

# Fire Prevention Lessons From the Triangle Disaster

## Public Commemoration Next Wednesday to Emphasize Importance of Observing Simple Rules of Safeguarding Life and Property

THE third anniversary of the Triangle shirtwaist factory fire, in which 147 girls lost their lives, occurs on Wednesday next, March 25. Fire Commissioner Robert Adamson has arranged for the observance of this anniversary by fire drills in factories and schools, by the circulation of fire-prevention literature by taxpayers and safety organizations and by calling attention as widely as possible to the educational phase of fire prevention. Mayor Mitchell and city officials are to be invited to witness fire drills held in some large factory. In every church in the city the Fire Commissioner has asked every minister to read a letter to the congregation to-day calling attention to the Triangle disaster and pointing out the obligation of every individual to observe both at home and in places of business all the simple rules which tend to prevent fires. The City Club will give a luncheon next Saturday, at which the subject for discussion will be "Fire Prevention."

The Fire Commissioner is convinced that a vast majority of the fires which occur in this city are the result of carelessness. A match or a lighted cigarette carelessly thrown away in all probability caused the Triangle fire and the loss of 147 lives, and it is for the purpose of impressing upon every one the importance of being careful in the handling of matches, in the throwing away of cigar or cigarette stubs, in keeping places of business free from waste and rubbish and combustible materials and in taking care to safeguard heating and lighting apparatus and in observing all of the simple rules of fire prevention that the observance of the Triangle fire anniversary has been arranged for.

It is interesting on this anniversary to call attention to the steps which have been taken since that fire occurred to make New York a safer place to live in. Fire prevention as a science was hardly known in this city before that fire, and even yet a vast majority of the people do not understand the necessity for doing the things and taking simple precautions which the Fire Prevention Bureau insists upon. Summing up the results of the fire prevention reforms since the Triangle fire and what needs still to be done Fire Commissioner Adamson made this statement:

Investigation immediately following the Triangle fire brought out the fact that careless habits both in factories and in homes were the main causes of most fires. A match or cigarette heedlessly thrown among some waste clippings on the Triangle floor, as has been said, was the probable cause of the disaster. Out of that thoughtless action has grown the law against smoking in factories, which the Fire Department is endeavoring to enforce.

Despite all the efforts of the department, however, there is a vast amount of public disregard of simple precautions against fire, as is shown by an analysis of the reports of fires for the year just closed. For instance, it appears that cigars, cigarettes and their careless handling caused no less than 1,079 fires last year, with an estimated loss of \$306,335. The careless handling of matches caused a property loss in Greater New York of \$131,188, the actual number of such fires being 1,175. While on the subject of matches and their careless handling it might be mentioned that children playing with matches caused 588 fires last year, with a loss of \$32,245, which must be added to the match damage, making a total from this cause of \$154,133.

Another fruitful source of careless and entirely avoidable fires was the bonfire and fires from brushwood igniting fences. These fires numbered last year 1,000 and cost Greater New York \$10,230. Thus out of a total of 12,558 fires for the year 1913 3,909, or more than an entire third, were caused by culpable negligence.

Talking the other main causes of fire, such as careless handling of gas lights and illuminants, stoves, furnaces and steam pipes, the misuse of benzine, the failure to clean chimneys and such items. It appears that thoughtlessness and lack of care cover practically the entire list, with exception perhaps of those fires which were deliberately set for the purpose of arson or through pyromania—the disease for setting fires. Fortunately many persons are beginning to "think fire beforehand" and to heed the thousands of warnings which have been sent out by the Fire Department. This is shown in the fact that there were in this city 2,673 fires less in 1913 than there were in 1912, with an estimated monetary saving of \$1,601,582.

If carelessness is the cause of more than 60 per cent. of fires in this city cleanliness might be called the remedy. The whole situation might be summed up in one word—"thriftiness"—with the exception of course of incendiary fires and those that might be said to be directly due to lightning. If oily waste were placed in receptacles there would be no "spontaneous combustion"; and if motors were kept from sparking there would be no fires from this source. Chimney fires are certainly avoidable by the simple process of sweeping out flues in time.

Most of the laws for fire prevention have been placed upon the statutes since the Triangle fire. Thus out of this great disaster much good has come. One of the first tangible results of the Triangle fire was the drafting and passage of the law establishing the Fire Prevention Bureau.

During the last month there were more than 107,000 inspections of buildings made by the Fire Department and next month these places will again be visited and others added to the list. Many conditions throughout the city have been remedied and the general public is beginning to wake up to the dangers from fire which prevail.

A campaign of education has been started by the Fire Department which includes wide distribution of literature, such as "No Smoking" signs and various "Don'ts for Fire Prevention." Enforcement of the laws against smoking in factories and other regulations are having a salutary effect. Lecture centres are also being established and the public

schools will soon have a course of fire prevention studies.

In carrying out fire prevention laws and regulations a large number of important factors enter into consideration. In the first place there is the reduction of the fire hazard by the elimination of the cause of perhaps 75 per cent. of fires in this city, that is, carelessness. A second very important factor in achieving fire prevention is the introduction of appliances which will extinguish fires in their incipency; this includes fire extinguishers and fire pails, hose lines on floors and most important of all the automatic sprinkler.

Experts stated on the witness stand after the Triangle fire that had the Triangle factory been equipped with automatic sprinklers no lives would have been lost. The installation of automatic sprinklers may now be enforced by the Fire Department, and they will be placed in all factory buildings and other workshops where the occupancy of the floors requires it. This will be one of the most important means of safeguarding lives of the workers.

A sprinkler system is not so costly an affair as many owners of buildings seem to imagine. The cost of a system works out at about \$10 per sprinkler head—this a system with about 300 heads would cost \$3,000. The initial installation of the system actually pays for itself within about four years by the saving derived from reduced fire insurance rates. For instance, if the fire insurance premium is, say, \$1,500 a year before the installation of a sprinkler system, it will only be about \$500 a year after the putting in of the system. As a matter of fact, so certain is this saving in insurance, that a number of reputable firms, both in New York and elsewhere, will install automatic sprinkler systems without initial cost to owners on condition that the equipment is paid for out of the saved fire insurance premiums extending over a period of a few years.

Another important point in fire safety is the provision of adequate means of egress from all buildings where numbers of workers or other persons are engaged. Not only should properly built fire escapes and fire towers be provided, but, wherever possible, buildings should have fire walls running through their entire extent so that workers in one part of a factory may walk to safety through these walls by means of proper fire doors, closing automatically in case of fire. Such fire escape buildings, and the use of what is called the horizontal exit from one part of a building to another, will prove an enormous life saver wherever installed.

Naturally, where fire exits and means of escape are amply provided, lessons should be given as to the use of these means of escape in case of emergency. Proper fire drills should be inaugurated in all factories. The labor law requires such drills.

In the Triangle factory there was no fire drill whatever, the fire escape was inadequate and led down into a blind court, making a literal fire trap. The workers were unacquainted with the exits, one of which was undoubtedly locked. There were only two stairways in this building, though the building code required three, and the doors leading upon these stairways opened inward. Only one stairway led to the roof and few of the workers were aware of its existence. The windows of the building had no wire glass in them, and this caused the fire to leap from one floor to the other. Carelessly enough, though the fire started on the eighth floor, the principal fatalities occurred on the ninth.

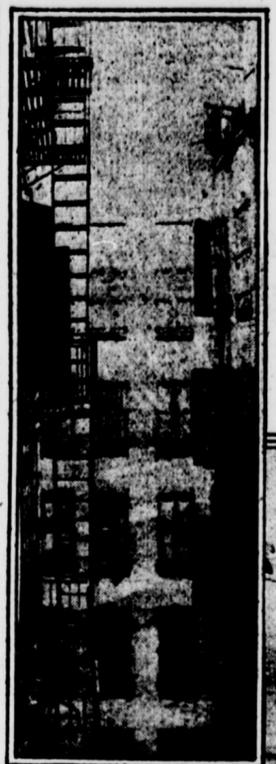
In the Triangle fire the floors were littered with scraps and cuttings, and no attempt was made to clean these and place them in metal lined receptacles, as is now done in the same building to-day; which is also equipped with automatic sprinklers. The concerns occupying the building also have fire drills, using as means of exit a capacious fire escape in the rear of the building and also interior fire towers, the doors of which open outward. All waste and rubbish is swept regularly from the floors and placed in metal lined boxes, so that even should fire start within the boxes from spontaneous combustion it cannot spread.

It might be mentioned in connection with the Triangle building to-day that though so many lives were lost from the careless smoking of some one in the shirtwaist factory on March 25, 1911, in the same building several times since the disaster persons have been fined as much as \$50 at a time for disobeying the Fire Department order against smoking.

When the Triangle fire occurred the employees not only had no fire drills, but they were so placed at work that they blocked their own egress from the floors. In most of the large factories throughout New York Fire Department

inspectors now insist upon ample floor space in the aisles.

As the Iroquois fire in Chicago on December 30, 1903, in which 600 persons



Using New York's largest fire escape during fire drill. The steps are constructed to accommodate large crowds. This factory can be emptied of its 2,000 employees in two minutes. Picture in upper corner shows the old fire escape in Triangle Waist building before fire. It was down this inadequate fire escape that hundreds of girls tried to go on the fatal March 25, 1911. The escape was badly constructed and the fire caused it to crumble. The steps led to a blind court, where many of the workers lost their lives. A modern fire escape has replaced it.

perished, resulted in the safeguarding of theatres throughout the country, so has the Triangle Waist factory fire brought about a great reformation in rendering factories in New York more secure than they were before the fire. Many large firms on their own initiative have made fire prevention almost a hobby. There are some factories in the city employing more than 1,000 women workers which are as safe from fire danger as it is possible to make them.

Of course in all matters of fire prevention building construction is of supreme importance. The best form of building for fire prevention purposes is the type of mill building developed in the New England States, where the floor

beams are massive and the floors, where wooden, are of great thickness—usually four inches. There are no vertical openings between the floors for the spread of fire from one floor to another, and these buildings are also equipped with automatic sprinklers and other devices for extinguishing fire.

The Triangle fire demonstrated forcibly the fact that no building is absolutely fire-proof, for it is impossible to make the contents non-inflammable. However, with proper building construction and with the use of fire retarding materials such as wire glass, doors covered with block tin, concrete partitioning and similar fire stops, the progress of fire may be arrested sufficiently long to save life and property, provided auxiliary fire appliances are up to standard also.

It is building construction that has placed European cities so far ahead of us in the matter of fire losses. For instance, Greater New York has 500 fires per 100,000 inhabitants, while London for the same population has but 81, Paris 74, Berlin 37, Vienna 69 and St. Petersburg 75. Our fire loss in this country is about eight times that of Europe.

The actual cash loss—to say nothing of upkeep of fire departments, water supply and fire insurance premiums—is about \$40,000 for every day of the year, or \$25,000 for every hour of the day. We spend every year in this country about \$500,000,000 as a fire tax, or \$125,000,000 more each year than the total cost of the Panama Canal. What nation can afford to pay for cash \$500,000,000 worth of smoke each year?

So many elements enter into the question of fire prevention, and the subject is so large that it would take volumes to cover it. It has only been attempted here to give an outline of the importance of the subject. The Triangle factory fire emphasizes one other extremely important item, the loss of life, which averages about 2,000 persons a year. In the last ten years in this country it is estimated that 38,000 persons have lost their lives by fire and about 80,000 work-

ers and other persons have been injured.

The loss of life, figuring each worker at \$5,000, amounts for the 20,000 workers lost in ten years to \$1,000,000,000.

It is to help stop this loss that the Fire Department is endeavoring to call attention to matters of fire prevention and appealing to the public at large, whether in home or factory, to cooperate with the department in diminishing our annual fire loss in this city. One of the best means of accomplishing this is by "thinking fire beforehand" and using care and forethought in all matters which may directly cause or lead to fires. An ounce of fire prevention in time is worth many tons of water from the fire engines "afterward."

And that the various departments or groups should select their own deans or heads, now nominated by the president.

Dr. Cattell has held a Columbia professorship for twenty-three years. He is the editor of the *Popular Science Monthly* and of *Science*. As a student and lecturer in foreign universities years ago he became well acquainted with the administrative systems of European universities, which are quite different from ours. He is one of the great scholars of America, also one of a comparatively small group of university professors entirely fearless in public speech.

In a sense his own experience at Co-

# Sees Danger in One Man Control in Universities

## Prof. Cattell of Columbia Wants No Boss in Colleges and Urges Real Democracy—College Rulers Stirred by His Address

ARE the colleges and universities of America ruled by "bosses"? Is the college president an autocrat, holding dominion over an enslaved faculty, exercising his power usually with benevolence, but equally ruthless if his purposes happen to be sinister? Is the whole administrative system ludicrously incompatible with democracy and must it be changed before the best results can be obtained from the scholarship and money poured into our campuses?

These are old questions, newly pointed by an address, which Prof. J. McKeen Cattell recently gave before the Religious Education Association in New Haven, his subject being "To What Extent is Democracy Realized in University and College Administration?" He said his answer might be as brief as the famous chapter on snakes in the natural history of Treadwell—"there is no democracy in university administration."

A short extract from the address, which was printed the next day, has caused a great deal of discussion in colleges and among their critics. This SUN is able to present it in full this morning.

Prof. Cattell would not eliminate the president, but suggests that he should be chosen not by the trustees but by the fa-

lultia believes the charge made in certain quarters that conflict of views with the heads of some American institutions entails dismissal. He has always spoken his mind freely—not in the newspapers, but before scientific societies and to his faculty comrades. Yet he stays at Columbia. Now and then one hears that "Cattell is too big a man to be fired."

As a matter of fact, it was President Butler who saved him in a notable episode last year. Early in May the Century Association declined to admit Prof. Jacques Loeb, the biologist, to membership. Prof. Cattell wrote a letter charging that Dr. Loeb was blackballed because of race prejudice.

At about the same time Prof. Cattell was notified that a resolution providing for his retirement, as he had taught twenty-five years, would be presented at the next meeting of the board of trustees. He objected to retirement.

On May 21 G. L. Rives, chairman of the trustee, wrote him that the committee on education had favored his retirement in accordance with a previously expressed judgment of their own, and also in accordance with their own conviction that the interests of the university would be promoted by your retirement.

Mr. Rives's letter, however, had this closing paragraph:

"Your letter of May 12, 1913, addressed to the chairman of the trustees, confirms the committee in this latter opinion, but at the personal request of the president of the university and in deference to his wishes the committee has decided not to present to the trustees the resolution providing for your retirement."

It was emphatically denied at Columbia that the plan to retire Prof. Cattell was in any way related to his championship of Dr. Loeb. Apparently it matured before the Loeb matter came up. But it seems obvious that Prof. Cattell's previous record of outspokenness had influenced the committee on education and the trustees, if not President Butler.

At the time of the disturbance which resulted in the retirement of Prof. Harry Thurston Peck, Dr. Cattell sent to other faculty members a pamphlet expressing dissatisfaction with conditions at Columbia.

He spoke of "the bureaucratic system by which nearly everything in university control is done by the president with or without consultation with his subordinate deans." He gave a list of prominent educators whom Columbia had lost in the last five years from its "pure science" faculty.

"In men of distinction and high promise we have fallen behind Harvard, Yale, Columbia and Johns Hopkins," he wrote. "The university takes advantage of the man of genius scientific interest to place him in a position which is less independent and less adequately paid than he would have in other professions."

But the lovers of disorder who predicted a great rumus at Columbia on Prof. Cattell's account have been confounded. President Butler insisted on his retention, and that anomaly ended it.

Just now the surface at Columbia is unrippled. President Butler "stood up" for both Prof. Peck and Prof. Cattell and won friends thereby. Apparently he and Prof. Cattell are the best of friends. Yet the psychologist has in recent years changed his opinion that the possibilities of one man control in any university is bad in practice and dangerous in possibility. That seems a fair inference from his New Haven address.

Indication of the contrast between the administrative systems of Europe and America should preface a report of Prof. Cattell's remarks. Let Oxford be the Old World example.

"At Oxford 'final control over all acts and business of the university' rests with the House of Convocation, composed of all masters of arts and doctors of the highest faculties who are enrolled on the university books. This body elects the Chancellor, who nominates annually the Vice-Chancellor, the real administrative head of the university. The Vice-Chancellor must be chosen from among the heads of the various colleges.

All university legislation is promulgated and submitted to the convocation of the House of Convocation, the Hebdomadal Council. Its members are the Chancellor, Vice-Chancellor, immediate ex-Vice-Chancellor and proctors, six ex officio, and eighteen other men, heads of houses, professors, &c., elected for six year terms by the congregation of the university.

This monarchical England has a truly democratic university. The dissimilarity between this and the American system is obvious. 'The college presidency [in the United States] is a despotism untempered by assassination,' says one signing himself 'A Near Professor' in Dr. Cattell's magazine, the *Popular Science Monthly*, an epigram widely quoted by professors whose observation of the throne room is more than 'near.' The same letter tells of a university president who, when questioned regarding summary action regarding members of his faculty, said: 'I have no reasons to give; it is my pleasure.' The writer adds: 'It is possible that the distinguished president

obtains unlimited powers, whether in the nation, the State, the city, the family, or the university, he does not work to be wise and benevolent, and when he is the gain from his superior initiative and efficiency may be cancelled by the loss of the self-interest in his subordinate's good ideal. It is not surprising that the student is troubled to find these various houses and sometimes

Moves in a mysterious way, His wonders to perform.

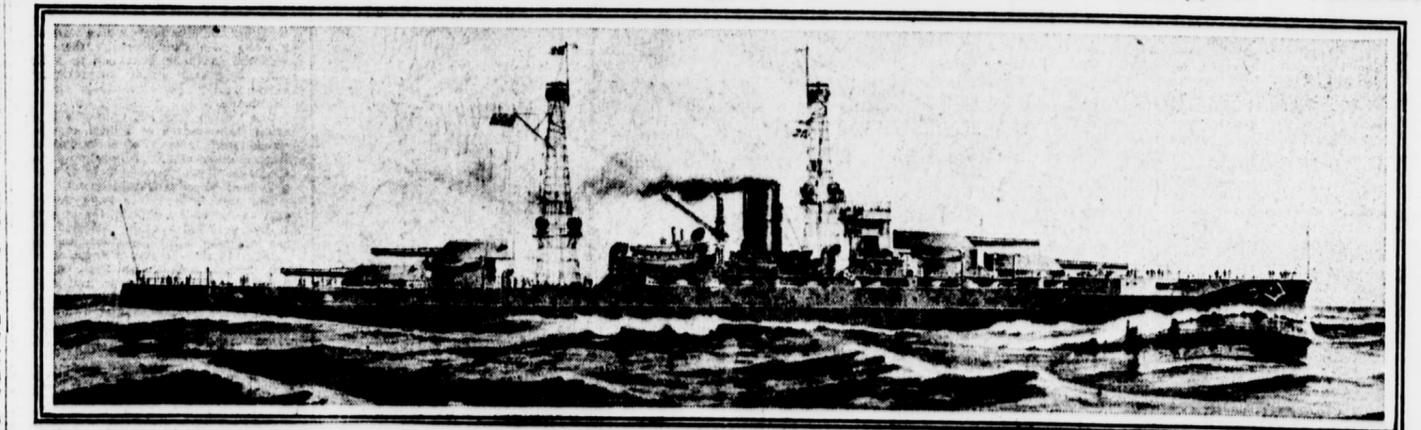
"The difficulty is that if an autocrat obtains unlimited powers, whether in the nation, the State, the city, the family, or the university, he does not work to be wise and benevolent, and when he is the gain from his superior initiative and efficiency may be cancelled by the loss of the self-interest in his subordinate's good ideal. It is not surprising that the student is troubled to find these various houses and sometimes

"Government is a rough business, and this holds to a certain extent for educational institutions. The university president has at least six masters: the trustees, the board of the state, the alumni, the general public and the members of the house, and each of these has different and dissimilar interests and ideal. It is not surprising that the student is troubled to find these various houses and sometimes

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# Uncle Sam's Newest Dreadnought Fastest and Largest Afloat



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U. S. S. Oklahoma, to be launched at Camden, N. J., on Tuesday.

The United States dreadnought Oklahoma, which will be launched next Tuesday at the New York Shipbuilding Company at Camden, N. J., is a sister ship of the dreadnought Nevada, and is expected to make at least twenty-three knots when she goes on the trial course. Her displacement is as follows: 4,500 tons; armament, 10 fourteen inch guns; 21 five inch guns; 4 three pounders; 8 one pounders; 2 three inch field pieces; 2 machine guns, and 4 twenty-one inch torpedo tubes; length, 575 feet; beam, 95 feet 3 inches; draught, 25 feet 6 inches. She will have a complement of 1,150 officers and crew.

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