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FIRE PROTECTION HISTORY-PART 191: 1920 (SPRINKLER SYSTEM WATER SUPPLIES)

By Richard Schulte

The twenty-fourth Annual Meeting of the National Fire Protection Association was held in Chicago in early May, 1920. A portion of the report of the Committee on Automatic Sprinklers presented at this meeting included the following excerpt addressing the minimum water supply for a sprinkler system supplied by the municipal water distribution system:

> "*The President: The next item on the program is the report of the Committee on Automatic Sprinklers, C. L. Scofield, of Montreal, Chairman.*
>
> *Mr. Scofield: The changes recommended by the Committee in this report are designed to standardize the practice in some details not now fully covered by the regulations. (Reads :)*
>
> ***Report of Committee on Automatic Sprinklers.***
>
> *C. L. Scofield, Chairman,*
>
> *R. C. Bird, E. P. Boone, J. H. Brumbaugh, E. S. Clayton, Gorham Dana, C. H. Fischer, O. F. Gibbs, Clarence Goldsmith, R. W. Hendricks, I. G. Hoagland, C. H. Jenkins, L. H. Kunhardt, W. R. Lee, F. E. MacKnight, B. R. Martin, F. J. McFadden, Lee McKenzie, F. C. Moore, I. Osgood, F. B. Quaekenboss, Wm. Reed, Benjamin Richards, R. L. Rumbaugh, H. P. Smith, P. D. C. Steward, R. Sweetland, P. L. Wormeley.*
>
> [TEXT OMITTED]

"***SECTION "I."***
Water Supplies.

Rule 59. Public Water.

Substitute the following for the third sentence:

"The supply from city main should not be considered as acceptable unless a hydrant test of the main capacity with 500 gallons per minute flowing indicates sufficient residual underground pressure to give at least 12 pounds [psi] *under the roof; this requirement of flow is the minimum for equipments having 200 heads or less in one fire area; larger areas will require additional flow in gallons per minute." The rule then proceeds as now: – "Street mains should be of ample size," etc., etc.*"

It is interesting to note that the minimum residual pressure required for a sprinkler system was 12 psi (at the elevation of the high sprinklers), even though the pipe schedule permitted the use of 3/4 inch piping. A hydraulic analysis of the pipe schedule would indicate that a 12 psi residual pressure is inadequate to operate a sprinkler system if the sprinklers at the end of the branch lines operate, along with other sprinklers on the branch lines, yet the success rate of sprinkler protection was high.

It is apparent that the hydraulics of water flow in a piping system was more of an art than a science in 1920.

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