

*Inclusion in building codes in the various cities of the country furnish the only medium whereby the institution of developed standards can be assured and through its Technical Department the National Lumber Manufacturers' Association has made every effort to secure the inclusion of proper laws relating to fire prevention and fire protection in the building codes of the cities throughout the country. During the past year our field representatives have visited over 300 cities for the purpose of forcibly bringing before the City Councils, the Chamber of Commerce bodies, and the various architectural and engineering bodies the importance and need of the institution of proper building laws. In conducting this work it has been our purpose in the first place to secure the proper use of wood from a structural standpoint and then to urge the incorporation of the necessary fire prevention features in building codes for the purpose of protecting wood products. The officials of a large percentage of the cities which we have visited have expressed themselves as being convinced of the need for safeguarding lives and property through the medium of proper building regulations.*

*During the past year we have published a series of "Frame Construction Details" dealing with the relationship of the various structural members of a frame building and the methods of application and erection of these members, giving special emphasis to fire prevention features. This book has been sold at the nominal cost of $1.00 per copy and 900 have thus far been distributed among engineers, architects and builders, and others who are vitally interested in the erection of buildings.*

*This Association has made every effort to insure the correct use of lumber in mill, ordinary and frame construction. It has been our purpose to bring together in condensed form the results of the scientific, experimental and research work in which we have been engaged in the past six years. We believe the information that we have distributed to be an accurate and reliable guide to the safe and efficient use of wood in construction.*"

Although one of the guiding principles of the National Fire Protection Association was to promote the use of “fire-proof” building construction, it was observed that major fires still occurred in such “fire-proof” buildings. While the construction of a “fireproof” building may not become involved in a fire, the combustible contents of a “fireproof” building will still burn. Hence, major fires can still occur in “fire-proof” buildings.

By 1921, many in the fire protection field understood that the term “fireproof” building was a misleading and inaccurate term. In fact, there simply is no such thing as a “fireproof building”, if the building contains combustible contents. The eventual recognition of this simple fact lead to the abandonment of the term “fireproof building” and the replacement of this term with the term “fire resisitive building”.

With the understanding that no building is really “fireproof” also came the recognition that allowing smaller buildings to be constructed using wood and timber structural members was a reasonable approach to the regulating buildings from a fire safety standpoint. In other words, buildings constructed using combustible structural elements can also be utilized safely provided that these buildings are properly designed and constructed and the hazards within these buildings are adequately controlled and/or protected.

The research sponsored by the National Lumber Manufacturers’ Association ushered in a whole new understanding that building fire safety is actually multi-faceted and that no one building feature, such as “fire-proof” building construction, will assure that buildings are “fire-safe”. That understanding was quite a break-through, particularly for the time period, the early 1920's.

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**Source:** “*Proceedings of the Twenty-fifth Annual* [NFPA] *Meeting*”, San Francisco, California, 1921.